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Exploratory analysis of mediators of the relationship between childhood maltreatment and suicidal behavior

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ABSTRACT

Introduction: Suicide is a major public health concern. One consistently cited risk factor for suicide is childhood maltreatment, which also may play a role in the transition from suicidal ideation to suicidal behavior.

Method: The current study aimed to examine the relationship between childhood maltreatment and suicide attempts during adolescence (N = 4834; 52.1% female; 67.5% Caucasian). Data from the U.S. National Longitudinal Study of Adolescent Health were utilized. Forty-six theoretically-relevant risk factors were explored as potential mediators of this relationship using an exploratory mediation data analytic method.

Results: Results demonstrated a significant childhood maltreatment - suicide attempt relationship only among females. After considering demographics and suicidal ideation, having received counseling in the previous 12 months was the most influential mediator, followed by having a friend attempt suicide in the previous 12 months.

Conclusions: These findings highlight potential gender differences in the relationship between childhood maltreatment and later suicide attempts, and, moreover, the importance of assessing for recent exposure to peer suicidal behavior in suicide risk assessments.

1. Introduction

Suicide is a major public health problem. It is the second-leading cause of death among 15–25 year olds within the United States (US), with approximately 5500 individuals aged 10–24 dying by suicide each year (Center for Disease Control [CDC], 2014). Furthermore, it is believed that for every suicide in this age group, there are between 100 and 200 suicide attempts (SAs) (Goldsmith, Pellmar, Kleinman, & Bunney, 2002). Recent statistics also have suggested that these rates may be increasing: from 1999 to 2016, rates increased between 6 and 57% across all states within the US, with 25 states having at least a 30% rate increase (CDC, 2018). This highlights the need for further examination of SAs during this developmental period, because SAs not only have potential detrimental consequences, but also are related to several prospective negative outcomes. For example, SAs during adolescence are predictive of later psychopathology, poorer adjustment, risky sex, and psychiatric treatment in adulthood (Brière et al., 2014). As such, a rich literature has focused on identifying risk factors for suicidal behavior among adolescents.

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One important risk factor for suicidal behavior is the experience of childhood maltreatment (CM). Unfortunately, CM is widespread (e.g., an estimated 3.2 million children were investigated for suspected maltreatment; U.S. Department of Health & Human Services, 2016), and the presence of CM is associated with increased odds of SA. Indeed, the experience of any CM has been found to account for a substantial proportion of variance in predicting SA presence: 50% among women and 33% among men (Afifi et al., 2008). Furthermore, CM was found to be cross-sectionally and longitudinally predictive of adolescent SAs in both psychiatric and community samples (Miller, Esposito-Smythers, Weismoore, & Renshaw, 2013; Neumann, Houskamp, Pollock, & Briere, 1996; Paolucci, Genuis, & Violato, 2001; Rind, Tromovitch, & Bauserman, 1998; Salzinger, Rosario, Feldman, & Ng-Mak, 2007). Importantly, CM has been found to be more common among individuals with SAs compared to those with only suicidal ideation (Burke, Ammerman, Knorr, Alloy, & McCloskey, 2017; May & Klonsky, 2016), suggesting it may have a significant role in acting on one's suicidal thoughts (Joiner, 2005; Klonsky & May 2015), and thus, represents an important area of inquiry to reduce suicidal behavior. The significant relationship between CM and SAs is in line with several theories of suicide, most notably the Interpersonal Psychological Theory of Suicide (IPTS; Joiner, 2005) and the Three-Step Theory of Suicide (3ST; Klonsky & May 2015). The IPTS suggests that suicidal ideation results from the interaction of thwarted belongingness and perceived burdensomeness, whereas the 3ST suggests that suicidal ideation results from the experience of psychological pain and hopelessness, and that a lack of connectedness can escalate suicidal ideation. These theories converge in suggesting that in addition to experiencing a desire for suicide (i.e., suicidal ideation), it is necessary for an individual to have acquired the capability to enact suicidal behavior, defined as having habituated to both the fear and pain necessary to enact lethal behavior (Joiner, 2005; Klonsky & May 2015). CM appears to play a powerful role in the etiology of suicidal behavior, likely through contributing to one's capability to engage in suicidal behavior (e.g., Ammerman et al., 2017; Nock & Kessler, 2006); however, many individuals exposed to CM do not attempt suicide, highlighting the need to better understand factors that may influence the relationship between CM and attempted suicide.

Research aimed at directly examining potential mediating factors of the CM-SA relationship (e.g., Sarchiapone et al., 2009) has been very limited. Given this, it may be helpful to consider theoretically and empirically important risk factors for SA that may constitute relevant underlying mechanisms between CM and SAs. Working within the previously discussed theoretical frameworks, and considering recent reviews of the literature (e.g., Bryan et al., 2015; Franklin et al., 2017; May & Klonsky, 2016; Victor & Klonsky, 2014), several factors may be particularly important to consider as potential underlying mechanisms of the CM – SA relationship. The IPTS and the 3ST theories of suicide both suggest interpersonal factors (e.g., quality of parent, peer, and school/community relationships, social support, isolation) as important in the development of suicidal ideation (Joiner, 2005; Klonsky & May 2015). Further, social support has been shown to have a significant relationship with CM (Messman-Moore & Coates, 2007), and CM may even be predictive of decreased social support (Vranceanu, Hobfoll, & Johnson, 2007), which highlights it as a potential underlying mechanism.

Beyond the direct occurrence of CM, this experience may contribute to capability for suicide by exposing an individual to other (emotionally and/or physically) painful events that may ultimately serve to reduce their fear of death or the pain involved in dying. For example, those who have experienced CM may be more likely to select friends with similar experiences (or emotional distress) or be more susceptible to the influence of peers (e.g., Jussim & Osgood, 1989). This may result in greater exposure to other's suicidal behaviors and/or general risk behaviors. Although understudied in relationship to CM, exposure to suicidal behaviors has been theoretically (Joiner, 2005; Klonsky & May 2015) and empirically (Maple, Cerel, Sanford, Pearce & Jordon, 2017) linked to SAs. Similarly, research suggests that CM has been linked to risky behavior engagement (e.g., substance use, risky sexual behaviors; Rodger, Lang, Laffaye, Satz, Dresselhaus, & Stein, 2004), which may be a product of one's social environment (e.g., Dishion & Tipsord, 2011; Prinstein, Boergers, & Sprito, 2001; Steinberg, 2007) or represent maladaptive coping strategies due to the experience of CM (Horwitz, Hill, & King, 2011; Kim, Beak, Han, Lee, & Yurgelun-Todd, 2015; Wilson et al., 1995). In turn, high levels of risk-taking behavior (e.g., increased alcohol use, promiscuous sex, violent and non-violent crimes) are associated with increased suicide risk (Pena, Matthieu, Zayas, Masyn, & Caine, 2012).

Recent reviews of the literature linking CM and SAs (e.g., Bryan et al., 2015; Franklin et al., 2017; May & Klonsky, 2016; Victor & Klonsky, 2014) suggest that CM may lead to subsequent psychopathologies, such as major depression and anxiety disorders (Kim & Cicchetti, 2010; Shaffer, Huston & Egeland, 2008; Teicher & Samson, 2013), which in turn may augment risk for SAs. Indeed, a large majority of individuals who attempt suicide meet criteria for mental health diagnosis (Nock et al., 2013). Taken together, a broad range of factors, including various forms of interpersonal factors, exposure to suicidal behaviors, engagement in risky behaviors, and increased psychopathology symptomatology all may constitute mechanisms underlying the relationship between CM and SAs.

A final factor in need of consideration is gender. Rates of SAs differ between genders, particularly in adolescence (e.g., Kessler, Borges, & Walters, 1999; Lewinsohn, Rhode, Seely, & Baldwin, 2001), and risk factors may differentially relate to suicide between genders. The relationship between alcohol use and SAs has been demonstrated as stronger among males (Groves, Stanley, & Sher, 2007; McManama et al., 2014; Wong, Zhou, Goebert, & Hishinuma, 2013). It is therefore possible that the relationship between CM and SAs may be influenced by gender. It was found that depression, hopelessness, and family dysfunction mediated the childhood sexual abuse – suicidality relationship among females more strongly than among males (Martin, Bergen, Richardson, Roeger, & Allison, 2004). Better understanding how gender impacts the pathway from maltreatment to suicidal behavior may inform the development of targeted prevention efforts among adolescents exposed to CM.

2. Current study

SAs peak in adolescence (CDC, 2014) and CM confers significant risk for adolescent suicide. However, less is known about what factors mediate this relationship during this developmental period and how this may vary as a function of gender. The current study