

Suicidal Ideation among Thai Adolescents: An Empirical Test of a Causal Model

Benjamaporn Rungsang, Nujjaree Chaimongkol, Wannee Deoisres, Pairatana Wongnam*

Abstract: The purpose of this cross-sectional study was to test the Rungsang-Chaimongkol Model of Suicidal Ideation among Thai Adolescents. A multi-stage random sampling technique was used to recruit a sample of 437 adolescents attending secondary schools in a central province of Thailand. Research instruments were self-report questionnaires, including the Scale for Suicidal Ideation, the General Health Questionnaire, the Strengths and Difficulties Questionnaire, the Rosenberg Self-Esteem Scale, and the Negative Event Scale. Descriptive statistics and structural equation modeling were used to explore the magnitude of direct and indirect effects on the suicidal ideation among the sample.

Results revealed that negative psychological attributes and stressful events had a direct positive effect on suicidal ideation. Overall distress mediated the link between negative psychological attributes and stressful events, and suicidal ideation. The Model accounted for 32% of the overall variance in prediction of suicidal ideation among Thai adolescents. These findings suggested that the intervention program to prevent suicidal ideation aiming at decrease negative psychological attributes, stressful events and overall distress would be beneficial. However, it requires further testing with other groups.

Pacific Rim Int J Nurs Res 2017; 21(2) 97-107

Keywords: Adolescents, Negative psychological attributes, Overall distress, Stressful events, Suicidal ideation, Thailand.

Introduction

Suicidal ideation is known to be an indicator of suicide¹ which is the leading cause of death among adolescents throughout the world,¹⁻⁴ and the fourth highest cause of death among Thai adolescents.² Studies of the suicidal ideation among adolescents found that it was at a high prevalence rate.²⁻⁵ For instance, in the United States of America (USA), nearly 40% of ninth-grade Latino females have experienced suicidal ideation, whereas, 20% of non-Latino ninth-grade females experienced suicidal ideation in the past year.⁵ In Bangkok, Thailand, among students aged

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15–19 years, there was a report of 11.2% suicidal ideation.³ A study in a high school in the north of Thailand found that the prevalence rate of suicidal ideation in the past 12 months among adolescents age 13–15 years was 8.8%.⁴ These studies also found out the prevalence rate of suicidal attempts. Suicidal ideation is considered as a predictor of attempted suicide and completed suicide¹ making⁶ a critical mental health problem among adolescents. Interestingly, a study in one high school in the north of Thailand revealed that there were 4.6% of adolescents had attempted suicide during the past year. In addition, the researchers presented that 7.4% of girls and 5.7% of boys had attempted suicide.⁴ To try to decrease the incidence rate, it would be of high interest to identify the risk factors associated with suicidal ideation among adolescents which can, in turn, lead to the development of nursing interventions that prevent or reduce the risk for suicide among Thai adolescents.

Conceptual Framework and Review of Literature

The conceptual framework of this study was based on the cognitive behavioral model⁷ and a review of related literature in order to explain the causal relationship among factors including, psychological attributes, self-esteem, stressful events, and overall distress contribute to suicidal ideation among adolescents.

Rudd's cognitive behavioral model⁷ grounded and explained suicidal ideation in that the cognitive systems of suicide mode that characterized suicidal individuals and were associated with increased vulnerability to suicidal ideation.⁸ Based on this model, it is believed that some individuals are more likely to develop suicidal ideation because of having a predisposition to suicide, that consists of cognitive, biological and behavioral susceptibility. The predisposition to suicide is stimulated by the presence of aggravating factors and an individual's

perception to negative feelings such as perceived loss and relationship difficulties or problems which increase vulnerability for suicidal ideation and could lead to suicidal attempts or completed suicide.^{7–8}

The literature on relationships and factors influencing suicidal ideation shows that psychological attributes of positive and negative behaviors are related to suicidal ideation among adolescents.^{9–10} Evidence indicates an association between negative psychological attributes and suicidal ideation in adolescents.^{9–12} For instance, a study reported that adolescents who made suicide attempts and those who experienced suicidal ideation had significant emotional problems and hyperactivity.¹⁰ Similarly, adolescents with higher scores on emotional problems are more likely to have suicidal ideation than those with lower scores.¹¹ Other negative attributes, such as conduct behavior, impulsivity, and aggression, have also been found to be related to suicidal ideation in adolescents.¹²

In regards to self-esteem, a wide range of research has clearly shown that adolescents who have feelings of low self-worth are more likely to have suicidal ideation and greater ideation when this is compounded by depression and anxiety.^{13, 15–17} Studies have reported that self-esteem is negatively associated with suicidal ideation and have found that a decrease in self-esteem was significantly related to an increase in suicidal ideation.^{13–14} Suicide attempters had significantly lower levels of self-esteem than non-suicidal attempters.^{15–17} Furthermore, adolescents' increased likelihood of suicidal ideation was associated with lower self-esteem.¹³

A perception of loss or a belief that one is a burden to others is also related to adolescents' suicidal ideation.⁷ Stressful events, including problems with friends, boyfriends or girlfriends, studying, teachers, other students, parents, money, relatives and health problems, academic limitations, and poor course interest are associated with suicide risk.¹⁸ Several studies indicate that problems with peers, including physical fighting and bullying, were significantly related to increased risk of suicide ideation.^{9, 19–20} Poor family

relationships have a strong positive correlation with suicidal ideation among university students.^{18, 21} In addition, characteristics of boyfriend-girlfriend relationships such as failure in love and threats that their beloved will leave have significant relationships with suicidal thoughts.¹⁷ Additionally there is a significant but indirect association between teacher relationship or school bonding and suicidal ideation.^{9,13} A problem with other students such as roommates also was a stressful event factors actively predisposing to suicide ideation,¹ whereas some stressful events such as academic limitations, poor course interest,^{16,19} and health problems associated with suicidal ideation in adolescents.⁹

Adolescents with high overall distress (anxiety, depression and life dissatisfaction), have high risk for developing suicidal ideation.²²⁻²³ Empirical research in adolescents demonstrate positive associations among anxiety, depression and suicidal ideation.^{4,15,24,25} Moreover, adolescents who have low self-esteem have an increased likelihood of suicidal ideation.¹³ A study

showed association between indicators of psychosocial distress among 2,758 Thai adolescents and suicidal ideation, such as anxiety and sadness.⁴ In addition, life satisfaction which referred to how adolescents evaluate their lives, has been associated with psychological health problems when combined with depression and anxiety.^{8,26}

The cognitive behavioral model explains the contribution of stressful events and overall distress to suicidal ideation, but does not postulate psychological attributes and self-esteem in which empirical studies revealed these influences. However, most prior findings in western research indicated an association between these variables and suicidal ideation, however there is a paucity of predictive studies among Thai adolescents. Therefore, the hypothesized Rungsang-Chaimongkol Model of Suicidal Ideation among Thai Adolescents (here after 'the RC Model') was developed as a causal to explain influencing of negative psychological attributes, self-esteem, stressful events and overall distress on suicidal ideation among Thai adolescents.

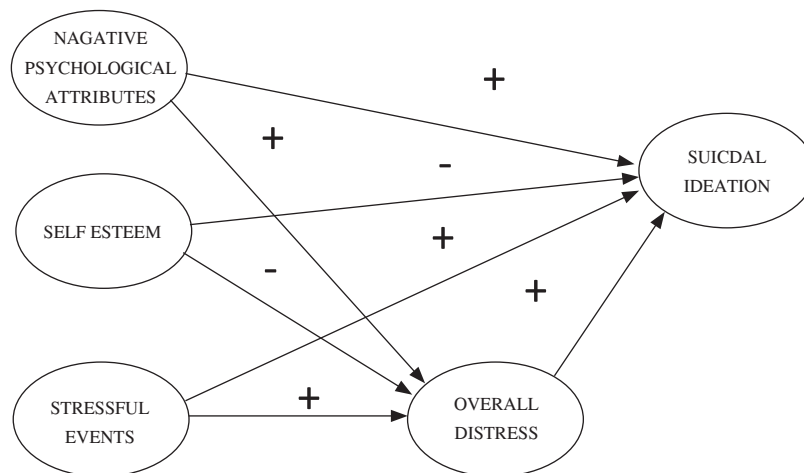


Figure 1 The hypothesized Rungsang-Chaimongkol Model of Suicidal Ideation among Thai Adolescents

Study Hypotheses

This study aimed to test the following hypotheses:

1) Negative psychological attributes, self-esteem,

stressful events and overall distress, all have a direct effect on suicidal ideation, and 2) Negative psychological attributes, self-esteem and stressful events influence suicidal ideation through overall distress.

Methods

Design: A descriptive cross-sectional, correlational study.

Sample and Setting: The sample size was based on the suggestion of Hair et al.²⁴ that a ratio of 10 respondents per parameter estimates is considered most appropriate for the structural equation modeling (SEM). Therefore a sample of 310 with 31 parameter estimates was obtained in this study.

A multi-stage, random sampling technique was used. Inclusion criteria for the sample recruitment were: being an adolescent enrolled in grades 7 – 12 (Mathayomsuksa 1 – 6) in secondary schools in the second semester of academic year 2015; generally healthy; never been diagnosed with a mental health problem; and received permission to participate in this study from parents. Six out of 22 school names were drawn, and two classes per one school were also selected randomly. All students in each selected classroom were invited and participated voluntarily.

Ethical Considerations: This study was approved by the Institutional Review Board (IRB) for Graduate Studies of Faculty of Nursing, Burapha University. Before the questionnaires were administered, the participants were asked to sign the assent form, and their parents were also asked to sign the consent form. They were informed that their participation was voluntary and that they could refuse to participate at any time without any penalty. The selected adolescents were invited to participate and received a full explanation of all aspects of the study. There were potential risks and benefits related to uncomfortable feelings due to the sensitive nature of some questions. Information about local mental health supporters was provided to participants showing distress during filled out the questionnaire.

Research Instruments: Data were collected by using six self-report questionnaires as follows:

A *Demographic Questionnaire* was developed by the principle investigator (PI). This questionnaire

collected information of the participants' gender, age, level of class, grade point average (GPA), the persons they were living with, sufficiency of expenses, marital status of their parents, and smoking and drinking experiences.

The Scale for Suicidal Ideation (SSI-Thai Version 2014) was modified and translated into Thai from the Beck Scale for Suicidal Ideation by Kittiteerasack and Muijeen.²⁸ It was used to assess suicide ideation. It has previously been administered with 200 individuals aged between 18–60 years in the Thai context. The 19 items consist of 3 subscales including: attitudes toward living and dying (5 items e.g., “Reasons for living/dying”); a desire to make an active (5 items e.g., “Reason for contemplated attempt”); and suicide risk factor (9 items e.g., “Actual preparation for contemplated attempt”, “Suicide note”). The respondents were asked to rate each item ranging from 0 (not at all) to 2 (very often). The total sum of the scores ranged from 0 to 38. A higher score would reflect a higher level of suicidal ideation. In this study, the Cronbach's alpha coefficient was .81.

The Strengths and Difficulties Questionnaire (SDQ – Thai version) was derived from the Strengths and Difficulties Questionnaire (SDQ) developed by Goodman²⁹, and translated into Thai by Woerner et al.³⁰ It is used to measure psychological attributes and contains 25 items in 5 subscales: emotional symptoms (5 items e.g., “I get a lot of headaches, stomach-aches or sickness”); conduct problems (5 items e.g., “I get very angry and often lose my temper”); hyperactivity/inattention (5 items e.g., “I am restless, I cannot stay still for long”); peer relationship problems (5 items e.g., “I am usually on my own. I generally play alone or keep to myself”); and pro-social behavior (5 items e.g., “I try to be nice to other people, and I care about their feelings”). Each item ranges from 0–2. The total score ranges from 0–50 with higher scores indicating higher negative social behaviors. In this study, the Cronbach's alpha coefficient was .70.

The Rosenberg's Self-Esteem Scale (RSE-Thai version) was translated into Thai from the Rosenberg's

Self-Esteem Scale³¹ by Tinakon & Nahathai.³² It was used to measure orientation toward one's self-esteem. It consists of 10 statements of positive (5 items e.g., "I feel that I have a number of good qualities.") and negative (5 items e.g., "I certainly feel useless at times"). Each item ranges from 0–5. The total score ranges from 0–40. Lower scores indicate lower self-esteem. The Cronbach's alpha coefficient for this study was .84.

The Negative Event Scale (NES– Thai version) was originally developed in English by Maybery³³ and translated into Thai by Thanoi.¹⁸ It is used to measure the level of negative events in an adolescent population. It contains 42 items in 10 subscales: problems with friends (4 items e.g., "Negative feedback from your friend/s"); problems with boy/girlfriend (5 items e.g., "Negative communication with your boy/girlfriend"); problems with money (4 items e.g., "Not enough money for necessities (e.g. food, clothing, housing etc.)"); problems with course (4 items e.g., "Problems getting assignments/essays finished"); problems with teacher/ lecturers (4 items e.g., "Negative communication with teacher/s, lecturer/s"); problems with parents (4 items e.g., "Negative communication with your parents or parent"); problems with other students (4 items e.g., "Conflict with other student/s"); problems with relatives (4 items e.g., "Conflict with relative/s"), health problems (4 items e.g., "Your health"); and academic limitation and course interest (5 items e.g., "Course not relevant to your future career"). Each item ranges from 0–5. The total score ranges from 0–210, with higher scores indicating higher negative perception to events. For this study, the Cronbach's alpha coefficient was .89.

The General Health Questionnaire (GHQ Thai version) was modified and translated into Thai by Nilchaikovit et al.³⁴ from the original General Health Questionnaire developed by Goldberg.³⁵ It is used to measure overall distress and has been widely used in various cultures as a screening tool to assess common mental health problems amongst Thais. It contains 12 items of 3 subscales including: depression (4 items e.g.,

"Have you been feeling unhappy or depressed recently?"); anxiety (4 items e.g., "Have you felt that you are playing a useful part in things recently?"); and life satisfaction (4 items e.g., "Have you been feeling reasonably happy recently, all things considered?"). Each item ranges from 0–1. The total score ranges from 0–12, with higher scores indicating higher overall distress. In this study, the Cronbach's alpha coefficient was .84.

Data collection: After IRB approval, informed consent and assent were obtained. The PI met with the facilitating teachers to make appointments. Data were collected by using the above self-administer questionnaires at the school where available study time and classrooms were arranged by the primary teacher of each class. It took about 20–30 minutes to complete all questionnaires.

Data analysis: Descriptive statistics were used to describe the demographic characteristics of the sample. Statistical assumptions underlying structural equation modeling (SEM), including outlier, normality, linearity, and multicollinearity, were tested. Then the hypothesized model was tested with Structural Equation Modeling (SEM) by using the AMOS program. The maximum likelihood method was used to estimate the strength of the relationships that existed among the study variables.

Results

Participants were 437 adolescents, 42.8% of whom were male. Their age was between 12–19 years old with a mean of 15.35 ($SD = 1.76$). Approximately equal percentages of them were studying in grades 7–12 (17.62%, 15.10%, 15.56%, 15.56%, 14.42% and 21.74%, respectively). More than one half (67.28%) had a grade point average (GPA) above 3.00. The majority of the participants (84.90%) lived with their family. Most (89.93%) had sufficient living expenses. Most of their parents were married (71.85%). There were 83.98%

non-smoking, and 72.31% who were non-drinkers of alcohol.

The description of the study variables, including suicidal ideation, negative psychological attributes, self-esteem, stressful events and overall distress, are

presented in the Table 1. The data for the 437 adolescents were tested for univariate and multivariate outliers, then these outlier cases were deleted. Consequently, the final sample contained 408 participants for the subsequent analyses.

Table 1 Descriptive statistics of Study Variables (n = 408)

Variable	Interval range		Mean	SD
	Possible	Actual		
Suicidal Ideation	0 - 38	0 - 24	6.61	5.05
Psychological attributes	0 - 50	8 - 34	18.87	5.00
Self-esteem	0 - 40	19 - 30	24.72	1.67
Stressful events	0 - 210	0 - 153	50.60	30.25
Overall distress	0 - 12	0 - 9	1.56	2.05

All the fit indices showed the hypothesized RC Model did not fit the actual data. Thus, the hypothesized model was modified by deleting each of 2 non-significant paths, of which were the paths from self-esteem to overall distress, and self-esteem to suicidal ideation. After deletion, the set of remaining paths achieved the criteria to fit the model. The final modified model adequately fitted with the sample data and all path coefficients were significant. In the modified RC Model (See Figure 2), 32 % of the variance in suicidal ideation among adolescents was accounted for by stressful events, overall distress,

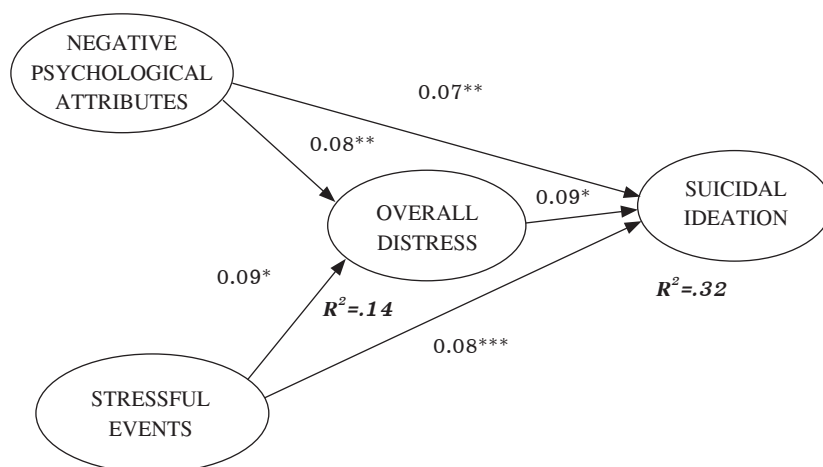
and negative psychological behaviors. Self-esteem did not significantly affect suicidal ideation of adolescents. Stressful events had the greatest statistically significant direct effect, followed by overall distress, while negative psychological behaviors had the smallest direct effect on suicidal ideation. Overall distress was found to be a mediator between suicidal ideation and the other predictors. Additionally, the results revealed that the hypothesis was partially supported. The results of the direct, indirect, and total effect of suicidal ideation among adolescents are presented in Table 2.

Table 2 Direct, indirect, and total effects of the modified Rungsang-Chaimongkol Model of Suicidal Ideation among Thai Adolescents (n = 408)

Causal variable	Overall distress			Suicidal Ideation		
	DE	IE	TE	DE	IE	TE
Stressful events	.09*	–	.09*	.08***	.02*	.10***
Negative psychological attribute	.08**	–	.08**	.07**	.03*	.10**
Overall distress	–	–	–	.09*	–	.09*
	$R^2=.14$			$R^2=.32$		

* $p < .05$, ** $p < .01$, *** $p < .001$

Note DE = Direct effect, IE = Indirect effect, TE = Total effect



* = $p < .05$, ** = $p < .01$, *** = $p < .001$

Chi-square = 235.48, $df = 126$, $p < .001$, RMSEA = .05

Figure 2 The modified Rungsang–Chaimongkol Model of Suicidal Ideation among Thai Adolescents

Table 3 Statistics of model fit index between the hypothesized and the modified Rungsang–Chaimongkol Model of Suicidal Ideation among Thai Adolescents ($n = 408$)

Model fit criterion	Acceptable score	Hypothesized RC model	Modified RC model
CMIN	$p > .05$	$\chi^2 = 334.78$ $p = .00$ ($df = 144$)	$\chi^2 = 235.48$ $p = .00$ ($df = 126$)
CMIN/ df	< 2	2.33	1.87
GFI	.90 – 1.00	.91	.94
AGFI	.90 – 1.00	.88	.91
RMSEA	$< .05$.06	.05

Note CMIN= minimum Chi-square, GFI = goodness of Fit Index, AGFI = adjusted goodness of fit index, and RMSEA = root square error of approximation

Discussion

These findings support the modified Rungsang–Chaimongkol Model of Suicidal Ideation among Thai Adolescents. The strongest to the weakest significant direct predictors of suicidal ideation were stressful events, overall distress, and negative psychological attributes, respectively.

Stressful events had a direct positive effect on suicidal ideation. This indicated that adolescents who perceived loss and relation difficulty or problems, had

increased vulnerability for suicidal ideation. Consistent with this finding, previous studies in Western countries and Thailand have shown that adolescents with higher levels of stressful events tend to have more suicidal ideation^{1, 3, 36} and the adolescents who confronted with stressful events, their cognitive vulnerability may become depressed, which is most often associated with suicide.^{7, 11}

Negative psychological attributes had a direct positive effect on suicidal ideation. In other words, adolescents who have more negative psychological

attributes such as anti-social behaviors, emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship problems are more likely to have high suicidal ideation. This finding is consistent with prior studies in Western adolescents.^{9,11} Evidence indicates that delinquency is significantly related to suicidal ideation in both male and female adolescents. In addition, impulsivity and aggression have been strongly associated with suicidal ideation in adolescents.³⁶

Overall distress showed a significant direct positive effect on suicidal ideation. The pathway from overall distress to suicidal ideation was found to be significant in the hypothesized model and it fitted the sample. It means that adolescents who had high overall distress had more suicidal ideation. According to the Rudd's cognitive behavioral model⁷ it is believed that individuals are likely to develop suicidal ideation because of having a predisposition to suicide, and overall distress could be associated with this. This is consistent with several previous studies which found positive relationships between suicidal ideas, depression, and anxiety among university students. Moreover, depression had the most contribution in predicting suicidal ideation followed by anxiety, respectively.^{8, 25, 36}

As for indirect effects on suicidal ideation, there were two predictors, negative psychological attributes and stressful events. Negative psychological attributes had a positive indirect effect on suicidal ideation through overall distress. Adolescents with negative psychological attributes, including emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship problems can increase their suicidal ideation through when distressed by feelings associated with depression or anxiety. Based on the cognitive behavioral model,³⁷ adolescents were likely to develop suicidal ideation because of having a predisposition to suicide such as impulsivity, aggressiveness, prior suicidal experiences, and psychiatric illness. These factors can be stimulated by stressful life events such as perceived loss, and relation difficulty or problems, which increase vulnerability for suicidal ideation and may

lead to suicidal attempts and completed suicide.¹³ This finding is also consistent with several studies.^{10-11, 14}

The estimated parameter from stressful events had significant positive indirect effects on suicidal ideation through overall distress. This indicates that adolescents who have high perceived stressful events account for more suicidal ideation through depression, anxiety or life dissatisfaction. The finding confirms results of prior studies^{10-11, 14} and the cognitive behavioral model.⁷

The predictor that had no effect on suicidal ideation was self-esteem. A possible reason might be that participants in this study had their total mean score of self-esteem (24.72) higher than possible mean score (20.00), implying that this group of adolescents had high self-esteem and slightly deviated from its mean ($SD = 1.67$). Therefore, further and deeper investigation about Thai adolescents' self-esteem is needed to confirm its effect on suicidal ideation. Based on the cognitive behavioral model, self-esteem is displayed as an affective symptoms of behavioral susceptibility.³⁷ Thus, this finding remains inconclusive.

Limitations

There are three limitations to this study. First, our findings may have limited generalizability to other group of participants than adolescents attending secondary schools in central Thailand. Although most adolescents have similar distress, attributes, and life events, various populations in other regions of the country and other countries may have not the same characteristics and beliefs. Second, we used a cross-sectional design, which may not reflect sequences and patterns of the relationship among all study variables changing over time. A longitudinal design would be preferable to more accurately explain these effects. Finally, the SDQ is a screening tool to identify behavior problems. A specific diagnostic tool is probably more suitable to measure psychological attributes.

Conclusions and Implications for Nursing Practice

The modified model version of the Rungsang-Chaimongkol Model of Suicidal Ideation among Thai Adolescents fitted the data well. It accounted for 32 % of total variance in prediction of suicidal ideation among Thai adolescents. Nurses who work with adolescents should identify indicators to develop suicidal ideation as well as demonstrate a preventive intervention for adolescents' suicidal ideation by teaching strategies to cope and deal with unexpected daily life stressful events aiming at reduce overall distress and negative psychological expression. In addition, teachers and school health teachers should be trained to understand and screen the high risk factors for suicidal ideation in adolescents, and later appropriately refer suspected cases to specific counseling and treatment.

Recommendations for future research

A future study with longitudinal design would gain more precise risk factors of adolescents' suicidal ideation as time passes with the same group of participants. An experimental study targeted at decreasing negative psychological attributes, such as moodiness, and being emotional, and stressful events, such as problems with peers, boy/girlfriend, parents and teachers, should be carried out to facilitate prevention of suicidal ideation. Additionally, the modified model explained only 32% of variance in suicidal ideation. Thus future research should add other factors such as coping and support from social, family, peer, and teacher in the model for further testing. Including these factors may provide a great level of specificity.

Acknowledgements

Thanks are given to PathumThani University, the King Prajadhipok and Queen RambhaiBarni

Memorial Foundation, as well as Burapha University for the allocated partial funding to support this project. All schools and participants are also thanked.

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ความคิดฆ่าตัวตายในวัยรุ่นชาวไทย: การทดสอบเชิงประจักษ์ของแบบจำลองเชิงสาเหตุ

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บทคัดย่อ: การศึกษาแบบตัดขวางครั้งนี้มีวัตถุประสงค์เพื่อทดสอบแบบจำลองรุ่งสาธ-ไชยมงคล ของความคิดฆ่าตัวตายของวัยรุ่นชาวไทย กลุ่มตัวอย่างคัดเลือกโดยการสุ่มแบบหลายขั้นตอน คือวัยรุ่นที่กำลังศึกษาอยู่ชั้นมัธยมศึกษาปีที่ 1 – 6 ในจังหวัดหนึ่งตอนกลางของประเทศไทย จำนวน 437 คน เครื่องมือวิจัยเป็นแบบสอบถามที่ให้กลุ่มตัวอย่างเป็นผู้ตอบเอง ได้แก่ แบบวัดความคิดฆ่าตัวตาย แบบสอบถามสภาวะสุขภาพทั่วไป แบบประเมินจุดแข็งและจุดอ่อน แบบวัดความรู้สึกรู้สึกมีคุณค่าในตนเองของโรเซนเบิร์ก และแบบวัดการรับรู้ต่อเหตุการณ์ที่สร้างความยุ่งยากใจ การวิเคราะห์ข้อมูลใช้สถิติพรรณนา และโมเดลสมการโครงสร้างเพื่อค้นหาขนาดของอิทธิพลทางตรงและทางอ้อมที่มีต่อความคิดฆ่าตัวตายในวัยรุ่นชาวไทย

ผลการศึกษาพบว่า พฤติกรรมเชิงลบและการรับรู้ต่อเหตุการณ์ที่สร้างความยุ่งยากใจ มีอิทธิพลโดยตรงในทางบวกต่อความคิดฆ่าตัวตาย ความทุกข์ใจเป็นสื่อกลางระหว่างพฤติกรรมเชิงลบและการรับรู้ต่อเหตุการณ์ที่สร้างความยุ่งยากใจ กับความคิดฆ่าตัวตาย แบบจำลองรุ่งสาธ-ไชยมงคลของความคิดฆ่าตัวตายของวัยรุ่นชาวไทย สามารถอธิบายความแปรปรวนของความคิดฆ่าตัวตายในวัยรุ่นชาวไทยได้ร้อยละ 32 การค้นพบนี้ให้ข้อเสนอแนะว่าการจัดโปรแกรมเพื่อป้องกันการคิดฆ่าตัวตาย โดยมุ่งเน้นเพื่อลดพฤติกรรมเชิงลบ เหตุการณ์ที่สร้างความยุ่งยากใจ และความทุกข์ใจ จะทำให้เกิดประโยชน์ได้ อย่างไรก็ตามก็ตีแบบจำลองนี้ยังต้องการการทดสอบกับกลุ่มตัวอย่างอื่นอีก

Pacific Rim Int J Nurs Res 2017; 21(2) 97-107

คำสำคัญ: วัยรุ่น; พฤติกรรมเชิงลบ; ความทุกข์ใจ; เหตุการณ์ที่สร้างความยุ่งยากใจ; ความคิดฆ่าตัวตาย; ประเทศไทย

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