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The QoL of College Students and Its Impact on Stress Level: A Cross-Sectional Study

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Abstract: The peak of vulnerability to behavioral and mental disorders occurs during college, making this a crucial time for development. College students have a worse quality of life (QoL) in terms of mental health compared to the general population. There is a need for information regarding QoL related to stress in students, as studies discussing QoL and stress in college students are still lacking. This study aims to analyze the relationship between QoL and stress levels in college students. A cross-sectional survey design was used in this study, involving 249 college students at higher education institutions in East Java, Indonesia. The data samples were collected based on demographic characteristics, using the QoL scale from WHOQOL-BREF and the Depression, Anxiety, and Stress Scale-21 to assess the correlation between QoL and stress levels among college students. The results showed that the stress levels of college students were classified as normal (54.6%), mild (17.3%), moderate (17.3%), severe (8.4%), and extremely severe (2.4%). A significant negative correlation was observed between all domains of QoL and stress: Physical (-0.630), Psychological (-0.658), Social Relationship (-0.564), and Environment (-0.584). These results indicate that as QoL increases, stress scores decrease. Attention should be paid to providing appropriate interventions related to college students' quality of life. Further research is needed to gather detailed information on existing QoL domains, particularly those focusing on students' needs, current information developments, and demographic characteristics.

Citation: R. N. Karimah, P. Destarianto, D. A. Perwiraningrum, E. T. Ardianto, "The QoL of College Students and Its Impact on Stress Level: A Cross-Sectional Study", *IJHIS*, vol. 2, no. 3, pp. 118–130, Dec. 2024.

Keywords: College Students; QoL; Quality of Life; Stress; Information.

Received: 31-10-2024

Accepted: 23-12-2024

Published: 26-12-2024



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1. Introduction

The college years are a crucial period for the development and peak vulnerability for behavior and mental disorders. Mental health problems are directly related to lower academic performance, which can result in school dropout in the short term and a loss of human resources for society in the long term[1]. Academic tasks are increasingly recognized as a major source of stress for many adolescents. Academic stress is significantly positively correlated with academic burnout and significantly negatively correlated with academic self-efficacy[2].

The pressure of academic tasks can harm health and quality of life. The burden of academic activities also affects academic stress[3]. These two things are classic college problems. College problems were all negatively related to life satisfaction, while self-efficacy was positively and strongly associated with life satisfaction[4]. Academic stress has become a rampant issue across countries, cultures, and ethnic groups. Academic stress continues to be a serious problem that affects college students' mental health and well-being[5], [6].

The rates of mental health problems in Indonesian students were high. Students in Indonesia were identified as having 25% clinically relevant depressive symptoms and 51% as having anxiety symptoms[7]. A greater concern was highlighted by a multinational

study, which reported that college students from Indonesia were the most likely to report suicidal ideation among 12 Muslim countries[8].

Quality of life (QoL) is defined as an individual's perception of their position in life in the context of the culture and value system where they are inserted, involving their goals, perspectives, standards, and concerns[9], [10], [11], [12], [13]. It was plausible to infer that many factors can impact QoL. Fatigue, sleep disturbances, and depression can worsen the quality of life[4], [11], [14]. Compared to the general population, college students have poorer QoL in terms of mental health. Research related to students' Quality of Life should be conducted based on specific regions that have similar characteristics[14]. There is a lack of research that discusses quality of life and stress in college students[6], [11], [14]. A narrative review by Li et al. suggests conducting a quality-of-life study on college students across various majors and disciplines[14]. This research aims to analyze the relationship between quality of life (QoL) and stress levels in college students in the East Java, Indonesia. This research took into account the diversity of the sample with similar cultures to minimize bias. The research population is all students at higher education institutions in East Java, Indonesia.

2. Materials and Methods

After obtaining permission from the Ethics Committee, this research was conducted among third-semester college students in all higher education institutions in the East Java region of Indonesia from July to August 2024. Researchers limited participants to third-semester students to reduce the potential for bias. Students in the first and second semesters tend to be unstable because they are still adapting to the new environment. Meanwhile, final-semester students are prone to stress related to final assignments and the approaching deadlines for completing their studies. Universal sampling was conducted. The research objectives were explained, and a questionnaire was designed that included items from the WHOQOL-BREF quality of life measurement and the Depression, Anxiety, and Stress Scale-21 (DASS-21) for measuring stress. This questionnaire was distributed to all college students through Google Forms. Responses were collected from students who met the criteria and agreed to participate. Those who did not provide consent were excluded from the sample, as were those who submitted incomplete forms.

WHOQOL-BREF is a 26-item survey concerning experiences in the past 2 weeks. It evaluates QOL in four domains: Physical health, psychological health, social relationships, and environment. Perceptions are assessed using a Likert scale ranging from 1 (very poor) to 5 (very good). This survey has been used in diverse populations, showing good reliability with Cronbach's α of 0.68–0.82. Final scores can be transformed into 0–100, measured in a positive direction, where higher scores indicate better QoL. To measure the stress, participants were given the 21-item version of the DASS questionnaire.

SPSS-20 software was used for quantitative analysis data. QOL and stress questionnaire scores are based on minimum and maximum values, as well as the mean (Standard Deviation). The association between QOL and stress was analyzed using the Pearson Correlation test for bivariate analysis and Spearman's Rho for abnormally distributed variables.

3. Results and Discussion

The participants included in the sample (n=249) were primarily female (79.11%) and male (20.48%). One participant did not choose the option related to gender status. Participants attended various universities in East Java, Indonesia, representing 15 different higher education institutions, both state and private. The age criteria selected were students in their third semester, aged 19 to 20 years. The mean values of the study parameters for the samples are presented in Table 1.

Table 1. Mean values of study parametes

Domain	Mean ± SD	Min - Max
Physical	68.30 ± 14.20	31 - 100
Psychological	66.61 ± 17.31	25 - 100
Social Relationships	60.35 ± 21.42	6 - 100
Environment	65.67 ± 15.13	25 - 100
Overall	65.23 ± 13.36	36 - 97
Stress	7.28 ± 4.27	0 - 21

Based on the results above, the highest average QoL score in the physical domain was 68.30 (very good), with a minimum score of 31 (moderate) and a maximum of 100 (very good). The overall average QoL score was 65.23 (good), with a minimum score of 36 (moderate) and a maximum of 97 (very good). The average Stress score was 7.28 (normal to mild), with a minimum score of 0 (normal) and a maximum score of 21 (extremely severe).

Table 2. Normality test result

Variable	P-value	Distribution
Physical	0.062	Normal
Psychological	0.055	Normal
Social Relationships	0.002	Abnormal
Environment	0.056	Normal
Overall	0.678	Normal
Stress	0.144	Normal

The normality test result using the Kolmogorov-Smirnov test showed that almost all observed variables were normally distributed with a sig value greater than $\alpha = 0.05$ ($p > 0.05$). Except for the Social Relations variable, the data were abnormally distributed with a sig value of 0.002 ($p < 0.05$).

Table 3. Result of the correlation analysis between QoL performance and stress level

Variable	Correlation coefficient (r)	P-value	Correlation test
Physical performance and Stress status	- 0.630	0.000	Pearson Correlation
Psychological performance and Stress status	- 0.658	0.000	Pearson Correlation
Social Relationships performance and Stress status	- 0.564	0.000	Spearman's Rho
Environment performance and Stress status	- 0.584	0.000	Pearson Correlation
Overall and Stress status	- 0.748	0.000	Pearson Correlation

A negative correlation was observed between all of QoL performance and stress status (Figure 3): physical performance and stress status ($r = -0.630$, $p < 0.01$), psychological performance and stress status ($r = -0.658$, $p < 0.01$), social relationships performance and stress status ($r = -0.564$, $p < 0.01$), environment performance and stress status ($r = -0.584$, $p < 0.01$), overall and stress status ($r = -0.748$, $p < 0.01$). These findings indicate that college students' QoL performance significantly impacts their mental health (stress status).

Considering these results, it is recommended that additional support programs be developed for college students' quality of life during their studies, as this impacts their mental health. These data underscore the importance of paying attention to students' mental well-being in the context of their academic pursuits. High levels of stress can interfere with concentration and learning absorption. Students may have difficulty focusing on academic tasks, leading to temporary learning efficiency challenges. In Indonesia, most students experience stress due to the burden of studying, but other common sources of stress include social relationships, limited financial support, and living conditions[15].

College student life is an important transformation stage with many potential factors that can negatively impact the QoL and the adoption of unhealthy behaviors. College students are transitioning from adolescence to young adulthood and faced with various challenges, including academic burdens, economic pressures, hopes for a better future, social identity, independent life away from parents, and uncertainty of life after graduation. The burdens during college affect the QoL of students, which can lead to a negative impact on mental health[16]. QoL has been increasingly linked to health, and WHO defines the latter as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" [14]. Research conducted by Sinaga et al. in 2023 after the COVID-19 pandemic stated that the quality of life of most Indonesian students was below average or at the "moderate" level[13]. However, the results of this study were different, with the average QoL score of students at the "good" level and an average stress score of 7.28 (normal to mild), showing better results. The success of stress management strategies has been proven to positively develop mental health and good adaptation in Indonesian students during and after the pandemic, accompanied by support from the education system in higher education[17].

These results are also in line with the study by Parsaei et al.2020, who identified the negative relationship between QoL and stress in large industrial employees. Quality of life is an individual, multidimensional, and latent concept that involves objective and subjective factors reflecting person's physical, mental, and social health. Quality of life affects the quality of work life and work characteristics, such as productivity[18]. Previous research related to the QoL of students stated that mental health education, psychological counseling, and social support should be emphasized in colleges to provide the timely and effective support for students. For instance, sports and physical activities should be encouraged to help students develop a healthy body, supportive policies for students from low-income families may be implemented to reduce their financial burden and stress, and health education on the harm of internet abuse and inadequate sleep to help them develop good living habits[10], [14]. In the promotive and preventive efforts to maintain mental and behavioral health, college students need to obtain information on the importance of improving their QoL to prevent stress[11], [18], [19]. Information can be in the form of education regarding tips and solutions to QoL-related problems. Conveying information can be done by utilizing advances in information technology that are closely related to the lives of students today. It is important to develop information technology skills by increasing students' perceptions of its impact on their professional future and QoL[12]. The wise use of information technology in improving social relationships or maintaining QoL needs to be considered for future development.

This study result can be used to conduct further research on QoL in college students. The limitations of this study include the inadequate sample size which was not sufficient

to provide detailed insights into the QoL domains relevant to college students' needs, current technological information developments, and demographic characteristics in one research area. In addition, the cross-sectional study design precludes causal conclusions.

4. Conclusions

This study concluded that quality of life has a negative relationship with stress in college students. Attention should be paid to providing appropriate interventions related to college students' quality of life. It is important to educate on improving QoL as a promotive and preventive effort to mitigate stress. This can be done by utilizing advances in information technology that are very closely related to students' lives today. Further research is needed regarding detailed information on existing QoL domains, especially those focusing on students' needs, current information technological developments, and demographic characteristics.

5. Patents

This work was supported by the funding from Pusat Penelitian dan Pengabdian Kepada Masyarakat, Politeknik Negeri Jember.

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