

Depressive Symptoms and Coping Strategies among University Students: A Cross-sectional Study

Nur Natasya Binti Mohamad Sharif, Annamma Kunjukunju*, Salida Johari, Nurul Fariza Mohd Mustafa

KPJ Healthcare University, Persiaran Seriemas, Kota Seriemas, 71800 Nilai, Negeri Sembilan, Malaysia

*Corresponding Author's Email: ann@kpju.edu.my

ABSTRACT

Background: Adjusting to life on campus and attending a university course for the first time might be challenging for university students. Students who are having difficulties adjusting to college life are more likely to experience depressive symptoms. The detrimental impacts of depression on college students have drawn attention from across the world. The study investigated the prevalence of depressive symptoms and coping strategies among university students in a private healthcare university in Negeri Sembilan, Malaysia. **Methods:** This study employed a quantitative cross-sectional survey design. A total of 293 participants were recruited from a private healthcare university using convenient sampling. The sample size was determined using a sample size calculator, ensuring a confidence interval of 95% with a 5% margin of error. Data was collected through self-administered survey questionnaires comprising the Beck Depression Inventory (BDI) and brief COPE scales. Data were analysed using SPSS software version 26.0. Descriptive statistics and chi-square were applied to analyse and summarise the data. **Results:** According to the findings of the study, 71.6% of students reported having depressed symptoms overall. Furthermore, 17.4% of university students reported having borderline depressed symptoms, and 47.1% reported having moderate depressive symptoms. Additionally, the results showed that 6.1% and 1.0%, respectively, had severe and extreme depression symptoms. When it came to depressive symptoms, male students scored higher (74.8%) than female students (69.7%). Emotion-focused coping (positive reframing 6.38 ± 1.12) was the most frequently used, followed by problem-focused coping (active coping 6.26 ± 1.11). Also, 48.92% of the students employed adaptive coping strategies, whereas 35.21% employed maladaptive ones. **Conclusion:** Among students in higher education, depression symptoms are very common. The results may be used to develop staff and student awareness campaigns and mental health awareness programs that will lessen the effects of depression and improve university students' quality of life.

Keywords: College Students; Depression; Depressive Symptoms; Mental Health; Psychology; University Students

INTRODUCTION

Depression is a prevalent mental health issue worldwide and in Malaysia. Depression among adolescents has been steadily increasing (Ibrahim *et al.*, 2022). Transitioning to university life is a significant challenge, often leading to stress, anxiety and depressive symptoms. For many students, the shift from structured high school environments to the independence and demands of higher education can be overwhelming. Existing studies suggest a growing incidence of mental health issues, particularly depression, among university students (Mofatteh, 2021). The pressure to adapt to the academic environment, social settings, and personal responsibilities aggravates the issue. Depressive symptoms affect academic performance, are linked to health, and can lead to suicide in extreme cases (Stear *et al.*, 2023).

The incidence of depressive tendencies among college students ranges from 10–30%, with some developing depressive disorders (Stanislawski, 2019). A Malaysian public university study reported a 36.4% prevalence of depressive disorders, mostly mild symptoms (Nahas *et al.*, 2019). As most lifelong mental illnesses manifest during university age, studying depression in college students is vital (Wheatley & Botelho, 2023). Contributing factors include academic pressure, transitional stress from school to university due to

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differing teaching and assessment methods, high self and family expectations, and social media influence (Mofatteh, 2021). Social isolation, difficulty adapting to new environments, and struggles to form reliable friendships can exacerbate depression symptoms (Liu *et al.*, 2021). Financial stress further impacts mental health and increases depression risk. Depression significantly affects students' lives, reducing functional well-being, life quality, health, and roles in relationships and society; restricting routines; causing occupational uncertainty; and increasing premature mortality risk (Fernandes *et al.*, 2023; Singh *et al.*, 2023). Challenges such as accommodation, financial hardship, academic competitiveness, and decision-making difficulties add to this burden, making depression a crippling illness for students (Asif *et al.*, 2020).

Most lifetime mental disorders first appear during university age, making it vital to study depressive symptoms in this population due to their impact on campus health services and mental health policies (Almeida, Monteiro & Rodrigues, 2021). Students experiencing depression or stress require immediate support to manage workloads and protect their personal and professional lives. Efforts to address student depression include counselling services, stress management workshops, peer support programs, and mental health awareness campaigns to reduce stigma and encourage help-seeking. However, many students still fail to access these resources due to stigma, lack of awareness, or limited availability (Munira, Liamputtong & Viwattanakulvanid, 2023). A German study of 6,996 university students, 1.5 years post-COVID-19 restrictions, found that 29% reported depressive symptoms and 32% reported anxiety. Key contributors were lack of a trusted person, financial struggles, COVID-19 concerns, and pre-existing health conditions. The study emphasises the need for targeted mental health prevention and counselling programs during crises (Heumann *et al.*, 2024).

Coping mechanisms are critical in determining how students manage depressive symptoms (Almeida, Monteiro & Rodrigues, 2021). Effective coping strategies such as problem-solving and seeking social support have been associated with better mental health outcomes. However, maladaptive strategies such as avoidance or substance abuse can worsen depression and affect academic success (Rodrigues, Morouço & Santos, 2023). Improving existing mental health services by focusing on early detection and proactive support systems like mental health screenings and resilience-building workshops to equip the students with coping strategies before symptoms worsen (Wiedermann *et al.*, 2023). Additionally, the mental health of university students has a big impact on campus health services and the creation of mental health policies (Kumaran *et al.*, 2022). Mental health programs are crucial for students because they raise awareness about mental health issues. They have a real impact on reducing stigma and making it acceptable to discuss depression in the same way that the community would discuss any other disease (Liu *et al.*, 2022; Liu *et al.*, 2023). Combining all the interventions with innovative research and information helps raise awareness of what is new in the field (Lee, Goh & Yeo, 2023). Increase access to digital mental health tools to provide on-demand support.

With the rising prevalence of depression among university students, understanding depressive symptoms and coping strategies is essential. This study examined the extent of depressive symptoms and coping mechanisms among students at a private healthcare university in Negeri Sembilan, Malaysia, focusing on three coping domains: problem-focused, emotion-focused, and avoidant. The findings aim to inform targeted interventions to enhance students' mental well-being. Problem-focused coping includes planning, constructive reframing, active coping, and informational assistance. High scores reflect strategies to change difficult situations, psychological resilience, persistence, and a practical problem-solving approach, often predicting positive outcomes (Stanisławski, 2019). Emotion-focused coping involves venting, humour, acceptance, self-blame, emotional support, and religion, all of which aim to regulate emotions triggered by stress. While scores may not directly correlate with health, they can influence overall well-being. Avoidant coping involves drug abuse, self-distraction, denial, and disengagement, with high scores indicating detachment from stressors. Lower scores suggest difficulty adapting effectively (Allen, 2021).

METHODOLOGY

Research Design

An institution-based cross-sectional survey design was used in this study to determine the depressive

symptoms and coping mechanisms among students in a private university college. The private healthcare university is located in Negeri Sembilan, Malaysia. It is a healthcare university offering undergraduate and postgraduate courses. The university now offers thirty-six programs under various schools, such as the School of Nursing, Pharmacy, Medical Imaging, Physiotherapy, Business Management, and Health Information Management.

Study Sample and Population

At the time of the study, the total population of students on campus at the private healthcare university was 971. Using the Rao Soft sample size calculator, a minimum sample size of 276 was determined for the study. However, the final sample consisted of 293 respondents. Convenience sampling was used in this study, allowing for efficient data collection from the available student population.

Instruments

The study instrument has three (3) sections.

Section A: Socio-Demographic Characteristics

Section A has 16 items related to the demographic profile of prospective respondents to the survey. The items provide single-choice questions for the respondents to choose from. The questionnaire includes the respondents' and their families' backgrounds.

Section B: Depressive Symptoms

The depressive symptoms were measured using a self-reporting 21-item questionnaire called the Beck Depression Inventory (BDI). The scale has 21 items on a 4-point Beck Depression Symptoms scale, ranging from 0 (no symptoms) to 3 (severe symptoms) (Dozois & Covin, 2004). The score is calculated by adding the highest scores for each of the 21 items. 0 is the lowest possible score, and 63 is the highest. Higher scores imply more severe symptoms; however, one item—"loss of interest in sex"—was excluded from this study due to the characteristics of the respondent group. Scores ranging from 0 to 10 signify normal mental health; 11 to 16 show mood abnormalities; 17 to 20 suggest indications of borderline clinical depression; 21 to 30 indicate moderate depression symptoms; 31–40 indicate severe depression; and >40 indicate extreme depression symptoms.

Section C: Coping Mechanism (Brief-Cope)

The 28-item Brief-COPE self-report tool evaluates effective and ineffective coping strategies following a stressful life event. An individual's major coping style may be determined by their scores on the subscales and the three types of coping strategies: problem-focused, emotion-focused, and avoidant coping (Carver, 1997).

Validity and Reliability

This study used a pre-validated questionnaire titled the Beck Depression Inventory. The medical indicators on the questionnaire have a high level of validity, with a value of 0.92 for outpatients with mental problems and 0.93 for college students. The researcher tested questionnaires using a 10% sample size to determine their reliability. A version of IBM SPSS 26 was utilised to analyse the Cronbach alpha. The reliability study yielded a Cronbach alpha of 0.815 for the short COPE inventory scale and 0.759 for the BDI scale.

Data Collection

The questionnaire was sent to each cohort leader via Google Forms following approval from the email correspondence with various school program directors. The cohort leader disseminated the questionnaire to all the students using chat forums. The collected data was analysed using descriptive statistics and the inferential statistical test Chi-square.

Ethical Consideration

The researchers obtained ethical clearance from the Institutional Review Board (IRB) of KPJ Healthcare University College, Malaysia, with reference number KPJU/RMC/SON/EC/2022/440 on 17th November 2022.

RESULTS

The demographic profile of the responders is displayed in Table 1

Table 1: Demographic Data (n=293)

Demographic variables	Factors	Frequency (n)	Percentage (%)	Mean
Age (Years)	18 - 21	152	51.87	21.73±3.25
	22 - 25	126	44.5	
	25 - 32	5	1.77	
Gender	Male	115	39.2	
	Female	178	60.8	
Race	Malay	141	47.1	
	Chinese	72	24.6	
	Indian	69	23.5	
	Others	11	3.8	
Religion	Islam	141	48.1	
	Christianity	42	14.3	
	Hinduism	59	20.1	
	Others	51	17.4	
Discipline of Study	School of Nursing	81	27.6	
	School of Pharmacy	63	21.5	
	School of Health Sciences	72	24.6	
	School of Business	63	21.5	
	Centre of Global Professional and Social Development	14	4.8	
Level of Study	Diploma	95	32.4	
	Degree	176	60.1	
	Masters	3	1.0	
	Foundation In science	19	6.5	
Year of Study	Year 1	88	30.0	
	Year 2	85	29.0	
	Year 3	87	29.7	
	Year 4	33	11.3	
Monthly Family Income (R.M.)	< 1000	59	20.8	
	1000 - 10000	177	62.5	
	> 10000	45	15.9	
Hometown Location	Rural	129	44.0	
	Urban	164	56.0	
Parent Status	Stay together	263	89.8	
	Divorced	23	7.8	
	Passed away	7	2.4	

Table 1 presents the demographic profile of the respondents. The majority (51.87%) were aged between 18 and 21, with a mean age of 21.73. Female respondents comprised the larger portion of the sample (60.8%). In terms of ethnicity, Malays represented the largest group, followed by Chinese and Indians. Islam was the predominant religion among respondents. The distribution of respondents across academic disciplines showed that the highest representation was from the School of Nursing. Most participants were enrolled in degree programs, and a greater proportion hailed from urban areas. Additionally, the majority of respondents reported that their parents were still together.

Table 2: The Prevalence of Depressive Symptoms

Prevalence of Depressive Symptoms	Yes	%	No	%
The Overall Prevalence of Depressive symptoms	210	71.6	83	28.4
Prevalence of Depressive Symptoms by Gender				
Male	86	74.8	29	25.2
Female	124	69.7	54	30.3

Table 2 presents the prevalence of depressive symptoms among respondents overall and by gender. The overall prevalence of depressive symptoms was relatively high, with 71.6% of the respondents reporting depressive symptoms. When broken down by gender, the prevalence was slightly higher among males, with 74.8% of male respondents experiencing depressive symptoms, compared to 69.7% of females. These findings suggest a high overall prevalence of depressive symptoms, with males slightly more affected than females in this sample.

Table 3: Categories of Depressive Symptoms

Variables	Frequency	Frequency	MEAN± SD
Normal	26	8.9	20.5563±7.57
Mild Mood Disturbances	57	19.5	
Borderline Clinical Depression Symptoms	51	17.4	
Moderate Clinical Depression Symptoms	138	47.1	
Severe Clinical Depression Symptoms	18	6.1	
Extreme Clinical Depression Symptoms	3	1.0	

The total score was 60 on the 20-item Beck Depression Inventory scale

Table 3 shows the various levels of depression symptoms experienced by healthcare university students. Moderate clinical depression symptoms account for the highest percentage of symptoms, followed by moderate mood disturbances.

Table 4: Relationship Between Prevalence of Depressive Symptoms Socio-Demographic Profile

Variables		Normal	Mild mood disturbance symptoms	Borderline clinical depression symptoms	Moderate depression symptoms	Severe depression symptoms	Extreme depression symptoms	χ^2	df	P value
Age (Years)	18 - 21	6	9	9	32	2	0	7.96	10	0.632
	22 - 25	18	45	38	100	13	3			
	25 - 32	2	3	4	6	3	0			
Gender	Male	4	25	19	61	6	0	10.42	5	0.064
	Female	22	32	32	77	12	3			
Religion	Islam	16	31	19	60	12	3	27.76	15	0.023
	Christianity	3	8	15	15	1	0			
	Hinduism	6	6	10	35	2	6			
	Others	1	12	7	28	3	1			
Discipline of Study	School of Nursing	14	20	9	28	8	2	33.48	20	0.030
	School of Pharmacy	4	12	14	32	1	0			
	School of Health Sciences	4	15	8	39	5	1			
	School of Business and Management	3	9	17	32	2	0			
	Centre of Global professional and social development	1	1	3	7	2	0			
Program	Foundation In science	2	3	1	8	5	0	33.48	20	0.030
	Diploma	11	16	18	44	5	1			
	Degree	13	38	32	83	8	2			
	Masters	0	0	0	3	0	0			
Level of Study	Year 1	5	14	16	47	6	0	17.99	15	0.263
	Year 2	3	18	15	41	6	2			
	Year 3	11	20	13	37	5	1			
	Year 4	7	5	7	13	1	0			

Table 4 presents the prevalence of depressive symptoms in relation to the demographic characteristics of the respondents. The findings indicate that nursing students reported a higher prevalence of depressive symptoms, though this association with the field of study was not statistically significant ($p = 0.30$). Similarly, students enrolled in degree programs exhibited higher levels of depressive symptoms ($p = 0.30$). In terms of religious affiliation, the highest prevalence of depressive symptoms was observed among Muslim respondents ($p = 0.023$), possibly reflecting the demographic composition of the sample.

Table 5: Coping Styles

Coping Styles	Mean	Std. Deviation
Avoidant Coping	35.20	5.77
Emotion-Based Coping	30.54	3.75
Problem-Focused Coping	18.37	2.62

Table 5 presents the mean and standard deviation of the coping styles employed by the respondents. The data reveal that avoidant coping was the most commonly used strategy. Emotion-based coping was the second most prevalent coping style, with a mean score of 30.54 and a lower standard deviation of 3.75, suggesting more consistency in how respondents employed this strategy. Lastly, problem-focused coping was the least utilised, indicating respondents were less likely to use proactive problem-solving techniques than other coping mechanisms.

Table 6: Distribution of Coping Styles Based on 14 Subscales of Brief COPE

Coping Styles	Coping Subscales	Mean	Std. Deviation
Emotion-Focused	Positive reframing	6.38	1.12
Problem-Focused	Active coping	6.25	1.11
Avoidant	Self-distraction	6.19	1.23
Emotional-Focused	Venting	6.17	1.35
Emotion-Focused	Acceptance	6.15	1.13
Problem-Focused	Planning	6.15	1.20
Emotion-Focused	Religion	6.11	1.24
Problem-Focused	Use of Information support	5.96	1.43
Emotion-Focused	Self-blame	5.96	1.42
Emotion-Focused	Emotional support	5.95	1.38
Emotion-Focused	Humour	5.93	1.48
Avoidant	Denial	5.76	1.61
Avoidant	Behaviour disengagement	5.63	1.60
Avoidant	Substance abuse	5.47	1.87

Table 6 presents the mean and standard deviation for various coping subscales, categorised under emotion-focused, problem-focused, and avoidant coping strategies. The highest-scoring subscale was positive reframing, an emotion-focused strategy, indicating that respondents commonly used this approach to cope with stress. This was closely followed by active coping and self-distraction, which represent problem-focused and avoidant coping styles.

Emotion-focused strategies such as venting, acceptance and religion also had relatively high mean scores, suggesting they were frequently employed. In terms of avoidant coping, denial, behavioural disengagement, and substance abuse had lower mean scores, indicating they were used less frequently compared to emotion-focused and problem-focused strategies. The findings suggest that respondents leaned more towards positive reframing and active coping but employed avoidant coping mechanisms like self-distraction. Problem-solving strategies like planning and the use of informational support were moderately used.

Table 7: Adaptive and Maladaptive Coping Styles

Variables	Mean	Std. Deviation
Adaptive coping	61.05	6.851
Maladaptive	23.08	4.445

Table 7 data present respondents' mean and standard deviation for adaptive and maladaptive coping strategies. The mean score for adaptive coping is high, indicating that respondents tended to use adaptive coping strategies frequently, and there was moderate variability in how consistently these strategies were employed. The mean score for maladaptive coping is considerably lower, suggesting that the respondents used maladaptive coping strategies less frequently, with relatively less variability in their use. These findings suggest that the respondents were more inclined to use adaptive coping mechanisms while using maladaptive strategies was less common. The higher variability in adaptive coping scores indicates some respondents used these strategies more than others.

DISCUSSION

Demographic Information

The study analysed demographic factors, including gender, race, age, educational level, program, household income, and place of residence. Most participants were younger, aligning with the typical university age range. Females dominated the sample, reflecting the caregiving nature of healthcare fields like nursing, which are traditionally female dominated. In terms of ethnicity, Malays comprised the majority, followed by Chinese and Indians, mirroring Malaysia's multicultural demographics. The School of Nursing had the highest representation, as it is one of the university's earliest and most prominent programs. Most respondents were degree students, reflecting the institution's primary offerings. A significant portion of participants hailed from urban areas, and most reported that their parents were still together.

Depressive Symptoms Prevalence

Depression is one of the most common mental health issues among college students, and its prevalence is increasing steadily. Depression is more prevalent among college students compared to the general population. Undergraduate health sciences students are particularly susceptible to internal stress, which can lead to the subtle development and gradual worsening of depressive symptoms. This study revealed that a significant proportion of respondents experienced varying levels of depressive symptoms. Depression is a leading cause of disability worldwide, with many common mental disorders (CMDs) manifesting before individuals reach their mid-twenties. Among young adults, particularly those aged 18 to 29, anxiety and mood disorders are widespread. Many experience their first depressive episode in their late teens or early twenties, a crucial period for personal development, social relationships, and educational progress.

Research shows a significant rise in studies on university students' mental health over the last decade. Globally, a substantial percentage of students report depressive symptoms (Khan *et al.*, 2021), with rates notably higher than in the general population. Depression affects nearly one-third of students, with moderate to severe cases even more prevalent in some studies (Ahmed *et al.*, 2020; Wong *et al.*, 2023). Estimates vary widely, but depression remains a significant challenge for this demographic (Campbell *et al.*, 2022; Uglesić *et al.*, 2014). Nursing students face heightened stressors during their academic journey, making them more susceptible to depressive symptoms compared to peers in other medical fields (Nway *et al.*, 2023). A study on Chinese college students found academic stress significantly impacts depression, both directly and via poor sleep quality, with social support mitigating these effects. Enhancing emotion regulation, sleep quality, and social support could help prevent depression can severely impact a student's quality of life, interfering with their physical functioning, social relationships, and academic success. It can diminish students' motivation and ability to learn, leading to poor academic performance and, in some cases, dropout. Depression is also a major risk factor for suicide attempts among college students (Mofatteh, 2021). Therefore, it is crucial to examine the factors that make college students more vulnerable to depression (Deng *et al.*, 2022).

Depression often begins during childhood, affecting daily functioning and frequently recurring

throughout life. It is well-established that depression negatively affects academic performance and psychological well-being in young adults, with anxiety and depression contributing to diminished academic outcomes. Numerous studies have highlighted that university students tend to have worse mental health compared to their peers in the general population (Ahmed *et al.*, 2020; Awoke *et al.*, 2021).

Adolescence is a period of heightened vulnerability to poor mental health, including depression. Factors such as sleep deprivation during this stage of life increase the risk of developing depression. University students face numerous pressures as they transition into adulthood, including academic responsibilities, financial stress, interpersonal challenges, and the need to make critical life decisions. Although there may be additional factors contributing to the high prevalence of depressive symptoms, exploring them is beyond the scope of this study.

One of the most widely recognised facts about depression is that girls are generally more likely than boys to experience depressive symptoms beginning in adolescence (Uglesić *et al.*, 2014). However, this study revealed that male students exhibited a higher percentage of depressive symptoms compared to their female counterparts. This discrepancy may be attributed to the unequal gender distribution within the sample, which could have introduced bias and led to a type 1 error. The study also found that a large portion of students exhibited mild depressive symptoms, while only a small group reported normal mental health. A related study from India found a significant portion of individuals experiencing depression, with many reporting moderates to severe symptoms. The higher rate of depressive symptoms in this study may also be linked to the small sample size, the use of non-probability convenience sampling, and the data collection method, which involved a survey. Response bias may have played a role, as students experiencing depressive symptoms might have been more inclined to engage with and respond to the survey questionnaire.

Coping Mechanisms Used by The Students

The study categorised students' coping strategies into three main types. Most students primarily used avoidant coping, followed by emotion-focused and problem-focused coping. Prolonged reliance on avoidant coping can lead to a diminished quality of life due to the continuous stress it may cause (Stearé *et al.*, 2023). Emotion-focused coping, which involves strategies to manage the emotional impact of stress, was the second most commonly used approach among students (Schoenmakers, van Tilburg & Fokkema, 2015). In contrast, problem-focused coping, aimed at addressing the root causes of stress to improve the situation, was less frequently employed. This approach, which includes strategies like thorough exam preparation, is considered highly effective (Stearé *et al.*, 2023).

The study also examined coping strategies using a scale that assesses various subscales. Positive reframing, a form of emotion-focused coping, was students most frequently employed strategy. Active coping, a problem-focused approach, was the second most common strategy. Among avoidant coping methods, self-distraction was the most prevalent. Conversely, substance abuse was the least common strategy, with behavioural disengagement and denial also being relatively rare. This finding aligns with national research indicating low substance abuse rates among young people (Wong *et al.*, 2023). The results suggest that students use various coping mechanisms to manage university life, as supported by a similar study (Deng *et al.*, 2022).

However, the study has limitations. The findings may not be generalisable to other settings as they were conducted within a single institution. Additionally, the small sample size could impact the results. Future research should consider multicentre studies to explore the causes of depressive symptoms among college students and the factors contributing to them.

Limitation

The study used convenience sampling, which may not provide a representative sample of all university students, particularly those in different academic programs. This limitation can affect the generalisability of the findings. The cross-sectional design provides only a snapshot of the prevalence of depressive symptoms and coping strategies among students. Additionally, the use of self-reported data might have led to over- or under-reporting of symptoms and coping strategies. Since the study was conducted at a single private healthcare university, the results may not be applicable to other academic settings, especially public universities or non-healthcare fields, where stressors and mental health profiles may differ.

CONCLUSION

The study revealed a high prevalence of depressive symptoms among university students, but most employed adaptive coping mechanisms such as active coping, self-distraction, and positive reframing. Substance abuse was the least used coping strategy, a positive finding. Despite these trends, students with depression require more support to improve mental well-being. To promote mental well-being and prevent crises, universities should offer accessible mental health resources, including online counselling, webinars, and early detection programs. Future studies should explore factors contributing to depressive symptoms and investigate how academic pressure and support systems affect students' mental health. Examining specific academic stressors could guide reforms in teaching, workload, and support services. Additionally, evaluating the effectiveness of app-based interventions or online counselling in reducing depressive symptoms and fostering adaptive coping strategies is recommended.

Conflict of interest

There is no conflict of interest to report in this study.

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