



Association Between Traditional Bullying Victimization and Mental Health among Ethnic Minority In-School Adolescents in Northern Thailand

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Abstract

Background: Traditional bullying victimization is an important public health concern because of its association with adverse mental health outcomes, yet evidence among ethnic minority adolescents in northern Thailand remains limited. **Objective:** This study aimed to examine the association between traditional bullying victimization and the severity of depression, anxiety, and stress symptoms among ethnic minority adolescents. **Methods:** A school-based cross-sectional study was conducted among ethnic minority students in grades 10–12 in Chiang Rai Province, Thailand. Traditional bullying victimization was assessed using the Revised Olweus Bully/Victim Questionnaire (R-OBVQ), while mental health symptoms were assessed using the Depression Anxiety Stress Scales (DASS-21). Descriptive statistics and ordinal logistic regression analyses were used to examine the associations between bullying victimization and mental health symptom severity. **Results:** A total of 450 students participated in the study. Most participants were female (66.0%),

with a mean age of 16.80 years (SD = 1.16), and 6.2% were non-Thai nationals. Overall, 91 students (20.2%) were classified as victimized. After adjustment for age, sex, nationality, ethnic group, and alcohol consumption, victimized students had higher odds of being in more severe symptom categories for depression (aOR = 1.73; 95% CI, 1.13–2.66; $p = 0.011$), anxiety (aOR = 1.97; 95% CI, 1.29–3.01; $p = 0.002$), and stress (aOR = 2.70; 95% CI, 1.73–4.21; $p < 0.001$) than non-victimized students. Traditional bullying victimization was associated with greater depression, anxiety, and stress symptom severity among ethnic minority adolescents. **Conclusion:** These findings support culturally responsive school-based bullying prevention, routine and confidential screening, and clear referral pathways for students requiring further mental health support.

Keywords: Bullying Victimization, Mental Health, Ethnic Minority Adolescents, Northern Thailand

What was Known

- Traditional bullying is a significant global public health issue that adversely affects adolescents' psychological development and overall well-being.
- Bullying victimization is consistently associated with an increased risk of mental health problems, particularly depression, anxiety, and stress.
- Ethnic minority adolescents may face heightened vulnerability due to socio-cultural and structural factors; however, they remain underrepresented in research on bullying and mental health.

What's New and Next

- Traditional bullying victimization was significantly associated with greater depression, anxiety, and stress symptom severity among ethnic minority adolescents.
- The findings underscore the need for culturally responsive mental health support and proactive school-based screening for at-risk students.
- Effective bullying prevention requires multi-sectoral collaboration among schools, healthcare providers, and local communities to ensure sustainable well-being.

Introduction

Adolescence is a critical developmental period during which mental health problems, including depression, anxiety, and stress, commonly emerge⁽¹⁾. These conditions can have lasting effects on emotional well-being, social functioning, and academic performance, making adolescent mental health a growing public health concern worldwide^(1,2).

During adolescence, traditional bullying victimization, encompassing face-to-face physical, verbal, and relational aggression, represents an important psychosocial stressor associated with mental health problems^(3,4). Existing evidence indicates that these experiences are widespread among students across the globe, with nearly one in three students globally reporting bullying victimization (32%)⁽⁵⁾. The issue is also evident in Thailand, the context of this study, where the 2015 Global School-Based Student Health Survey reported a 30-day bullying prevalence of 29.3% among school-going adolescents⁽⁶⁾. Although these estimates were derived using different definitions and measurement approaches, they highlight the substantial public health burden of bullying victimization. From a stress-process perspective, traditional bullying victimization may be conceptualized as an interpersonal stressor whose psychological implications may vary according to adolescents' social position and access to coping and social support resources⁽⁷⁾. Repeated victimization may generate persistent feelings of threat, negative self-perceptions, and disruptions in social functioning, thereby increasing vulnerability to depression, anxiety, and stress⁽⁸⁾. This association is further supported by recent meta-analytic evidence indicating that bullying victimization is associated with adverse mental health outcomes among children and adolescents^(9,10).

The potential mental health consequences of bullying victimization may be particularly relevant to ethnic minority upper-secondary students in Thailand, who may face intersecting developmental and structural challenges. During upper-secondary education, peer relationships remain salient while academic and transition-related demands increase. Ethnic minority students may additionally encounter linguistic barriers, socioeconomic disadvantage, stigma, and limited access to health and educational resources, potentially compounding stress and constraining access to appropriate support^(11–15).

In light of these concerns, Chiang Rai Province provides an important context for examining bullying-related mental health outcomes among ethnic minority adolescents. Located in northern Thailand and bordering Myanmar and Laos, the province is home to diverse ethnic minority communities, including Akha, Hmong, Yao, Karen, Lisu, and Lahu. Evidence from the local context

indicates a notable mental health burden among these populations. For example, during the COVID-19 period, 21.9% of hill-tribe high school students in the province had depressive symptoms⁽¹⁶⁾.

Despite evidence suggesting mental health vulnerability among ethnic minority adolescents in Thailand, research examining bullying-related mental health outcomes in this population is scarce. Previous Thai studies have primarily focused on the prevalence and factors associated with bullying perpetration or victimization in general school populations or selected clinical groups^(17,18). Although several studies have examined selected depressive or psychosocial outcomes^(19,20), evidence remains limited regarding the association between traditional bullying victimization and the ordered severity of depression, anxiety, and stress symptoms among ethnic minority upper-secondary students. Therefore, this study aimed to examine these associations among ethnic minority students in grades 10–12 in Chiang Rai Province, Thailand. The findings may inform culturally appropriate bullying prevention and mental health support for ethnic minority adolescents in northern Thailand.

Materials and Methods

Study design and setting

An analytical cross-sectional study was conducted to investigate the association between traditional bullying victimization and mental health outcomes among ethnic minority senior high school students in Chiang Rai Province, Thailand. Data were collected from May to August 2025.

Study population, study sample, and sample size calculation

The study population comprised ethnic minority students enrolled in grades 10–12 at the participating schools during the data collection period who self-identified as belonging to one of six major ethnic groups—Hmong, Akha, Lahu, Yao, Lisu, or Karen. Eligible students who met the inclusion criteria were invited to participate in the study.

Inclusion criteria were students who: (1) self-identified as belonging to one of the six ethnic minority groups; (2) were enrolled in grades 10–12; (3) were able to read and write Thai; (4) were willing to participate; and (5) provided written informed consent or assent, as applicable. Written consent from a parent or legal guardian was additionally obtained when required under the approved research protocol. Exclusion criteria included being absent on the day of data collection or having an illness that prevented participation in the study.

The sample size was calculated using the formula for a cross-sectional study⁽²¹⁾: $n = [Z^2 \cdot P \cdot (1 - P)] / d^2$. Based on a reported victimization prevalence of 52% ($p = 0.52$)⁽²²⁾, a 95% confidence interval ($Z = 1.96$), and a 5% margin of error ($d=0.05$), the minimum required sample size was 384. After

allowing for approximately 15% potential non-response, the target sample size was set at 450. All recruited participants completed the survey and were included in the final analysis.

A multistage sampling procedure was used. Eligible schools were defined as upper secondary schools offering grades 10–12 and enrolling students from one or more of the six target ethnic groups. Seven eligible schools were identified across five districts. Six schools were selected and invited to participate: the sole eligible school in each of four districts and two of the three eligible schools in Mae Fah Luang District, which were selected by simple random sampling. One invited school declined participation before student recruitment. Consequently, five schools across four districts participated in the study: one each in Chiang Saen, Mae Chan, and Mae Suai, and two in Mae Fah Luang.

Within each participating school, grade-specific student enrollment lists were used for random selection. Students were stratified by school and grade level, resulting in 15 school–grade strata. Thirty students were selected from each stratum using simple random sampling without replacement. Eligibility, including self-identified ethnic minority status, was confirmed before enrollment in the study. This process yielded a total sample of 450 students.

Research instruments

The research instruments consisted of three parts.

Part 1: General characteristics. This section collected data on sex, age, nationality, ethnic group, school type, smoking, and alcohol consumption.

Part 2: Traditional bullying victimization. Traditional bullying victimization was assessed using the Thai version of the Revised Olweus Bully/Victim Questionnaire (R-OBVQ)⁽²³⁻²⁵⁾, which covers face-to-face physical, verbal, and relational bullying, including social exclusion. Before completing the questionnaire, students were presented with the R-OBVQ definition of bullying, which emphasized repeated negative actions and an imbalance of power. Although the full questionnaire was administered, overall victimization status in the present analysis was defined using the global victimization frequency item, an established R-OBVQ approach to classifying victimization⁽²³⁾. The item assessed how often students had been bullied at school during the previous two months. The response categories were: 1 = “I had not been bullied at school during the previous two months,” 2 = “only once or twice,” 3 = “two or three times a month,” 4 = “once a week,” and 5 = “three or four times a week.” Students who reported being bullied “two or three times a month” or more frequently

(response categories 3–5) were classified as victimized. Those who reported no bullying or bullying only once or twice (response categories 1–2) were classified as non-victimized. The remaining items assessed specific forms and contextual characteristics of bullying and were not used to define the primary exposure variable in the present analysis.

Part 3: Mental health outcomes. Mental health outcomes were assessed using the Thai version of the 21-item Depression Anxiety Stress Scales (DASS-21)⁽²⁶⁻²⁸⁾. The DASS-21 consists of 21 items assessing depression, anxiety, and stress symptoms during the previous week, with seven items in each subscale. Each item is rated on a four-point scale: 0 = “did not apply to me at all,” 1 = “applied to me to some degree or some of the time,” 2 = “applied to me to a considerable degree or a good part of the time,” and 3 = “applied to me very much or most of the time.” Scores for the seven items in each subscale were summed separately, yielding raw scores ranging from 0 to 21. Raw subscale scores were not multiplied by two. For the present analysis, depression scores were classified as normal (0–4), mild (5–6), moderate (7–10), and severe to extremely severe (≥ 11); anxiety scores as normal (0–3), mild (4–5), moderate (6–7), and severe to extremely severe (≥ 8); and stress scores as normal (0–7), mild (8–9), moderate (10–12), and severe to extremely severe (≥ 13)⁽²⁷⁻²⁸⁾.

To ensure clarity and contextual appropriateness, the overall questionnaire was reviewed by three experts with expertise in mental health, family health, and epidemiology. Although the standardized Thai DASS-21 was used without modification, all questionnaire items achieved an Index of Item-Objective Congruence (IOC) value of 1.00. Internal consistency was assessed in a pilot test among 30 ethnic minority upper-secondary students from a different district, yielding Cronbach's alpha coefficients of 0.85, 0.81, and 0.82 for the depression, anxiety, and stress subscales, respectively.

Statistical analysis

All analyses were conducted using SPSS version 30.0 (IBM Corp.). Descriptive statistics included frequencies, percentages, means, and standard deviations. Categorical variables were compared between victimized and non-victimized students using Pearson's chi-square test or Fisher's exact test, as appropriate. Differences in raw DASS-21 subscale scores between the two groups were examined using independent-samples t-tests.

Ordinal logistic regression was used to examine the association between traditional bullying victimization and each mental health outcome, categorized into the four ordered symptom-severity levels defined above. Ordinal logistic regression was selected because the primary analytical interest was the ordered severity of mental health symptoms and the odds of being in a higher severity category. The severe and extremely severe categories were combined to ensure adequate observations in the highest category, particularly for stress, while preserving a consistent ordinal outcome structure across the three models. Results were presented as crude odds ratios (cORs) and adjusted odds ratios (aORs) with 95% confidence intervals (CIs). The adjusted models included sex, age, nationality, ethnic group, and alcohol consumption, entered simultaneously as prespecified potential confounders. These covariates were selected based on previous literature and their conceptual relevance as potential confounders, rather than data-driven model-selection criteria. The proportional odds assumption was assessed using the test of parallel lines, with $p > 0.05$ indicating no evidence of violation of the assumption.

Results

General characteristics of the participants

A total of 450 ethnic minority senior high school students participated in the study. Most participants were female (66.0%), and the mean age was 16.80 years (SD = 1.16). Twenty-eight participants (6.2%) were non-Thai nationals. The largest ethnic groups were Hmong (37.3%) and Akha (34.0%), followed by Lahu (21.1%); Yao, Lisu, and Karen together accounted for the remaining 7.6%. Most students attended day schools (80.0%). Regarding lifestyle behaviors, 18.7% reported alcohol consumption, whereas 2.2% reported smoking (Table 1).

When participants were compared according to traditional bullying victimization status, 91 students (20.2%) were classified as victimized. No statistically significant differences were observed in sex, age, nationality, ethnic group, school type, smoking, or alcohol consumption between the victimized and non-victimized groups (all $p > 0.05$) (Table 1).

Mental health outcomes among participants

The distributions of depression, anxiety, and stress symptom severity according to traditional bullying victimization status are presented in Table 2. Victimized students had significantly higher mean raw scores for depression, anxiety, and stress than non-victimized students. Symptom severity distributions also differed significantly between the two groups across all three domains (all $p < 0.05$),

with victimized students generally showing greater proportions in the higher symptom-severity categories.

Table 1 Participant characteristics categorized by traditional bullying victimization status (n = 450)

Characteristics	Traditional bullying victimization		<i>p</i>
	Victimized n (%)	Non-victimized n (%)	
Sex			0.086
Male	24(26.4)	129(35.9)	
Female	67(73.6)	230(64.1)	
Age (years), Mean ± SD	16.89±1.04	16.77±1.19	0.346 ^a
Nationality			0.516
Thai	84(92.3)	338(94.2)	
Non-Thai	7(7.7)	21(5.8)	
Ethnic group			0.342
Hmong	36(39.5)	132(36.8)	
Akha	35(38.5)	118(32.9)	
Lahu	13(14.3)	82(22.8)	
Yao/Lisu/Karen	7(7.7)	27(7.5)	
School type			0.597
Boarding	20(22.0)	70(19.5)	
Day school	71(78.0)	289(80.5)	
Smoking			0.695 ^b
Yes	1(1.1)	9(2.5)	
No	90(98.9)	350(97.5)	
Alcohol consumption			0.364
Yes	20(22.0)	64(17.8)	
No	71(78.0)	295(82.2)	

Note: Values are presented as n (%) unless otherwise indicated. Percentages were calculated within each column. The *p* values compare victimized and non-victimized students and were obtained using Pearson's chi-square test for categorical variables, the independent-samples t-test for age, and Fisher's exact test for smoking.

Table 2 Traditional bullying victimization status and mental health outcome among ethnic minority adolescents (n = 450)

Bullying victimization status	Mean (SD)	Mental health outcome severity				p
		Normal	Mild	Moderate	Severe	
		n (%)	n (%)	n (%)	n (%)	
Depression						0.001 ^a
						0.036 ^b
Victimized (n=91)	6.65 (4.76)	36 (39.5)	12 (13.2)	24 (26.4)	19 (20.9)	
Non-victimized (n=359)	4.97 (4.28)	184 (51.2)	61 (17.0)	72 (20.1)	42 (11.7)	
Total	5.31 (4.43)	220 (48.9)	73 (16.2)	96 (21.3)	61 (13.6)	
Anxiety						0.005 ^a
						0.025 ^b
Victimized (n=91)	6.02 (4.22)	28 (30.8)	19 (20.9)	15 (16.5)	29 (31.8)	
Non-victimized (n=359)	4.68 (4.02)	169 (47.1)	67 (18.7)	51 (14.2)	72 (20.0)	
Total	4.95 (4.09)	197 (43.8)	86 (19.1)	66 (14.7)	101 (22.4)	
Stress						<0.001 ^a
						<0.001 ^b
Victimized (n=91)	8.36 (4.47)	39 (42.8)	15 (16.5)	18 (19.8)	19 (20.9)	
Non-victimized (n=359)	6.17 (4.35)	236 (65.8)	50 (13.9)	41 (11.4)	32 (8.9)	
Total	6.61 (4.46)	275 (61.1)	65 (14.5)	59 (13.1)	51 (11.3)	

Note: SD = standard deviation. Values are presented as mean ± SD or n (%). Percentages were calculated within each traditional bullying victimization group. DASS-21 subscale scores ranged from 0 to 21 and were not multiplied by two. The p values compare victimized and non-victimized students.

^a Independent-samples t-test. ^b Pearson's chi-square test. Severe and extremely severe categories were combined to severe.

Table 3 Associations between traditional bullying victimization status and depression, anxiety, and stress symptom severity among ethnic minority adolescents (n = 450)

Traditional bullying victimization status	Univariable analysis		Multivariable analysis	
	cOR (95% CI)	<i>p</i>	aOR (95% CI)	<i>p</i>
Model 1: Depression				
Victimized	1.79 (1.17–2.72)	0.007	1.73 (1.13–2.66)	0.011
Non-victimized	Reference		Reference	
Model diagnostics	Overall model likelihood-ratio test, <i>p</i> = 0.033; Test of Parallel Lines, <i>p</i> = 0.880; Nagelkerke pseudo- <i>R</i> ² = 0.040			
Model 2: Anxiety				
Victimized	1.90 (1.25–2.88)	0.003	1.97 (1.29–3.01)	0.002
Non-victimized	Reference		Reference	
Model diagnostics	Overall model likelihood-ratio test, <i>p</i> = 0.003; Test of Parallel Lines, <i>p</i> = 0.638; Nagelkerke pseudo- <i>R</i> ² = 0.054			
Model 3: Stress				
Victimized	2.61 (1.69–4.04)	<0.001	2.70 (1.73–4.21)	<0.001
Non-victimized	Reference		Reference	
Model diagnostics	Overall model likelihood-ratio test, <i>p</i> < 0.001; Test of Parallel Lines, <i>p</i> = 0.544; Nagelkerke pseudo- <i>R</i> ² = 0.082			

Note: cOR = crude odds ratio; aOR = adjusted odds ratio; CI = confidence interval. Separate ordinal logistic regression models were fitted for depression, anxiety, and stress symptom severity. The non-victimized group was the reference category. Adjusted models included age, sex, nationality, ethnic group, and alcohol consumption. Only estimates for traditional bullying victimization, the primary exposure of interest, are presented. An OR greater than 1 indicates higher odds of being in a more severe symptom category among victimized students than among non-victimized students. Model diagnostics refer to the adjusted models. Pearson goodness-of-fit test: depression, p = 0.522; anxiety, p = 0.244; and stress, p = 0.181.

Association between traditional bullying victimization and mental health outcomes

Ordinal logistic regression analyses showed that traditional bullying victimization was significantly associated with greater symptom severity across all three mental health outcomes in both the crude and adjusted analyses (Table 3). After adjustment for age, sex, nationality, ethnic group, and alcohol consumption, victimized students had higher odds of being in a more severe symptom category of depression (aOR = 1.73; 95% CI, 1.13–2.66; $p = 0.011$), anxiety (aOR = 1.97; 95% CI, 1.29–3.01; $p = 0.002$), and stress (aOR = 2.70; 95% CI, 1.73–4.21; $p < 0.001$) than non-victimized students. There was no evidence of violation of the proportional odds assumption for any model (test of parallel lines: $p = 0.880$, 0.638 , and 0.544 for depression, anxiety, and stress, respectively). The overall likelihood-ratio tests were statistically significant ($p = 0.033$, 0.003 , and < 0.001 , respectively), and the corresponding Nagelkerke pseudo- R^2 values were 0.040 , 0.054 , and 0.082 .

Discussion

While previous Thai studies have examined bullying involvement, associated factors, and selected depressive or psychosocial outcomes among general school, primary-school, and selected clinical populations^(17–20), the present study extends these studies by documenting the associations between traditional bullying victimization and the severity of depression, anxiety, and stress symptoms among ethnic minority upper-secondary students. Regarding the prevalence of bullying victimization, the findings reveal that approximately one in five ethnic minority high school students reported experiencing traditional bullying victimization. In this context, victimization may reflect the intersecting social challenges faced by some ethnic minority students, including socioeconomic disadvantage, residence in remote areas, linguistic differences, and cultural marginalization, which may increase vulnerability to bullying⁽¹¹⁾. Nevertheless, victimization was not universal, suggesting that vulnerability to bullying varies across individuals and contexts.

Beyond the prevalence of victimization, the findings showed that victimized students reported higher levels of depression, anxiety, and stress than their non-victimized peers, with anxiety being the most commonly reported outcome. Multivariable analysis further indicated that traditional bullying victimization was significantly associated with higher odds of greater symptom severity across all three mental health outcomes, with the largest point estimate observed for stress, followed by anxiety and depression. These associations remained statistically significant after adjustment for the prespecified covariates, including age, sex, nationality, ethnic group, and alcohol consumption. These

higher levels of mental health problems among victimized students, together with the significant associations observed in the adjusted models, indicate that traditional bullying victimization is an important factor associated with psychological distress among ethnic minority students who experience it.

For stress, the observed association is consistent with Thai evidence linking bullying victimization to broader psychosocial distress among school-going adolescents⁽¹⁸⁾. Similar findings have been reported among high school students in Italy⁽²⁹⁾, youth receiving mental health services in the Netherlands⁽³⁰⁾, and mid-adolescent boys and girls in Sweden⁽³¹⁾, in which traditional bullying victimization was associated with higher stress levels. In the context of the present study, the observed association may reflect the accumulation of multiple challenges experienced by ethnic minority students who encounter bullying⁽³²⁾. These students may already face academic demands, adjustment to the school environment, linguistic barriers, and social or cultural pressures^(11,33). Thus, bullying experiences may add to these existing burdens, which may help explain the higher stress symptom severity observed among victimized students. Fear of social exclusion and stigma related to disclosure or help-seeking may be associated with reduced help-seeking and greater psychological distress.

For anxiety, the observed association is consistent with a previous Thai clinical study linking bullying victimization with anxiety among children and adolescents⁽¹⁷⁾. Similar associations have been reported among high school students in southeastern Turkey⁽³⁴⁾, left-behind children in China⁽³⁵⁾, and children and adolescents from an ethnic autonomous county in China⁽³⁶⁾. In the context of the present study, the observed association may be partly explained by heightened feelings of social threat and uncertainty in peer relationships among students who experience bullying victimization⁽³⁷⁾. This may be especially relevant for ethnic minority students who experience linguistic and cultural differences within school settings, which may shape their perceptions of peer acceptance⁽³⁵⁾. Under these conditions, victimized students may experience greater concerns about being judged, excluded, or not accepted by others. Such experiences may be accompanied by heightened insecurity and persistent expectations of negative peer interactions, which may help explain the higher anxiety symptom severity observed among victimized students^(34,37). Longitudinal meta-analytic evidence also indicates bidirectional associations between peer victimization and anxiety, with relational victimization showing a particularly strong prospective association with social anxiety⁽³⁸⁾.

For depression, the observed association is consistent with a previous Thai study linking bullying victimization with depressive symptoms among adolescents⁽¹⁹⁾. It is also supported by a systematic review indicating that school bullying victimization is associated with depression and poorer mental well-being among adolescents⁽³⁹⁾. Moreover, studies conducted in Europe⁽⁴⁰⁾, the United States^(41,42), and China^(43,44) have reported associations between traditional bullying victimization and subsequent depressive symptoms or suicidality. Within the context of the present study, the observed association may reflect psychological processes related to repeated victimization among ethnic minority adolescents. One possible explanation is that repeated victimization may be accompanied by feelings of helplessness, diminished self-worth, and social withdrawal, which are central features of depressive symptomatology^(39,42,45).

The findings of this study highlight that traditional bullying victimization is not only an interpersonal problem but also a significant public health concern because of its association with depression, anxiety, and stress symptoms among ethnic minority adolescents. Beyond mental health, previous studies have linked bullying victimization to feeling unsafe at school⁽⁴⁶⁾ and poorer academic outcomes⁽³⁹⁾. These concerns may be particularly important for ethnic minority adolescents, who may face social and structural vulnerabilities associated with greater psychological distress, underscoring the need for health equity and culturally responsive interventions^(11–15).

Within a public health prevention framework^(47,48), these findings have implications for primary, secondary, and tertiary prevention. At the primary prevention level, culturally responsive school policies and curriculum-based anti-bullying programs should promote respect for ethnic and linguistic diversity and foster positive interethnic peer relationships. At the secondary prevention level, routine and confidential school-based screening may support the early identification of students reporting bullying victimization or elevated symptoms of depression, anxiety, and stress, enabling timely psychosocial support. At the tertiary prevention level, schools should establish clear referral pathways to appropriate mental health services for students experiencing severe or persistent symptoms. Effective implementation of these measures will require collaboration among schools, health professionals, families, and community stakeholders to ensure culturally appropriate and sustained support.

A key strength of this study is its focus on an understudied population of ethnic minority upper-secondary students in northern Thailand. Nevertheless, several limitations should be acknowledged. First, due to the cross-sectional design, causal inferences cannot be established, and

the directionality of the observed associations remains unclear. Second, although the full R-OBVQ was administered, traditional bullying victimization in the present analysis was classified using the global victimization frequency item, which may not fully capture variation in the specific forms and contexts of victimization. Third, mental health outcomes were assessed using the self-reported DASS-21, which measures symptom severity rather than providing clinical diagnoses. Both self-reported assessments may also be subject to recall and social desirability biases, particularly given the sensitive nature of the questions. Fourth, although the models adjusted for prespecified covariates, residual confounding may remain because other relevant factors, including family environment, socioeconomic status, social support, and previous mental health conditions, were not measured or included. Finally, because this study focused on six major highland ethnic groups, the findings may not be generalizable to other populations in the region, such as the Tai Yai (Shan) or Yunnanese Chinese (Chin Haw). Future longitudinal studies are needed to clarify the temporal relationship between bullying victimization and mental health outcomes. Intervention studies should also evaluate the effectiveness of culturally responsive school-based bullying prevention, mental health screening, and referral strategies in this population.

Conclusion

This study found that traditional bullying victimization was associated with greater depression, anxiety, and stress symptom severity among ethnic minority in-school adolescents in northern Thailand. Approximately one in five students were classified as victimized, and the largest adjusted point estimate was observed for stress. Schools, local education authorities, and health authorities should strengthen culturally responsive anti-bullying measures, routine and confidential screening for bullying victimization and mental health symptoms, and clear referral pathways for students requiring further support.

Ethical Approval Statement

All research protocols were approved by the Research Ethics Committee of Mae Fah Luang University, Thailand (COA: 236/2024; approval date: 12 December 2024).

Author Contributions

TR, PS, WC, TK, and FY contributed to conceptualization and methodology. TR, WC, TK, and FY were responsible for investigation. TR and WC performed data curation. TR, DT, and PS conducted formal analysis. TR contributed to validation. TR and FY were responsible for project

administration. TR was responsible for funding acquisition and supervision. TR, PS, TK, and WC contributed to writing – original draft. TR and PS contributed to writing – review & editing. All authors have read and approved the final manuscript.

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Conflicts of Interest

The authors declare that they have no competing interests.

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