Published in final edited form as:

Clin Pediatr (Phila). 2012 June ; 51(6): 590–593. doi:10.1177/0009922811407181.

Childhood Abuse in Pediatric Patients With Chronic Daily Headache

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Introduction

Recent studies have raised significant concern about the high prevalence of childhood abuse in adults with chronic daily headache (CDH). In a survey of 1348 adult migraine patients,¹ it was found that 21% of patients reported a history of childhood physical abuse and 25% reported a history of sexual abuse. Data from the ACE (Adverse Childhood Experiences) study and other studies have also found that childhood physical abuse and other forms of maltreatment were significantly associated with migraine headache.^{2–4}

Although retrospective studies seem to provide strong evidence for an association between childhood abuse and CDH, one prospective longitudinal study did not find a difference between those with and without a documented history of childhood abuse in terms of their risk for chronic pain in adulthood.² These inconsistent results may be a result of varying methodologies, the effects of recall bias or because the connection between childhood abuse and pain in adulthood may be more complex. More prospective research is needed to investigate the connection between childhood abuse and CDH. Children with CDH form a significant proportion of patients seen in pediatric neurology clinics, accounting for up to one third of newly referred patients.⁵ There is little research examining the prevalence of childhood physical and sexual abuse in pediatric headache patients, and the impact of an early abuse history in terms of clinical presentation of pediatric CDH patients (headache frequency, severity, disability, and quality of life) is not known.

As part of the screening process for a large treatment study for pediatric CDH, our research team gathered comprehensive clinical data, including data on exposure to trauma among the patients. The objectives of this investigation were to 1) specifically examine the prevalence of physical and sexual abuse in these clinically referred children and adolescents with CDH and 2) to compare headache characteristics, headache-related disability, depressive symptoms, and quality of life between those who reported a history of abuse and those who did not. Based on the adult literature, we hypothesized that we would find a higher rate of

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The clinical trial registration number is NCT00389038.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

childhood abuse in CDH than in the general population and a rate similar to what has been reported in the adult literature (ie, approximately 20%). Also, we hypothesized that CDH patients with a positive history of abuse would have higher levels of headache-related disability, more depressive symptoms, and lower quality of life than those without a history of abuse.

Methods

Patients

Patients were children between 10 and 17 years of age presenting to a specialty headache center in a pediatric hospital. All patients were diagnosed with CDH by a pediatric headache specialist and had at least 15 or more headaches per month as documented by prospective daily diaries.

Procedure

The data for this study were gathered as part of the comprehensive screening for a clinical trial in pediatric CDH. This protocol did not exclude those with any history of abuse. The protocol was approved by the institutional review board and written consent from parents and assent from patients was obtained. Patients and their parent(s) completed a psychiatric interview and questionnaires during the screening visit. A trained doctoral-level psychology fellow or licensed psychologist conducted the psychiatric interviews, and a research coordinator administered the questionnaires.

Measures

Parents completed a demographic information form to note patient age, gender, race, ethnicity, and family socioeconomic status. The Kiddie-Schedule for Affective Disorders and Schizophrenia,⁶ a semistructured interview, was used to assess present and lifetime history of psychiatric diagnoses in childhood according to criteria from the *DSM-IV* (*Diagnostic and Statistical Manual of Mental Health Disorders*, 4th ed). The interview includes a section on the assessment of trauma in which patients are specifically asked about exposure to physical or sexual abuse. If a positive history of current or past physical or sexual abuse was reported by the child/adolescent, confirmation was obtained from their parent, and an assessment of current risk was conducted for purposes of reporting and/or treatment planning.

Questionnaires completed by participants included the following: Children's Depression Inventory (CDI), a validated, 27-item self-report measure that assesses symptoms of depression in children and adolescents in the past 2 weeks—raw scores range from 0 to 54 (clinical cutoff score for depressive symptoms = 17)⁷; the Pediatric Migraine Disability Assessment Score, a validated instrument used to assess disability in children and adolescents with headache—a total score >50 is considered as indicative of severe disability⁸; and the Pediatric Quality of Life Inventory (PedsQL)—Generic Core Scales, a validated instrument used to assess quality of life in children and adolescents, rated by both patients and parents for the domains of physical, school, social, and emotional functioning—clinically significant scores are below 69.7 for the child version and below 65.4 for the parent version.⁹

Results

The sample consisted of a total of 122 patients (average age = 14 years). The majority were female (77%) and white (85%; 11% African American and 4% Hispanic, Native American, or biracial). The average yearly income range for families was \$40,000 to \$49,999. The

average frequency of headaches was 20.4 headaches per month (standard deviation [SD] = 6.12), and the mean headache intensity on a 0 to 10 numeric rating scale was 5.6 (SD = 1.6). The average raw score on the CDI for CDH patients was 8.06 (T score = 47.2; SD = 10.2), which is below the clinically significant level. The overall PedsQL score was in the normal range for both child self-report and parent proxy report.

Of the 122 patients, a total of 8 patients (6.5%) reported a history of abuse. Of these, 3 patients reported physical abuse, 4 sexual abuse, and 1 both physical and sexual abuse. Of the 8 cases of abuse, 7 had already been officially reported to protective services, and the child was no longer in the abusive situation. One case of abuse was not previously reported, and therefore, with the knowledge of the parent, a report was initiated by our research staff to Child Protective Services and treatment options were discussed with the family.

Because of the small sample size of patients who reported a history of abuse, statistical comparisons were not conducted to compare those with and without a history of abuse. However, Table 1 summarizes descriptive scores on headache characteristics, depressive symptoms, disability, and quality of life separately for the patients with and without a history of abuse. Those with a history of abuse reported somewhat higher headache frequency (M = 24.6 vs 20.8, respectively) and headache intensity (M = 6.1 vs 5.6, respectively). Depressive symptoms in the patients with a history of abuse were almost twice as high as in those without a history of abuse (CDI score = 13.6 vs 6.4, respectively). Patients who reported a history of abuse also scored in the clinically significant range of impairment on the PedsQL (school, emotional, and psychosocial functioning subscales), based on both child report and parent proxy report, whereas patients who did not report abuse scored within normal limits. There was no noticeable difference in headache-related disability between those with and without a history of abuse.

Discussion

The prevalence of childhood abuse in pediatric CDH is lower (6.5%) than that reported in the adult headache literature (>20%); however, it is higher than estimated rates of documented childhood abuse in the general population (0.012%).¹⁰ One reason for the lower rates in adolescents compared with adults with CDH may be underreporting of abuse by patients, who might hesitate to disclose accurate information because of fear of the reporting requirements. On the other hand, higher reports of childhood abuse in retrospective adult studies may be a result of methodological issues in retrospective report or the fact that increasing maturity may bring a different understanding of abusive situations, which may not have been evident to patients during the childhood years. Even though less than 10% of children in this pediatric CDH sample reported experiencing physical or sexual abuse, the clinical presentation of CDH patients with a history of abuse was markedly different in several important respects.

Depressive symptoms among CDH patients with an abuse history were almost 2 times higher compared with those who did not report abuse. Self-report and parent report of overall quality of life suggested that those with a history of abuse had lower scores in school, emotional, and psychosocial functioning. Pain intensity and headache frequency were also somewhat higher. Therefore, pediatric CDH patients who present with elevated headache symptoms and poor psychosocial functioning, especially depression, may require a more comprehensive assessment, including assessment of trauma or victimization.

Limitations to this preliminary report of clinical findings are that formal documentation of abuse records was not available. Also, the relatively small sample size of clinically referred patients limits generalizability. Clearly, larger prospective studies with more comprehensive

assessment of childhood abuse along with documented records are needed to further examine the link between childhood abuse and chronic headaches in children.

Acknowledgments

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: National Institutes of Health, RO1 NS050536 (PI: S. Powers).

References

1. Tietjen GE, Brandes JL, Peterline BL, et al. Childhood maltreatment and migraine (part I). Prevalence and adulthood revictimization: a multicenter headache clinic survey. *Headache*. 2010; 50:20–31. [PubMed: 19845782]
2. Fuh J-L, Wang S-J, Juang K-D, et al. Relationship between childhood physical maltreatment and migraine in adolescents. *Headache*. 2010; 50:761–768. [PubMed: 20236341]
3. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the adverse childhood experiences (ACE) study. *Am J Prev Med*. 1998; 14:245–258. [PubMed: 9635069]
4. Anda RF, Tietjen GE, Schulman E, et al. Adverse childhood experiences and frequent headaches in adults. *Headache*. 2010; 50:1473–1481. [PubMed: 20958295]
5. Hershey AD, Powers SW, Benti A-L, et al. Characterization of chronic daily headaches in children in a multidisciplinary headache center. *Neurology*. 2001; 56:1032–1037. [PubMed: 11320174]
6. Chambers WJ, Puig-Antich J, Hirsch M, et al. The assessment of affective disorders in children and adolescents by semistructured interview: test-retest reliability of the Kid-die Schedule for Affective Disorders and Schizophrenia for School-Age Children, present episode version. *Arch Gen Psychiatry*. 1985; 42:696–702. [PubMed: 4015311]
7. Kovas, M. *Children's Depression Inventory*. North Tonawanda, NY: Mental Health Systems; 1992.
8. Hershey AD, Powers SW, Lecates SL, et al. Ped-MIDAS: development of a questionnaire to assess disability of migraines in children. *Neurology*. 2001; 57:2034–2039. [PubMed: 11739822]
9. Varni JW, Burwinkle TM, Seid M, et al. The PedsQL 4.0 as a pediatric population health measure: feasibility, reliability, and validity. *Ambul Pediatr*. 2003; 3:329–341. [PubMed: 14616041]
10. Child Maltreatment Report. U.S. Department of Health and Human Services; Administration on Children, Youth and Families. Children's Bureau; Washington DC: 2006. http://www.acf.hhs.gov/programs/cb/stats_research/index.htm#can

Table 1
Means and Standard Deviations of Headache Characteristics and Psychosocial Factors

Variable	History of Abuse (n = 8)		No History of Abuse (n = 114)		Total Group (n = 122)	
	Mean	SD	Mean	SD	Mean	SD
Headache frequency (0–28)	24.57	6.02	20.78	5.47	21.00	5.55
Pain intensity (VAS)	6.10	0.72	5.56	1.69	5.59	1.65
CDI (0–54)	13.63	10.19	7.62	6.42	8.06	6.84
PedMIDAS total score (0–540)	62.63	29.59	65.25	35.56	65.08	32.27
PedsQL total score (0–100)	60.73	21.85	72.76	13.29	71.97	14.19
Physical functioning	67.97	27.94	72.44	17.19	72.14	17.95
Emotional functioning	53.13	29.27	70.96	17.92	69.79	19.21
Social functioning	72.50	22.68	87.68	15.07	86.68	16.00
School functioning	45.00	21.71	60.22	20.40	59.22	20.74
Psychosocial functioning	56.88	22.67	72.95	13.82	71.97	14.19
PedsQL Parent Proxy total score	59.70	18.50	73.60	15.67	72.77	16.16
Physical functioning	68.75	21.78	74.84	18.22	74.44	18.42
Emotional functioning	46.88	23.14	70.35	19.42	68.81	20.42
Social functioning	73.44	19.68	85.31	17.40	84.53	17.71
School functioning	45.00	20.70	63.55	23.26	62.33	23.48
Psychosocial functioning	54.76	18.56	70.46	16.60	69.42	17.09

Abbreviations: SD, standard deviation; VAS, Visual Analog Scale; CDI, Children's Depression Inventory; PedMIDAS, Pediatric Migraine Disability Assessment Score; PedsQL, Pediatric Quality of Life Inventory.