THE PREDICTING EFFECTS OF DEPRESSION AND SELF-ESTEEM ON SUICIDAL IDEATION AMONG ADOLESCENTS IN KUALA LUMPUR, MALAYSIA

Chin WC[1], and Wu SL[2].
[1]*School of American Degree Program, SEGi College Penang, George Town, Penang, Malaysia*
[2]*Department of Psychology, School of Science and Technology, Sunway University, Petaling Jaya, Malaysia*

Correspondence:
Chin Wen Cong
School of American Degree Program,
SEGi College Penang,
10200 George Town, Penang, Malaysia
Email: chinwencong@segi.edu.my

Abstract

Background: In Malaysia, the prevalence of adolescents' suicidal ideation has increased over the years. Therefore, it is crucial to investigate the predictors of suicidal ideation among adolescents. Hence, the aim of this study was to examine the predicting effects of depression and self-esteem on suicidal ideation among Malaysian adolescents. In addition, the relationships between depression, self-esteem, and adolescents' suicidal ideation were explored as well.

Methods: By using a multistage cluster sampling method, a cross-sectional study was conducted in secondary schools in Kuala Lumpur, Malaysia. The participants were comprised of 852 adolescents (51% males and 49% females) aged 13-17 years old who completed self-administered questionnaires. Pearson's Correlation analysis was used to analyse the relationships among depression, self-esteem, and adolescents' suicidal ideation, while Standard Multiple Regression analysis was used to examine the predicting effects of depression and self-esteem on adolescents' suicidal ideation.

Results: Depression had a positive correlation with adolescents' suicidal ideation ($r = .290$, $p < .001$), while self-esteem had a negative correlation with adolescents' suicidal ideation ($r = -.283$, $p < .001$). Results also showed that both depression ($\beta = .200$, $p < .001$) and self-esteem ($\beta = -.186$, $p < .001$) significantly predicted adolescents' suicidal ideation.

Conclusion: The study found that depression is a risk factor, while self-esteem is a protective factor of adolescents' suicidal ideation.

Keywords: *Adolescence, Depression, Self-esteem, Suicidal Ideation*

Introduction

Suicide is a critical mental health issue around the world. A suicide death case occurs every 40 seconds, summing up to 800,000 suicide deaths globally every year, with up to 60% happening in Asian countries (1, 2). The National Health and Morbidity Survey 2017 demonstrated an increase of 2.1% for the adolescents' suicidal ideation prevalence from the year 2012 to 2017 in Malaysia (3). Moreover, a study revealed a prevalence rate of 27.9% for the suicidal ideation among Malaysians adolescents in Selangor (4). Based on the reported prevalence rates, Malaysia is facing a serious social problem regarding the suicide of adolescents. Therefore, determining the predictors of

adolescents' suicidal ideation is the first step in designing effective intervention programs.

Suicidal ideation is defined as the thought or desire to terminate one's own life (5). Suicide intervention programs should view suicidal ideation as a pathway for suicide, with suicidal ideation as the starting point, followed by the attempt to commit suicide, and lastly the act of committing suicide itself (6). Thus, research should place great emphasis on suicidal ideation, which leads to the path of suicidal death through identifying the predictors of adolescents' suicidal ideation. Only then can effective interventions be designed. Thus, it is crucial to study the risk factors of suicidal ideation (e.g., depression) as well

as to examine the potential protective factors (e.g., self-esteem) in order to prevent adolescents' suicide. Hence, the present study examined depression and self-esteem as predictors of suicidal ideation among Malaysian adolescents.

Adolescence is a critical period characterised by movement, changes, and transitions from one state to another in several areas simultaneously (7). Adolescents begin to make important decisions about their direction in life, especially in the areas concerning family, school and peer social circles. In addition, they will face new challenges in constructing their own identity, establishing self-esteem, bearing more responsibilities, and maintaining more relationships. As these new challenges continuously begin to surface, adolescents are exposed to physical and psychological changes within themselves at the same time. Moreover, they are challenged with high expectations from significant others and friends. Therefore, if adolescents fail to resolve these challenges effectively, low self-esteem will emerge (7).

Depression is an emotional disorder which normally begins during early adolescence, particularly after reaching puberty (8). Past studies have reported that both the manifestation and depression levels peak especially during the period of adolescence (9, 10). A depressed person is more prone to think of suicide, attempt suicide, and commit suicide (11). According to the National Health and Morbidity Survey 2017 in Malaysia, depression is the second most common mental health issue among Malaysian adolescents, with the prevalence of 18.3% (3). This indicates that depression among adolescents is an important public health issue that needs to be properly addressed immediately (12).

In fact, about 50-65% of suicide cases have comorbidity in depression (7). Past studies have shown that depression has had a significant correlation with suicidal ideation (4, 13, 14). About 75% of adolescents with prior history of attempted suicide meet the diagnosis of depression; however, not every adolescent who displays depressive symptoms reports having suicidal ideation (15). As shown in a longitudinal study, children with high depression levels were twice as inclined to have suicidal ideation when they have reached the developmental stage of adolescence (16). In Malaysia, researchers have found depression to be a significant predictor of adolescents' suicidal ideation (4). They also reported a significantly much higher suicidal ideation prevalence rate among adolescents with depression (55.8%) compared to those without depression (14.4%). Therefore, it is crucial to examine the predicting effect of depression on adolescents' suicidal ideation where in this study, depression is operationalised as depressive symptoms displayed by adolescents based on the Depression Anxiety Stress Scales 21 (DASS-21) (17).

One factor that is often correlated with heightened suicidal ideation among adolescents is low self-esteem (18, 19). Self-esteem is an individual's general sense of worthiness, which has been found to be an important predictor of some behavioural outcomes among adolescents (20, 21). The most detrimental result of having very low self-esteem is suicide (19). For instance, when adolescents are in a depressed mood, they will feel a low sense of worthiness and might plan to end their life. This is because adolescents who have low self-esteem may perceive life as not worth living; thus, they are more likely to have suicidal ideation (19).

Two theories were used in this study to explain the predicting factors of suicidal ideation which are the Three-Step Theory of Suicide and Baumeister's Theory of Escaping the Self. The Three-Step Theory of Suicide could be used to explain the effect of depression on suicidal ideation (22). There are three steps in this theory where in the first step, it states that the combination of pain and hopelessness will contribute to adolescents' suicidal ideation. In the second step, poor connectedness will escalate the intensity of suicidal ideation among those adolescents who are experiencing both pain and hopelessness. It was proposed that adolescents' depression is one of the contributing factors to pain, hopelessness, and/or connectedness, which will eventually lead to the emergence of suicidal ideation. In the third step, it states that high levels of suicidal ideation will lead to a suicide attempt when adolescents have the means and capacity to commit suicide. Besides that, the predicting effect of self-esteem on suicidal ideation could be supported by Baumeister's Theory of Escaping the Self, which states that suicide intention rises from a strong wish to escape from low self-esteem (18). According to this theory, adolescents are likely to suffer from low self-esteem when they fail to accomplish the goals set by themselves, which subsequently turns into self-blame. These negative self-attributions catalyse the development of suicidal ideation.

To date, most studies on adolescent suicide use clinical adolescents as the study sample (e.g., 23, 24). This limits the generalisability of the findings to non-clinical adolescents. Besides that, many studies only use a single item to assess suicidal ideation (e.g., 4, 14), which limits the reliability of the findings on suicidal ideation as compared to multiple-item scales. Therefore, the present study was able to close these methodological gaps by examining the factors of suicidal ideation among secondary school students along with the utilisation of multiple-item scales to measure suicidal ideation. Based on the previously discussed literature, the present study aimed to explore the relationships between depression, self-esteem, and adolescents' suicidal ideation. Moreover, it investigated the predicting effects of depression and self-esteem on the suicidal ideation of adolescents. The study hypothesised that depression will correlate positively with adolescents' suicidal ideation, while self-esteem will correlate negatively with adolescents' suicidal ideation. Depression and self-esteem were also hypothesised to predict adolescents' suicidal ideation. This study also aimed to describe the prevalence rate of suicidal ideation among adolescents in Kuala Lumpur, Malaysia.

Materials and Methods

Participants

Eight hundred and fifty-two students (51% males and 49% females) of national secondary schools in three regions of Kuala Lumpur, Malaysia between 13-17 years old (M = 14.8 years old; SD = 1.225), were involved in this study through the use of multi-stage sampling. In the first stage, all the national secondary schools in Kuala Lumpur were divided into three groups based on the their regions (North, Central, and South). Then, a secondary school was randomly chosen for each region using simple random sampling technique, indicating that three secondary schools were chosen to represent three different regions of Kuala Lumpur. In the second stage, 15 classes were randomly selected using simple random sampling technique by each school to participate in the study, except Form 3 and Form 5 due to the school policy that does not allow examination classes to participate. The data collection was carried out from January to February 2019, whereby the students were quite relaxed because most of the introduction chapters were taught during this period and this period was far away from final examination.

Ethical consideration

All procedures were approved by the UTAR Scientific and Ethical Review Committee (U/SERC/19/2019). Permission to collect data from secondary school students was also obtained from the Ministry of Education Malaysia (MOE), Kuala Lumpur Education Department and respective school principals. Parental consent was not necessary for this study as it does not involve blood, bodily or fluid interaction with the students (25). Prior to data collection, the students were briefed by their school teachers on the background of the study, the purpose of the study, and the right to withdraw from the study without any penalty at the school assembly hall. Confidentiality and anonymity were assured, and written informed consent was collected from the participants as well. There was no token of appreciation given to the respondents of this study.

Instrumentations

The participants filled out paper and pencil self-administered questionnaires that asked about demographic details and three instruments that assessed the three study variables respectively. The questionnaires were administered in the Malay language to help the participants gain a better understanding of the questions asked.

Depression anxiety stress scales 21

Depression subscale which consists of seven items in the Depression Anxiety Stress Scales 21 (DASS-21) was used to measure the depressive symptoms among secondary school students in the past two weeks (17). The Malay-DASS-21 scale was translated through two forward and two back translations in parallel with a Cronbach alpha .840 (26). Participants self-rated the scale through the use of a 4-point scale, from 0 = "Did not apply to me at all" to 3 = "Applied to me very much or most of the time" on items such as "I was unable to become enthusiastic about anything" and "I felt that life was meaningless". The total score was obtained by summing up all the seven items in the depression subscale. It is a continuous scale where higher scores indicate a higher level of depression. Adolescents with depressive symptoms were those who had a score of 10 and above after multiplying the score by 2 in the depression subscale (17). The reliability analysis revealed a Cronbach's alpha of .792 for the scale.

Rosenberg self-esteem scale

The Rosenberg Self-esteem Scale (RSES) was used to measure self-esteem (21). The Malay-RSES scale was translated through forward and back translation with a Cronbach alpha .840 (27). RSES consists of five positive items and five negative items. The 10 items were self-rated by the participants on a 5-point scale with the options of 1 = "Strongly Disagree" to 5 = "Strongly Agree". The total score was obtained by summing up the five positive items and the reversed scores of the five negative items in this scale. This is a continuous scale in which a higher score indicates a higher level of self-esteem. The example items for the scale are "I am able to do things as well as most other people", and "I feel that I'm a person of worth, at least on an equal plane with others". The reliability analysis revealed a Cronbach's alpha of .647 for the scale.

Positive and negative suicide ideation inventory

The Positive and Negative Ideation Inventory (PANSI) is divided into two subscales: Positive Suicide Ideation and Negative Suicide Ideation (28). Negative Suicide Ideation was used to measure the adolescents' suicidal ideation in this study. The Malay-PANSI-Negative scale was translated through forward and back translation with a Cronbach alpha .840 (29). Negative Suicide Ideation has eight items with a 5-point scale with the options of 0 = "None of the time" to 4 = "Most of the time". The total score was obtained by summing up all the eight items in the Negative Suicide Ideation subscale. This is a continuous scale where a higher score indicates a higher level of suicidal thoughts. The example items are "Thought about killing yourself because you felt like a failure in life?", and "Thought about killing yourself because you could not find a solution to a personal problem?". The reliability analysis revealed a Cronbach's alpha of .689 for the scale.

Data analysis

The statistical analyses were conducted using SPSS version 25. Initially, descriptive statistics were used to describe the demographic data. Then, inferential statistics were used to verify the hypotheses of the study with a significant level set at $p < .05$. In order to investigate the relationships among study variables, Pearson's Correlation analysis was conducted. The predicting effects of depression and self-esteem towards adolescents' suicidal ideation were verified through a Standard Multiple Regression analysis.

Results

A total of 1,040 self-administered questionnaires were distributed to the participants. Only 852 completed questionnaires were included whereas questionnaires with missing data and extreme values were excluded from the study. From the total sample, 42% were 16 years old, 32% were 14 years old, 17% were 13 years old, 6% were 15 years old, and 3% were 17 years old. In terms of ethnicity, 62% of the students were Malay, 31% were Chinese, 4% were Indian, and 3% were other ethnicities. Table 1 demonstrates the socio-demographic information about the participants.

Table 1: Socio-demographic profile of the participants (N = 852)

Variables	Percentage (%)	Mean
Age (years)		14.80
13	17	
14	32	
15	6	
16	42	
17	3	
Gender		
Male	51	
Female	49	
Ethnicity		
Malay	62	
Chinese	31	
Indian	4	
Others	3	

Out of the 852 participants, 37.4% were found to have suicidal thoughts throughout the earlier two weeks. The categorisation was based on the score of 1 and above on the Negative Suicide Ideation items in the Positive and Negative Ideation Inventory (PANSI) (28). PANSI is a scale used to measure adolescents' suicidal ideation in this study. Regarding depression, 45.8% of the participants were found to be suffering from depressive symptoms in the past two weeks. The categorisation was based on a score of 10 and above after multiplying the score by 2 on the Depression items in Depression Anxiety Stress Scales-21 (DASS-21) (17). DASS-21 is a scale used to measure adolescents' depression in this study.

Table 2 displays the correlational analyses of all study variables (refer to Table 2). Pearson Correlation analysis was done to investigate the relationships between depression, self-esteem, and adolescents' suicidal ideation. Based on the correlational analyses, the independent variables showed significant correlation with adolescents' suicidal ideation.

Table 2: Correlational analyses (N = 852)

Variables	Mean (SD)	Depression	Self-esteem	Suicidal ideation
Depression	4.93 (3.928)	1		
Self-esteem	35.60 (5.572)	-.487***	1	
Suicidal ideation	1.27 (2.125)	.290***	-.283***	1

Note. ***p < .001

It was found that depression (r = .290, p < .001) was positively related to adolescents' suicidal ideation, indicating that the greater the adolescents' depressive symptoms, the higher their suicidal ideation level. However, self-esteem (r = -.283, p < .001) was negatively related to adolescents' suicidal ideation. Findings suggested that the higher the self-esteem, the lower adolescents' suicidal ideation. Besides that, depression (r = -.487, p < .001) was negatively related to self-esteem, revealing that the greater the adolescents' depressive symptoms, the lower their general sense of worthiness.

Table 3 displays the multiple regression analysis that was used to test if the independent variables could significantly predict depression (refer to Table 3). The assumption on multicollinearity was satisfied as the *Tolerance Value* was > 0.10 and *VIF* < 10 for all the variables. The results of the regression indicated the predictors explained 11% of the variance in suicidal ideation [R^2 = .110, F (2, 849) = 52.675, p < .001]. Based on the model, both depression (β = .200, p < .001) and self-esteem (β = -.186, p < .001) were significant predictors of suicidal ideation. Therefore, as depressive symptoms increases and self-esteem decreases, suicidal ideation among adolescents will increase. The analysis also showed that depression is a stronger predictor compared to self-esteem in predicting adolescents' suicidal ideation.

Table 3: Standard multiple regression analysis for suicidal ideation (N = 852)

Variables	B	SEB	β	t
Depression	0.108	0.020	.200***	5.384
Self-esteem	-0.071	0.014	-.186***	-5.008

Note. R = .332; R^2 = .110; F (2,849) = 52.675; ***p < .001

Discussion

The current study found 37.4% of the students from the selected schools in Kuala Lumpur have suicidal ideation. The percentage of suicidal ideation in this study is slightly higher than the 27.9% prevalence rate found in another similar study conducted in Selangor in 2012, where the researchers used a single-item scale ("Thoughts that you

would be better off dead or of hurting yourself in some way") to measure suicidal ideation in their study (4). As compared to the eight-items scale used in this study, the different items asked may contribute to the discrepancy in percentage between both studies. Besides, the usage of a single item is vulnerable to random measurement errors as the internal reliability could not be determined in the single-item scale as compared to multi-items scale (30). The slightly high percentage of suicidal ideation found in this study also suggests that the issue of adolescents' suicide in Malaysia requires more attention. The possible explanation for this phenomena could be due to the increasing rate of adolescents' depression in Malaysia (3). Since depression is a significant predictor of suicidal ideation, the increase in adolescents' depression might explain the slightly higher percentage of adolescents' suicidal ideation.

This study aimed to investigate the effects of depression and self-esteem in predicting adolescents' suicidal ideation in Malaysia. It was found that depression was positively related to Malaysian adolescents' suicidal ideation, which is corresponding to a local study that found a significant relationship between depression and suicidal ideation among Malaysian adolescents (4). Moreover, the prediction model also indicated that depression is a stronger predictor compared to self-esteem in predicting adolescents' suicidal ideation, which is supported by past local study (4). This shows that depressed adolescents are more prone to develop suicidal thoughts as proposed (11). This finding supports the Three-Step Theory of Suicide, whereby depression contributes to pain, hopelessness, and/or connectedness, which will eventually lead to suicidal ideation (22).

Furthermore, self-esteem was negatively correlated with Malaysian adolescents' suicidal ideation which is consistent with past studies that found that adolescents who have lower self-esteem tend to have higher suicidal ideation (18, 19). The prediction model also revealed that self-esteem is a significant predictor of adolescents' suicidal ideation, which supported the predicting role of self-esteem in adolescents' behavioural outcomes, including their suicidal ideation (20, 21). In line with Baumeister's Theory of Escaping the Self, the findings posited that adolescents seldom have suicidal thoughts when they have a higher sense of worthiness about themselves (18). Nevertheless, adolescents with lower self-esteem were found to have higher depression which is in line with previous findings (4, 31). This suggests that adolescents' self-esteem is a significant protective factor against depression as supported by previous literature (31, 32). Therefore, self-esteem is especially important when dealing with depressed adolescents to cope with their depressive symptoms.

One of the limitations of the present study is the few number of schools involved in the study. There was only one school randomly selected from each region, which makes the generalisation of the findings being questionable. To address this limitation, future research should involve a sufficient number of schools in each region to enhance the generalisability of the study findings to the whole Kuala Lumpur. Moreover, the study used a cross-sectional research design, which does not allow a firm conclusion to be drawn about the causal relations of the studied variables. It is recommended that the study be replicated in a longitudinal research design in order to establish such causal relationships among the study variables. Besides that, the data collected lack objectivity when the study adopted the single-informant methodology, where the data relies only on the self-report data from the participants. It is recommended that future research could adopt a multiple-informant methodology to prevent the subjectivity from only one source of data, especially on data such as depression and suicidal ideation. For example, teachers' reports and parents' reports on the adolescents' depression and suicidal ideation should be taken into consideration.

Conclusion

Suicidal ideation is a crucial starting point in the suicide pathway. In this study, it was found that 37.4% of the participants had suicidal ideation which indicates the seriousness of adolescents' suicide problem in Kuala Lumpur. Thus, the study aimed to investigate the predicting effects of depression and self-esteem towards adolescents' suicidal ideation in Malaysia. From the analysis, it was found that depression and self-esteem significantly predicted adolescents' suicidal ideation. Depression was found to be the risk factor of adolescents' suicidal ideation, whereas self-esteem was found to be the protective factor of adolescents' suicidal ideation.

Therefore, adolescent suicide intervention programs should focus on working through their depressive symptoms and improving their self-esteem. Secondary schools are recommended to organise campaigns or workshops that teach students on how to cope with depressive symptoms and enhance their self-esteem. For example, students could be taught on how to identify the symptoms of depression and ways to deal with these symptoms. Besides that, students who have a lower level of self-esteem are more likely to focus on their weaknesses. Thus, rational thinking should be taught in schools which focuses on students' strengths and also improving their weaknesses in order to increase their self-esteem. Moreover, students with any mental health issues could access the counselling services in school. Since counselling is able to help adolescents in alleviating depressive symptoms, more campaigns should be conducted to encourage students with depressive symptoms to seek proper help through attending counselling sessions.

Competing Interest

The authors declare that there is no conflict of interest.

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