Original Article

doi:10.31674/mjn.2025.v17i01.001

MJN

Depressive Symptoms among Undergraduate Nursing Students in Indonesia

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ABSTRACT

Background: Depression is increasingly prevalent among university students, leading to poor academic performance. Research has identified the prevalence, and several factors linked to depression among nursing students, but there is a limited study available in the Indonesian context. **Objective:** This study aimed to estimate the prevalence and examine the demographic characteristics relationship of depressive symptoms in undergraduate nursing students in North Sumatra, Indonesia. **Methods:** The design of the present study was descriptive. The sample size was 385 nursing students, and a simple random sampling was used to recruit respondents. The instrument was the Indonesian version of the Centre for Epidemiologic Studies Depression Scale-Revised (CESD-R). Data was collected in June 2024 using a Google form. The data analysis used included frequency, percentage, and Chi-square tests. **Results:** This study found that the highest proportion were aged between 17 and 20 years (60.3%) with a mean age of 20.1 ± 1.39 years, in the first academic year (30.6%), and women (91.4%). The mean score of depressive symptoms was 20.36 ± 16.52, and more nursing students indicated no depression disorder (58.4%) than depression disorder (41.6%). The study found no relationship between depressive symptoms and demographic characteristics (age, academic year, and gender) with a *p*-value > 0.05. **Conclusion:** The present study shows that the prevalence of depressive symptoms among undergraduate nursing students at the university tends to be high. Therefore, students need to be given education and practice on how to deal with stress and the potential for depression and provide health assistance when students need it.

Keywords: Depression; Depression Disorder; Depressive Symptoms; Nursing Student

INTRODUCTION

Depression is a prevalent mental health disorder affecting millions worldwide. According to the World Health Organisation (WHO, 2017), more than 300 million people (4.4%) experience depression globally. This condition disproportionately impacts women, with an annual incidence rate of 1.98% compared to 1.10% in men (Santangelo *et al*., 2019). Notably, depression is most common among individuals aged between 15 and 44 (Sum *et al*., 2024). In Indonesia, the prevalence of depression among young adults is particularly concerning, with nearly 28% of young adults reporting depression in the Family Life Survey (Purborini, 2021).

Depression, also known as depressive disorder, is defined by the World Health Organisation (WHO, 2017) as a loss of pleasure in normally enjoyable activities accompanied by a prolonged depressed mood. This condition is characterised by feelings of guilt, sadness, fatigue, difficulty concentrating, disrupted eating and sleeping patterns, loss of interest, and low self-esteem (Lim, Lau & Li, 2021). Depression can result from a deep trauma in life, such as the loss of a loved one, valuable objects, relationships or health. However, depression can also occur without a definite cause (Bedaso *et al*., 2016). In addition, about 60% of people who commit suicide are experiencing severe depression (Alreshidi *et al.*, 2024).

Depressive symptoms are reported to increase among students who study at university (Wagner *et al*., 2022). They are a vulnerable group to experience depressive symptoms, both in the mild category (Sousa, Romeiro & Sandim, 2021) and severe depression (Jiang *et al*., 2022). The prevalence of depression in

Received: July 9, 2024 Received in revised form: May 17, 2025 Accepted: May 22, 2025

university students ranges from 6 to 54% (Wagner *et al.*, 2022). A systematic review revealed that the estimated prevalence of depression was 34% around the world, which was the highest among Asian nursing students (43%) (Tung *et al*., 2018).

Literature reported that the most common risk indicators for depression are recreational activities, single marital status, divorced or widowed, low socioeconomic status, job loss, lack of social support, stress, heavy smartphone use, chronic medical illnesses, psychological illness, family history of depression, substance abuse, smoking and alcohol consumption, low level of maternal education, poor parental relationships, majors of study, academic failures, and severe academic requirements. Meanwhile, the most common demographic characteristics related to depression include young age, female gender, and academic year (Hamasha *et al*., 2019). In addition, the studies among nursing students in Thailand and Vietnam showed that the factor related to and predicting depressive symptoms was stress (Hai *et al.*, 2022; Klongdee & Chaniang, 2021).

The results of studies on the relationship between demographic characteristics and depression are inconclusive. Evidence shows that nursing students will likely be depressed in their first academic year (Janatolmakan *et al*., 2019). In South Africa, a nationwide study involving around 41,000 first-year students found that 10% had severe depressive symptoms (Wagner *et al*., 2022). However, another study found that fourth-year students seem to experience higher levels of depression compared to other academic years (Amadu *et al.*, 2024). Regarding gender and age, they are also still controversial because, on the one hand, there are studies that find it is related to depressive symptoms, but on the other hand, they state that it is not related (OF *et al.*, 2018). A study found that the prevalence of depression by age of nursing students did not differ significantly between age groups (Alsaqri *et al.*, 2019).

Depressive symptoms are associated with a decline in academic achievement (Fonseca *et al.*, 2019), lack of participation in organizational activities, hostile social networks, and even a tendency to commit suicide (Asfaw *et al*., 2020; Yu *et al*., 2021). Depressive symptoms lead to delayed development and a decline in the quality of university graduates (Wagner *et al*., 2022). Depression is a significant barrier to academic performance (Nway *et al*., 2023). Several studies have been conducted worldwide but are still limited in Indonesia. Thus, this study aims to identify depressive symptoms and their relationship with demographic characteristics in nursing students at the Universitas Sumatera Utara, Indonesia.

METHODOLOGY

Study Design and Samples

This study was a cross-sectional descriptive survey. A descriptive design describes the distribution of one or more variables without explaining causal relationships or testing a hypothesis (Aggarwal & Ranganathan, 2019). The sample size was estimated using Cochran's formula (Israel 2003)

$$N = \frac{Z^2 p.\, q}{e^2}$$

Z = Z score for confidence level of 95%, $\frac{a}{2} = 1.96$

e = level of precision

p = estimated proportion

q = 1-p.

The value of the proportions used was 0.5, assuming that the variability of the population was 50% (maximum variability) (Israel, 2003). The value of the maximum proportion was taken because the variability of the respondent population had yet to be discovered; in other words, no research had been conducted on nursing students at the Universitas Sumatera Utara. Thus, the number of samples in this study was

$$N = \frac{(1.96)^2 \;\; 0.5 \;\; (0.5)}{(0.05)^2} = 385$$

Therefore, the sample size was 385 nursing students. The inclusion criteria were nursing students willing to become research respondents voluntarily and in their first through fourth academic years. Simple random sampling was applied to recruit the respondents using a Google random number generator. Thus, there were no cases where the researcher intentionally excluded respondents.

Instruments

The Indonesian version of the Centre for Epidemiologic Studies Depression Scale-Revised (CESD-R) was used in the current study (Tran et al., 2019). Permission was granted from the translator. The scale consists of 20 items with five answer choices (0-4) and a score range of 0-80. With a sensitivity and specificity of 75.0% and 79.9%, the scale could screen for depressive disorders at a score of ≥ 20. However, the scale does not classify the depression level. The instrument has been proven valid and reliable in Indonesian young adults, with a Cronbach's alpha of > 0.8.

Data Collection

Data was collected at the Faculty of Nursing, Universitas Sumatera Utara, Indonesia, in June 2024. The questionnaire was given online using a Google form. Students filled out questionnaires separately and individually. All respondents received an information sheet explaining the study's steps and signed an informed consent sheet before data collection began. The researchers waited until the respondents filled out the questionnaire entirely while reminding those who still needed to fill out the questionnaire. Therefore, all data is collected over one month.

Data Analysis

Version 23 of SPSS was used for data analysis. Demographic characteristics and depressive symptoms were analysed by descriptive statistics (mean, frequency, and percentage), and the association of demographic characteristics with depression disorder by inferential statistics (a Chi-square test), with a *p*-value of less than 0.05, was regarded as statistically significant. Data analysis was applied following the guidelines proposed by Morgan *et al*., (2020)

Ethical Consideration

This research received ethical approval from the ethical committee, Universitas Sumatera Utara, Indonesia, with reference number 631/KEPK/USU/2024 on 12th June, 2024.

RESULTS

The demographic characteristics of nursing students are described as the frequency and percentage in Table 1. The feelings and behaviours of undergraduate nursing students are displayed based on the statement in the CESD-R presented in Table 2. Meanwhile, the percentage of depressive symptoms in undergraduate nursing students is presented in Table 3. Finally, a cross-tabulation between factors related to depression disorders of undergraduate nursing students is presented in Table 4.

Table 1: Demographic Characteristics of Undergraduate Nursing Students (n=385)

Characteristics	Frequency	Percentage (%)
Age (year) (Min – Max = 17 – 23; Mean = 20.1 ± 1.39)		
17-20	232	60.3
21-23	153	39.7
Academic Year		
1st	118	30.6
2nd	94	24.4
3rd	62	16.2
4th	111	28.8
Gender		
Women	352	91.4
Men	33	8.6

There were 385 nursing students involved in this study. As depicted in Table 1, this study revealed that the majority of the students were aged between 17 – 20 years (60.3%) with a mean age of 20.1 ± 1.39 years in the first academic year (30.6%), and women (91.4%).

Table 2: Feeling and Behaviour of Undergraduate Nursing Students (n=385)

No	Statements	Mean	SD
1.	My appetite was poor.	2.07	1.19
2.	I could not shake off the blues.	2.23	1.22
3.	I had trouble keeping my mind on what I was doing.	2.45	1.26
4.	I felt depressed.	1.95	1.23
5.	My sleep was restless.	2.20	1.32
6.	I felt sad.	2.35	1.23
7.	I could not get going.	2.12	1.25
8.	Nothing made me happy.	1.69	1.13
9.	I felt like a bad person.	1.67	1.11
10.	I lost interest in my usual activities.	2.12	1.26
11.	I slept much more than usual.	2.28	1.29
12.	I felt like I was moving too slowly.	2.18	1.32
13.	I felt fidgety.	2.14	1.23
14.	I wished I were dead.	1.36	0.93
15.	I wanted to hurt myself.	1.31	0.85
16.	I was tired all the time.	2.60	1.46
17.	I did not like myself.	1.76	1.23
18.	I lost a lot of weight without trying to.	1.61	1.08
19.	I had a lot of trouble getting to sleep.	2.06	1.35
20.	I could not focus on the important things.	2.22	1.26

In Table 2, the top five most feelings and behavior by nursing students almost every day for two weeks as follows: "I was tired all the time" was 75 students (19.5%, 2.60 ± 1.46), "I had trouble keeping my mind on what I was doing" was 46 students (11.9%, 2.45 ± 1.26), "I felt sad" was 45 students (19.5%, 2.35 ± 1.23), "I slept much more than usual" was 43 students (11.2%, 2.28 ± 1.29), and "My sleep was restless" was 41 students (10.6%, 2.20 ± 1.32).

Table 3: Depressive Symptoms among Undergraduate Nursing Students (n=385)

Characteristics	Frequency	Percent
Total score (Mean = 20.36 ± 16.52) Depressive symptoms categories:		
≤ 19	225	58.4
≥ 20	160	41.6

This study found that the mean score of depressive symptoms was 20.36 (SD = 16.52). Referring to the Indonesian version of CESD-R, a person is indicated to have depression disorder if the score ≥ 20. This study found that more nursing students were not indicated for depression disorder (58.4%) compared to those indicated for depression disorder (41.6%), as shown in Table 3.

Table 4: Factor Associated with Depressive Symptoms among Undergraduate Nursing Students (n=385)

Variable	Depressive Symptoms		χ^2	*p*-value
	≤ 19	≥ 20		
Age (year)			0.008	0.930
17-20	136 (60.4%)	96 (60.0%)		
21-23	89 (39.6%)	64 (40.0%)		
Academic Year			1.10	0.777
1st	72 (32.0%)	46 (28.7%)		
2nd	54 (24.0%)	40 (25.1%)		
3rd	33 (14.7%)	29 (18.1%)		
4th	66 (29.3%)	45 (28.1%)		
Gender			1.88	0.170
Women	202 (89.8%)	150 (93.8%)		
Men	23 (10.2%)	10 (6.2%)		

As shown in Table 4, there was no significant difference in depressive symptoms between 17-20 years old and 21-23 years old (p = 0.930). Additionally, there was no significant difference in depressive symptoms between the 1st, 2nd, 3rd, and 4th academic years (p = 0.777). Furthermore, there was no significant difference in depressive symptoms between women and men (p = 0.170).

DISCUSSION

Depressive Symptoms

The current study found that the percentage of undergraduate nursing students who had depressive symptoms scores ≥ 20, which is categorised as depression disorder based on the CESD-R, tends to be high (41.6%). The high percentage of depressive symptoms was likely to occur as a result of the nature of the curriculum of the Faculty of Nursing, Universitas Sumatera Utara, which demands very dense academic activities. According to Sousa, Romeiro and Sandim (2021), little time to relax is one of the sources of stress that may result in depressive symptoms. In addition, a high academic workload causes stress (Nway *et al*., 2023). Indeed, nursing is one of the most stressful professions worldwide (Babapour, Gahassab-Mozaffari, & Fathnezhad-Kazemi, 2022).

Several recent research results have a higher and lower prevalence of depressive symptoms than the current study. The results of studies with higher prevalence than current studies include Egypt, Cameroon, Nigeria, Myanmar, Iran, Nepal, Spain, and Saudi Arabia. In Egypt, nursing students experienced depressive symptoms at 87.5% with mild to severe levels (Mohamed *et al*., 2019). In Cameroon, in two English-speaking regions, the overall prevalence of depression in nursing students was 69.57%, and depression was 26.40% (Njim *et al*., 2020). In Nigeria, in an open and distance learning programme, 63.65% of nursing students experienced depression (Faronbi *et al*., 2021). In Myanmar, a study on undergraduate nursing students found a mean score of 21.23 (depression rate nearly 63.5%) (Nway *et al*., 2023). In Iran, it was found that nursing students had various levels of depression, with the rate significantly higher in the first year (61.7%) than last year (38.1%) (Janatolmakan *et al*., 2019). In Nepal, the results of a descriptive study from nine universities found that 350 out of 680 (51.7%) nursing students had moderate to high levels of depression (Samson, 2019). In Spain, the depressive symptom was found in 134 nursing students (46.6%) (Ibáñez-del Valle, Navarro-Martínez, & Cauli, 2023). In Saudi Arabia, it was found that around 45% experienced mild to severe depression in health students (i.e., medical, dental, pharmacology and nursing) (Hamasha *et al*., 2019).

In contrast, studies with a lower prevalence than current studies are those in India, Brazil, and Thailand. In India, the prevalence of moderate to severe depressive symptoms was 34.1% (Verma *et al*., 2021). In Brazil, a study found that nursing students who experienced moderate or severe depression were 19.2% (Facioli *et al*., 2020). In addition, another study in Brazil found that 31.7% of nursing students experienced depressive symptoms (Melo *et al*., 2021). In Thailand, the rate of depression was 14.29% among first-year nursing students, with the mean score using the CES-D depression scale of 23.04. However, after students were involved in mental health promotion and mental disorder prevention activities, the average score decreased to 9.52 (Li *et al*., 2024).

Depressive symptoms are higher in students whose social interactions are disrupted. Social interaction is needed by students in order to feel that they have enough support from classmates, non-classmates, and the community, which ultimately makes their physical and mental development conducive. In addition, depressive symptoms can be triggered by a sense of loneliness as a result of social isolation and are more common in college students in their higher years because they have heavier learning tasks. Furthermore, a lack of social support can also increase the risk of depressive symptoms. On the other hand, the prevalence of depressive symptoms was lower in students who had high hopes. Therefore, strategies to increase student hope levels are needed to reduce the incidence of depressive symptoms (Yu *et al*., 2021).

Factors Related to Depressive Symptoms

The current study found that there was no relationship between demographic characteristics (age, academic year, and gender) and depression disorder. The current study results have similarities and differences with other studies regarding factors related to demographic characteristics. In Iran, they found that nursing

students experienced depressive symptoms significantly higher in the first year (61.7%) than last year (38.1%) (Janatolmakan *et al*., 2019). In Spain, the prevalence of depressive symptoms was higher in women than men, while insignificant factors were marital status, having children, living in college, smoking, and drinking alcohol or stimulants (Ibáñez-del Valle *et al*., 2023). In Saudi Arabia, the variables that were significant to depression were gender, presence of recently deceased family members, type of study, academic year, mental disorders, and social lifestyle. Additional variables were satisfaction with each indicator of the type of speciality, lecturers, and university facilities (Hamasha *et al.*, 2019). High rates of depression are related to gender (female), high workload (>40 hours per week), and prolonged academic activities (>90 minutes) (Facioli *et al*., 2020).

Other researchers around the world have also identified other related factors. In Egypt, negative predictors of depressive symptoms were students' grades and self-compassion (Mohamed *et al*., 2019). In Cameroon, a study found that factors significantly related to depressive symptoms were marital status, number of children, age, chronic diseases, and personal relationships (Njim *et al.*, 2020). In Myanmar, factors that significantly affect depressive symptoms include stress, self-efficacy, and emotion-focused coping, where stress was the most contributing factor. On the other hand, the factors that did not significantly affect emotion-focused coping, interest in nursing, and academic year (Nway *et al*., 2023). In Nepal, nursing students who used emotion-focused coping experienced significantly higher depression and anxiety than students who used problem-focused coping (Samson, 2019). In India, the factor significantly associated with depression was family relationships (Verma *et al*., 2021). In Thailand, after students were involved in mental health promotion and mental disorder prevention activities, the average score decreased to 9.52 (Li *et al*., 2024). Although some studies show that depressive symptoms tend to increase in the second and third years of the study period because they are in a transition period from academic life to the clinical period, the results of other studies did not find significant differences. Therefore, it is still controversial (Alsaqri *et al.*, 2019).

This study has limitations because it was conducted at one university in North Sumatra, Indonesia. Therefore, the results cannot be generalised to Indonesia's nursing student population. Data collection was limited to student questionnaires and self-reports, and due to the nature of cross-sectional studies, it is impossible to explain the causal-effect relationship between the research variables.

CONCLUSION

The current study holds significant implications, as it underscores a substantial prevalence of depressive symptoms among nursing students at Universitas Sumatera Utara. Given the demanding academic and clinical environment faced by nursing students, identifying the extent of depression is crucial. This awareness helps universities acknowledge the psychological struggles students experience, enabling early interventions and targeted mental health support. The findings emphasise the urgent need for systematic approaches to mental health education, stress management programmes, and psychological services tailored explicitly to nursing students. Ultimately, addressing mental health issues contributes positively to students' academic performance, clinical competence, professional readiness, and overall well-being. Future research should concentrate on designing, implementing, and assessing specialised intervention programmes aimed at reducing depressive symptoms among nursing students at Universitas Sumatera Utara. Longitudinal studies to track the effectiveness of these interventions over extended periods will provide deeper insights into their sustained impact. Additionally, future research could expand the scope by exploring other potential determinants such as academic stressors, clinical practice demands, social support networks, coping mechanisms, and resilience training effectiveness. Comparative studies involving other universities or healthcare disciplines may also help generalise these findings, allowing for broader applicability and refinement of mental health strategies in nursing education.

Conflict of Interest

The authors declare that they have no competing interests.

ACKNOWLEDGEMENT

The authors would like to thank all the respondents who had taken the time to engage in the study.

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