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The Relationship between Social Maladjustment, Childhood Abuse and Suicidal Behavior in College Students

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Abstract

There are over 1,000 suicides on college campuses annually. Childhood abuse and social maladjustment are risk factors for suicidal behavior in the college student population. Few studies have investigated how these variables combine to instantiate risk for suicidal behavior. Thus, the current study examined the role of social maladjustment (i.e. insecure attachment style and inadequate social support) in the relationship between childhood abuse and suicidal behavior among college students. Six hundred fifty-nine undergraduate college students completed online self-report questionnaires measuring childhood sexual and physical abuse, suicidal behavior, social support, and attachment style. Structural equation modeling was used to explore hypothesized relationships between childhood abuse, social maladjustment, and suicidal behavior. Social maladjustment mediated the relationship between childhood physical and sexual abuse and suicidal behavior. These findings reveal social maladjustment is a pathway by which childhood abuse is associated with suicidal behavior. Implications are discussed as they pertain to improving suicide prevention interventions for college students.
Key words: suicidal behavior, sexual abuse, physical abuse, social adjustment.

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Novelty and Significance

What is already known about the topic?

- Six percent of college students in the USA seriously consider suicide annually.
- Childhood physical and sexual abuse are risk factors for suicide attempt among college students.
- The pathways through which childhood abuse leads to suicidal behavior are not well studied.

What this paper adds?

- Among 659 college students who completed self-reports, social maladjustment was found to explain the relationship between childhood abuse and suicidal behavior.
- Interventions targeting social adjustment among college students who have a history of childhood abuse may decrease suicidal behavior among this population at-risk for suicidal behavior.

On USA college campuses, more than 1,000 suicides occur annually (American Association of Suicidology, 2010). Non-fatal suicide attempts and other types of suicide-related behavior, such as suicidal ideation, are also major problems on college campuses (Hirsch & Barton 2011; Wilcox, Arria, Caldeira, Vincent, Pinchevsky, & O'Grady, 2010). Large nationally-representative epidemiological studies show 18% of college students have seriously considered attempting suicide in their lifetime and 6% of students have seriously considered attempting suicide in the past 12 months (American College Health Association, 2014; Drum, Brownson, Burton Denmark, & Smith, 2009).

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Understanding the risk and protective factors for suicidal behavior is crucial to increase the effectiveness of suicide prevention strategies. The research on the etiology of suicidal behavior is extensive and expanding, and it has repeatedly been found that exposure to traumatic life events contributes to the occurrence of suicidal behavior (Stein, Wai Tat, Hwang, *et al*., 2010; Stein, Chiu, Hwang, *et al*., 2012). Research has shown a strong positive association between suicide attempt and ideation in adulthood and childhood sexual abuse (Bedi, Nelson, Lynskey, *et al*., 2011; Brezo, Paris, Vitaro, Hebert, Tremblay, & Turecki, 2008; Ullman & Najdowski, 2009). Similarly, suicidal behaviors and childhood physical abuse are often found to be related (Brezo *et al*., 2008; Fuller-Thomson, Baker, & Brennenstuhl, 2012; Mironova, Rhodes, Bethell, *et al*., 2011; Sugaya, Hasin, Olfson, Lin, Grant, & Blanco, 2012). Particular to college students, Bryan, McNaugton-Cassill, Osman, and Hernández (2013) found that college students who were sexually or physically abused as children contemplated and attempted suicide more often than their fellow classmates who did not experience childhood abuse. While numerous studies have shown that childhood sexual and physical abuse increase the risk of suicidal behaviors individually, researchers now emphasize that there may be an additive effect of different types of childhood abuse (Arata, Langhinrichsen-Rohling, Bowers, & O'Brien 2007; Brezo *et al*., 2008; Joiner, Sachs-Ericsson, Wingate, Brown, Anestis, & Selby, 2007; Kurtz, Kurtz, & Jarvis, 1991; Ryan, Kilmer, Cauce, Watanabe, & Hoyt, 2000).

Social maladjustment, such as inadequate perceived social support and insecure attachment, is also linked to suicidal behavior. Suicide attempters are more likely to report inadequate social support networks and lower levels of perceived social support than clinical and community controls (Hirsch & Bart, 2011; Miller, 2015; Rowe, Conwell, Schulberg, & Bruce, 2006). Stepp, Morse, Yaggi, Reynolds, Reed, and Pilkonis (2008) also found that insecure attachment style, characterized by difficulties trusting others and tolerating closeness and intimacy (Bowlby, 1988; Collins & Read, 1990), was associated with suicide-related behaviors among adult psychiatric patients and community members. Taken together, these findings suggest that adults with insecure attachments and lower levels of perceived social support may be at greater risk for engaging in suicidal behavior.

Social maladjustment may also mediate or explain the relationship between childhood sexual and physical abuse and suicidal behavior. Individuals with childhood histories of sexual or physical abuse commonly have difficulties forming attachments with others (Briere, 2002; Stronach, Toth, Rogosch, Oshri, Manly, & Cicchetti, 2011), and they are more likely than those who have not been abused to develop and maintain avoidant and anxious attachment styles into adulthood (Baer & Martínez, 2006; Cantón Cortés, Cortés, & Cantón, 2015). However, few studies, to our knowledge, have investigated social maladjustment as a third variable that explains or changes the relationship between childhood abuse and suicidal behavior. Moreover, findings from the few studies that have examined all three variables are mixed. For instance, Miller, Adams, Esposito-Smythers, Thompson, & Proctor, (2014) prospectively explored the consequences of childhood abuse on interpersonal relationships and subsequent suicidal behavior and found interpersonal relationship quality did not explain the relationship between childhood abuse and suicidal ideation at age 18. Smith, Gamble, Cort, Ward, Conwell, and Talbot (2012) also

explored the role of social maladjustment in the relationship between childhood abuse and suicidal behavior and found that social maladjustment was associated with greater death ideation in a sample of women who had experienced childhood sexual abuse and depression. Lastly, Esposito, and Clum (2002) found that social support moderated the relationship between childhood sexual abuse and suicidal ideation and behavior among juvenile delinquents. Among those adolescents who reported greater childhood sexual abuse, social support satisfaction attenuated the positive relationship between childhood sexual abuse and current suicidal ideation.

Theoretically, Joiner (2005) has posited that individuals who die by suicide have both a strong desire to die by this method, which is motivated by perceptions of not belonging or being a burden to others, and have acquired the ability to self harm through prior experiences. Joiner (2005) further offers that severe forms of child maltreatment, such as physical and sexual abuse, significantly increase the risk of suicide because they increase one's capability to inflict self-harm. Moreover, low perceived social support is posited to increase an individual's sense of not belonging (Joiner, 2005).

The current study builds upon prior research and theory by testing whether social maladjustment, defined as insecure attachment and dissatisfaction with social support, mediates the relationship between childhood abuse and suicidal behavior in a college student sample (see Figure 1). A large literature shows attachment style influences how individuals seek and perceive social support (Collins & Feeney, 2004; Mikulincer & Shaver, 2007; Rholes, Simpson, Campbell, & Grich, 2001; Rholes, Simpson, Kohn, Wilson, Martin, Tran, & Kashy, 2011) and specifically that insecurely-attached, compared to securely-attached, individuals are less likely to seek social support and more likely to anticipate relationship failures while in them (Collins & Feeney, 2004; Mallinckrodt & Wei, 2005; Rholes *et al*., 2001; Riggs, 2010). Therefore, we hypothesized dissatisfaction with social support and attachment styles were best combined into a single latent factor, which we labeled social maladjustment.

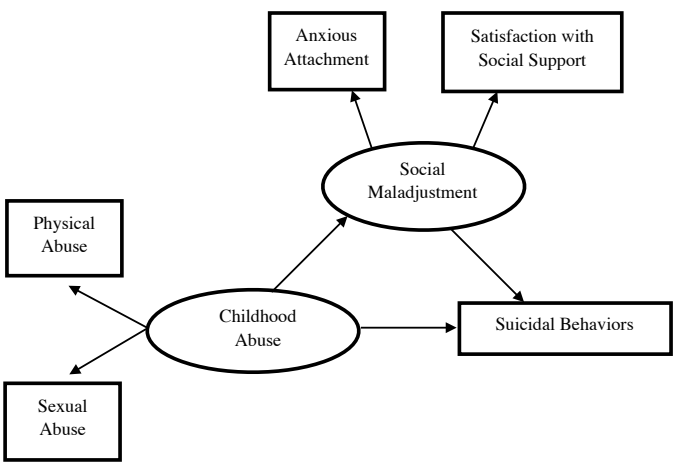

Figure 1. Schematic Diagram of the Proposed Mediational Model (all error terms and the disturbance term have been omitted from the figure for readability. All paths to error and disturbance terms were constrained to 1).

METHOD

Participants

Data from 659 undergraduate students who participated in a larger study examining the relationships between ethnicity, culture, and emotional wellbeing were used. Data from five additional students were excluded as they did not complete the questionnaires pertaining to sexual abuse. Participants were mostly female (71.6%, *n*= 472) and ranged in age from 18 to 46, (mean 20.49, *SD*= 3.79) with 84.2% (*n*= 555) of participants between the ages of 18-22 years. Forty-six percent (*n*= 303) of participants self-identified as Latino/a, 24.6% (*n*= 162) as Caucasian, 17.1% (*n*= 113) as African American, and 10.8% (*n*= 71) as Asian/Asian American. In addition, five participants identified (.8%) as Native American.

Procedure

Approval for the study was granted by the local Institutional Review Board. Students in undergraduate psychology classes were invited to participate in the on-line study in exchange for course research credit. All participants gave informed consent prior to completing the on-line questionnaires. After completing the study, all participants were debriefed and provided with contact information for local mental health services. Student responses were also monitored to identify participants with current suicidal ideation or significant depressive symptoms. Distressed students were contacted by the Principal Investigator (EJ), a licensed clinical psychologist with expertise in suicide risk assessment and treatment, and provided with additional mental health resources to maintain safety.

Instruments and Measures

The Suicidal Behaviors Questionnaire-Revised (SBQ-R; Osman, Bagge, Gutiérrez, Konick, Kopper, & Barrios, 2001). The SBQ-R is a self-report screening measure consisting of four questions that assess suicidal behavior and risk over the lifetime. The first item explores past and current suicidal ideation and is scored on a 6-point Likert scale from 0 (Never) to 5 (I have attempted to kill myself and really hoped to die). The second item addresses the frequency of suicidal ideation over the past twelve months on a 5-point Likert scale from 0 (Never) to 4 (Very often). Item 3 asks if the participant has ever threatened to commit suicide on a 6-point Likert scale from 0 (No) to 5 (Yes, more than once, and I really wanted to do it). The last item assesses the likelihood of a future suicide attempt on a 6-point Likert scale from 0 (Never) to 5 (Very likely). The total score ranges from 0 to 18, with higher scores indicating greater lifetime suicidal behaviors. A cut-off score of 7 is used to distinguish suicidal from non-suicidal individuals in the general population. Scores on the SBQ-R significantly correlate with scores on the Scale for Suicide Ideation (SSI; Beck, Kovacs, & Weissman, 1979; Cotton, Peters, & Range, 1995). In the current sample, the SBQ-R was found to have good internal consistency (α= .83).

Comprehensive Child Maltreatment Scale -Adult version (CCMS-A; Higgins & McGabe 2001). The CCMS-A is a 22-item self-report questionnaire measuring five types of adverse childhood experiences including physical abuse, sexual abuse, psychological

maltreatment, neglect, and witnessing family violence. For the purposes of this study, only the physical abuse (CCMSA-PA) and sexual abuse (CCMSA-SA) subscales were used as these forms of abuse are most frequently related to suicidal behavior (Dube Anda, Felitti, Chapman, Williamson, & Giles, 2001; Fergusson, Boden, & Horwood, 2008; Joiner, Sachs-Ericsson, Wingate, Brown, Anestis, & Selby, 2007). Questions capture the frequency of diverse acts of physical and sexual abuse perpetrated by different individuals. Scores on the three questions comprising the physical abuse subscale and the 11 questions from the sexual abuse subscale are summed to determine subscale scores. Scores can range from 31 to 155 for the sexual abuse subscale and from 9 to 45 for the physical abuse subscale, with higher scores indicating a greater frequency of sexual or physical abuse. Previous studies have used the mean of each subscale as indicative of clinically significant abuse (Higgins & McCabe, 2000). Studies have found satisfactory test-retest and internal consistency reliabilities for each scale of the CCMS-A (Higgins & McCabe, 2001). In the current sample, the CCMSA-PA and CCMSA-SA subscales had good to excellent internal consistency, with alphas of .84 and .96, respectively.

The Adult Attachment Scale (AAS; Collins & Read, 1990). The AAS is an 18-item self-report questionnaire measuring attachment styles in adult intimate relationships and close relationships. Items describe characteristics, qualities and comfort with interpersonal relationships, such as comfort levels with intimacy and dependency on others and rejection and abandonment fears in relationships. Individuals rate how characteristic statements are of them from 1 (Not at all characteristic) to 5 (Very characteristic). The AAS consists of three subscales: close, depend, and anxiety. The Close subscale includes items that are worded to measure comfort level with intimacy and general closeness (e.g. "I find it relatively easy to get close to others"). The Depend subscale explores comfort level with depending on others (e.g. "I find it difficult to allow myself to depend on others") while the Anxiety subscale measures anxiety over rejection and abandonment in relationships (e.g., "In relationships, I often worry that others will not want to stay with me"). Combinations of scores on these subscales identify individuals according to traditional descriptions of attachment styles. Securely attached individuals score high on the close and depend subscales and low on the anxiety subscale; anxiously attached individuals score high on the anxiety subscale and moderately on the close and depend subscales, and avoidantly attached individuals score low on all three subscales. In this sample, the AAS-Depend and Anxiety subscales were found to have adequate internal consistency, with alphas of .70 and .73, respectively. The Close subscale did not maintain adequate internal consistency (α= .60) and was thus not considered for analysis. Further, because we were interested in studying insecure attachment in suicidal behavior, we did not consider the Depend subscale in our analyses as this attachment style is associated with secure attachment.

Social Support Questionnaire 6 (SSQ6; Sarason, Sarason, Shearin, & Pierce, 1987). The SSQ6 is a 6-item measure of the number of social supports an individual has and his or her degree of satisfaction with this social support. For each question, respondents first list up to 9 individuals who provide the specific type of social support in question (e.g., individuals they can depend on when help is needed, individuals they count on to console them if upset). They then rank how satisfied they are with the support on a 6-point Likert-scale from 1 (Very dissatisfied) to 6 (Very satisfied). Two scores are then derived. The SSQ number score is the average number of social supports an individual has across types of social relationships. The SSQ satisfaction score (SSQ-S) is the average satisfaction an individual has across his supportive relationships and is calculated by averaging the scores across the 6 satisfaction items. As we were interested in perceived quality as opposed to quantity of social supports, as perceptions of versus actual social support is more robustly associated with mental health outcomes (Serovich, Kimberly, Mosack, & Lewis, 2001), only the SSQ-S was used in this study. The SSQ6 has been

found to be both valid and reliable in undergraduate populations, with the authors reporting good convergent validity with the original Social Support Questionnaire as well as excellent internal consistency for both subscale scores (Sarason *et al*., 1987). In our study, the SSQ-S had excellent internal consistency with α= .95. Demographic information was collected using a self-report measure that included questions about age, sex, and race/ethnicity.

Data Analysis

All analyses were completed using SPSS, version 21 (IBM Corp., 2012) and AMOS 5.0 (Arbuckle, 2003). Pearson product-moment correlation coefficients were calculated to determine bivariate relationships between SSQ-S, AAS-Anxious, CCMSA-SA, CCMSA-PA, and SBQ-R scores. We then used structural equation modeling, performed using AMOS 5.0, to explore hypothesized relationships between abuse, social maladjustment and suicidal behavior. We created the latent abuse variable from the CCMS-A physical abuse and sexual abuse subscales and the latent social maladjustment variable using the AAS-Anxiety subscale and the SSQ-S. These factor structures were determined a-priori to multivariate analysis based on findings from factor analytic studies showing significant associations between latent physical and sexual abuse factors in community samples (e.g., Bernstein, Stein, Newcomb, *et al*., 2003) and evidence that perceptions of social support are strongly influenced by working attachment models (e.g., Collins & Feeney 2004). That is, Collins and Feeney (2004) found a strong, universal negative relationship between insecure attachment and perceived social support. For identification purposes, a two-factor Confirmatory Factor Analysis (CFA) was performed. The hypothesized model was then tested using Maximum Likelihood estimation procedures. Bootstrapping tests were performed on the final preferred model to provide bias-corrected regression weights and standard errors as well as a 95% confidence interval for the indirect effect of abuse on suicidal behavior through social maladjustment (Kline, 2005). For the bootstrapping tests, we drew a random sample of 2,000 cases. Model fit was evaluated using the Chi-square statistic, the comparative fit index (CFI: Bentler 1990) and the root mean square error of approximation (RMSEA). Our evaluation criteria were based on conventional guidelines suggesting non-significant χ^2 statistics, CFI values greater than .95, and RMSEA values less than .06 indicate good fit (Bentler 1992; Marsh, Hau, & Wen, 2004; Tabachnick & Fidell, 2000).

RESULTS

Of the 659 undergraduate students, 11.2% (n= 74) reported childhood sexual abuse, and 38.8% of the sample (n= 256) reported childhood physical abuse (i.e. hitting, kicking, punching). Using a cut-off score of 7 on the SBQ-R, 11.5% (n= 76) of students could be categorized as suicidal. Twenty-two percent (n= 16) of the sample with childhood sexual abuse histories and 14.9% (n= 38) with childhood physical abuse histories reported suicidal behaviors.

Results from the CFA showed that the proposed two-factor, four-indicator model of abuse and social maladjustment fit the data well [$\chi^2_{(1)}$= 2.85, p= .09; CFI= .98, RMSEA= .05]. Results from preliminary testing and comparison of χ^2 goodness-of-fit

statistics indicated the proposed meditational model with a direct path between abuse and suicidal behavior fit better than a model without the path. So the former model was used in bootstrapping tests of mediation. Results indicated a good overall fit for the model [$\chi^2_{(3)}$= 4.80, p= .19; CFI= .99, RMSEA= .03].

Figure 2 shows the model and the regression weights obtained from boot-strapping procedures. The standardized direct paths between abuse and social maladjustment (β= .62, *s.e.*= .15) and social maladjustment and suicidal behavior (β= .80, *s.e.*= .47) were significant (p <.001, p= .001, respectively). The direct path between abuse and suicidal behavior was not significant in the final model (p= .13). Additionally, the 95% confidence interval for the estimate of the standardized indirect effect of abuse on suicidal behavior did not contain 0 (95% CI= [.20, 3.18]), indicating that social maladjustment mediated the relationship between abuse and suicidal behavior. The model accounted for 42.2% of the variance in social maladjustment scores and 33.7% of the variance in SBQ scores.

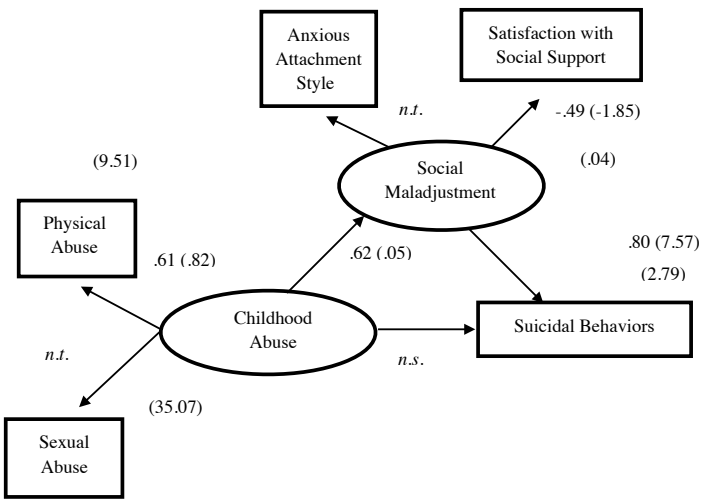

Figure 2. Social Maladjustment as a Mediator between Childhood Abuse and Suicidal Behavior (unstandardized regression weights presented in parentheses. *n.s.*= not significant, *n.t.*= not tested. Standardized estimate of factor loading for sexual abuse= .52, for anxious attachment style= .33. Unstandardized regression coefficients for errors and disturbance appear in parentheses on respective variables and factor. All paths significant at p <.01 level).

DISCUSSION

Our results show social maladjustment mediates the relationship between childhood abuse and suicidal behaviors in college students. These results support our hypothesis that social maladjustment explains the relationship between abuse and suicidal behavior. Our findings add to a limited literature examining how childhood abuse leads to risk for suicidal behavior (Esposito & Clum, 2002; Grewal-Sandhu, 2009; Santa Mina & Gallop 1998). Our findings have important clinical implications, suggesting that the effects of childhood abuse on suicidal behavior may be attenuated by targeting social adjustment.

A limited number of studies to our knowledge have examined third variable effects of social factors in the relationship between childhood abuse and suicidal behavior. Miller *et al*. (2014), in a prospective study, investigated the role of interpersonal relationships (i.e. parent and peer relationships) in explaining the relationship between childhood abuse and suicidal behavior and found interpersonal relationships did not mediate the relationship between childhood abuse and suicidal behavior. However, Smith *et al*. (2012) found that social maladjustment was associated with higher death ideation in a sample of women who had experienced both childhood sexual abuse and depression. Additionally, Esposito and Clum (2002) found that social support moderated the relationship between childhood sexual abuse and suicidal ideation and behavior in a juvenile delinquent population. These authors concluded that satisfaction with social support networks increases an individual's sense of security, making him or her less likely to experience maladaptive psychological outcomes, including suicidal ideation and behavior. In our study, we found that having a history of childhood abuse was significantly related to social maladjustment, which in turn, was associated with suicidal behavior.

Our findings also align with studies showing social maladjustment is a consequence of childhood abuse. Researchers have found that individuals who have experienced childhood abuse are more likely to develop insecure attachment styles than those who have not been abused (Baer & Martínez, 2006). Further, exposure to childhood abuse is also associated with lower perceived quality and quantity of social supports (Pepin & Banyard, 2006) as well as less satisfaction with social support (Esposito, 1997).

Others have investigated the psychological sequelae of social maladjustment and found insecure attachment styles negatively impact psychological functioning and emotional health (Love & Murdock, 2004; Mikulincer & Shaver, 2007; van Ijzendoorn & Bakermans-Kranenburg, 1996). Low perceived levels of social support are also found to predict suicidal behavior (Rowe *et al*., 2006). Thus, prior studies have found relationships between social maladjustment, childhood abuse, and suicidal behavior. Our study extends these findings by showing that childhood abuse instantiates risk for suicidal behavior through its effect on social maladjustment.

Childhood physical and sexual abuse, as opposed to physical neglect and emotional abuse and neglect, were chosen as the primary focus in this paper because childhood physical and sexual abuse are currently the types of childhood abuse most often associated with suicide attempts (Afifi, Enns, Cox, Asmundson, Stein, & Sareen, 2008; Mandelli, Carli, Serretti, & Sarchiapone, 2011; Ystgaard, Hestetun, Loeb, & Mehlum, 2004). In alignment with findings from previous studies, both childhood sexual and physical abuse were significantly correlated with suicidal behavior in the sample.

We choose to study social maladjustment because prominent theories of suicidal behavior posit an important role for social factors in suicide attempt risk. For instance, Joiner (2005), in his Interpersonal-Psychological Theory of Suicidal Behavior, suggests thwarted belonging and perceived burdensomeness are key risk factors for suicidal behavior. Thwarted belongingness, in particular, pertains to being socially isolated but having the desire for social connectedness. Without a sense of social connection, individuals are at greater risk for suicidal behavior.

Prospective studies employing non self-report measures are needed to confirm these findings. This study employed a cross-sectional design and relied on retrospective self-reports of childhood abuse, suicidal behavior, and social maladjustment. Adult

retrospective reports of childhood adversity are subject to issues with memory recall and their reliability has been questioned, especially when independent verification of self-report data is not possible (Hardt & Rutter, 2004; Nisbett & Wilson, 1977, Widom & Shepard, 1996). It may be particularly difficult to determine whether perceptions of physical abuse are consistent among participants and whether self-reported physical abuse is similar in type and severity to abuse that would be substantiated by a third party. Additionally, cross-sectional data precluded our ability to determine whether social maladjustment preceded suicidal behavior and followed childhood abuse. It is reasonable to assume social maladjustment followed childhood abuse given the measurement tool we used and the extant literature and theory. That is, in attachment theories, attachment is posited to be determined by experience (Bowlby, 1973, 1988). Despite these limitations, the SBQ-R, CCMS-A, AAS, and SSQ6 are measures with established psychometric properties and strong external validity (e.g., Osman *et al*., 2001; Higgins & McCabe, 2000). The sample used in this study was also primarily female and Latino/a. As rates of and risk factors for suicidal behaviors sometimes differ based upon gender and race/ethnicity, this model would need to be validated in different samples. There are, for example, some, albeit not consistent, indications (e.g., Evans, Scourfield, & Moore, 2014) that social factors increase suicide risk among females but not males.

Additionally, moderating studies are needed to determine factors that buffer the impact of childhood sexual and physical abuse on subsequent suicidal behaviors. Contextual elements related to the trauma, such as the age of the victim at the time of the abuse, the severity and type of abuse, the duration and frequency of abuse, and the relationship between the victim and the perpetrator, can affect the degree to which childhood abuse impacts an individual (National Child Protection Clearinghouse, 2010). Suicidal behavior is not always or even often an outcome of childhood sexual or physical abuse (Afifi & MacMillan, 2011). Between 30-50% of adults and adolescents with a history of childhood maltreatment do not exhibit mental health disturbances and function well (DuMont, Widom, & Czaja, 2007). Various biopsychosocial factors have been linked to healthy attachment and psychological well-being including the absence of mental health disorders (Collishaw, Pickles, Messer, Rutter, Shearer, & Maughan, 2007). This, along with other factors, may buffer the impact of childhood sexual or physical abuse on suicidal behavior.

Finally, studies testing other mediators of the relationship between childhood abuse and suicidal behavior are needed. For instance, in developmental models of suicidal behavior, childhood abuse has been posited to lead to impulsive aggression, which in turn, is shown to lead to suicidal behavior (Carballo, Baca García, Blanco, *et al*., 2010; Turecki, 2005). Thus, intrapersonal, in addition to interpersonal, risk factors for suicidal behavior that are also associated with childhood abuse merit additional study.

The findings of this study have practical implications for mental health clinicians treating college students. Understanding pathways by which childhood abuse leads to suicidal behavior allows for early identification and targeted intervention with college students at particular risk for suicidal behavior. Currently, two effective interventions for treating suicidal behavior exist: Cognitive Therapy (CT) specifically for the prevention of suicide attempts (Brown, Henriques, Ratto, & Beck, 2002) and Dialectical Behavior

Therapy (DBT; Linehan, 1993). Various randomized controlled trials exploring the efficacy of these aforementioned treatments show that, for example, patients with Borderline Personality Disorder (BPD) who received DBT compared to those receiving treatment as usual in the community, had fewer incidents of suicidal behaviors (i.e. suicidal ideation and attempts) (e.g., Linehan, Armstrong, Suarez, Allmon, & Heard, 1991; Linehan, Comtois, Murray, *et al*., 2006). Ultimately, our research findings may help improve existing interventions by identifying targets, i.e., social maladjustment, for treatment to prevent suicidal behavior among college students.

Another consideration when designing programs to reduce suicidal behavior among individuals with a history of childhood abuse is whether and how familial supports can be included in treatment. Our findings suggest perceived social support and attachment style are important intermediaries in determining suicide behavior risk given childhood abuse. Thus, working with client family members to strengthen bonds among family members may be indicated in treatment. However, contextual factors, including the relationship between the perpetrator and victim must be considered when personalizing treatment. Intervention programs for social support systems when extrafamilial abuse was present should provide emotional support to the families, focus on educating parents about the impact of maltreatment, and train parents to resolve feelings regarding the abuse and to detect distress in the child (Sesan, Freeark, & Murphy, 1986). Additionally, intervention programs pertaining to families experiencing intrafamilial abuse should focus on improving the parent-child relationship and the parent's quality of care in order to promote a secure attachment (Cyr, Dubois-Comtois, & Moss, 2010), train families to resolve family conflicts, and provide problem-solving skills to help develop and improve family dynamics (Sesan *et al*., 1986). Such treatment programs may help prevent individuals from engaging in subsequent suicidal behaviors by improving the quality of victims' social support systems and their interpersonal functioning.

The population attributable ratio of physical and sexual abuse to suicide attempts is .30, meaning that there would be 30% fewer suicide attempts if childhood physical and sexual abuse were effectively prevented or the consequences of childhood physical and sexual abuse were effectively treated (Afifi *et al*., 2008). We showed social maladjustment is a pathway by which childhood abuse is associated with suicidal behavior. Thus, interventions targeting social adjustment among individuals with a history of childhood abuse may decrease suicide behavior outcomes among this population at-risk for suicidal behavior. Ultimately, portions of efficacious treatments for suicidal behavior targeting interpersonal difficulties, e.g., the interpersonal effectiveness module of DBT skills group training, may be feasible and efficacious interventions for college students who are vulnerable to suicidal behavior by virtue of their childhood experience and subsequent social adjustment difficulties.

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