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The Role of Protective Self-cognitions in the Relationship Between Childhood Trauma and Later Resource Loss

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Abstract

We examined a prospective model investigating posttraumatic stress disorder (PTSD) symptoms and protective self-cognitions (self-esteem and self-efficacy) with later resource loss among 402 inner-city women who experienced childhood abuse. We predicted that women with PTSD may fail to develop or sustain protective self-cognitions that could protect against future stress. Results from the hypothesized model suggest that child abuse was associated with greater PTSD symptoms and later resource loss. PTSD symptoms were also related to protective self-cognitions, which in turn were associated with less resource loss. We also examined an alternative model exploring the relationship between resource loss and later PTSD symptoms. Findings allude to the relationship of risk and resiliency variables among women with childhood trauma histories.

Childhood sexual abuse (CSA) and childhood physical abuse (CPA) are reported by as many as one in four individuals (Amodeo, Griffin, Fassler, Clay, & Ellis, 2006; Styron & Janoff-Bulman, 1997). The rates of child abuse are even higher among inner-city women (Hien & Bukszpan, 1999), many of whom experience both physical and sexual abuse (Schaaf & McCanne, 1998; Schumm, Stines, Hobfoll & Jackson, 2005; Schumm, Hobfoll, & Keogh, 2004). Numerous studies have established a relationship between child maltreatment and negative outcomes, including PTSD, depression, anxiety, sexual disturbances, and suicidal ideation (Beitchman et al., 1992; Boney-McCoy & Finkelhor, 1996; Duncan, Saunders, Kilpatrick, Hanson, & Resnick, 1996; Wind & Silvern, 1992). Furthermore, studies have shown that CPA and CSA are predictive of secondary victimization that can lead to maintenance and exacerbation of symptoms (Schaaf & McCanne, 1998, Schumm et al., 2005).

Less well-studied, but especially salient, is the long-term negative association of CSA and CPA on resource losses that are vital to individuals' well-being and even survival (Johnson, Palmieri, Jackson, & Hobfoll, 2007; Schumm et al. 2005). Hobfoll's (1989) Conservation of Resources (COR) theory posits that individuals have a basic motivation to obtain and protect resources. When successful at acquiring resources, individuals develop a resource pool that assists in coping with stressors when they arise. When such resources cannot be developed, individuals are not only more vulnerable to stress but subject to increasing vulnerability due to ongoing cycles of resource loss. Such losses may include energy resources such as time, interpersonal resources such as assistance from friends and co-workers, family resources

such as help with tasks at home, or material resources such as food or shelter. Over time, resource loss will decrease individuals' ability to cope and thrive following traumatic events, and indeed reduce their ability to cope with everyday challenges. So, whereas resource loss has been shown to be predictive of both the development and maintenance of PTSD symptoms (Arata, Picou, Johnson & McNally, 2000), as well as difficulties with relationships in the aftermath of trauma (Benotsch et al., 2000; Sutker, Davis, Uddo & Ditta, 1995), we were primarily interested in investigating the role of child abuse and subsequent PTSD on later resource loss. However, we also explored an alternative model investigating the role of child abuse and resource loss on later PTSD symptoms, to further assess the directionality of hypothesized pathways.

Child abuse in particular, may uniquely interfere with resource acquisition and maintenance. Childhood abuse disrupts the general environment in which children develop. Children who are abused are often subject to instability, are not taught appropriate interpersonal skills, or given necessary resources for safe and healthy living. Maltreatment has been theorized to interfere with healthy behavioral development in children and is related to difficulty regulating emotions (Maughan & Cicchetti, 2002). Furthermore, maltreatment is related to the adoption of deviant values (Brezina, 1998; Herrenkohl et al., 2003). The very nature of childhood trauma disrupts individuals' ability to learn resource acquisition processes, leaving children at a disadvantage for attaining future resources. For these reasons, we expect a direct impact of child abuse on resource loss, as it interferes with developmental and interpersonal processes necessary to acquire needed resources.

We also hypothesized that child abuse would lead to later resource losses through symptoms of PTSD, which inhibit healthy emotional regulation and lead to avoidance of important resource networks. Hobfoll (1991) views PTSD as a disorder that develops and is maintained by a rapid loss of material and psychosocial resources. When individuals face high levels of symptoms, they are less able to activate resource networks and effectively engage resource pools (Hobfoll, 1991; Johnson et al., 2007; Walter & Hobfoll, 2009). Benotsch et al. (2000) found that as resources decreased, PTSD symptoms increased over time in a longitudinal study of male and female Gulf War returnees. Consistent with these findings, we theorize that PTSD will serve as a partial mediator between childhood abuse and future resource loss, such that PTSD symptoms will interfere with effective resource investment and acquisition above what is already suffered from the trauma itself. However, losses have also been predictive of later PTSD, as loss of vital coping and tangible resources necessary to function in the face of trauma can make individuals vulnerable in the aftermath. Therefore, in our alternate model, we reversed loss and PTSD, to capture a different aspect of the relationship among these variables.

Childhood abuse may further impact resource loss through diminished protective self-cognitions, which abuse and general life experiences that often accompany abusive environments may affect. In this manner, women may not be able to preserve protective self-cognitions following abuse, particularly self-esteem and self-efficacy (Cascardi & O'leary, 1992; Orava, McLeod, & Sharpe, 1996). Self-efficacy, in the present study, is a generalized sense of personal ability or agency in managing their environment (Bandura, 1997). Generalized self-efficacy may be more important when considering resource losses across several domains, as resource investment and fostering of resource networks requires self-efficacy in many different areas. Self-esteem, however, is a sense of one's own worth and value (Blascovich & Tomaka, 1991). These variables are distinct, yet related. Self-esteem may aid in this process by giving one the beliefs that they deserve to take care of themselves by investing resources. Self-efficacy then allows them to believe that they can actually carry out these plans effectively. In this regard, these resources work together, but have distinct importance.

Supporting this pathway, studies examining the role of resource losses in the aftermath of trauma have shown that these protective self-cognitions limited future losses to the extent that women can preserve them (Bradley, Schwartz, & Kaslow, 2005; Schumm et al., 2005). As a result, women with greater protective self-cognitions will have greater success in many life spheres and this success can lead to resource acquisition. It follows that childhood abuse will often lead to diminished self-esteem and self-efficacy, and these protective self-cognitions, in turn, lead to more limited ability to obtain, foster, and protect resources. As such, the influence of child abuse on later resource reservoirs will occur through the deleterious impact of abuse on self-esteem and self-efficacy.

Finally, in addition to abuse directly impacting self-esteem and self-efficacy, abuse may influence these protective self-cognitions via its impact on PTSD symptoms. Specifically, PTSD symptoms may also act to decrease protective self-cognitions, as PTSD has been associated with reduced levels of internal psychological factors such as self-esteem (Vigil & Geary, 2008) and self-efficacy (Johansen et al., 2007). Benight and Bandura (2004) also contend that PTSD symptoms may be perceived as a failure to effectively manage emotions, which in turn, decreases self-efficacy as well as self-esteem (Cascardi & O'leary, 1992; Orava, McLeod, & Sharpe, 1996). Maintaining a sense of self-efficacy is critical, particularly because protective self-cognitions may be depleted by the actual experience of the trauma event and PTSD symptoms (Benight & Bandura, 2004). In this way, although we predict that child abuse and subsequent PTSD symptoms will be associated with more limited protective self-cognitions, to the extent women maintain self-esteem and self-efficacy they will be able to guard against resource loss.

The hypothesized model investigated the effects of child abuse on later resource loss while also prospectively examining the effects of PTSD and protective self-cognitions in this relationship during a period of 12 months in women's adult lives (see Figure 1). It is hypothesized that PTSD will serve as a partial pathway through which child abuse impacts later protective self-cognitions, and subsequent resource losses. We theorized that individuals with higher levels of PTSD will be more prone to resource losses, due to their lack of resource investment and avoidance of potential resource networks due to triggers. Further, due to the hypothesized negative impact of PTSD symptoms on later protective self-cognitions, we propose that those with fewer protective self-cognitions will have difficulty motivating their resource network to halt resource loss cycles. Similarly, those with higher levels of protective self-cognitions will be less likely to incur later loss of resources among women with histories of childhood abuse.

An alternative longitudinal model was conducted to explore the effects of child abuse on later PTSD symptoms while also examining the effects of resource loss and protective self-cognitions (see Figure 2). This model is similar to the hypothesized model, except that resource loss at baseline and PTSD symptoms at 12-month follow-up are used in the model. This model was tested to evaluate the theory behind the hypothesized model and to further examine relationships among model variables.

Method

Participants

Four hundred and two women from a medium-sized Midwestern city composed the sample for this study. Women were recruited from two locations, which included a hospital setting and a freestanding community center. Participants were 16-29 years of age and reported engaging in high risk behaviors for contracting HIV/AIDS and other sexually transmitted diseases. An additional inclusion criterion for this current study required that individuals

experienced at least one episode of childhood sexual or physical/emotional abuse before the age of 15.

Participants who met this abuse history criterion were, on average, 21.5 ($SD = 3.7$) years of age; and 55% had annual household incomes under \$10,000. Thirty-eight percent of the sample had some high school education, with an additional 32% earning a high school diploma. The large majority of the sample was single and had never been married, consisting of 89% of the respondents. African Americans constituted 65% of the sample, and European Americans constituted 29%. The remaining respondents were Hispanic, Asian, or of multi-ethnic backgrounds.

The participants were selected from a larger study of women's health. Of the 769 participants who were eligible, 402 (52%) who had complete follow-up data at 6 and 12 months were included in the final sample. Analyses comparing the final sample and those who did not complete both follow-ups showed no differences on any variables except ethnicity, $\chi^2 (2, N = 769) = 12.05, p < .01$, (some groups collapsed due to small cell size) and intervention group, $\chi^2 (2, N = 769) = 7.53, p < .05$. Specifically, African American women were more likely to have complete data than other ethnic groups (55% and 43% respectively) and participants in the control group were more likely to have complete data as compared to participants in the two intervention groups (58% control; 51% general health intervention; 46% HIV prevention intervention).

Measures

A self-report demographic questionnaire was used to collect information relating to age, race, educational level, marital status, and income level.

The Post-Traumatic Symptom Scale- Interview (PSS-I; Foa, Riggs, Dancu & Rothbaum, 1993) is a 17-item scale that contains items that correspond to PTSD symptom criteria found in the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition, text revision (*DSM-IV-TR*; American Psychiatric Association, 2000). The PSS-I assesses re-experiencing (5 items), avoidance (7 items), and hyperarousal (5 items) symptoms. Each symptom criterion is rated in terms of frequency or severity on a 0 (not at all) to 3 (very much) scale. Cronbach's alpha for current study was $\alpha = .92$.

The Child Trauma Questionnaire (Bernstein, Fink, Handelsman, Foote, Lovejoy, Wenzel, Sapareto, & Ruggiero, 1994) is a 28 item retrospective, self-report questionnaire primarily targeting child abuse under the age of 15 years. Each item is rated on a scale from 1 (never) to 5 (very often) and the relationship to the perpetrator is also asked. The Child Trauma Questionnaire has been shown to have good psychometric properties, including in community samples (Scher, Stein, Asmundson, McCreary, & Forde, 2004). Cronbach's alpha for this study was $\alpha = .94$ for sexual abuse and $\alpha = .82$ for physical/emotional abuse.

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) is a 10 item Likert scale measuring self-reported beliefs regarding one's self-esteem. The questions are answered on a 4 point scale with responses ranging from 0 (strongly agree) to 3 (strongly disagree) for a maximum score of 30, with higher scores reflecting greater self-esteem. The Rosenberg Self-Esteem Scale has been shown to be a valid and reliable measure of self-esteem (Blascovich & Tomaka, 1991). Cronbach's alpha for this analysis was $\alpha = .91$.

Schwarzer's General Perceived Self-Efficacy Scale (Schwarzer & Jerusalem, 1995) is a unidimensional 10 item scale that assesses self-reported beliefs regarding generalized ability to cope with various stressors and life demands. The questions are answered on a 7 point scale, ranging from 1 (not at all true) to 7 (exactly true) for a maximum score of 70, with

higher scores indicating greater self-esteem. The General Perceived Self-efficacy Scale has been widely used and psychometric properties of the scale have been well established (Scholz, Gutierrez-Dona, Sud, & Schwarzer, 2002). Cronbach's alpha for the current study was $\alpha = .85$.

Thirty-six resources relevant for inner-city women's lives were selected from the full Conservation of Resources-Evaluation (COR-E; Hobfoll & Lilly, 1993) 74-item measure. Selected items were piloted and used in previous studies. These 36 items were found to be a valid and reliable representation of loss with samples of inner-city women (e.g., Hobfoll et al., 2002; Walter & Hobfoll, 2009). Participants indicate how much loss they have experienced in the last month for each of the 36 items. The loss variables were rated on a scale from 1 (no loss or threat of loss) to 3 (a great deal of loss). Resource item categories included: energy resources (e.g. time or savings), general interpersonal resources (e.g. loyalty of friends), family resources (e.g. intimacy with spouse or partner) and material resources (e.g. adequate food).

Procedure

Women were recruited at two community clinics serving low-income populations. A female interviewer explained the content of the study and offered women \$25 for participating in interviews. Interviewers were trained in multicultural sensitivity by professional-level counseling and clinical supervisors. Interviewers followed a written protocol of an interview questionnaire. Study participants completed interviews at baseline, 6-month, and 12-month follow-up. Data from all three assessment time points were used for analysis. Specifically, the hypothesized model (Figure 1) includes the following variables: childhood abuse (baseline), PTSD symptoms (baseline), protective self-cognitions (6 months) and resource loss (12 months). The alternative model (Figure 2) utilizes the following variables: childhood abuse (baseline), resource loss (baseline), protective self-cognitions (6 months) and PTSD symptoms (12 months).

Once women were initially interviewed, they were then randomly assigned to 1 of 3 conditions in the Women's Health Empowerment Study: a small group, 6-session (1) communally oriented HIV prevention intervention, (2) general health promotion intervention control; or (3) a standard care control (for a further detailed description see Hobfoll et al., 2002). Groups generally consisted of 5-8 women each and discussed topics related to HIV/AIDS, negotiation skills, and physical and mental health.

Data Analysis

Structural equation modeling (SEM; see Bollen, 1989) with maximum likelihood estimation was done with EQS (Bentler, 1996) to test model-data fit. Two variables (material and family resources) were normalized using a square-root transformation. The model includes one free-to-float variable, which is the HIV-prevention group that participants belonged to in the larger HIV-prevention study. The group variable (baseline assessment) is not expected to be related to the outcome variables, as the groups were designed to reduce risk of HIV infection, but was included in the model as to confirm this prediction. Model fit was assessed through 3 indices with the respective suggested cut-offs: Comparative Fit Index (CFI) of .90 or larger, standardized root-mean square residual (SRMR) of .05 or less, and root mean square error of approximation (RMSEA) values of .08 or less. The model chi-square was also reported to further assess model fit.

Results

Hypothesized Model

Intercorrelations among model variables can be found in Table 1. Means and standard deviations for included variables are shown in Table 2. Results for the first hypothesized SEM model are shown in Figure 1. The model fit well: $\chi^2 = 107.60$, $p < .001$; CFI = .97; SRMR = .05; and RMSEA = .07 (90% CI = .05-.08). Power analyses were conducted according to recommendations set forth by MacCallum, Browne, and Sugawara (1996). Power for the test of close fit for the model was .94. All indicators were significant in the model and 4 of the 6 pathways were significant (see Table 3). Specifically, child abuse was significantly positively related to PTSD symptoms and resource loss but was not related to protective self-cognitions. Additionally, PTSD symptoms were significantly negatively related to protective self-cognitions but not associated with resource loss. Lastly, protective self-cognitions were significantly negatively related to resource loss. These results indicate that child abuse has a significant direct effect and indirect effect (through PTSD symptoms and protective self-cognitions) on later resource loss.

Although model fit indicators revealed that the model fit the data well, results from the Wald test were considered. The Wald test recommended dropping the two non-significant paths from the model. However, there was no theoretically sound reason to eliminate these paths and thus, the changes were not implemented. The only change to the final model is that the free-to-float group variable was dropped as this variable did not correlate with the outcome variables. The results reported are for the model without the group variable.

Alternative Model

Results for the alternative model are shown in Figure 2. This model also fit well: $\chi^2 = 63.75$, $p = .08$, *ns*; CFI = .99; SRMR = .04; and RMSEA = .04 (90% CI = .00-.06). Power for the test of close fit for the model was .91. All indicators were significant and only 2 of the 6 pathways were significant, demonstrating fewer relationships than shown in the hypothesized model (see Table 3). Specifically, child abuse was significantly positively related to resource loss, but was not directly related to PTSD. Resource loss was positively related to PTSD symptoms, but not significantly associated with protective self-cognitions. Finally, protective self-cognitions were not significantly related to PTSD symptoms. The overall findings of the model reveal an indirect relationship between child abuse and PTSD symptoms, through resource loss, but not through protective self-cognitions. The Wald and Lagrange tests were again considered for this model and no recommendations were made for altering paths that would significantly improve model fit. Again, the free-to-float group variable was dropped based on analysis results and results reflect the model without the group variable.

Discussion

We tested two models exploring the negative sequelae resulting from child abuse. The first prospective model investigated the association between PTSD symptoms, protective self-cognitions, and resource loss among women with histories of child abuse. The present study highlighted ways in which child abuse continues to impact women's lives both in terms of PTSD symptoms and resource losses years after the abuse. The overall model fit the data well, suggesting that child abuse, PTSD symptoms, and protective self-cognitions combine to contribute to women's later resource loss. More specifically, within the context of the model, child abuse was positively related to both PTSD symptoms and future resource loss. Results further showed that PTSD symptoms were negatively related to self-esteem and self-efficacy. In turn, self-esteem and self-efficacy were negatively associated with later resource

losses, suggesting that protective self-cognitions shield individuals against losses after the experience of child abuse. Our model suggests that the negative effects of PTSD symptoms on resource losses may be mitigated by protective self-cognitions, specifically self-efficacy and self-esteem. Such protective self-cognitions may directly empower women to continue to engage in their resource network regardless of their symptoms, yet more research is needed to help elucidate this finding. Further, as protective self-cognitions can be acquired and fostered in all populations, this may be of specific importance for vulnerable populations that do not have extensive resource networks.

It is important to note that two pathways were not significant, counter to our hypotheses, yet actually highlight the importance of the role of self-esteem and self-efficacy in PTSD. First, we hypothesized that self-esteem and self-efficacy would be directly impacted by child abuse history. However, this hypothesis was not supported, with self-esteem and self-efficacy predicted only by PTSD symptoms. This suggests that counter to our theory based on previous literature, it may be that the development of PTSD is paramount in predicting lowered level of protective self-cognitions, and not the experience of child abuse alone. Previous research supports the role of PTSD in this association (Schumm et al., 2005). It is likely, therefore, that unless women experience the symptoms of PTSD, they are able to retain levels of protective self-cognitions (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999).

Further, our hypothesized association between PTSD and later resource loss was non-significant. We know from previous literature that PTSD is generally predictive of later loss, and that losses are generally predictive of later PTSD symptoms (Hobfoll, 1991; Johnson et al., 2007; Walter & Hobfoll, 2009). Thus the present finding of no direct association between PTSD symptoms and later losses may be particularly important as this finding is inconsistent with previous research. However, our alternate model did show that losses were predictive of later PTSD, consistent with the same literature that suggests a potential cyclical nature of this relationship (Hobfoll, 1991; Johnson et al., 2007, Walter & Hobfoll, 2009), such that as symptoms rise, losses also rise, and vice versa. It is possible, however, that in the context of protective self-cognitions, the relationship between PTSD and later losses is mitigated. This suggests a need for further research investigating the potential difference in these pathways, such that for later losses, protective self-cognitions may ameliorate the effects of PTSD, yet the reverse may not be true. The loss of resources may not be effectively dealt with through these protective self-cognitions, and thus are predictive of later PTSD. More research is needed to investigate this potentially important finding.

Further comparing these models reveals a significant indirect path between child abuse and later resource loss, but not between child abuse and later PTSD symptoms. Despite good model fit indicators for both models, the hypothesized model not only demonstrates significant relationships between predictor and outcome variables, but reveals a series of indirect pathways that show how child abuse continues to affect the lives of women who experienced child abuse. Though, as previously suggested, it is important to note that these models may be looking at different aspects of a cyclical relationship, and thus it is important to consider the results of both models when considering the nature of the relationships among these variables.

The present study has a number of strengths. We utilized a sample of lower-income, racially diverse, urban women, who constitute an understudied and underserved population in the research literature (Saris & Johnston-Robledo, 2000). This is especially important as childhood abuse, PTSD symptoms, and resource losses are highly prevalent among this group (Hien & Bukszpan, 1999; Schumm et al., 2005; Schumm, Hobfoll, & Keogh, 2004). Resources are central to the day-to-day struggles of these women, making this research vital to illuminate points of intervention to buffer such losses. Results of the present study suggest

that future research should investigate intervention strategies that specifically work to increase protective self-cognitions such as self-esteem and self-efficacy in this population, in addition to reducing symptoms of PTSD. Taking this approach may effectively aid such women in mobilization and utilization of their resource networks.

The longitudinal nature of the present study is also noteworthy and assessed the relationships among variables over time in a large sample. Longitudinal data also allowed for the use of SEM, including use of an alternative model, which revealed specific directional relationships among variables. Further, inner-city, low-income women are an especially difficult population to reach, due to homelessness, lack of phone services, frequent re-location, and other circumstances associated with poverty. However, this sample is most in need of intervention from losses, as they likely have few resources to begin. An area of future research could explore this model with inner-city populations with and without trauma to see more clearly how trauma influences these factors among individuals with fewer resources.

In addition to strengths of the study, there are also limitations. The present study focused exclusively on the effects of child abuse. Although in the present study we were particularly interested in interpersonal childhood trauma, it may be that other types of trauma such as combat exposure, natural disasters, or motor vehicle accidents may not impact individuals in the same ways. We were unable to include additional trauma related characteristics that may be of importance for future research, such as time since trauma or repeated traumatization. Though these characteristics are important, the present study focus was on child abuse in general, and thus future studies may wish to replicate these findings with other populations. Future research should explore these models in individuals who were traumatized post-childhood. It is possible that traumas experienced in childhood differentially impact the development of coping strategies, and therefore, later protective self-cognitions. Also, despite a history of child abuse, rates of PTSD were fairly low in the sample.

Although our study was longitudinal it did not assess individuals immediately post-trauma. Thus, intervening processes may have occurred prior to the baseline assessment. Additionally, although our study examined a 1-year period in adult women's lives, the mean age of the sample was 21. Therefore, the findings may not represent how these factors influence individuals later in adulthood. Though research is needed to test our models in different populations, it is likely that such patterns will be consistent across trauma and age, as the influential role of resources has been tested across many different populations (e.g. Arata et al., 2000; Benotsch et al., 2000). Also, although we included the group intervention in our analyses to control for its effects, it is also possible that women in the intervention and intervention control group, as compared to those in the standard care group, received some element of social support that may have boosted their ability to acquire resources. Future research should investigate these pathways unique from an ongoing intervention project to mitigate this possibility. It should also be noted that due to attrition at follow-up, it is difficult to determine the generalizability of findings to the population of inner-city women with childhood trauma histories; however, analyses showed few differences between participants with complete and incomplete data alleviate this concern.

In conclusion, this study illustrated the vital role of protective self-cognitions in shielding individuals from resource losses resultant from child abuse and symptoms of PTSD. The findings of this study suggest that fostering protective self-cognitions in women with symptoms of PTSD following child abuse may be critical to the prevention of later losses. For inner-city women, a population in which losses may be extremely detrimental to survival, promoting protective self-cognitions may be a way of preventing cycles of loss and symptom exacerbation. Finally, the present study also suggests that PTSD symptoms

themselves are the primary route through which child abuse leads to lowered protective self-cognitions. Therefore, not only those with clinical levels of PTSD, but those with any symptoms may experience decreased protective self-cognitions, highlighting again the need for interventions aimed at increasing self-esteem and self-efficacy. The present study reinforces the importance of building on one's own protective self-cognitions in times of trauma and distress in order to prevent continued suffering from abuse.

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$\chi^2 = 107.60, p < .001$; CFI = .97; RMSEA = .07; SRMR = .05

Figure 1.

Structural equation model examining the effects of child abuse and PTSD symptoms on protective self-cognitions and resource loss ($N = 402$).

Note. Solid lines indicate significant pathways; dashed lines indicate non-significant pathways.

Intervention group not included in results for final model.

*** $p < .001$. ** $p < .01$, two-tailed.

$\chi^2 = 63.75, p = .08$; CFI = .99; RMSEA = .04; SRMR = .04

Figure 2.

Structural equation model examining the effects of child abuse and resource loss on protective self-cognitions and PTSD symptoms (N=360).

Note. Solid lines indicate significant pathways; dashed lines indicate non-significant pathways.

Intervention group not included in results for final model.

*** $p < .001$. ** $p < .01$, two-tailed.

Table 1

Intercorrelations among Model Factors

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.
1. CPA	1																	
2. CSA	.40	1																
3. Re-exp	.40	.39	1															
4. Avoid	.36	.35	.86	1														
5. Arousal	.41	.41	.85	.86	1													
6. 12 mo. Re-exp	.30	.25	.51	.47	.44	1												
7. 12 mo. Avoid	.31	.30	.49	.47	.48	.87	1											
8. 12 mo. Arousal	.32	.33	.48	.45	.49	.81	.84	1										
9. Energy loss	.25	.15	.21	.27	.25	.16	.15	.13	1									
10. Material loss	.17	.13	.17	.25	.22	.16	.16	.14	.70	1								
11. Family loss	.27	.17	.23	.32	.30	.23	.24	.23	.64	.61	1							
12. Interper. loss	.19	.17	.23	.34	.28	.25	.29	.24	.53	.55	.67	1						
13. 12 mo. Energy	.23	.16	.26	.30	.25	.25	.27	.25	.49	.39	.35	.31	1					
14. 12 mo. Material	.17	.14	.25	.27	.23	.25	.26	.25	.37	.46	.35	.28	.74	1				
15. 12 mo. Family	.25	.18	.28	.34	.30	.32	.36	.35	.29	.39	.49	.39	.60	.64	1			
16. 12 mo. Interper.	.24	.19	.27	.32	.30	.34	.37	.35	.29	.29	.36	.43	.50	.52	.63	1		
17. 6 mo. Esteem	-.15	-.18	-.27	-.31	-.29	-.32	-.37	-.30	-.15	-.22	-.25	-.29	-.20	-.25	-.31	-.32	1	
18. 6 mo. Efficacy	-.21	-.15	-.21	-.23	-.24	-.32	-.32	-.29	-.17	-.20	-.19	-.23	-.23	-.26	-.31	-.31	.60	1

Note. All correlations significant at $p < .01$. Variables measured at baseline unless otherwise noted.

CPA = child physical/emotional abuse; CSA = child sexual abuse; Re-exp = Re-experiencing symptoms; Avoid = Avoidance symptoms; Arousal = Hyperarousal symptoms; Interper. = Interpersonal resource loss.

Table 2

Means and Standard Deviations for Model Variables

Model variables	M	SD	Model variables	M	SD
Child physical/emotion abuse	7.76	5.21			
Child sexual abuse	3.35	5.84			
Baseline re-experiencing	1.90	3.32	12-month re-experiencing	1.22	2.76
Baseline avoidance	2.81	4.67	12-month avoidance	2.14	4.26
Baseline hyper-arousal	2.59	4.07	12-month hyper-arousal	1.58	3.39
Baseline energy loss	7.52	4.63	12-month energy loss	6.68	4.56
Baseline material loss	5.30	4.19	12-month material loss	4.43	4.02
Baseline family loss	3.07	3.08	12-month family loss	2.12	2.64
Baseline interpersonal loss	2.52	2.59	12-month interpersonal loss	2.05	2.34
6-month self-esteem	22.34	4.96			
6-month self-efficacy	54.61	9.47			

Table 3
Standardized Effects for Models

Exogenous variable and path	Direct effects	Indirect effects	Total effects
<i>Hypothesized Model</i>			
Child Abuse			
Child abuse to PTSD symptoms	.68***		.68***
Child abuse to protective self-cognitions	-.15	-.20	-.35
Child abuse to resource loss	.22**	.04	.26**
PTSD Symptoms			
PTSD symptoms to protective self-cognitions	-.30***		-.30***
PTSD symptoms to resource loss	.14	.09	.23
Protective self-cognitions			
Protective self-cognitions to resource loss	-.30***		-.30***
<i>Alternative Model</i>			
Child Abuse			
Child abuse to resource loss	.47***		.47***
Child abuse to protective self-cognitions	-.13	.00	-.13
Child abuse to PTSD symptoms	.10	-.01	.09
Resource Loss			
Resource Loss to protective self-cognitions	.02		.02
Resource Loss to PTSD symptoms	.29**	.01	.30***
Protective self-cognitions			
Protective self-cognitions to PTSD	-.26		-.26

Note.

*
 $p < .05$.

**
 $p < .05$.

 $p < .001$, two-tailed.