

ADVERSE CHILDHOOD EXPERIENCE AMONG ADOLESCENTS IN THE ETHNIC MINORITIES OF LANG SON PROVINCE

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The objective of this paper was to investigate the prevalence of adverse childhood experiences (ACEs) and associated factors among adolescents of the ethnic minorities of Lang Son province. This cross-sectional research was carried out in Lang Son province. A total of 845 students in boarding schools participated in the study. Adverse Childhood Experiences Questionnaire (ACE-Q) was used to measure ACEs. Multivariate Logistic Regression was performed to identify associated factors with ACEs. Emotional abuse is the most common ACE, experienced by 21.9% of the participants, followed by emotional neglect at 14.4% and parental divorce at 11%. Overall, 48.7% experienced ACEs in their lifetime. The frequency of parental visits every two months significantly increases the likelihood of adverse experiences (OR = 2.41, 95% CI: 1.43-4.05, p-value = 0.0009), and living in households with fewer than ten people versus ten or more significantly decreases the risk (OR = 0.48, 95% CI: 0.33-0.70, p-value < 0.0001). Additionally, internet use for 4 hours/day (OR = 0.24, 95% CI: 0.15-0.38, p-value < 0.01), 5 hours/day (OR = 0.26, 95% CI: 0.13-0.51, p-value < 0.01), and six or more hours/day (OR = 0.21, 95% CI: 0.11-0.43, p-value < 0.01) are also significantly associated with lower odds of adverse experiences, suggesting protective effects of extended daily internet use against adverse childhood experiences. This study underscores a significant prevalence of ACEs among adolescents in ethnic minority communities in Lang Son province, pointing to an urgent need for comprehensive strategies to address these challenges.

Keywords: Adverse childhood experience, adolescent, ethnic minority.

I. INTRODUCTION

The impact of adverse childhood experiences (ACEs) on long-term mental and physical health outcomes has been extensively documented within various populations worldwide.¹ These experiences, which include multiple forms of abuse, neglect, and household dysfunction, have been shown to contribute significantly to the development of a wide range of health issues in later life, including mental health disorders, chronic diseases, and social maladjustment.^{1,2} Across countries, some studies have been conducted to measure

ACEs among children and adolescents. A study in Eastern Europe revealed that 53% of adolescents and adults had encountered at least one ACE.³ A survey in the United States demonstrated that over 90% of 14-year-old adolescents reported experiencing at least one ACE, with approximately 57% disclosing the occurrence of three or more ACEs.⁴ However, less research has focused on the prevalence and effects of ACEs among adolescents within ethnic minority groups, particularly in regions where cultural and socio-economic factors may influence the incidence and impact of such experiences.

In Vietnam, there is limited evidence about ACEs in adolescents. Several studies were performed on high school or university students, suggesting that the rates of adolescents and

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youths encountering at least one adverse childhood experience ranged from 74% to 86%.^{5,6} Lang Son province, located in the northern border region of Vietnam, is home to a diverse population of ethnic minorities, each with distinct cultural and social practices. This area provides a unique context to explore the dynamics of ACEs due to its socio-economic diversity, cultural richness, and the various challenges faced by these communities, including economic disparities and limited access to healthcare and educational resources. By understanding the specific nature and impact of ACEs in these communities, the study seeks to inform targeted interventions to mitigate the long-term adverse outcomes associated with these experiences and promote resilience and well-being among vulnerable youth populations. This paper aims to investigate the prevalence and associated factors among adolescents in the ethnic minorities of Lang Son province.

II. MATERIALS AND METHOD

1. Study design, settings and participants

This cross-sectional research was carried out in Lang Son province, located in the northeastern part of Vietnam, which is notable for its diverse ethnic composition, primarily comprising minority groups. The study enlisted students attending boarding secondary and high schools designed explicitly for ethnic minorities in Lang Son province. These students, aged between 10 and 18, willingly agreed to participate in the research. Exclusion criteria applied to students who refused to partake or did not complete the survey. Boarding schools of this nature are exclusive to ethnic minority adolescents in the mountainous provinces of Vietnam. Within the selected schools for our study, we encompassed the entire student body across all grade levels spanning from grades 6 to 12. A total of 845 students participated in this

research study.

2. Data Collection Procedure

Data were gathered from August to December 2022 through face-to-face interviews conducted by trained bilingual interviewers using a structured questionnaire, the Adverse Childhood Experiences Questionnaire (ACE-Q).² This tool, consisting of ten items, measures adverse or traumatic experiences individuals encountered before turning 18. It assesses exposure to psychological, physical, and sexual abuse, as well as household dysfunction like domestic violence and substance use. Responses were coded as Yes=1 or No=0, with scores ranging from 0 to 10, indicating the severity of ACEs experienced.² The questionnaire was translated into local languages and back into Vietnamese for accuracy. It also collected demographic, behavioral, and relational data.

Researchers received training on study objectives, questionnaire content, and data collection procedures. Institutional approval was obtained, and teachers helped students seek parental consent. Investigators explained the study, provided instructions, addressed queries, and supervised survey completion. Completed forms were reviewed for completeness and accuracy, with necessary revisions made promptly.

3. Statistical Analysis

Data were analyzed using Stata 16.0. Descriptive statistics were used to summarize ACEs' demographic characteristics and prevalence rates. Chi-square tests were employed to explore the associations between demographic factors and the incidence of ACEs. Multivariate logistic regression analyses were conducted to identify predictors of ACEs while controlling for potential confounders. The outcome was having at least one ACE in a lifetime (0=No; 1=Yes). All tests were two-tailed,

and a p-value of less than 0.05 was considered statistically significant.

4. Ethical Approval

The study protocol was reviewed and approved by the Vietnam National Children’s Hospital Ethics Committee and the Provincial People’s Committee of Lang Son (3079/BVNTW-HĐĐĐ).

III. RESULTS

Table 1 shows that females were predominant across all groups (70.7%). Most individuals fell within the 12-15 age bracket across all ethnicities (74.0%). Home and paternal visits were primarily monthly, reported by over 91% of participants across all groups. The living arrangements showed a majority residing in households with more than

ten people, with 61.4%. Friendship quality was rated ‘Good’ by the majority (54.1%). Physical activity was relatively high, with 67.9% performing physical activity regularly. Internet use was low, with more than 60% of respondents across all ethnicities reporting they did not use the internet.

Figure 1 shows that Emotional abuse was the most common ACE, experienced by 21.9% of the participants, followed by emotional neglect at 14.4% and parental divorce at 11%. Physical abuse was reported by 10% of the participants. Other ACEs such as household mental illness (3.2%), household physical violence (2.5%), incarcerated household members (2.4%), household substance abuse (1.8%), sexual abuse (0.9%), and physical neglect (0.3%) were less common.

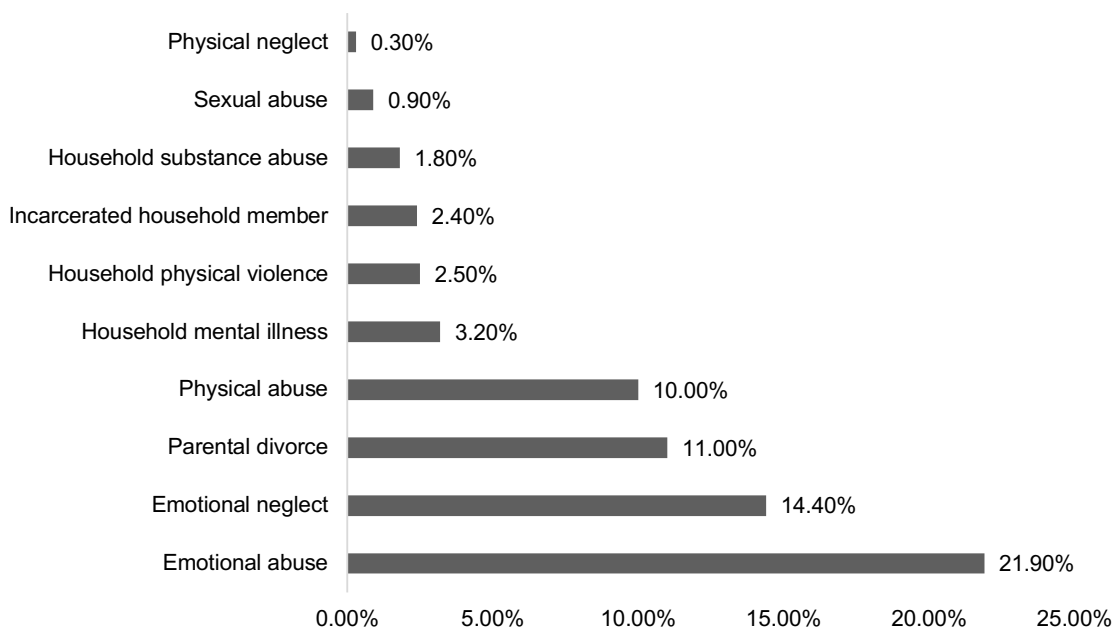


Figure 1. Type of ACEs among participants

Overall, 48.7% experienced ACEs in their lifetime. Table 2 shows that significant differences were found in the number of ACEs across age groups, frequency of parental

visit, quality of friendship, physical activity and frequency of internet use among participants (p<0.05).

Table 1. Demographic and behavioral characteristics of participants

Characteristics	Ethnicities			Total	
	Tay	Nung	Other		
Gender, n (%)	Male	89 (27.3%)	133 (31.2%)	26 (28.0%)	248 (29.3%)
	Female	237 (72.7%)	293 (68.8%)	67 (72.0%)	597 (70.7%)
Age group, n (%)	12-15	243 (74.5%)	310 (72.8%)	72 (77.4%)	625 (74.0%)
	16-18	83 (25.5%)	116 (27.2%)	21 (22.6%)	220 (26.0%)
Frequency of home visit, n (%)	Once a month	293 (89.9%)	396 (93.0%)	80 (86.0%)	769 (91.0%)
	Every two months	21 (6.4%)	25 (5.9%)	12 (12.9%)	58 (6.9%)
	Every three months or less	12 (3.7%)	5 (1.2%)	1 (1.1%)	18 (2.1%)
Frequency of parental visit, n (%)	Once a month	292 (89.6%)	364 (85.4%)	86 (92.5%)	742 (87.8%)
	Every two months	28 (8.6%)	50 (11.7%)	7 (7.5%)	85 (10.1%)
	Others	6 (1.8%)	12 (2.8%)	0 (0.0%)	18 (2.1%)
Number of people living together, n (%)	< 10 people	131 (40.2%)	184 (43.2%)	11 (11.8%)	326 (38.6%)
	≥ 10 people	195 (59.8%)	242 (56.8%)	82 (88.2%)	519 (61.4%)
Quality of friendship, n (%)	Good	176 (54.0%)	235 (55.2%)	46 (49.5%)	457 (54.1%)
	Fair	134 (41.1%)	182 (42.7%)	44 (47.3%)	360 (42.6%)
	Poor	16 (4.9%)	9 (2.1%)	3 (3.2%)	28 (3.3%)
Physical activity, n (%)	Yes	232 (71.2%)	283 (66.4%)	59 (63.4%)	574 (67.9%)
	No	94 (28.8%)	143 (33.6%)	34 (36.6%)	271 (32.1%)
Frequency of Internet use, n (%)	No use	194 (59.5%)	287 (67.4%)	32 (34.4%)	513 (60.7%)
	Weekend	8 (2.5%)	14 (3.3%)	3 (3.2%)	25 (3.0%)
	4 hours/day	73 (22.4%)	89 (20.9%)	42 (45.2%)	204 (24.1%)
	5 hours/day	29 (8.9%)	17 (4.0%)	7 (7.5%)	53 (6.3%)
	6 hours/day or more	22 (6.7%)	19 (4.5%)	9 (9.7%)	50 (5.9%)

Table 2. Adverse childhood experiences across demographic and behavioral characteristics

Demographic characteristics	Number of ACEs				p	
	None	One	Two	More than two		
Total	434 (51.3%)	192 (22.7%)	103 (12.2%)	117 (13.8%)		
Gender, n (%)	Male	129 (29.8%)	59 (30.7%)	35 (34.0%)	25 (21.4%)	0.18
	Female	304 (70.2%)	133 (69.3%)	68 (66.0%)	92 (78.6%)	
Age group, n (%)	12-15	330 (76.2%)	146 (76.0%)	78 (75.7%)	71 (60.7%)	<0.01
	16-18	103 (23.8%)	46 (24.0%)	25 (24.3%)	46 (39.3%)	
Ethnicity	Tay	168 (38.8%)	79 (41.1%)	38 (36.9%)	41 (35.0%)	0.85
	Nung	214 (49.4%)	97 (50.5%)	53 (51.5%)	62 (53.0%)	
	Others	51 (11.8%)	16 (8.3%)	12 (11.7%)	14 (12.0%)	
Frequency of home visit, n (%)	Once a month	391 (90.3%)	173 (90.1%)	98 (95.1%)	107 (91.5%)	0.27
	Every two months	32 (7.4%)	12 (6.2%)	4 (3.9%)	10 (8.5%)	
	Every three months or less	10 (2.3%)	7 (3.6%)	1 (1.0%)	0 (0.0%)	
Frequency of parental visit, n (%)	Once a month	401 (92.6%)	166 (86.5%)	81 (78.6%)	94 (80.3%)	<0.01
	Every two months	25 (5.8%)	20 (10.4%)	20 (19.4%)	20 (17.1%)	
	Others	7 (1.6%)	6 (3.1%)	2 (1.9%)	3 (2.6%)	
Number of people living together, n (%)	< 10 people	270 (62.4%)	110 (57.3%)	62 (60.2%)	77 (65.8%)	0.47
	≥ 10 people	163 (37.6%)	82 (42.7%)	41 (39.8%)	40 (34.2%)	
Quality of friendship, n (%)	Good	218 (50.3%)	99 (51.6%)	66 (64.1%)	74 (63.2%)	0.04
	Fair	202 (46.7%)	85 (44.3%)	35 (34.0%)	38 (32.5%)	
	Poor	13 (3.0%)	8 (4.2%)	2 (1.9%)	5 (4.3%)	
Physical activity, n (%)	Yes	273 (63.0%)	123 (64.1%)	78 (75.7%)	100 (85.5%)	<0.01
	No	160 (37.0%)	69 (35.9%)	25 (24.3%)	17 (14.5%)	
Frequency of Internet use, n (%)	No use	213 (49.2%)	116 (60.4%)	79 (76.7%)	105 (89.7%)	<0.01
	Weekend	14 (3.2%)	7 (3.6%)	1 (1.0%)	3 (2.6%)	
	4 hours/day	136 (31.4%)	44 (22.9%)	16 (15.5%)	8 (6.8%)	
	5 hours/day	35 (8.1%)	15 (7.8%)	3 (2.9%)	0 (0.0%)	
	6 hours/day or more	35 (8.1%)	10 (5.2%)	4 (3.9%)	1 (0.9%)	

Table 3 shows that the frequency of parental visits every two months significantly increased the likelihood of ACEs (OR = 2.41, 95% CI: 1.43-4.05, p-value = 0.0009) and living in households with fewer than ten people versus ten or more significantly decreased the risk (OR = 0.48, 95% CI: 0.33-0.70, p-value < 0.0001).

Additionally, internet use for 4 hours/day (OR = 0.24, 95% CI: 0.15-0.38, p-value < 0.01), 5 hours/day (OR = 0.26, 95% CI: 0.13-0.51, p-value < 0.01), and six or more hours/day (OR = 0.21, 95% CI: 0.11-0.43, p-value < 0.01) were also significantly associated with lower odds of ACEs.

Table 3. Factors associated with adverse childhood experiences

Characteristics	OR	95%CI lower	95%CI higher	p-value
Gender (Male-ref vs Female)	1.23	0.89	1.69	0.210
Age group (12-15-ref vs 16-18)	1.28	0.92	1.79	0.142
Ethnicity (vs. Tay- ref)				
Nung	0.95	0.70	1.30	0.770
Other	1.13	0.68	1.87	0.648
Frequency of home visit(vs. Once a month – ref)				
Every two months	0.64	0.35	1.16	0.142
Every three months or less	1.45	0.54	3.88	0.457
Frequency of parental visit (vs. Once a month – ref)				
Every two months	2.41	1.43	4.05	< 0.01
Others	2.80	1.01	7.72	0.047
Number of people living together (< 10 people-ref vs. ≥ ten people)	0.48	0.33	0.70	< 0.01
Quality of friendship (vs Good-ref)				
Fair	0.80	0.59	1.08	0.148
Poor	1.53	0.67	3.50	0.314
Physical activity (Yes-ref vs No)	0.98	0.70	1.37	0.900
Frequency of Internet use (vs. No use-ref)				
Weekend	0.56	0.24	1.31	0.180
4 hours/day	0.24	0.15	0.38	< 0.01
5 hours/day	0.26	0.13	0.51	< 0.01
6 hours/day or more	0.21	0.11	0.43	< 0.01

IV. DISCUSSION

The current study conducted among adolescents from ethnic minorities in Lang Son province indicates a concerning prevalence of adverse childhood experiences (ACEs). A certain number of children have undergone such issues. Specifically, 48.7% have experienced at least one adverse childhood experience, and 13.8% have undergone three or more. Regarding specific types of adverse experiences, the highest rate involves being insulted or threatened by a family member (21.9%), followed by feelings of being unloved (14.4%) and having divorced parents (11.0%). The rates of being abused harassed (0.9%), and feeling unsafe (0.3%) are the lowest.

The ACE rate identified in our study exceeds the average occurrence observed in adolescents living in low and middle-income countries⁷ and is significantly higher than the rates recorded in developed countries.⁸ The current ACE rate in this study is relatively lower compared to a previous study conducted in 2020 on 4,957 adolescents in Vietnam, which showed that 86% had experienced at least one ACE in their lifetime,⁶ while another study in the northern provinces showed an ACE rate of 74%.⁵ Another study in Hanoi reported an ACE rate of 46% among adolescents.⁹ It is important to note that all these studies were conducted among middle and high school students, which could cause a difference in ACE rates compared to our study. In Vietnam, ethnic minority adolescents attending boarding schools display psychological traits that distinguish them from the broader high school student population. Influenced by various traditional cultural practices, these students often value freedom and autonomy, resisting societal norms and regulations.¹⁰ The students participating in our study are from ethnic boarding schools, so they rarely go

home and encounter fewer ACEs compared to adolescents in other areas, such as urban or rural settings. Nevertheless, the ACE rate in our study remains high. Our findings suggest a high rate of ACEs among ethnic minority children in mountainous regions, possibly due to limited knowledge and lack of awareness about ACEs among adults in Vietnam in particular and in Asian countries in general. The culture in these countries shows that adults often use mental and physical maltreatment towards children as a way to assert control and train children without realizing that these are forms of child abuse. Studies in developing countries and Asian nations often show an inadequate recognition of ACEs as a significant public health concern.¹¹

Analyzing factors associated with adverse childhood experiences reveals several significant associations noteworthy for policy and further research. Notably, the frequency of parental visits every two months is linked with an increased likelihood of adverse childhood experiences, suggesting that infrequent parental interaction may play a role in increasing vulnerability to negative experiences.¹² This result could imply a need for more consistent parental involvement, as sporadic contact might correlate with less supervision and emotional support. Conversely, the data show a protective association with prolonged internet use, where durations of 4 hours or more per day significantly reduce the likelihood of adverse experiences. This suggests that children engaged in internet activities are within safer environments or may use the internet as a coping mechanism to escape from unfavorable conditions. However, the relationship between internet use and adverse experiences requires careful interpretation. It raises questions about the nature of online activities-whether they

are educational or social-and their impact on children's welfare ¹³. This aspect underscores the importance of monitoring the amount of time spent online and the quality of content and interaction, which could significantly influence developmental outcomes. Further studies are required to delve deeper into these correlations, ideally incorporating longitudinal designs to trace these effects over time and to establish clearer causal pathways.

The findings necessitate urgent attention to formulating targeted interventions to mitigate ACEs' impact on these vulnerable groups. This might include enhancing social support systems, improving child protection laws, and increasing awareness and education among parents and community leaders. Social services and healthcare providers should also be equipped with the necessary training and resources to identify and support children at risk of or suffering from ACEs.

This study faces limitations typical of self-reported surveys, including potential recall bias and social desirability bias that might lead to underreporting of specific ACEs, particularly sexual abuse. The cross-sectional design limits the ability to ascertain causal relationships between ACEs and later life outcomes. Furthermore, the focus on specific ethnic minority groups in Lang Son may limit the generalizability of the findings to other regions or ethnic groups within Vietnam. Future research should consider longitudinal designs to track ACEs' long-term impact and explore specific interventions' effectiveness.

V. CONCLUSION

This study underscores a significant prevalence of ACEs among adolescents in ethnic minority communities in Lang Son province, pointing to an urgent need for comprehensive

strategies to address these challenges. It highlights the importance of culturally sensitive approaches to reduce the incidence of ACEs and support effectively affected individuals. Further research is necessary to expand on these findings and to test interventions tailored to the unique needs of these communities.

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