

## A Cross-Sectional Study of Stress and Related Conditions Among Nursing Students at a Tertiary Care Hospital, North India

Swati Singh<sup>1</sup>, Rajesh Kunwer<sup>2</sup>, Pankaj Pathak<sup>1</sup>, Chhaya Singh<sup>3</sup>

<sup>1</sup>Associate Professor, <sup>2</sup>Professor and Head, <sup>3</sup>Assistant Professor, Department of Community Medicine, TS Misra Medical College & Hospital, Lucknow, India

**Correspondence:** Dr. Chhaya Singh, E-mail: drchhaya9492@gmail.com

### Abstract:

**Introduction:** Mental well-being is a vital component of overall health, particularly for nursing students who face academic, clinical, and career-related pressures. **Objective:** To estimate the prevalence of depression, anxiety, and stress emotions among nursing students and its association with societal and bio-social behavioural factors. **Method:** An analytic cross-sectional study was conducted at a nursing college of a tertiary care hospital in Lucknow, India, from November 2023 to August 2024. 240 nursing students enrolled for the study with complete enumeration, out of which 205 filled questionnaires. Data were collected using a self-administered questionnaire, including the DASS-21 scale to assess depression, anxiety and stress levels. Societal variables (religion, caste, residence, family type) and bio-social behavioural factors (sleep duration, social media use, spiritual practices, and outdoor sports) were analysed. Statistical analysis was performed using STATA 18.0, and Chi-square tests were applied to determine associations. **Results:** Out of 205 nursing students, 78 (38%) experienced depressive emotions, 109 (53.2%) reported anxiety, and 84 (41%) suffered from stress emotions. Depression was most common among third-year students 24 (48%), anxiety among fourth-year students 35 (61.4%), and stress among third-year students 31 (62%). Social factors such as female gender, rural residence, hostel living, and minority religion were significantly associated with depression, anxiety and stress. Bio-social behaviours, including fewer than six hours of sleep and lack of outdoor activities, were significantly linked to higher depression, anxiety and stress scores. **Conclusion:** Nursing students face substantial mental health challenges, with anxiety being the most prevalent. Stress-related disorders were significantly associated with demographic factors such as Muslim religion, rural place of residence, residing in hostels, Hours of sleep and indulgence in outdoor sports were found to be protective for stress-related illnesses.


**Keywords:** Anxiety, Depression, Emotions, Stress, Societal factors, Nursing students

### Introduction:

Mental health a component of broader topic health is affected by various societal factors. The mental health and well-being of nursing students is paramount. The potentially challenging nature of the work of nursing students starts from the moment they enter the nursing course. Stress and related conditions such as anxiety and depression are affected by a cluster of societal factors

such as income, education, younger age, gender, marital status and unemployment.<sup>[1]</sup>

Nurses and nursing students play a very crucial role in healthcare. The potentially challenging nature of the work of nursing students starts from the moment they enter the nursing course. During the course along with studies, nursing students are exposed to clinical experience, they also have to interact with patients, their

Quick Response Code	Access this article online	How to cite this article :
	<b>Website :</b> <a href="http://www.healthlinejournal.org">www.healthlinejournal.org</a>	Singh S, Kunwer R, Pathak P, Singh C. A Cross-Sectional Study of Stress and Related Conditions Among Nursing Students at a Tertiary Care Hospital, North India. Healthline. 2025;16(1): 51-58
	<b>DOI :</b> <a href="https://doi.org/10.51957/Healthline_702_2025">10.51957/Healthline_702_2025</a>	

Received : 25-02-2025

Accepted : 27-03-2025

Published : 31-03-2025

attendants and other healthcare workers.<sup>[2]</sup> Due to continuous exposure to pressure due to studies, clinical experience and seeking a job after post-graduation nursing students are at risk of stress.<sup>[3]</sup> Early identification of stress, anxiety and depression is important as they can lead to reduced productivity, minimize life satisfaction and even lead to suicidal thoughts. In a systematic review, it was observed that in nurses, the incidence of anxiety ranged from 22.8% to 27% and the incidence of depression was observed to be 28%.<sup>[4]</sup> A study conducted on nursing students of a tertiary care hospital in Central India reported a prevalence of depression (46.6%), anxiety (72.2%), and stress (34.7%).<sup>[5]</sup>

Hence, there is circumscribed evidence relating to mental health troubles among undergraduate nursing students. Owing to the dearth of data relating to the cause of mental health issues among nursing students the present study seeks to estimate the prevalence of emotional states of anxiety, stress and depression in all the four years of nursing students. The study also aims to determine various societal and Bio-social behaviour factors associated with anxiety, stress and depression among nursing students.

#### **Method:**

An analytical cross-sectional study was carried out in a nursing college of a tertiary care hospital, Lucknow. The study was conducted from November 2023 to August 2024.

**Study population and sample size:** The study population were all the nursing students admitted to the college. In Nursing College, 60 students enrolled for nursing courses each year, students from all four years were eligible to take part in this study. A questionnaire was administered to all the nursing students admitted to the college for more than six months except to those with diagnosed physical and mental illness. Of 240 nursing students, completely filled questionnaires were received from 205 enrolled students.

Data was collected in a self-administered questionnaire using a Google form. Depression, anxiety and stress were assessed by the Depression, Anxiety and Stress Scale - 21 Items (DASS-21).<sup>[6]</sup> Data was collected

after formal approval from the Principal of the Nursing College. Students were explained the purpose of the study, DASS-21 scale was also explained to the students before data collection. After an instructional session, the students were directed to fill out the questionnaire in class.

DASS-21 is a self-reported scale for psychological disorders; it is applied to measure emotional states of stress, anxiety and depression. The tool consists of 21 questions to assess the level of depression, anxiety and stress. Of the 21 questions, seven questions were for each depression, anxiety and stress. Each question is to be answered on a 4-point rating scale. To calculate the final score, each of the total scores obtained for DASS-21 was multiplied by 2. For depression 0-9 was normal, 10-13 was mild, 14-20 moderate 21-27 was severe and >28 extremely severe. Similarly, for anxiety 0-7 was normal, 8-9 was mild, 10-14 moderate, 15-19 severe, >20 extremely severe. And for stress 0-14 was normal, 15-18 was mild, 19-25 moderate, 26-33 severe and >34 was extremely severe.<sup>[6]</sup>

Data included in the study had the following variables:

**Demographic factors:** Age, gender, religion, caste, belonging to rural or urban areas, residing in any type of family.

**Bio-social behaviour factors:** hours of sleep, hours spent on social media, devotion to religious or spiritual practice (such as prayer, or certain types of meditation)<sup>[7]</sup> and play outdoor games (such as sports involving physical activity).<sup>[8]</sup>

The data was collected and entered in Microsoft Excel 2013 and was analysed using version 18.0 of STATA. Categorical variables are presented as frequency and percentage. A continuous variable was presented as mean and standard deviation. Association was determined by the Chi-square test. P-values <0.05 were considered statistically significant.

The study was approved by the Institutional Ethical Committee of T.S. Misra Medical College and Hospital, Lucknow, India (Ref No. TSMCC&H/ IEC/July-23/ 94/39).

**Results:**

In the present study emotional states of depression, anxiety and stress were measured using the DASS-21 scale in 205 nursing students. The mean age of nursing

students was  $20.88 \pm 2.766$  years. Of 205 nursing students 78 (38%) reported depressive emotions. Anxiety was present in 109 (53.2%) nursing students and Stress in 84 (41%). (Tables 1 and 2)

**Table 1: Demographic Characteristics of Nursing Students (N= 205)**

Characteristic	First year N=44 n(%)	Second year N=54 n(%)	Third year N=50 n(%)	Fourth year N=57 n(%)	Total N=205 n(%)
Gender					
Male	16 (36.4)	11 (20.4)	11 (22.0)	10 (17.5)	48 (23.4)
Female	28 (63.6)	43 (79.6)	39 (78.0)	47 (82.5)	157 (76.6)
Religion					
Hindu	42 (95.5)	48 (88.9)	49 (98.0)	56 (98.2)	195 (95.1)
Muslim and others	2 (4.5)	6 (11.1)	1 (2.0)	1 (1.8)	10 (4.9)
Place of residence					
Rural	32 (72.7)	32 (59.3)	36 (72.0)	32 (56.1)	132 (64.4)
Urban	12 (27.3)	22 (40.7)	14 (28.0)	25 (43.9)	73 (35.6)
Type of family					
Nuclear	25 (56.8)	33 (61.1)	36 (72.0)	34 (59.6)	128 (62.4)
Joint	19 (43.2)	21 (38.9)	14 (28.0)	23 (40.4)	77 (37.6)
Caste					
General	11 (25.0)	11 (20.4)	14 (28.0)	12 (21.1)	48 (23.4)
OBC	28 (63.6)	36 (66.7)	29 (58.0)	33 (57.9)	126 (61.5)
SC/ST	5 (11.4)	7 (13.0)	7 (14.0)	12 (21.1)	31 (15.1)
Residence in					
Hostel	21 (47.7)	28 (51.9)	27 (54.0)	37 (64.9)	113 (55.1)
Home	23 (52.3)	26 (48.1)	23 (46.0)	20 (35.1)	92 (44.9)

**Table 2: Bio-social Behaviour of Nursing Students (N=205)**

Characteristic	First year N=44 n(%)	Second year N=54 n(%)	Third year N=50 n(%)	Fourth year N=57 n(%)	Total N=205 n(%)
Hours of sleep					
<6	15 (34.1)	6 (11.1)	8(16.0))	22 (38.6)	51 (24.9)
6 to 7	24 (54.5)	36 (66.7)	22 (44.0)	28 (49.1)	110 (53.7)
7 to 8	5 (11.4)	9 (16.7)	17 (34.0)	7 (12.3)	38 (18.5)
>8	0 (0.0)	3 (5.6)	3 (6.0)	0 (0.0)	6 (2.9)
Hours spent on social media					
<1	9 (20.5)	11 (20.4)	6 (12.0)	16 (28.1)	42 (20.5)
1 to 2	22 (50.0)	22 (40.7)	27 (54.0)	27 (47.4)	98 (47.8)
>2	13 (29.5)	21 (38.9)	17 (34.0)	14 (24.6)	65 (31.7)
Indulgence in spiritual practice					
Yes	40 (90.9)	49 (90.7)	35 (70.0)	55 (96.5)	179 (87.3)
No	4 (9.1)	5 (9.3)	15 (30.0)	2 (3.5)	26 (12.7)
Indulge in outdoor games					
Yes	21 (47.7)	29 (53.7)	23 (46.0)	21 (36.8)	94 (45.9)
No	23 (52.3)	25 (46.3)	27 (54.0)	36 (63.2)	111 (54.1)

**Distribution of depression, anxiety and stress by academic year:** From all the four-year nursing students depression was most common in third-year students (48%). Anxiety was most commonly reported in fourth-year students (61.4%), followed by first-year students (56.8%). Stress was most commonly reported in third-

year students (62%). (Table 3)

**Distribution and association of depression, anxiety and stress by societal factors:** Depression was more common among female nursing students, 66 (42%) of female and 12 (25%) of male nursing students reported depressive emotions, the difference was found to be

**Table 3: Levels of Depression, Anxiety and Stress among Nursing Students (N=205)**

Characteristic	First year N=44 n(%)	Second year N=54 n(%)	Third year N=50 n(%)	Fourth year N=57 n(%)	Total N=205 n(%)
Depression					
Normal	26 (59.1)	40 (74.1)	26 (52.0)	35 (61.4)	127 (62.0)
Mild	16 (36.4)	10 (18.5)	18 (36.0)	12 (21.1)	56 (27.3)
Moderate	2 (4.5)	4 (7.4)	5 (10.0)	10 (17.5)	21 (10.2)
Severe	0 (0.0)	0 (0.0)	1 (2.0)	0 (0.0)	1 (0.5)
Anxiety					
Normal	19 (43.2)	28 (51.9)	27 (54.0)	22 (38.6)	96 (46.8)
Mild	9 (20.4)	12 (22.2)	10 (20.0)	8 (14.0)	39 (19.0)
Moderate	16 (36.4)	13 (24.1)	13 (26.0)	25 (43.9)	67 (32.7)
Severe	0 (0.0)	1 (1.8)	0 (0.0)	2 (3.5)	3 (1.5)
Stress					
Normal	28 (63.6)	36 (66.7)	19 (38.0)	38 (66.7)	121 (59.0)
Mild	16 (36.4)	18 (33.3)	29 (58.0)	17 (29.8)	80 (39.0)
Moderate	0 (0.0)	0 (0.0)	2 (4.0)	2 (3.5)	4 (2.0)
Severe	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

**Table 4: Association of Depression, Anxiety and Stress with Societal Factors (N=205)**

Societal factors	Participants n(%)	Depression N=78 n(%)	$\chi^2$ , P-value	Anxiety N=109 n(%)	$\chi^2$ , P-value	Stress N=84 n(%)	$\chi^2$ , P-value
Gender							
Male	48 (23.4)	12 (25.0)	4.527,	18 (37.5)	6.181,	15 (31.3)	2.451,
Female	157 (76.6)	66 (42.0)	<b>0.033</b>	91 (58.0)	<b>0.013</b>	69 (43.9)	0.117
Religion							
Hindu	195 (95.1)	72 (36.9)	2.149,	101 (51.8)	3.039,	76 (38.9)	6.620,
Muslim and others	10 (4.9)	6 (60.0)	0.143	8 (80.0)	0.081	8 (80.0)	<b>0.010</b>
Place of residence							
Rural	132 (64.4)	58 (43.9)	5.457,	63 (47.7)	4.411,	68 (51.5)	17.025,
Urban	73 (35.6)	20 (27.4)	<b>0.019</b>	46 (63.0)	<b>0.036</b>	16 (21.9)	<b>0.000</b>
Type of family							
Nuclear	128 (62.4)	50 (39.1)	0.149,	69 (53.9)	0.074,	53 (41.4)	0.026,
Joint	77 (37.6)	28 (36.4)	0.700	40 (51.9)	0.786	31 (40.3)	0.872
Caste							
General	48 (23.4)	20 (41.7)	0.348,	27 (56.3)	0.239,	21 (43.8)	0.199,
OBC and SC/ST	157 (76.7)	58 (36.9)	0.555	82 (52.2)	0.625	63 (40.1)	0.655
Residence in							
Hostel	113	48 (42.5)	2.095,	69 (61.1)	6.297,	54 (47.8)	4.831,
Home	92	30 (32.6)	0.148	40 (43.5)	<b>0.012</b>	30 (32.6)	<b>0.028</b>

significant statistically (P=0.033). Nursing students from rural areas had a higher prevalence of depressive emotions 58 (43.9%) as compared to urban areas 20 (27.4%) and it was statistically significant (P=0.019). Depression was more common in nursing students belonging to the General caste (41.7%) and in nursing students living in hostel (42.5%). (Table 4)

Anxiety was more common in female nursing students 91 (58.0%) compared to male 18 (37.5%) and it was statistically significant (P=0.013). Anxiety was common in Muslim nursing students (80%) when compared with Hindu students (51.8%). Anxiety was significantly associated with students belonging to urban residences (P=0.036). Anxiety was more common in hostelites (61.1%) and it was significantly associated (P=0.012). (Table 4)

Stress was more common among female nursing students 69 (43.9%) as compared to male students 15 (31.3%). Only 38.9% of Hindu nursing students reported stress, whereas 80% of Muslim and other religious students were suffering from stress (P=0.010). Stress was more common in nursing students from rural residences (51.5%), and it was statistically significantly associated (P=0.000). Stress was almost equally distributed between General and other castes. Stress was

significantly more common among students living in hostel (P=0.028). (Table 4)

**Distribution and association of depression, anxiety, and stress by Bio-social behaviour:** In the present, it was observed that nursing students sleeping hours were significantly associated with depression (P=0.010). The proportion of students having less than six hours of sleep had more depressive emotions (52.9%). Depressive emotions were more common in students who spent less than one hour on social media (40.5%). Depression was more commonly seen in participants who did not indulge in spiritual activities (50%) and outdoor sports (41.4%). It was observed that 70.6% of students with anxiety had less than six hours of sleep. Anxiety was significantly associated with sleeping hours (P=0.015). Anxiety was more commonly seen in students who spent fewer hours on social media, did not indulge in outdoor sports or those who were not indulging in spiritual activities. Anxiety was significantly linked with those who avoided outdoor sports (P=0.025). Students under stress had fewer hours of sleep and it was significantly associated (P=0.032). Stress was seen higher proportion in those nursing students who did not indulge in outdoor sports or spiritual activity. Stress was significantly associated with individuals who abstained from outdoor sports (P=0.032). (Table 5)

**Table 5: Association of Depression, Anxiety and Stress with Bio-social Behaviour Factors (N=205)**

Bio-social behaviour	Participants n(%)	Depression N=78 n(%)	$\chi^2$ P-value	Anxiety N=109 n(%)	$\chi^2$ P-value	Stress N=84 n(%)	$\chi^2$ P-value
Hours of sleep							
<6	51 (24.9)	27 (52.9)		36 (70.6)		29 (56.9)	
6-7	110 (53.7)	41 (37.3)	11.401,	56 (50.9)	10.533,	36 (32.7)	8.819,
7-8	38 (18.5)	7 (18.4)	<b>0.010</b>	14 (36.8)	<b>0.015</b>	17 (44.7)	<b>0.032</b>
>8	6 (2.9)	3 (50.0)		3 (50.0)		2 (33.3)	
Hours spent on social media							
<1	42 (20.5)	17 (40.5)		25 (59.5)		18 (42.9)	
1-2	98 (47.8)	38 (38.8)	0.323,	51 (52.0)	0.882,	34 (34.7)	3.492,
>2	65 (31.7)	23 (35.4)	0.851	33 (50.8)	0.644	32 (49.2)	0.174
Indulgence in spiritual practice							
Yes	179 (87.3)	65 (36.3)	1.804,	99 (55.3)	2.587,	71 (39.7)	1.003,
No	26 (12.7)	13 (50.0)	0.179	10 (38.5)	0.108	13 (50.0)	0.317
Indulge in outdoor games							
Yes	94 (45.9)	32 (34.0)	1.182,	42 (44.7)	5.025,	31 (32.9)	4.59,
No	111 (54.1)	46 (41.4)	0.277	67 (60.4)	<b>0.025</b>	53 (47.7)	<b>0.032</b>

**Discussion:**

It was observed that depressive symptoms were present in 38% of study participants, anxiety in 53.2% and stress in 41%. These results were almost similar to other studies conducted in Pakistan, Nepal and China, which showed the prevalence of depression in 44.2%, 38.2% and 57.9% respectively among nursing students.<sup>[9-11]</sup> Likewise anxiety was seen to be 64.2%, 51.6% and 50.0% in studies conducted in Pakistan, China and Malaysia.<sup>[9,11,12]</sup> In the same way, symptoms of stress seen in other studies were 42.3%, 55.6% and 12%.<sup>[9,11,13]</sup> The variations in prevalence rates across countries may be attributed to differences in healthcare systems, work environments, and cultural influences affecting mental health. Since the majority of the cited studies originate from developing nations, it is likely that nursing students in these settings face inadequate working conditions, Nursing students face high stress, with 65.3% experiencing moderate to severe stress and 43.2% showing depression.<sup>[14]</sup> The WHO (2019) links burnout to long hours, high patient loads, and poor support. Globally, 50-70% of students report stress, with 30-50% experiencing anxiety/depression.<sup>[15]</sup> Addressing these challenges through mental health programs, workload management, and peer support is crucial for student well-being and academic success.

Societal factors can affect the likelihood of developing stress-related symptoms. In the present study, it was observed that students coming from rural households had a higher prevalence of depression, anxiety and stress symptoms. Similar findings of a higher prevalence of depressive symptoms were seen in a study conducted in Kerala (P-0.002).<sup>[16]</sup> A higher prevalence of depressive symptoms among rural students may be attributed to additional stressors such as economic hardships, lack of access to mental health resources, and difficulty in adapting to urban academic settings.<sup>[17]</sup>

Religion was significantly associated with stress in the present study. Religion and spirituality often play a protective role in mental health by providing coping mechanisms; however, differences in religious beliefs and practices may influence stress perception and

management.<sup>[18]</sup> Previous research suggests that students with strong religious affiliations may experience either increased or decreased stress levels depending on the degree of social support and religious coping mechanisms available.<sup>[19]</sup>

Anxiety and depression emotion were significantly more common in female nursing students. Similar findings of a higher prevalence of anxiety were seen in female nursing students in a study conducted in Kerala.<sup>[16]</sup> A study conducted in Spain on college students showed a higher prevalence of anxiety among female students.<sup>[20]</sup> It was observed by Fryers et al.<sup>[21]</sup> that some mental health diagnoses such as anxiety states and depression were more common in females. This higher prevalence in females could be attributed to higher social demands on females, greater material deprivation than males and females might be suffering from premenstrual dysphoria caused by hormone changes leading to serotonin deficiency, which affects mood.<sup>[22]</sup>

Nursing students residing in hostel also had a higher prevalence of anxiety and stress. This aligns with findings from prior research that highlight the role of environmental factors in the development of depression, anxiety and stress symptoms.<sup>[23]</sup> Hostel life often involves challenges such as homesickness, and lack of immediate family support, all of which contribute to increased psychological distress.<sup>[24]</sup> Individual factors such as family support are a protective factor, preventing the development of stress-related illnesses. Studies indicate that strong familial bonds provide emotional security, practical assistance, and stress-buffering effects, which significantly reduce the risk of depression and anxiety.<sup>[25]</sup> The absence of family support, particularly for students living away from home, exacerbates feelings of loneliness and stress, leading to poor mental health outcomes.<sup>[12]</sup>

Biosocial behavioural variables such as hours of sleep and indulgence in outdoor games were significantly associated with depression, anxiety and stress. It is a well-established fact that sleep is an important variable that determines the mental health problems in an individual.<sup>[26-28]</sup> Individuals not obtaining sufficient sleep are at a higher risk of developing of

developing depression, stress and anxiety.<sup>[27]</sup> Sleep deprivation disrupts neurochemical processes in the brain, leading to increased cortisol levels and heightened susceptibility to emotional dysregulation.<sup>[29]</sup> Several studies have confirmed that healthcare students who experience poor sleep quality are at a greater risk of developing depression, anxiety and stress symptoms.<sup>[30]</sup>

Participation involved in outdoor sports were significantly associated with reduced depression, anxiety and stress emotions. Indulgence in sports activity has number of benefits such as mood enhancement, and relieve mild depression anxiety and stress.<sup>[31,32]</sup> Outdoor sports help in reducing the level of cortisol and stress hormones.<sup>[33,34]</sup>

### Conclusion:

The finding of the current study indicates that nursing students were facing a significant amount of stress-related symptoms. Anxiety-related symptoms were most common in study participants followed by stress and depression. Stress-related disorders were significantly associated with demographic factors such as Muslim religion, rural place of residence, residing in hostels. Hours of sleep and indulgence in outdoor sports were found to be protective for stress-related illnesses. Hence positive reinforcements such as yoga, meditation and mental health nurse may help ameliorate the symptoms of stress-related disorders and could improve the academic and clinical performance of nursing students.

### Declaration:

Funding: Nil

Conflicts of interest: Nil

### References:

1. Rogers A, Pilgrim D. Social stratification and mental health. In: A sociology of mental health and illness. 5th ed. New York (NY): Open University Press; 2014. p. 30.
2. Jimenez C, Navia-Osorio PM, Diaz CV. Stress and health in novice and experienced nursing students. *J Adv Nurs*. 2010;66(3):442–55.
3. Beiter R, Nash R, McCrady M, Rhoades D, Linscomb M, Clarahan M, Sammut S. The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *J Affect Disord*. 2015 Mar 1;173:90–6. doi: 10.1016/j.jad.2014.10.054.
4. Ślusarska B, Nowicki GJ, Niedorys-Karczmarczyk B, Chrzan-Rodak A. Prevalence of Depression and Anxiety in Nurses during the First Eleven Months of the COVID-19 Pandemic: A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2022 Jan 20;19(3):1154. doi: 10.3390/ijerph19031154. PMID: 35162183; PMCID: PMC8834441
5. Verma P, Verma M, Lahri B, Pakhare A, Das S. Study of depressive, anxiety, and stress symptoms and their associated risk factors among undergraduate nursing students in central India: A cross-sectional study. *J Prim Care Spec* 2021;2:80-4. doi: 10.4103/jopcs.jopcs\_16\_21
6. Lovibond , S. H. and Lovibond , P. F. 1995 . Manual for the Depression, Anxiety and Stress Scales , 2nd ed , Sydney, Australia: Psychology Foundation .
7. Newberg, A. B. The neuroscientific study of spiritual practices. *Frontiers in Psychology*, 2014;5:215. doi: 10.3389/fpsyg.2014.00215
8. Wijffelaars RWL, Markopoulos P. Collocated interactive outdoor games for children: A systematic literature review. *Entertainment Computing*. 2024 Mar 1;49:100615. doi: 10.1016/j.entcom.2023.100615
9. Shahid Hussain Bapar, Raja1 and Badil. Frequency and correlation between depression, anxiety, and stress among nursing students. *Liaquat National Journal of Primary Care* 2022; 4(2): 118-123. doi: 10.37184/lnjpc.2707-3521.4.37.
10. Paudel S, Gautam H, Adhikari C, Yadav DK. Depression, anxiety, and stress among the undergraduate students of Pokhara metropolitan. *J Nepal Health Res Counc*. 2020;18(1):27–34. doi: 10.33314/jnhrc.v18i1.2189.
11. Zeng Y, Wang G, Xie C, Hu X, Reinhardt JD. Prevalence and correlates of depression, anxiety, and symptoms of stress in vocational college nursing students from Sichuan, China: a cross-sectional study. *Psychol Health Med*. 2019;24(7):798–811. doi: 10.1080/13548506.2019.1574358.
12. Deo PK, Budhathoki S, Raut J, Adhikari B, Shrestha J. Factors associated with perceived stress, anxiety, depression, and insomnia during the COVID-19 outbreak among nursing students. *Int J Sci Res*. 2020;17(19):23–9. doi: 10.21275/SR20826170002.
13. Hamzah NS, Farid ND, Yahya A, Chin C, Su TT, Rampal SR, et al. The prevalence and associated factors of depression, anxiety and stress of first year undergraduate students in a public higher learning institution in Malaysia. *J Child Family Stud*. 2019; 28(12): 3545-57.
14. Sharma B, Wavare R. Academic stress due to depression among medical and para-medical students in an Indian medical college: health initiatives cross-sectional study. *J Health Sci*. 2020;3(5):29–38.
15. World Health Organization. Burn-out an "occupational phenomenon": International Classification of Diseases [Internet]. Geneva: WHO; 2019 May 28 [cited 2024 Feb 17]. Available from: <https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases>.
16. Manikandan S, Beema H, Vijayan L. Depression, anxiety & stress (DAS) among nursing students: a cross-sectional design. *Int J Res Publ Rev*. 2023;4(5):4078–86.

17. Colizzi M, Lasalvia A, Ruggeri M. Prevention and early intervention in youth mental health: is it time for a multidisciplinary and trans-diagnostic model for care? *Int J Ment Health Syst.* 2020;14:23. doi: 10.1186/s13033-020-00356-9.
18. Koenig HG. Research on religion, spirituality, and mental health: a review. *Can J Psychiatry.* 2009 May;54(5):283–91. doi: 10.1177/070674370905400502.
19. Kaur P, Teotia A. Relationship between religious coping and mental health among the Sikh population in Punjab. *Int J Indian Psychol.* 2024;12(2):190–6. doi: 10.25215/1202.424.
20. Ramón-Arbués E, Gea-Caballero V, Granada-López JM, Juárez-Vela R, Pellicer-García B, Antón-Solanas I. The prevalence of depression, anxiety, and stress and their associated factors in college students. *Int J Environ Res Public Health.* 2020;17(19):7001. doi: 10.3390/ijerph17197001.
21. Fryers T, Melzer D, Jenkins R, Brugha T. The distribution of common mental disorders: social inequalities in Europe. *ClinPractEpidemiolMent Health.* 2005 Sep 5;1:14. doi: 10.1186/1745-0179-1-14.
22. Rogers A, Pilgrim D. Gender, sexuality, and mental health. In: *A sociology of mental health and illness.* 5th ed. New York (NY): Open University Press; 2014. p. 39-45.
23. Cheung T, Wong S, Wong K, Law L, Ng K, Tong M, et al. Depression, anxiety, and symptoms of stress among baccalaureate nursing students in Hong Kong: a cross-sectional study. *Int J Environ Res Public Health.* 2016;13(8):779. doi: 10.3390/ijerph13080779.
24. Basudan S, Binzan N, Alhassan A. Depression, anxiety, and stress in dental students. *Int J Med Educ.* 2017;8:179–86. doi: 10.5116/ijme.5910.b961
25. Pitt A, Oprescu F, Tapia G, Gray M. An exploratory study of students' weekly stress levels and sources of stress during the semester. *Act Learn High Educ.* 2018;19(1):61–75. doi: 10.1177/1469787417731194.
26. Chattu VK, Manzar MD, Kumary S, Burman D, Spence DW, Pandi-Perumal SR. The global problem of insufficient sleep and its serious public health implications. *Healthcare (Basel).* 2018;7(1):1. doi: 10.3390/healthcare7010001.
27. Zou P, Wang X, Sun L, Liu K, Hou G, Yang W, et al. Poorer sleep quality correlated with mental health problems in college students: a longitudinal observational study among 686 males. *J Psychosom Res.* 2020;136:110177. doi: 10.1016/j.jpsychores.2020.110177.
28. Vargas PA, Flores M, Robles E. Sleep quality and body mass index in college students: the role of sleep disturbances. *J Am Coll Health.* 2014;62(8):534–41. doi: 10.1080/07448481.2014.933344.
29. Breedvelt JJ, Amanvermez Y, Harrer M, Karyotaki E, Gilbody S, Bockting CL, et al. The effects of meditation, yoga, and mindfulness on depression, anxiety, and stress in tertiary education students: a meta-analysis. *Front Psychiatry.* 2019;10:193. doi: 10.3389/fpsy.2019.00193.
30. Hershner SD, Chervin RD. Causes and consequences of sleepiness among college students. *Nat Sci Sleep.* 2014 Jun 23;6:73–84. doi: 10.2147/NSS.S62907.
31. Malm C, Jakobsson J, Isaksson A. Physical activity and sports—real health benefits: a review with insight into the public health of Sweden. *Sports (Basel).* 2019;7(5):127. doi: 10.3390/sports7050127.
32. Li Y, Guo K. Research on the relationship between physical activity, sleep quality, psychological resilience, and social adaptation among Chinese college students: a cross-sectional study. *Front Psychol.* 2023;14:1104897. doi: 10.3389/fpsyg.2023.1104897.
33. Gerber M, Imboden C, Beck J, Brand S, Colledge F, Eckert A, et al. Effects of aerobic exercise on cortisol stress reactivity in response to the Trier social stress test in inpatients with major depressive disorders: a randomized controlled trial. *J Clin Med.* 2020;9(5):1419. doi: 10.3390/jcm9051419.
34. Xu S, Liu Z, Tian S, Ma Z, Jia C, Sun G. Physical activity and resilience among college students: the mediating effects of basic psychological needs. *Int J Environ Res Public Health.* 2021;18(7):3722. doi: 10.3390/ijerph18073722.