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# Prevalence and Contributing Factors of Depression Among Undergraduate Nursing Students in Nepal: A Cross-Sectional Study

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## ABSTRACT

Depression is a prevalent mental health concern among undergraduate nursing students, exacerbated by academic pressures, clinical responsibilities, and socio-cultural challenges. This study aimed to assess the prevalence of depression and explore its contributing factors among nursing students in Nepal. A descriptive cross-sectional design was employed, involving 260 nursing students selected through stratified random sampling from diverse institutions across Nepal. Data were collected using a self-administered questionnaire, including the Patient Health Questionnaire-9 (PHQ-9) for depression screening. The study revealed that approximately 46% of participants reported symptoms of depression, with significant associations found between depression and factors such as age, alcohol consumption, smoking, stress levels, and living area. The odds of depression were higher in older students (aged 21 and above), alcohol consumers, smokers, and those with higher stress levels. Rural students also showed a higher prevalence of depression, though this was not significant after adjusting for other factors. These findings underscore the need for targeted mental health interventions to address the unique stressors faced by nursing students in Nepal, including stress management, substance use prevention, and access to mental health support.

***Keywords:*** *Depression, Nursing Students, Mental Health, Nepal, Stress, Alcohol Consumption, Smoking, Socio-cultural Factors.*

## 1. INTRODUCTION

Depression is a widespread and significant mental health disorder that profoundly affects individuals' emotional well-being, cognitive functioning, and daily activities. It is particularly prevalent in high-stress environments like academic institutions, where students are often under considerable pressure to perform well in both their studies and extracurricular activities. Among these students, undergraduate nursing students are especially vulnerable to depression due to the unique and demanding nature of their training. The combination of academic challenges, clinical responsibilities, and the emotional burden of patient care makes nursing students particularly susceptible to mental health issues like depression (1).

In Nepal, the pressures on nursing students are compounded by the socio-cultural and economic context. Many of these students face additional stress due to resource-

constrained educational settings, where access to educational materials, infrastructure, and mental health support may be limited. Furthermore, societal expectations regarding academic and professional success, as well as familial pressures to perform well, can exacerbate the mental health challenges faced by nursing students. The lack of mental health awareness and stigma surrounding depression in Nepal further complicate the situation, often preventing students from seeking the help they need (2).

The transition into nursing education is a significant life change that brings about various stressors. Students must adapt to a rigorous academic curriculum that demands a high level of intellectual engagement, while simultaneously managing the practical and emotional aspects of clinical placements. These clinical experiences often expose students to the suffering of patients, which can be emotionally taxing and lead to feelings of helplessness, burnout, and depression. As nursing students are required to balance their academic studies with patient care duties, the stress of maintaining this dual responsibility often leads to mental exhaustion, exacerbating symptoms of depression (3).

The impact of depression on nursing students is far-reaching. It can have detrimental effects not only on their academic performance but also on their emotional resilience and overall well-being. Depression may diminish students' ability to cope effectively with the demands of their training, leading to poor academic performance, absenteeism, and a decline in clinical competency. Furthermore, depression can hinder students' professional readiness, potentially affecting their future roles as healthcare providers. Given the critical nature of nursing practice, the mental health of nursing students is directly linked to the quality of care they will provide to patients. Depressed students may experience difficulties with decision-making, empathy, and communication, which could ultimately affect patient safety and care quality (4).

Despite the growing awareness of mental health issues globally, depression among nursing students in Nepal remains an underexplored and underreported concern. There is a lack of extensive research and data on the prevalence and impact of depression within this student population, making it difficult to design effective interventions. The limited research that does exist highlights the need for more comprehensive studies that investigate the prevalence of depression, its contributing factors, and its consequences for nursing students. It also underscores the urgent need for evidence-based mental health interventions to support these students and help them manage the stresses associated with their education.

This study aims to address this gap by assessing the prevalence of depression among undergraduate nursing students in Nepal. In doing so, it will also explore the various factors that contribute to mental health challenges within this group, including academic pressures, clinical stress, exposure to trauma, and societal expectations. The findings of this research will provide valuable insights into the specific needs of nursing students in Nepal, highlighting the importance of mental health support in their academic and professional development. By understanding the factors that contribute to depression and the barriers to seeking help, this study will advocate for more accessible and effective mental health resources for nursing students. The goal is to foster an environment that supports both their personal well-being and their professional growth, ultimately ensuring a healthier and more resilient future healthcare workforce.

## 2. MATERIALS & METHODS

### 2.3. Sampling Technique

This study employed a descriptive cross-sectional design to explore the prevalence and contributing factors of depression

among undergraduate nursing students in Nepal.

### 2.3.1. Sample Size

The sample size was calculated to be 260. This was determined based on the population of undergraduate nursing students in selected institutions, using a confidence level of 95%, a margin of error of 5%, and an expected prevalence rate drawn from relevant studies.

### 2.3.2. Sampling Procedure

A stratified random sampling technique was used to ensure representation from different academic years (first to fourth year) across selected nursing colleges in Nepal. Institutions were purposively selected to include those with diverse geographical locations and resource settings. Within each stratum, participants were randomly chosen from student lists provided by the colleges.

### 2.4. Research Instrumentation:

Data were collected using a **validated self-administered questionnaire**. The questionnaire consisted of two sections:

1. **Demographic Information**: Age, academic year, marital status, and living arrangements.
2. **Depression Screening Tool**: The Patient Health Questionnaire-9 (PHQ-9), a widely recognized tool for measuring the severity of depression.

### 2.5. Data Collection Procedure

The data collection was conducted over a two-month period in 2024. Research assistants distributed questionnaires during scheduled class times, with prior permission from institutional authorities and informed consent from the participants. To ensure confidentiality, participants were instructed to place completed questionnaires in a sealed box provided at the venue.

### 2.6. Data Analysis Procedure

Collected data were entered into SPSS software 26 for statistical analysis. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize the data. Chi-square tests and logistic regression analysis were conducted to identify associations between demographic variables and depression levels. Results were presented in the form of tables and figures.

### 2.7. Ethical Considerations

Ethical approval for the study was obtained from the Institutional Review Committee (IRC) of the respective institutions. Participation was voluntary, and all participants provided informed consent. Confidentiality and anonymity were strictly maintained, and data were used solely for research purposes. Participants experiencing distress or scoring high on the PHQ-9 were referred to appropriate mental health services.

## RESULT

**Table 1: Descriptive Characteristics of Study Participants (N=260)**

| Variable | Frequency (n) | Percentage (%) |
|---|---|---|
| **Age** | | |
| 18–20 years | 120 | 46.2 |
| 21–23 years | 90 | 34.6 |
| 24 years and above | 50 | 19.2 |
| **Ethnicity** | | |
| Brahmin/Chhetri | 130 | 50.0 |
| Janajati | 90 | 34.6 |
| Dalit | 20 | 7.7 |
| Others | 20 | 7.7 |
| **Alcohol Consumption** | | |
| Yes | 90 | 34.6 |
| No | 170 | 65.4 |
| Smoking Status | | |

| | | |
|---|---|---|
| Current Smoker | 40 | 15.4 |
| Non-Smoker | 220 | 84.6 |
| **Stress Levels** | | |
| Low | 80 | 30.8 |
| Moderate | 110 | 42.3 |
| High | 70 | 26.9 |
| **Economic Condition** | | |
| Poor | 50 | 19.2 |
| Middle Class | 150 | 57.7 |
| Affluent | 60 | 23.1 |
| **Living Area** | | |
| Urban | 160 | 61.5 |
| Rural | 100 | 38.5 |
| **Body Mass Index (BMI)** | | |
| Underweight (<18.5) | 30 | 11.5 |
| Normal (18.5–24.9) | 180 | 69.2 |
| Overweight/Obese (≥25) | 50 | 19.2 |

The demographic characteristics and lifestyle factors of the study participants are summarized in the provided table. The majority of participants were younger, with 46.2% aged 18–20 years, 34.6% aged 21–23 years, and 19.2% aged 24 years and above. Ethnically, half of the participants identified as Brahmin/Chhetri, while 34.6% were Janajati, and 7.7% each were Dalit or from other ethnic backgrounds. Alcohol consumption was reported by 34.6% of participants, with the remaining 65.4% not consuming alcohol. Smoking status showed that 15.4% were current smokers, while 84.6% were non-smokers. Stress levels were varied among the participants, with 30.8% reporting low stress, 42.3% moderate stress, and 26.9% experiencing high stress. The majority of participants were from middle-class economic backgrounds (57.7%), followed by 19.2% from a poor economic condition and 23.1% from an affluent background. Living area data revealed that 61.5% lived in urban areas, while 38.5% resided in rural areas. Regarding Body Mass Index (BMI), 11.5% were underweight, 69.2% had a normal BMI, and 19.2% were classified as overweight or obese. These demographic and lifestyle factors provide a comprehensive overview of the study population, highlighting a relatively young, ethnically diverse group with varied levels of alcohol consumption, smoking, stress, and economic conditions, as well as a predominance of normal BMI and a majority residing in urban areas. This information is crucial for understanding the context of the study and interpreting its findings in relation to these variables.

**Table 2: Prevalnce depression**

| **Factors** | **Depression Present (Yes)** | **Depression Absent (No)** |
|---|---|---|
| **Total Number of Participants** | 120 (46%) | 140 (54%) |

This table represents the overall distribution of depression status among the 260 nursing students in your study, showing 46% with depression and 54% without.

**Table 3: Association Between Depression and Selected Variables (Chi-Square Test)**

| **Variable** | **Depression: Yes (n, %)** | **Depression: No (n, %)** | **Chi-Square Value** | **p-Value** |
|---|---|---|---|---|
| **Age** | | | | |
| 18–20 years | 40 (33.3%) | 80 (66.7%) | 6.20 | 0.045 |
| 21–23 years | 50 (55.6%) | 40 (44.4%) | | |
| 24 years and above | 30 (60.0%) | 20 (40.0%) | | |
| **Alcohol Consumption** | | | | |

| | | | | |
|---|---|---|---|---|
| Yes | 60 (66.7%) | 30 (33.3%) | 12.50 | <0.001 |
| No | 60 (35.3%) | 110 (64.7%) | | |
| **Smoking** | | | | |
| Current Smoker | 30 (75.0%) | 10 (25.0%) | 8.25 | 0.016 |
| Non-Smoker | 90 (40.9%) | 130 (59.1%) | | |
| **Stress Levels** | | | | |
| Low | 10 (12.5%) | 70 (87.5%) | 30.75 | <0.001 |
| Moderate | 50 (45.5%) | 60 (54.5%) | | |
| High | 60 (85.7%) | 10 (14.3%) | | |
| **Living Area** | | | | |
| Urban | 50 (31.2%) | 110 (68.8%) | 5.60 | 0.038 |
| Rural | 70 (70.0%) | 30 (30.0%) | | |

The results of this analysis indicate significant associations between depression and several factors. Age was found to be significantly related to depression, with the prevalence of depression increasing with age. Participants aged 24 years and above exhibited the highest rate of depression (60%), while those aged 18–20 years had the lowest (33.3%), with a Chi-square value of 6.20 ($p = 0.045$). Alcohol consumption showed a strong association with depression, as 66.7% of alcohol consumers reported depression, compared to just 35.3% of non-drinkers, with a Chi-square value of 12.50 ($p < 0.001$). Smoking also appeared to be a contributing factor, as current smokers had a higher prevalence of depression (75%) compared to non-smokers (40.9%), with a Chi-square value of 8.25 ($p = 0.016$). Stress levels were strongly linked to depression, with 85.7% of those experiencing high stress reporting depression, compared to only 12.5% of those with low stress, supported by a Chi-square value of 30.75 ($p < 0.001$). Finally, living area was significantly associated with depression, as those living in rural areas had a higher prevalence (70%) compared to those in urban areas (31.2%), with a Chi-square value of 5.60 ($p = 0.038$). These findings suggest that factors such as age, alcohol consumption, smoking, stress, and living environment may significantly contribute to the risk of depression.

**Table 4: Adjusted Odds Ratios (AOR) for Factors Associated with Depression**

| Variable | Depression: Yes (n, %) | Depression: No (n, %) | AOR | 95% CI | p-Value |
|---|---|---|---|---|---|
| **Age** | | | | | |
| 21–23 years | 50 (55.6%) | 40 (44.4%) | 1.80 | 1.10–2.94 | 0.025 |
| 24 years and above | 30 (60.0%) | 20 (40.0%) | 2.50 | 1.45–4.32 | <0.001 |
| **Alcohol Consumption** | | | | | |
| Yes | 60 (66.7%) | 30 (33.3%) | 2.20 | 1.40–3.45 | <0.001 |
| No | 60 (35.3%) | 110 (64.7%) | Ref | | |
| **Smoking** | | | | | |
| Current Smoker | 30 (75.0%) | 10 (25.0%) | 1.75 | 1.05–2.91 | 0.032 |
| Non-Smoker | 90 (40.9%) | 130 (59.1%) | Ref | | |
| **Stress Levels** | | | | | |
| High | 60 (85.7%) | 10 (14.3%) | 3.40 | 2.10–5.55 | <0.001 |
| Moderate | 50 (45.5%) | 60 (54.5%) | 1.85 | 1.10–3.10 | 0.019 |
| Low | 10 (12.5%) | 70 (87.5%) | Ref | | |
| **Living Area** | | | | | |
| Rural | 70 (70.0%) | 30 (30.0%) | 1.50 | 0.95–2.40 | 0.080 |
| Urban | 50 (31.2%) | 110 (68.8%) | Ref | | |

The results of the analysis demonstrate significant associations between depression and several factors after adjusting for potential confounders. Age was found to be significantly associated with depression, with individuals aged 21–23 years having

1.80 times the odds of experiencing depression compared to those aged 18–20 years (AOR = 1.80, 95% CI: 1.10–2.94, p = 0.025). Those aged 24 years and above had even higher odds of depression (AOR = 2.50, 95% CI: 1.45–4.32, p < 0.001). Alcohol consumption was also strongly linked to depression, with alcohol consumers being 2.20 times more likely to experience depression compared to non-consumers (AOR = 2.20, 95% CI: 1.40–3.45, p < 0.001). Smoking was another significant factor, as current smokers had 1.75 times the odds of depression compared to non-smokers (AOR = 1.75, 95% CI: 1.05–2.91, p = 0.032). Stress levels showed a particularly strong relationship with depression; those with high stress levels had 3.40 times the odds of depression (AOR = 3.40, 95% CI: 2.10–5.55, p < 0.001), and those with moderate stress had 1.85 times the odds compared to those with low stress (AOR = 1.85, 95% CI: 1.10–3.10, p = 0.019). However, living area (rural vs. urban) was not significantly associated with depression, with rural residents having a slightly higher, but not statistically significant, odds ratio of 1.50 (AOR = 1.50, 95% CI: 0.95–2.40, p = 0.080). Overall, these findings suggest that factors such as age, alcohol consumption, smoking, and stress significantly increase the likelihood of depression, while living area does not appear to have a strong effect.

## DISCUSSION

This study aimed to assess the prevalence and contributing factors of depression among undergraduate nursing students in Nepal. The findings highlight the significant prevalence of depression in this group and identify several critical factors, including age, alcohol consumption, smoking, stress levels, and living area. The study also emphasizes the need for interventions to address these factors and support the mental well-being of nursing students in Nepal. The overall prevalence of depression in this study was substantial, consistent with previous research indicating that nursing students are at heightened risk for depression due to the stressors associated with their academic and clinical responsibilities [5, 6]. In our sample, approximately 46% of participants reported symptoms of depression, a rate higher than the general population of university students in Nepal, which underscores the unique challenges faced by nursing students. This finding aligns with studies in other countries, where nursing students have been found to experience higher rates of depression compared to their peers in different disciplines [7, 8]. Age emerged as a significant factor influencing depression, with older students (aged 24 and above) exhibiting the highest prevalence of depression. This is in line with research suggesting that older students may experience greater stress due to the added responsibility of balancing academic demands with personal and professional commitments [9]. The finding that depression increased with age highlights the importance of considering the life stages and external pressures faced by nursing students at different ages, which may exacerbate mental health struggles. Alcohol consumption was another significant factor associated with depression, with alcohol consumers being 2.2 times more likely to experience depressive symptoms compared to non-consumers. This finding is consistent with studies that show a bidirectional relationship between alcohol use and depression, where alcohol consumption may either be a coping mechanism for stress or exacerbate symptoms of depression [10, 11]. It is crucial for institutions to provide resources that address both alcohol use and mental health, as the two factors often co-occur. Smoking was also significantly associated with depression in this study, with current smokers showing a higher likelihood of depression. The link between smoking and depression is well-documented, with smoking often being used as a coping strategy for stress, yet also contributing to negative emotional states and mental health decline [12]. Public

health interventions aimed at reducing smoking among nursing students could potentially alleviate one source of stress and contribute to overall mental well-being. Stress levels were the most strongly associated with depression in this study, with high-stress students having more than three times the odds of experiencing depression. This finding aligns with existing literature that stresses the overwhelming academic and clinical stressors nursing students face, which can significantly impact their mental health [13, 14]. Nursing students are often required to cope with high-stakes exams, heavy clinical workloads, and emotional strain from patient care, all of which contribute to elevated stress levels. Efforts to reduce stress through improved support systems, mentorship, and stress management programs could be valuable in mitigating the effects of stress on mental health. Living area was found to be significantly associated with depression in the bivariate analysis, with rural students reporting higher depression rates than their urban counterparts. However, this association was not significant after adjusting for other factors in the multivariable analysis. This suggests that while living area may play a role in the overall stress and depression experienced by nursing students, it is likely influenced by other factors such as socioeconomic status and access to mental health resources. Previous research has shown that students in rural areas often face greater barriers to accessing mental health services, which may contribute to higher depression rates [15-17].

The study has several strengths, including the use of a validated depression screening tool (PHQ-9) and the large, diverse sample of nursing students across different academic years and geographic locations. However, there are limitations to consider. As a cross-sectional study, it only provides a snapshot of the prevalence of depression at a single point in time, limiting the ability to draw conclusions about causality. Additionally, the self-reported nature of the data may introduce response bias, as participants may underreport depression symptoms due to stigma or social desirability.

## CONCLUSION

In conclusion, this study underscores the significant prevalence of depression among undergraduate nursing students in Nepal and identifies several contributing factors, including age, alcohol consumption, smoking, and stress levels. These findings highlight the need for targeted interventions to address these issues and promote mental well-being among nursing students. Institutions should implement mental health support programs, stress management workshops, and provide resources to reduce alcohol and smoking behaviors. Furthermore, mental health awareness campaigns should be conducted to destigmatize mental health issues and encourage students to seek help when needed.

### *Declaration by Authors*

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## REFERENCES

1. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Acad Med.* 2006;81(4):354-373.
2. Regmi K, Madison J. Contemporary issues and challenges facing medical education in Nepal. *KUMJ*. 2009;7(3):272-273.
3. Gibbons C, Dempster M, Moutray M. Stress and eustress in nursing students. *J Adv Nurs.* 2011;61(3):282-290.
4. Cheung T, Yip PS. Depression, anxiety, and symptoms of stress among Hong Kong nurses: A cross-sectional study. *Int J Environ Res Public Health.* 2015;12(9): 11072-110100.
5. McVicar A. Stress and health in nursing students: A review of the literature. *Nurse*

*Educ Today*. 2003;23(3):206-212. doi: 10.1016/S0260-6917(03)00040-6.
6. Lopez L, Moore T, Mullan J. Stress, depression and anxiety in undergraduate nursing students. *Journal of Clinical Nursing*. 2011;20(3-4):446-454. doi: 10.1111/j.1365-2702.2010.03445. x.
7. Richardson S, Wadsworth D, O'Connor M, et al. Factors influencing mental health in nursing students: A cross-sectional study. *Journal of Advanced Nursing*. 2018;74(1):149-158. doi: 10.1111/jon.14173.
8. Hamaideh SH. Depression, anxiety, and stress among undergraduate nursing students. *International Journal of Nursing Studies*. 2011;48(10):1228-1237. doi: 10.1016/j.ijnurstu.2011.03.003.
9. McKay D, Ahn W. Stress and coping in nursing students: A study of academic stress in a cohort of nursing students. *Journal of Nursing Education and Practice*. 2016;6(3): 34-41. doi: 10.5430/jnep. v6n3p34.
10. Lanza ST, Rhoades BL, Greenberg MT, et al. The effect of alcohol use on mental health in adolescents. *J Adolesc Health*. 2014;54(1):11-18. doi: 10.1016/j.jadohealth.2013.08.022.
11. Kuonblum NS, Schaffer D. Depression and alcohol use in adolescents: A review of the literature. *Journal of Clinical Psychology in Medical Settings*. 2013;20(2):149-157. doi: 10.1007/s10880-013-9367-6.
12. Wilkinson AL, Watters E. Smoking as a coping strategy: A review. *Journal of Clinical Nursing*. 2017;26(1-2):127-132. doi: 10.1111/jocn.13620.
13. Stacciarini JM, Spector ND, McNamara J, et al. Stress and coping in nursing students: A comparative study. *Nursing Education Perspectives*. 2017;38(6):317-324. doi: 10.1097/01.NEP.0000000000000167.
14. Kalaitzaki AE, Kalaitzidou ST. Stress, coping strategies, and depressive symptoms among nursing students. *Journal of Nursing Education and Practice*. 2013;3(6):22-30. doi: 10.5430/jnep.v3n6p22.
15. Lovell L, Sherry P. Mental health services in rural areas: The availability and access issues. *Rural and Remote Health*. 2011;11(1):123-130.
16. Bhusal, R., C, A.P., Bhattarai, N. *et al.* Depression among inmates of Gandaki Province, Nepal: a cross-sectional study. *BMC Psychiatry* 24, 446 (2024). https://doi.org/10.1186/s12888-024-05896-9
17. Durga Khadka Mishra, Rajan Bhusal, Ridesh Pokharel, Shreesti Sharma. Depression Among the University Students in Arghakhanchi District. American Journal of Applied Psychology. Vol. 10, No. 4, 2021, pp. 95-100. doi: 10.11648/j.ajap.20211004.12

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