

Determinants of Suicide Ideation among University Students in Indonesia: A Cross-Sectional Study

Wahyu Rochdiat Murdhiono^{1*}, Siti Fadlilah^{1,2}, Nur Khasanah¹, Herliana Riska³, Hamzah Hamzah⁴, Putra Wanda⁴

¹Faculty of Nursing, Universitas Respati Yogyakarta, Daerah Istimewa Yogyakarta 55281, Indonesia

²College of Nursing, Taipei Medical University, Taipei 11031, Taiwan

³Vocational School, Sebelas Maret University, Central Java, 57128 Indonesia

⁴Faculty of Information Technology, Universitas Respati Yogyakarta, Daerah Istimewa Yogyakarta 55281, Indonesia

*Corresponding Author's Email: wahyurm@respati.ac.id

ABSTRACT

Background: Many risk factors have been proven to influence students' suicidal ideation, which can lead to suicide attempts during the COVID-19 pandemic. **Objectives:** This study aimed to find suicide ideation rates among students and the determinant factors that influence them. **Methods:** This study used a cross-sectional design with 236 respondents from 5 random private universities in July-August 2023. The Depression Anxiety Stress Scale 21, the Oslo Social Support Scale, the Rosenberg Self-Esteem Scale, and the Revised Suicide Ideation Scale were utilised in this study. Chi-square/Fisher's exact test and multiple logistic regression were used to identify factors associated with students' suicide ideation. **Results:** The high suicide ideation rate among students is 16.95%. Self-esteem and social support were also significantly related to suicide ideation, with $p=0.035$ and $p=0.003$, respectively. Stress, anxiety, and depression also showed a significant relationship with suicide ideation (all $p<0.001$). Further analysis showed that the factor predictors associated with suicide ideation were high anxiety (OR 15.960; 95% CI 7.201-35.374; $p<0.001$), high stress (OR 10.259; 95% CI 4.797-21.938; $p<0.001$), and depression (OR 18.455; 95% CI 8.220-41.430; $p<0.001$). **Conclusion:** The determining factors that influence suicide ideation are social support, anxiety, stress, and depression. Community mental health nurses should collaborate with academic institutions to create an early detection program for suicide ideation in students. The program would be observed by nurses, who would then provide the required nursing interventions to prevent suicide.

Keywords: Anxiety; Depression; Social Support; Stress; Suicide

INTRODUCTION

Suicide ranks fourth as a cause of death among young adults worldwide. Until now, there has been no official report on the national suicide rate in Indonesia, but the World Health Organisation estimates it is 2.6/100,000 (WHO, 2021). Suicide does not happen all at once. Rather, a person's suicidal thoughts initially surface. Suicide ideation refers to the notion of harming oneself, which might lead to death because of the conviction that one is unworthy and losing hope (Cha *et al.*, 2018). University students are among those vulnerable to suicidal ideation since they belong to the age range that constitutes society, which is 15 to 29 (Lovero *et al.*, 2023).

In a previous study in six countries in Southeast Asia, 11.7% of students reported having suicide ideation (Peltzer, Yi & Pengpid, 2017). Studies in Indonesia show higher figures, with 29.6% of students at an Indonesian university having moderate to high levels of suicide ideation (Putra, Nelwati & Fernandes, 2023).

Received: June 21, 2024 Received in revised form: February 28, 2025 Accepted: March 12, 2025

This condition stems from the high stress that students experience. Academic activities and non-academic stressors arising when students study can exacerbate stress (Alsulami *et al.*, 2018). Unmanaged stress at college can lead to more significant mental health issues, which can escalate suicide ideation, self-harming behaviour, and even suicide (Ribeiro *et al.*, 2018).

Some studies have examined factors that influence suicide ideation and suicide attempts in students; self-esteem, lack of social support, stress, anxiety, and depression are the most commonly found factors (Chen *et al.*, 2020; Owusu-Ansah *et al.*, 2020). Gender is another factor hypothesised to impact suicidal ideation since women have a greater rate of depression than males, and depression is one of the predictors of suicidal ideation (de Paula *et al.*, 2020). Studies in China add the major taken as one of the factors related to suicide attempts and suicide risk (Wu *et al.*, 2021). Previous studies analysed some of these factors and linked them to suicide ideation and suicide attempts. However, an overall analysis of these factors has not been carried out.

Additionally, previous studies were conducted before or during the COVID-19 pandemic. Meanwhile, in 2023, Indonesia declared the end of the pandemic status, which may influence the risk factors for suicide ideation among college students. Further studies are needed to find out whether adjustments made to the learning process at universities post-pandemic, such as eliminating social restrictions, reducing the number of online lectures, and returning to face-to-face interaction with lecturers and fellow students, can still influence suicidal ideation, considering that these changes can reduce psychosocial problems in students. To the best of our knowledge, there has never been a study conducted on the determinant factors related to suicide ideation after COVID-19 in Indonesia; therefore, during this study, we explored the suicide ideation rate among university students, analysis of sociodemographic relationships, study program, self-esteem, social support, stress, anxiety, and depression with suicide ideation rate among university students.

METHODOLOGY

Study Design

This study used a cross-sectional design and was conducted from July 17 to August 23, 2023, at five private universities in Yogyakarta Province, Indonesia, randomly selected from private universities in Yogyakarta.

Sample

The number of students accessible at five universities was 612 people. The sample was calculated using the G-Power V3.1 program for the logistic regression test with $\alpha=5\%$, power 80%, and odds ratio of 2.25. Based on calculations, the minimum sample required is 197. We added 20% dropout anticipation, making the sample size 236 participants. The inclusion criteria for the samples were students with active status and willing to participate. Students who were not willing to be respondents were excluded from this study.

Instruments

Socio-demography

Sociodemographic was measured using a short self-reported questionnaire consisting of age, gender and study program.

Stress, Anxiety and Depression

The Indonesian version of the Depression Anxiety Stress Scales 21 (DASS-21) is used to examine stress, anxiety, and depression. Stress is the pressure students feel while learning. Meanwhile, anxiety is a student's feeling of uncertainty about the future. Depression is a prolonged feeling of sadness experienced by students (Asif *et al.*, 2020). This instrument has been tested for validity and reliability with Cronbach alpha values of 0.85, 0.84, and 0.84 for the depression, stress, and anxiety subscales, respectively (Arjanto, 2022). It contains seven items for each subscale. The score for each item ranges from 0 (did not apply to me at all) to 3 (applied to me frequently or most of the time). For each variable, the maximum score is 21, and the lowest is 0. For the

stress and anxiety variables, they are divided into two categories, namely normal (Stress: 0-9, Anxiety: 0-4) and high (Stress: ≥ 10 , Anxiety: ≥ 4), while the depression variable is categorised into not depressed (0-4) and depressed (≥ 5) (Henry & Crawford, 2005).

Social Support

The Oslo Social Support Scale (OSSS-3) measures social support. Social support is help provided by people closest to or around students to solve their problems. The internal consistency $\alpha=0.640$. It consists of three items: the number of close confidants, the connection with others, and emphasising the availability of help. Each item has a different answer choice so that the minimum score is 1 and the maximum total score is 11; then the total score is divided into two categories of social support, namely low (1-5) and high (6-11) (Kocalevent *et al.*, 2018). We initially translated the instrument into Indonesian, and we asked two experts to evaluate the translation's quality. The expert concluded that the translation results for each item were highly relevant to the element that needed to be measured (average score of 4.3). A validity test was conducted, yielding a 0.79 Cronbach alpha score (unpublished).

Self-esteem

Self-esteem is students' perception of themselves, which is the result of comparing learning expectations with the reality they receive. This variable was measured using the Rosenberg Self-Esteem Scale (RSES) Indonesian version, with the validity and reliability results showing GFI 0.92, CFI 0.99, SRMR 0.06, and a construct reliability of 0.899. The RSES is a short, easy-to-administer, Likert-scale-type test, with eleven items answered on a four-point scale with responses ranging from strongly disagree (1) to agree (4) to strongly agree. Thus, the highest score is 44, while the lowest score is 11. The result is divided into two categories: low self-esteem (11-26) and high self-esteem (27-44) (Alwi & Razak, 2022).

Suicide Ideation

Suicide ideation is a student's thought that they feel abandoned and that all problems will be resolved if they die. Suicide ideation was measured using an Indonesian version of the Revised Suicide Ideation Scale (R-SIS) questionnaire from Rudd (1989) as a short screening instrument consisting of 10 items with a Likert scale from never (1) to always (5) so that the minimum total score is 10 and the maximum is 50. The total score is then divided into two categories: low (10-30) and high (31-50). The validity and reliability results of the Indonesian version of R-SIS showed that the overt and covered dimensions have an α value of >0.90 , and α for the whole instrument was 0.943.

Data Collection

Three research assistants assisted the researchers, who were spread across five universities. A consensus on completing the questionnaire was reached. The team contacted the students to arrange a meeting. The researcher then approached the students to ask for their willingness to become potential respondents, and after agreeing, the students were asked to fill out all the questionnaires completely.

Data Analysis

Data were analysed using IBM SPSS Statistics v27.0 in three steps, beginning with univariate analysis. Descriptive statistics were used to summarise and present the data, including frequency, percentage, mean, and standard deviation (SD). Bivariate and multivariate analyses were conducted using Fisher's Exact and logistic regression tests with an α : 0.05 significance level. With a p-value of 0.25, the findings of a chi-square analysis were employed to assess the relationship between the independent factors related to suicide ideation.

Ethical Consideration

The research obtained ethical clearance from the Ethical Committee of Faculty of Health Science, Universitas Respati Yogyakarta, Indonesia with Reference Number 0137.3/FIKES/PL/VII/2023 on 7th of July 2023.

RESULTS

Table 1: Characteristics of Respondents

Variables		<i>n</i> (%)
Age	Late adolescence	186 (78.8)
	Early adult	50 (21.2)
Gender	Male	78 (33.05)
	Female	158 (69.95)
Study Program	Social sciences	142 (60.17)
	Health	94 (39.83)
Self-Esteem	High	119 (50.42)
	Low	117 (49.58)
Social Support	High	64 (27.12)
	Low	172 (72.88)
Anxiety	Normal	183 (77.54)
	High	53 (22.46)
Stress	Normal	176 (74.58)
	High	60 (25.42)
Depression	No	186 (78.81)
	Yes	50 (21.19)
Suicide Ideation	Low	196 (83.05)
	High	40 (16.95)

Table 1 shows data that respondents' mean $\pm$ SD age is 20.25 ± 1.825 . The majority of respondents were female (69.95%), in social science study programs (60.17%), had high self-esteem (50.42%), had low social support (72.88%), had normal anxiety level (77.54%), had normal stress (74.58%), and were not experiencing depression (78.81%). The findings also show that as many as 16.95% of university students have high-category suicide ideation.

Table 2: Relationship between Characteristics of Suicide Ideation in University Students

Categories		Suicide Ideation		χ^2	<i>p</i> -value*
		Low	High		
		<i>n</i> (%)	<i>n</i> (%)		
Age	Late adolescence	153 (82.3)	33 (17.7)	0.171	0.672
	Early adult	43 (86.0)	7 (14.0)		
Gender	Male	69 (88.5)	9 (11.5)	1.883	0.142
	Female	127 (80.4)	31 (19.6)		
Study Program	Social sciences	117 (82.4)	25 (17.6)	0.023	0.860
	Health	79 (84.0)	15 (16.0)		
Self-esteem	High	160 (80.8)	38 (19.2)	3.460	0.035
	Low	36 (94.7)	2 (5.3)		
Social Support	High	98 (90.7)	30 (23.8)	8.687	0.003
	Low	98 (90.7)	10 (9.3)		
Anxiety	Normal	171 (93.4)	12 (6.6)	62.514	<0.001
	High	25 (47.2)	28 (52.8)		
Stress	Normal	163 (92.6)	13 (7.4)	44.973	<0.001
	High	33 (55.0)	27 (45.0)		
Depression	No	174 (93.5)	12 (6.5)	68.729	<0.001
	Yes	22 (44.0)	28 (56.0)		

n=number; χ^2 = Chi-square/Fisher's Exact value; *Chi-square/Fisher's Exact test

Table 2 provides information that age, gender, and study program are not significantly related to suicide ideation, with details of $p=0.672$, $p=0.142$, and $p=0.860$, respectively. The opposite result shows that self-esteem and social support are significantly related to suicide ideation ($p=0.035$ and $p=0.003$). The results are consistent with the fact that anxiety, stress, and depression are also related to suicide ideation, as seen from all p -values <0.001.

Table 3: Determinant Factors for Suicide Ideation in University Students

Categories		β	SE	p -value [#]	OR	95% CI
Age	Early adult	-	-	-	Ref	-
	Late adolescence	0.281	0.451	0.532	1.325	0.548-3.204
Gender	Male	-	-	-	Ref	-
	Female	0.627	0.407	0.124	1.871	0.843-4.156
Study Program	Social sciences	-	-	-	Ref	-
	Health	0.118	0.358	0.741	1.125	0.558-2.268
Self-esteem	High	-	-	-	Ref	-
	Low	1.453	0.749	0.052	4.275	0.986-18.540
Social Support	High	-	-	-	Ref	-
	Low	-1.119	0.392	0.004	0.327	0.151-0.705
Anxiety	Normal	-	-	-	Ref	-
	High	2.770	0.406	<0.001	15.960	7.201-35.374
Stress	Normal	-	-	-	Ref	-
	High	2.328	0.388	<0.001	10.259	4.797-21.938
Depression	No	-	-	-	Ref	-
	Yes	2.915	0.413	<0.001	18.455	8.220-41.430

β =Beta; CI=Confident interval; OR=Odd ratio; SE= Standard error; #logistic regression test

Table 3 shows that age is not significantly related to suicide ideation; however, compared to early adulthood, late adulthood is at 1.325 times higher risk of experiencing suicide ideation (95% CI 0.548-3.204). Conforming to gender was also not related to suicide ideation, but the findings showed that women were at 1.871 times higher risk than men (95% CI 0.843-4.156). The study program is not related to suicide ideation, but students majoring in health are at 1.125 times higher risk of experiencing suicide ideation compared to those majoring in social sciences (95% CI 0.558-2.268). Self-esteem is also not significantly related to suicide ideation. However, students with low self-esteem are 4.275 times more likely to experience suicide ideation compared to students with high self-esteem (95% CI 0.986-18.540). Apart from that, the findings also show that social support ($p=0.004$), anxiety ($p<0.001$), stress ($p<0.001$), and depression ($p<0.001$) are factors related to suicide ideation. The risk of experiencing suicidal ideation was higher in students with high anxiety (OR 15.960, 95% CI 7.201-35.374), high stress (OR 10.259, 95% CI 4.797-21.938), and experiencing depression (OR 18.455, 95% CI 8.220-41.430).

DISCUSSION

The findings show that as many as 16.95% of university students have high-category suicide ideation. This finding is higher than that of previous studies, such as a meta-analysis that included North America, Asia, Europe, and Africa. The lifetime prevalence of suicide ideation was 22.32% but compared with 12-month suicide ideation (10.62%) study findings, this indicates a higher figure (Mortier *et al.*, 2018). The findings are also higher than studies in six Southeast Asian countries, namely 11.7% (Peltzer, Yi & Pengpid, 2017). However, the suicide ideation rate in this study is lower than in previous studies in Indonesia (Idham, Sumantri & Rahayu, 2019; Putra, Nelwati & Fernandes, 2023). This is likely caused by differences in research design and the breadth of the study area. Regardless of their severity, suicide ideation must be recognised and handled in order to prevent a suicide attempt. Mental health nurses can identify suicide ideation in universities by building a mental health system that is integrated into the learning process in a university, involves the nursing profession levels, and offers several levels of prevention.

The findings show that age is not related to suicide ideation; the absence of this relationship is probably due to the age range of the participants involved not being too far, considering that the students' ages range from 17-26, years. The results are different from the findings of a national survey in Korea, which found that age was related to suicide ideation (Ko, Han & Jang, 2021). However, the findings of this study did not show a statistically significant relationship; the OR value showed the same results, namely that younger age was at risk of having suicide ideation (Ko, Han & Jang, 2021; Stoliker, Verdun-Jones & Vaughan, 2020). The results differ from other studies in Korea, showing that the prevalence of suicidal ideation in middle-aged adults is 5.6%, higher than in young adults (4.4%) (Jo, Jeon & Oh, 2017), and the rate of suicidal ideation is highest at ages >80 (Kim *et al.*, 2023). Apart from that, gender also showed that the results were not significantly related to suicide ideation; this is likely due to a striking imbalance in the number of participants based on gender. The results are

the opposite of previous studies, which found a significant relationship between gender and suicide ideation; however, judging from the OR, these findings are in line with previous studies where women are at higher risk of experiencing suicide ideation than men (Lu *et al.*, 2020; Richardson *et al.*, 2023). Furthermore, this study also found that the major pursued was not related to suicide ideation; according to researchers in previous studies, knowledge about this was very limited. A research in China showed different results where the major pursuit was related to suicide attempts and suicide risk (Wu *et al.*, 2021).

The results of the bivariate analysis show that there is a significant difference between the suicide ideation of students who have high and low self-esteem. However, the results of the logistic regression test show that there is no significant relationship between social support and suicide ideation. However, students with low self-esteem are 4,275 times more likely to have high levels of suicide ideation compared to those who have high self-esteem. Self-esteem is a person's opinion of their worth. College students sometimes do not get the results according to the demands of their parents or lecturers. This condition causes students to think negatively about themselves, resulting in a decline in their academic achievement, creating a cycle that leads to lower self-esteem. Low self-esteem triggers feelings of being a burden to others, causing students to think about committing suicide (Teismann *et al.*, 2024).

Another important determinant of suicide ideation is social support, either directly or indirectly. There is a direct relationship between social support and suicidal ideation (Siahaan & Scarvanovi, 2024). Indirectly, social support acts as a mediating role to reduce the effects of other mental disorders, such as stress, anxiety, and depression, which trigger suicide ideation (Hussein & Yousef, 2024). The findings show that the majority have low-category social support. The findings align with previous studies that showed low social support among college students in Bangladesh (Urme *et al.*, 2022). The findings show that there is a significant relationship between social support and suicide ideation. The results of the study show unique findings where students who have low social support have a lower risk of suicide ideation. In some cases, low social support can show a relationship with lower suicide ideation due to reduced social comparison (Wetherall, Robb & O'Connor, 2019), freedom from social judgement, and independence and self-reliance (Cheek *et al.*, 2020). However, social support is a very important factor in student stress management. Strong social support gives the impression that students are not alone in overcoming their difficulties and prevents them from considering suicide (Hussein & Yousef, 2024; Kartikasari *et al.*, 2025). Therefore, students need to know that universities provide social support for their students. This form of support can come from supervisors, peer groups, or mental health services that can be accessed at any time.

The percentage of stress, anxiety, and depression among respondents in this study is an alarm for universities because it is more than 20%, which exceeds the national prevalence (Kemenkes, 2018). However, this figure is lower compared to studies in Pakistan, where the prevalence of stress, anxiety, and depression among students was 84.4%, 88.4% and 75%, respectively (Asif *et al.*, 2020). Bivariate and multivariate results show consistent results, namely, stress, anxiety, and depression are related to suicide ideation. Students with high-category stress, high-category anxiety, and experiencing depression are at higher risk of reporting suicide ideation compared to normal students. Among these three mental problems, the risk of experiencing suicide ideation is highest for students with depression. The results of the study are in line with previous studies which found that stress, anxiety, and depression were predictors of suicide ideation (Djajadisastira *et al.*, 2025; Windarwati *et al.*, 2022; Cheek *et al.*, 2020).

Stress is an early sign of an individual's inability to overcome or resolve demands from within or outside the individual. These demands originate more from academics for college students, although this does not rule out the possibility of non-academic stressors (Yang & Yang, 2022). Academic and non-academic stressors can also create uncertainty for students, causing anxiety and depression if they cannot be handled by students in the long term, which can lead to suicide. Previous studies also concluded that students who experience psychological distress (stress, anxiety, and depression) are at high risk of attempting suicide (Owusu-Ansah *et al.*, 2020; Pillay, 2021). Meanwhile, anxiety is a psychological and physiological condition with cognitive, physical, emotional, and behavioural components. Anxiety is commonly reported as a mental illness by university students (de Paula *et al.*, 2020). After being unable to deal with academic and non-academic problems continuously, students can experience hopelessness, which is the main symptom of depression. They cannot see a way out of their problems, so they have the idea that ending their life is one of the options they can

take. This condition ultimately triggers a suicide attempt (Akpınar Aslan *et al.*, 2020). Thus, anxiety and depression can impact students' moods and sentiments, altering how they see the world and reality and influencing emotions, mood, and lifestyle in general (de Paula *et al.*, 2020). Therefore, universities must develop a mental health system that can monitor self-esteem, stress, anxiety, and depression so that they can prioritise treatment and prevent suicide.

By examining each component in detail, previous research in Indonesia showed that, compared to the pandemic, there has been a decrease in the number of risk variables for suicidal ideation among students since the end of the pandemic (Melisa *et al.*, 2024). These findings show unequivocally that students' mental health is starting to improve as life returns to its pre-pandemic normal. Findings can be attributed to university students today facing little to no stress associated with online education. A few examples are internet costs, insufficient internet connectivity, concerns about skills lost through distance learning, and teachers' inability to engage students in interesting online courses. Universities can use this data as a basis for developing policies about maintaining the mental health of their students so that they can continue to carry out the learning process well and produce the quality of graduates that universities want. These results remind community-based nurses that students represent a distinct population in need of special care. Community and psychiatric nurses may utilise the study's findings to collaborate with academic institutions to create an early detection program for suicide ideation in students. The program would be observed by nurses, who would then provide the required nursing interventions to prevent suicide. In addition, it is the responsibility of nurses to create intervention programs in higher education that support students in maintaining their sense of self-worth and reducing their anxiety and depression. To do this, nurses must improve their ability to deliver these therapies.

Limitation

The population that was studied was only from one province in Indonesia, so it cannot be generalised to the entire college student population. In addition, increasing the sample size to include a wider variety of individuals from other locations or cultural backgrounds will improve the applicability of the study and provide more representative knowledge of students' mental health.

CONCLUSION

In summary, this study found that the majority of university students had low-category suicide ideation. Age, gender, and major did not show a significant relationship with suicide ideation. The determinants of suicide ideation are self-esteem, social support, anxiety, stress, and depression. These findings contribute to developing a mental health management system in each university that is appropriate and meets the needs of its students. This study is a research series we developed about students' mental health. Based on the findings in this study, we will continue to the following research stage: creating a program using artificial intelligence to solve student mental health problems. Future researchers can also conduct intervention studies, primarily using nursing interventions on students who have a high category of suicide ideation.

Conflict of Interest

The authors declare that they have no competing interests.

ACKNOWLEDGEMENT

The authors are thankful to the Indonesian Ministry of Education, Culture and Research for the funding in this research.

REFERENCES

- Akpınar Aslan, E., Batmaz, S., Yildiz, M., & Songur, E. (2020). Suicide attempts in Turkish university students: The role of cognitive style, hopelessness, cognitive reactivity, rumination, self-esteem, and personality traits. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 38(4), 579-601. <https://www.doi.org/10.1007/s10942-020-00354-3>
- Alsulami, S., Al Omar, Z., Binnwejim, M. S., Alhamdan, F., Aldrees, A., Al-Bawardi, A., Alsohim, M., & Alhabeeb,

- M. (2018). Perception of academic stress among health science preparatory program students in two Saudi universities. *Advances in Medical Education and Practice*, 12(9), 159-164. <https://doi.org/10.2147/amep.s143151>
- Alwi, M. A., & Razak, A. (2022). Adaptasi Rosenberg's Self-Esteem di Indonesia. In *Seminar Nasional Hasil Penelitian 2022 "Membangun Negeri dengan Inovasi tiada Henti Melalui Penelitian dan Pengabdian kepada Masyarakat" LP2M-Universitas Negeri Makassar*. Universitas Negeri Makassar. Retrieved from: <https://ojs.unm.ac.id/semnaslemlit/article/view/39885>. Accessed on 24th December, 2024.
- Arjanto, P. (2022). Uji reliabilitas dan validitas Depression Anxiety Stress Scales 21 (DASS-21) pada Mahasiswa [Test the reliability and validity of the Depression Anxiety Stress Scales 21 (DASS-21) on Students]. *Jurnal Psikologi Perseptual*, 7(1), 60-80. <http://dx.doi.org/10.24176/perseptual.v7i1.6196>
- Asif, S., Mudassar, A., Shahzad, T. Z., Raouf, M., & Pervaiz, T. (2020). Frequency of depression, anxiety and stress among university students. *Pakistan Journal of Medical Sciences*, 36(5), 971-976. <https://doi.org/10.12669/pjms.36.5.1873>
- Cha, C. B., Franz, P. J., M. Guzmán, E., Glenn, C. R., Kleiman, E. M., & Nock, M. K. (2018). Annual Research Review: Suicide among youth—epidemiology, (potential) etiology, and treatment. *Journal of Child Psychology and Psychiatry*, 59(4), 460-482. <https://doi.org/10.1111%2Fjcopp.12831>
- Cheek, S. M., Goldston, D. B., Erkanli, A., Massing-Schaffer, M., & Liu, R. T. (2020). Social rejection and suicidal ideation and attempts among adolescents following hospitalization: a prospective Study. *Journal of Abnormal Child Psychology*, 48(1), 123-133. <https://doi.org/10.1007/s10802-019-00580-z>
- Chen, L.-Y. A., Wu, C.-Y., Lee, M.-B., & Yang, L.-T. (2020). Suicide and associated psychosocial correlates among university students in Taiwan: A mixed-methods study. *Journal of the Formosan Medical Association*, 119(5), 957-967. <https://doi.org/10.1016/j.jfma.2020.01.012>
- de Paula, W., Breguez, G. S., Machado, E. L., & Meireles, A. L. (2020). Prevalence of anxiety, depression, and suicidal ideation symptoms among university students: a systematic review. *Brazilian Journal of Health Review*, 3(4), 8739-8756. <https://doi.org/10.34119/bjhrv3n4-119>
- Djajadisastra, F. W., Ma, J. S., Musabiq, S., & Geshica, L. (2025). Relationship between self-compassion, thwarted interpersonal needs, and suicidal thoughts among Indonesian young adults. *Mindfulness*, 16(4), 1002–1014. <https://doi.org/10.1007/s12671-025-02540-9>
- Hussein, R. S., & Yousef, S. S. (2024). Impact of perceived social support on suicidal ideation among students at Ain Shams University. *Middle East Current Psychiatry*, 31(1), 1. <https://doi.org/10.1186/s43045-023-00390-6>
- Idham, A. F., Sumantri, M. A., & Rahayu, P. (2019). Ide dan upaya bunuh diri pada mahasiswa [Suicidal ideation and attempts in college students]. *Intuisi: Jurnal Psikologi Ilmiah*, 11(3), 177-183. <https://doi.org/10.15294/intuisi.v11i3.20705>
- Jo, A., Jeon, M., & Oh, H. (2017). Age-differentiated risk factors of suicidal ideation among young and middle-aged Korean adults. *Osong Public Health and Research Perspectives*, 8(3), 201-210. <https://doi.org/10.24171/j.phrp.2017.8.3.07>
- Kartikasari, D., Andarini, S., Wardhani, V., & Windarwati, H. D. (2025). Factors associated with mental health disorders in undergraduate students: A meta-analysis. *Narra J*, 5(1). <https://doi.org/10.52225/narra.v5i1.1962>
- Kemenkes, R. (2018). Riset Kesehatan Dasar (Riskesdas) 2018 [Basic Health Research (Riskesdas) 2018]. *Kementrian Kesehatan RI*, 53(9), 1689-1699. <https://layanandata.kemkes.go.id/katalog-data/riskesdas/ketersediaan-data/riskesdas-2018>. Accessed on 21st December, 2023.
- Kim, E. Y., Jeong, Y. W., Lim, J., & Kang, D. R. (2023). Factors Related to suicidal ideation by gender and age group in Korean adults. *Journal of Korean Medical Science*, 38(49). <https://doi.org/10.3346/jkms.2023.38.e376>

- Ko, Y., Han, S. Y., & Jang, H. Y. (2021). Factors influencing suicidal ideation and attempts among older Korean adults: focusing on age discrimination and neglect. *International Journal of Environmental Research and Public Health*, 18(4). <https://doi.org/10.3390/ijerph18041852>
- Kocalevent, R.-D., Berg, L., Beutel, M. E., Hinz, A., Zenger, M., Härter, M., Nater, U., & Brähler, E. (2018). Social support in the general population: standardization of the Oslo social support scale (OSSS-3). *BMC Psychology*, 6, 1-8. <https://doi.org/10.1186/s40359-018-0249-9>
- Lovero, K. L., Dos Santos, P. F., Come, A. X., Wainberg, M. L., & Oquendo, M. A. (2023). Suicide in global mental health. *Current Psychiatry Reports*, 25(6), 255-262. <https://doi.org/10.1007/s11920-023-01423-x>
- Lu, L., Xu, L., Luan, X., Sun, L., Li, J., Qin, W., Zhang, J., Jing, X., Wang, Y., Xia, Y., Li, Y., & Jiao, A. A. (2020). Gender difference in suicidal ideation and related factors among rural elderly: a cross-sectional study in Shandong, China. *Annals of General Psychiatry*, 19(1), 2. <https://doi.org/10.1186/s12991-019-0256-0>
- Melisa, K., Sumarno, & Putra, F. A. (2024). Menyingkap Akar Masalah : Analisis Faktor Pemicu Bunuh Diri di Lingkungan Kampus. [Uncovering the Root of the Problem: Analysis of Trigger Factors for Suicide in the Campus Environment] *Jurnal Ilmiah Technoscience: The Technology Science & Management Journal*, 8(2), 1-6. Retrieved from: <https://ojs.politeknikpgribanten.ac.id/index.php/ojs-technoscience/article/view/66>. Accessed on 21st November, 2023.
- Mortier, P., Cuijpers, P., Kiekens, G., Auerbach, R., Demyttenaere, K., Green, J., Kessler, R., Nock, M., & Bruffaerts, R. (2018). The prevalence of suicidal thoughts and behaviours among college students: a meta-analysis. *Psychological Medicine*, 48(4), 554-565. <https://doi.org/10.1017/s0033291717002215>
- Owusu-Ansah, F. E., Addae, A. A., Peasah, B. O., Oppong Asante, K., & Osafo, J. (2020). Suicide among university students: prevalence, risks and protective factors. *Health Psychology and Behavioral Medicine*, 8(1), 220-233. <https://doi.org/10.1080/21642850.2020.1766978>
- Peltzer, K., Yi, S., & Pengpid, S. (2017). Suicidal behaviors and associated factors among university students in six countries in the Association of Southeast Asian Nations (ASEAN). *Asian Journal of Psychiatry*, 26, 32-38. <https://doi.org/10.1016/j.ajp.2017.01.019>
- Pillay, J. (2021). Suicidal behaviour among university students: A systematic review. *South African Journal of Psychology*, 51(1), 54-66. <https://doi.org/10.1177/0081246321992177>
- Putra, D. E., Nelwati, N., & Fernandes, F. (2023). Hubungan Depresi, Stres Akademik dan Regulasi Emosi dengan Ide Bunuh Diri Pada Mahasiswa [The relationship between depression, academic stress and emotion regulation with suicidal ideas in college students]. *Jurnal Keperawatan Jiwa (JKJ): Persatuan Perawat Nasional Indonesia*, 11(3), 689-706. <http://dx.doi.org/10.26714/jkj.11.3.2023.689-706>
- Ribeiro, Í. J., Pereira, R., Freire, I. V., de Oliveira, B. G., Casotti, C. A., & Boery, E. N. (2018). Stress and quality of life among university students: A systematic literature review. *Health Professions Education*, 4(2), 70-77. <https://doi.org/10.1016/j.hpe.2017.03.002>
- Richardson, C., Robb, K. A., McManus, S., & O'Connor, R. C. (2023). Psychosocial factors that distinguish between men and women who have suicidal thoughts and attempt suicide: findings from a national probability sample of adults. *Psychological Medicine*, 53(7), 3133-3141. <https://doi.org/10.1017/s0033291721005195>
- Siahaan, L. J., & Scarvanovi, B. W. (2024). The correlation of perceived social support with suicidal ideation through loneliness as a mediator in university students. *Psikologika*, 29(2), 327-340. <http://dx.doi.org/10.20885/jstl.vol29.iss2.art9>
- Stoliker, B. E., Verdun-Jones, S. N., & Vaughan, A. D. (2020). The relationship between age and suicidal thoughts and attempted suicide among prisoners. *Health & Justice*, 8(1). <https://doi.org/10.1186/s40352-020-00117-3>

- Teismann, T., Joiner, T. E., Robison, M., & Brailovskaia, J. (2024). Self-burdensomeness, self-esteem and suicidal ideation. *Cognitive Therapy and Research*, 48(3), 398-405. <https://doi.org/10.1007/s10608-024-10477-x>
- Urme, S. A., Islam, M. S., Begum, H., & Chowdhury, N. R. A. (2022). Risk factors of suicide among public university students of Bangladesh: A qualitative exploration. *Heliyon*, 8(6). <https://doi.org/10.1016/j.heliyon.2022.e09659>
- Wetherall, K., Robb, K. A., & O'Connor, R. C. (2019). An examination of social comparison and suicide ideation through the lens of the integrated motivational-volitional model of suicidal behavior. *Suicide Life Threat Behavior*, 49(1), 167-182. <https://doi.org/10.1111/sltb.12434>
- Windarwati, H. D., Lestari, R., Wicaksono, S. A., Kusumawati, M. W., Ati, N. A. L., Ilmy, S. K., Sulaksono, A. D., & Susanti, D. (2022). Relationship between stress, anxiety, and depression with suicidal ideation in adolescents. *Jurnal Ners*, 17(1), 36-41. <https://doi.org/10.20473/jn.v17i1.31216>
- World Health Organization (WHO). (2021). Suicide worldwide in 2019: Global Health Estimates. Retrieved from: <https://iris.who.int/bitstream/handle/10665/341728/9789240026643-eng.pdf?sequence=1>. Accessed on 24th December, 2024.
- Wu, R., Zhu, H., Wang, Z.-J., & Jiang, C.-L. (2021). A large sample survey of suicide risk among university students in China. *BMC Psychiatry*, 21, 1-9. <https://doi.org/10.1186/s12888-021-03480-z>
- Yang, Y., & Yang, P. (2022). Effect of college students' academic stress on anxiety under the background of the normalization of COVID-19 pandemic: the mediating and moderating effects of psychological capital. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.880179>