



Early life stressors and suicidal ideation: Mediation by interpersonal risk factors



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ABSTRACT

Childhood abuse is a major public health concern that has been consistently associated with many deleterious outcomes, including suicidal ideation (SI) and behavior. The processes through which early abuse experiences confer risk for suicidality are unclear. Drawing on Joiner's (2005) interpersonal theory of suicide, we hypothesized that the relationship between SI and childhood abuse would be specific to childhood emotional abuse, and that this relationship would be mediated by thwarted belongingness and perceived burdensomeness. Participants ($n = 189$) with moderate to severe childhood abuse completed measures of childhood abuse, perceived burdensomeness, and lack of belongingness at the baseline assessment, and a measure of SI at a 7-week follow-up assessment. We found partial support for the study hypotheses. Childhood emotional abuse, but not childhood physical or sexual abuse, was found to be prospectively associated with SI. Perceived burdensomeness but not thwarted belongingness mediated this relationship. These findings suggest that the relationship between SI and childhood abuse may be specific to emotional abuse, and that this abuse subtype confers risk for ideation through increasing the individual's sense of hindering or burdening to others within the social network. Implications of these findings are discussed.

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1. Introduction

Childhood abuse is a major public health concern. Indeed, in 2010, reports of abuse or neglect were made to child protective services (CPS) for approximately 5.9 million children (U.S. Department of Health and Human Services, 2011). Furthermore, one recent epidemiological study found that 18.6% of children reported having experienced some form of child maltreatment (Finkelhor, Turner, Ormrod, & Hamby, 2009), including childhood sexual abuse (CSA), physical abuse (CPA), emotional abuse (CEA), and/or neglect. Childhood abuse experiences have been linked with heightened risk for a variety of negative outcomes (e.g., anxiety disorders; Chaffin, Silovsky, & Vaughn, 2005; Fuller-Thomson, Sohn, Brennenstuhl, & Baker, 2012; aggression and victimization in interpersonal relationships; Cullerton-Sen et al., 2008; Roberts, McLaughlin, Conron, & Koenen, 2011; schizophrenia; Varese et al., 2012; depression; Widom, DuMont, & Czaja, 2007; and death; Putnam-Hornstein, 2011).

One preventable negative health outcome of particular relevance to childhood abuse is SI and behavior. Suicide is the third

leading cause of death from ages 10 to 24 (Centers for Disease Control and Prevention, 2011). Given the current absence of effective empirically based suicide prevention programs (Bridge, Goldstein, & Brent, 2006; Nock et al., 2013; Solberg, Nordin, Bryant, Kristensen, & Maloney, 2009), ascertaining the processes underlying suicide risk is especially important for advancing future treatment strategies. Prior studies have demonstrated that CPA (McHolm, MacMillan, & Jamieson, 2003), CSA (Bebbington et al., 2009), and CEA (Langhinrichsen-Rohling, Monson, Meyer, Caster, & Sanders, 1998) are all related to suicidality. Additionally, the presence of multiple types of abuse has been shown to have an additive effect on risk for suicidal behavior (Anderson, Tiro, Price, Bender, & Kaslow, 2002; Hahm, Lee, Ozonoff, & Wert, 2010).

Nevertheless, several gaps in the literature exist which limit our understanding of the nature of these relationships. In particular, the processes through which early abuse experiences confer greater risk for suicidality are unclear. This gap is consistent with the current need to advance beyond identifying *what* factors confer risk for suicide, and toward an appreciation of *how* they exert their deleterious effects (Brent, 2011; Nock, 2012). Such an appreciation would potentially lead to greater clarity in targets for clinical intervention.

Second, relatively few studies have concurrently assessed all three subtypes of childhood abuse. In particular, the relationship between CEA and suicidality has been understudied compared to

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CSA and CPA, likely because it is often assumed to be less damaging (Trickett, Mennen, Kim, & Sang, 2009). Rarely have studies investigated multiple subtypes of childhood abuse in relation to suicidality while concurrently covarying other subtypes (for exceptions see Gibb et al., 2001; Torchalla, Strehlau, Li, Schuetz, & Krausz, 2012). Studies that examine childhood abuse as a more general construct fail to differentiate between subtypes and/or to account for all subtypes; thus, they are unable to parse out the unique effects of each type of abuse. It is likely that different types of childhood abuse may all be related to risk for suicidality, but potentially through different pathways. Understanding how these subtypes relate to various facets of suicidal behavior would be a starting point for considering the mechanisms through which childhood abuse relates to suicidality. The fact that the majority of abuse victims, particularly in clinical samples, report exposure to multiple forms of maltreatment (Finkelhor, Ormrod, & Turner, 2007; Higgins & McCabe, 2000) underscores the importance of more fine-grained analyses of the relationship between childhood abuse and suicidality. In particular, given the high concurrence rate of the different forms of childhood abuse, failure to simultaneously consider the effects of all three forms of abuse is especially problematic because the analysis of a single form of abuse by itself may inflate its apparent relationship with suicidality, and neglect the impact of other co-occurring forms that may potentially better explain this relationship.

Joiner's interpersonal theory of suicide (Joiner, 2005; Van Orden et al., 2010) is a promising framework for addressing these gaps in the literature in that it allows for the generation of hypotheses regarding how different subtypes of childhood abuse may be related to different aspects of suicide risk. This theory posits that individuals who make a lethal or near-lethal suicide attempt must possess both the desire (i.e., SI) and the capacity to do so. Suicidal desire is thought to stem from interpersonal factors, specifically, lacking a sense of belonging or connectedness with others (i.e., thwarted belongingness), and feeling that one is a burden to close others (i.e., perceived burdensomeness), whereas the capability to initiate suicidal behavior is acquired via exposure to painful and fear-provoking events that habituate individuals to pain and fear associated with death. According to this theory, childhood abuse may serve as a distal risk factor for suicide by increasing the individual's sense of thwarted belongingness and perceived burdensomeness, which in turn lead to SI. Furthermore, childhood abuse is similarly hypothesized to increase capability for suicidal behavior by increasing the victim's ability to endure the pain and acclimatizing them to the fear associated with bodily injury. In addition to providing a coherent theoretical account of the processes through which childhood abuse may confer suicide risk, the interpersonal theory of suicide also specifies that two forms of early abuse experiences, CPA and CSA, are particularly relevant to the acquired capability for suicide because, unlike CEA, they are both physically painful and fear-provoking forms of abuse.

What is less clear, however, and the focus of the current study, is whether there is similar specificity in the forms of childhood abuse most relevant to the two proximal risk factors for SI articulated in this theory, thwarted belongingness and perceived burdensomeness. Specifically, it has been hypothesized that associations between childhood abuse, as a general construct, and SI may be explained by increases in social alienation in victims which contribute to feelings of thwarted belongingness (Twomey, Kaslow, & Croft 2000) and victims' feelings of being unwanted, unimportant, or dispensable, which result in increases in their perceptions of burdensomeness (Van Orden et al., 2010). However, this explanation does not parse apart the various forms of childhood abuse and consider how they may be differentially related to SI.

Drawing on Rose and Abramson's (1992) extension of the hopelessness theory as it applies to suicide (Abramson et al., 2000), we propose that CEA would be more likely than CPA or CSA to directly inform the development of thwarted belongingness and perceived burdensomeness, and thus it would be more likely to confer risk for SI. Specifically, Rose and Abramson (1992) posited that with CEA, negative self-attributions are directly supplied to the victim by the perpetrator (e.g., "You are worthless; I wish you were never born"). Given the inherently social and interpersonal nature of CEA, such attributions are likely to relate to feelings of thwarted belongingness and perceived burdensomeness. With CPA and CSA, the victim is left to form their own attributions, which consequently are less likely to be related to these two suicide risk factors. Supporting Rose and Abramson's (1992) extension of the hopelessness theory in relation to SI, CEA, but not CPA or CSA, has been found to be uniquely associated with greater SI in college students (Gibb et al., 2001). Also consistent with the view that CEA may be particularly linked to thwarted belongingness and perceived burdensomeness is the finding that CEA is associated with a host of relationship difficulties in adulthood (Reyome, 2010). To date, thwarted belongingness and perceived burdensomeness have yet to be examined as potential mechanisms mediating this relationship between CEA and SI.

In summary, the present study aims to further knowledge on the relationship between childhood abuse and SI by testing two hypotheses in a sample of individuals with a history of moderate to severe childhood abuse. First, we hypothesized that CEA, but not CPA or CSA, will be uniquely and positively associated with thwarted belongingness and perceived burdensomeness. Second, we hypothesized that these two interpersonal risk factors, in turn, will mediate the relationship between CEA and SI.

2. Materials and methods

2.1. Participants

Participants were selected from a larger sample of 508 undergraduates from a large public university.

Participants were included in the current study if they met criteria for moderate to severe abuse for at least one type of abuse on the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003), based on criteria defined by Bernstein and Fink (1998; i.e., a score ≥ 13 on the emotional abuse subscale, a score ≥ 10 on the physical abuse subscale, and a score ≥ 8 on the sexual abuse subscale). The final sample of participants meeting screening criteria on the CTQ consisted of 189 undergraduates (84.2% female). Of these participants, 65.1% endorsed moderate to severe emotional abuse, 45.5% endorsed moderate to severe physical abuse, and 59.8% endorse moderate to severe sexual abuse. The mean age at baseline was 22.02 years ($SE = 0.49$). Approximately 54.0% of the sample was Caucasian, 19.3% Asian, 11.9% African American, with the rest self-identifying with another race.

2.2. Procedure

Participants completed study measures on two occasions separated by 7 weeks ($M = 50.19$ days, $SE = 0.84$) on a secure website as a part of an IRB-approved study. Participants completed measures of childhood abuse (CTQ), perceived burdensomeness and lack of belongingness (INQ) at Time 1. They completed measures of SI (BSS) at Time 2. The study procedure was approved by the university's institutional review board. For all participants who presented with elevated SI, a suicide risk assessment was conducted under the supervision of a licensed clinical psychologist. Regardless of

Table 1
Means, standard errors, and intercorrelations between study variables.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 |
|------------------------------|--------|-------|--------|--------|-------|-------|
| 1. Childhood emotional abuse | – | | | | | |
| 2. Childhood physical abuse | .427** | – | | | | |
| 3. Childhood sexual abuse | –.033 | .124 | – | | | |
| 4. Perceived burdensomeness | .361** | .123 | .032 | – | | |
| 5. Thwarted belongingness | .304** | .160* | .012 | .666** | – | |
| 6. Suicidal ideation | .220** | .119 | .018 | .264** | .146* | – |
| Mean | 13.788 | 9.810 | 10.476 | 2.253 | 2.807 | 1.238 |
| Standard error | .353 | .343 | .421 | .084 | .087 | .266 |

Note: * $p < .05$, ** $p < .01$.

risk level, all participants were given information about mental health campus resources at the end of the study.

2.3. Measures

2.3.1. Lack of belongingness and perceived burdensomeness

The Interpersonal Needs Questionnaire (INQ; Van Orden, Witte, Gordon, Bender, & Joiner, 2008) is a 12-item measure of the variables associated with the interpersonal theory of suicide. Seven items assessed perceived burdensomeness (e.g., “These days I feel like a burden on the people in my life”) and five items assessed thwarted belongingness (e.g., “These days other people care about me” [reverse scored]). Each item was rated on a 7-point Likert scale (i.e., 1 = “Not at all true for me” to 7 = “Very true for me”). Higher scores for the two scales indicated higher perceived burdensomeness and thwarted belongingness. Both subscales showed high internal consistency, ($\alpha = .93$ and $.88$, respectively).

2.3.2. Suicidal ideation

The Beck Scale for Suicide Ideation (BSS; Beck & Steer, 1991) is a 21-item self-report measure that assesses current SI and suicidal behavior. Only the first 19 items, which measured SI were used. Higher scores indicate more severe ideation. Questions included information about wish to die, plans for suicide, and access to means to engage in suicidal behavior. The mean level of ideation found in the current sample (see Table 1) is comparable to or higher than those found in previous studies using unselected and high-risk samples recruited from undergraduate populations (Surrence, Miranda, Marroquín, & Chan, 2009; Van Orden et al., 2008). The BSS showed high internal consistency in this study ($\alpha = .93$).

2.3.3. Childhood abuse

The Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003) was used to assess levels of CEA, CPA, and CSA. The measure included subscales for CEA, CPA, and CSA. Example items include “I thought that my parents wished I’d never been born” for CEA, “People in my family hit me so hard that it left me with bruises or marks” for CPA, and “Someone tried to make me do sexual things or watch sexual things” for CSA. Response options for each item were on 5-point Likert scales ranging from 1 = “Never True” to 5 = “Very Often True.” Higher scores reflected higher levels of abuse. Internal consistency for CEA, CPA, and CSA in the current study were adequate ($\alpha = .77$, $\alpha = .81$, $\alpha = .90$, respectively).

2.4. Data analysis

To test the study hypotheses, we assessed two mediational models using methods outlined in Preacher and Hayes (2008). Both models had all three forms of childhood abuse (i.e., CEA, CSA, and CPA) assessed at Time 1 as independent variables and SI at Time 2 as the dependent variable. Perceived burdensomeness was tested

as a potential mediator of the relation between the abuse variables and SI in the first model, and thwarted belongingness was assessed as a potential mediator in the second model. Bias-corrected bootstrapping was used to examine the indirect effects of the three forms of abuse on SI through perceived burdensomeness and thwarted belonging, respectively. The benefits of bootstrapping are that it is less vulnerable to Type 1 errors and is appropriate for use with relatively small sample sizes. Significant mediation at $p < .05$ is indicated by 95% confidence intervals that do not include 0. Additionally, to account for positive skew in SI, the BSS was dichotomized to differentiate between ideators and non-ideators.

3. Results

3.1. Preliminary analyses

The bivariate correlations for all study variables are displayed in Table 1. CEA was positively correlated with CPA, but neither was significantly correlated with CSA. CEA was positively correlated with perceived burdensomeness, thwarted belongingness, and SI. Both perceived burdensomeness and thwarted belongingness, in turn were positively correlated with SI. With the exception of a positive correlation between CPA and SI, no other correlations were observed. Given that neither CPA nor CSA were significantly correlated with perceived burdensomeness and thwarted belongingness, these latter variables were only evaluated as potential mediators of the relationship between CEA and prospective SI.

3.2. Perceived burdensomeness as a mediator

In assessing perceived burdensomeness as a mediator of the relationship between CEA and prospective SI, following procedures outlined by Preacher and Hayes (2008), we found that CEA was positively associated with perceived burdensomeness, even after accounting for the presence of CPA and CSA ($B = .091$, $p < .001$, $r_{\text{effect size}} = .348$). Additionally, CEA was positively associated with prospective SI after covarying CPA and CSA (OR = 1.223, 95% CI = 1.105–1.354). Also worthy noting is that neither CPA nor CSA were associated with prospective SI in this model (OR_{CPA} = .982, 95% CI = .898–1.075; OR_{CSA} = .998, 95% CI = .929–1.072).¹ After CEA, CPA, and CSA were covaried, perceived burdensomeness was predictive of higher prospective SI (OR = 1.469, 95% CI = 1.043–2.069). Using bootstrapping, we found perceived burdensomeness to be a significant mediator of the relationship between CEA and prospective SI ($B = .038$, $SE = .020$, 95% CI = .003–.079).

¹ The model remained essentially unchanged after addressing suppressor effects with CPA and CSA.

3.3. Thwarted belongingness as a mediator

Next, we assessed thwarted belongingness as a mediator of the relationship between CEA and prospective SI. We found that CEA was positively associated with thwarted belongingness after CPA and CSA were covaried ($B = .072, p < .001, r_{\text{effect size}} = .265$). As noted above, CEA, but not CPA or CSA, was also positively associated with prospective SI when evaluated concurrently within a single model. After covarying CEA, CPA, and CSA, however, we found that thwarted belongingness was not predictive of higher prospective SI ($OR = 1.376, 95\% CI = .974\text{--}1.944$). Therefore, thwarted belongingness was not evaluated as a potential mediator of the relationship between CEA and prospective SI.

4. Discussion

The purpose of this study was to test the hypothesis that CEA, as compared to other forms of childhood abuse, would be uniquely related to SI, and that this relationship would be mediated by thwarted belongingness and perceived burdensomeness. We found partial support for the study hypotheses. Consistent with a prior study similarly evaluating the unique concurrent effects of all three forms of childhood abuse on SI (Gibb et al., 2001), CEA, but not CPA or CSA, was found to be prospectively associated with SI. As hypothesized, this association was mediated by perceived burdensomeness. Although CEA was positively associated with thwarted belongingness, this interpersonal risk factor did not mediate its relationship with SI. Collectively, the current findings suggest that the relationship between SI and childhood abuse may be specific to CEA, and that this childhood abuse subtype confers risk for ideation through increasing the individual's sense of being a hindrance or burden to others within the social network.

Our findings contribute to the current understanding of SI in several ways. The current study provided the first direct evaluation of the relationship between all three forms of childhood abuse and SI within the context of Joiner's interpersonal theory of suicide (Joiner, 2005; Van Orden et al., 2010). That is, these findings provide support for the hypotheses put forth by the interpersonal theory of suicide (Joiner, 2005; Van Orden et al., 2010), in that the unique associations between CEA and suicidal desire can be explained, at least in part, by interpersonal factors, namely perceived burdensomeness. Thus, the current study addressed the stated need to extend research in this area beyond identifying suicide risk factors towards a greater understanding of the processes through which they confer heightened risk (Brent, 2011; Nock, 2012).

Additionally, the unique association between CEA and SI highlights the need for greater empirical attention to CEA as being equally important as other forms of childhood abuse in conveying risk for suicide. Given that it is the most prevalent form of childhood abuse (Spinhoven et al., 2010), it is critical for future research to investigate CEA as a construct and further to delineate the mechanisms through which it may exert its deleterious effect. Additionally, these findings underscore the necessity of concurrent consideration of different forms of childhood abuse, such that the unique effects of different forms of abuse on subsequent suicidal thoughts and behavior may be ascertained.

At the same time, we caution against interpreting the current findings as indicating that CPA and CSA are unrelated to suicide risk. Rather, we suspect that both these forms of childhood abuse are also uniquely associated with suicide risk, but through distinctly different pathways from the ones assessed in the current study. Indeed, one potential avenue for future investigation within the context of Joiner's interpersonal theory of suicide (Joiner, 2005; Van Orden et al., 2010) is to evaluate whether CPA and CSA confer greater capability for suicide. According to Joiner's theory, painful

and fear-provoking events habituate the individual to the pain and fear associated with suicide, and thus reducing the internal barriers to engaging in suicidal behavior. CPA and CSA, in particular, have been posited to be relevant painful and fear-provoking experiences (Van Orden et al., 2010). In addition to accounting for the relationship between different forms of childhood abuse and suicide risk mechanisms, it would also be important for future research to demonstrate that these mechanisms, in turn, mediate the relationship between these forms of childhood abuse and actual suicidal behavior.

The present findings should be interpreted within the context of the limitations of the study. Childhood abuse was measured using a retrospective self-report instrument. Although the CTQ is a widely used and well-validated measure of childhood abuse, it is possible that recall or response biases may have influenced participants' reports of abuse. It should be noted, however, that individuals' recollection of negative childhood experiences tend to be fairly accurate and free of mood-congruent recall biases (Bifulco, Brown, Lillie, & Jarvis, 1997). Nonetheless, it may be beneficial for future studies to consider other methods of ascertaining experiences with early childhood abuse (e.g., interview-based approaches). Second, although the levels of SI reported in this study are comparable with those found in other at-risk samples (e.g., Van Orden et al., 2008), it is important for future research to investigate whether these findings generalize to more clinically severe (e.g., inpatient) samples. Finally, a valuable extension of this research would be to use a multiwave longitudinal design to provide an idiographic rather than nomothetic evaluation of the course of CEA in relation to thwarted belongingness, perceived burdensomeness, and SI.

Finally, although the current findings should be regarded as preliminary, the identification of interpersonal mediators explaining the relationship between CEA and later SI may have clinical implications. Treatments that work to avert the development of perceptions of burdensomeness and feelings of lack of connectedness to close others may be especially important preventative measures for individuals who have experienced substantial CEA. Furthermore, interventions for those with current SI and a history of CEA may benefit from focusing on altering these perceptions.

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