

RESEARCH AND PRACTICE

Association Between Childhood Physical Abuse and Gastrointestinal Disorders and Migraine in Adulthood

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Previous studies suggest that childhood physical abuse is a strong predictor of mental disorders during adulthood.¹⁻⁵ An association between childhood abuse and increased use of medical services has also been documented,⁶ suggesting that childhood physical abuse is associated with poor health. In contrast, relatively little information is available on the link between childhood physical abuse and physical illness in adulthood.

We examined the association between childhood physical abuse and the odds of gastrointestinal disorders and migraine headache among adults in the community. We hypothesized that childhood physical abuse would be associated with increased odds of gastrointestinal disorders and migraine headache during adulthood, and that this association would be independent of comorbid mental disorders.

METHODS

Sample

The Midlife Development in the United States Survey (MIDUS) is a nationally representative survey of 3032 persons aged 25 through 74 years in the noninstitutionalized civilian population of the 48 coterminous United States. It was carried out between January 1995 and January 1996, with an overall response rate of 60.8%. The data were weighted to adjust for differential probabilities of selection and nonresponse. Details on the design, field procedures, and sampling weights are available elsewhere.⁷⁻⁹

Diagnostic Assessment

MIDUS diagnoses were based on the Composite International Diagnostic Interview Short Form (CIDI-SF) scales,¹⁰ a series of diagnostic-specific scales that were developed from item-level analyses of a modified version of the World Health Organization's Composite International Diagnostic Interview (CIDI-WHO).¹¹ The CIDI-SF scales were designed to reproduce the full CIDI as exactly as possible with only a small subset of the original questions. CIDI-SF diagnoses at 12 months included in the MIDUS are major depression, panic attacks, generalized anxiety disorder, and alcohol and drug abuse disorders. The CIDI-WHO was designed for use by trained lay interviewers. WHO field trials¹² and National Comorbidity Survey clinical reappraisal studies¹³⁻¹⁵ documented excellent reliability and adequate validity for all of these diagnoses.

To assess physical health problems, interviewers presented each participant with a list of physical disorders and asked whether the participant had experienced, or been diagnosed by a physician with, any of the conditions listed within the past year. The list included migraine headaches, ulcer, and recurring stomach problems. Only participants for whom information was available on all variables (n=2407) were included in the present analyses.

Self-Reported Childhood Physical Abuse

A history of self-reported childhood abuse was assessed by responses to questions derived from the Conflict Tactics Scale.¹⁶ Subjects were asked whether their mother or father often, sometimes, or rarely "kicked, bit, or hit [them] with a fist; hit or tried to hit [them] with something; beat [them] up; choked [them]; burned [them] or scalded [them]." Affirmative responses to any of the items were grouped as indicating "any" physical abuse; respondents who answered "often" were included in analyses as having experienced "frequent" abuse.

Analytic strategy

First, independence-based F tests were used to evaluate differences in demographic characteristics, mental, and physical disorders between individuals with no history of physi-

cal abuse (reference group), those with any abuse, and those with frequent abuse. Binary indicator variables were created for use in multiple logistic regression analyses comparing any abuse with no abuse and frequent abuse with no abuse. Multiple logistic regression analyses were then used to investigate the odds of each physical illness' being associated with each level of abuse. All analyses were then adjusted for differences in sociodemographic characteristics and comorbid mental disorders.

RESULTS

Prevalence and Sociodemographic Characteristics

Childhood physical abuse was reported by 381 (15.8%) of the 3032 respondents, with 74 (3.1%) reporting frequent abuse. Individuals who reported experiencing childhood abuse were significantly younger, more likely to be of minority racial status, and more likely to have current mental disorders than those who did not report abuse (Table 1). Frequent abuse was associated with decreased odds of being married. A higher percentage of men than women reported any abuse, and a higher percentage of women than men reported frequent abuse.

Childhood Abuse and Physical Illness Among Adults in the Community

Any childhood abuse was associated with a significantly increased odds ratio (OR) for recurring stomach problems (OR=1.7; 95% confidence interval [CI]=1.2, 2.4), and frequent childhood abuse was associated with a significantly increased likelihood of recurring stomach problems (OR=3.5; 95% CI=1.9, 6.4), migraine (OR=2.7; 95% CI=1.2, 5.8), and ulcer (OR=4.2; 95% CI=1.8, 10.0), which remained statistically significant after adjusting for sociodemographic characteristics and mental disorders (Table 2).

DISCUSSION

Limitations of this study should be noted. First, since the sample was a cross-sectional population of adults, recall about events that occurred during childhood may have suffered from recall bias. Previous evidence suggests

TABLE 1—Univariate Association Between Self-Reported Physical Abuse in Childhood, Sociodemographic Characteristics, and Mental and Physical Disorders Among Adults

| | No abuse (n = 1817) | Any abuse (n = 381) | Statistics | | | Frequent abuse (n = 74) | Statistics | | |
|----------------------------------|------------------------|------------------------|------------|---------|--------|----------------------------|------------|---------|--------|
| | | | F | df | P | | F | df | P |
| Age, y, mean (SD) | 46.9 (13.2) | 44.7 (12.1) | 9.0 | 1, 2178 | .003 | 44.9 (12.2) | NS | ... | ... |
| Sex | | | 8.1 | 1, 2196 | .004 | | NS | ... | ... |
| Male, % | 47.6 | 55.6 | | | | 45.9 | | | |
| Female, % | 52.4 | 44.4 | | | | 54.1 | | | |
| Race | | | 21.6 | 1, 2156 | <.0001 | | NS | ... | ... |
| Minority status, % | 10.7 | 18.4 | | | | 17.6 | | | |
| Marital status | | | NS | ... | ... | | 7.6 | 1, 1889 | .006 |
| Married, % | 65.8 | 62.6 | | | | 50.0 | | | |
| Mental and physical disorders, % | | | | | | | | | |
| Major depression | 12.6 | 16.8 | 5.1 | 1, 2196 | .002 | 29.7 | 18.4 | 1, 1889 | <.0001 |
| Panic attacks | 5.6 | 8.5 | 9.8 | 1, 2196 | .002 | 12.2 | 8.2 | 1, 1889 | <.0001 |
| Generalized anxiety disorder | 2.1 | 4.1 | 6.6 | 1, 2196 | .011 | 5.4 | 4.4 | 1, 1889 | .036 |
| Alcohol/substance use disorders | 2.1 | 3.9 | 8.0 | 1, 2196 | .005 | 12.2 | 27.1 | 1, 1889 | <.0001 |
| Recurring stomach problems | 17.5 | 25.2 | 20.2 | 1, 2180 | <.0001 | 43.2 | 32.2 | 1, 1878 | <.0001 |
| Ulcers | 3.8 | 4.3 | 2.4 | 1, 2186 | .1 | 17.6 | 33.9 | 1, 1881 | <.0001 |
| Migraine headaches | 9.7 | 10.7 | 3.3 | 1, 2188 | .069 | 31.1 | 33.1 | 1, 1883 | <.0001 |

Note. The reference group was individuals with no history of physical abuse.

TABLE 2— Association Between Self-Reported Physical Abuse in Childhood and Odds of Recurring Stomach Problems, Ulcers, and Migraine Headaches Among Adults

| | Recurring Stomach Problems (n = 531) OR (95% CI) | Ulcers (n = 114) OR (95% CI) | Migraine Headaches (n = 270) OR (95% CI) |
|-----------------------|--|---------------------------------|--|
| Any abuse | | | |
| Unadjusted | 1.8* (1.4, 2.3) | 1.5 (0.9, 2.5) | 1.4 (1.0, 1.9) |
| Adjusted ^a | 1.9* (1.4, 2.6) | 1.5 (0.8, 2.8) | 1.9* (1.4, 2.6) |
| Adjusted ^b | 1.7* (1.2, 2.4) | 1.4 (0.7, 2.7) | 1.4 (0.9, 2.2) |
| Frequent abuse | | | |
| Unadjusted | 3.6* (2.3, 5.8) | 5.5* (2.9, 10.5) | 4.1* (2.4, 6.9) |
| Adjusted ^a | 4.0* (2.2, 7.2) | 5.0* (2.2, 11.6) | 4.0* (2.0, 8.0) |
| Adjusted ^b | 3.5* (1.9, 6.4) | 4.2* (1.8, 10.0) | 2.7* (1.2, 5.8) |

Note. OR = odds ratio; CI = confidence interval.

^aAdjusted for age, sex, marital status, race, and education.

^bAdjusted for age, sex, marital status, race, education, panic attacks, generalized anxiety disorder, major depression, and alcohol/substance use disorders.

* $P < .05$.

that recall of childhood abuse may have questionable reliability.^{17–18} Second, factors not controlled for in this study, such as socioeconomic status during childhood, may independently influence both odds of exposure to childhood physical abuse and physical illness, thereby confounding these results.¹⁹ Third, data on physical illnesses were obtained only

by self-report; however, previous data have shown adequate validity of self-reported information on chronic medical conditions.²⁰

These data provide initial evidence of an association between childhood physical abuse and increased odds of gastrointestinal problems and migraine headaches among adults in the general population. The mechanism of

the observed association is not known. Experiences of childhood physical abuse may lead to an increased tendency to somatize emotional distress and to report physical illnesses.²¹ It is also possible that the experience of childhood abuse increases recognition of underlying health problems.²² In other words, physical abuse may increase awareness or sensitize people to pains or physical discomfort that others might ignore. Alternatively, childhood abuse may lead to changes in biological functioning that influence the development of physical illness.²³ One model that could be offered as evidence for this pathway is the increased gastric scarring among mice exposed to stressful situations.²⁴

It is also possible that physical abuse is an indicator of wider psychosocial adversity in childhood, which might include poverty, parental stress, and poor parenting.²⁵ These broad risk factors may be more important than abuse per se as determinants of later physical or mental disorders. The fact that a variable for neglect, which could be included in poor caretaking and abuse, was not included in the Conflict Tactics Scale may result in uncontrolled confounding and is another limitation of this study.

Consistent with previous evidence of an association between childhood physical abuse and poorer mental health in adulthood,¹⁻⁵ these preliminary data suggest that childhood physical abuse also increases the likelihood of physical health problems later in life. Future studies investigating these associations should use prospective, longitudinal epidemiological samples of youths and adults and should be able to adjust for a multitude of antecedent common risk factors. Such studies may help improve our understanding of these links. ■

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Contributors

R. D. Goodwin was the principal author and conceptualized the research with significant input from C. W. Hoven, R. Murison, and M. Hotopf. All authors participated in the review and revisions of the brief.

Human Participant Protection

This study was approved by the institutional review board of The University of Michigan.

References

- MacMillan HL, Fleming JE, Streiner DL, et al. Childhood abuse and lifetime psychopathology in a community sample. *Am J Psychiatry*. 2001;158:1878-1883.
- Stevenson J. The treatment of the long-term sequelae of child abuse. *J Child Psychol Psychiatry*. 1999;40:89-111.
- Young EA, Abelson JL, Curtis GC, Nesse RM. Childhood adversity and vulnerability to mood and anxiety disorders. *Depress Anxiety*. 1997;5:66-72.
- Kaplan MJ, Klinetob NA. Childhood emotional trauma and chronic posttraumatic stress disorder in adult outpatients with treatment-resistant depression. *J Nerv Ment Dis*. 2000;188:596-601.
- Kessler RC, Davis CG, Kendler KS. Childhood adversity and adult psychiatric disorder. *Psychol Med*. 1997;27:1101-1119.
- Rosenberg HJ, Rosenberg SD, Wolford GL, Manganiello PD, Brunette MF, Boynton RA. The relationship between trauma, PTSD, and medical utilization in three high risk medical populations. *Int J Psychiatry Med*. 2000;30:247-159.
- Brim OG, Baltes PB, Bumpass LL, et al. National Survey of Midlife Development in the United States (MIDUS), 1995-1996. Available at: <http://www.icpsr.umich.edu:8080/NACDA-STUDY/02760.xml>. Accessed April 28, 2003.
- Kessler RC, Mickelson KD, Zhao S. Patterns and correlates of self-help group membership in the United States. *Soc Policy*. 1997;27:27-46.
- Kessler RC, DuPont RL, Berglund P, Wittchen HU. Impairment in pure and comorbid generalized anxiety disorder and major depression at 12 months in two national surveys. *Am J Psychiatry*. 1999;156:1915-1923.
- Kessler RC, Andrews G, Mroczek D, Ustun B, Wittchen HU. The World Health Organization Composite International Diagnostic Interview Short Form (CIDI-SF). *Int J Methods Psych Res*. 1998;7:171-185.
- Composite International Diagnostic Interview (CIDI), Version 1.0. Geneva, Switzerland: World Health Organization; 1990.
- Wittchen HU. Reliability and validity studies of the WHO Composite International Diagnostic Interview (CIDI): a critical review. *J Psychiatr Res*. 1994;28:57-84.
- Wittchen HU, Kessler RC, Zhao S, Abelson J. Reliability and clinical validity of UM-CIDI DSM-III-R generalized anxiety disorder. *J Psychiatr Res*. 1995;29:95-110.
- Andrews G, Peters L. The psychometric properties of the Composite International Diagnostic Interview. *Soc Psychiatry Psychiatr Epidemiol*. 1998;33:80-88.
- Wittchen IU, Zhao S, Abelson JL, Kessler RC. Reliability and procedural validity of UM-CIDI DSM-III-R phobic disorders. *Psychol Med*. 1996;25:1169-1177.
- Straus MA. Measuring intrafamily conflict and violence: the Conflict Tactics Scale. *J Marriage Fam*. 1979;41:75-88.
- Widom CS, Shepard RL. Accuracy of adult recollection of childhood victimization, part I: childhood physical abuse. *Psychol Assess*. 1996;8:412-421.
- Fergusson DM, Horwood LJ, Woodward LJ. The stability of child abuse reports: a longitudinal study of the reporting behavior of young adults. *Psychol Med*. 2000;30:529-544.
- Korbin JE, Coulton CJ, Lindstrom-Ufuti H, Spilbury J. Neighborhood views on the definition and etiology of child maltreatment. *Child Abuse Negl*. 2000;24:1509-1527.
- Kehoe R, Wu SY, Leske MC, Chylack LT. Comparing self-reported and physician-reported medical history. *Am J Epidemiol*. 1994;15:813-818.
- Cloitre M, Cohen LR, Edelman RE, Han H. Post-traumatic stress disorder and extent of trauma exposure as correlates of medical problems and perceived health among women with childhood abuse. *Women Health*. 2001;34:1-17.
- Ng V, Norwood A. Psychological trauma, physical health and somatisation. *Ann Acad Med Singapore*. 2000;29:658-664.
- Heim C, Newport DJ, Bonsall R, Miller AH, Nemeroff CB. Altered pituitary-adrenal axis responses to provocative challenge tests in adult survivors of childhood abuse. *Am J Psychiatry*. 2001;158:575-578.
- Overmier JB, Murison R. Anxiety and helplessness in the face of stress predisposes, precipitates, and sustains gastric ulceration. *Behav Brain Res*. 2000;110:161-174.
- Higgins DJ, McCabe MP. Relationships between different types of maltreatment during childhood and adjustment in adulthood. *Child Maltreat*. 2000;5:261-272.

High Prevalence of Self-Reported Forced Sexual Intercourse Among Internally Displaced Women in Azerbaijan

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Previous reports have shown that forced sexual intercourse and other forms of gender-based violence are a persistent public health problem for refugee or internally displaced women.¹⁻⁶ (Internal displacement is defined as forced relocation within a person's country of citizenship because of some catastrophic event.) In some settings, the proportion of refugee or internally displaced women reporting some type of gender-based violence exceeds 60%.^{7,8} Sexual violence against refugee or internally displaced women can cause women to flee their homelands.⁹⁻¹⁴ Unfortunately, these women are not always safe from harm after their relocation or after resettlement.^{4,12,15-18} Investigation of sexual violence affecting these women, its incidence, prevalence, and correlates is critical to the development of effective treatment and prevention strategies.

METHODS

Setting

This investigation was conducted in non-governmental organization-operated reproductive health clinics in the Barda, Yevlack,