An examination of the relation between conduct disorder, childhood and adulthood traumatic events, and posttraumatic stress disorder in a nationally representative sample

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A B S T R A C T

Background: Clinical data has indicated that exposure to trauma and meeting diagnostic criteria for posttraumatic stress disorder (PTSD) are common among individuals with a history of conduct disorder. However, these relationships have not been adequately examined in a population-based sample.

Methods: Data were drawn from Wave 2 of the U.S. National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) collected in 2004–2005 (n = 34,653, response rate = 86.7%). Multivariate logistic regression analyses were conducted to examine relations between conduct disorder, traumatic life events, and PTSD in the full sample, and separately for males and females.

Results: The main findings indicate that childhood maltreatment was associated with conduct disorder (Adjusted Odds Ratio [AOR] ranging from 2.4 to 4.7) after adjustment for sociodemographic variables. Additionally, respondents with a history of conduct disorder compared to respondents without conduct disorder were more likely to report experiencing any traumatic event (AOR = 2.7, 95% CI = 2.0–3.6) and PTSD (AOR = 2.2, 95% CI = 1.8–2.7) after adjusting for sociodemographic variables. Although sex differences were noted, conduct disorder was associated with the greatest odds of assaultive violence for males and females. The majority of individuals (72.9%) diagnosed with both conduct disorder and PTSD developed conduct disorder symptoms before PTSD symptoms.

Conclusions: Results of this study provide the first known sex-stratified examination of the relationship between conduct disorder, traumatic events, and PTSD in a large, population-based sample of adults and are consistent with clinical impressions. Policy and clinical implications are discussed.

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Conduct disorder is a psychiatric disorder within childhood and/or adolescence that is characterized by aggressive, delinquent, and deceitful behavior such as bullying, physical or sexual violence, stealing, vandalizing, and running away from home (American Psychiatric Association, 2000). Previous research has noted sex differences in the presentation of conduct disorder with regard to prevalence, symptoms, and comorbidity with other mental disorders. For example, although conduct disorder is a common diagnosis among both males and females, the prevalence of conduct disorder is often higher among males (Keenan et al., 1999; McCabe et al., 2004; Nock et al., 2006; Zahn-Waxler et al., 2008; Zoccolillo, 1993), while females are more likely to experience greater comorbidity (Loeb and Keenan, 1994).

Childhood maltreatment has been linked to an increased likelihood of conduct disorder in a variety of samples (Afifi et al., 2006, 2009; Fergusson et al., 1996; Jaffee et al., 2005; McCabe et al., 2005). For example, one study of a nationally representative United States sample found that childhood physical and/or sexual abuse increased the likelihood of any lifetime externalizing problems including drug abuse or dependence, conduct disorder, antisocial personality disorder, and adult antisocial behavior (Afifi et al., 2006). Another study of the same sample found that the traumatic experience of childhood maltreatment, which included physical abuse, sexual abuse, neglect, and exposure to intimate partner violence, was associated specifically with increased odds of having a lifetime diagnosis of conduct disorder, as well as other externalizing disorders (Afifi et al., 2009). One theoretical perspective for this association is that the trauma of childhood maltreatment may be related to difficult behavioral features that
could place an individual at a greater likelihood of developing conduct disorder and experiencing further maltreatment. Likewise, the often reckless and risky behavioral patterns of individuals with conduct disorder may place these individuals at an increased risk for other traumatic exposures in childhood, adolescence, and adulthood such as assaultive violence and life threatening accidents. In fact, delinquent and aggressive behaviors in childhood have been linked with an increased likelihood of trauma exposure including assaultive violence (Breslau et al., 2006). In a clinical sample, 50% of youth with conduct disorder reported trauma exposure and of those, 17% met criteria for posttraumatic stress disorder (PTSD; Reebey et al., 2000). Researchers using data from other clinical, veteran, and nationally representative United States samples have similarly found a comorbid relationship between conduct disorder and PTSD (Allwood et al., 2008; Connor et al., 2007; Koenen et al., 2005, 2002; Nock et al., 2006). Clinical data using a small sample has also indicated that sex differences exist in the relationship between conduct disorder and trauma exposure, with females being more likely to report sexual assault and males being more likely to experience accidents, physical assaults, and witnessing the death of a loved one (Reebeey et al., 2000). Very little is known about the sex differences with regard to conduct disorder, traumatic events, and PTSD using general population samples. Further research is necessary to understand these relationships and to provide new knowledge to that will have important implications for policy and treatment that can be tailored to males and females with conduct disorder.

Findings from clinical data suggest that conduct disorder may increase the likelihood of experiencing traumatic events, thereby putting these individuals at greater risk for developing PTSD. However, beyond the relationship between childhood maltreatment and conduct disorder, the risk of trauma exposure and PTSD has not been adequately examined in representative samples of males and females with and without a history of conduct disorder. In addition, given the high comorbidity of conduct disorder and PTSD with other Axis I and II disorders (Affifi et al., 2010; Cunningham and Ollendick, 2010; Kessler et al., 2003; Lipschitz et al., 1999; Nock et al., 2006), it is important to account for the variance of these relationships in order to adequately assess the potential independent relationship between conduct disorder with traumatic events and PTSD. Many studies have not adjusted for potential psychiatric comorbidity. The purpose of the current study is to extend the clinical literature to examine sex differences in trauma exposure and PTSD among adults with and without a history of conduct disorder in a representative sample of adults from the United States while adjusting for sociodemographic variables and Axis I and II disorders.

This present study had five main objectives: (1) evaluate whether there is a relationship between childhood maltreatment and conduct disorder separately for males and females; (2) determine if adults with a history of conduct disorder are more likely than adults without a history of conduct disorder to report having experienced other traumatic events; (3) examine whether females with conduct disorder compared to males with conduct disorder are more or less likely to report having experienced certain traumatic events; (4) assess if adults with a history of conduct disorder compared to those without a history of conduct disorder are more likely to report having experienced PTSD and if sex differences are noted in this relationship; and (5) examine the developmental course between conduct disorder symptoms and PTSD symptoms. Based on findings of sex differences in past clinical and at-risk samples (McCabe et al., 2004; Reebey et al., 2000), all analyses were examined separately for males and females. We hypothesized that adults who experienced childhood maltreatment would have increased odds of having conduct disorder and that, compared to adults without a history of conduct disorder, those with a history of conduct disorder would be more likely to report having experienced other traumatic events and meet criteria for a lifetime PTSD diagnosis. We hypothesized that the lifetime prevalence of conduct disorder would be higher among males compared to females; and that the lifetime prevalence of PTSD would be higher among females compared to males (McCabe et al., 2004; Reebey et al., 2000). We further hypothesized that the onset of conduct disorder symptoms would precede PTSD symptoms for the majority of individuals.

1. Methods

1.1. Sample

Data for this study were drawn from Wave 2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), which was collected in 2004–2005 (n = 34,653, response rate = 86.7%). The NESARC is a representative sample of the adult (20 years of age or older), civilian, non-institutionalized population of the US. It included respondents living in households and assorted non-institutional group dwellings such as college quarters, group homes, and boarding houses. Interviews for the NESARC were conducted face-to-face by trained lay interviewers. All respondents provided written informed consent with knowledge of the nature of the survey, statistical uses of the data, voluntary participation, and federal laws protecting confidentiality and identity. The US Census Bureau and US Office of Management and Budget reviewed the research protocol and provided full ethical approval (NESARC, 2008). Further details of the NESARC have been published elsewhere (Ruan et al., 2008; Grant et al., 2005).

1.2. Measures

1.2.1. Mental disorders

Lifetime conduct disorder (with or without antisocial personality disorder) and PTSD were diagnosed using the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria (American Psychiatric Association, 1994) and the Alcohol Use Disorder and Associated Disabilities Interview Schedule—DSM-IV Version (AUDADIS-IV) (Grant et al., 2001; Ruan et al., 2008), a fully-structured diagnostic interview appropriate for use by trained lay interviewers and clinicians. The AUDADIS-IV provides a fully-structured interview protocol to assess mental disorders. DSM-IV criteria and the AUDADIS-IV were also used to assess other mental disorders, including any lifetime mood disorder (depression, dysthymia, and bipolar disorder), any other lifetime anxiety disorders (panic disorder, agoraphobia, social phobia, specific phobia, and generalized anxiety disorder), any lifetime substance use disorder (alcohol use disorder, illicit drug use disorder), and any lifetime personality disorder (paranoid, schizoid, schizotypal, antisocial, histrionic, borderline, narcissistic, avoidant, dependent, and obsessive-compulsive personality disorders). Age of onset for conduct disorder with or without antisocial personality disorder was determined by asking respondents at what age they first began engaging in behaviors characteristic of individuals with conduct disorder (e.g., stealing, getting into fights, and running away from home).

1.2.2. Traumatic events: childhood maltreatment

Respondent experiences of a several types of childhood maltreatment occurring before the age of 18 were assessed using questions based on those from the Adverse Childhood Experiences study (Dong et al., 2003; Dube et al., 2005). These questions comprised a subset of items from the Conflict Tactics Scale (Straus, 1979; Straus et al., 1996) and the Child Trauma Questionnaire (Bernstein et al., 1994).
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