

Childhood Abuse Linked to Type 2 Diabetes in Women

BY KERRI WACHTER

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Physical and sexual abuse in childhood and adolescence appear to increase the risk of type 2 diabetes in adult women in a dose-response fashion, based on the results of an epidemiologic study involving almost 70,000 women.

Moderate and severe physical abuse in childhood and adolescence were associated with 26%-54% higher risks of diabetes in women. Those who had experienced forced sex once had a 34% higher risk of

are not only emotional and behavioral consequences of abuse in childhood and adolescence; there are physical consequences as well," he said in an interview.

"We need to be much more sensitive to issues of abuse and in the history, because they demonstrably now have mental and physical downstream impacts."

For this study, the researchers used data from the Nurses Health Study II (NHSII), a cohort of 116,430 registered nurses, who were aged 25-42 years when the cohort was established in 1989. The cohort has been followed by biennial mailed questionnaires, which inquire about risk factors and disease incidence.

In 2001, a violence questionnaire was added to this large longitudinal cohort study of women. Participants returned 68,376 violence questionnaires; 67,853 were included in this analysis.

A total of 2,074 cases of type 2 diabetes were accrued from 1989 to 2005, and 759 incident cases occurred after the violence questionnaire was administered in 2001. All of the cases (2,833) were included in the analysis to maximize power. Data were analyzed in 2009, after diagnoses of diabetes reported on the 2005 questionnaire were reviewed and coded.

The Violence Questionnaire covers three periods: childhood (up to age 11 years), adolescence (11-17 years), and adulthood. Childhood and adolescent physical abuse was assessed through an adaptation of the Revised Conflict Tactics Scale. Child and adolescent sexual abuse was measured by questions about unwanted sexual touching and forced sexual activity.

In this cohort, 65% of participants reported any degree of physical or sexual abuse in childhood or adolescence, which was associated with a 24% increased risk of type 2 diabetes in adulthood, even after adjustment for age, race/ethnicity, body type at 5 years, and maternal/paternal education and history of diabetes. A dose-response association was found between physical abuse and risk of diabetes. However, this was somewhat attenuated by adjustment for race, maternal and paternal education, maternal and paternal diabetes, and somatotype at age 5, the investigators found.

"The high prevalence of child abuse suggests that it is an important, if overlooked, contributor to type 2 diabetes. ... A more precise description of the physiologic and psychological mechanisms through which abuse leads to overweight and obesity would help to focus prevention efforts," the investigators concluded. Dr. Phillips agreed. "If an individual [with a history of abuse] is heavy or is gaining weight or is physically inactive, we need to try to intervene – recognizing that those kinds of changes in these individuals will predispose them to the development of diabetes more than perhaps the general population."

diabetes than were women who were not sexually abused as girls and a 69% higher risk when sexual abuse occurred more frequently. Even after accounting for adult body mass index, there remained a 10%-30% increased risk of diabetes among women who had experienced moderate physical abuse or the most severe forms of physical or sexual abuse (Am. J. Prev. Med. [doi:10.1016/j.amepre.2010.09.007]).

"The PAR [population attributable risk] percent derived from this model indicates that child/adolescent abuse accounted for 14% (7%-21%) of type 2 diabetes in this cohort. Applying the hazard ratio from this study to the 43% prevalence of any child or adolescent abuse reported by women in the National Violence Against Women Survey, an estimated 9% of diabetes in U.S. women may be attributed to early abuse," wrote Janet W. Rich-Edwards, Sc.D., and her colleagues.

An association consistently has been reported between child abuse and adult obesity. Studies indicate "that early trauma may cause lasting dysregulated responsiveness, which may link child abuse with diabetes through physiologic pathways independent of adiposity," wrote Dr. Rich-Edwards, director of developmental epidemiology at the Connors Center for Women's Health and Gender Biology at Brigham and Women's Hospital, Boston, and her colleagues. However, the association between childhood abuse and adult diabetes has not been studied before in a large population.

The new findings highlight the importance of recognizing abuse in children and adolescents and asking adults about a history of abuse, according to Dr. Lawrence S. Phillips, a professor of endocrinology at Emory University, Atlanta. Physicians need to be aware that "there

VITALS

Major Finding: Moderate and severe physical abuse in childhood and adolescence were associated with 26%-54% higher risks of diabetes in women. Women who had experienced forced sex once or repeatedly before adulthood had 34%-69% higher risks of diabetes than did women who were not sexually abused as girls.

Data Source: Epidemiologic analysis of data from a cohort of 68,376 women.

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Note: Based on 5,908 responses to a survey conducted from June 22 to Oct. 5, 2009. Source: Adv. Nurse Pract. 2010;17:24-30