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# Adverse Childhood Experiences and the Health of University Students in Eight Provinces of Vietnam

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## Abstract

Recent systematic reviews have emphasized the need for more research into the health and social impacts of adverse childhood experiences (ACEs) in the Asia-Pacific region. This cross-sectional study was conducted with 2099 young adult students in 8 medical universities throughout Vietnam. An anonymous, self-report questionnaire included the World Health Organization ACE-International Questionnaire and standardized measures of mental and physical health. Three quarters (76%) of the students reported at least one exposure to ACEs; 21% had 4 or more ACEs. The most commonly reported adversities were emotional abuse, physical abuse, and witnessing a household member being treated violently (42.3%, 39.9%, and 34.6%, respectively). Co-occurrence of ACEs had dose–response relationships with poor mental health, suicidal ideation, and low physical health–related quality of life. This first multisite study of ACEs among Vietnamese university students provided evidence that childhood adversity is common and is significantly linked with impaired health and well-being into the early adult years.

## Keywords

adverse childhood experiences, mental health, physical health, university students

## Introduction

The term *adverse childhood experiences* (ACEs) is used to describe some of the most intense and frequently occurring sources of stress that children may suffer in early life.<sup>1</sup> Such experiences include multiple types of child abuse and neglect; exposure to violence between parents or household members; peer conflict and community violence; household dysfunction including having an alcohol and/or substance abuser in the family, one or no parent, growing up with a mentally ill household member, or incarcerated household members.<sup>1,2</sup>

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Research in Asian and Pacific Island countries indicates the serious long-term effects of cumulative stress during childhood on physical and mental health and health risk behaviors of adolescents and adults.<sup>2-7</sup> Community-based research in this region indicates that while risk of specific types of violence and other adversities varies considerably across studies in different countries and cultures the probable psychological and behavioral impacts are quite similar.<sup>3,4,7</sup>

Although narrative and systematic reviews of research outline the scale of the problem in the Asia Pacific,<sup>7-9</sup> there remains a strong need for further research. Much of the evidence gathered to date is not representative at the national or provincial level. Furthermore, the majority of surveys have been quite limited in scope, often focusing on single or just a few types of child abuse. Many do not incorporate broader assessment of other family and social environmental stressors in early life.<sup>3,7,9</sup>

The Violence and Injury Prevention Division of the World Health Organization has called for research into ACEs to expand the breadth of the adversities measured and the range of putative health outcomes.<sup>1</sup> This should help identify the most and least common adversities within and between cultural and regional contexts. It should more clearly identify which health disorders, social problems, and associated financial loss are, or are not, strongly linked to child maltreatment and other preventable adverse conditions. In turn, this evidence should enable economic assessment of the burden created by ACEs, to a level that is convincing for policy makers and community leaders.<sup>1,3,7</sup>

These broad ambitions are laudable but can appear lofty and unattainable to many public health workers and nongovernmental organization-based advocates who may be constrained by limited budgets and inadequate social survey infrastructure or specialist research expertise. In countries where the ACE evidence base is thin, one practical way forward is to use brief, validated tools and to concentrate on population subgroups that can be accessed ethically and with relatively low cost.

In the early years of child protection research in North America and Europe, the evidence base was formed using surveys of young people in educational settings. Although not representative of all in their age groups, the conditions affecting the lives of students in high schools and universities attract wide public and professional interests. Once such research is disseminated, it may become more feasible to extend the research to marginalized social groups and, if resources permit, to representative samples.

In Vietnam there has been some research into links between childhood adversity and mental and physical health among school students.<sup>10</sup> Associations between ACEs and health among young or older adults in Vietnam are presently unknown. This study investigated the prevalence and possible impacts of childhood adversities on mental health-related and physical health-related quality of life among a large sample of medical university students in 8 provinces of Vietnam.

## Methods

### *Study Design*

A cross-sectional survey included students in years 1, 3, and 5 of the 6-year medical curriculum. In each of 8 sites, one class was selected randomly to be representative of each of the 3 year levels. All students available in the classroom on survey days were invited to participate voluntarily. The total number of people invited was 2111, of whom 2099 completed the questionnaires during class time (response rate of 99.4%).

### *Study Instrument*

An anonymous self-report questionnaire was used to collect data. The World Health Organization (WHO) Adverse Childhood Experiences International Questionnaires (ACE-IQ) was included

in the survey instrument.<sup>1</sup> The original ACE-IQ includes 13 categories: emotional abuse; physical abuse; sexual abuse; violence against household members; living with household members who were substance abusers; living with household members who were imprisoned; growing up with one or no parents, parental separation, or divorce; emotional neglect; bullying; community violence; collective violence. The ACE-IQ tool can be used in a modular way, depending on local contexts. We excluded one category with items about exposure to war, collective violence, or maltreatment by the police or the military from our questionnaire before the pilot study because it was considered by advisors and in the preparatory in-depth interviews to be inappropriate for contemporary conditions for young people aged under 30 years in Vietnam, none of whom were alive during the wars of the 1960s and 1970s. Also, questions about conflict with the military or law enforcement officers are considered to be sensitive, and we were advised not to include them. Before calculating the total ACE score from data in the main survey, data on 2 items on emotional neglect were removed as they were deemed in in-depth interviews with young people to have little face validity in Vietnamese cultural and language contexts to adequately measure this kind of neglect. Finally, there were 11 categories of ACEs in the analysis. Calculation of ACE subcategory scores and total scores followed the guidelines of the WHO.<sup>1</sup> The higher the ACE score, the more forms of adversity participants experienced up to the age of 18 years.

Mental health measures included the Center for Epidemiological Studies-Depression (CES-D) scale,<sup>11</sup> an anxiety scale developed in Vietnam,<sup>12</sup> the WHO-5 Well-being Index,<sup>13</sup> and the Subjective Happiness Scale.<sup>14</sup> Six items on physical health-related quality of life (QoL) were taken from the Short-Form Health Survey (SF-12).<sup>15</sup> Both the WHO-5 and CES-D have been used in many studies worldwide and have good psychometric validity. In Vietnam, these scales have been validated in previous studies of youth mental health.<sup>10,12</sup> A question on past year suicidal ideation “During the last 12 months, have you ever seriously considered attempting suicide” was also included in the questionnaire.

### Data Analysis

Data analysis was performed using SPSS version 21.0. The associations between ACE total score (5 levels from 0 to 4+) and health status were examined by one-way ANOVA. Post hoc contrasts used the Dunnett test, with students not reporting exposures as the reference group. Chi-square tests were used where appropriate.

### Ethics Approval

This study was approved by the Queensland University of Technology Human Research Ethics Committee (Approval No. 1200000263) and the Hanoi Medical University Biomedical Research Ethics Committee (No. 112/HDDD-DHYHN).

### Results

Of the 2099 respondents, 50.1% were male and 49.9% were female. The average age was 21.46 years, ranging from 18 to 30. The proportion of participants from years 1, 3, and 5 were 33.8%, 33.6%, and 32.6%, respectively. Most (84.5%) of the respondents reported that they were from the Kinh ethnic (majority) group, and 85.3% said that they did not affiliate with any formal religion. Over half (54.3%) of those surveyed reported that they originated from rural areas. In terms of parental education, the proportion of fathers holding a high school diploma, a technical school diploma, or a university degree was 28%, 11.7%, and 25.8%, respectively. Mothers had somewhat less educational attainment at 27.3%, 11.7%, and 19.7%, respectively.

**Table 1.** Prevalence of Types of Childhood Adversities, by Gender<sup>a</sup>.

Before Age 18	Male	Female	Total
<b>ACE categories</b>			
Physical neglect	<b>9.3</b>	<b>7.2*</b>	8.2
Physical abuse	<b>44.9</b>	<b>34.9**</b>	39.9
Emotional abuse	44.0	40.6	42.3
Sexual abuse	14.9	15.2	15.1
Alcohol and/or drug abuser in the family	9.1	11.1	10.1
A household member was depressed, mentally ill, or suicidal	3.9	5.1	4.5
A household member was sent to prison	2.1	2.1	2.1
Had one or no parent during childhood	<b>9.3</b>	<b>12.8**</b>	11.1
Household members treated violently	<b>31.3</b>	<b>38.0**</b>	34.6
Experienced bullying many times	5.3	3.9	4.6
Witnessed community violence	<b>37.1</b>	<b>21.7**</b>	29.4
<b>ACE total score</b>			
0 type	20.1	27.5	23.8
1 type	23.1	21.9	22.5
2 type	18.9	16.7	17.8
3 type	15.9	14.3	15.1
4 type	12.9	9.9	11.4
5 type	5.5	6.5	6.0
6+ type	3.7	3.2	3.5

Abbreviation: ACE, adverse childhood experience.

<sup>a</sup>Positive if any of the items in that category were endorsed by the respondent. Full details of ACE-IQ items are available at [http://www.who.int/violence\\_injury\\_prevention/violence/](http://www.who.int/violence_injury_prevention/violence/).

Comparisons of figures in bold were statistically significant; \* $P < .01$ . \*\* $P < .05$  ( $\chi^2$  test was applied).

Table 1 presents the percentages of young people who reported at least one specific event within any of the ACE categories. Of the 11 types, the most commonly reported ACEs were emotional abuse, physical abuse, and witnessing a household member being treated violently (42.3%, 39.9%, and 34.6%, respectively). The least commonly reported ACEs were “experienced bullying many times” (4.6%), growing up in a household with a family member who went to prison (2.1%), and living with a household member who had a mental illness (4.5%). It is notable that approximately 15% of students reported some experiences of sexual abuse during childhood, and the proportions were not significantly different for males and females.

Regarding co-occurrence of ACEs, it was found that the majority of the respondents (53.8%) had 2 or more types of ACEs. One in every 5 had been exposed to 4 or more types, while about 1 in every 30 medical students reported 6 or more of the 11 forms of adversity.

Table 2 presents the means and standard deviations for 5 mental and physical health indicators and the percentage of students who reported past-year suicidal ideation, by the number of ACEs. There were statistically significant main effects of co-occurrence of ACEs on all 6 health indicators. Strong associations between number of ACEs and more severe depressive symptoms, anxiety, and past-year suicidal thinking as well as lower level of subjective well-being, happiness, and physical health-related QoL were observed, generally indicating dose-response relationships between ACE scores and impaired health and well-being (apart from subjective happiness). On all measures, the young adults with 4 or more ACEs had significantly poorer health than those who reported none of the 11 adversities in childhood.

**Table 2.** Association Between ACEs and Mental and Physical Health.

ACE Scores	Depression <sup>a</sup>	Anxiety <sup>a</sup>	Well-being <sup>a</sup>	Happiness <sup>a</sup>	Physical Health-Related QoL <sup>a</sup>	Suicidal Ideation <sup>b</sup>
0	14.13 (7.13)	20.71 (4.05)	13.78 (4.74)	4.69 (0.91)	74.85 (19.31)	5.3
1	15.03 (7.21)	21.01 (4.15)	13.20 (4.87)	4.60 (0.96)	72.85 (20.16)	6.9
2	15.21 (7.31)	20.92 (3.99)	12.94 (4.69)	4.60 (0.86)	73.22 (19.91)	6.5
3	15.79 (7.36)*	21.49 (3.90)*	12.95 (4.27)*	4.57 (0.93)	70.68 (20.27)*	9.4
4+	17.42 (8.03)**	22.36 (4.11)**	12.17 (4.56)**	4.27 (1.05)**	67.29 (21.76)**	15.1

Abbreviations: ACE, adverse childhood experience; QoL, quality of life.

<sup>a</sup>Mean and standard deviation are presented; higher scores indicated higher numbers of depressive symptoms and anxiety, lower scores indicated lower well-being, happiness, and physical health-related QoL.

<sup>b</sup>Percentages are presented; the association with ACEs was significant at  $P < .01$ .

\*\* $P < .01$ . \* $P < .05$  (one-way ANOVA and Dunnett test, first group as control).

## Discussion

This is the first national scale study in Vietnam to investigate the prevalence and correlates of childhood adversity in relation to mental and physical health among young adults. The study makes a contribution in several ways. The findings demonstrate that the new ACE-IQ tool is culturally and linguistically adaptable in Vietnam. Importantly, the concurrent validity of the tool appears to be confirmed, as the ACE total scores positively correlated with adverse health conditions and have an inverse correlation with good mental health. The overall pattern is consistent with results from a study of ACEs in the Philippines that used an earlier though similar questionnaire<sup>2</sup> and a recent survey using the ACE-IQ tool in Saudi Arabia.<sup>16</sup>

In Vietnamese context, the study has estimated the prevalence of adversities in the early lives of students who had been able to enter medical universities. The most common types of child maltreatment (emotional abuse and physical abuse) are similar to findings with high school students in Vietnam<sup>10</sup> and Malaysia.<sup>5</sup> The estimates of child sexual abuse among females and males (15.2% and 14.9%) are in line with findings from China, where the pooled estimates were 15.3% for females and 13.8% for males,<sup>8</sup> and are quite similar to those reported from regional meta-analyses.<sup>7,9</sup> Higher risk of physical maltreatment among males, and relative gender equivalence in unwanted sexual experiences, is consistent with studies in Vietnam and other East Asian countries.<sup>3-5,10</sup> This study is also consistent with national and international research showing that the various forms of childhood adversity co-occur.<sup>5,7,10,16-19</sup> One in 5 (20.9%) of the respondents had experienced 4 or more ACEs. The apparent dose-response relationship between number of adverse experiences and health status found here is similar to that seen in a previous study among high school students in Vietnam,<sup>10</sup> among adults in the Philippines,<sup>2</sup> and children and young people in the United States<sup>17</sup> and Thailand.<sup>18</sup> This association is robust and seems, largely, to be culturally invariant.

The findings have practical implications for advocacy for improved general health and counselling services within higher education institutions in Vietnam and other Asia-Pacific countries. During negotiations with some decision makers and discussion with other colleagues prior to the survey, the authors encountered a possibly widespread perception that university students are mostly “young, healthy, and socially advantaged.” Indeed, we were directly asked by several people to explain why we would do such research with medical students at all, with the suggestion that we would find relatively few serious problems. A strength of the current study is that it shows clearly that substantial numbers of medical students experience depressive symptoms (including suicidal ideation), anxiety, and low level of well-being, and many report significant recent academic difficulties and family and social relationship problems.<sup>20</sup>

In addition to the usual caveats placed on interpretation of data from cross-sectional, retrospective self-report surveys, this study may be affected by the truncation of the ACE-IQ tool with the removal of some items considered to be inappropriate in Vietnamese context. The ACE-IQ is a new tool that is still being validated in different populations.<sup>16,19</sup> The present study may add to psychometric evaluation and possible refinement of the tool.

## Conclusion

As professional counselling services develop in Vietnamese universities, they should be informed by contemporary evidence from research into the changing social conditions and health problems of the students. Furthermore, there should be collaborative research between universities to gather comprehensive data on students' well-being, in a manner similar to global school-based health surveys.<sup>21</sup> Research such as this should be used to sensitize policy makers and university leaders to the needs of young people in their care.

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