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Coping Self-Efficacy and Thoughts of Self-Harm Among Adolescents in Vietnam: A Longitudinal Study

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ABSTRACT

We aimed to determine the effect of coping self-efficacy on thoughts of self-harm among adolescents attending high school in Hanoi, Vietnam. Longitudinal data were collected using the Center for Epidemiologic Studies Depression Scale Revised and the Coping Self-Efficacy Scale among 552 Year 10 students. The prevalence of thoughts of death and/or self-injury on at least 1 day in the past week was 16.9% at baseline and 14.5% at 8-month follow-up. When baseline coping self-efficacy was greater by one standard deviation, the odds of having thoughts of self-harm at follow-up were reduced by 42%. Our findings suggest that school-based programs that aim to strengthen coping strategies may be useful in preventing self-harm among adolescents.

KEYWORDS

Adolescents; coping self-efficacy; self-harm; stress; Vietnam

INTRODUCTION

Self-harm, which includes suicide attempt and deliberate nonsuicidal self-injury, is the third leading cause of the disability-adjusted life years among 10- to 24-year-olds (GBD 2019 Diseases and Injuries Collaborators, 2020). There is significant variation in the prevalence of self-harm among adolescents across settings (Hawton et al., 2012). Globally, a recent meta-analysis of 66 studies found that the lifetime prevalence of suicide attempts among children and adolescents was 6% and lifetime prevalence of nonsuicidal self-injury was 22.1% (Lim et al., 2019). Having thoughts of suicide or nonsuicidal self-injury in adolescence strongly predicts engaging in self-harm in the short and long term (Castellvi et al., 2017; O'Connor & Nock, 2014). Globally, most people experiencing self-harm thoughts and behaviors do not receive any treatment (O'Connor & Nock, 2014). Therefore, understanding the risk factors and predictors of self-harm thoughts is crucial for preventing self-harm attempts.

Stress arises when a person perceives that a life event or situation, such as interpersonal conflict, death of a loved one, illness, heavy workload, or excessive responsibility, exceeds their ability to cope with the threats or demands being made on them (Lambert & Lazarus, 1970; Lazarus & Folkman, 1984). Self-efficacy for coping with stress is an individual's subjective judgment about their ability to perform a specific behavior to handle stressful situations effectively. Previous studies suggested that high self-efficacy

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for coping with stress can reduce the chance of engaging in health risk behaviors, including self-harm (Czyz et al., 2016; Heath et al., 2016). Several positive coping strategies, including managing emotional responses and problem-focused coping, are also associated with lower risk of self-harm attempts (de Jager & Naude, 2018; Guerreiro et al., 2013). Previous studies also found that higher general (Feng et al., 2015) and emotional (Kobayashi et al., 2015; Valois et al., 2015) self-efficacy were associated with a lower risk of suicidal ideation. However, the association between self-efficacy specifically for coping with stress and thoughts of self-harm during adolescence has not been studied.

In Vietnam, recent studies revealed that self-harm (suicide attempts and nonsuicidal self-injury) and thoughts of self-harm are prevalent among adolescents. Thai et al. (2021) conducted a survey of 1,316 students aged 15 to 18 years in urban and rural areas of Ho Chi Minh City and found that 43.9% of the participants had engaged in non-suicidal self-injury in the past 12 months. The 2019 Global School Health Survey found that among 7,796 surveyed students aged 13 to 17 years in Vietnam, 15.6% reported that they seriously considered attempting suicide in the past 12 months and 3.1% had attempted suicide during the past 12 months (World Health Organization, 2022). Other studies have reported similar findings, with a high prevalence of suicidal thoughts in the last 12 months among adolescents ranging from 11% (Thai et al., 2020; Q. A. Tran et al., 2020) to 26.3% (Nguyen et al., 2013).

The aim of this study was to ascertain the effect of coping self-efficacy on the thoughts of death and/or self-injury among adolescents in high schools in Hanoi, Vietnam.

MATERIALS AND METHODS

This is a secondary analysis of prospective data contributed by the control group of an intervention study (hereafter called the main study). The main study was a trial of a school-based program that aimed to improve coping skills and build resilience to prevent depression and promote well-being among young people, conducted in Hanoi, Vietnam (T. Tran et al., 2020).

Setting

Vietnam is located in Southeast Asia and has a population of 98 million. The gross domestic product per capita in 2020 was US$2,786, and Vietnam is classified as a lower-middle-income country (World Bank, 2021). Approximately 8.3% of school-age children (6 to 18 years old) are not in school (General Statistics Office of Vietnam (GSO), 2019). Hanoi is the capital city and one of the two largest cities in Vietnam. The population of Hanoi is approximately 8 million people, split equally between those living in urban and rural areas (GSO, 2019).

Main Study

The main study is a school-based, two-arm parallel controlled trial including students aged 15 to 16 years from Year 10 classes (T. Tran et al., 2020). The intervention group

received a group-based program aiming to prevent depression and promote positive mental health in addition to the usual school curriculum, and the control group received the usual school curriculum.

Participants were recruited using a multiple-stage method. First, two urban and two rural districts were randomly selected from the 12 urban districts and 18 rural districts in Hanoi by an independent statistician. Second, two public high schools in each of the selected districts were randomly selected. In each district, we randomly assigned one school to the intervention arm and the other to the control arm. Third, in each of the selected schools, three or four Grade 10 classes (clusters) were randomly chosen and invited to participate in the study. Classes were only included if both the school principal and class head teacher gave informed consent. All students in the selected Grade 10 classes were eligible and invited to participate. Students and their parents/guardians received a study information sheet and consent form a week prior to recruitment. Students who agreed and who had a parent/guardian's written consent to participate were recruited for this study. A total of 1,084 (96.1%) adolescents from 1,128 eligible students (552 in control group and 532 in intervention group) aged 15 to 16 years were recruited and provided data for the main study.

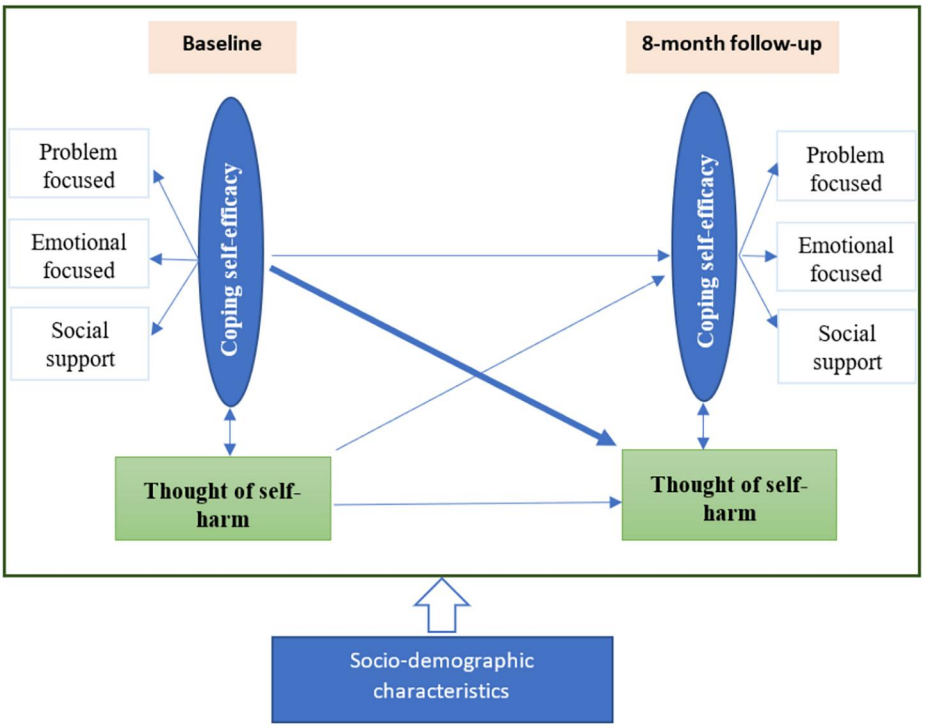
Data were collected at recruitment (baseline), postintervention (2 months after baseline) and follow-up (8 months after baseline). The first two surveys used paper-based self-completed questionnaires during usual 45-min class sessions. Due to COVID-19 restrictions in Hanoi, the follow-up survey was conducted using an online survey built in the Qualtrics Insight Platform (Qualtrics 2020), and students completed the survey from home during online 45-min class sessions. All sessions were supervised by trained data collectors from the Hanoi University of Public Health. Instructions on how to complete the questionnaire were given orally at the beginning of the session. Students were assured that they could leave any questions or the whole questionnaire blank if they did not want to answer. Students were asked to return the questionnaire whether or not it had been completed in a sealed envelope that was provided or submit the online survey.

Participants

This secondary analysis included all 552 participants from the control arm of the main study. Participants from the intervention arm were not included because of the potential effect of the intervention that was conducted during the first month after the baseline survey.

Conceptual Framework

The causal relationship between coping self-efficacy and thoughts of self-harm was examined through a conceptual framework (Figure 1) based on cross-lagged panel modeling (Kenny, 2005), using data at two time points (baseline and follow-up surveys). Postintervention data were not used because they were collected too close to baseline to determine a longitudinal relationship.



(Rectangular boxes are observed variables; Ellipses are unmeasured (latent) variables; single-headed arrows present directional paths; double-headed arrows present correlations.)

FIGURE 1. Conceptual framework.

Coping self-efficacy at baseline and follow-up was developed from three domains (namely, problem-focused and emotion-focused self-efficacy and social support–seeking strategies). The conceptual framework was used to test the hypothesis that there is a directional effect of coping self-efficacy and coping self-efficacy is associated with fewer thoughts of self-harm. Coping self-efficacy at baseline (earlier time point) is associated with lower likelihood of thoughts of self-harm at follow-up (later time point) when controlling for potential confounding factors. These potential confounders include (a) the associations between coping self-efficacy at baseline and follow-up and between thoughts of self-harm at baseline and follow-up; (b) cross-sectional associations between coping self-efficacy and thoughts of self-harm at baseline and at follow-up; (c) the association between thoughts of self-harm at baseline and coping self-efficacy at follow-up; and (d) sociodemographic characteristics such as gender and family characteristics.

Data Sources

Outcomes

Thoughts of self-harm were assessed at baseline and follow-up using two questions from the Center for Epidemiologic Studies Depression Scale Revised (Eaton et al., 2004): "I wished I were dead" and "I wanted to hurt myself." Responses to each of the

items were given on a 5-point Likert scale including *not at all or less than 1 day in the past week*, *1–2 days in the past week*, *3–4 days in the past week*, *5–7 days in the past week*, and *nearly every day for 2 weeks*.

Coping Self-Efficacy

Specific self-efficacy for coping with stress was assessed using the Coping Self-Efficacy Scale–Vietnamese version (CSES-V; T. Tran et al., 2022) at baseline and follow-up. The CSES-V includes 26 behaviors that an individual might do when things are not going well or when they are having problems. For each behavior, the respondent rates the extent to which they believe they could perform each behavior from 0 = *cannot do at all* to 10 = *certain I can do*. CSES-V comprises three subscales: Problem-Focused (concentrating on changing the stressor itself and its physical impact), Emotion-Focused (managing emotional responses to the event), and Social Support Seeking. The CSES-V has been locally validated (T. Tran et al., 2022). A three-subscale model was confirmed. Cronbach's alpha coefficients of the three subscales were at acceptable levels (emotion-focused: .91, problem-focused: .86, and social support: .75). Measurement invariance between boys and girls was supported. Subscale scores are the total scores of all items in each subscale. A higher subscale score indicates greater self-efficacy for that group of coping strategies.

Sociodemographic Characteristics

Baseline characteristics of the participants, including their sex (boy/girl), parents' education level, place of residence (urban/rural), who they are currently living with, number of siblings, self-reported major chronic disease and/or physical disability, self-rated general physical health, and family car ownership, were ascertained using study-specific questions.

Data Management and Data Analysis

The outcome variable derived from the two questions about thoughts of self-harm was recategorized into two groups: (0) *no thoughts or thinking of death or self-injury less than 1 day in the past week* and (1) *thinking of death or self-injury on at least 1 day in the past week*.

We conducted a structural equation model to examine the effect of coping self-efficacy on thoughts of self-harm using the conceptual framework presented in Figure 1. Criteria for model fit include a root mean square error of approximation (RMSEA) value of <0.05, comparative fit index > 0.95, and Tucker-Lewis index > 0.95 indicating a good fit (Brown, 2014; Kline, 2015).

Structural equation modeling was conducted in Mplus v7.4 (Muthén & Muthén, 2015). All other analyses were carried out using Stata v16 (StataCorp, 2019). Missing data were treated using full information maximum likelihood estimation under a missing at random assumption.

Ethical Considerations

This research was undertaken in accordance with Australia's National Statement on Ethical Conduct in Human Research and the Helsinki Declaration of 1975, as revised in 2008. This study was approved by Monash University Human Research Ethics Committee (Certificate No. 21455), Melbourne, Victoria, Australia; the Institutional Review Board of the Hanoi University of Public Health (488/2019/YTCC-HD3), Hanoi, Vietnam; and Queensland University of Technology's Office of Research Ethics and Integrity (2000000087). Written informed consent was obtained from a parent or guardian for participants under 16 years old.

RESULTS

Five hundred fifty-two adolescents aged 15 to 16 years were included in the analyses. The characteristics of the sample are presented in Table 1.

A total of 16.9% (95% confidence interval [CI] [13.8; 20.3]) of participants endorsed having thoughts of death and/or self-injury on at least 1 day in the past week. The corresponding figure at follow-up was 14.5% (95% CI, [11.6; 17.8]). Detailed data on the frequencies of thoughts of self-harm are shown in Table 2.

The structural equation model presented in Table 3 fit the data well. We found that when baseline coping self-efficacy was increased by one standard deviation, the odds of

TABLE 1. Sociodemographic and health characteristics of the sample ($N = 552$).

Characteristics	*n* (%)
Girls	325 (58.9)
Urban residence	284 (51.5)
Living with	
Both biological parents	496 (89.9)
Other	56 (10.1)
Number of siblings	
None	19 (3.5)
One	318 (57.8)
Two or more	213 (38.7)
Mother's education level	
University or above	220 (39.9)
Diploma/technical degree	52 (9.4)
High school (Year 12)	97 (17.6)
Secondary school (Year 9) or lower	93 (16.9)
Do not know	90 (16.3)
Father's education level	
University or above	217 (39.3)
Diploma/technical degree	35 (6.3)
High school (Year 12)	106 (19.2)
Secondary school (Year 9) or lower	83 (15.0)
Do not know	111 (20.1)
Self-reported major chronic disease and/or physical disability	58 (10.6)
Self-rated physical health	
Very good	93 (16.9)
Good	193 (35.2)
Fair	250 (45.5)
Poor/very poor	13 (2.3)
Family owns a car	189 (34.2)

TABLE 2. Prevalence of thoughts of death and/or self-injury.

	Baseline[a] *n* (%)	Follow-up[b] *n* (%)
Thoughts of death		
Not at all or less than 1 day in the past week	478 (86.8)	481 (89.4)
1–2 days in the past week	44 (8.0)	33 (6.1)
3–4 days in the past week	12 (2.2)	11 (2.0)
5–7 days in the past week	17 (3.1)	13 (2.4)
Nearly every day for 2 weeks	0 (0.0)	0 (0.0)
Thoughts of self-injury		
Not at all or less than 1 day in the past week	484 (87.8)	479 (89.0)
1–2 days in the past week	39 (7.1)	36 (6.7)
3–4 days in the past week	14 (2.5)	15 (2.8)
5–7 days in the past week	14 (2.5)	8 (1.5)
Nearly every day for 2 weeks	0 (0.0)	0 (0.0)

[a]Missing $n = 1$.
[b]Missing $n = 14$.

having thoughts of self-harm at follow-up were reduced by 42%. In addition, the odds of having thoughts of self-harm were increased for participants not living with both parents and those without a family car (which indicates a comparatively lower socioeconomic position). Coping self-efficacy was lower among girls than boys and lower among adolescents with two or more siblings. Self-rated physical health was positively associated with coping self-efficacy.

DISCUSSION

Overall, one in six adolescents aged 15 to 16 years in high schools in Hanoi had thoughts including wishing they were dead or about injuring themselves on at least 1 day in the past week. The hypothesis of this study was supported in that adolescents who had greater coping self-efficacy were less likely to have any thoughts of self-harm in the short term. To our knowledge, this study is the first to contribute prospective data on the directional relationship between coping self-efficacy and thoughts of self-harm among adolescents.

This study has several strengths. First, we used longitudinal data and an advanced longitudinal data analysis technique, taking into account baseline characteristics, producing evidence for a causal relationship about which we are confident. Second, the sample size is large and the participants were recruited from both urban and rural areas using a rigorous multistage method. Finally, the recruitment and completion rates were high.

We acknowledge some limitations. First, the outcome measure, which comprises two items, "I wished I were dead" and "I wanted to hurt myself," is brief and has not been validated against a diagnostic interview locally. Second, we used "family having a car" as a proxy for a family's socioeconomic position. Though in this setting this is a sensitive indicator, there are others (such as family income) that might capture the gradient of family socioeconomic positions better. Finally, this study only included adolescents aged 15 to 16 years who attended school and lived in Hanoi. Generalization of the findings to younger or older adolescents, adolescents who are not in school, or adolescents living in other regions requires caution. Nevertheless, these limitations are in relation to

TABLE 3. Structural equation model.

Pathway	Estimate	95% CI		*p* Value
Thoughts of self-harm at follow-up	Odds ratio			
Regressed on:				
Coping self-efficacy at baseline (standardized unit)	0.58	0.46	0.72	<.001
Thoughts of self-harm at baseline	5.02	3.39	7.44	<.001
Urban vs. rural	0.92	0.54	1.55	.750
Mother's education level (completed high school or higher)	1.35	0.69	2.63	.385
Father's education level (completed high school or higher)	0.58	0.31	1.06	.077
Female vs. male	1.26	0.77	2.06	.356
Siblings (two or more)	1.14	0.71	1.83	.600
Not living with both parents	2.05	1.02	4.10	.042
Having any chronic disease	1.14	0.53	2.45	.731
Self-rated physical health (fair/poor vs. very good/good)	1.05	0.63	1.73	.859
Family having a car	1.78	1.10	2.87	.018
Coping self-efficacy at follow-up	Standardized coefficient			
Regressed on:				
Coping self-efficacy at baseline	0.56	0.49	0.62	<.001
Thoughts of self-harm at baseline	−0.05	−0.11	0.02	.178
Urban vs. rural	0.04	−0.04	0.12	.360
Mother's education level (completed high school or higher)	0.01	−0.09	0.11	.881
Father's education level (completed high school or higher)	0.01	−0.09	0.1	.882
Female vs. male	−0.12	−0.2	−0.05	.002
Siblings (two or more)	−0.08	−0.15	−0.01	.042
Not living with both parents	−0.02	−0.08	0.04	.511
Having any chronic disease	−0.02	−0.09	0.06	.692
Self-rated physical health (fair/poor vs. very good/good)	−0.05	−0.13	0.03	.214
Family having a car	0.05	−0.03	0.12	.257
Coping self-efficacy at baseline				
Regressed on:				
Urban vs. rural	−0.06	−0.16	0.04	.226
Mother's education level (completed high school or higher)	−0.04	−0.17	0.09	.535
Father's education level (completed high school or higher)	−0.02	−0.15	0.1	.702
Female vs. male	−0.08	−0.17	0.01	.099
Siblings (two or more)	−0.03	−0.13	0.06	.473
Not living with both parents	−0.02	−0.011	0.07	.642
Having any chronic disease	0.05	−0.04	0.14	.251
Self-rated physical health (fair/poor vs. very good/good)	−0.27	−0.36	−0.18	<.001
Family having a car	0	−0.09	0.10	.965
Coping self-efficacy at baseline				
Measured by:				
Social support coping self-efficacy at baseline, *Z* score	0.71	0.66	0.76	<.001
Emotion-focused coping self-efficacy at baseline, *Z* score	0.87	0.83	0.91	<.001
Problem-focused coping self-efficacy at baseline, *Z* score	0.82	0.78	0.86	<.001
Coping self-efficacy at follow-up				
Measured by:				
Social support coping self-efficacy at follow-up, *Z* score	0.81	0.77	0.84	<.001
Emotion-focused coping self-efficacy at follow-up, *Z* score	0.94	0.92	0.96	<.001

(*continued*)

TABLE 3. Continued.

Pathway	Estimate	95% CI		*p* Value
Problem-focused coping self-efficacy at follow-up, *Z* score	0.92	0.89	0.95	<.001
Correlational relationships	Covariance			
Thoughts of self-harm at baseline with coping self-efficacy at baseline	−0.34	−0.45	−0.23	<.001
Thoughts of self-harm at follow-up with coping self-efficacy at follow-up	−0.33	−0.45	−0.21	<.001
Problem-focused coping self-efficacy at follow-up with problem-focused coping self-efficacy at baseline	0.46	0.35	0.57	<.001
Emotion-focused coping self-efficacy at follow-up with emotion-focused coping self-efficacy at baseline	0.37	0.22	0.53	<.001
Social support coping self-efficacy at follow-up with social support coping self-efficacy at baseline	0.43	0.35	0.50	<.001
Model fit information	Value			
RMSEA	0.026			
Probability RMSEA $\leq$ 0.05	0.999			
Comparative fit index	0.98			
Tucker-Lewis index	0.965			

the prevalence of low coping self-efficacy and thoughts of self-harm rather than the relationships between these variables.

The prevalence of having any thoughts of suicide or self-injury in this study is in line with the findings of previous studies in Vietnam that found the prevalence ranged from 11.0 to 15.6% (Thai et al., 2020; Q. A. Tran et al., 2020; World Health Organization, 2022). However, other studies have reported a prevalence of up to 26.3% (Nguyen et al., 2013; Thai et al., 2021). This variation in prevalence can be attributed to a number of factors, including differences in outcome measures, sociodemographic characteristics of the samples, and the COVID-19 pandemic. The prevalence of having any thoughts of suicide or self-injury in our study was slightly higher than the pooled prevalence of 14% among school-based studies of adolescents aged 12 to 17 years in 82 countries (Biswas et al., 2020). Our findings support the existing knowledge that thoughts of self-harm are common among adolescents, and more attention is warranted from teachers, schools, researchers, and policymakers.

The strong effect size of coping self-efficacy on having fewer thoughts of self-harm found in this study is in line with the current frameworks of predictors of suicide and self-injury in adolescence. O'Connor and Nock (2014) reviewed the predominant theoretical models of suicidal behavior and postulated that cognitive factors, including stress coping strategies, alongside personality and individual differences (e.g., hopelessness and perfectionism), social factors (e.g., social isolation) and negative life events (e.g., childhood adversities and physical illness) are the key psychological risk and protective factors for suicidal ideation and suicidal behavior. Gallagher and Miller (2018) also proposed that stress coping strategies including problem-solving ability and emotion regulation are individual assets that play a role in resilience, buffering the effects of social risk factors (e.g., dysfunctional family and physical/sexual abuse) on adolescent suicide outcomes. However, previous empirical studies in this field have only been able to show the association between self-harm and stress coping strategies (Guerreiro et al., 2013).

This study also found associations between family sociodemographic characteristics and having thoughts of self-harm. Not living with either or both biological parents is a risk factor for thoughts of suicide or self-injury (Minh et al., 2012; Thai et al., 2021). This living situation may be a marker of adversity, such as family loss, separation, or life change in which the adolescent is both less likely to have an adult who provides responsive care because the available parent is preoccupied with their own situation and also may undertake adult responsibilities that may contribute to having more thoughts of self-harm. An adolescent who does not live with their parents may lack nurturing care. This finding suggests the crucial role of parents in supporting psychological development throughout adolescence. Another family characteristic that is associated with thoughts of self-harm is socioeconomic position (Van Phan & O'Brien, 2019). Surprisingly, our findings suggest that adolescents living in families with higher socioeconomic status are more likely than others to experience thoughts of self-harm. It is possible that more advantaged families have higher academic ambitions for their children, which might contribute to unrealistic expectations that arouse anxiety. It is plausible that young people contemplate ways to escape the potential humiliation of failing to meet their parents' ambitions (Fisher et al., 2011; Nguyen et al., 2013; Thai et al., 2021). Thoughts about and attempts of self-harm are generally higher among young women than among young men (Fisher et al., 2011; McKinnon et al., 2016). Our study had a similar finding, but this difference was no longer significant when other factors, including coping self-efficacy, were controlled for. Thus, in understanding differences in the prevalence of self-harm ideation and behaviors between male and female adolescents, our findings suggest that these are mediated by psychological factors including coping self-efficacy. If so, interventions to strengthen psychological protective factors need to be gender informed but can contribute to eliminating gender disparities.

CONCLUSION

Thoughts of self-harm are common among adolescents in schools in Vietnam. Coping self-efficacy is a potentially modifiable protective factor against thoughts of self-harm. There is a lack of mental health promotion in the current school curriculum in Vietnam, in particular, training strategies for understanding and coping with stress. The results of this study strongly suggest that school-based psychoeducational programs aimed at developing effective stress coping strategies are urgently needed to help prevent self-harm among adolescents.

ACKNOWLEDGEMENTS

The authors are especially grateful to the adolescents who contributed their experiences to this research.

AVAILABILITY OF DATA AND MATERIAL

The data, analytic methods (code) used in the analysis, and materials used to conduct the research will be made available to any researcher for purposes of reproducing the results or replicating the procedure on reasonable request to the corresponding author.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

ETHICS APPROVAL

This study was a part of a trial study that was approved by Monash University Human Research Ethics Committee (Certificate No. 21455), Melbourne, Victoria, Australia; the Institutional Review Board of the Hanoi University of Public Health (488/2019/YTCC-HD3), Hanoi, Vietnam; and Queensland University of Technology's Office of Research Ethics and Integrity (2000000087).

PARTICIPANT CONSENT

Written informed consent was obtained from a parent or guardian for participants under 16 years old.

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