The Prevalence of Suicidal Ideation among High School Students in Thailand and Its Potential Related Risk Factors

นิพนธ์ต้นฉบับ

Original Article

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บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาความคิดฆ่าตัวตายและปัจจัยที่เกี่ยวข้องในนักเรียนชั้นมัธยมศึกษา ในจังหวัดหนึ่งตอนกลางของประเทศไทย **วิธีการศึกษา:** เป็นการศึกษาแบบภาคตัดขวาง ในวัยรุ่นที่กำลังศึกษาอยู่ชั้นมัธยมศึกษาตอนต้นและตอนปลาย ในจังหวัดหนึ่งในตอนกลางของประเทศไทย จำนวน 437 คน เครื่องมือวิจัยเป็นแบบสอบถามที่ให้กลุ่มตัวอย่างเป็นผู้ตอบเอง ได้แก่ แบบวัดความคิดฆ่าตัวตาย แบบสอบถามสภาวะสุขภาพทั่วไป แบบประเมินจุดแข็งและจุดอ่อน แบบวัดความรู้สึกมีคุณค่าในตนเองของโรเซนเบิร์ก และแบบวัดการรับรู้ต่อเหตุการณ์ที่สร้างความยุ่งยากใจ การวิเคราะห์ข้อมูลใช้สถิติพรรณนา และวิเคราะห์การถดถอยโลจิสติกส์ **ผลการศึกษา:** พบว่านักเรียนชั้นมัธยมศึกษาร้อยละ 20.6 มีความคิดฆ่าตัวตาย (คะแนน SSI ≥ 6) โดยที่ 4.1 % ของกลุ่มนี้มีความเสี่ยงสูงมากที่จะทำร้ายตนเองสำเร็จ และพบว่า การสูบบุหรี่ การมีค่าใช้จ่ายประจำวันไม่เพียงพอ และระดับการศึกษา เป็นปัจจัยที่เกี่ยวข้องกับการมีความคิดฆ่าตัวตายในวัยรุ่น โดยวัยรุ่นที่สูบบุหรี่มีโอกาสที่จะเกิดความคิดฆ่าตัวตายมากกว่าวัยรุ่นที่ไม่ได้สูบบุหรี่ 3.6 เท่า วัยรุ่นที่มีค่าใช้จ่ายประจำวันไม่เพียงพอมีโอกาสที่จะเกิดความคิดฆ่าตัวตายมากกว่าวัยรุ่นที่มีค่าใช้จ่ายเพียงพอ 2.8 เท่า ในขณะที่ นักเรียนชั้นมัธยมศึกษาตอนปลายมีโอกาสที่จะเกิดความคิดฆ่าตัวตายน้อยกว่านักเรียนชั้นมัธยมศึกษาตอนต้น (0.3 เท่า) **สรุป:** อัตราความคิดฆ่าตัวตายที่สูงในนักเรียนชั้นมัธยมศึกษา มีแนวทางที่จะลดปัญหานี้ได้คือการหามาตรการในการหยุดการสูบบุหรี่ในนักเรียน และหาแนวทางช่วยเหลือค่าใช้จ่ายประจำวันให้เพียงพอ โดยเฉพาะในกลุ่มนักเรียนมัธยมศึกษาตอนต้น

คำสำคัญ: ค่าใช้จ่ายประจำวัน, นักเรียนมัธยมศึกษาตอนปลาย, การสูบบุหรี่, ความคิดฆ่าตัวตาย

Abstract

Objectives: To examine prevalence of suicidal ideation in high school students and determine its potential related risk factors in a province in central Thailand. **Methods**: In this cross-sectional survey, the study sample consisted of 437 students attending secondary schools in fall semester 2016 in a province in central Thailand. The students filled in a demographic questionnaire and the Suicidal Ideation's scale Thai version with a consistency reliability coefficient of 0.81. Descriptive statistics, chi-square test and binary logistic regression were used to analyze the data. **Results**: The prevalence of suicidal ideation was 20.6%. Among these with suicide ideation, 4.1% were with a very high suicide risk or were determined to commit suicide. Smoking was the highest potential risk factor, followed by inadequate budget for daily expense and studying in junior high school level. Gender, living with parents and parent's marital status were not associated with suicidal ideation. Students who were smoking and having insufficient budget for daily expense had the risk of suicidal ideation 3.6 and 2.8 times of their counterparts, respectively. In addition, students in a senior high school level were less likely to have suicidal ideation compared with those in their junior years. **Conclusion:** The prevalence of suicidal ideation among high school students in Thailand was *relatively* high. Strategies to stop smoking and alleviate the suffering related to insufficient budget for daily expense should be targeted to young adolescents, especially those in junior high school levels.

Keywords: daily expense, high school students, smoking, suicidal ideation, Thailand

Introduction

Suicidal ideation refers to thoughts of engaging in behavior intended to end one's life without actions or attempt, which is common in the general population.[1] However, suicidal ideation may serve as an indicator of suicide and such suicidal ideation is significant in anticipating the suicidal attempt and completed suicide.[2,3] Consequently, suicide has been recognized as a significant public health problem. In addition, the consequences of suicide cause suffering and anguish for families and society.[4-6] Urbanization, social disruption, secularization of society, rapid economic transitions, and loss of traditional values contribute to the increase in suicide.[7]

Currently, suicide is a leading cause of deaths worldwide.[4,8] In each year, more than one million individuals died by suicide and there were approximately twenty suicidal attempts for every committed suicide.[8,9] By the year 2020, It is estimated that approximately 1.53 million people or nearly 3% of all worldwide deaths would be due to suicide, and 10 – 20 times more people would have attempted suicide worldwide.[8] This represents on an average of one death for every 20 seconds and one attempt for every 1 – 2 seconds.

In Thailand, suicide is the fourth highest cause of death.[10] In 1999, suicide rates were found to have increased to a peak of 8.6 per 100,000, then decreased to 7.1 per 100,000 in 2003[11] and to 6.3 per 100,000 in 2012.[10,12] Although the rate of overall suicide has decreased, the rate of adolescent suicide has increased dramatically. There were 5.6 – 8.3 per 100,000 populations in 1999.[10,13] In Bangkok, among students aged 15 -19 years, there were 4.0% of adolescents with reported suicidal ideation and 6.1% with attempted suicide. In addition, a study in Chiang Mai high school students found that 4.6% of adolescents had attempted suicide in the past year.[14] In 2012, the Thailand Global School-Based Student Health Survey presented the prevalence of suicidal ideation was 8.8%. There were 7.4% of girls and 5.7% of boys had attempted suicide.[14] However, studies had been usually based on adolescents who had already attempted suicide. Few studies on suicidal ideation have been done in Thai adolescents. This would be of interest to examine the prevalence of suicidal ideation among high school students, which are adolescents. Therefore, the objectives of this study were to determine the prevalence of suicidal ideation and examine factors related to suicidal ideation among Thai high school students.

Methods

In this cross-sectional survey, the study population was students studying in Mathayomsuksa (M.) 1 - 6 or high schools (i.e., junior and senior high schools combined) in a province in the central Thailand of the second semester of the academic year 2015. Sample size was based on Tabasnick and Fidell (2007) suggestion[28], where 5 or 10 subjects per each independent variable considered appropriate. There were nine prospective independent variables in this study. Therefore, the minimum sample size was 90.

A total sample of 437 students was recruited by using a multi-stage random sampling. Six out of 22 school names were drawn which represented 25 - 30% of the total population.[29] In each of the six schools, a level was chosen. Two classes in the selected level were picked resulting in twelve study classes. To avoid social embarrassment and stigmatization, all students in each selected classroom (roughly 40 students per class) were invited to participate voluntarily. This study was approved by the Institutional Review Board (IRB) for graduate studies of Faculty of Nursing, Burapha University (IRB no. 01-12-2558, approved on January 8, 2016). For students to be eligible in the study, they had to be health in general, never been diagnosed with any mental problem, received permission to participate in the study from the parent.

Instruments

A demographic questionnaire and the Scale for Suicidal Ideation (SSI-Thai Version 2014)[15] was used to collect the data. The demographic questionnaire contained information about the characteristics of participants (age; gender; and GPA) and the characteristics their parents (marital status of parents, and education). The Scale for Suicidal Ideation (SSI-Thai Version 2014)[15] was used to assess suicide ideation. It has been previously administered with 200 individuals aged between 18 and 60 years in the Thai context and a content validity coefficient of 0.89 was found.[15] The SSI consisted of 19 items measuring the severity of suicidal ideation, plan to suicide, and likelihood of attempting suicide in the near future. The total scores ranged from 0 to 38 where high score indicated a high level of thought to suicide. A total score between 0 - 5 indicated a low suicidal ideation; while 6 - 19 referred to a high risk or a readiness to commit suicide, and 20 - 38 indicated a very high risk or a determination to commit suicide. In this study, the internal consistency reliability was at a high level with a Cronbach's alpha coefficient of 0.81.

Statistical analysis

Descriptive statistics including frequency, percent, mean, and standard deviation was used to describe the prevalence of the study variables. To obtain the association between the suicidal ideation and potential risk factors**,** Chi-square test and binary logistic regression were carried out. Candidate factors including age, gender, GPA, parental marital status, education level, smoking status, and sufficiency of the daily expense budget were tested in the logistic regression. The method of enter-step elimination in the logistic regression was employed. The *P*-value was set at < 0.05 throughout the analysis process, and 95% confidence intervals were calculated.

Results

The demographic characteristics of the sample

The demographic characteristics of the sample were presented in Table 1. Of a total of 437 students recruited, there were slightly more female students (n = 250 or 57.2%) than male students. The age of the participants ranged from 12 to 19 years with a mean of 15.4 (SD = 1.7). There were 51.7% of the participants studying in the senior high school level. More than one half of the participants (67.3%) had a grade point average (GPA) above 3.00. The majority of the participants (84.9%) were living with their family. Most of the participants (89.9%) had sufficient budget for daily expense. Most of their parents were married (71. 9%). It was found that 83.9% of the participants did not smoke and 72.3% did not drink alcohol beverage. Of these 437 participants, 20.6% reported having suicidal ideation (Table 1).

Table 1 Demographic characteristics of the sample (N = 437).

Variables	n	%
Suicidal Ideation *M = 6.61, SD = 5.05*		
Low risk	347	79.4
High risk	72	16.5
Very high risk	18	4.1
Age (years) *M = 15.35, SD = 1.76*		
12	21	4.8
13	65	14.9
14	53	12.1
15	96	21.9
16	55	12.6
17	96	21.9
18	50	11.4
19	1	0.2
Gender		
Male	187	42.8
Female	250	57.2
Education		
Junior high school	211	48.3
Senior high school	226	51.7
GPA *M = 3.20, SD = 0.53*		
≤ 3.00	143	32.7
3.01 - 4.00	294	67.3
Living with parents		
yes	371	84.9
no	66	15.1
Marital status of parents		
Married	314	32.7
Others	123	67.3
Sufficient budget for daily expense		
Yes	393	84.9
No	44	15.1
Smoking		
Yes	70	71.9
No	367	28.1
Alcohol consumption		
Yes	121	89.9
No	316	10.1

Factors related to suicidal ideation

Based on the logistic regression analysis, the final three factors significantly related to suicidal ideation among high school students were identified (Table 2). These three factors included high school level, sufficiency of the budget for daily expense, and smoking status when controlled for each other. Students who were studying in the senior high school level were less likely to have suicidal ideation than those in the junior level with an adjusted odds ratio (adj. OR) of 0.33 (*P*-value < 0.001, 95% CI = 0.199 - 0.556). Having insufficient budget for daily expense was associated with a higher risk of suicidal ideation (adj. OR = 2.77, *P*-value < 0.01, 95% CI = 1.372 - 5.591). Moreover, students who were smoking had a risk of suicidal ideation 3.6 times of those not smoking (adj. OR = 3.57, *P*-value < 0.001, 95% CI = 1.995 - 6.394).

Table 2 Logistic regression analysis of the likelihood of having a suicidal ideation.

Variable	β	X^2	*p*	Exp(B)	95% C.I. for EXP(B)	
					Lower	Upper
Senior high school	-1.10	17.63	< 0.001	0.33	0.199	0.556
Insufficiency day-to-day expenses	1.02	8.083	0.004	2.77	1.372	5.591
Smoking	1.27	18.35	< 0.001	3.57	1.995	6.394
Constant	-1.26	51.88	< 0.001	0.29		

Discussions and Conclusion

The study findings showed that 20.6% of high school students. Among these, 4.1% had a very high risk or a determination to commit suicide. It meant that this group had seriously considered committing suicide within the past 12 months. This rate of suicidal ideation (20.6%) was higher than that in a previous study in Thailand[14] (8.8%), and those in other countries such as 9.2% in China[6], 17.0% in Norway[16] and 18.4% in South Korea.[17] It was however lower than that in Zambia (31.3%).[18] Thus, the prevalence of suicidal ideation in adolescents seems to vary across regions and cultures. However, the higher rate of suicidal ideation in our study could suggest that suicide could be a leading cause of death among Thai adolescents. Thai government should pay a serious attention to this problem and develop suicide prevention program for this group.

Furthermore, this study was to identify the potential related protective factors of suicidal ideation among high school students. Senior high school students were less likely to have suicidal ideation than students in junior level. Smoking, insufficient budget for daily expense, and studying in junior high school level were significantly associated with suicidal ideation among high school students. It was also found that adolescents who were smoking had a risk of suicidal ideation 3.6 times of those non-smokers. This finding was consistent with a study in Peru where they found that smoking was significantly associated with an increased risk of suicidal ideation among school-going urban adolescents.[19] Similarly, a number of earlier studies also observed cigarette smoking as a risk factor of suicidal ideation.[16,20-23]

It was found that high school students who had an insufficient budget for daily expense had a risk of suicidal ideation 2.8 times of those with a sufficient budget. This finding was in accordance with the results obtained by Fuller-Thomson and colleagues [23] who reported that the average household income of teenagers with suicidal ideation was significantly lower than that of their suicidal ideation-free peers. Similar finding of juvenile delinquents was also reported by Kim and colleagues.[17] They stated that adolescents who perceived their household income as lower than average were more likely to have serious suicidal thoughts than their counterparts. Zhai and colleagues[6] also found that the parent's unstable job produced financial instability among university students and could lead to the student's suicidal ideation. Therefore, the appropriate program should be in place to help unemployed parents so that suicide ideation among adolescents could be prevented.

Students in a senior high school level were less likely to have suicidal ideation compared with those in their junior years. This finding was consistent with some studies.[22,24] Chang and colleagues found that adolescent suicidal ideation was significantly related to grade levels.[22] They postulated that middle school students experienced higher levels of suicidal ideation than high school students ($t = 5.38$, $P < 0.001$). A study of Ng and colleagues[24] also found that studying in senior level grade was a protective factor for suicidal ideation among adolescents. This highlights the strong positive meaning of academic level to adolescence.

Gender was found not associated with suicidal ideation. Our finding was not totally in agreement with all previous studies. A study in Zambia reported that gender was not associated with suicidal ideation among school adolescents.[18] However, several other studies stated that females were significantly associated with suicidal ideation.[23] For example, a study in Hong Kong adolescents[24] reported that girls were significantly more likely than boys to have suicidal ideation. In contrast, several studies indicated males had more completed suicide than females both in Thailand[11-13] and other countries.[25,26] With these inconclusive findings, suicide prevention program for adolescents should focus both female and male adolescents.

This study also found that living with parents had no association with suicide ideation. It could be possible that living with family did not guarantee a healthy and happy life[17] which was inconsistent with other studies.[17,23] A study found that adolescents who did not live with families had a higher level of suicidal ideation than those living with their family.[23] On the contrary, Kim and colleagues found that suicidal ideation was more common among adolescents not living with their family than their counterparts.[17] However, these findings suggest that adolescents not living with their family need to take care for their mental health problem, especially suicide prevention.

Even though some studies indicated that the parent's marital status was a risk factor for suicidal ideation of adolescents.[6,23] Zhai and colleagues indicated that having divorced parents or parents with negative relationships disrupted the cohesiveness of the family.[6] Such family stress could result in negative psychological state which could be further a reason for university students' suicidal ideation.[6] Additionally, Lemstra and colleagues suggested that it is not the structure of family such as single parents that leads to a suicide risk.[27] On the contrary, the poor quality of the relationship within the family leads to an increased suicide risk among adolescents. As a result, no association between suicidal ideation and parent's marital status was found in this study.

Conclusions and Implications for Nursing Practice

A high level of suicidal ideation was found in this sample among Thai high school students. The findings from our present study implied that smoking, insufficient budget for daily expense and studying in junior high school level were more likely to have suicidal ideation. The findings suggest that effective prevention programs directly address suicidal ideation to prevent suicide among this group of students

should be in place. Psychiatric-mental health nurses working in community especially in school setting should take part in this kind of program. The prevention program could focus more on students who smoke, have insufficient budget for daily expense, and are in junior level. Future research should extend on examination of more specific risk factors associated with suicidal ideation. More understanding could help diminish suicidal ideation to prevent suicide in adolescents.

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Editorial note
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