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Research article

The independent effects of child sexual abuse and impulsivity on lifetime suicide attempts among female patients

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ABSTRACT

Child sexual abuse (CSA) is a causal agent in many negative adulthood outcomes, including the risk for life-threatening behaviors such as suicide ideation and suicide attempts. Traumatic events such as CSA may pose risk in the healthy development of cognitive and emotional functioning during childhood. In fact, high impulsivity, a risk factor for suicidal behavior, is characteristic of CSA victims. The current study aims to understand the relations among CSA, impulsivity, and frequency of lifetime suicide attempts among a female patient sample admitted for suicidal behavior. Participants included 177 female patients between the ages of 18 and 63 years admitted at two hospitals in Buenos Aires, Argentina. Number of previous suicide attempts and CSA were assessed via structured interviews, while impulsivity was assessed with the Barratt Impulsiveness Scale (BIS-11). A model of structural equations was employed to evaluate the role of impulsivity in the relation between CSA and suicide attempts. CSA ($\beta = .18$, $p < .05$) and impulsivity ($\beta = .24$, $p < .05$) were associated with the number of previous suicide attempts. However, impulsivity was not significantly associated with CSA ($\beta = .09$, $p > .05$). CSA and impulsivity are independently associated with lifetime suicide attempts among female patients with recent suicidal behavior.

Child sexual abuse (CSA) is defined as the involvement of a child in sexual activity that he or she does not fully comprehend, is unable to give informed consent to or is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society. CSA is evidenced by this activity between a child and an adult, or another child who by age or development is in a relationship of responsibility, which is intended to gratify or satisfy the needs of the perpetrator. CSA may include but is not limited to: (i) the inducement or coercion of a child to engage in any unlawful sexual activity, (ii) the exploitative use of a child in prostitution or other unlawful sexual practices, and (iii) the exploitative use of children in pornographic performance and materials (WHO, 1999). CSA is indeed a serious worldwide public health concern (Barth,

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Bermetz, Heim, Trelle, & Tonia, 2013; Stoltenborgh, van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011). Data suggest 78–89% of CSA victims are women (Synder, 2000); approximately one in five adult women in the United States have a history of CSA (Tjaden & Thoennes, 1998).

CSA victimization increases the risk for numerous negative mental health outcomes, including depression (Dinwiddie et al., 2000; Putnam, 2003; Weiss, Longhurst, & Mazure, 1999), posttraumatic stress disorder (Duncan, Saunders, Kilpatrick, Hanson, & Resnick, 1996; Miller & Resick, 2007; Walsh et al., 2012), sexual risk-taking (Fergusson, Horwood, & Lynskey, 1997) and borderline personality disorder (Zanarini et al., 2002). Of particular concern are the high rates of suicidal ideation and suicide attempts among victims of CSA (Brodsky et al., 2001; Gladstone et al., 2004; Ullman & Brecklin, 2002). As noted in epidemiological research, CSA is a large risk factor of future suicidal behavior (Bebbington et al., 2009; Molnar, Berkman, & Buka, 2001). This strong association is also true for a variety of diverse samples (Afifi et al., 2016; Fergusson, McLeod, & Horwood, 2013; Lopez-Castroman et al., 2013; Rabinovitch, Kerr, Leve, & Chamberlain, 2015). For example, childhood trauma exposure, including CSA, significantly predicted suicidal ideation above and beyond the effects of combat exposure among United States military personnel and Veterans (Youssef et al., 2013). Longitudinal studies demonstrate how the effects of CSA are long lasting and increase risk for suicidal behavior (Trickett, Noll, & Putnam, 2011). Evidence also suggests the age of onset of CSA is associated with increased suicidal intent (Lopez-Castroman et al., 2013). Moreover, women with a history of CSA who attempt suicide are disproportionately vulnerable to repeated suicidal behavior as compared to women without a history of CSA (Dube et al., 2005; Ystgaard, Hestetun, Loeb, & Mehlum, 2004). Altogether, this data shows the association between CSA and suicide behavior.

Less clearly understood, however, are the mechanisms underlying the relation between CSA and suicidal behavior. It has been suggested that impulsivity may serve as one of the underlining mechanisms (Braquehais, Oquendo, Baca-Garcia, & Sher, 2010). Impulsivity comprises a wide spectrum of behaviors characterized by quick and nonplanned reaction to external or internal stimuli, without taking into account the possible negative consequences for the individual or others (Moeller, Barratt, Dougherty, Schmitz, & Swann, 2001). Impulsivity may be considered a personality trait, behavior, or state (i.e., impulsive action). Multiple theoretical models of suicide refer to impulsivity in attempt to explain suicidal behavior (Mann, Waternaux, Haas, & Malone, 1999; Van Orden et al., 2010). For example, a diathesis stress model of suicide would propose impulsivity, as a trait, predisposes an individual to engage in self-directed violence in response to suicidal thoughts (Mann et al., 1999). Consistent with Linehan's theory of suicide, pronounced impulsivity likely contributes to emotion regulation difficulties that may set the stage for suicidal crises (Crowell, Beauchaine, & Linehan, 2009). In fact, among individuals with borderline personality disorder, impulsivity is a robust predictor of suicide attempts (Brodsky, Malone, Ellis, Dulit, & Mann, 1997; Daray et al., 2015; Herpertz, Sass, & Favazza, 1997; Rebok et al., 2015; Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994). The association between impulsivity and suicide attempts has been extensively observed in various adult psychiatric populations (Dougherty et al., 2004; Oquendo et al., 2004; Swann et al., 2005). Moreover, low serotonergic activity has been suggested as a common biologic substrate for both impulsivity and suicidal behavior (Roy & Linnoila, 1988) On the other hand, impulsivity has also been associated with CSA. Sexual abuse during childhood may lead to disruptions in executive functioning (Brodsky et al., 2001; Putnam, 2003). Impulse control is an executive function that typically develops well into adolescence (Leon-Carrion, Garcia-Orza, & Perez-Santamaria, 2004); therefore, adverse events occurring at any point in childhood may contribute to deleterious effects. Indeed, adults with a history of CSA show higher trait impulsivity and rates of suicide attempts as compared to adults without CSA history (Brodsky et al., 2001).

Given the relation among impulsivity, suicidal behavior and CSA, the current study aimed to examine the degree to which the relation between CSA and lifetime suicide attempts may be explained in part by impulsivity. To the best of our knowledge, this is the first exploratory study to focus on the role of impulsivity as a potential mediator between CSA and frequency of suicide attempts among patients hospitalized for a recent suicide attempt or active suicidal ideation. The two competing hypotheses were explored:

H1. Consistent with theories suggesting adverse childhood events negatively impact neurodevelopmental functioning (Navalta, Polcari, Webster, Boghossian, & Teicher, 2006), impulsivity will mediate the association between CSA and number of prior suicide attempts in female psychiatric patients.

H2. Consistent with the diathesis stress model that considers impulsivity a trait (Mann et al., 1999), impulsivity will be independent of CSA and will be positively associated with number of previous suicide attempts.

1. Method

1.1. Study design

The present study used a cross-sectional design to compare baseline data obtained as part of a larger study with female patients admitted for a suicide attempt or active suicidal ideation at the Emergency Departments of *Dr. Braulio A. Moyano Neuropsychiatric Hospital* and the *Hospital de Clínicas José de San Martín*. The Dr. Braulio A. Moyano hospital is a women's neuropsychiatric hospital. The Hospital de Clínicas José de San Martín is a general hospital with a service for psychiatric hospitalization. Both hospitals serve a large urban catchment area in Buenos Aires, Argentina and predominantly treat lower-income, uninsured patients.