



Published in final edited form as:

J Abnorm Psychol. 2000 February ; 109(1): 20–25.

Prior Interpersonal Trauma: The Contribution to Current PTSD Symptoms in Female Rape Victims

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Abstract

The purpose of the current study was to disentangle the relationship of childhood sexual abuse and childhood physical abuse from prior adult sexual and physical victimization in predicting current posttraumatic stress disorder (PTSD) symptoms in recent rape victims. The participants were a community sample of 117 adult rape victims assessed within 1 month of a recent index rape for a history of child sexual abuse, child physical abuse, other adult sexual and physical victimization, and current PTSD symptoms. Results from path analyses showed that a history of child sexual abuse seems to increase vulnerability for adult sexual and physical victimization and appears to contribute to current PTSD symptoms within the cumulative context of other adult trauma.

Research has documented high rates of childhood physical and sexual abuse in clinical and nonclinical adult populations (Bryer, Nelson, Miller, & Krol, 1987; Carmen, Rieker, & Mills, 1984; Chu & Dill, 1990; Emslie & Rosenfeld, 1983; Husain & Chapel, 1983; Rosenfeld, 1979). Ranges from 25% to 40% have been reported in the literature for nonclinical samples of adult females (Finkelhor, Hotaling, Lewis, & Smith, 1990; Kohn, 1987; Wyatt, 1985). It has been acknowledged that a history of traumatic events can play an etiological role in triggering or maintaining psychological disorders across various domains of functioning (Chu, 1991). Specifically, research has identified significant links between histories of childhood traumatic events and increased prevalence of adult psychological problems (Bagley & Young, 1987; Briere & Runtz, 1988; Murphy et al., 1988), impaired sexual functioning (Gershenson, et al., 1989), and interpersonal problems (Kendall-Tackett & Simon, 1988; Russell, 1983; Wyatt & Newcomb, 1990).

A myriad of chronic problems leading to distress and dysfunction among adults have been noted among adult survivors of both childhood sexual abuse (Alter-Reid, Gibbs, Lachenmeyer, Sigal, & Massoth, 1986; Beitchman et al., 1992; Briere & Runtz, 1991; Browne & Finkelhor, 1986) and childhood physical abuse (Cloitre, Tardiff, Marzuk, Leon, & Portera, 1996). In particular, disproportionately high rates of childhood sexual abuse have been reported among certain groups of adult psychiatric patients (Chu, 1991). Posttraumatic stress disorder (PTSD) and dissociative disorders have been found to be the most frequently cited disorders associated with histories of childhood abuse (Kluft, 1985; Neumann, Houskamp, Pollock, & Briere, 1996; Putnam, Guroff, Silberman, Barban, & Post, 1986). Rates of PTSD among child survivors of child sexual abuse have been reported to range from 21% to 50% (Deblinger, McLeer, Atkins, Ralphe, & Foa, 1989; McLeer, Deblinger, Atkins, Foa, & Ralphe, 1988). Interestingly, studies of adult survivors of child sexual abuse have reported even higher PTSD rates, ranging from 72% to 100% (Donaldson & Gardner, 1985; Lindberg & Distad, 1985; Rodriguez, Ryan, Kemp, & Foy, 1997).

Although none of the theories of sexual revictimization have been empirically verified (Messman & Long, 1996), perhaps it is the cumulative effect of childhood traumatic events and subsequent victimization that results in the increased symptomatology observed among adult survivors of childhood abuse as compared with child survivors of childhood abuse (Cloitre et al., 1996; Follette, Polusny, Bechtle, & Naugle, 1996). Several studies have shown that a history of prior victimization is the single best predictor of subsequent victimization (Koss & Dinero, 1989; F. Norris & Johnson, 1988; F. Norris & Kaniasty, 1994). Subsequent victimization, in turn, has been shown to be the most significant predictor of lasting postcrime symptomatology (F. Norris & Kaniasty, 1994).

Studies with adult sexual assault victims have documented high rates of revictimization (Briere & Runtz, 1987; Ellis, Atkeson, & Calhoun, 1982; Fromuth, 1986; Gidycz, Coble, Latham, & Layman, 1993; Gidycz, Hanson, & Layman, 1995; Koss & Dinero, 1989; Marhoefer-Dvorak, Resick, Hutter, & Girelli, 1988; Roth, Wayland, & Woolsey, 1990; Sorenson, Siegel, Golding, & Stein, 1991). Retrospective studies of rape survivors report a high number of previous incidents of childhood and adult sexual assault (Briere & Runtz, 1988; Gershenson et al., 1989; Jackson, Calhoun, Amick, Madderer, & Habif, 1990; Kendall-Tackett & Simon, 1988; Russell, 1983; Wyatt & Newcomb, 1990). In addition, research has also shown that there is a higher prevalence of adult sexual assault among women reporting only physical abuse or physical abuse and sexual abuse than those reporting only sexual abuse, indicating the significance of physical abuse also as a potential risk factor for adult sexual assault (Cloitre et al., 1996). Studies with rape survivors have thus documented a clear relationship among victimization history, increased postrape pathology, and prolonged or compromised recovery (Frank & Anderson, 1987; Frank, Turner, Stewart, Jacob, & West, 1981; Kramer & Green, 1991; Roth et al., 1990).

It is clear that adult victimization is associated with prior victimization and that either one alone, or both in concert, pose a substantial threat to recovery from victimization. To further our understanding of these complexities, it is important to disentangle the independent and joint contributions of prior childhood traumatic events and subsequent victimization to the posttraumatic symptomatology in recent victims. Teasing apart the unique contributions of prior trauma history and subsequent victimization to current trauma pathology, in recent victims, is critical in order to determine the role of cumulative traumatic events in increasing vulnerability for the development of PTSD symptomatology (Yehuda et al., 1995). For instance, in a study with combat veterans, childhood physical abuse was found to be a risk factor in the development of combat-related PTSD (Bremner, Southwick, Johnson, Yehuda, & Charney, 1993).

The purpose of the current study was to disentangle the relationship of childhood sexual abuse and childhood physical abuse from prior adult sexual and physical victimization in predicting current PTSD symptoms in recent rape victims. While a number of factors proximal to the current assault (e.g., perceived life threat) contribute to posttraumatic symptomatology (Cluss, Boughton, Frank, Stewart, & West, 1983; Ellis et al., 1982; Girelli, Resick, Marhoefer-Dvorak, & Hutter, 1986; National Institute of Justice, 1987; J. Norris & Feldman-Summers, 1981; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993), the variance accounted for by these factors is small (6%; Kilpatrick et al., 1989). The addition of injury, rape, and two control variables (age, number of years since most recent crime) increases the explained variance to about 30% (Kilpatrick et al., 1989), leaving almost 70% variance unexplained. Indeed, it has been suggested that prior experience with violence and prior victimization may be significant variables in influencing the contribution of recent assault variables to current posttrauma symptoms (Girelli et al., 1986). Therefore, we focused on isolating the unique and combined contributions of prior interpersonal victimization in explaining the frequency of current PTSD

symptomatology following a recent sexual assault. A path analysis was performed to test the theoretical model presented in Figure 1.

Method

Participants

Participants ($N = 117$) were recruited through police, hospital, and victim service agencies as part of a National Institute of Mental Health study evaluating factors that are associated with recovery from recent rape (completed vaginal, oral, or anal penetrative assault; National Institute of Mental Health [NIMH], 1999). Police reports were made in 94% of the cases. After presenting a complete description of the study to the participants, we obtained written informed consent. We assessed participants within the first month after the rape and they programmed completed multiple self-report measures into a laptop computer. Eighteen participants were deleted from the path analyses because data on one or more of the measures tested in the model were incomplete.

Measures

History of Victimization Questionnaire (HVQ, NIMH, 1986)—The HVQ is a 56-item measure that extensively surveys childhood and adult exposure to sexual and physical victimization. In the present study, we used rational methods to create three subscales: Childhood Sexual Abuse, Childhood Physical Abuse, and Adult Victimization. The scores generated on these subscales were entered into the path analysis.

Childhood Sexual Abuse subscale—Two single items measured reports¹ of child sexual abuse. One item assessed sexual fondling committed by an adult when the participant was under 17 years of age. The second item assessed oral, anal, or vaginal penetrative assault committed by an adult when the participant was under 17 years of age. The items were originally endorsed on a 5-point scale and recoded on a 3-point rating scale as follows: 1 (*never*), 2 (*one to two times*), and 3 (*more than two times*). Scores for the two items were summed, and the internal consistency as measured by coefficient alpha was .65.

Childhood Physical Abuse subscale—To assess physical abuse, we created a 13-item scale by summing items that measured child physical abuse. Items ranged from being hit on the body with a fist to being hit with a belt, cord, stick or object on buttocks; to being hit in the face or head with a fist; being locked in a closet; being burned/scalded; or being thrown down stairs or against a wall. The items were endorsed on a 7-point scale and recoded on a 3-point rating scale as follows: 1 (*never*), 2 (*one to two times*), and 3 (*more than two times*). The scores on the 13 items were summed to get a total score with a coefficient alpha of .92.

Adult Victimization subscale—Participants were queried about the number of times they were exposed to high-magnitude, high-impact traumatic events during adulthood, excluding the current sexual assault: (a) rape/sodomy, (b) attempted rape/sodomy, (c) other nonrape sexual assault, (d) physical assault resulting in permanent injuries, (e) physical assault with minor injuries, and (f) attempted murder. The decision to combine both sexual and physical victimization items in the assessment of adult victimization was based on a review of literature that demonstrates that childhood sexual abuse victims are likely to undergo both sexual revictimization and physical revictimization as adults (Messman & Long, 1996). Items were rated on a frequency scale as follows: 1 (*none*), 2 (*one to three times*), and 3 (*more than three*

¹For clarity of language, the word *reports* is not used throughout the article in reference to victimization history variables. However, it should be understood that indexes of prior victimization serve only as reports because definitive evidence of prior victimization was not obtained.

times). Items were summed to yield an overall index of exposure to high-magnitude, high-impact traumatic events resulting in a total score with a coefficient alpha of .79.

PTSD Symptom Scale—Self Report (PSS–SR; Foa, Riggs, Dancu, & Rothbaum, 1993)—The PSS–SR consists of 17 self-report items that correspond to the symptoms of the diagnostic criteria for PTSD, as reported in the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM–III–R; American Psychiatric Association, 1987)*. Each symptom is rated for frequency on a 4-point scale. The total score is calculated as the sum of the frequency ratings for the items (total score range = 0–51). A score of less than 10 is considered mild or no PTSD symptoms; scores between 10 and 27 are indicative of moderate PTSD symptoms; and scores greater than 28 indicate severe PTSD symptoms. Parallel to the *DSM–III–R*, the items of the PTSD symptom scale are clustered into three areas: reexperiencing (4 items), avoidance (7 items), and arousal (6 items). The PSS–SR was used at all assessment points.

Results

Demographics of the Sample

The mean age of this sample was 29.2 years ($SD = 7.8$; range = 18–51). Average education was 12.6 years ($SD = 2.3$; range = 9–20). Sixty-two percent of the participants were single, 13% were married, and the remainder were separated or divorced. Sixty percent of the sample had earned less than \$5,000 in the last year. Seventy percent of the sample were African American, 27% were Caucasian, and 3% were Hispanic. The majority of the women (60%) had been raped by strangers, 12% by a very casual acquaintance, 4% by a date, 2% by a coworker, 11% by a friend, 2% by a boyfriend, and 9% by an ex-intimate partner.

Results of Path Analysis

We performed path analysis to test the theoretical model presented in Figure 1. All analyses were conducted using the SAS system's CALIS procedure (Hatcher, 1994). Continuous scores generated from the three rationally derived of Child Sexual Abuse, Child Physical Abuse, and Adult Victimization subscales (described under *Measures*) were tested for skewness. Skewness was evaluated by examining the absolute values of skewness and the shape of the distributions (Tabachnick & Fidell, 1996). The absolute values of skewness were between 0 and 1.4, and the shapes of the distributions were relatively normal. The scores for the three variables were then entered into the analysis along with the PSS scores. Descriptive statistics on all the variables are provided in Table 1. The analyses used the maximum likelihood method of parameter estimation, and all analyses were performed on the covariance matrix. The p value associated with the model chi-square test was 0.75 (for an ideal fit, the closer the p value is to 1.00, the better). The normed fit index (NFI; Bentler & Bonett, 1980) and the comparative fit index (CFI; Bentler, 1989) were used to assess goodness of fit of the model to the data. The indices may range in value from 0–1, where 0 represents the goodness of fit associated with a “null” model (one specifying that all variables are uncorrelated), and 1 represents the goodness of fit associated with a “saturated” model (a model with 0 degrees of freedom that perfectly reproduces the original covariance matrix). Because the theoretical model tested was a fully saturated model, both the Bentler CFI and the Bentler and Bonett NFI were a perfect 1.00.

A review of the standardized path coefficients from the test of the theoretical model showed that the path coefficients for (a) the path from child sexual abuse to other adult sexual and physical victimization and (b) the path from other adult sexual and physical victimization to current PTSD symptoms exceeded .32 in absolute magnitude, indicating that they were meaningful in size (Billings & Wroten, 1978). In addition, the t values for these two path coefficients proved to be statistically significant ($p < .001$). However, the path coefficients for

the paths going from child sexual abuse to current PTSD symptomatology, from child physical abuse to other adult sexual and physical victimization, and from child physical abuse to current PTSD symptomatology were less than .32 in absolute magnitude, and the t values for them were not statistically significant. A review of the stepwise multivariate Wald indexes showed that the deletion of the path from child sexual abuse to current PTSD symptomatology would lead to a small nonsignificant increase in the chi-square statistic, $\chi^2(1, N = 96) = 0.10, p < .75$, and provide the best fit to the model (Bentler CFI = 1.00; Bentler and Bonett NFI = 0.99). Deleting this path would be consistent with the literature demonstrating the finding that current PTSD symptomatology in victims of multiple prior trauma history seems to be a result of a cumulative effect of child sexual abuse and other traumas rather than child sexual abuse alone (Follette et al., 1996). A decision was therefore made to adopt this revised model as the final model (Figure 1). As per the recommendations made by MacCallum, Rozonowski, and Necowitz (1992), this model demonstrated the best overall fit of the data to the model and involved the least number of modifications. The absolute values for the path coefficients were nontrivial in magnitude, and the t statistics for each path coefficient exceeded 1.96. The analysis revealed R^2 values of .14 in current PTSD symptomatology and .27 in other adult sexual and physical victimization. These R^2 values for each endogenous variable were statistically significant and meaningful in size. Given the suggestion that a history of prior victimization may influence the contribution of recent-assault-related variables to current posttrauma symptoms (Girelli et al., 1986), we ran a separate analysis controlling for the perception of life threat as a moderator variable between adult victimization and current posttrauma symptoms. The analysis did not yield significant path coefficients, and the increase in explained variance in current posttrauma symptoms was not significant. This lends further strength to the findings that the cumulative effect of prior trauma seems to directly predict recent-rape-related posttrauma symptoms.

Discussion

The purpose of this study was to assess the relative contributions of childhood physical and sexual abuse in the prediction of prior adult victimization history and current posttraumatic symptomatology following a recent sexual assault. Path modeling procedures were used to test the relationships among these variables, and the final model met criteria for an ideal fit. The results showed that a higher rate of childhood sexual abuse was related to higher rates of subsequent adult sexual and physical victimization, which in turn contributed to the level of PTSD symptomatology following a recent rape. Childhood sexual abuse, but not childhood physical abuse, predicted subsequent exposure to high-impact, high-magnitude traumatic events, such as physical and sexual assault during adulthood. Apart from its link to subsequent adult victimization, childhood sexual abuse alone was not a significant independent predictor of current posttrauma PTSD symptomatology but was linked only indirectly to PTSD through its relationship with adult sexual and physical victimization. Childhood physical abuse alone was neither directly nor indirectly related to current posttrauma PTSD symptomatology.

These data are consistent with the emergent body of research highlighting the relationship between childhood sexual trauma and vulnerability to sexual and physical victimization during adulthood. Second, it appears that posttrauma PTSD symptomatology is attributable to the cumulative impact of childhood sexual trauma stressors and prior adult victimization rather than the impact of childhood sexual abuse alone. Finally, childhood sexual abuse posed a significantly greater risk for subsequent victimization and symptomatology than childhood physical abuse.

A critical question then is, What makes child sexual abuse survivors vulnerable to subsequent victimization during adulthood? On the basis of the clinical and descriptive literatures on childhood sexual abuse survivors, we can offer several hypotheses. One possible explanation

is that survivors of childhood sexual abuse have dysfunctional interpersonal schemas affecting perceptions of trust and safety that affect judgment and decision making with regard to risk appraisal in interpersonal situations. It is also possible that symptoms of unresolved traumatic stressors, including depression, dissociation, anxiety, posttraumatic stress symptoms and substance abuse may interfere with the cognitive appraisal of risk in potentially vulnerable situations or lessened ability to resist and defend themselves once in a situation. Further, depression, dissociation, and anxiety may very well moderate PTSD symptomatology independent of unresolved trauma issues. Common sequelae of childhood sexual abuse, such as difficulty modulating affect, engaging in inappropriate forms of self-soothing, and setting healthy interpersonal boundaries may set the stage for involvement in situations that increase the risk of victimization. It should also be noted that the majority of the sample in this study made less than \$5,000 per annum. Environmental stressors related to a low income level (e.g., unsafe housing) may have influenced the rates of revictimization in this study. Future studies could focus on delineating the role of these potential variables in mediating the link between childhood sexual abuse and subsequent victimization during adulthood.

One limitation of the present study was a lack of a large enough sample size to include these other important variables in the model that may mediate the increased vulnerability of child sexual abuse victims to adult interpersonal victimization. Also, the prior victimization data are retrospective and may suffer from recall bias leading to state-dependent overreporting of prior trauma (Sandberg, Lynn, & Green, 1994). Research has shown that emotion experienced at the time of retrieving a traumatic event influences what is remembered to a greater extent than the strength of the original emotion (Wessel & Merckelbach, 1994). Because the participants were recent rape victims, it is entirely possible that their current emotions at the time of assessment led to an overreporting of prior trauma experiences. However, other literature suggests that self-reports of past emotion are not always an accurate reflection of emotion actually experienced during the original event (Neisser & Harsch, 1992) and that past emotion correlates more strongly with remembering trauma details than does present emotion (Christianson & Loftus, 1990). Moreover, retrospective assessment using self-report measures of childhood victimization history has been found to be generally reliable, but when errors occur, they occur in the direction of underreporting of previous trauma (Widom & Morris, 1997; Widom & Shepard, 1996). Further, it had been reported that there is little evidence to link current psychiatric status with less reliable or less valid recall of early experiences (Brewin, Andrews, & Gotlib, 1993). Although it might be argued that our results have limited generalizability to a long-term posttrauma period, it has been demonstrated that most postassault recovery takes place within the first 3 months (Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992), thus making the study of short-term posttrauma period important.

Limitations of this study notwithstanding, the results of our study are consistent with other research (Follette et al., 1996) suggesting that to the extent that prior trauma history contributes to PTSD symptomatology in recent rape victims, its effects appear to be a cumulative result of child sexual abuse and adult interpersonal victimization. Thus, an assessment of prior trauma history symptoms can help clinicians identify clients at higher risk for subsequent victimization and development of PTSD.

Acknowledgments

This work was supported by National Institute of Mental Health Grant NIH-RO1-MH46992. We thank Katie Berezniak, Dana Cason, Kate Chard, Lisa Ellis, Terese Evans, Linda Housman, Michelle Myers, Lisa Parker, Gail Pickett, Monica Schnicke, and Terri Weaver for their assistance with clinical interviews for this article and the St. Louis Police Department and victim agencies in the city and county of St. Louis for their assistance in participant recruitment.

References

- Alter-Reid K, Gibbs MS, Lachenmeyer JR, Sigal J, Massoth MA. Sexual abuse of children: A review of the empirical findings. *Clinical Psychology Review* 1986;6:249–266.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 3rd. Washington DC: Author; 1987.
- Bagley C, Young L. Juvenile prostitution and child sexual abuse: A controlled study. *Canadian Journal of Community Mental Health* 1987;6:5–26.
- Beitchman JH, Zucker KJ, Hood JE, daCosta GA, Akman D, Cassavia E. A review of the long-term effects of child sexual abuse. *Child Abuse and Neglect* 1992;16:101–118. [PubMed: 1544021]
- Bentler, PM. EQS structural equations program manual. Los Angeles: BMDP Statistical Software; 1989.
- Bentler PM, Bonett DG. Significance tests and goodness-of-fit in the analysis of covariance structures. *Psychological Bulletin* 1980;88:588–606.
- Billings RS, Wroten SP. Use of path analysis in industrial/organizational psychology: Criticisms and suggestions. *Journal of Applied Psychology* 1978;63:677–688.
- Bremner JD, Southwick SM, Johnson DR, Yehuda R, Charney DS. Childhood physical abuse and combat related posttraumatic stress disorder in Vietnam veterans. *American Journal of Psychiatry* 1993;150:235–239. [PubMed: 8422073]
- Brewin CR, Andrews B, Gotlib IH. Psychopathology and early experience: A reappraisal of retrospective reports. *Psychological Bulletin* 1993;113:82–98. [PubMed: 8426875]
- Briere J, Runtz M. Post sexual abuse trauma: Data and implications for clinical practice. *Journal of Interpersonal Violence* 1987;2:367–379.
- Briere J, Runtz M. Symptomatology associated with childhood sexual victimization in a nonclinical adult sample. *Child Abuse and Neglect* 1988;12:51–59. [PubMed: 3365583]
- Briere, J.; Runtz, M. The long-term effects of sexual abuse: A review and synthesis. In: Briere, J., editor. *Treating victims of child sexual abuse*. San Francisco: Jossey-Bass; 1991.
- Browne A, Finkelhor D. Impact of child sexual abuse: A review of the research. *Psychological Bulletin* 1986;99:66–77. [PubMed: 3704036]
- Bryer JB, Nelson BA, Miller JB, Krol PA. Childhood sexual and physical abuse as factors in adult psychiatric illness. *American Journal of Psychiatry* 1987;144:1426–1430. [PubMed: 3674223]
- Carmen EH, Rieker PP, Mills T. Victims of violence and psychiatric illness. *American Journal of Psychiatry* 1984;141:378–383. [PubMed: 6703102]
- Christianson SA, Loftus EF. Some characteristics of people's traumatic memories. *Bulletin of the Psychonomic Society* 1990;28:195–198.
- Chu JA. The repetition compulsion revisited: Reliving the dissociated trauma. *Psychotherapy* 1991;28:327–332.
- Chu JA, Dill DL. Dissociative symptoms in relation to childhood physical and sexual abuse. *American Journal of Psychiatry* 1990;147:887–893. [PubMed: 2104510]
- Cloitre M, Tardiff K, Marzuk PM, Leon AC, Portera L. Childhood abuse and subsequent sexual assault among female inpatients. *Journal of Traumatic Stress* 1996;9:473–482. [PubMed: 8827650]
- Cluss PA, Boughton J, Frank LE, Stewart BD, West D. The rape victims: Psychological correlates of participation in the legal process. *Criminal Justice and Behavior* 1983;10:342–357.
- Deblinger E, McLeer SV, Atkins MS, Ralphe D, Foa E. Post-traumatic stress in sexually abused, physically abused, and non-abused children. *Child Abuse and Neglect* 1989;13:403–408. [PubMed: 2776048]
- Donaldson, M.; Gardner, J. Traumatic stress among women after childhood incest. In: Figley, C., editor. *Trauma and its wake*. New York: Brunner/Mazel; 1985.
- Ellis E, Atkeson BM, Calhoun K. An examination of differences between multiple- and single-incident victims of sexual assault. *Journal of Abnormal Psychology* 1982;91:221–224. [PubMed: 7096792]
- Emslie GJ, Rosenfeld A. Incest reported by childhood and adolescents hospitalized for severe psychiatric problems. *American Journal of Psychiatry* 1983;140:708–711. [PubMed: 6846628]

- Finkelhor D, Hotaling G, Lewis IA, Smith C. Sexual abuse in a national survey of adult men and women: prevalence, characteristics, and risk factors. *Child Abuse and Neglect* 1990;14:19–28. [PubMed: 2310970]
- Foa EB, Riggs DS, Dancu CV, Rothbaum BO. Reliability and validity of a brief instrument for assessing post-traumatic stress disorder. *Journal of Traumatic Stress* 1993;6:459–473.
- Follette VM, Polusny MA, Bechtle AE, Naugle AE. Cumulative trauma: The impact of child sexual abuse, adult sexual assault, and spouse abuse. *Journal of Traumatic Stress* 1996;9:25–35. [PubMed: 8750449]
- Frank E, Anderson BP. Psychiatric disorders in rape victims: Past history and current symptomatology. *Comprehensive Psychiatry* 1987;28:77–82. [PubMed: 3802802]
- Frank E, Turner SM, Stewart BD, Jacob J, West D. Past psychiatric symptoms and the response to sexual assault. *Comprehensive Psychiatry* 1981;22:479–487. [PubMed: 7187868]
- Fromuth ME. The relationship of childhood sexual abuse with later psychological and sexual adjustment in a sample of college women. *Child Abuse and Neglect* 1986;10:5–15. [PubMed: 3955429]
- Gershenson HP, Musick JS, Ruch-Ross HS, Magee V, Rubino KK, Rosenberg D. The prevalence of coercive sexual experience among teenage mothers. *Journal of Interpersonal Violence* 1989;4:204–219.
- Gidycz CA, Coble CN, Latham L, Layman MJ. A sexual assault experience in adulthood and prior victimization experiences: A prospective analysis. *Psychology of Women Quarterly* 1993;17:151–168.
- Gidycz CA, Hanson K, Layman MJ. A prospective analysis of the relationships among sexual assault experiences. An extension of previous findings. *Psychology of Women Quarterly* 1995;19:5–29.
- Girelli SA, Resick PA, Marhoefer-Dvorak S, Hutter CK. Subjective distress and violence during rape: Their effects on long-term fear. *Victims and Violence* 1986;1:35–45.
- Hatcher, L. A step-by-step approach to using the SAS system for factor analysis and structural equation modeling. Cary, NC: SAS Institute; 1994.
- Husain A, Chapel JL. History of incest in girls admitted to a psychiatric hospital. *American Journal of Psychiatry* 1983;144:591–593. [PubMed: 6846589]
- Jackson JL, Calhoun KS, Amick AE, Madderer HM, Habif VL. Young adult women who report childhood intrafamilial sexual abuse: Subsequent adjustment. *Archives of Sexual Behavior* 1990;19:211–221. [PubMed: 2360872]
- Kendall-Tackett K, Simon A. Molestation and the onset of puberty: Data from 365 adults molested as children. *Child Abuse and Neglect* 1988;12:73–81. [PubMed: 3365584]
- Kilpatrick DG, Saunders BE, Amick-McMullan A, Best CL, Veronen LJ, Resnick HS. Victim and crime factors associated with the development of crime-related post-traumatic stress disorder. *Behavior Therapy* 1989;20:199–214.
- Kluft, RP. Childhood antecedents of multiple personality. Kluft, RP., editor. Washington DC: American Psychiatric Press; 1985.
- Kohn A. Shattered innocence. *Psychology Today* 1987;21:54–58.
- Koss MP, Dinero TE. Discriminant analysis of risk factors for sexual victimization among a national sample of college women. *Journal of Consulting and Clinical Psychology* 1989;57:242–250. [PubMed: 2708612]
- Kramer TL, Green BL. Posttraumatic stress disorder as an early response to sexual assault. *Journal of Interpersonal Violence* 1991;6:160–173.
- Lindberg FH, Distad LJ. Post-traumatic stress disorders in women who experienced childhood incest. *Child Abuse and Neglect* 1985;9:329–334. [PubMed: 4052838]
- MacCallum RC, Roznowski M, Necowitz LB. Model modifications in covariance structure analysis: The problem of capitalization on chance. *Psychological Bulletin* 1992;111:490–504. [PubMed: 16250105]
- Marhoefer-Dvorak S, Resick P, Hutter CK, Girelli SA. Single versus multiple-incident rape victims. *Journal of Interpersonal Violence* 1988;3:145–160.
- McLeer SV, Deblinger E, Atkins MS, Foa EB, Ralphe DL. Post-traumatic stress disorder in sexually abused children. *American Academy of Child and Adolescent Psychiatry* 1988;27:650–654.

- Messman TL, Long PJ. Child sexual abuse and its relationship to revictimization in adult women: A review. *Clinical Psychology Review* 1996;16:397–420.
- Murphy SM, Kilpatrick DG, Amick-McMullan A, Veronen LJ, Paduhovich J, Best CL, Villeponteaux LA, Saunders BE. Current psychological functioning of child sexual assault survivors. *Journal of Interpersonal Violence* 1988;3:55–79.
- National Institute of Justice. NIJ Final Rep No 84-IJ-CX-0039. Washington, DC: Author; 1987. The psychological impact of crime: A study of randomly surveyed crime victims.
- National Institute of Mental Health. NIMH Final Rep No NIH-RO1-MH37296. Washington, DC: Author; 1986. Psychological reactions of victims of rape or robbery.
- National Institute of Mental Health. NIMH Final Rep No NIH-RO1-MH46992. Washington. DC: Author; 1999. Cognitive processes in PTSD: Etiology and treatment.
- Neisser, U.; Harsch, N. Phantom flashbulbs: False recollections of hearing the news about Challenger. In: Winograd, E.; Neisser, U., editors. *Affect and accuracy in recall: Studies of “flashbulb” memories*. Cambridge, England: Cambridge University Press; 1992.
- Neumann DA, Houskamp BM, Pollock VE, Briere J. The long-term sequelae of childhood sexual abuse in women: A meta-analytic review. *Child Maltreatment* 1996;1:6–16.
- Norris F, Johnson K. The effects of “self-help” precautionary measures on criminal victimization and fear. *Journal of Urban Affairs* 1988;10:161–181.
- Norris F, Kaniasty K. Psychological distress following criminal victimization in the general population: Cross-sectional, longitudinal, and prospective analyses. *Journal of Consulting and Clinical Psychology* 1994;62:111–123. [PubMed: 8034813]
- Norris J, Feldman-Summers S. Factors related to the psychological impacts of rape on the victim. *Journal of Abnormal Psychology* 1981;90:562–567. [PubMed: 7320325]
- Putnam FW, Guroff JJ, Silberman EK, Barban L, Post RM. The clinical phenomenology of multiple personality disorder: Review of 100 cases. *Journal of Clinical Psychiatry* 1986;47:285–293. [PubMed: 3711025]
- Resnick HS, Kilpatrick DG, Dansky BS, Saunders BE, Best CL. Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology* 1993;61:984–991. [PubMed: 8113499]
- Rodriguez N, Ryan SW, Kemp HV, Foy D. Posttraumatic stress disorder in adult female survivors of childhood sexual abuse: A comparison study. *Journal of Consulting and Clinical Psychology* 1997;65:53–59. [PubMed: 9103734]
- Rosenfeld AA. Incidence of a history of incest among 18 female psychiatric inpatients. *American Journal of Psychiatry* 1979;136:791–795. [PubMed: 443462]
- Roth S, Wayland K, Woolsey M. Victimization history and victim-assailant relationship as factors in recovery from sexual assault. *Journal of Traumatic Stress* 1990;3:169–180.
- Rothbaum BO, Foa EB, Riggs DS, Murdock T, Walsh W. A prospective examination of post-traumatic stress disorder in rape victims. *Journal of Traumatic Stress* 1992;5:455–475.
- Russell D. The incidence and prevalence of intrafamilial and extrafamilial sexual abuse of female children. *Child Abuse and Neglect* 1983;7:133–146. [PubMed: 6605793]
- Sandberg, D.; Lynn, SJ.; Green, JP. Sexual abuse and revictimization: Mastery, dysfunctional learning, and dissociation. In: Lynn, SJ.; Rhue, JW., editors. *Dissociation: Clinical and theoretical perspectives*. New York: Guilford Press; 1994.
- Sorenson SB, Siegel JM, Golding JM, Stein JA. Repeated sexual victimization. *Violence and Victims* 1991;6:299–308. [PubMed: 1822699]
- Tabachnick, BG.; Fidell, LS. *Using multivariate statistics*. 3rd. New York: HarperCollins; 1996.
- Wessel I, Merckelbach H. Characteristics of traumatic memories in normal Subjects. *Behavioural & Cognitive Psychotherapy* 1994;22:315–324.
- Widom CS, Morris S. Accuracy of adult recollections of childhood victimization: II. Childhood sexual abuse. *Psychological Assessment* 1997;9:34–46.
- Widom CS, Shepard RL. Accuracy of adult recollections of childhood victimization: I. Childhood physical abuse. *Psychological Assessment* 1996;8:412–421.

- Wyatt GE. The sexual abuse of Afro-American and White-American women in childhood. *Child Abuse and Neglect* 1985;9:507–519. [PubMed: 4084830]
- Wyatt GE, Newcomb M. Internal and external mediators of women's sexual abuse in childhood. *Journal of Consulting and Clinical Psychology* 1990;58:758–767. [PubMed: 2292625]
- Yehuda R, Kahana B, Schmeidler J, Southwick SM, Wilson S, Giller EL. Impact of cumulative lifetime trauma and recent stress on current posttraumatic stress disorder symptoms in holocaust survivors. *American Journal of Psychiatry* 1995;152:1815–1818. [PubMed: 8526254]

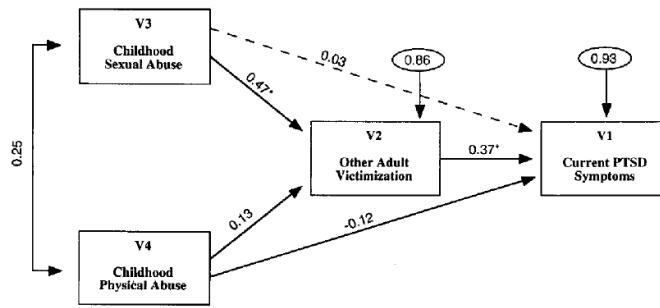


Figure 1. Path analysis indexes for the final revised model of prior trauma history. Standardized path coefficients appear on single-headed straight arrows; correlations appear on double-headed curved arrows. The dotted line represents the path that was deleted from the initial theoretical model. PTSD = posttraumatic stress disorder. * $p < .01$.

Table 1
Means, Standard Deviations, and Intercorrelations for the Initial Model of Prior Interpersonal Trauma History

Measure	<i>M</i>	<i>SD</i>	1	2	3	4
1. Child sexual abuse	3.28	1.44	—			
2. Child physical abuse	18.91	6.02	.25	—		
3. Adult sexual and physical victimization	9.12	2.57	.50*	.25	—	
4. Current PTSD symptomatology	32.14	14.99	.19	-.01	.36*	—

Note. *N* = 96. PTSD = posttraumatic stress disorder.

* $p < .01$.