

Social Factors Associated with Mental Health Status Among Undergraduate Students of Medical Science in Nepal

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Abstract

Medical education is inherently demanding, often impacting the mental well-being of students. This study investigates the social factors associated with mental health status—specifically depression, anxiety, and stress—among undergraduate students of medical sciences in Nepal. To explore how sociological determinants such as academic pressure, social support networks, socioeconomic background, and interpersonal interactions influence mental health outcomes in students at Maharajgunj Medical Campus, Kathmandu. A quantitative cross-sectional study was conducted among 210 undergraduate MBBS students, selected through simple random sampling from a total population of 429 students. Data were collected via a semi-structured, self-administered questionnaire disseminated through Google Forms. Mental health status was assessed using the globally validated DASS-21 scale, while socio-demographic and academic data were also gathered. Findings revealed that academic stress is a primary contributor to increased levels of anxiety and depression, consistent with Structural Functionalist interpretations of institutional pressures. Students lacking robust social support networks reported higher stress levels, emphasizing the relevance of Social Support Theory. Moreover, Conflict Theory helps explain the disproportionate mental health burden among students from lower socioeconomic backgrounds, particularly those from rural areas, who face challenges adjusting to urban academic settings. Symbolic Interactionism highlights how perceived stigma, and negative social interactions further deteriorate mental well-being. Sociological determinants play a significant role in shaping the mental health status of medical students. Interventions should prioritize strengthening peer and institutional support systems, addressing academic workload management, and combating mental health stigma on campus. Special attention is warranted for students from rural and underprivileged backgrounds, as well as female students, through targeted mental health services and inclusive academic policies. This study underscores the importance of a multidimensional approach that integrates sociological understanding to promote mental wellness in medical education settings.

Keywords: anxiety; DASS-21; depression; medical students; mental health; sociological factors; stress

Introduction

Mental health has become an increasing concern among university students worldwide, and this issue is especially pronounced in medical institutions in Nepal. Medical students face a unique set of pressures, including academic overload, intense competition, and high expectations from family and society. These challenges, coupled with financial struggles and limited support systems, often lead to stress, anxiety, and depression. Despite the growing prevalence of such issues, mental health remains a stigmatized topic in Nepal, preventing many students from seeking help and worsening their conditions.

From a sociological standpoint, mental health is influenced not only by individual experiences but also by broader social structures. Theories such as Social Stress Theory, Labeling Theory, and Social Support Theory help explain how external pressures, societal expectations, and the availability (or lack) of support systems affect student well-being. Factors like socioeconomic status, family background, academic environment, and peer relationships play a significant role in shaping mental health outcomes. However, limited research in the Nepalese context has explored how these sociological elements contribute to students' mental health, creating a critical gap in understanding and support. This study focuses on examining the sociological factors affecting the mental health of undergraduate medical students at Maharajgunj Medical Campus, Kathmandu, Nepal. By identifying key determinants such as financial status, academic stress, and social support, this research aims to provide insights that can guide institutional policies and mental health interventions. Understanding these factors is essential for developing inclusive support systems, reducing stigma, and fostering a healthy academic environment where students can thrive both academically and emotionally.

Materials and Methods

This cross-sectional quantitative study was conducted among undergraduate medical students at Maharajgunj Medical Campus, Institute of Medicine, Tribhuvan University, Nepal. The institution was selected due to its status as the largest and most prominent medical training center in Nepal, enrolling students from diverse geographical and sociocultural backgrounds. **Study Design and Participants:** A total of 210 undergraduate MBBS students from first year to final year were selected using simple random sampling from a sampling frame of 429 students. The study duration was from November 2023 to November 2024. The required sample size was calculated using a standard formula for finite population correction, referencing a previous prevalence ($p=33.7\%$) of mental health issues (Salari et al., 2020), with a 95% confidence interval, 5% margin of error, and 10% non-response rate.

Ethical Considerations: Ethical approval for the study was obtained from the Institutional Review Committee (IRC) of the Institute of Medicine, Maharajgunj Medical Campus. Prior to data collection, informed consent was obtained electronically from each participant. Participation was voluntary, and data confidentiality and anonymity were strictly maintained.

Data Collection Tools and Procedure: Data were collected through a self-administered, semi-structured questionnaire distributed via Google Forms. The tool included socio-demographic questions, academic and social stress-related items, and the validated Depression, Anxiety and Stress Scale (DASS-21), developed by Peter Lovibond. The DASS-21 comprises 21 items categorized into three subscales—depression, anxiety, and stress—with 7 items each, scored on a 4-point Likert scale. The tool has demonstrated strong internal consistency with Cronbach's alpha coefficients

of 0.81 (depression), 0.89 (anxiety), and 0.79 (stress). Data Processing and Statistical Analysis: Collected responses were exported to Microsoft Excel for data cleaning and coding, then analyzed using SPSS. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarize participant characteristics and mental health outcomes. Inferential statistics, including chi-square tests and logistic regression analyses, were conducted to assess associations between sociodemographic factors and mental health outcomes. Data quality was ensured through double-checking and cross-verification of entries.

Results

The sociodemographic characteristics of the study participants revealed a predominantly young population, with 74.29% aged 20-24 years, and a male majority (75.24%). Urban residents comprised 76.19% of the sample, with ethnicity and year-of-study distributions reflecting the institutional demographics (Table 1).

Table 1: Socio Demographic Characteristics of Respondents (n =210)

Variable	Category	Frequency	Percentage
Age	20-24	156.0	74.29%
	Up to 19	47.0	22.38%
	Above 25	7.0	3.33%
Gender	Male	158.0	75.24%
	Female	52.0	24.76%
Ethnicity	Brahmin/Chettri	117.0	55.71%
	Madeshi	53.0	25.24%
	janajati	17.0	8.10%
	Others	9.0	10.9
Year of study	First year	85.0	40.48%
	Second	66.0	31.43%
	Third	47.0	22.38%
	Fourth	7.0	3.33%
	Fifth	5.0	2.38%
Residence	Urban	160.0	76.19%
	Rural	50.0	23.81%

Academic pressure emerged as a significant concern, with over 35% of students frequently feeling overwhelmed by their workload and 34.76% reporting extreme exam-related stress (Table 2).

Table 2: Academic Pressure and Social Support Status of the Respondents (n =210)

Variable	Category	Frequency	Percentage
Overwhelmed by your academic workload	Often	74.0	35.24%
	Sometimes	71.0	33.81%
	Always	51.0	24.29%
	Rarely	14.0	6.67%
	Never	0	0
Do you feel stressed regarding upcoming exams?	Moderate	81.0	38.57%
	Extremely high	73.0	34.76%
	High	47.0	22.38%
	None	6.0	2.86%
	Low	3.0	1.43%
Academic Environment Competitive-ness	Moderately	138.0	65.71%
	Extremely	42.0	20.00%
	Slightly Competitive	28.0	13.33%
	Not competitive	2.0	0.95%
	Very Competitive	0	0
Do you feel supported by your family regarding your academic life?	Highly	100.0	47.62%
	Moderately	76.0	36.19%
	Slightly	26.0	12.38%
	Not supported	8.0	3.81%

Do you feel supported by your peers at the university?	Slightly	73.0	34.76%
	Moderately	61.0	29.05%
	Not supportive	56.0	26.67%
	Very Supportive	14.0	6.67%
	Extremely Supportive	6.0	2.86%
Adapted to living away from home?	Yes	136.0	64.76%
	No	57.0	27.14%
	Unsure	17.0	8.10%

The academic environment was perceived as moderately competitive by 65.71% of respondents. While family support appeared robust, with 47.62% reporting high levels of support, peer support was notably weaker, with only 34.76% feeling slightly supported by their peers.

Regarding social relations, most participants (51.32%) rated their personal relationships as good, yet a substantial proportion (38.16%) reported feeling moderately socially isolated (Table 3).

Table3: Social Relation Status of Respondents (n=210)

Variable	Category	Frequency	Percentage
the quality of your personal relationships (friends/family)	Very poor	8.0	2.63
	Poor	0	0
	Neutral	56	18.42
	Good	156	51.32
	Very good	20	6.58
	Excellent	44	14.47

Do you often feel socially isolated	Not adapted	36	11.84%
	Slightly adapted	72	23.68%
	Moderately adapted	116	38.16%
	Well adapted	48	15.79%
	Fully adapted	32	10.53%

The assessment of mental health indicators showed that while most students fell within normal ranges for depression (69.5%), anxiety (66.2%), and stress (92.9%), concerning proportions reported moderate symptoms of depression (15.2%) and anxiety (21.4%) (Table 4).

Table 4: Prevalence of Depression, Anxiety and Stress

Depression	Category	Frequency	Percentage
	Normal	146	69.5%
	Mild	26	12.4%
	Moderate	32	15.2%
	Severe	6	2.9%
Anxiety	Normal	139	66.2%
	Mild	14	6.7%
	Moderate	45	21.4%
	Severe	9	4.3%
	Extremely Severe	3	1.4%
Stress	Normal	195	92.9%
	Mild	9	4.3%
	Moderate	6	2.9%
	Severe	0	0
	Extremely Severe	0	0

Analysis of socio-demographic associations revealed no significant relationships between demographic factors and depression status ($p > 0.05$) (Table 5).

Table 5: Association of Socio-Demographic Variable with Depression

Variable	Depression status		P-value
Age	Normal	Depressed	0.132
15-20	21(55.3%)	26 (55.3%)	
21-25	102 (65.4%)	54 (34.6%)	
26-30	7(100.0%)	0 (0.00%)	
Gender			0.213
Male	98 (62.0%)	60 (38.0%)	
Female	60 (75.0%)	20 (25.0%)	0.507
Residence			
Urban	103(64.4%)	57(35.6%)	
Rural	27(54.0%)	23 (46.0%)	

However, anxiety showed significant associations with both gender ($p = 0.023$) and residence ($p = 0.009$) (Table 6).

Table 6: Association of Socio-Demographic Variable with Anxiety

Variable	Anxiety status		P-value
Age	Normal	Anxious	0.88
15-20	23 (48.9%)	24 (54.1%)	
21-25	109 (69.9%)	47(30.1%)	
26-30	7 (100.0%)	0(0.00%)	
Gender			0.023
Male	104 (65.8%)	54 (34.2%)	
Female	35 (67.3%)	17(32.2%)	0.009
Residence			
Urban	107(66.9%)	53 (33.1%)	
Rural	32(64.0%)	18 (36.0%)	

Stress levels demonstrated significant correlations with age ($p = 0.041$), gender ($p = 0.011$), and residence ($p = 0.005$), indicating these factors may play important roles in stress experiences among students (Table 7).

Table 7: Association of Socio-Demographic Variable with Stress of the Respondents

Variable	Stress status		P-value
Age	Normal	Stress	0.041
15-20	47 (100.00%)	0 (0.00%)	
21-25	153 (98.1%)	3 (1.9%)	
26-30	7 (100.00%)	0 (00.00%)	
Gender			

Male	158 (100.0%)	0 (0.00%)	0.011
Female	0 (0.00%)	3 (100.0%)	
Residence			0.005
Rural	50 (100.0%)	0 (0.00%)	
Urban	157 (98.1%)	3 (1.9%)	

Discussions

This study underscores how age, gender, and residence shape mental health among medical students at Maharajgunj Medical Campus, mirroring global trends (Eisenberg et al., 2013; Cleary, 2016). Older students reported higher stress, likely due to cumulative academic pressures (Dyrbye et al., 2015). Gender disparities were pronounced, with females experiencing greater stress and anxiety—a pattern attributed to societal expectations and institutional barriers in male-dominated fields (Dyrbye et al., 2015).

Rural students faced heightened stress, aligning with symbolic interactionism (Blumer, 1969; Becker, 1963), which posits that adapting to urban academic cultures can exacerbate feelings of isolation. The campus's competitive environment—interpreted through structural functionalism (Parsons, 1951) further institutionalizes stress, while lack of peer support (reported by 26.67%) deprives students of buffering social capital (Putnam, 2000).

To address the identified mental health challenges, the institutions should implement targeted interventions including peer mentorship programs for rural students, gender-sensitive counseling services, and stress-management workshops, while also pursuing institutional reforms to reduce excessive competitiveness through fostering collaborative learning environments. Additionally, longitudinal research should be conducted to track mental health trends across different academic phases, enabling the campus to cultivate a more supportive ecosystem that effectively mitigates mental health risks while maintaining its high academic standards. These comprehensive

measures would help create a healthier educational environment that supports both student well-being and academic excellence.

Conclusions

The study highlights high academic stress, moderate peer support, and significant anxiety among students, with gender and residence influencing mental health outcomes. Interventions should focus on enhancing support systems and targeting vulnerable groups.

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