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Research article

Association of autistic traits in adulthood with childhood abuse, interpersonal victimization, and posttraumatic stress☆

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ABSTRACT

Persons with autistic traits may be at elevated risk for interpersonal victimization across the life course. Children with high levels of autistic traits may be targeted for abuse, and deficits in social awareness may increase risk of interpersonal victimization. Additionally, persons with autistic traits may be at elevated risk of posttraumatic stress disorder (PTSD) symptoms subsequent to trauma. We examined retrospectively reported prevalence of childhood abuse, trauma victimization and PTSD symptoms by autistic traits among adult women in a population-based longitudinal cohort, the Nurses' Health Study II ($N = 1,077$). Autistic traits were measured by the 65-item Social Responsiveness Scale. We estimated odds ratios (OR) for childhood sexual and physical/emotional abuse and PTSD symptoms by quintiles of autistic traits. We examined possible mediation of PTSD risk by abuse and trauma type. Women in the highest versus lowest quintile of autistic traits were more likely to have been sexually abused (40.1% versus 26.7%), physically/emotionally abused (23.9% versus 14.3%), mugged (17.1% versus 10.1%), pressured into sexual contact (25.4% versus 15.6%) and have high PTSD symptoms (10.7% versus 4.5%). Odds of PTSD were elevated in women in the top three quintiles of autistic traits compared with the reference group (OR range = 1.4 to 1.9). Childhood abuse exposure partly accounted for elevated risk of PTSD in women with autistic traits. We identify for the first time an association between autistic traits, childhood abuse, trauma victimization, and PTSD. Levels of autistic traits that are highly prevalent in the general population are associated with abuse, trauma and PTSD.

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Introduction

Autistic traits (the "broad autism phenotype"), which are continuously distributed in the population (Constantino & Todd, 2000, 2003), are characterized by difficulties in interpreting social information such as tone of voice and facial expression, deficits in understanding what others are thinking and feeling, difficulties in communicating ideas and emotions, reduced desire to interact with others, and by autistic mannerisms, such as repetitive and rigid behaviors (Constantino et al., 2004). These traits may elevate the risk for interpersonal victimization for those who exhibit them across the life course.

Parents of children with higher levels of autistic traits may become more emotionally and physically punitive in frustration at the child's non-responsiveness. It has been hypothesized that the intense, rigid adherence to routine exhibited by children with autistic traits may be perceived by parents as oppositional (Grayson, Childress, & Baker, 2013). Parents' expectations of successfully reasoning with and being understood by their child may also affect abuse perpetration. Mothers of profoundly deaf children, for example, were more likely to choose physical discipline in a misbehavior scenario than were mothers of hearing children (Knutson, Johnson, & Sullivan, 2004). Children with communication impairments (Brownlie, Jabbar, Beitchman, Vida, & Atkinson, 2007; Knutson et al., 2004; Spencer et al., 2005) and children with cognitive and physical disabilities (Jones et al., 2012; Sullivan & Knutson, 2000) are at increased risk of being targeted for abuse in childhood.

Additionally, adults with high levels of autistic traits may be at increased risk of interpersonal victimization. Deficits in emotional and social cognition, specifically, inability to identify sexually inappropriate behavior (Marx & Soler-Baillo, 2005; Soler-Baillo, Marx, & Sloan, 2005), inability to detect violations in social exchange rules (DePrince, 2005) and inability to identify one's own discomfort at inappropriate behavior (Zeitlin, McNally, & Cassiday, 1993) increase risk of victimization and characterize persons with autistic traits.

Posttraumatic stress disorder (PTSD) is a common sequela of childhood abuse (Heim, Shugart, Craighead, & Nemeroff, 2010; Maniglio, 2009) and interpersonal victimization (Breslau et al., 1998; Copeland, Keeler, Angold, & Costello, 2007; Darves-Bornoz et al., 2008). Consequently, if persons with more versus fewer autistic traits are at higher risk of abuse and interpersonal victimization, they may also be at increased risk of PTSD symptoms. Very few studies have examined risk of abuse in children with autism spectrum disorder (ASD); these suggest higher risk of abuse, though evidence is mixed (Mandell, Walrath, Manteuffel, Sgro, & Pinto-Martin, 2005; Spencer et al., 2005; Sullivan & Knutson, 2000). The association of autistic traits below clinical thresholds for ASD with childhood abuse, interpersonal victimization in adulthood and PTSD has not been examined.

In the present study we examine the association of autistic traits in adulthood with retrospectively reported childhood physical, emotional and sexual abuse, lifetime exposure to traumatic events, and lifetime PTSD symptoms among women in a large case–control study nested in a population-based longitudinal cohort, the Nurses' Health Study II (NHS II). Further, we examine the extent to which childhood abuse and type of trauma exposure account for possible associations between autistic traits and PTSD symptoms.

Methods

Sample

The NHS II is a cohort of 116,430 female nurses recruited in 1989 from 14 populous U.S. states and followed up biennially. The present study uses data from the 3,756 women (90% response rate) who participated in the 2007 Autism Case–Control Substudy of the NHS II, details of which have been described (Lyall, Pauls, Spiegelman, Santangelo, & Ascherio, 2012). The present analyses include only those participants returning the measure of autistic traits ($n = 1{,}247$, ~40% of women who were initially mailed questionnaires). Women in the Autism Case–Control Substudy were selected on the basis of reporting having had a child with an ASD (cases) or having had a child without ASD (controls). Thus, all women in our study were mothers. The Partners Healthcare Institutional Review Board approved this research. Completion and return of questionnaires sent by U.S. mail constitutes implied consent.

Measures

We measured current autistic traits in NHSII mothers using the 65-item Social Responsiveness Scale (SRS, possible range, 0 to 195, higher scores indicate more autistic traits) (Constantino, 2002; Constantino & Todd, 2003). These items have been found to be a manifestation of one continuously distributed underlying "autism" factor (Constantino et al., 2004). This factor has been found to be highly heritable with the same genetic structure as autism (Constantino & Todd, 2000). The SRS has five subscales that separately capture social cognition (e.g., "Is able to understand the meaning of people's tone of voice or facial expressions"), social communication (e.g., "Avoids eye contact or has unusual eye contact"), social awareness (e.g., "Focuses his or her attention where others are looking"), social motivation (e.g., "Would rather be alone than with others"), and autistic mannerisms (e.g., "Shows unusual sensory interests, such as spinning or mouthing objects"). The SRS had high stability over time in a longitudinal study with 1–5 years of follow up (test–retest correlation = 0.90) (Constantino et al., 2009). The SRS has been validated against the Autism Diagnostic Interview-Revised (Constantino et al., 2003) and the Autism Diagnostic Observation Schedule and is widely used both in the US and internationally (Bölte, Knecht, & Poustka, 2007). The NHSII