

ORIGINAL ARTICLE

Depression, Anxiety, Coping Skills and Quality of Life Among Pre-University Students in Kuantan Pahang

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ABSTRACT

Introduction: In recent years, the increasing prevalence of mental disorders, such as depression and anxiety, among pre-university students has raised significant concern. This study investigates the association between depression, anxiety, coping skills, and quality of life within this population. **Methods:** A quantitative cross-sectional survey was conducted at a pre-university college in Kuantan, Pahang. Participants were selected based on the inclusion and exclusion criteria. The questionnaire consisted of Depression Anxiety and Stress Scale (DASS-21) questionnaires, coping skills and quality of life questionnaires, and were distributed to all faculties by the Students Representative Council through an online platform. Data were analysed using descriptive studies, Mann-Whitney test, and Pearson Correlation Coefficient. **Results:** A total of 309 participants responded to the online survey. The study found that prevalence of depression and anxiety were 63.8% and 77.3% respectively. The mean (SD) of the total score for coping skills was 41.90 (SD±9.21) with a minimum score of 15 and a maximum score of 65 while the mean (SD) for quality of life was 76.90 (SD±17.62) with a minimum score of 35 and a maximum score of 115. Total coping skills scores have significant correlations with quality of life ($p < 0.001$). Depression and anxiety showed significant association with quality of life with a p-value of 0.001 and p-value of 0.001 respectively. **Conclusion:** Preventive measures and intervention programs for pre-university students should be planned immediately towards reducing the prevalence of mental disorders.

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mental disorders, leading to severe suicidal thoughts in 3 million people (1,2). The vulnerability of adolescents to mental disorder is attributed to physical, social, and emotional changes they experience as well as exposure to abuse, violence, poverty, and poor social support (3). The most common types of mental disorders experienced by adolescents are depression, and anxiety (3). Depression is a persistent feeling of sadness, loss of pleasure or interest, feelings of low self-worth or guilt,

INTRODUCTION

It is estimated that 1 in 7 of adolescents suffer from

sleep disturbance, poor concentration, low energy, and suicidal thought (1). Persistent, intense, and excessive feelings of fear or worry can lead to anxiety disorders.

Studies have shown that the prevalence of anxiety among university students ranges from 48.1% to 88.4% (4-7). Similarly, pre-university students also vulnerable to depression and anxiety due to the transition from high school to the university life, separation from the family and other academic challenges. Pre-university students can be defined differently across various countries. In Peru, they considered pre-university as students engaged in higher education aged 14 to 16 years, while in Bangladesh, pre-university students are those taking the undergraduate admission test at Jahangirnagar University, with a mean age of 19.7 years (8-9). In Malaysia, pre-university students refer to those aged 18 to 19 years who continue their studies at the foundation level in universities (10).

To adapt with their new academic challenges, coping skills play an important role in the students' quality of life. Poor coping skills have been negatively associated with mental disorders that can impact their quality of life (11, 12). Furthermore, students with symptoms of depression and anxiety have been found to have a poor mental and physical health related Quality of Life (13-14).

While several studies have examined depression, anxiety, and coping skills among university students, there has been a notable oversight of the unique needs and challenges faced by pre-university students. Additionally, scant attention has been given to exploring the relationship between coping skills and quality of life in the context of depression and anxiety among this demographic. As a result, there exists a significant knowledge gap regarding the prevalence, impact, and efficacy of coping strategies in enhancing the quality of life among pre-university students. Thus, this study aims to address this gap by investigating the prevalence of depression and anxiety and evaluating the correlation between coping skills and quality of life among pre-university students.

METHODS

Study Design

A cross-sectional study was conducted among pre-university students in Kuantan, Pahang. This type of study design was used to analyse data from a population at a specific point in time. The participants were selected through a non-probability convenient sampling method based on inclusion (students who registered as a pre-university student - regardless their nationality and stay in campus) and exclusion (students on study leave) criteria. The calculation of population was calculated by using OpenEpi Sample Size Calculator version 3. The margin error of 5%, confidence interval of 95%, response rate

was set at 63% and estimated total population is 4000. The recommended sample size for this study was 323 participants. With 10% dropout considered for non-respondents, the sample size was 355.

Measurements

Symptoms of depression and anxiety were measured using the Depression Anxiety Stress Scale (DASS-21), comprising 21 items, and designed with a rating scale from 0 to 3. Those scored ≥ 10 in depression ≥ 8 for anxiety will be categorised as having the symptoms. Coping strategy was assessed using the Coping Skills Questionnaire adopted from a previous study (15), consisting of 13 questions to evaluate cognitive, emotional, and behavioral methods of dealing with mental health problems. The sum or mean of all the items can represent the final score, with higher scores indicating greater levels of coping skills. Quality of life was evaluated using the Quality of Life Questionnaire, adapted from a previous study (15). The questionnaire comprises three major domains: physical, spiritual, and subjective well-being, with 5 items for physical well-being, 5 items for spiritual well-being, and 13 items for subjective well-being.

Variables

The independent variables for this study were the symptoms of depression, anxiety, and coping skills of students, while the dependent variable was the quality of life (QoL) among pre-university students.

Ethical Considerations

Ethical approval was obtained from the Kulliyah of Nursing Post Graduate Research Committee (KNPGRC) and the IIUM Research Ethical Committee (IREC). The DASS-21 questionnaire is freely available for research use in the public domain, while permission to use the Coping Skills Questionnaire and Quality of Life Questionnaire was obtained from the respective researchers. Before participants entered the study, they were provided with a clear explanation of the study's purpose in the information sheet along with the consent form. Informed consent was obtained from each participant. However, participants retained the right to withdraw at any time and for any reason, and their participation was entirely voluntary.

Participant recruitment and data collection

Upon ethical approval, the Students Representative Council of the pre-university college was contacted to brief them about the study. The council served as the study's gatekeeper, facilitating the researcher's connection with students from various Kulliyah (Faculties). A set of questionnaires was distributed to all faculties both in person and through an online platform. The questionnaire was set up in a Google Form, which included the information sheet and consent form explaining the purpose of the study, procedures, confidentiality measures, right to withdraw, and contact

information of the researcher. Participants who met the inclusion criteria signed the consent form and completed the questionnaire via self-administration on Google Forms. The researcher reviewed the returned questionnaires to ensure all questions were answered. However, incomplete questionnaires were automatically excluded from data analysis. Data collection took place over three months, from March 2023 to May 2023.

Data Analysis

The data were analyzed using SPSS version 20. For categorical variables, descriptive statistics are presented as proportions. The Kolmogorov-Smirnov test was employed to assess the data distribution for numerical variables. Variables demonstrating a normal distribution are presented as mean with standard deviation (SD), while those not conforming to normal distribution are presented as median with interquartile range (IQR). The association between depression, anxiety, and quality of life was tested using the Mann-Whitney test, while the association between coping skills and quality of life was assessed using Pearson correlation coefficient. The statistical significance level was set at $p < 0.05$.

RESULTS

Out of 355 pre-university students approached, 309 responded (87.0% response rate) and answered the study questionnaires. Table I shows the prevalence of depression and anxiety among pre-university students, divided into two groups which were asymptomatic and symptomatic group. A total of 197 (63.8%) students were having symptoms of depression while 239 (77.3%) had anxiety symptoms.

Table II shows the level of coping skills and quality of life which were measured through the Coping Skills and Quality of Life Questionnaire. The result shows mean and standard deviation (SD) of the total score for coping skills and quality of life among pre-university students. The mean (SD) of the total score for coping skills was 41.90 (SD±9.21) with a minimum score of 15 and a maximum score of 65. Then, the mean (SD) for quality of life was 76.90 (SD±17.62) with a minimum score of 35 and a maximum score of 115. The higher scores, the higher level of coping skills and quality of life.

The association between coping skills and quality of life was analyzed by using Pearson Correlation Coefficient is shown in Table III (normality test for both variables was tested using Kolmogorov-Smirnov indicated that the data is normally distributed). This test is used to examine the strength between two numerical groups Based on the result, the $p < 0.05$ is statistically significant between coping skills and QoL with a fair correlation coefficient ($r=0.560$; $p=0.000$).

Table IV shows the association between depression, anxiety and quality of life using the Mann-Whitney test (normality test for both variables was tested using

Table I: Prevalence of depression and anxiety symptoms (n=309)

Characteristics*	Depression		Anxiety	
	n	%	n	%
Asymptomatic	112	36.2	70	22.7
Symptomatic	197	63.8	239	9.7

Table II: Coping skills and quality of life (n=309)

Charac- teristics	Coping Skills			Quality of Life		
	Mean (SD)	Minimum	Maximum	Mean (SD)	Minimum	Maximum
Total Score	41.90 (9.21)	15	65	76.90 (17.62)	35	115

Table III: Association between coping skills and quality of life among pre-university students (n = 309)

Characteristics*	Correlation with quality of life	
	r-value	p-value
Total Coping Skills	0.560	0.000*

*Pearson Correlation Coefficient, $p < 0.05$

Table IV: Association between Depression and Anxiety with Quality of Life (n = 309)

Characteristics*	Median (IQR)	Z-statistics	p-value*
Depression			
Asymptomatic	91 (21)	-8.793	0.000*
Symptomatic	68 (23)		
Anxiety			
Asymptomatic	86 (28)	-3.390	0.001*
Symptomatic	75 (28)		

*Mann-Whitney test, $p < 0.05$

Kolmogorov-Smirnov indicated that the data is not normally distributed). The p-value was for depression and QoL was 0.000 while anxiety and QoL ($p = 0.001$). Both results indicate that the Mann-Whitney test is statistically significant. Null hypothesis rejected. There was an association between depression, anxiety and quality of life among pre-university students.

DISCUSSION

Prevalence of Depression and Anxiety

This study was conducted to determine the prevalence of depression and anxiety among 309 pre-university students in Kuantan, Pahang. DASS-21 questionnaire was used to assess students' mental health. Among the 309 pre-university students, the prevalence of depression and anxiety in the study was 63.8% and 77.3% respectively. This prevalence was higher compared to a study using similar instruments among university students in Kuantan, Pahang which stated that the prevalence of depression and anxiety was 41% and 68.9% each (16). The prevalence was high due to students having faced challenges of transitioning from high school to the pre-university level. New students in the university commonly struggle with academic problems, time management issues, self-adjustment to a new university, academic culture and exam anxiety which are inevitable and become part of university students' life (17).

Moreover, our findings also showed that the prevalence of anxiety was higher than depression which was similar to a study conducted by Ramadianto et al. (5) in Indonesia with 22.2% for depression and 48.1% for anxiety (5). A study by Sundarasan et al. (18) that conducted in Malaysia found that students at the pre-university level were significantly associated with a higher level of anxiety (18). Financial limitations, remote online teaching and uncertainty about the future with regard to academics and career are the main stressors to a higher prevalence of anxiety.

Level of Coping Skills and Level of Quality of Life

Mean (SD) of total coping skills among 309 respondents was 41.90 (SD \pm 9.21) with a minimum score of 15 and a maximum score of 65. This result was in a high category which was almost similar to a previous study (19). The mean (SD) was 39.32 (SD \pm 7.02). This means that the respondents have the ability to manage the stressors as the mean result was fairly close to the maximum score. To conclude, those who was good in managing stress, have a high level of coping skills.

the total mean score of total quality of life which was 76.90 (SD \pm 17.62), where it should range between 35 and 115. Higher scores indicate higher levels of quality of life. Overall, pre-university students have a high quality of life. A study was conducted to evaluate the quality of life among university students from various courses (20). The result showed that the students exhibited a fair category of quality of life with a total mean score of QoL was 64.33 \pm 8.02, with a minimum score of 25 and a maximum score of 125. The corresponding to higher results in this current study might be influenced by self-motivated, good guidance and support from lecturers, the university's structural resources and being active in sports (20).

Relationship between Coping Skill and Quality of Life

Table III shows that coping skills have a positive and significant correlation with quality of life ($r=0.560$, $p<0.05$). This means that as the coping levels increase, the better the quality of life of students. Previous study found that the two concepts of coping skills and quality of life appear to be intertwined: positive and negative coping mechanisms (21). Positive coping mechanisms were linked to a higher quality of life, while negative coping mechanisms were linked to a lower quality of life.

Correspondingly, previous study found that that active coping skills (problem-solving, positive and negative emotional control, social support, cognitive restructuring) were positively associated with quality of life among adolescents with chronic kidney disease (22). Hence, it is important for adolescents to practice good coping skills when facing stressors during one year of study in order to have a high quality of life and well-being.

Relationship between Depression, Anxiety and Quality of Life

The final objective of this study was to examine the association between depression, anxiety with quality of life. Current findings found that depression and anxiety are statistically associated ($p<0.05$) with QoL of pre-university students. Consistent with this finding, the presence of depression and anxiety was found to be associated with impaired quality of life among UK college students (23). This is because depressed students experienced low mood or loss of interest, low self-worth, disturbed sleeping patterns and poor concentration while anxious students experienced restlessness, excessive fear and worry which can significantly impact their quality of life.

A study by Cam and Top (13) also showed that nursing students with depressive symptoms were found significantly has a poor quality of life than those without depressive symptoms. Their study mentioned that depressive symptoms of students with parental democratic type were significantly lower than those with non-democratic parental type. According to this, it is important to have a harmonious family environment such as a healthy relationship between parents and children and democratic parenting styles to nurture better personality traits, mental well-being and quality of life of adolescents.

CONCLUSION

This study was conducted among 309 pre-university students to study the prevalence of depression and anxiety, the level of coping skills and its association with quality of life. Findings of this study found that the prevalence of depression and anxiety was high among pre-university students. Despite the high prevalence, the students' overall health is not worrisome because they have a high level of coping skills and good quality of life based on the ratings. Designing some preventive strategies and interventions to promote psychological health for pre-university students is immediately needed. The universities organization can use the results of the study to formulate specific interventions such as conducting early screening and monitoring programs to identify high-risk students and provide appropriate treatment to them.

This research study has several potential limitations that warrant consideration. Firstly, cross-sectional study design used in this study restricts the evaluation of variables to a specific point in time, thus precluding the determination of causal relationships between mental disorders and quality of life. Additionally, the utilization of a convenience sampling method introduces inherent limitations, including the inability to generalize findings to the broader population and the risk of sampling bias. This study overlooks variations in depression and anxiety levels across different time periods, such as pre-

and post-examinations. Future research endeavours should account for contextual factors, such as academic demands and examination periods, which may influence levels of depression and anxiety.

Furthermore, participants were not screened for their existing mental illness. Individuals diagnosed with mental illness may have different coping mechanisms, treatment histories, or support systems that could influence the outcomes being studied. Future study should exclude individuals with diagnosed mental illness. This approach enables the study to concentrate specifically on the experiences and outcomes of individuals without pre-existing conditions.

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ETHICAL APPROVAL

This study was approved by IIUM Research Ethics Committee (IREC), IREC 2023-KON/NURF68.

CONFLICT OF INTEREST

The author declares that they have no conflict of interest.

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