

# Adverse Childhood Experiences among Thai Patients with Depressive Disorders: A University/Tertiary Care Hospital Experiences

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**Background:** Childhood trauma and adverse experiences are common in patients with depressive disorders, and yet, there is a lack of research in this area in Thailand.

**Objective:** To determine the prevalence and types of adverse childhood experiences (ACEs) among patients with depressive disorders and the association between ACEs and some characteristics of depressive patients.

**Materials and Methods:** A cross-sectional descriptive study was conducted in patients with depressive disorders at a university hospital in northeastern Thailand. The patients were interviewed using the ACEs questionnaire, investigating the 10 most common types of childhood trauma. Statistical analyses included descriptive statistics and association analyses.

**Results:** Among the 119 patients who completed the questionnaire, 98 (82.4%) had major depressive disorder (MDD) and 21 (17.6%) had persistent depressive disorder (PDD). Most (62.2%) had at least one type of ACEs with 60.2% in MDD and 71.4% in PDD. The three most common traumatic events were emotional neglect (37.8%), verbal abuse (27.7%), and having family members with alcohol or substance abuse (21%). Only emotional neglect was related to further suicidal risk. A total score of 4 or more significantly increased the risk of admission (OR 23.42, 95% CI 5.73 to 95.78) and suicide attempts (OR 3.68, 95% CI 1.14 to 11.9).

**Conclusion:** About two-thirds of patients with a depressive disorder had at least one type of childhood trauma, and the most common type was emotional neglect. In patients with depression, a history of ACEs should be evaluated before formulating the psychological trauma treatment plan. The authors recommend pro-active strategies for educating and counseling parents regarding appropriate parenting to reduce the incidence of ACEs for their children.

**Keywords:** Adverse Childhood Experiences (ACEs), Depression, Childhood trauma

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Depression is a common problem affecting about 264 million persons worldwide<sup>(1)</sup>, and represents about 1.5 million people in Thailand. Depression disrupts daily life function and can be severe enough to result in suicidal behaviors<sup>(2)</sup>. It is thought that depression can be caused by chronic stress or traumatic life events

in childhood such as abuse, bullying, or neglect.

Adverse childhood experiences (ACEs) child abuse, neglect, or household dysfunction before 18 years of age<sup>(3)</sup> can lead to physical, mental, and behavioral problems as children grow up<sup>(4,5)</sup>. Research has demonstrated that early life traumas can lead to health risks in adulthood including liver disease<sup>(6)</sup>, chronic obstructive pulmonary disease<sup>(7)</sup>, coronary artery disease<sup>(8)</sup>, and autoimmune disease<sup>(9)</sup>. Childhood trauma causes not only medical diseases but also mental health and behavioral problems such as alcohol abuse<sup>(10)</sup>, smoking, illicit drug use, sexual behavior problems<sup>(11)</sup>, and depression<sup>(12-16)</sup>. The previous study in Thailand revealed that childhood adverse experiences are common among Thai young residents, especially emotional abuse. Sexual abuse has a potential impact on adult mental health<sup>(17)</sup>.

The present study aimed to investigate the

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prevalence of ACEs in patients with depression as such data for Thailand are lacking. The authors wanted to determine the type of adverse experiences and the relationship between the type(s) of adverse experience and depression. The results of the present study could be used to educate the public about mental health promotion in children to prevent such experiences and the follow-on depressive disorders.

## Materials and Methods

The present study was a cross-sectional descriptive study, conducted between April 2017 and March 2018. Patients were recruited from the Psychiatric Clinic at Srinagarind Hospital, which is a university hospital for local patients and patients referred from other hospitals in the northeastern region of Thailand. The sample size was calculated using the prevalence of depressive disorder and previously had at least one of childhood bad experience from previous study<sup>(13)</sup>, 25.8% of female and 19% of male in general population using this equation:

$$N = \frac{(Z\alpha^2 PQ)}{e^2}$$

The calculated sample size was 75 female and 45 male patients.

Inclusion criteria were patients diagnosed with mild to moderate depressive disorders according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Patients who could not control themselves because of aggression, psychotic conditions, or high risk of suicide, were excluded from the study. The study protocol was reviewed and approved by the Human Research Ethics Committee, Khon Kaen University (Project No. HE601150).

The procedure of the research was explained to the participants and written consents were obtained. Information about the diagnosis, onset of depression, history of hospitalizations, history of receiving electroconvulsive therapy, and suicidal history were reviewed from the medical records. The participants were interviewed by a psychiatric nurse to gather the identification data, history of physical illness, alcohol, tobacco and substance use, and any support system(s).

### Adverse childhood experiences questionnaire

The authors used the ACEs questionnaire, translated into Thai by the researcher, to guide the interview vis-à-vis traumatic childhood experiences. The ACEs Thai version was checked for correctness and back-translated from Thai to English by a reviewer and a language expert to confirm the accuracy of the

translation. The authors then presented the complete translated questionnaire to the meeting, which was approved by three psychiatrists. Ten “Yes” or “No” questions of the most common ACEs were asked, including verbal abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, divorced parents, domestic violence, living with alcohol or substance abuser, living with the mentally ill person, and having a family member in jail. If the participant had at least one of these experiences, he or she was assumed to have had an adverse childhood experience.

All the questionnaires were collected and examined for completeness. Demographic data were presented as frequencies, percentages, means, and standard deviations. Analysis of the relationship of demographic data with ACEs was performed using chi-square test, using independent t-test with analysis of normal distribution of quantitative variable, Mann-Whitney test with non-normal distribution of quantitative variable. The authors analyzed the relationship between each type of ACEs and depression by chi-square test. The relationship between ACEs type, ACE score, and health risk behaviors were analyzed by multivariable logistic regression to present adjusted odds ratio (OR) and 95% confidence intervals (CIs) of the adjusted variables of age, gender, and history of caretaker. A p-value of less than 0.05 was considered statistical significance.

## Results

### General characteristics of the sample

The authors had complete data for 119 of the 120 participants. Most of the patients were women (62%), married (58.8%), and held a bachelor's degree or higher (53.8%). The average age of the patients was 46.5±15.4 years and the average age of onset of depressive disorders was 41.1±13.9 years. Nearly half (46.2%) of the patients had no physical disease. The respective history of smoking, alcohol abuse, and substance use was 6.7%, 15.9%, and 4.2%, respectively (Table 1).

### Depression and treatment

Major depressive disorders (MDD) was a more common diagnosis with 98 patients (82.4%), while 21 patients (17.6%) were diagnosed with a persistent depressive disorder (PDD). About one-third of patients (34.4%) had a history of admission to a psychiatric ward, 28.6% had a history of suicidal attempts, and 8.4% had received electroconvulsive therapy.

**Table 1.** Demographic data (n=119)

Demographic data	n (%)
Age (range 18 to 63 years); mean±SD	46.5±15.4
Sex	
Male	44 (37.0)
Female	75 (63.0)
Marital status	
Single	31 (26.1)
Married	70 (58.8)
Separated/divorced	16 (13.4)
Widow	2 (1.7)
Educational level	
Elementary	24 (20.2)
Secondary	1 (0.8)
High school	19 (16.0)
Vocational certificate	11 (9.2)
Bachelor's degree or higher	64 (53.8)
Occupation	
Public servant	44 (37.0)
Private employee	6 (5.0)
Student	18 (15.1)
Personal business	21 (17.6)
Employment	2 (1.7)
Agriculturist	13 (10.9)
Unemployed	14 (11.8)
Other	1 (0.8)
Income (per month)	
<10,000 Baht	48 (40.3)
10,001 to 30,000 Baht	34 (28.6)
30,001 to 50,000 Baht	25 (21.0)
>50,000 Baht	12 (10.1)
Underlying disease	
None	55 (46.2)
Diabetes mellitus	9 (7.6)
Hypertension	20 (16.8)
Dyslipidemia	6 (5.0)
Other	43 (36.1)
History of smoking	8 (6.7)
Current alcohol abuse	19 (15.9)
History of substance abuse	5 (4.2)
Presence of caretaker	
Always	75 (63.0)
Often	29 (24.4)
Rarely/never	15 (12.6)

SD=standard deviation

### Adverse childhood experiences

The present study found that 62.2% of the patients

**Table 2.** Relation between demographic data and adverse childhood experiences

	ACEs ≥1; n (%)		p-value
	Yes	No	
Sex			0.803 <sup>a</sup>
Female	46 (61.3)	29 (38.7)	
Male	28 (63.6)	16 (36.4)	
Age (year); median (IQR)	47.4 (25.5)	53.3 (21.5)	0.399 <sup>b</sup>
Age onset of depression; mean±SD	42.1±14.7	39.5±12.3	0.330 <sup>c</sup>
Number of academic years; median (IQR)	14.5 (7)	16 (4)	0.222 <sup>b</sup>
Diagnosis			0.036 <sup>**</sup>
MDD	59 (60.2)	39 (39.8)	
PDD	15 (71.4)	6 (28.6)	

ACEs=adverse childhood experiences; MDD=major depressive disorder; PDD=persistent depressive disorder; IQR=interquartile range; SD=standard deviation

<sup>a</sup> Chi-square test, <sup>b</sup> Mann-Whitney test, <sup>c</sup> Independent t-test, \* Significant at p<0.05

had ACEs. Such experiences were comparable between male and female with 63.6% for females and 61.3% for males. The prevalence of ACEs occurred more in the PDD group than in the MDD group (71.4% versus 60.2%), however, the difference was not statistically significant (Table 2).

The most common adverse experience found in the present study was emotional neglect (37.8%), followed by verbal abuse (27.7%), and history of having a family member with substance use (21%) (Table 3).

### Types of ACEs and health-risk behaviors

From the adjusted logistic regression, the findings showed the significant predisposing factors for admission were physical abuse (OR 4.42, 95% CI 1.48 to 13.21), sexual abuse (OR 4.63, 95% CI 1.42 to 15.12), physical neglect (OR 6.99, 95% CI 2.24 to 21.82), domestic violence (OR 3.2, 95% CI 1.08 to 9.45), and parental divorce (OR 3.63, 95% CI 1.31 to 10.06). The authors also found an increased risk of treatment by electroconvulsive therapy in patients who had a history of verbal abuse (OR 4.05, 95% CI 1.07 to 15.25) or physical neglect (OR 6.77, 95% CI 1.66 to 27.55). The predisposing factor for substance use was domestic violence (OR 26.0, 95% CI 1.48 to 457.46), while it was emotional neglect (OR 2.87, 95% CI 1.14 to 7.19) for suicide attempts (Table 4).

### Total score of ACEs

The ACE scores were similar between males and females, and across diagnoses (Table 5). There was a

**Table 3.** Associations of individual ACEs with depression

ACEs category	MDD; n (%)	PDD; n (%)	Total; n (%)	p-value
Verbal abuse	27 (27.6)	6 (28.6)	33 (27.7)	0.924 <sup>a</sup>
Physical abuse	15 (15.3)	4 (19.0)	19 (15.9)	0.743 <sup>a</sup>
Sexual abuse	13 (13.3)	3 (14.3)	16 (13.4)	>0.999 <sup>a</sup>
Emotional neglect	38 (38.8)	7 (33.3)	45 (37.8)	0.641 <sup>a</sup>
Physical neglect	20 (20.4)	2 (9.5)	22 (18.4)	0.357 <sup>a</sup>
Parental divorce	17 (17.3)	6 (28.6)	23 (19.3)	0.237 <sup>a</sup>
Domestic violence	15 (15.3)	2 (9.5)	17 (14.2)	0.734 <sup>a</sup>
Having family members with alcohol or substance abuse	21 (21.4)	4 (19.0)	25 (21.0)	>0.999 <sup>a</sup>
Having family member diagnosed with a mental illness	19 (19.4)	4 (19.0)	23 (19.3)	>0.999 <sup>a</sup>
Having family member in jail	5 (5.1)	0 (0.0)	5 (4.2)	0.585 <sup>b</sup>

ACEs=adverse childhood experiences; MDD=major depressive disorder; PDD=persistent depressive disorder

<sup>a</sup> Chi-square test, <sup>b</sup> Fisher's exact test**Table 4.** Prevalence and adjusted relative odds of health-risk behaviors by type of ACEs

Type of ACEs	History of admission	History of ECT	Smoking	Alcohol abuse	Substance abuse	Attempted suicide
Prevalence; n (%)	42 (35.3)	13 (10.9)	8 (6.7)	19 (16.0)	5 (4.2)	34 (28.6)
Adjusted OR (95% CI)						
Verbal abuse	0.99 (0.96 to 1.02)	4.05* (1.07 to 15.25)	1.53 (0.13 to 18.24)	0.44 (0.10 to 1.91)	2.24 (0.05 to 107.30)	1.95 (0.76 to 5.01)
Physical abuse	4.42* (1.48 to 13.21)	2.25 (0.51 to 9.92)	9.66 (0.79 to 117.34)	1.59 (0.38 to 6.60)	34.71 (0.98 to 1226.68)	1.74 (0.58 to 5.24)
Sexual abuse	4.63* (1.42 to 15.12)	1.41 (0.26 to 7.58)	-	3.62 (0.78 to 16.86)	-	1.06 (0.31 to 3.65)
Emotional neglect	2.17 (0.94 to 5.03)	1.88 (0.54 to 6.52)	3.94 (0.47 to 32.78)	1.34 (0.42 to 4.33)	0.66 (0.04 to 10.87)	2.87* (1.14 to 7.19)
Physical neglect	6.99* (2.24 to 21.82)	6.77* (1.66 to 27.55)	10.95 (0.43 to 279.36)	1.06 (0.19 to 5.98)	-	1.88 (0.60 to 5.89)
Parental divorce	3.63* (1.31 to 10.06)	0.42 (0.05 to 3.59)	2.90 (0.36 to 23.36)	1.71 (0.47 to 6.18)	5.85 (0.44 to 78.37)	2.41 (0.88 to 6.60)
Domestic violence	3.20* (1.08 to 9.45)	2.03 (0.47 to 8.75)	2.06 (0.20 to 21.66)	3.30 (0.81 to 13.49)	26.00* (1.48 to 457.46)	2.03 (0.67 to 6.19)
Family substance	2.33 (0.90 to 6.02)	0.31 (0.04 to 2.63)	0.58 (0.05 to 7.12)	1.89 (0.52 to 6.91)	1.94 (0.14 to 26.32)	1.24 (0.45 to 3.38)
Family mental illness	1.97 (0.76 to 5.08)	0.29 (0.04 to 2.44)	0.51 (0.04 to 6.03)	1.29 (0.34 to 4.93)	7.72 (0.46 to 129.30)	2.31 (0.83 to 6.43)
Family in jail	2.87 (0.43 to 19.05)	3.95 (0.55 to 28.45)	14.93 (0.59 to 378.35)	2.03 (0.17 to 24.05)	-	-

ACEs=adverse childhood experiences; ECT=electroconvulsive therapy; OR=odds ratio; CI=confidence interval

Adjusted for age, sex, and history of caretaker; \* p&lt;0.05

**Table 5.** Total ACE score by sex vs by diagnosis

	Number of ACEs (%)					Total
	0	1	2	3	≥4	
Sex						
Male	16 (36.4)	8 (18.2)	4 (9.1)	7 (15.9)	9 (20.4)	44 (100)
Female	29 (38.7)	9 (12.0)	8 (10.7)	10 (13.3)	19 (25.3)	75 (100)
Total	45 (37.8)	17 (14.3)	12 (10.1)	17 (14.3)	28 (23.5)	119 (100)
Diagnosis						
MDD	39 (39.8)	12 (12.2)	9 (9.2)	15(15.3)	23 (23.5)	98 (100)
PDD	6 (28.6)	5 (23.8)	3 (14.3)	2 (9.5)	5 (23.8)	21 (100)
Total	45 (37.8)	17 (14.3)	12 (10.1)	17 (14.3)	28 (23.5)	119 (100)

ACEs=adverse childhood experiences; MDD=major depressive disorder; PDD=persistent depressive disorder

**Table 6.** Prevalence and odds of health-risk behaviors by number of ACEs

Number of ACEs		History of admission	History of ECT	Smoking	Alcohol abuse	Substance abuse	Attempted suicide
0 (n=45)	Prevalence (%)	20.0	11.1	6.7	13.3	2.2	20.0
1 (n=17)	Prevalence (%)	23.5	5.9	0.0	17.6	0.0	17.6
	AdjOR (95% CI)	1.26 (0.30 to 5.25)	0.55 (0.06 to 5.33)	-	1.17 (0.23 to 6.01)	-	0.79 (0.17 to 3.59)
2 (n=12)	Prevalence (%)	25.0	8.3	8.3	0.0	0.0	16.7
	AdjOR (95% CI)	0.92 (0.20 to 4.26)	0.58 (0.06 to 5.64)	1.98 (0.09 to 43.98)	-	-	0.71 (0.12 to 4.19)
3 (n=17)	Prevalence (%)	29.4	5.9	5.9	23.5	11.8	41.2
	AdjOR (95% CI)	1.95 (0.51 to 7.49)	0.57 (0.06 to 5.44)	0.78 (0.04 to 14.15)	2.18 (0.45 to 10.61)	8.08 (0.33 to 195.01)	2.92 (0.80 to 10.69)
≥4 (n=28)	Prevalence (%)	75.0	17.9	10.7	21.4	7.1	46.4
	AdjOR (95% CI)	23.42* (5.73 to 95.78)	2.72 (0.63 to 11.79)	4.16 (0.41 to 42.71)	2.38 (0.57 to 9.97)	6.45 (0.27 to 153.01)	3.68* (1.14 to 11.91)

ACEs=adverse childhood experiences; ECT=electroconvulsive therapy; AdjOR=adjusted odds ratio; CI=confidence interval

Adjusted for age, sex, and history of caretaker; \* p<0.05

significantly increased risk of admissions and suicide attempts when the total score was 4 or greater (OR 23.42, 95% CI 5.73 to 95.78 and OR 3.68, 95% CI 1.14 to 11.91) respectively (Table 6).

## Discussion

The prevalence of ACEs based on the current study was as high as 62.2%, which is similar to the studies by Chapman et al<sup>(13)</sup>, and Remigio-Baker et al<sup>(18)</sup>, in which the respective prevalence was 59.7% and 55.4%.

The most prevalent type of adverse childhood experience in the current study was emotional neglect (37.8%) followed by verbal abuse (27.6%), which agrees with a study by Jirapramukpitak et al<sup>(17)</sup> who investigated young Thais and found that 31.8% had experienced some sort of emotional or verbal abuse. To compare, Chapman et al<sup>(13)</sup> found that the most prevalent adverse childhood experience among adults at a primary care clinic in San Diego was physical abuse. In another American study, Remigio-Baker et al<sup>(18)</sup> reported that household dysfunction including mental illness, alcohol consumption, substance use, imprisoned family members, parental divorce, and physical abuse by the parents was the most prevalent adverse childhood experience in Hawaiian women who have current depressive symptoms (60.3%) followed by verbal abuse (51%). The difference between the present study and that of Remigio-Baker et al<sup>(18)</sup> and Chapman et al<sup>(13)</sup> might be due to cultural differences.

Chapman et al<sup>(13)</sup> found the significant association between ACEs and depressive disorder in adults ( $p<0.001$ ) and emotional neglect increases the risk of depressive disorder 2.7 times more than in the general population. Remigio-Baker et al<sup>(18)</sup> found that

verbal abuse increases the risk of depressive disorder to 3.2 times greater than the general population. Notwithstanding, the finding cannot be compared to the present study because of lack of data regarding the normal population.

The current study found no significant difference with respect to the relationship between having at least one ACEs and the type of depression whether MDD or PDD. The authors also found no association between the types of ACEs and the types of depressive disorders. The lack of any relationship might be because the psychosocial etiology of depressive disorders is quite similar between groups.

The total score for ACEs was also associated with suicide attempts. The authors found that a total score of 4 or greater increased the risk of suicide attempts and this finding agrees with three reports from Dube et al<sup>(19)</sup>, in which the ACE score had a strong relationship with attempted suicide. The adjusted OR for attempting suicide among persons with an ACE score of 7 or more was 31.1 (95% CI 20.6 to 47.1). It is worthy to note that the risk of suicide attempts increases by about 60% for every increase in the ACE score. When adjusted for illicit drug use, depressed affect, and self-reported alcoholism, there was a reduced strength of the relationship between the ACE score and suicide attempts, suggesting that there may be partial mitigation by these factors of the ACEs suicide attempt relationship. Dube et al<sup>(19)</sup> found that the risk of suicide attempt was increased by any ACEs, regardless of the category. By comparison, the present research revealed a significantly increased risk of suicide with emotional neglect. The authors might not have discovered any significant risk between other types of ACEs and suicidal attempt because of the present study small sample size. Sfoglia et al<sup>(20)</sup>

found that patients who had multiple ACEs of any category increased the risk of attempted suicide. Likewise, Felitti and Anda<sup>(11)</sup> reported that 54% of current depression and 58% of suicide attempts in women could be attributed to ACEs. Emotional neglect was found in the highest ratio and significantly increased the risk of suicide. This finding was similar to the report by Salokangas et al<sup>(21)</sup> that showed that childhood emotional abuse, physical abuse, and emotional neglect were significantly associated with suicidal risk. Possibly loneliness and being abandoned disrupt the development of self-concept, self-worth, and purpose, leading to suicidal ideation.

The present study also found that the more types of ACEs to which a child was exposed, the greater the risk of psychiatric ward admission. The subscales that increased the risk of admission were physical abuse, sexual abuse, childhood physical neglect, domestic violence, and parental divorce. Verbal abuse and childhood physical neglect were correlated with increased risk for electroconvulsive therapy, and to the authors' knowledge, this is the first such report.

The authors found that ACEs in particular the domestic violence type, increased by 26-fold the risk of further substance abuse, as also reported by Felitti and Anda<sup>(11)</sup>. The latter found a proportionate and robust relationship between the ACE score and the further use of various psychoactive materials or behaviors. Smoking, alcohol abuse, and injected drug use are strongly related to several specific categories of adverse experiences during childhood. An ACE score of 6 or more results in a 4,600% increased likelihood of becoming an injected drug user. The present study finding agrees with a similar report by Hughes et al<sup>(22)</sup> who found a strong relationship between ACEs and problematic drug use (ORs of 7 or more). It is assumed that the occurrence of domestic violence results in frustrated psychosocial development and affected persons try to escape their pain through substance use.

### Problems and limitations

The number of patients with PDD, being much less than those with MDD, might have affected the reliability of the data. The present study was a retrospective study, which there might have been recall bias as subjects might not have remembered some of their childhood experiences. Some patients, moreover, might have interpreted the childhood experience so negatively that it was concealed; thus, the prevalence rate might be even higher than reported. The present study did not collect data on a

normal group, so, the results cannot generalize to the normal population.

### Conclusion

Most of the patients with depressive disorders had at least one adverse childhood experience. The most prevalent adverse childhood experience was emotional neglect, which increased suicidal risk. Higher scores in all subscales of ACEs were associated with a higher risk of further hospitalization and suicidal behavior. History taking of patients with depression should include ACEs to help in creating a trauma treatment plan. Pro-active strategies in educating and counseling parents should be done to decrease adverse experiences for children as well as to preempt the development of depressive disorders.

### What is already known on this topic?

Several studies have shown that childhood adverse experiences can lead to physical, mental, and many kinds of behavior problems in normal populations. However, there was no data about prevalence of childhood adverse experiences and the type of trauma associated with depressive disorders, which is the main problem in Thailand.

### What this study adds?

The present study showed that most of patients with depressive disorders had at least one type of childhood trauma, and the most common type is emotional neglect. Higher ACE scores increase risk of admissions and suicide attempts in depressive patients. The risk of treatment by ECT was increased in patients who had a history of verbal abuse or physical neglect. The predisposing factor for substance use was domestic violence, while it was emotional neglect for suicide attempts. The findings encourage public policy of appropriate parenting education to reduce incidence of childhood adverse experiences.

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## Conflicts of interest

The authors declare no conflict of interest.

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