European Journal of Molecular & Clinical Medicine

ISSN 2515-8260 Volume 08, Issue 03, 2021

Structural Equation Model Factors Affecting Suicidal Ideation among Undergraduate Students

Herlina J. EL- Matury[1], Besral[2*]

[1]Graduate School of Public Health Science, Faculty of Public Health, Institute of Health Deli Husada Deli Tua,

[2*] Biostatistics and Population Studies Department Faculty of Public Health Universitas Indonesia, A Building 2st Floor Kampus Baru UI Depok 16424, Indonesia

E-mail: besral.ui@gmail.com, Phone: +62-24-7460058, Fax: +62-24-76480675

Abstract

Introduction: The term suicide refers to the experience that one's life is undeserved that starts with a thought and advances to the actual action to kill oneself or an obsession with self-destruction. This study aimed to construct a structural equation model of factors that affect suicidal ideation among undergraduate students. This study was conducted at 14 colleges at state universities in Jakarta, Indonesia. Method: A cross-sectional design was used in this study. A sample of 504 students was selected using a stratified random sampling method at 14 colleges. Data was analyzed with structural equation modelling testing. Results: Depression, anxiety, stress, and social support were significant factors that affected students' suicidal ideation. Low social support was associated with increased suicidal ideation in college students. Depression, anxiety, and stress triggered suicidal ideation in students. Conclusion: Universities need to plan activities that can raise awareness and prevent students from experiencing depression, anxiety, and stress so that students can avoid suicidal ideation.

Keywords: depression; anxiety; stress; suicidal ideation

Introduction

Suicidal ideation is a more general term for suicidal thoughts. Most individuals who commit suicide have psychiatric disorders. Symptoms of psychiatric disorders related to suicide include alcohol abuse and major depression. Suicidal behaviour can be characterized by thoughts of suicide to actually committing suicide (Gliatto & Rai, 1999). Suicidal ideation includes thinking about, remembering, or planning to commit suicide and is included in the criteria of acts of violence against oneself or self-injurious behaviour and attempted suicide (Crosby, Ortega, & Melanson, 2011).

Social, psychological, cultural, and other factors can interact to lead a person to suicidal behaviour, but the stigma attached to mental disorders and suicide causes many people to feel unable to seek help (WHO, 2014). Risk factors include issues related to society and the relationship between war and disaster, acculturation pressures (such as between indigenous peoples or refugees), discrimination, a sense of isolation, harassment, violence, and conflictual relations. Risk factors at the individual level

include previous suicide attempts, mental disorders, excessive alcohol intake, financial loss, chronic pain, and family history of suicide (WHO, 2014).

International literature has produced many records of risk factors and life processes that result in suicide in adolescents and suicide attempts. The domains of risk factors that can cause suicidal behaviour include social and educational difficulties; children and family difficulties; psychopathology; vulnerability; exposure to life events and stressful circumstances; and social, cultural and contextual factors (Beautrais, 2000). Research conducted by Beautrais (2000) showed that the strongest risk factors for suicide in youth were mental disorders (i.e., affective disorders, drug abuse disorders, and antisocial behaviour) and history of psychopathology.

There were an estimated 793,000 suicides worldwide in 2016, which indicates a global standard suicide rate of 10.5 per 100,000 people, the rate was 3.7 per 100,000 people in Indonesia (WHO, 2016).

The 2014 National Survey of Counselling Centre Directors (NSCCD) report by the American College Counselling Association (ACCA) in a counselling centre of a university in the US stated that psychological problems in students are a trend and reported that as many as 52% of their clients have severe psychological problems; 44% experienced a period of severe distress (depression, anxiety, panic, suicidal ideation, etc.), a sharp increase from 44% in 2013, and 125 students conducted suicide in 2013 (61% due to depression, 21% due to relationship problems, and 11% due to academic problems) (Gallagher, 2014).

A report on the results of an academic impact survey by the American College Health Association (ACHA), the 2016 National College Health Assessment survey, revealed that 32.5% of respondents were diagnosed with anxiety; 20.9% had depression; 42.2% were stressed; 28.4% had difficulty sleeping; 13% had seriously considered suicide; 2.1% had attempted suicide; and 8.7% had injured themselves (ACHA, 2016).

The majority of young people who experience suicidal ideation will not act on the idea, but every report of suicidal thoughts has to be taken seriously. Even when it is mild and only reported on one occasion, suicidal ideation is associated with clinically significant symptoms of depression (Evans, Rodham, Psychol, & Deeks, 2005).

Young people with persistent suicidal ideas are at severe risk of a suicide attempt. Evidence has shown that the relationship between suicidal ideation and suicide attempts was mediated by the burden of psychosocial risk factors in young people (Scanlan, Purcell, Robinson, & McGorry, 2009).

This study aimed to construct a structural equation model of factors that influence suicidal ideation in undergraduate students. The factors studied were the source of the problem, self-esteem, social support, coping, depression, anxiety, and stress.

Method

Study design and sample

This study used a cross-sectional analytic design with a quantitative approach. Sample size calculation was performed using the correlation coefficient test formula. The sampling technique was performed using an equal probability sampling method with a stratified random sampling method. This method was used to obtain a proportional sample size in various groups of majors and colleges. The results of the sample size calculation were proportioned according to the number of students in each major. The sample size calculation indicated a total sample of 504 people, which were divided into 3 groups of majors, namely, health sciences majors (72 students), science and technology majors (165 students), and social sciences and humanities majors (267 students). The research was performed at a state university in Jakarta, Indonesia.

Measurements

The dependent variable in this study was suicidal ideation. The independent variables measured included the source of the problem, self-esteem, social support, coping management, depression, anxiety, and stress.

The problem source was measured with an instrument developed based on the complaints of students that visited university clinics and several study articles on student problem sources *(KlinikSatelitMakara, 2016).*

Self-esteem was measured using the Rosenberg Self Esteem Scale built by Rosenberg (1965). Self-esteem assessments included how students felt about themselves, five question or positive ratings, and five questionnaires for negative ratings. Positive self-assessment scale values were from 1 to 4, while negative self-assessment scale values were from 4 to 1. The total self-esteem score ranged from 10-40 with the following categories: low = 10-20, moderate = 21-30, and high = 31-40.

Social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS) instrument developed by Zimet et al. (1988). The MSPSS questionnaire includes support from family, support from friends, and support from others. The MSPSS uses a 7-point Likert scale: strongly disagree, disagree, somewhat disagree, neutral, somewhat agree, agree, and strongly agree. The total social support score ranged from 12-48 and was categorized as follows: low = 12-25, moderate = 26-38, and high = 39-48.

Coping management was measured using The Brief-COPE instrument developed by Carver (1997). It has 14 scales, and each scale has 2 redundant statements. Thus, the total number of statements was 28. This study used 1 statement for each scale, and 2 scales were not selected because during the validity trial, the 2 statements were invalid. Therefore, 12 statements were included in the study. The total coping management score ranged from 12-48 and was categorized as follows: low = 12-25, medium = 26-38, and high = 39-48.

Depression, anxiety, and stress were assessed using the Depression, Anxiety, and Stress Scale (DASS)-21 instrument, which is a shortened version of DASS-42

developed by Lovibond and Lovibond (1995). DASS-21 has fewer questions. Thus, it does not require substantial time, and the results are more stable. DASS-21 was indicated by Damanik (2006) and has been tested for its validity and reliability with the results of valid and reliable instruments. The total depression score ranged from 0 to 42 and was categorized as follows: normal = 0-4, mild = 5-6, moderate = 7-10, severe = 11-13, and very severe = 14+. The total anxiety score ranged from 0 to 42 and was categorized as follows: normal = 0-3, mild = 4-5, moderate = 6-7, severe = 8-9, and very severe = 10+. The total stress score ranged from 0 to 42 and was categorized as follows: normal = 0-7, mild = 8-9, moderate = 10-12, severe = 13-16, and very severe = 17+.

Suicidal ideation was assessed using the Columbia-Suicide Severity Rating Scale (C-SSRS) developed by Kelly Posner (Posner, 2008).

Statistical analysis

The analyses in this study were performed using structural equation modelling (SEM) to understand and thoroughly explain the correlations between variables. SEM can show unobserved concepts as well as the correlation therein and the calculation of measurement errors. SEM presents unobserved concepts through the use of latent variables. Data analysis was performed with Lisrel 8.1.

RESULTS

Validity and reliability tests

The reliability analysis showed that all variables at the source of the problem have high internal consistency with a Cronbach alpha of 0.914, and the construct validity test demonstrated a corrected-item total correlation > 0.3. The sources of the problem, which included 50 variables, were reduced to 24 valid variables ($t > 1.96$) using the confirmatory factor analysis (CFA) method.

The self-esteem reliability test demonstrated a Cronbach alpha of 0.749, and the corrected-item total correlation ranged from 0.354 to 0.608, except for item 8, which was < 0.3. The test results showed that the instrument was valid and reliable for student respondents. The CFA test results with SEM revealed only 6 out of the 10 statements were valid ($t \geq 1.96$).

The validity test of the MSPSS instrument with a 7-point Likert scale demonstrated the instrument was not valid. The respondents were confused by the number of choices for responses, and they tended to choose a neutral answer. The number of choices on the scale was then changed from 7 to 4. A retest was conducted, and the results demonstrated all MSPSS questionnaires were valid and reliable. The results of the validity and reliability test of social support revealed a Cronbach alpha of 0.877, and the corrected-item total correlation ranged from 0.512 to 0.685. The CFA test results with SEM revealed that all statements were valid ($t > 1.96$).

The validity and reliability tests of coping management revealed a Cronbach alpha of 0.658, and the total corrected-item correlation ranged from 0.312 to 0.530,

except for items 6, 9, 10, 11, and 12, which were < 0.3. The instrument was tested for CFA with SEM, and only 7 of the 12 statements were valid (t >1.96).

The validity and reliability tests of depression, anxiety, and stress demonstrated a Cronbach alpha of 0.910 and a corrected-item total correlation value ranging from 0.335 to 0.686, except for item 1, which was < 0.3. The CFA test results with SEM analysis on structural model equations demonstrated that all statements were valid ($t \geq 1.96$) and met the goodness of fit criteria to be included in the structural model equation.

The C-SSRS instrument was translated and tested for validity and reliability with a Cronbach alpha of 0.861 and total corrected-item correlation ranging from 0.438 to 0.702. The instrument was tested by CFA with SEM analysis, and a structural model equation was obtained. All statements were valid ($t \geq 1.96$) and met the goodness of fit criteria to be included in the structural model equation.

Subject characteristics

Table 1. Frequency distribution

Subject characteristics/Factors	n=504 (%)
Gender	
Male	234 (46.4)
Female	270 (53.6)
Age	
18-19 years	240 (47.6)
20-22 years	264 (52.4)
Majors	
Health Science	72 (14.3)
Science and Technology	165 (32.7)
Social and Humanities	267 (53)
Self-esteem	
Low	19 (3.8)
Moderate	384 (76.2)
High	101 (20)
Social support	
Low	15 (3)
Moderate	286 (56.7)
High	203 (40.3)
Coping management	
Low	76 (15.1)
Moderate	420 (83.3)
High	8 (1.6)
Depression	
Normal	37 (7.3)
Low	41 (8.1)

Subject characteristics/Factors	n=504 (%)
Moderate	119 (23.6)
High	89 (17.7)
Very high	218 (43.3)
Anxiety	
Normal	41 (8.1)
Low	46 (9.1)
Moderate	63 (12.5)
High	84 (16.7)
Very high	270 (52.6)
Stress	
Normal	204 (40.5)
Low	61 (12.1)
Moderate	78 (15.5)
High	75 (14.9)
Very high	86 (17.1)
Suicide Ideation (Columbia-Suicide Severity Rating Scale)	
Have you wished you were dead or wished you could go to sleep and not wake up?	145 (28.8)
Have you actually had any thoughts of killing yourself?	46 (9.1)
Have you been thinking about how you might kill yourself?	106 (21)
Have you had these thoughts and had some intention of acting on them?	59 (11.7)
Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?	10 (2)
Have you ever done anything, started to do anything, or prepared to do anything to end your life?	22 (4.4)
If yes, was it over than a year ago?	12 (2.4)
If yes, between three months and a year ago?	10 (2)
If yes, within the past three months?	13 (2.6)

Source: Primary data

Table 1 shows the demographic characteristics of the respondents and the distribution frequency of self-esteem, social support, coping management, depression, anxiety, and stress, and suicidal ideation in the respondents. More respondents were women (52.6%), aged 20-22 years (52.4%), majoring in social sciences and humanities (53%), and had a moderate level of self-esteem (76.2%), moderate level of social support (56.7), and moderate level of coping management (83.3%). More than half of the respondents (61%) experienced severe or very severe depression. Of students who experienced anxiety, 69.3% experienced severe or very severe anxiety. Only 32% of students experienced severe or very severe stress.

The results of this study indicate that 28.8% of respondents hoped to die, while 21% of respondents thought of ways to kill themselves. As many as 11.7% of respondents had thoughts and intentions to commit suicide, and 4.4 attempted suicide.

Table 2 Characteristic with suicide ideation

Variables	Wishing to die		p	Thoughts of suicide		p-value	Thoughts and intention of suicide		p
	No	Yes		No	Yes		No	Yes	
Gender									
Male	179 (76.5%)	55 (23.5%)	0.01*	216 (92.3%)	18 (7.7%)	0.353	212 (90.6%)	22 9.4%)	0.165
Female	180 (66.7%)	90 (33.3%)		242 (89.6%)	28 (10.4%)		233 (86.3%)	37 (13.7%)	
Age									
17- 19 years	172 (71.7%)	68 (28.6%)	0.844	225 (93.8%)	15 (6.3%)	0.04*	221 (92.1%)	19 (7.9)	0.01*
20-26 years	187 (70.8%)	48 (29.1%)		233 (88.3%)	31 (11.7%)		224 (84.8%)	40 (15.2%)	
Majors									
Health Science	55 (76.4%)	17 (23.6%)	0.569	66 (91.7%)	6 (8.3%)	0.939	65 (90.3%)	7 (9.7%)	0.578
Science & Technology	117 (70.9%)	48 (29.1%)		149 (90.3%)	16 (9.7%)		148 (89.7%)	17 (10.3%)	
Social & humanities	187 (70%)	80 (30%)		243 (91%)	24 (9%)		232 (86.9%)	35 (13.1%)	
Grade point average									
2.00 - 2.99	15 (65.2%)	8 (34.8%)	0.330	22 (95.7%)	1 (4.3%)	0.029*	19 (82.6%)	4 (17.4%)	0.277
3.00 – 4.00	344 (71.5%)	137 (28.5%)		376 (78.6%)	105 (21.8%)		426 (88.6%)	55 (11.4%)	

Source: Primary data

Table 2 shows that one-third of female respondents reported yes to “wishing to die,” whereas one-fifth of male respondents reported yes to this item. In the 20-22 years age group, more respondents had “thoughts of suicide” and “thoughts and intention of suicide” than the 18-19 years age group. In the 3.00-4.00 grade point average (GPA) group, there were more respondents who reported yes to having “thoughts of suicide” than in the 2.00-2.99 GPA group.

Model

The structural model analysis produced structural models. The latent variables that were related to suicidal ideation were social support, depression, anxiety, and stress, while the source of the problem, coping, and self-esteem was not related to suicidal ideation. Figure 1 shows the results of the structural model analysis.

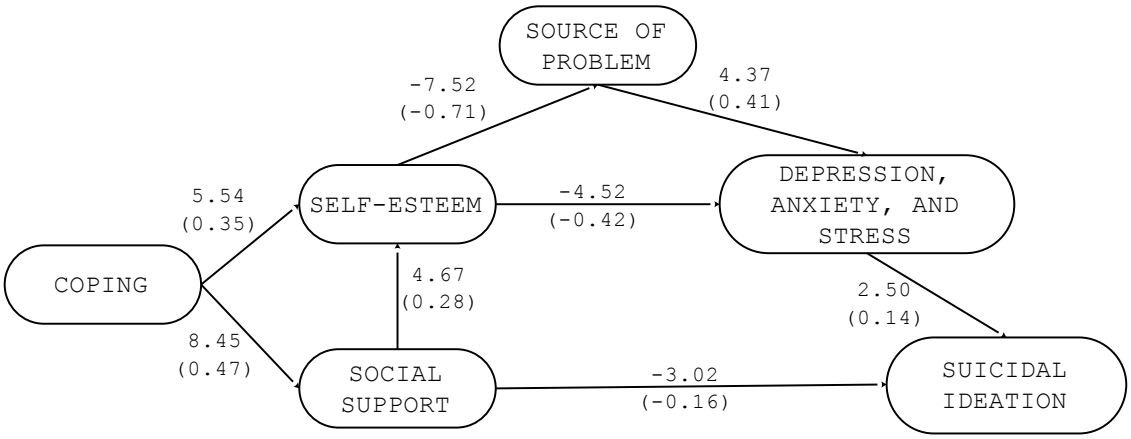

Figure 1 Test results for structural models of suicidal ideation in college students
Source: primary data

High social support (-0.16) significantly decreased the suicide rate of undergraduate students. Depression, anxiety, and stress (0.14) increased suicidal ideation in undergraduate students. Coping affected self-esteem (0.35) and social support (0.47). Social support (0.28) increased self-esteem. High self-esteem reduced the source of problems (-0.71) and depression, anxiety, and stress (0.42).

Table 3 Model suitability test results

No	**Goodness of fit**	**Cut off value**	**Value**	**Criteria**
1	Standardize Chi-square = Chi Square / DF	< 3.84	3.60	Good
2	Root Mean Square Error of Approximation (RMSEA)	< 0.08	0.072	Good
3	p-value	< 0.05	0.00	Good
4	Comparative Fit Index (CFI)	≥ 0.90	0.92	Good
5	Incremental Fit Indices (IFI)	≥ 0.90	0.92	Good
6	Parsimony Goodness of Fit Index (PGFI)	≥ 0.60	0.61	Good

Source: primary data

Table 3 shows the results of the feasibility test or suitability of the model. The table shows that the resulting framework met four goodness of fit criteria and was sufficient to assess the feasibility because it represents the criteria (1) absolute fit indices, (2) incremental fit indices, and (3) parsimony fit indices (Hair, Black, Babin, & Anderson, 2013). This result shows that the role of self-esteem, social support, coping

management, sources of problems, and depression, anxiety, and stress in suicidal ideation in students produced in this study were suitable, good, and parsimonious.

DISCUSSION

The results showed that of the 504 students, 21% had thought about how to carry out suicide; 11.7% had thoughts and intentions to commit suicide; and 9.1% had thought of suicide. The presence of ideas, thoughts, and intentions to actually commit suicide was experienced by students at some point in their lives, and it is extremely dangerous if they do something to end their lives. The same results were reported by Nock et al. (2008), who found that 22% to 38% of teenagers thought about suicide at some point in their lives; 12% to 26% reported having intentions to commit suicide in the previous year; and an estimated 6% of first-year students at state universities in the Mid-Atlantic region of the US experienced suicidal ideation (Arria et al., 2009).

Social support and depression, anxiety and stress strongly influenced suicidal ideation among students. The same finding was reported by Rosiek, Rosiek-Kryszewska, Leksowski, and Leksowski (2016), who stated that chronic stress strongly impacts mental health and suicidal thoughts among students. Suicidal ideation predicted anxiety disorders two years later (Zivin, Eisenberg, Gollust, & Golberstein, 2009). Overall, social support strongly influenced the relationship between academic stress and suicidal ideation (Khan, Hamdan, Ahmad, Mustaffa, & Mahalle, 2016). A study conducted with Syarif Hidayatullah State Islamic University students showed that social support significantly affected suicidal ideation (Khairunnisa, 2018). Rudd et al. (2006) and Scanlan et al. (2009) stated that individuals who might commit suicide demonstrate signs, including threatening to hurt themselves or commit suicide, finding ways to kill themselves, deliberately hurting themselves, and feeling anxious.

A negative association was found between social support and suicidal ideation, and good relationship with parents and family members can be a strong support for students and can reduce the risk of or protect students from suicidal ideation.

In line with this research, the results of a study conducted by Salsabhilla and Panjaitan (2019) demonstrated that there was an inverse relationship between social support and suicidal ideation in international students from Central Java at Universitas Indonesia. A study conducted by Shenouda and Basha (2014) in 293 college students in Egypt revealed that there was an inverse relationship between social support and suicide. Similar research by Consoli et al. (2013) on suicidal behaviour in depressed adolescents demonstrated that a poor relationship with one parent or with both parents increased the risk of suicide and depression. According to Shaheen and Jahan (2017), groups with low family support experience more suicidal ideation under stressful conditions. Rojas et al. (2017) also reported that suicidal ideation or attempted suicide is related to the lack of support from family, especially parents.

Family members, especially parents, are the main source of support for students. A good relationship with parents and other family members demonstrated by maintaining routine communication, providing solutions to problems experienced by

students, and observing changes in the attitudes and behaviour of students can prevent suicidal ideation in students. The same finding was also revealed by Cenkseven-Önder (2018), who described that family is the primary source of support linked to fewer ideas of suicide. Although friends and significant others are important sources of support for students, family support is a more important source, especially in traumatic situations (Lai & Ma, 2016). Fredrick, Demaray, Malecki, and Dorio (2018) found that support from parents, classmates, and close friends decreased depression and suicidal ideation.

Support from friends in the social environment, both on campus and off campus, also plays an important role in reducing suicidal ideation in students because social networks can provide positive experiences for individuals and groups who receive support from the environment (Shenouda & Basha, 2014). This type of support is related to happiness, stability in life situations, and awareness of self-importance (Lakey & Cohen, 2000; Shenouda & Basha, 2014).

This study demonstrated that social support from family, friends, and others influenced suicidal ideation in students. Suicidal ideation can be prevented by planning effective prevention and interventions programs, promoting family support to help students avoid suicidal ideation, and providing more fitness classes to increase physical activity. Other programs can aim at growing peer social support.

The results of this study revealed that depression, anxiety, and stress influence suicidal ideation in college students. The same finding was observed in a study conducted by Tentama, Mulasari, Sukesi, and Sulistyawati (2019), who stated that almost all suicide victims committed suicide because of problems that cause depression.

Support from family, close friends, and university friends can help prevent students from experiencing depression, anxiety, and stress by eliminating the problems that cause depression, anxiety, and stress because social support moderates the relationship between depressive symptoms and hopelessness in predicting suicidal ideation (Lamis, Ballard, May, & Dvorak, 2016). The use of mental health service facilities (i.e., counselling) by students needs to be improved. Lack of access and utilization of mental health services and social support for international students can cause severe mental health problems to go unnoticed (Bhochhibhoya, Dong, & Branscum, 2017).

In one of the colleges, some efforts were made that were quite effective in reducing depression, anxiety, and stress in college students. The efforts involved seniors helping new students face academic and cultural shock and friendship problems. If the problems experienced by new students could not be resolved with the aid provided by the seniors, students were recommended to see college counsellors. If the problem remained unsolved at the college level, then students were recommended counselling at the university clinic. These efforts should be organized and performed in other colleges throughout the university.

The university needs to raise awareness for student mental health. Such efforts can include announcing counselling activities and services on the university website. Other activities include promotional and preventive activities, such as training students

as peer counsellors and health educators, and suicide prevention activities (Hardjono, 2016). Early detection activities, such as mental and psychological health screenings for new students and periodical health examination for all students, can also be performed.

Other counselling service activities that can be performed by universities include counselling services for students and lecturers (which can be provided at university clinics, dormitories, and colleges), online counselling services, counsellor training for lecturers and college counselling managers, peer counsellor and health educator (PCHE) activities, and collaboration with internal and external university institutions. In addition to counselling services, seminars or workshops on stress management can also be offered to new students (Hardjono, 2016).

Conclusion

Social support, depression, anxiety, and stress affected suicidal ideation in students. Social support is a key variable to prevent suicidal ideation in students, while depression, anxiety, and stress are triggers for suicidal ideation in students. Policies and activities are required from universities to develop awareness and support activities, including providing information about counselling activities and services, training peer counselors and health educators, screening for early detection, and organizing seminar activities on stress management, to prevent suicidal ideation in students.

Acknowledgements

The Authors would like to thank all participants who contributed to this study. This publication was sponsored by Universitas Indonesia through Hibah Publikasi International Terindeks (Hibah PITTA B; No.: NKB-0595/UN2.R3.1/HKP.05.00/2019).

References

ACHA. (2016). Canadian Reference Group Executive Summary, Spring 2016. In *American College Health Association*.

Arria, A. M., O'Grady, K. E., Caldeira, K. M., Vincent, K. B., Wilcox, H. C., & Wish, E. D. (2009). Suicide ideation among college students: A multivariate analysis. *Archives of Suicide Research, 13*(3), 230–246. https://doi.org/10.1080/13811110903044351

Beautrais, A. L. (2000). Risk factors for suicide and attempted suicide among young people. *Australian & New Zealand Journal of Psychiatry, 34*(3).

Bhochhibhoya, A., Dong, Y., & Branscum, P. (2017). Sources of Social Support Among International College Students in the United States. *Journal of International Students, 7*(3), 671–686. https://doi.org/http://dx.doi.org/10.5281/zenodo.570032

Carver, C. S. (1997). Depression, Anxiety and Stress among Undergraduate Students in Jakarta: Examining Scores of the Depression Anxiety and Stress Scale According to Origin and Residency. *International Journal of Behavioral Medicine*, *4*, 92–100.

Cenkseven-Önder, F. (2018). Social Support and Coping Styles in Predicting Suicide Probability among Turkish Adolescents. *Universal Journal of Educational Research*, *6*(1), 145–154. https://doi.org/10.13189/ujer.2018.060114

Crosby, A. E., Ortega, L., & Melanson, C. (2011). *Self Directed Violence Surveillance: Uniform Definition Recomended Data Elements* (1st ed.). Centre for Disease Control and Prevention (CDC).

Damanik, E. D. (2006). Pengujian reliabilitas, validitas, analisis item dan pembuatan norma Depression Anxiety Stress Scale (DASS): Berdasarkan penelitian pada kelompok sampel Yogyakarta dan Bantul yang mengalami gempa bumi dan kelompok sampel Jakarta dan sekitarnya yang tidak.

Evans, E., Rodham, K., Psychol, C., & Deeks, J. (2005). The prevalence of suicidal phenomena in adolescents : A systematic review of population - based studies. *Suicide and Life- Threatening Behavior*, *35*(3), 239–250.

Fredrick, S. S., Demaray, M. K., Malecki, C. K., & Dorio, N. B. (2018). Can social support buffer the association between depression and suicidal ideation in adolescent boys and girls? *Psychology in the Schools*, *55*(5), 490–505. https://doi.org/10.1002/pits.22125

Gallagher, R. P. (2014). *National Survey of College Counseling Centers 2014*. Pitsburg: The International Association of Counseling Services, Inc.

Gliatto, M. F., & Rai, A. K. (1999). Evaluation and treatment of patients with suicidal ideation. *American Family Physician*, *59*(6), 1500–1506.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). *Multivariate Data Analysis* (7th ed.). Pearson Education Limited.

Hardjono, A. W. (2016). *Laporan Hasil Pemeriksaan Kesehatan Mahasiswa Baru UI*. FK UI.

Khairunnisa, K. (2018). *Pengaruh Dukungan Sosial dan Hopelessness terhadap Ide Bunuh Diri*. Universitas Islam Negeri Syarif Hidayatullah.

Khan, A., Hamdan, A. R., Ahmad, R., Mustaffa, M. S., & Mahalle, S. (2016). Problem-Solving Coping and Social Support as Mediators of Academic Stress and Suicidal Ideation Among Malaysian and Indian Adolescents. *Community Mental Health Journal*, *52*, 245–250. https://doi.org/10.1007/s10597-015-9937-6

KlinikSatelitMakara. (2016). *Laporan Konseling Mahasiswa di Klinik Satelit Makara Universitas Indonesia*.

Lakey, B., & Cohen, S. (2000). *Social Support Theory and Measurement*.

Lamis, D. A., Ballard, E. D., May, A. M., & Dvorak, R. D. (2016). Depressive Symptoms and Suicidal Ideation in College Students: The Mediating and Moderating Roles of Hopelessness, Alcohol Problems, and Social Support. *Journal of Clinical Psychology*, *72*(9), 919–932. https://doi.org/10.1002/jclp.22295

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression, Anxiety, and Stress Scale* (2nd ed.). Psychology Foundation.

Nock, M. K., Borges, G., Bromet, E. J., Cha, C. B., Kessler, R. C., & Lee, S. (2008). Suicide and Suicidal Behavior. *Epidemiological Review*, *30*(1), 133–154. https://doi.org/10.1093/epirev/mxn002

Posner, K. (2008). *COLUMBIA-SUICIDE SEVERITY RATING SCALE*.

Rojas, S. M., Bilsky, S. A., Dutton, C., Badour, C. L., Feldner, M. T., & Leen-Feldner, E. W. (2017). Lifetime histories of PTSD, suicidal ideation, and suicide attempts in a nationally representative sample of adolescents: Examining indirect effects via the roles of family and peer social support. *Journal of Anxiety Disorders*, *49*(April), 95–103. https://doi.org/10.1016/j.janxdis.2017.04.006

Rosenberg, M. (1965). *Society and the adolescent self-image*. NJ: Princeton University Press.

Rosiek, A., Rosiek-Kryszewska, A., Leksowski, L., & Leksowski, K. (2016). Chronic stress and suicidal thinking among medical students. *International Journal of Environmental Research and Public Health*, *13*(212), 1–16. https://doi.org/10.3390/ijerph13020212

Rudd, M. D., Berman, A. L., Joiner, T. E., Nock, M. K., Silverman, M. M., Mandrusiak, M., … Witte, T. (2006). Warning Signs for Suicide: Theory, Research, and Clinical Applications. *Suicide and Life-Threatening Behavior*, *37*(3), 254–262.

Salsabhilla, A., & Panjaitan, R. U. (2019). DUKUNGAN SOSIAL DAN HUBUNGANNYA DENGAN IDE BUNUH DIRI PADA MAHASISWA RANTAU. *Jurnal Keperawatan Jiwa*, *7*(1), 107–114.

Scanlan, F., Purcell, R., Robinson, J., & McGorry, P. (2009). *MythBuster : Suicidal Ideation*.

Shaheen, H., & Jahan, M. (2017). Student Stress and Suicidal Ideation: The Role of

Social Support From Family, Friends, and Significant Others. *International Journal of Humanities and Social Science Invention ISSN (Online*, *6*(9), 21–32.

Shenouda, E., & Basha, S. (2014, October 11). *Resilience, Social Support, and Stress as Predictors of Suicide Ideation Among Public Universities' Students in Egypt*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2508552

Tentama, F., Mulasari, S. A., Sukesi, T. W., & Sulistyawati, S. (2019). Penyuluhan Dan Pendampingan Pada Korban Selamat Percoban Bunuh Diri Di Gunung Kidul. *International Journal of Community Service Learning*, *3*(1), 27–32. https://doi.org/10.23887/ijcsl.v3i1.17398

WHO. (2014). *Preventing suicide. A global imperative*. https://doi.org/ISBN: 978 92 4 156477 9

WHO. (2016). *Suicide rate estimates, age-standardized Estimates by country*.

Zimet, G. ., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, *52*, 30–41.

Zivin, K., Eisenberg, D., Gollust, S. E., & Golberstein, E. (2009). Persistence of mental health problems and needs in a college student population. *Journal of Affective Disorders*, 180–185. https://doi.org/10.1016/j.jad.2009.01.001