BRIEF REPORTS

Trauma Exposure Among Children With Oppositional Defiant Disorder and Attention Deficit–Hyperactivity Disorder

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Consecutive admissions to an outpatient child psychiatry clinic diagnosed with oppositional defiant disorder (ODD), attention deficit–hyperactivity disorder (ADHD), or adjustment disorder were assessed for trauma exposure by a structured clinical interview and parent report. Controlling for age, gender, severity of internalizing behavior problems, social competence, family psychopathology, and parent–child relationship quality (assessed by parent report), an ODD diagnosis, with or without comorbid ADHD, was associated with increased likelihood of prior victimization (but not nonvictimization) trauma. ADHD alone was not associated with an increased likelihood of a history of trauma exposure. Traumatic victimization contributed uniquely to the prediction of ODD but not ADHD diagnoses. Children in psychiatric treatment who are diagnosed with ODD, but not those diagnosed solely with ADHD, may particularly require evaluation and care for posttraumatic sequelae.

Attention deficit–hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD) affect up to 10% of all children and 33% of those in psychiatric treatment (Costello, Angold, Burns, Stangl, et al., 1996), sometimes with severe psychosocial impairment (Costello, Angold, Burns, Erkanli, et al., 1996). The role of psychological trauma in ODD or ADHD is uncertain. Some studies suggest that 33% of abused children meet criteria for ODD (Flisser et al., 1997; Merry & Andrews, 1994) or ADHD (Fletcher, 1996), but two studies found abuse to be unrelated to ADHD (McLeer, Callaghan, Henry, & Wallen, 1994; Merry & Andrews, 1994). Although trauma has not been linked etiologically to ADHD (Lahey, Appelgate, McBurnett, et al., 1994) or ODD (Lahey, Appelgate, Barkley, et al., 1994), trauma may worsen ODD's angry oppositionality or ADHD's impulsivity, hyperactivity, and attentional dysregulation and the disruptive behavior disorder symptoms may lead to trauma exposure (Cuffe, McCullough, & Pumariega, 1994).

Moreover, posttraumatic stress disorder (PTSD) often is comorbid with conduct disorder (Steiner, Garcia, & Matthews, 1997) and ADHD (Cuffe et al., 1994; Famularo, Fenton, Kinscherff, & Augustyn, 1996). Intrusive reexperiencing and hyperarousal symptoms could contribute to ADHD's impulse and attentional dysregulation or to ODD's aggressive and oppositional behavior. Posttraumatic avoidance, emotional numbing, or social detachment also could contribute to ADHD's motivational or social problem-solving deficits and to ODD's angry defiance and spitefulness.

This study examined the association of psychological trauma with ADHD and ODD compared with a control clinical sample of child psychiatry outpatients diagnosed with a less chronic and severe condition than ADHD or ODD (adjustment disorder). Several variables associated with the etiology or severity of ODD (Lahey, Appelgate, Barkley, et al., 1994) or ADHD (Lahey, Appelgate, McBurnett, et al., 1994), as well as with trauma exposure (Boney-McCoy & Finkelhor, 1995) and PTSD (Fletcher, 1996), were used to achieve a conservative test of the correlation specifically between trauma and ADHD or ODD. The first three variables are known to be independent of any specific diagnosis and are positively related to trauma exposure and PTSD: family psychopathology and severity of child psychopathology and psychosocial impairment. Age tends to be positively related to trauma exposure but inversely related to PTSD. Gender is associated with ADHD and ODD (more common in boys): Boys are more likely exposed to trauma, but girls are more likely to develop PTSD. Education tends to be inversely related to PTSD in adults and is a key element in family socioeconomic status. Finally, quality of parent–child relationship tends to be inversely related to trauma exposure, PTSD, and both ADHD and ODD. These variables'
association with trauma history were tested on a univariate basis, and those related to trauma history were entered in multivariate analyses.

**Method**

Participants were consecutive admissions to the Dartmouth Hitchcock Medical Center outpatient child psychiatry clinic, aged 6 to 17 years, who were diagnosed with ADHD, ODD, or adjustment disorder. All parents gave informed consent and all children gave verbal assent in accord with a protocol approved by the Dartmouth College Committee for Protection of Human Subjects. Less than 5% of all admissions were excluded because of psychiatric or neurological conditions (i.e., current bipolar, psychotic, pervasive developmental, obsessive-compulsive, or mental retardation disorders) or language difficulties that might have led to invalid data due to comprehension deficits. Most participants (N = 165; mean age = 11.5 years, SD = 3.4 years; 57% female, 43% male) were Caucasian (4% African American or Latino) from rural, suburban, or urban settings, with varied parent education levels (31% high school or less, 28% high school graduate, 21% some college, 20% graduate).

Child diagnoses were done by study clinicians according to the Multimodal Treatment Study of Children with ADHD’s multiple-gating procedure (Hinshaw et al., 1997), using a diagnostic checklist developed by Hudziak (1997); parent ratings were done using the SNAP-IV (Swanson, Nolan, and Pelham questionnaire (Hinshaw et al., 1997) for ADHD and ODD. Independent rediagnoses by study clinicians for 18 to 20 randomly chosen cases each produced adequate interrater reliability kappas for ADHD (.80), adjustment disorder (.77), and ODD (.60).

We assessed trauma exposure by using a structured clinical interview with the child, the Traumatic Events Screening Inventory (TESI-C), and by using parent reports from a parallel questionnaire, the TESI-P. The TESIs identify traumatic events per Diagnostic and Statistical Manual of Mental Disorders (4th ed.; American Psychiatric Association, 1994) PTSD criteria with respondent-appropriate phrasing (Ford & Rogers, 1997) for 15 trauma categories, yielding two summary indexes: (a) nonvictimization trauma (accident, disaster, or illness) and (b) victimization trauma (assault, mugging, community violence, family violence, or sexual molestation). Intercorrelation kappas for TESI-C summary indexes ranged from .73 to 1.00; TESI-C and TESI-P summary scores’ 2- to 4-month retest kappas with pediatrics patients ranged from .50 to .70; and parent-child agreement kappas on TESI-C versus TESI-P items ranged from .64 to .79 (Ford & Rogers, 1997). Because of expectable parent-child cross-informant disagreement (Verhurest, van der Ende, Ferdinand, & Kasisus, 1997), each trauma category was scored positive if either the child or the parent endorsed a trauma event.

The widely used, reliable, and validated Child Behavior Checklist (CBCL; Achenbach, 1996) was completed by a parent, yielding two scores:

**Results and Discussion**

The ADHD, ODD, comorbid ADHD–ODD, and adjustment disorder case groups did not differ in age, gender, or parent–child relationship (see Table 1). All continuous variables were approximatively normally distributed, except for age, which was dichotomized as 6 to 8.9 years old versus 9 to 17 years old (Staub, 1979). ODD and ADHD, particularly if comorbid, were associated with family psychopathology, $\chi^2(3, N = 165) = 15.8, \ p < .001$. Comorbid ODD–ADHD were associated with CBCL internalizing, $F(3, 161) = 2.8, \ p = .03$, and (lower) CBCL social competence, $F(3, 161) = 4.3, \ p = .003$ (see Table 1).

In unweighted univariate logistic regression analyses (see Table 2), ADHD or ODD (or both) conferred an elevated likelihood of having been exposed to victimization trauma compared with adjustment disorder. ADHD and ODD were not associated with accident, disaster, or illness trauma. Age and gender also were unrelated to trauma type. Parent education and parent–child relationship quality were associated with trauma type (and were included in the multivariate analyses).

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1 Copies of the TESI-P and the TESI-C, with instructions for clinical and research application, may be obtained by clinicians and researchers with background in child psychiatric assessment and treatment, or child clinical psychiatric research, from the National Center for PTSD/Dartmouth Child Psychiatry Research Group (Patricia.Watson@Dartmouth.edu) or from Julian D. Ford (Ford@Psychiatry.UCHC.edu)—as well as more detailed psychometric information on the 15 specific trauma items assessed by each TESI form and validation data from both psychiatric and pediatric medical samples.
In multivariate analyses (see Table 3), parent education, family psychopathology, parent–child relationship, and CBCL internalizing and social competence were entered as a first block, followed by ADHD and ODD diagnosis as a second block. Only parent education was (inversely) associated with history of accident-, disaster-, or illness-related trauma. Family psychopathology (positively) and parent education (inversely) were independently related to victimization trauma, and child internalizing scores were marginally related. An ODD, but not ADHD, diagnosis accounted for substantial additional unique variance in history of exposure to victimization.

In separate hierarchical logistic regression analyses that tested predictors of each disruptive behavior diagnosis, ODD was predicted by family psychopathology ($\beta = 0.42, p = .001$) and CBCL internalizing ($\beta = 0.11, p = .036$), $\chi^2(5, N = 165) = 18.2, p = .000$. Adding accident- or illness-related trauma did not improve the model, but adding victimization did, $\chi^2(2, N = 165) = 8.8, p = .014 (\beta = 0.53)$. Good negative predictive power (.87) and specificity (.86) were achieved, but not positive predictive power (.58) or sensitivity (.40). Only family psychopathology predicted ADHD, $\chi^2(5, N = 165) = 13.5, p = .019 (\beta = 0.60, p = .005)$; trauma did not contribute, $\chi^2(2, N = 165) = 1.7, p = .429$.
Thus, ODD was associated with a history of victimization trauma, independent of the effect of age, gender, parent education, family psychopathology, parent–child relationship, and child internalizing psychopathology and social competence. Prospective replication is needed because this cross-sectional study cannot determine if ODD and trauma are causally linked and in what direction(s). However, systematic trauma screening (e.g., the TESI) appears to have clinical and research relevance with ODD-diagnosed children. ODD treatment also may be enhanced by selectively addressing the sequelae of trauma.

ADHD was not associated with trauma after accounting for family psychopathology, but ADHD’s univariate association with victimization suggests that trauma should be considered in prospective studies of ADHD’s elevated risk for subsequent ODD and conduct disorder (Barkley, 1996; Biederman et al., 1996). Comorbid ODD–ADHD was associated with particularly severe symptoms and social impairment and with the highest prevalence of past victimization, suggesting that victimization may contribute to a progressive worsening of child disruptive behavior disorders.

By contrast, nonvictimization trauma did not appear to be related to either ADHD or ODD. Although the absolute likelihood of exposure to nonvictimization trauma was higher than that for victimization, children with ODD or ADHD were no more likely than adjustment disorder controls to have experienced accident- or illness-related trauma. Nonvictimization trauma was prevalent, however, thus warranting consideration as an element in child psychiatric assessment.

Replication is needed with a broader clinical and community sample (Hinshaw et al., 1997) to include more ethnicultural diversity, conduct (Steiner et al., 1997), and mood and anxiety (Elliott & Briere, 1994) disorders, as well as ADHD and ODD; the use of standardized structured diagnostic (Hinshaw et al., 1997) and trauma assessment (Ford & Rogers, 1997) protocols, as well as complete data from all participants, is needed to guide clinicians, scientists, and policymakers in determining how best to address trauma’s role in the care of troubled children and families. Victimization also should be “dismantled” into components (e.g., child abuse and domestic violence) to explore their relationships to ODD and ADHD. This study’s findings suggest that victimization trauma may be of particular import in the clinical assessment and treatment of children with ODD and less so for those with ADHD.

References