

Influence of Demographic Factors on Mental Health among College Students

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ABSTRACT

Background: Demographic factors often influence the rise in mental health issues among college students globally. Understanding these factors is essential for designing early, targeted interventions and strengthening mental health services in academic settings. **Objectives:** This study aimed to examine the influence of age, gender, faculty, family income, physical health problem, and psychological trauma on the mental health of college students. **Methods:** A cross-sectional design was used with a total of 557 Indonesian university students as participants. Data were collected using a questionnaire and the Self-Reporting Questionnaire (SRQ-20). Data were analyzed using Spearman's Rho, Mann-Whitney, and Kruskal-Wallis tests followed by multivariable logistic regression analysis. **Results:** Statistical analyses revealed significant associations between mental health status and variables including age, gender, family income, physical health problems, and psychological trauma ($p < 0.05$), while the faculty variable showed no significant correlation. Psychological trauma emerged as the strongest independent predictor, with students who had experienced psychological trauma being more than nine times more likely to experience mental health problems. **Conclusion:** Trauma-informed and demographically sensitive mental health support is crucial, especially for students who are identified as vulnerable. These insights may inform mental health nursing assessments and targeted interventions in academic settings.

Keywords: College Students; Demographic Factors; Mental Health

INTRODUCTION

Mental health among college students has emerged as a substantial public health concern globally (Hang *et al.*, 2025; Rubio *et al.*, 2025). The transition to higher education often coincides with increased academic pressures, social challenges, and newfound independence (Simões *et al.*, 2025; Segú Odriozola, 2025), all of which can contribute to heightened vulnerability to mental health issues such as anxiety, depression, and stress-related disorders (American College Health Association [ACHA], 2024).

Approximately 35% of first-year college students screened positive for at least one lifetime mental disorder and 31% for a 12-month disorder (Auerbach *et al.*, 2018). Depression and anxiety are especially common among college students, with combined rates of 33.6% for depression and 39.0% for anxiety (Li *et al.*, 2022). College students in Indonesia experience substantial levels of mental health challenges. Studies indicate that the prevalence of depression ranges from 22.2% to 35.2%, anxiety from 48.1% to 50.2%, and stress from 38.9% to 40.3%. Among adolescents, the prevalence of psychological distress is 7.3%, with higher rates among females (Ismail & Jamil, 2023; Ramadianto *et al.*, 2022).

Mental disorders have a profound impact on students' roles in various domains, including home management, academic performance, and social interactions. For instance, 42.9% of students with at least one mental disorder reported severe role impairment (Alonso *et al.*, 2018). Persistent stress and anxiety can lead to demotivation, cognitive impairment, and reduced academic performance (Stirparo *et al.*, 2024). Exposure to violence is strongly associated with anxiety, depression, and suicidal ideation (Assari & Lankarani, 2018). Self-judgment is also causally linked to depression, particularly among female students (Ozmat *et al.*, 2024). Positive coping strategies and psychological capital can mitigate the adverse effects of stress and anxiety (Deng & Wang, 2024). Students who have

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experienced interpersonal violence report significant negative impacts on mental health and academic performance (Arttime *et al.*, 2019). Academic satisfaction and social support are significant correlates of psychological well-being (Deng & Wang, 2024). Furthermore, institutional characteristics such as school size, location, and religious affiliation also influence mental health outcomes (Nogueira & Sequeira, 2024).

Within the psychiatric-mental health nursing framework, understanding the multiple determinants of student learning difficulties is crucial for designing proactive interventions across campus (Russell *et al.*, 2025). Mental health nursing in academic settings has expanded beyond crisis intervention to encompass holistic screening, early identification of vulnerable groups, and the implementation of supportive environments that foster psychological resilience (Lu *et al.*, 2026). However, conventional nursing assessments in university clinics often only look at psychiatric symptoms in isolation, often ignoring how specific sociodemographic backgrounds and prior adverse life events—such as physical illness and psychological trauma—interact to exacerbate mental health vulnerabilities (Aquino-malabanan, 2026; Cerati, 2026). Integrating these demographic and clinical indicators into a cohesive screening protocol enables psychiatric nurses to provide demographically sensitive and tailored preventive care to high-risk student subpopulations (Campbell *et al.*, 2022).

Despite the growing body of research on mental health among college students, there is a lack of studies in Indonesia that comprehensively examine the influence of multiple demographic factors—including age, gender, faculty, family income, physical health problems, and psychological trauma—on students' mental health. Existing studies often focus on a single factor or limited populations, leaving a gap in understanding which demographic groups are most vulnerable and how these factors interact to affect mental health outcomes.

This study aims to analyze the influence of demographic factors such as age, gender, faculty, family income, physical health problems, and psychological trauma on mental health among college students. Additionally, it seeks to identify specific demographic groups that are at higher risk for mental health problems.

METHODOLOGY

Design

Conducted at one private institution in Indonesia, this study featured a cross-sectional correlational design. A cross-sectional approach allows researchers to collect and examine data at a single point, making it suitable for identifying the prevalence of mental health conditions and exploring the relationships between demographic factors and mental health outcomes among students (Wang & Cheng, 2020). The selection of this specific institution was based on its diverse student body, which represents various academic disciplines—specifically health sciences and science & technology—and diverse socioeconomic backgrounds, providing a relevant microcosm for examining the complicated relationship between demographic factors in an Indonesian academic context.

Participants were chosen by means of purposive sampling. College students who were ready to participate formed the selection criteria. Respondents totaling 557 were invited to take part, and all of them sent back surveys. Participants were informed of the goals, methods, possible risks and benefits, confidentiality protection, and opportunity to withdraw throughout the study. Participants were promised anonymity and confidentiality. All participants also gave written permission to take part.

Data Collection

Using the Demographic and Self-Reporting Questionnaire 20 (SRQ-20), data were gathered from October to December 2023. Should a questionnaire lack items, respondents were instructed to fill those things as practically as possible. The demographic factors gathered background information including age, gender, faculty, family income, physical health problems, and psychological trauma. Meanwhile, mental health was measured using the SRQ-20. The SRQ-20, previously translated and validated for use in Indonesia, is a reliable WHO-developed self-report screening tool. It has been extensively applied in national surveys such as Indonesia's Basic Health Research, demonstrating its strong validity and suitability for assessing mental health status in the Indonesian population. This questionnaire consists of 20 dichotomous items with total scores ranging from 0–20. A cut-off score of ≥ 5 was used to indicate probable mental health problems (Sari & Susmiatin, 2023).

Data Analysis

Using frequency, percentage, and means $\pm$ standard deviations, demographic factors and mental health among

respondents were examined and characterized. Mental health was correlated with demographic factors using the Spearman's Rho, Mann-Whitney, and Kruskal-Wallis statistical tests. Subsequently, multivariable logistic regression analysis was performed to identify independent predictors of mental health.

Ethical Consideration

The research obtained ethical approval from the Research Ethics Committee at ITS PKU Muhammadiyah Surakarta in Surakarta, Indonesia with ethical approval number 285/LPPM/ITS.PKU/VI/2023 on 9th June 2023.

RESULTS

There were 557 respondents in the final sample, with ages ranging from 17 to 28 years ($M = 19.71$, $SD = 6.51$). This study showed that students' age significantly correlated with mental health among college students ($rs = 0.114$, $p = 0.007$). Table 1 presents the characteristics of the participants.

As shown in Table 1, the study population was predominantly female (68.20%) and concentrated in the Faculty of Health Sciences (83.50%). In terms of socioeconomic background, more than half of the students (55.30%) reported a family income equivalent to the regional minimum wage. Regarding clinical and personal history, the majority of the samples reported having no current physical health problems (72.70%) and had never been exposed to a traumatic event in their lives (81.00%).

Table 1: Characteristics of College Students (n = 557)

Characteristics	Frequency (n)	Percentage (%)
Age (years)	Min - Max	17 - 28
Gender		
Male	177	31.80
Female	380	68.20
Faculty		
Health Sciences	465	83.50
Science and Technology	92	16.50
Family Income		
< Regional minimum wage	127	22.80
= Regional minimum wage	308	55.30
> Regional minimum wage	122	21.90
Physical Health Problems		
Yes	152	27.30
No	405	72.70
Psychological Trauma		
Yes	106	19.00
No	451	81.00

Bivariate statistical analyses were conducted to examine the relationship between several factors and mental health among college students. The results are presented in Table 2. The results of the study revealed several significant factors associated with mental health among college students (Table 2). Gender was significantly associated with mental health scores ($p < 0.001$), with female participants ($M = 7.37$, $SD = 5.34$) reporting higher levels of mental health problems compared to males ($M = 4.65$, $SD = 4.88$). However, no significant difference was found between faculties ($p = 0.577$), suggesting that mental health scores did not differ significantly between students from the Faculty of Health Sciences and those from the Faculty of Science and Technology.

Family income showed a statistically significant relationship with mental health ($p = 0.003$). Students from families earning below the regional minimum wage had the highest average mental health problem scores ($M = 7.91$, $SD = 5.81$), while those earning above the minimum wage reported the lowest ($M = 5.75$, $SD = 5.54$). This indicates that lower socioeconomic status may be associated with poorer mental health.

In addition, physical health problems were significantly related to mental health outcomes ($p < 0.001$). Participants with physical health issues reported higher mental health problem scores ($M = 9.35$, $SD = 5.77$) compared to those without such issues ($M = 5.44$, $SD = 4.77$). Likewise, psychological trauma had a strong and significant association with mental health ($p < 0.001$). Students with a history of psychological trauma scored

considerably higher ($M = 11.19$, $SD = 4.93$) than those without trauma ($M = 5.41$, $SD = 4.83$), highlighting the strong association between traumatic experiences and students' mental well-being.

Table 2: Factors Associated with Mental Health among College Students ($n = 557$)

Factors	Mental Health Score (Mean $\pm$ SD)	Test Statistic	<i>p</i> value
Age	19.71 $\pm$ 1.45	0.114	0.007 ^a
Gender	—		
Male	4.65 $\pm$ 4.88	-6.003	< 0.001 ^b
Female	7.37 $\pm$ 5.34		
Faculty			
Health Sciences	6.55 $\pm$ 5.33	-0.558	0.577 ^b
Science and Technology	6.27 $\pm$ 5.47		
Family Income			
< Regional minimum wage	7.91 $\pm$ 5.81	11.328	0.003 ^c
= Regional minimum wage	6.23 $\pm$ 4.97		
> Regional minimum wage	5.75 $\pm$ 5.54		
Physical Health Problems			
Yes	9.35 $\pm$ 5.77	-7.243	< 0.001 ^b
No	5.44 $\pm$ 4.77		
Psychological Trauma			
Yes	11.19 $\pm$ 4.93	-9.587	< 0.001 ^b
No	5.41 $\pm$ 4.83		

Note: $p < 0.05$ was considered statistically significant. Significant associations were found for age, gender, family income, physical health problems, and psychological trauma, while the faculty showed no statistically significant association with the mental health score. a: Spearman's Rho; b: Mann–Whitney test; c: Kruskal–Wallis test.

A multivariable logistic regression analysis was conducted to identify independent predictors of mental health among college students. The overall model was statistically significant ($\chi^2 = 140.651$, $df = 6$, $p < 0.001$), indicating that the predictors collectively contributed to the model. The model explained approximately 29.9% of the variance in mental health status (Nagelkerke $R^2 = 0.299$). Table 3 showed the results of multivariable logistic regression analysis.

Table 3: Multivariable Logistic Regression Analysis of Independent Predictors of Mental Health among College Students ($n = 557$)

Variable	AOR	95% CI	<i>P</i>
Age	1.201	1.052–1.371	0.007
Gender	3.636	2.311–5.721	<0.001
Faculty	1.268	0.730–2.203	0.400
Family Income	0.735	0.549–0.985	0.039
Physical Health Problems	2.542	1.574–4.106	<0.001
Psychological Trauma	9.287	4.301–20.052	<0.001

Note: Model $\chi^2 = 140.651$, $p < 0.001$; Nagelkerke $R^2 = 0.299$; Hosmer–Lemeshow $\chi^2 = 10.400$, $p = 0.238$; overall classification accuracy = 66.4%.

Psychological trauma emerged as the strongest predictor of mental health problems. Students who reported psychological trauma were approximately 9.3 times more likely to experience mental health problems than those without psychological trauma ($AOR = 9.287$, 95% CI : 4.301–20.052, $p < 0.001$). Female students were 3.6 times more likely to experience mental health problems than male students ($AOR = 3.636$, 95% CI : 2.311–5.721, $p < 0.001$). Students with physical health problems were 2.5 times more likely to experience mental health problems than those without physical health problems ($AOR = 2.542$, 95% CI : 1.574–4.106, $p < 0.001$). Increasing age was associated with a higher likelihood of mental health problems ($AOR = 1.201$, 95% CI : 1.052–1.371, $p = 0.007$). In contrast, higher family income was associated with lower odds of mental health problems, indicating a protective effect ($AOR = 0.735$, 95% CI : 0.549–0.985, $p = 0.039$).

Faculty affiliation was not significantly associated with mental health problems ($p = 0.400$).

DISCUSSION

This study demonstrates a correlation between age and mental health problems among college students aged 17-28 years. This finding is in line with previous studies. Several studies have shown that college students' mental health is influenced by age. The higher the age, the higher the mental pressure, but it can improve over time with age and supporting factors such as social rhythm and self-efficacy (Huang *et al.*, 2023; Nogueira & Sequeira, 2024). Studies show that older students (ages 21 to 24) are more likely to have mental health issues (Nogueira & Sequeira, 2024). Another study also highlighted that mental health issues are common among college students, showing that mental health issues are common across ages within the college population (Huang *et al.*, 2023). When analyzed through the lens of Stuart's psychiatric nursing framework, age serves as a fundamental biological predisposing factor. This intrinsic characteristic reflects the developmental maturity of a student's system, which significantly determines how academic stress and transitions are cognitively assessed and managed as they age (Stuart, 2013).

This study found a strong link between gender and mental health outcomes. Female students reported more mental health problems than male students. Consistent with prior research (Seehuus *et al.*, 2019; Litt *et al.*, 2024), gender differences in psychological well-being have often been linked to a combination of social, cultural, and structural factors. Although the underlying mechanisms were not examined in the present study, previous research has suggested that biological, psychological, and social factors may contribute to gender differences in mental health (Droogenbroeck *et al.*, 2018). Further research is needed to explore the specific factors underlying these differences among Indonesian college students.

It is important to note, however, that these contextual factors can vary considerably across different regions, communities, and institutional environments. The present study did not directly assess participants' cultural norms, experiences of discrimination, or exposure to gender-based violence. Therefore, despite the statistical significance of the observed gender differences in this sample, it is important to exercise caution when interpreting these findings. They should not be generalized to all Indonesian college students or other populations without additional empirical support. Future research would benefit from incorporating direct measures of cultural, social, and structural influences, as well as exploring the interaction between gender and other demographic or psychosocial variables, to more precisely elucidate the mechanisms underlying gender disparities in mental health. Within Stuart's paradigm of stress adaptation, gender serves as a critical psychological and sociological predisposing factor. This demographic variable establishes a student's baseline vulnerability, shaping how external sociocultural stressors are processed and manifested into specific psychiatric responses (Baños & Miragall, 2024).

Regarding other relationships, faculty did not have a direct impact on student mental health. Although faculty support is not directly related to student mental health, it has been shown to play a significant role in reducing levels of depression, anxiety, and stress. Students who feel supported, such as in nursing programs, tend to have better mental health outcomes. Additionally, faculty members play a strategic role in recognizing signs of mental illness and directing students to appropriate services. Given students' busy schedules, mental health services should be designed to be efficient, flexible, and accessible to fit into their routines and increase help-seeking behaviors (Wu *et al.*, 2024). Viewed through Stuart's stress-adaptation lens, although faculty affiliation may not act as a direct predisposing factor, the academic environment and its support networks serve as vital external coping resources. When faculty members actively foster a supportive culture, they enhance the social support dimension of students, thereby mitigating the impact of academic stressors and preventing maladaptive psychological outcomes (Stuart, 2013). This is consistent with current psychiatric nursing literature emphasizing that structured institutional and faculty-level environments are critical to fostering psychological resilience and strengthening students' defenses against mental distress (Shu & Lin, 2026).

In addition, the present study demonstrates that family income is significantly associated with students' mental health status. Several studies have shown that family income levels play an important role in the condition of individual mental health. Higher family income is generally linked to better mental health, while lower income is often linked to a higher risk of mental disorders and worse mental health (Cobo-Rendón *et al.*,

2020; Dong *et al.*, 2023). Financial stress is a major predictor of anxiety and depression. It can be postulated that for many students, financial hardship is not merely an economic issue but a constant cognitive load that diminishes their capacity to focus on academic success. Economic uncertainty, pressure to meet basic needs, and the burden of heavy debt or financial obligations can create long-term psychological distress (Assari & Lankarani, 2018; Othman *et al.*, 2019). In Stuart's stress-adaptation paradigm, socioeconomic background serves as a critical sociocultural predisposing factor. Financial pressures from low-income families consistently deplete students' coping resources, reducing their adaptive capacity and making them particularly vulnerable when academic stress arises.

Another issue related to student mental health is physical health. Physical health problems, such as chronic illness and injury, are often associated with increased psychological distress. Students with certain physical conditions tend to report higher levels of anxiety and stress than their healthy peers (Ayad *et al.*, 2024). Other issues, such as high body mass index and sleep problems, contribute to increased depression and anxiety (Liu *et al.*, 2023). A plausible explanation is that physical ailments may function as an additional stressor that reduces a student's resilience, creating a cycle where poor physical health exacerbates psychological vulnerability. Framed within Stuart's biopsychosocial assessment model, physical illness serves as a biological stressor. This somatic condition depletes physical energy reserves, directly impairing students' coping abilities and shifting their responses toward psychological distress.

This study also found a strong correlation between the emergence of mental health problems and the psychological trauma students experience. This finding is in line with previous studies showing that a history of exposure to violence in the form of psychological, physical, or sexual abuse is highly correlated with an increased risk of anxiety, depression, and even suicidal behavior among students (Assari & Lankarani, 2018). Students' mental health is also greatly affected by traumatic events like assault, robbery, serious illness, and emotional, physical, and sexual abuse. Students with a history of trauma commonly report poor psychological well-being and reduced academic performance. Latent profile analysis revealed groups of students with varying levels of trauma exposure and psychosocial factors, with the 'distressed' profile being at the highest risk for mental disorders. There is a strong indication that the substantial difference in scores between students with and without trauma, as shown in the data, suggests that trauma acts as a primary catalyst for more severe mental health disorders. Therefore, a trauma-informed approach is strongly recommended to support this vulnerable group (Allen *et al.*, 2025). Stuart's conceptual model posits that a history of psychological trauma acts as a profound psychological risk factor that permanently alters an individual's appraisal of stressors. This structural disruption often forces students' behavioral responses into maladaptive patterns, making past trauma a powerful catalyst for clinical mental health problems.

Limitations

Several limitations exist in this study that warrant consideration. First, the cross-sectional design precludes the establishment of causal relationships between the identified factors and mental health problems. Second, the study was conducted at a single private higher education institution in Indonesia, which may limit the generalizability of the findings to other student populations. Third, the sample was characterized by an uneven distribution of gender and faculty affiliation, with female students and students from health sciences being overrepresented. This imbalance may have influenced the observed associations and limited the representativeness of the findings. Fourth, data were collected using self-report questionnaires, which may be subject to recall and social desirability biases, particularly given the stigma associated with mental health issues. Finally, several potentially important factors, including social support, sleep quality, academic workload, and coping strategies, were not assessed and may have influenced students' mental health outcomes.

Future Scope

Future studies must adopt longitudinal and multi-institutional research designs to enhance the broader applicability of the findings and provide a deeper understanding of causal associations. From a practical perspective, the implementation of targeted, trauma-informed, and demographically tailored interventions is critical to promoting and sustaining the mental well-being of students.

CONCLUSION

This study found that age, gender, family income, physical health issues, and psychological trauma are significantly associated with college students' mental health. Female students, those from low-income families, and those with physical or traumatic experiences tend to be more vulnerable to mental health problems. In contrast, faculty affiliation showed no significant impact. Such results point toward the conclusion that psychological vulnerability within the academic environment is not a singular phenomenon but rather the result of a complicated relationship between economic burdens and the enduring impact of past trauma.

These findings have important implications for psychiatric nursing. Psychiatric nurses in primary care and community-based settings should expand screening frameworks beyond single-symptom metrics to address multidimensional predisposing factors and stressors among college students. Nursing interventions should be trauma-informed, demographically sensitive, and focused on strengthening students' basic coping resources. Continuing mental health education is crucial to raise awareness and reduce stigma, while structured collaboration between community nursing services and academic institutions is crucial to establish a supportive external environment and optimize student adaptation.

CRedit Authorship Contribution Statement

E.Y: Conceptualization, methodology, formal analysis, supervision, writing – Original draft, and writing – review and editing; N.I: Investigation, data collection, data curation, writing – original draft; Y.W: Methodology, data collection, validation, writing, reviewing, and editing; A.L.S: Investigation, resources, and writing—original draft; H.P: Validation, supervision, writing, review, and editing; D.H: Conceptualization, methodology, supervision, writing, reviewing, and editing. All authors have read and approved the final manuscript.

AI Assistance Declaration

The authors used AI solely to assist with English language editing, grammar correction, and improvement of manuscript readability and clarity. The authors meticulously reviewed, revised, and validated all AI-generated suggestions. The authors take full responsibility for the accuracy, integrity, and content of the manuscript. No AI tool was used for study design, data collection, data analysis, interpretation of results, or generation of research findings.

Conflict of Interest

The authors declare that they have no competing interests.

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