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Research paper

Direct and indirect forms of childhood maltreatment and nonsuicidal self-injury among clinically-referred children and youth

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ABSTRACT

Background: Although exposure to direct forms of childhood maltreatment is among the most widely studied risk factors for nonsuicidal self-injury (NSSI), research on NSSI has largely overlooked the role of exposure to indirect forms of child maltreatment (i.e., witnessing domestic violence). To address this gap in the literature, the present study examined associations among both direct and indirect forms of child maltreatment and NSSI among clinically-referred children and youth.

Methods: Data was collected using the interRAI Child and Youth Mental Health Assessment (ChYMH) at ten mental health agencies. The ChYMH is a comprehensive standardized clinical assessment tool completed by trained assessors using multiple sources. The study included a convenience sample of 747 children and youth (68% male) between ages 8–18 with complex mental health histories referred for inpatient or outpatient care in Ontario, Canada.

Results: Univariate chi-square analyses indicated positive associations with NSSI and both direct (i.e., physical, sexual) and indirect child maltreatment (i.e., witnessing domestic violence). In a binary multivariate logistic regression analysis controlling for participant age and sex, only exposure to indirect child maltreatment emerged as multivariate predictor of NSSI.

Limitations: The sample was limited to only 10 mental health agencies and only consenting parents/guardians referred to mental health services suggesting the study may not be generalizable to all clinical samples.

Conclusion: The present study provides evidence that witnessing domestic violence in childhood is an important risk factor for NSSI. Clinical relevance includes implications for clinicians to develop targeted intervention and prevention strategies for NSSI for children who have witnessed domestic violence.

Nonsuicidal self-injury (NSSI) is defined in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* as direct and deliberate bodily harm in the absence of suicidal intent (American Psychiatric Association, 2013) and includes behaviours such as cutting, scratching of skin, head-banging and biting. NSSI typically emerges between the age of 12–15 years, and recent reviews suggest that as many as 18% of adolescent community-based samples engage in NSSI (Muehlenkamp et al., 2012; Plener et al., 2015; Swannell et al., 2014) and as many as 37% of clinical samples meet the DSM-5 criteria for NSSI-disorder (Groschwitz et al., 2015; In-Albon et al., 2013). Although exposure to direct forms of childhood maltreatment (i.e., physical abuse, sexual abuse) is among the most widely studied risk factors for NSSI, research on NSSI has largely overlooked the role of exposure to indirect forms of child maltreatment. In particular, researchers have yet to examine whether witnessing domestic violence (i.e., an indirect form of child maltreatment) may be associated with an increased risk for NSSI. To address this significant gap in the literature, the present study examined associations among direct maltreatment (i.e., physical, sexual), indirect maltreatment (i.e., witnessing domestic violence) and NSSI among a sample of clinically-referred children and youth. Importantly, identifying family factors associated with NSSI engagement, will inform clinical care planning for children and youth.

Childhood Maltreatment.

Childhood maltreatment includes direct forms (e.g., physical, sexual) as well as indirect forms of abuse (e.g., neglect, witnessing domestic violence), and is a prevalent issue that is experienced by many children across North America (Sedlak et al., 2010). In the most recent Canadian Incidence Study of Reported Child Abuse and Neglect (CIS), there were approximately 235,842 reported childhood maltreatment-related incidents investigated in 2008 (Trocmé et al., 2010). This data is only representative of cases reported to child welfare and does not include those reported to police or not reported, suggesting the actual number of incidents

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of childhood maltreatment in Canada is estimated to be significantly higher. According to the CIS report (2008), neglect and witnessing domestic violence are the most commonly reported forms of maltreatment experienced by children and youth (34%), followed by physical abuse (20%), emotional abuse (9%) and sexual abuse (3%).

Childhood maltreatment has been associated with numerous short-term and long-term negative outcomes (Fitzgerald and Berliner, 2014; Webster, 2013; Widom, 2014). Children who are maltreated are more likely to develop mental health problems such a depression, anxiety and substance use in young adulthood (Dion et al., 2016; Khan et al., 2015; Scott et al., 2012). Moreover, it has been determined that previous childhood maltreatment can lead to intrapersonal problems such as decreased self-esteem, as well as increased risk for re-victimization of abuse as an adult (Auslander et al., 2016; Widom, 2014). Due to the multiple negative consequences of childhood maltreatment, researchers are working to fully understand the effects that maltreatment has on the child's mental health and well-being.

Childhood Maltreatment and Nonsuicidal Self-Injury.

Several recent studies have underscored the role of family factors in the prediction of NSSI (Baetens et al., 2015; Tatnell et al., 2014; for a review see Arbuthnott and Lewis, 2015). In particular, one of the most widely studied risk factors for NSSI is early childhood maltreatment. Research suggests that childhood maltreatment may be an important predictor in the development of NSSI (for a review see Ford and Gómez, 2015), and as many as 79% of children and youth with a history of some form of childhood maltreatment engage in NSSI (Yates, 2009). The link between childhood maltreatment and NSSI, however, may vary depending on the type of maltreatment (for a review see Lang and Sharma-Patel, 2011). Indeed, several studies have found that adolescents who experience childhood sexual abuse report higher rates of NSSI than adolescents without a history of sexual both (both retrospectively and longitudinally; Auerbach et al., 2014; Gonçalves et al., 2015; Rabinovitch et al., 2015; Wan et al., 2015); however, a meta-analysis of the studies on sexual abuse and NSSI suggests the association between NSSI and child maltreatment is modest (Klonsky and Moyer, 2008). In contrast, childhood physical abuse has been associated with NSSI in some studies (Heath et al., 2009; Gonçalves et al., 2015; Wan et al., 2015) but not in others (Auerbach et al.; Rabinovitch et al., 2015). Even fewer studies have examined the effects of emotional abuse and neglect but what little evidence is available has suggested a significant association with NSSI (for a review see Lang and Sharma-Patel, 2011).

Another type of childhood maltreatment that has not been examined in association with NSSI is witnessing domestic violence. In Canada, domestic violence has been found to occur more commonly than other types of maltreatment; as many as 1 in 3 substantiated childhood maltreatment cases includes children witnessing their parents physically abusing each other during childhood, most commonly male on female violence (Black et al., 2008; Trocmé et al., 2010). One reason witnessing violence has not been examined further is that witnessing domestic violence is not considered a form of child abuse in certain jurisdictions in Canada. Specifically, the Risk Assessment Model for Child Protection in Ontario (Ontario Association of Children's Aid Societies, 2000), which is a provincial strategy to protect children who have been abused, states that parenting behavior should be regarded as abusive if the child is present and *physically* suffers as a result. However, recent research has revealed that exposure to domestic violence is associated with a variety of mental health problems including depression, low self-esteem, post-traumatic stress disorder (PTSD) symptoms, poor school performance, and aggressive behaviours (Artz et al., 2014; Blair, McFarlane et al., 2015; Lourenço et al., 2013; Public Health Agency of Canada, 2008). Since witnessing domestic violence is considered to have such prominent effects on children, more research is needed to elucidate the effect of witnessing domestic violence on child and youth mental health.

The Present Study.

Although there is increasing evidence that direct childhood maltreatment, particularly sexual abuse, is associated with engagement in NSSI, little research has focused on indirect forms of maltreatment in relation to NSSI. In the present study, we addressed this gap in the literature by examining whether exposure to direct and indirect forms of childhood maltreatment are associated with NSSI engagement among clinically-referred children and youth. More specifically, we examined associations among sexual abuse, physical abuse, witnessing domestic violence (which has been overlooked in the literature), and NSSI. We predicted that both direct and indirect forms of childhood maltreatment would demonstrate positive associations with NSSI engagement, underscoring the importance of developing targeted intervention strategies for children and youth with both direct and indirect child maltreatment histories.

1. Methods

1.1. Participants

The present study was conducted through ten community mental health facilities across Ontario, Canada. In total, 913 children (68% males) between the ages of 4–18 years and their caregivers participated in the assessment as part of a larger ongoing study. Given that the ChYMH was being piloted as a standard of care in 10 selected mental health agencies, the participant response rate was very strong (approximately 85% of referrals completed the assessment at time of intake into clinical care). Parents gave informed consent for participation and assessments were completed by trained assessors. Since children as young as 4 years of age are unlikely to engage in self injury with specific intent that would fit the definition of NSSI, the present study was restricted to examining children between the ages of 8–18 years ($N=747$). This age range also coincides with the most common age of onset for NSSI (Glenn and Klonsky, 2009). The average age of the 747 children (68% male) included in the analysis was 12.02 years ($SD=$ 2.73). Most children lived at home (90%) with a parent or guardian at time of referral, although 19% had lived in foster home prior to referral. Forty-four percent of caregivers were married, whereas the remainder of parents were never married (18%), living with a partner (5%), separated (11%), divorced (14%) or widowed (2%; 6% were unknown). Among participating families, 35% of children referred had a preliminary diagnosis of anxiety, 56% had a preliminary diagnosis of attention-deficit hyperactivity disorder, 14% had a preliminary diagnosis of mood disorder, 25% had a learning/communication disorder and 14% had a preliminary diagnosis of autism. Less than 4% of the sample had preliminary diagnoses of eating disorders, sleep or adjustment disorders, psychosis, and reactive attachment.

1.2. Measures

The measure used for the present study was the interRAI Child and Youth Mental Health Instrument (ChYMH; Stewart et al., 2015). The ChYMH instrument is one of many instruments within an integrated assessment system developed through an international collaborative that is working to improve the quality of life for vulnerable persons (i.e., interRAI). The ChYMH addresses many of the weaknesses found in other child and youth assessment tools, and provides a comprehensive, multi-source approach to