Indirect Effects from Childhood Sexual Abuse Severity to PTSD: The Role of Avoidance Coping

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Abstract

Men who have sex with men (MSM) disproportionately experience childhood sexual abuse (CSA) compared to heterosexual men, often resulting in continued trauma related sequelae, including symptoms of Post-Traumatic Stress Disorder (PTSD) such as avoidance. The variability in trauma related sequelae may be associated with chronicity or duration of CSA. The relationship between duration of CSA and later PTSD symptom severity is not well understood, including the extent coping strategies account for these relationships. We used linear regression to examine these relationships and to assess the indirect effects of avoidance (behavioral disengagement and denial) and adaptive coping strategies on the relationship between CSA duration and adult PTSD symptom severity on a diverse sample included 290 MSM with a history of CSA. In adjusted models, CSA duration was significantly associated with adult PTSD symptom severity (standardized β =0.23, p <0.000) and with avoidance coping (standardized β = 0.19, p=0.002). Separating this out, behavioral disengagement was significantly associated with CSA duration (standardized β =0.20, p=0.001) but denial was not. In adjusted analyses assessing indirect effects, avoidance coping partially accounted for the relationship between CSA duration and total trauma symptom severity (standardized β reduced from 0.23 to 0.17; Sobel=2.90, p=0.004). Similarly,

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behavioral disengagement partially accounted for the association between CSA duration and total symptoms (standardized β reduced from 0.23 to 0.18; Sobel=2.68, p=0.007). Avoidance coping, and behavioral disengagement specifically, may play a role in the severity of PTSD symptoms experienced by MSM with CSA histories. This work emphasizes the need for clinicians to consider behavioral disengagement in understanding PTSD symptom severity among MSM with histories of CSA.

Keywords

trauma; coping; childhood sexual abuse; avoidance

Introduction

Experiencing childhood sexual abuse (CSA) increases risk for negative mental health outcomes that last into adulthood (Anda et al., 2006) and has been associated with anxiety, major depression, and posttraumatic stress disorder (PTSD; Neumann, Houskamp, Pollock, & Briere, 1996; Fergusson, Boden, & Horwood, 2008; Boroughs et al., 2015; Fergusson, McLeod, & Horwood, 2013) during childhood and adulthood. Rates of PTSD among children who have experienced sexual abuse are high, and are often comorbid with other mental disorders (Ackerman, Newton, McPherson, Jones, & Dykman, 1998; Boroughs et al., 2015; Deblinger, McLeer, Atkins, Ralphe, & Foa, 1989). Further, research suggests that children who have been sexually abused develop specific maladaptive coping patterns, including greater avoidance and dissociative symptoms than non-abused children, consistent with PTSD (Deblinger et al., 1989; Van Den Bosch, Verheul, Langeland, & Van Den Brink, 2003).

Compared to heterosexual men, men who have sex with men (MSM) report significantly higher rates of CSA, which is associated with psychological and behavioral ramifications throughout adulthood. Estimates of CSA among MSM ranges from 10–50%, compared to 7.9% of men in the general population (Lloyd & Operario, 2012; Pereda, Guilera, Forns, & Gómez-Benito, 2009). A review of the literature indicates that MSM with histories of abuse during childhood or assaults in adulthood display higher levels of psychological distress and greater endorsement of suicidal ideation and suicidal behavior compared to those without histories of violence (Arreola, Neilands, Pollack, Paul, & Catania, 2008), and these negative outcomes can pervade throughout the lifespan. Many MSM with histories of CSA report diagnostic levels of PTSD into adulthood, which the literature suggests is a predictor of sexual risk behaviors and substance use disorders (Boroughs et al., 2015; El-Bassel, Gilbert, Vinocur, Chang, & Wu, 2011; Reisner, Mimiaga, Safren, & Mayer, 2009). Further, CSA among MSM has been linked to sexual assault in adulthood (Pantalone, Horvath, Hart, Valentine, & Kaysen, 2015; Balsam, Lehavot, & Beadnell, 2011).

Research suggests that victims of CSA may utilize avoidance coping strategies, including behavioral disengagement and denial, to manage distress after the abuse, which may decrease in effectiveness in adulthood and lead to or perpetuate PTSD symptoms (Brewin & Holmes, 2003; Holahan & Moos, 1987; Roth & Cohen, 1986; Walsh, Fortier, & Dilillo,

2010). While avoidance coping strategies frequently appear to be correlated with adverse long-term mental health outcomes, such as psychological distress, among adults with a history of CSA and related PTSD symptoms, there are inconsistencies in the literature (e.g., Brand & Alexander, 2003; Cantón-Cortés & Cantón, 2010; Hébert, Tremblay, Parent, Daignault, & Piché, 2006; Leitenberg, Greenwald, & Cado, 1992; Steel, Sanna, Hammond, Whipple, & Cross, 2004). Some evidence suggests that avoidant coping, including experiential avoidance and denial, mediate the relationship between CSA-related PTSD symptoms and emotional distress in adults (Whiffen & MacIntosh, 2005; Shapiro & Levendosky, 1999; Rosenthal, Rasmussen Hall, Palm, Batten, & Follette, 2005). Others have unexpectedly found that distancing, or avoidance, coping was associated with less social dysfunction and among adolescents, while more approach oriented coping was associated with increased sexual concerns (Brand & Alexander, 2003; Daigneault, Hébert, & Tourigny, 2006). Still others have found no relationship between avoidance and adaptive coping and behavioral and interpersonal functioning in survivors of CSA (Cantón-Cortés & Cantón, 2010; Chaffin, Wherry, & Dykman, 1997; Filipas & Ullman, 2006; Hébert et al., 2006; Shapiro & Levendosky, 1999; Tremblay, Hébert, & Piché, 1999; Wright, Crawford, & Sebastian, 2007). The variability in findings indicate that healthy recovery from CSA-related PTSD symptoms may involve a more nuanced understanding of the relationships between CSA and avoidance coping strategies (Phanichrat & Townshend, 2010).

In addition to avoidance coping, adaptive coping strategies including emotion-oriented and problem-oriented coping strategies (e.g., acceptance, religion, active coping, etc.) have been identified as influencing trajectories of recovery and can be a critical component in long-term functioning in adults with histories of CSA. Early trauma, such as CSA, is thought to disrupt adaptive coping mechanisms, making it difficult to recover from traumatic experiences, potentially resulting in greater PTSD symptom severity throughout the lifespan. In contrast to avoidance coping, which has been linked to greater PTSD symptoms (Filipas & Ullman, 2006; Huang, Zhang, Momartin, Huang, & Zhao, 2008; Johnson, Sheahan, & Chard, 2003; Ullman & Filipas, 2005; Ullman & Peter-Hagene, 2014), adaptive coping following CSA may help to manage negative thoughts and emotions associated with CSA-related PTSD symptoms, thereby reducing distress (Walsh et al., 2010). The literature also indicates that adaptive versus avoidance coping strategies evolve over time among adult survivors of CSA, and are differentially associated with long-term psychological functioning (Walsh et al., 2010).

However, the extent that specific coping strategies account for the relationship between varying durations of CSA and later overall PTSD symptom severity, as well as specific PTSD symptom clusters, is not well understood among MSM, a population disproportionately affected by CSA. The exploration of indirect relationships between CSA duration and adult psychological distress, including overall PTSD symptom severity and symptom clusters, may assist us in better understanding the mechanisms at play to more effectively develop strategies to cope with CSA experiences and related psychological distress, and ultimately to encourage resilience in survivors of CSA (Walsh et al., 2010). This study examines the relationships between duration of CSA, severity of adult PTSD symptoms (including specific PTSD symptom clusters), and avoidance and adaptive coping strategies among MSM who endorsed CSA.

Method

Participants

Data from 290 HIV-uninfected MSM with histories of CSA were collected as part of a comprehensive psychiatric baseline assessment from a multi-site randomized clinical trial aimed at reducing sexual risk behaviors associated with HIV in Boston, MA and Miami, FL from 2011–2016 (Batchelder et al., 2017; Boroughs et al., 2015). Of the 827 individuals who completed phone screens across both sites, 421 were deemed eligible, and 290 completed the assessment used in the presented analyses. All participants reported more than one episode of unprotected anal sex or vaginal intercourse within the past 3 months and a history of CSA before age 17. The average age of participants was 38, SD=12 (range 18–67). The sample self-identified as 68% White, 22% Black or African American, and 10% other. Twenty-nine percent of the sample identified as Latino. One quarter of the sample reported having up to a high school education, 36% some college, 24% some graduate school, and 13% reported completing a graduate degree.

Procedures

recruitment.—Participants were recruited through advertising and via outreach to bars, clubs, cruising areas, community venues, and social media. To protect individuals' privacy and minimize stigma associated with endorsing childhood sexual abuse, recruitment efforts were combined with other ongoing behavioral and biomedical HIV prevention studies and health promotion initiatives.

study procedure.—Prospective participants were screened by trained clinical staff using a structured questionnaire. Enrollment criteria included: 1) identifying as a cisgender birth sex males who have sex with adult men; 2) endorsing sexual contact before 13 years of age with a person 5 or more years older, or sexual contact between 13–16 years of age with a person 10 years older or any age if threat of force or harm; 3) reporting more than one episode of unprotected anal or vaginal intercourse within the past three months; and 4) being HIV uninfected. HIV-negative status was confirmed via rapid testing. Participants were excluded if all episodes of unprotected anal or vaginal intercourse occurred with a single, primary, HIV-negative partner. All participants completed a comprehensive baseline assessment that included HIV and other STI testing, a psychiatric evaluation, and computer-based psychosocial assessments. Given the substantial evidence indicating participants are more likely to disclose sensitive information via computer questionnaire compared to a face-to-face interview, computer-based assessment was used to obtain and confirm verbally reported information (Des Jarlais et al., 1999; Metzger et al., 2000; Millstein, 1987; Navaline et al., 1994; O'Reilly, Hubbard, Lessler, Biemer, & Turner, 1994; Turner et al., 1998; Wilson, Genco, & Yager, 1985). All procedures were IRB approved.

Measures

demographics.—Participants self-reported age, race, ethnicity, educational attainment, income, and sexual orientation. Age was treated as continuous. We disaggregated race into White, Black, and other categories for analyses. Ethnicity was a dichotomous variable: Latino versus non-Latino. Education was disaggregated into 4 categories based on

distribution. These categories were: some high school- high school diploma or GED, some college, college degree (BA or BS)-some graduate school, and graduate degree.

assessment of childhood sexual abuse.—Childhood sexual abuse (CSA) was assessed through a clinician-administered interview adapted from an assessment of sexual abuse used with a variety of medical populations (Leserman et al., 1997; Leserman, Li, Drossman, & Hu, 1998), including people living with HIV (Lesserman, Ironson, & O'Cleirigh, 2006). Unwanted sexual contact was assessed using an adaptation from earlier research (Kilpatrick, 1992; Leserman, 2005). The interview included 20 closed-ended standardized questions predominately requiring yes/no answers. CSA was assessed across two age ranges: 0 through 12 years old and 13 through 16 years old. CSA in the younger age range included any unwanted sexual contact reported with someone 5 or more years older. In the older age range, CSA included any sexual contact with someone 10 years older or with someone of any age if there was threat of force or harm. CSA was indicated if any of the following occurred: genital touching, being touched, or penetrative intercourse (i.e., oral or anal penetration). CSA duration was defined as the time in years from the first episode to the last episode of CSA prior to age 17 and was calculated as age at the last reported episode minus age of the first reported episode, plus one. For example, if a participant reported his first CSA episode at 5 years old and the last episode at 10 years old, his CSA duration would be 6 years (inclusive of age 5 through age 10 years old). Additionally, frequency of CSA was asked (0–15+) episodes before 13 years old and between 13 and 16 years old. We created a variable using these two questions to estimate frequency of CSA.

coping strategies.—Coping strategies were assessed using the Brief COPE (Carver, 1997), a 28 item scale that assesses cognitive and behavioral coping strategies (e.g., active coping, behavioral disengagement, and denial). Each coping strategy was assessed by the mean of two items which participants rate on a 4-point scale (0= *I haven't been doing this at all* to 3=*I've been doing this a lot*). Avoidance coping mean score included two items assessing behavioral disengagement and two items assessing denial (Chronbach's alpha = 0.72). Adaptive coping mean score included two items from each of the following subscales: active coping, instrumental support, planning, acceptance, emotional support, positive reframing, and religion (Chronbach's alpha = 0.88).

post-traumatic stress disorder (PTSD) symptom clusters.—PTSD symptoms were assessed with the Davidson Trauma Scale (DTS; Davidson et al., 1997), a 17-item self-report questionnaire used to evaluate the frequency and severity of PTSD symptoms. Each question is rated on a scale from 0–8 (0–4 for frequency and 0–4 for severity), resulting in a total score range of 0–136. Scores 40 are consistent with the presence of PTSD (McDonald, Beckham, Morey, & Calhoun, 2009), which we confirmed in a clinical interview with staff in training for clinical psychology using the Structured Clinical Interview for DSM-IV (SCID, First, Spitzer, Gibbon, & Williams, 1996). The DTS has three subscales that map onto the diagnosis of PTSD: intrusive re-experiencing, avoidance, and hyperarousal.

Data Analysis

We conducted descriptive statistics on demographic variables (see Table 1) and confirmed duration of CSA, coping strategies, and overall PTSD symptoms as well as symptom clusters met assumptions for linear regression. We then conducted preliminary analyses to examine direct relationships between duration of CSA and all study related variables, using linear regression, controlling for age, race, ethnicity, and education which were selected a priori. We subsequently conducted models replacing duration of CSA with CSA frequency. We then followed Baron and Kenny's (1986) guidelines to assess indirect relationships, consistent with mediation, including conducting a series of linear regression models controlling for chosen demographics (age, race, ethnicity, and education). We used Baron and Kenny's (1986) rather than other methods given our prioritization of minimizing Type 1 error over increased power (Fritz, Taylor, & MacKinnon, 2012).

Results

Background Characteristics

A total of 290 men who endorsed having sex with men were included in the final sample (demographics described in Table 1). Sixty-seven percent (n=199) identified as gay or homosexual, 22% (n=64) identified as bisexual, 2% (n=7) identified as straight or heterosexual, 5% (n=14) reported being unsure, and another 2% identified as other when asked about sexual orientation. Participants' mean (SD) score for avoidance coping was 0.77 (0.72), with behavioral disengagement being 0.82 (0.85) and denial being 0.72 (0.85). Participants' mean (SD) score for adaptive coping was 1.52 (0.64). Total PTSD symptom mean (SD) score was 34.55 (26.22) with intrusive-re-experiencing subscale mean (SD) being 7.43 (7.78), avoidance subscale being 13.57 (11.94), and hyperarousal subscale being 13.63 (10.29). Thirty-nine percent of the samples' Davidson Trauma Scale total score indicated likely PTSD (score of 40; McDonald, Beckham, Morey, & Calhoun, 2009).

Direct Relationships

We identified a significant bivariate relationship between CSA duration and avoidance coping in adjusted models (standardized $\beta = 0.16$, p=0.007; table 3, step 2 path a) but not between CSA duration and adaptive coping. The only significant direct association between CSA duration and a specific coping strategy in adjusted models was found between CSA duration and behavioral disengagement (standardized $\beta = 0.04$, p=0.001). All other specific coping strategies were not significantly associated with CSA duration.

We also identified a significant direct association in adjusted models between CSA duration and Davidson total PTSD score (standardized $\beta = 0.23$, p<0.000). Additionally, we identified significant associations between CSA duration and all three Davidson symptom clusters in adjusted models: intrusive re-experiencing (standardized $\beta = 0.22$, p<0.000), avoidance (standardized $\beta = 0.26$, p<0.000), and hyperarousal (standardized $\beta = 0.13$, p=0.036).

Indirect Relationships

To further understand the complex associations between CSA duration, avoidance coping, and PTSD symptoms we conducted analyses in which we examined if avoidance coping

accounted for the relationship between CSA duration and PTSD symptom severity scores. As CSA duration was also associated with the three symptom clusters (intrusive re-experiencing, avoidance, and hyperarousal), we conducted four regression models with Davidson total and all three symptom clusters as outcome variables. As the only specific coping strategy significantly associated with CSA duration was behavioral disengagement, we subsequently conducted similar models, with behavioral disengagement replacing avoidance coping.

Table 3 summarizes the results for each step in assessing indirect relationships (see Figure 1). Step 1 estimates the *c* paths by examining the impact of CSA duration directly on PTSD scores. Step 2 estimates the *a* paths by examining the association of CSA duration on coping. Step 3 estimates the *b* paths by examining the association of coping scales on PTSD scores over and above effects of CSA duration. Step 4 estimates *c'* path. This step differentiates whether the "mediator" partially or completely accounts for the relationship between independent (X) and dependent variable (Y) by examining the effects of CSA duration on PTSD scores. Specifically, if the relationship between the independent (CSA duration) and dependent variable (PTSD score) is reduced, but the direct relationship remains significant, when the "mediator" (type of coping) is included in the model the relationship would be considered partially mediated. In contrast, in full mediation the relationship between the independent (CSA duration) and dependent variable (PTSD score) is insignificant when the "mediator" (type of coping) is included as a predictor in the model. Steps 3 and 4 are tested in the same regression models. To assess the significance of the indirect effects (c-c') we conducted Sobel tests (Fritz, Taylor, & MacKinnon, 2012; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Sobel, 1982; see Table 3).

As indicated in Table 3, avoidance coping partially accounted for the relationship between CSA duration and Davidson total (standardized β reduced from 0.23 to 0.17; Sobel=2.90, p=0.004), Davidson intrusive re-experiencing (standardized β reduced from 0.22 to 0.12; Sobel=2.54, p=0.011), and Davidson avoidance (standardized β reduced from 0.26 to 0.19; Sobel=2.85, p=0.004) in that the relationships between CSA duration and Davidson scores were smaller in the presence of avoidance coping. Avoidance coping fully mediated the relationship between CSA duration and Davidson hyperarousal (standardized β reduced from 0.13 to 0.05; Sobel=2.86, p=0.004), in that the direct relationship between CSA duration and Davidson hyperarousal was insignificant when avoidance coping was included in the model.

Similarly, behavioral disengagement partially accounted for the association between CSA duration and Davidson total (standardized β reduced from 0.23 to 0.18; Sobel=2.68, p=0.007) and Davidson avoidance (standardized β reduced from 0.26 to 0.21; Sobel=2.68, p=0.007). Behavioral disengagement only partially accounted for the relationship between CSA duration and Davidson intrusive re-experiencing (standardized β reduced from 0.22 to 0.19; Sobel=1.96, p=0.051). Resembling the effect of avoidance coping, behavioral disengagement fully accounted for the association between CSA duration and Davidson hyperarousal (standardized β reduced from 0.13 to 0.07; Sobel=2.73, p=0.006).

As post-hoc analyses, we completed similar models replacing CSA duration with estimated CSA frequency, based on the number of incidents of CSA endorsed by participants, rather than the span of time between the first and last incident. The significance of the relationships did not change in these models, compared to the reported models.

Discussion

This study is the first we are aware of to investigate the relationship between duration of CSA, avoidance coping strategies, and severity of adult PTSD symptoms in MSM with histories of CSA. Thirty-nine percent of this sample endorsed PTSD symptoms consistent with a PTSD diagnoses, confirmed with SCID interviewing. As expected, and consistent with existing theory (Walsh et al., 2010), our results indicate that longer duration of CSA was associated with greater avoidance coping, but CSA duration was not associated with adaptive coping. Behavioral disengagement, or the reduction in effortful engagement with a stressor, including potentially giving up on pursuit of stressor-related goals (Carver, Scheier, & Weintraub, 1989), was the only specific avoidance coping strategy associated with CSA duration. Consistent with findings in other populations (Filipas & Ullman, 2006; Huang, Zhang, Momartin, Huang, & Zhao, 2008; Johnson, Sheahan, & Chard, 2003; Ullman & Filipas, 2005; Ullman & Peter-Hagene, 2014), we identified relationships between longer CSA duration and higher current overall PTSD symptom severity, as well as all three symptom clusters: intrusive re-experiencing, avoidance, and hyperarousal.

When we examined whether avoidance coping strategies mediated the relationships between CSA duration and PTSD symptom severity, our results were more nuanced than, but consistent with, earlier investigations (e.g., Choi et al., 2015; Whiffen & MacIntosh, 2005; Shapiro & Levendosky, 1999). Specifically, avoidance coping fully accounted for the relationship between CSA and the hyperarousal symptoms in our sample of MSM. However, avoidance coping only partially accounted the relationship between CSA duration and overall PTSD symptom severity, as well as intrusive re-experiencing and avoidance symptom clusters. Together, these findings give us new insights into potential mechanisms of action that may lead to or perpetuate PTSD symptoms, including potentially varying relationships between coping strategies and PTSD symptom clusters among adult survivors of CSA, particularly MSM. Specifically, these findings indicate that among MSM with histories of CSA, an emphasis on engagement-focused coping, including behavioral activation, may be helpful in reducing adult PTSD symptomology. Longitudinal research is needed to investigate whether avoidance coping, particularly behavioral disengagement, mediates the relationship between CSA duration and PTSD symptom severity, both overall and specific symptom clusters. Additionally, behavioral disengagement, a type of avoidance coping that involves the reduction in engagement with a stressor or a stressor-related goal, was the only coping strategy directly associated with CSA duration. It fully mediated the relationship between CSA duration and hyperarousal and partially mediated the relationships between CSA duration and overall trauma symptom severity as well as intrusive re-experiencing and avoidance symptom clusters. These findings are consistent with evidence suggesting that victims of repeated CSA may initially utilize avoidance coping strategies to manage distress shortly after the abuse and continue through adulthood

(Brewin & Holmes, 2003). However, this avoidance coping strategy may then decrease in effectiveness in adulthood thereby perpetuating PTSD symptoms (Brewin & Holmes, 2003).

Unlike previous work, we did not find that denial, the second component in the avoidance coping subscale along with behavioral disengagement, was associated with PTSD symptom severity (Whiffen & MacIntosh, 2005; Shapiro & Levendosky, 1999; Rosenthal, Rasmussen Hall, Palm, Batten, & Follette, 2005). Our finding demonstrating that behavioral disengagement mediated the relationship between CSA duration and PTSD symptom severity may be attributable to longer exposure to CSA. For example, prolonged effortful attempts to extricate oneself from abuse may lead to overgeneralization of behavioral disengagement as a coping strategy, and perpetuation of PTSD symptoms. Further, as behavioral disengagement involves a reduction in one's effortful engagement with a stressor, potentially including the goal with which the stressor is interfering, it can be conceptualized as helplessness (Carver et al., 1989; Kaholokula et al., 2017). This maladaptive coping strategy offers temporary symptomatic relief; however, over time the increased passivity and effortful withdrawal may be detrimental to the recovery process.

Behavioral disengagement accounting for the relationship between CSA duration and PTSD symptom severity may be explained by a learned avoidance response. Those who experienced CSA over a longer duration may have learned to disengage or avoid, as they anticipated recurring negative outcomes, which may have resulted in a pattern that perpetuated the trauma-related symptoms (Brewin & Holmes, 2003). Notably, behavioral disengagement may have been adaptive in the context of CSA, including experiences a lack of control or power while potentially being dependent on the abuser (e.g., for food, shelter, etc.). Further, behavioral disengagement may be detrimental over time due to lack of active engagement in trauma recovery (Ullman & Peter-Hagene, 2014). Specifically, behavioral disengagement may fully account for the association between CSA duration and the hyperarousal symptom cluster due to the internalization of the experience of CSA being unavoidable, resulting in psychological distress eliciting heightened anxiety (Karakurt & Silver, 2014).

This work has several limitations and should therefore be considered an incremental contribution to the field. First, the sample included HIV-uninfected MSM who all reported recent sexual risk in addition to a history of CSA, limiting the generalizability of the findings. The measure of duration of CSA does not capture frequency or chronicity of abuse, rather the span of years between in the first and last episodes. To minimize triggering participants, participants were asked about a limited range of CSA episode frequency (up to ">15 times" before 13 years old and between 13 and 16 years old), resulting in a limited range of CSA episode frequency (1–30). Therefore, the frequency of CSA episode variable was truncated, which may not have captured the full range across participants. However, when we looked at the capped frequency measure, our findings did not significantly differ from analyses including the CSA duration variable (results not shown). Further, CSA was retrospectively reported and the data was collected cross-sectionally.

In conclusion, this is the first study we are aware of to demonstrate a relationship between duration of CSA and avoidance coping in a sample of MSM with histories of CSA, a

population disproportionately affected by CSA. Further, in this sample CSA duration was associated with overall PTSD symptom severity, as well as all three symptom clusters: intrusive re-experiencing, avoidance, and hyperarousal. Finally, our findings emphasize the role of behavioral disengagement, possibly indicative of learned avoidance, in the relationship between CSA duration and PTSD symptom severity among MSM with histories of CSA. Ultimately, this work emphasizes the need for clinicians to consider the role avoidance coping, specifically behavioral disengagement, in understanding the relationship between duration or severity of CSA and current PTSD symptom severity among MSM living with histories of CSA.

Acknowledgments:

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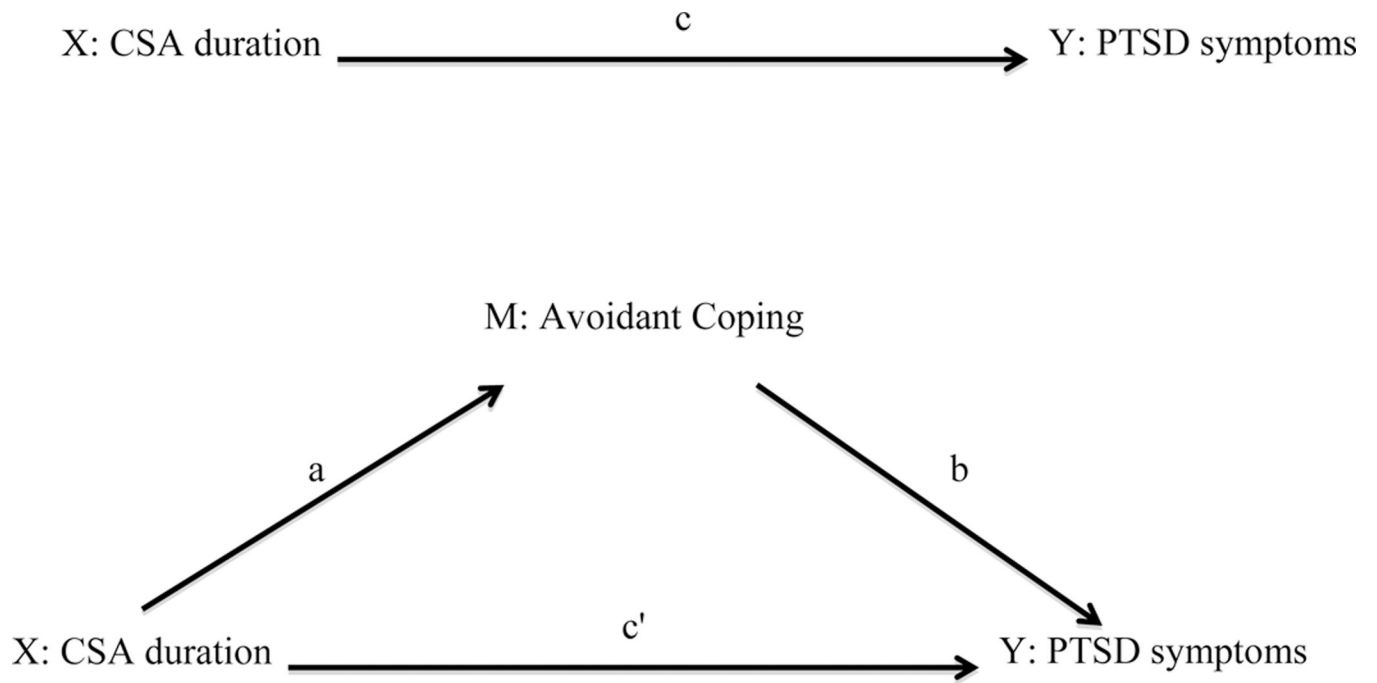X: CSA duration ———————— c ————————→ Y: PTSD symptoms

M: Avoidant Coping

a   b

X: CSA duration ———————— c' ————————→ Y: PTSD symptoms

Figure 1.
Conceptual Model of Indirect Effects

Table 1.

Sample Characteristics

Variable	n=290
Age (mean(SD))	37.95 (11.68) range 18–67
Race	
White	201 (67.9%)
Black	66 (22.3%)
Other	29 (9.8%)
Ethnicity	
Hispanic	87 (29.4%)
Education	
High school or GED	73 (24.7%)
Some college	106 (35.8%)
College degree (BA/BS)-Some graduate school	71 (24.0%)
Graduate degree	39 (13.2%)
Income	
$10,000	88 (29.7%)
$10,001-$20,000	66 (22.3%)
$20,001-$40,000	53 (17.9%)
$40,001	83 (28.0%)
PTSD	
Total (mean(SD))	34.5 (26.2) range 0–122
CSA Duration (mean(SD))	6.6 (4.7) years
Estimated CSA Frequency (mean(SD))	12.7 (10.0) events

Table 2.

Correlations between duration of childhood sexual abuse and coping strategies

Coping Strategy	CSA Duration (0–16 years)
Avoidant Coping Composite	0.204 (p=0.001)
Specific Coping Strategies	
Denial	0.062 (p=0.297)
Behavioral Disengagement	0.185 (p=0.002)

Table 3.

Summary of analyses examining indirect effects of duration of childhood sexual abuse on PTSD symptom profiles by coping strategies

Predictor	Mediator	Outcome	Step 1 Path c	Step 2 Path a	Step 3 Path b	Step 3 Path c'	Sobel
CSA duration	Avoidant Coping[1]	Davidson Total	0.23 p<0.000	0.19 p=0.002	0.29 p<0.000	0.17 p=0.004	2.90 p=0.004
CSA duration	Avoidant Coping[1]	Davidson Intrusive Re-experiencing	0.22 p<0.000	0.19 p=0.002	0.22 p<0.000	0.12 p=0.001	2.54 p=0.011
CSA duration	Avoidant Coping[1]	Davidson Avoidance	0.26 p<0.000	0.19 p=0.002	0.28 p<0.000	0.19 p=0.001	2.85 p=0.004
CSA duration	Avoidant Coping[1]	Davidson Hyperarousal	0.13 p=0.036	0.19 p=0.002	0.29 p<0.000	0.05 p=0.410	2.86 p=0.004
CSA duration	Behavioral Disengagement	Davidson Total	0.23 p<0.000	0.20 p=0.001	0.24 p<0.000	0.18 p=0.002	2.68 p=0.007
CSA duration	Behavioral Disengagement	Davidson Intrusive Re-experiencing	0.22 p<0.000	0.20 p=0.001	0.14 p=0.019	0.19 p=0.002	1.96 p=0.051
CSA duration	Behavioral Disengagement	Davidson Avoidance	0.26 p<0.000	0.20 p=0.001	0.24 p<0.000	0.21 p<0.000	2.68 p=0.007
CSA duration	Behavioral Disengagement	Davidson Hyperarousal	0.13 p=0.036	0.20 p=0.001	0.26 p<0.000	0.07 p=0.237	2.73 p=0.006

Table shows standardized coefficients. All models control for age, race (white, black, other), ethnicity, and education.

[1]Avoidant coping includes denial and behavioral disengagement.