



# The Relationship of Childhood Maltreatment with Migraine and Tension-Type Headache: Results from the American Migraine Prevalence and Prevention (AMPP) Study



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## BACKGROUND

- Childhood maltreatment has been associated with frequent headaches in clinic samples.
- The strength of association for migraine and episodic tension type headache (ETTH) has not been examined in population studies, nor has the moderating role of depression and anxiety in population samples.

## OBJECTIVES

Within a US population sample:

1. To report rates of childhood maltreatment
2. To compare the strength of associations of childhood maltreatment with ETTH and migraine
3. To examine the effect of anxiety and depression on these relationships.

## METHODS

- The AMPP study is a longitudinal, US population based study of persons with “severe headache”. In 2007 the survey was sent to 20,489 study participants.
- Headache subtype was determined by ICHD-2 criteria applied to self-reported headache symptomatology.
- History of childhood maltreatment (<18 years old) was assessed using the Childhood Trauma Questionnaire (CTQ). (see Reference)

• Response options ranged from 1 for “Never True” through 5 for “Very Often True”.

**EMOTIONAL ABUSE** Score: none 5-8, low 9-12, moderate 13-15, severe ≥ 16

- Someone in my family helped me feel that I was important or special

- I felt loved
- People in my family looked out for each other
- People in my family felt close to each other
- My family was a source of strength and support

**EMOTIONAL NEGLECT** Score: none 5-9, low 10-14, moderate 15-17, severe ≥ 18

- People in my family called me things like “stupid”, “lazy”, or “ugly”
- I thought that my parents wished I had never been born
- People in my family said hurtful or insulting things to me
- I felt that someone in my family hated me

- I believe that I was emotionally abused

**SEXUAL ABUSE**

- Someone tried to pressure or force me to have unwanted sexual contact
- I believe that I was sexually abused

## METHODS (continued)

- Cut scores were ≥ 13 for emotional abuse, ≥ 15 for emotional neglect, and answered sometime true, often true or very often true to either sexual abuse question.
- We modeled dichotomous outcomes of migraine vs. ETTH using logistic regression with CTQ subscales as predictors adjusting for sociodemographic variables.
- In subsequent models we adjusted for depression (PHQ-9) and anxiety (PRIME-MD anxiety module).

## RESULTS

- The analysis sample was comprised 8,305 respondents with migraine and 1,429 with ETTH. (Table 1)
- The odds of migraine vs. ETTH increased significantly as the number of subtypes of abuse reported increased (OR=1.18, 95%CI 1.10-1.27) adjusted for sociodemographics and (OR=1.13, 95%CI 1.05-1.22) adjusted for sociodemographics, depression and anxiety. (Table 2)

Table 1. Sociodemographic Descriptives of Sample

	ETTH N= 1,429	Migraine N= 8,305	P value
Age (mean in yrs)	51.4 (SD 14.3)	48.7 (SD 12.8)	<.001
Sex (% female)	72.5%	80.4%	<.001
Race (% Caucasian)	84.5%	88.5%	<.001
Household Income (% ≥ \$30,000 per year)	64.7%	68.0%	<.001
Depression (% moderate-severe depression on PHQ-9)	13.6%	22.6%	<.001
Anxiety (% positive on Prime MD anxiety module)	4.3%	9.0%	<.001
Emotional Neglect	21.5%	24.5%	<.05
Emotional Abuse	16.7%	22.5%	<.001
Sexual Abuse	13.3%	17.7%	<.001

Table 2: Risk of Migraine vs. ETTH: Effects of childhood maltreatment

	ETTH (Reference)	Migraine Adjusted for sociodemographics	Migraine Adjusted for sociodemographics, depression & anxiety
Emotional Neglect	1	OR= 1.25 95%CI 1.08-1.44	OR=1.18 95%CI 1.02-1.36
Emotional Abuse	1	OR=1.46 95%CI 1.25-1.70	OR=1.33 95%CI 1.13-1.56
Sexual Abuse	1	OR=1.33 95%CI 1.10-1.60	OR=1.17 95%CI 0.96-1.42

OR=Odds ratio, CI=confidence interval  
Depression: PHQ 9; Anxiety: Prime MD anxiety module  
Sociodemographic variables: Age, Gender, Geographic Region, Market Size, Household size, Race, Hispanic Origin and Annual Household Income

## CONCLUSIONS

- Childhood maltreatment, particularly emotional abuse, is associated with a higher likelihood of migraine over ETTH in adulthood.
- Adjusting for depression and anxiety partially attenuates these results suggesting that psychiatric comorbidity may be a mediator.
- Most results remain significant, suggesting that pathways not captured by measures of depression and anxiety link childhood trauma to migraine.
- Effects on migraine may be underestimated if migraine and tension type headache share risk factors.

## REFERENCE

Bernstein DP, Stein JA, Newcomb MD, et al. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse Negl.* 2003;27:169-190.

