Published in final edited form as:

Child Abuse Negl. 2009 July ; 33(7): 412–420. doi:10.1016/j.chiabu.2008.09.013.

Sexual and Physical Revictimization Among Victims of Severe Childhood Sexual Abuse

Jaclyn E. Barnes, MA,

Cincinnati Children's Hospital Cincinnati, Ohio

Jennie G. Noll, Ph.D.,

Cincinnati Children's Hospital Cincinnati, Ohio

Frank W. Putnam, Ph.D., and

Cincinnati Children's Hospital Cincinnati, Ohio

Penelope K. Trickett, Ph.D.

University of Southern California Los Angeles, California

Abstract

Objective—This fifteen year prospective, longitudinal study examines adolescent and young-adult female self-reports of traumatic sexual and physical experiences occurring subsequent to substantiated childhood sexual abuse—revictimizations (N=89).

Method—These incidences were contrasted to sexual and physical victimizations reported by a group of non-abused comparison females (N=90).

Results—Abused females were almost twice as likely to have experienced sexual revictimization (Odds = 1.99 ± 2.79 , $p < .05$), and physical revictimization (Odds = 1.96 ± 2.58 , $p < .05$) as compared to victimization rates reported by comparison females. Abused females' revictimizations were also more likely to have been perpetrated by older, non-peers and characterized by physical injury than were victimizations reported by comparison females.

Conclusion—Early childhood sexual abuse may provide information regarding the level of risk for recurrent sexual and physical victimization.

Keywords

childhood sexual abuse; revictimization; rape; assault

Introduction

More than 18% of women responding to a U.S. Department of Justice (DOJ) and Centers for Disease Control and Prevention (CDC) national survey reported that they had been sexually or physically assaulted at some point during their lives (Tjaden & Thoennes, 1998). Findings from this survey also suggest that females are at particular risk for victimization in the adolescent years with 54% of these women having been assaulted before the age of 18, and

Corresponding Author & Reprint Requests: Jaclyn E. Barnes, MA Cincinnati Children's Hospital 3333 Burnet Ave. Mail Location 3008 Cincinnati, Ohio 45229 Fax (513)636–2460 Phone (513)636–0042 Jaclyn.Barnes@chmcc.org.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

22% having been assaulted before the age of 12. Other research has reported that up to 35% of adolescents have experienced forms of dating violence including insults, threats, and intimidation (Carver, Joyner, & Udry, 2003), and 10–20% of adolescents reported more severe forms of dating violence such as physical and sexual assaults or forced sex (Center for Disease Control and Prevention, 2000). Over one-third of 10–16 year olds in a national survey reported having been victims of an assault by a peer or non-peer (Boney-McCoy & Finkelhor, 1995b). Thus, a substantial portion of our female youth experience significant physical or sexual victimization (defined as intimate partner violence, rape, or attempted rape by a peer or non-peer) by the time they reach adulthood.

Women with histories of physical and sexual victimization are especially vulnerable to future victimization (for review see Classen, Palesh, & Aggarwal, 2005). Physical or sexual abuse prior to age 18 seems to pose a particular risk (Breitenbecher, 2001; Breitenbecher & Gidycz, 1998; Desai, Arias, Thompson, & Basile, 2002; Noll, Horowitz, Bonanno, Trickett, & Putnam, 2003; Roodman & Clum, 2001; Sorenson, Siegel, Golding, & Stein, 1991). Females with childhood sexual abuse histories have reported rates of subsequent sexual or physical victimization at 3 to 5 times greater than females who do not report such histories, with revictimization often occurring before the end of high school (Boney-McCoy & Finkelhor, 1995a; Gidycz, Coble, Latham, & Layman, 1993; Krahe, Scheinberger-Olwig, Waizenhofer, & Kolpin, 1999; Noll et al., 2003; Wekerle & Avgoustis, 2003). Moreover, women with histories of childhood physical and sexual abuse have reported up to 3.5 times greater incidences of domestic and intimate-partner violence in young-adulthood than women who have not experienced childhood abuse (Coid et al., 2001; West, Williams, & Siegel, 2000; White & Widom, 2003; Wyatt, Guthrie, & Notgrass, 1992).

Deleterious outcomes attributable to the experience of childhood sexual abuse are numerous and span a multitude of psychological, social, and physiological domains (see reviews, Beitchman, Zucker, Hood, DaCosta, & Akman, 1991; Bonanno, Noll, Putnam, O'Neill, & Trickett, 2003; Carter, Bewell, Blackmore, & Woodside, 2006; Cicchetti & Lynch, 1995; Feiring, Taska, & Lewis, 2002; Fergusson, Horwood, & Lynskey, 1996; Kendler et al., 2000; Thornberry, Ireland, & Smith, 2001; Trickett & McBride-Chang, 1995). Several of these outcomes are also risk factors for sexual and physical victimization in the general population of adolescents and young adults who did not necessarily experience childhood sexual abuse (Davies & Frawley, 1994; Messman-Moore & Long, 2003). For example, low self esteem (Tyler, 2002), alcohol and substance abuse (Bryer, Nelson, Miller, & Krol, 1987), depression (Kendler et al., 2000), dissociation (Weiss, Longhurst, & Mazure, 1999), sexual permissiveness (Steel & Herlitz, 2005; Van Dorn et al., 2005), and delinquent/violent behavior (Merrill et al., 1999) have been upheld as both sequelae of childhood sexual abuse and risk factors for rape, domestic violence, and peer violence. The unique experience of *sexual* abuse seems to place victims at particular risk for subsequent victimization (Coid et al., 2001; Desai et al., 2002; Himelein, 1995; Maker, Kemmelmeier, & Peterson, 2001; Mandoki & Burkhart, 1989; Merrill et al., 1999; Noll et al., 2003; West et al., 2000; Widom & Kuhns, 1996). Thus, some have argued that sexual victimization during childhood is among the strongest predictors of continued victimization in adolescence and young adulthood, and should be upheld as a chief distal risk factor, especially for females (Casey & Nurius, 2005; Merrill et al., 1999; Siegel & Williams, 2003; Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004).

Methodological Concerns with Past Research

The extent to which continued victimization is a substantial problem for child sexual abuse survivors also remains a bit unclear because much of what we know about revictimization rates comes from retrospective studies of adult victims recalling childhood sexual abuse (e.g., Arata, 1999; Cloitre, Cancienne, Brodsky, Dulit, & Perry, 1996; Merrill et al., 1999; Stermac, Reist,

Addison, & Millar, 2002; Urquiza & Goodlin-Jones, 1994). Limitations of retrospective studies include (1) cross-sectional designs which make the temporal distinction of events difficult to ascertain (e.g., Arata, 2000; Classen, Field, Koopman, Nevill-Manning, & Spiegel, 2001; Koss & Dinero, 1989; Maker et al., 2001; Mandoki & Burkhart, 1989; Mayall & Gold, 1995), (2) the absence of childhood abuse substantiation and/or corroboration with social services (e.g., Arata, 2000; C. Classen et al., 2001; Krahe et al., 1999), (3) revictimization reports utilizing one-time-only, single-item assessment tools, making it difficult to ascertain the reliability of reporting, the subjective severity of the offence, and any of the details surrounding the events, (e.g., Bryer et al., 1987), and (4) the possibility that there is retrospective underreporting of childhood abuse among known victims (Fergusson, Horwood, & Woodward, 2000; Widom & Morris, 1997).

The few prospective longitudinal studies (e.g., Gidycz et al., 1993; Gidycz, Hanson, & Layman, 1995; Greene & Navarro, 1998; West et al., 2000; Widom & Kuhns, 1996) report wide variations in rates revictimization (10.5% – 30.0%). While these designs constitute substantial methodological improvements over retrospective designs, several methodological problems persist in several of these studies. For example, the attrition rates in several of these studies are relatively high ranging from 67.9% (Greene & Navarro, 1998) to 24.1% (Widom & Kuhns, 1996) which may introduce bias and limit generalizability. Some studies neither include a comparison group (Orcutt, Cooper, & Garcia, 2005; Rich, Gidycz, Warkentin, Loh, & Weiland, 2005) nor take into account possible confounding demographic variables (West et al., 2000), or do not rely on substantiated childhood abuse (i.e., utilizing self-reports; Orcutt et al., 2005). Often studies lack substantial lag time between baseline and follow-up assessments (e.g., 9 weeks, (Gidycz et al., 1993; Gidycz et al., 1995), to 8 or 9 months, (Greene & Navarro, 1998; Messman-Moore, Brown, & Koelsch, 2005) making it difficult to accurately estimate the rate of revictimization that may occur with a greater passage of time. Based on several critiques of both retrospective and prospective revictimization studies (Mayall & Gold, 1995; Roodman & Clum, 2001), clear, concise, and replicable criteria defining childhood sexual abuse as well as incidences of revictimization are generally lacking in extant research. In essence, the definitive long-term, prospective, longitudinal study of revictimization rates reported by victims of childhood abuse has yet to be accomplished.

The Present Study

Thus, the present study is one attempt to improve on past research in order to provide solid evidence for revictimization for females who have experienced childhood sexual abuse and to provide a more accurate picture of the rates and characteristics of both physical and sexual revictimization. Comprehensive trauma histories were assessed in late adolescence and young-adulthood during an 18-year longitudinal prospective study of the long-term effects of childhood sexual abuse on female development. We hypothesized that participants who experienced childhood sexual abuse would report higher rates of sexual and physical revictimizations (or victimizations occurring *subsequent* to their referring abuse) as compared to the occurrence of any victimization reported by a group of their non-abused peers. Given evidence that child sexual abuse earlier in life predicts more traumatic and significant sexual assaults and other deleterious outcomes later in life (Barnett, Manly, & Cicchetti, 1993; Cicchetti & Rogosch, 1997; Maker et al., 2001) we hypothesized that abused females would also experience subsequent physical victimizations and sexual and physical revictimizations at younger ages and suffer more non-peer (versus peer) and contact/injury (versus non-contact/non-injury) revictimizations as compared to victimizations reported by comparison females.

This sample has been reported on previously in a 2003 analysis focusing on sexual revictimization and self-harm (Noll et al., 2003) but the present series of analyses is unique in that it (1) incorporates six (as opposed to four) time-points constituting an *update* on

victimization rates in young-adulthood, (2) focuses on both sexual *and* physical victimizations and (3) includes data regarding the validity of the Comprehensive Trauma Interview (CTI) and the accuracy of retrospective reports of childhood abuse as compared to substantiated caseworker reports.

Methods

Participants

Females with substantiated childhood sexual abuse (N=93) participated in an 18-year longitudinal study. Initial eligibility criteria for inclusion were (a) the victim was female, age 6–16 years; (b) disclosure of referring abuse occurred within 6 months of the event; (c) sexual abuse involved genital contact or penetration; (d) the perpetrator was a family member, including parent, stepparent, or mother's live-in boyfriend, or other relative (e.g., older sibling, uncle, grandparent); and (e) a non-abusing parent or guardian (usually the child's mother) was willing to participate in the study. The majority (90.4%) were referred by child protective service (CPS) agencies where the sexual abuse was substantiated (enough credible evidence existed for CPS to confirm that child abuse occurred) and the remaining 9.6% (N=9) were cases in which sexual abuse was indicated (according to CPS definitions child abuse occurred but was unable to be fully confirmed). CPS records indicated that the median age at abuse onset was 7.8 years, the median duration was 24 months, 70% experienced vaginal and/or anal penetration, and 60% of perpetrators were the primary father figure (biological fathers, step fathers or mother's live-in boyfriends). These abuse characteristics were similar to comparable information reported in the 1988 National Incidence Study (NIS-2) (National Center of Child Abuse and Neglect, 1988).

Comparison females (N= 96) were recruited via advertisements in newspapers and posters in welfare, daycare, and community facilities in the same neighborhoods in which the abused participants lived. Comparison families contacted study personnel and were screened for eligibility which included having no prior contact with protective service agencies and being demographically similar to a same-aged abused female. Comparison and abused females were similar in terms of residing zip codes, racial/ethnic group, age, pre-disclosure socioeconomic status, family constellation (one or two parent families), and other non-sexual traumatic events. At some point after entry into the study, 2 comparison females revealed some form of sexual abuse and were dropped from the study resulting in a comparison sample of 94.

Fifty-four percent of the sample was Caucasian, 43% African American, 2% Hispanic, and 1% Asian American. The sample ranged from low to middle socioeconomic status (SES), with mean Hollingshead-II scores of approximately 36 (defined as “blue collar” or working class). The average age at the most recent interview (i.e., last reporting of traumatic histories) was 24.64 years. Table 1 demonstrates that there were no statistical differences across groups regarding these demographic variables.

Study Design and Procedures

The assessment design of the study was cross-sequential in nature—i.e., recruiting participants representing a cross-section of development and following this cross-section over time longitudinally. As illustrated in Table 1, the study began in 1987 (Time 1) when participants were mean age of 11.06 years (SD=3.23). Two follow-up assessments (Times 2 and 3; not included in the present analyses) were conducted at 1-year intervals after the initial assessment. Subsequent to Time 3, three follow-up assessments were conducted (Times 4 through 6). For purposes of the present investigation, we focus on comprehensive assessments of histories of traumatic events that were performed at Times 4 through 6 when participants reached late adolescence to early adulthood and were able to concurrently and retrospectively report on

traumatic life events. Over 96% of the sample was retained for these follow-up assessments (abused=89; comparison=90) and were mean age 24.14 (SD=3.43) on the last occasion that they were interviewed (i.e., the oldest age at which trauma histories were obtained).

Caregivers provided consent for female participants who were under the age of 18, those 18 and over signed for themselves, and those under 18 also provided assent. All participants were awarded monetary compensation at a rate put forth by the National Institutes of Health Normal Volunteer Office. Assessments were completed in 2–3 hour sessions by female trained clinical interviewers. The study received approval from the University Institutional Review Board and a Federal Certificate of Confidentiality. Participants were paid approximately \$15/hour as compensation.

Measures

Description of the Comprehensive Trauma Interview (CTI)—At Times 4 through 6 traumatic life-event histories were assessed via the Comprehensive Trauma Interview (CTI; Noll et al., 2003) which was developed as a semi-structured interview to elicit factual information concerning traumatic or upsetting life events as well as subjective responses to those events. The CTI is based on similar interviews previously tested with adolescents (Krinsley et al., 1994) but is greatly expanded with respect to the assessment of details of traumatic experiences, the ability to place traumatic experiences in developmental context, and subjective distress rating of each traumatic experience. The first section of the CTI requests that participants describe the “worst” or “most upsetting” traumatic event they have experienced in their lifetime. Participants then provide their subjective rating of this traumatic event from 1 (“not upsetting at all”) to 5 (“the most upset I have been”). The CTI then queries specific traumatic experiences across several domains including (a) separations and losses such as significant changes in residence, others becoming very sick or dying, or others with drug or alcohol problems; (b) physical and/or medical neglect; (c) emotional abuse or significant rejection from family members; (d) physical abuse; (e) other physical harm including being mugged, physical assault, domestic partner assault; (f) self-inflicted harm including suicide attempts; (g) sexual abuse and/or assault; (h) natural disasters; and (i) witnessing violence including domestic violence, serious accidents, or being close to someone who was seriously hurt. The CTI also includes several detailed follow-up questions for each traumatic experience including (a) ages and identification of perpetrators; (b) ages at occurrence of events (or age at onset and offset in cases of long periods of exposure to a trauma such as childhood abuse); (c) frequency of occurrence (e.g., daily, monthly, etc.); and (d) extent of victimization (e.g., contact vs. non-contact; injury vs. non-injury). Participants also provide subjective distress ratings for each individual traumatic experience (“1” = not upsetting at all; “5” = the most upset I have been). As a means to anchor these subjective ratings relative to an experience identified as upsetting, participants are reminded of the rating they assigned to their “worst” or “most upsetting” event reported in the initial section of the CTI.

CTI Reliability and Validity—In the current sample of sexually abused females, 9 out of 89 did not report that they had been sexually abused at any of the CTI assessments constituting a false negative rate of (10.11%). This rate is substantially lower than rates reported in other studies (19–50%) where participants are asked about abuse known to be substantiated (Fergusson, Horwood, & Woodward, 2000; Goodman et al., 2003; Widom & Morris, 1997; Williams, 1994). We also quantified abused females’ ability to accurately recall and report the details and characteristics of their substantiated abuse as compared to details included in the original caseworker reports. Of those who did report abuse when queried (N= 80) all (100%) were in agreement with caseworker reports regarding the identification of the referring perpetrator. Intra-class Kappa coefficients were $K=.70$ ($p<.01$) for agreement with respect to severity (i.e., penetration vs. genital contact), $K=.85$ ($p<.001$) regarding the age at abuse onset

(± 1 year), and $K=.87$ ($p<.001$) regarding the age when the abuse stopped (± 1 year). The level of agreement we detected between caseworker and victim reports indicates that, in general, abuse victims had moderate to excellent recall accuracy (Viera & Garrett, 2005) of specific events related to childhood abuse occurring 10–15 years prior.

For an indication of the test-retest reliability of the CTI, we quantified the extent of agreement across the Time 4 and Time 5 administrations (occurring approximately 2 years apart). Kappa coefficients for sexual victimization (e.g., $K=.76$; $p<.001$) and for physical victimization (e.g., $K=.51$; $p<.001$) show moderate to substantial accuracy when asked if ever sexually or physically victimized. These coefficients are somewhat larger than those that have been reported in past studies documenting the stability of sexual and physical victimization reporting over roughly the same span of time for a similarly-aged cohort (e.g., $K=.45-.47$; Fergusson et al., 2000). Concerning the details of the sexual victimization, all (100%) of participants' reports were in agreement regarding the identification of the perpetrator, $K=.90$ ($p<.001$) agreement with respect to severity (i.e., penetration vs. genital contact), $K=.99$ ($p<.001$) regarding the age at abuse onset (± 1 year), and $K=.97$ ($p<.001$) regarding the age when the abuse stopped (± 1 year) revealing almost absolute agreement from Time 4 to Time 5 when using the CTI. Concerning the details of physical victimization, all (100%) of participants' reports were in agreement regarding the identification of the perpetrator, $K=.90$ ($p<.001$) agreement with respect to frequency (i.e., "one time" to "more than 20 times"), $K=.99$ ($p<.001$) regarding the age at abuse onset (± 1 year), and $K=.97$ ($p<.001$) regarding the age when the abuse stopped (± 1 year) revealing almost absolute agreement from Time 4 to Time 5 when using the CTI.

Use of the CTI in the Current Study—The current set of analyses focuses exclusively on the sexual and physical victimization histories of females. Physical victimization was defined as physical harm including being beaten, mugged, or physically assaulted. Sexual victimization was defined as unwanted sexual violations. Only traumatic experiences with subjective upset ratings greater than or equal to 4 were included in the present analyses as these were deemed "significantly traumatic" relative to events subjectively rated 3 or below.

For the abused females, only those sexual and physical victimizations occurring *subsequent* to the referring abuse (i.e., that which qualified them for entry into the study) were analyzed. Because the primary objective of the current analysis was to describe risk for revictimization we were careful to ensure that analyses reflect victimization for the sexually abused females occurring subsequent to the referring sexual abuse. The substantiated referring sexual abuse established the criteria for entering the study and a baseline, or a starting point, from which to quantify subsequent increased risk for sexual and physical trauma. That is, any reports of physical victimization occurring prior to the referring sexual abuse were not included in revictimization analyses. Hence, the characterization of subsequent victimizations for females in the abused group constitute (re)victimization in all cases of subsequent trauma. This is an important distinction given that our focus is on the long-term sequelae of sexual abuse and the ways in which the first substantiated sexual trauma places females at particular risk for an any number of victimization to follow (Beitchman et al., 1991; Coid et al., 2001; West et al., 2000). Therefore, all traumatic experiences (both physical and sexual) for the abused females can be characterized as accounts of revictimizations whereas victimizations for the comparison females included any and all reported sexual and physical victimizations. Henceforth, we will use the term (re)victimization to refer to the sexual and physical traumatic events analyzed because this term encompasses both the revictimizations reported by abused females and *all* victimizations reported by non-abused females.

Classifying (Re)victimization—For those who reported being (re)victimized, the details of all reported incidences were examined more closely in order to discern group differences regarding the characteristics and types of (re)victimizations. Several dichotomous variables

were created to define the peer, non-peer, and contact/injury aspects of (re)victimization. *Non-peer* (re)victimizations were defined as perpetrators four or more years older than victims who were under 18 at the time of the affront (i.e., in most jurisdictions defined as child **abuse**). *Peer* (re)victimizations were defined as perpetrators within four years of age of victims under 18 or any incident for victims over 18 at the time of the affront (i.e., in most jurisdictions defined as **assault**). These variables were coded as “1” = ever experienced peer/non-peer (re)victimization; “0” = never experienced peer/non-peer (re)victimization). It should be noted that all (re)victimizations were examined to create these variables and thus participants could have experienced both peer and non-peer (re)victimizations necessitating the creation two separate, and independent, dichotomies. *Contact sexual* (re)victimization was defined as genital contact/fondling or penetration (versus harassment, exposure to genitals or pornography, or attempted rape). *Injury physical* (re)victimization was defined as physical affronts leaving marks, resulting in injury, or requiring medical attention. These variables were coded as “1” = ever experienced contact/injury or “0” = never experienced contact/injury. Finally, the *ages at first and second* sexual and physical (re)victimizations were also examined.

Results

All analyses were performed using SAS version 9.13. Correlational analyses revealed that several outcome variables were correlated with demographic variables. For example, minority status was correlated with sexual peer (re)victimization ($r(177) = -.14, p < .05$). Age at last interview was correlated with sexual (re)victimization ($r(177) = .16, p < .05$), physical (re)victimization ($r(177) = .21, p < .01$), sexual peer (re)victimization ($r(177) = .19, p < .01$), physical peer (re)victimization ($r(177) = .31, p < .001$), age at first sexual (re)victimization ($r(177) = .34, p < .01$), and age at first physical (re)victimization ($r(177) = .22, p < .05$). Therefore, in all subsequent analyses, minority status, age at last interview, and socioeconomic status, were used as covariates. With covariates included, group main effect differences in dichotomous outcome variables (e.g., sexual (re)victimization versus no sexual (re)victimization) were analyzed using logistic regression to estimate the likelihood of experiencing the outcome based on group membership. Also with covariates included, group main effect differences in continuous outcomes (e.g. age at first (re)victimization) were evaluated via individual F-tests in ANOVA.

Table 2 includes results of the Logistic and GLM analyses. Results indicated that the percentages of reported sexual and physical (re)victimizations were significantly higher for abused females than for comparison females. Abused females were $1.99 (\pm 2.79, p < .05)$ times more likely to have experienced sexual (re)victimization, and $1.96 (\pm 2.58, p < .05)$ times more likely to have experienced physical (re)victimization than were comparison females. For those experiencing sexual (re)victimizations ($n=58$; abused=36; comparison=22), abused females were $3.03 (\pm 6.04, p < .01)$ times more likely to have experienced non-peer sexual (re)victimization than were comparison females. Significant group main effects were not found for peer or contact sexual (re)victimizations. For those experiencing physical (re)victimizations ($n=98$; abused=61; comparison=37), abused females were $2.26 (\pm 3.51, p < .05)$ times more likely to have experience peer physical (re)victimization, $2.53 (\pm 3.58, p < .01)$ times more likely to have experience non-peer physical (re)victimization, and $3.21 (\pm 5.25, p < .01)$ times more likely to have experienced injury during physical (re)victimizations than were comparison females. Post hoc analyses were conducted where all victimization occurring prior to age 18 were categorized by peer versus non-peer victimizations. Results mirrored those reported (above) for overall revictimizations in that abused females reported significantly more non-peer sexual and physical revictimizations.

The age at first sexual (re)victimization was not significantly different across groups. However, for those reporting a second sexual (re)victimization ($n=23$; abused=15; comparison=8) abused

females reported significantly younger ages by an average of 4.7 years ($F(1, 20)=3.39, p<.05$). There were no significant differences in age at first or second physical (re)victimizations across groups.

Discussion

The purpose of this study was to examine the rates and characteristics of sexual and physical victimizations occurring subsequent to substantiated familial childhood sexual abuse. In contrast to a group who did not experience childhood sexual abuse, sexually abused females were almost twice as likely to have been sexually and physically (re)victimized. For females who were sexually abused in childhood, subsequent perpetrators were more likely to have been non-peers (i.e., at least 4 years older) and physical (re)victimizations were more likely to have resulted in injury. Hence, childhood sexual abuse appears to place females at substantial risk for experiencing subsequent victimizations that are relatively severe as compared to victimizations reported by females who did not experience childhood abuse.

The study also reports substantial accuracy in abuse victims' reporting of past, substantiated sexual abuse as corroborated by protective service records. Indeed, after almost fifteen years, reports of sexual abuse and characteristics such as perpetrator identity and variables indicative of severity were recalled and reported with relative accuracy. Moreover, retrospective reporting of subsequent physical and sexual (re)victimizations were markedly stable in test-retest assessments over approximately two years. The instrumentation utilized (the Comprehensive Trauma Interview) is unique in that, relative to other trauma history questionnaires, it queries several important characteristics of traumatic events and requires subjective appraisals relative to the "worst or most upsetting" event experienced. The use of this type of comprehensive instrumentation, and the assessment of such details, will likely advance our collective knowledge regarding the relative impact of specific types of traumatic events and the differential impact of those that may be subjectively judged as more "severe".

Results reported here are somewhat consistent with past research (Fergusson et al., 2000), however the design of the present study constitutes notable methodological improvements. First, the design is prospective in that childhood sexual abuse was objectively obtained and, by definition, occurred prior to subsequent victimization. Hence, subsequent victimization can truly be characterized as (re)victimization for childhood abuse survivors in this study. This is an important distinction given the substantiation difficulties and other problems inherent with retrospective reports of childhood abuse that characterize much of the extant previous research reporting a link between childhood abuse and later victimizations. Although reports of subsequent victimizations were obtained retrospectively in our study design, this was done so relatively proximal to their occurrence, on up to three separate occasions within a few years of one another, and with considerable stability in reporting. Second, victimization histories of sexually abused females were contrasted to those of a demographically similar non-abused group who were followed prospectively over the same course of time.

We acknowledge several caveats to our approach and possible limitations to generalization. Different results might have emerged if the sample had different contextual boundaries. For example, this sample was drawn from a Mid-Atlantic metropolitan region with specific ethnic and cultural characteristics. Hence the large, inner city environment may have been inordinately dangerous resulting in higher rates of crime and opportunities for victimization. In order to provide some homogeneity within the sample of abused females, childhood sexual abuse was limited to reported familial abuse (i.e., biological fathers, uncles, older siblings, grandparents) with 70% experiencing penetration. Thus, due to the severity of the sexual abuse experienced generalizability of the results may be limited to those experiencing more severe abuse. Abused females were accompanied by a non-abusing caregiver who was presumably

supportive and able to participate in the study. Hence the abused group may be under-represented by more chaotic families or those victims who were not believed or supported by non-abusing caregivers. The present study did not address the issue of individual differences in (re)victimization within the abused sample, the predictive power of co-morbid conditions, or the extent to which childhood sexual abuse is in-and-of-itself a unique contributor to (re) victimization when in company with other types of childhood adversity (although some demographic variables were controlled by design and as statistical covariates).

We did, however, consider whether the experience of physical abuse occurring prior to (or simultaneous with) the baseline assessments of the referring sexual abuse might place victims at increased risk for (re)victimizations. Based on the reported age at the onset of each type of abuse, we conducted a set of post-hoc analyses where multiple group contrasts were tested in the logistic and ANOVA models presented in Table 2. In these post-hoc models, three groups were contrasted; (Grp1) those who did not experience physical abuse prior to the referring sexual abuse (N=73), (Grp2) those who did experience physical abuse prior to the referring sexual abuse (N=16), and (Grp3) those in the comparison group (N=90). Post-hoc Helmert contrasts indicated that physical abuse prior to the referring sexual abuse (Grp2) was a significant predictor (Odds Ratio = 3.13, $p < .01$) of non-peer physical (re)victimizations above and beyond the experience of sexual abuse alone (Grp1). In other words the experience of both types of abuse placed victims at increased risk for subsequent non-peer physical abuses whereas the experience of sexual abuse alone increases risk for sexual (re)victimizations and peer physical (re)victimizations (mirroring results presented in Table 2). These post-hoc results should be interpreted with caution in light of the small sample size of those who experienced both types of abuse (N=16) and should be subjected to replication.

Future research would benefit from inclusion of likely predictors and alternative explanatory variables (including the co-occurrence of other forms of childhood abuse such as physical abuse) in order to better inform prevention and intervention models designed to curtail sexual and physical (re)victimization in adolescent and young-adult females. For example, does early traumatic victimization result in an increased acceptance of powerlessness, self-blame and victim-stigmatization leading to impaired coping behaviors that are consistent with the vulnerability of continued victimization (Finkelhor & Browne, 1985; Hazzard, 1993; Koss & Dinero, 1989)? How does low self-esteem, a commonly reported sequelae of childhood sexual abuse (Finkelhor & Browne, 1985; Trickett, Noll, Reiffman, & Putnam, 2001), modulate sex in dating relationships (Marx, Van Wie, & Gross, 1996) or place victims at risk for accepting abusive behavior and being prepared to stay with abusive boyfriends (MacLeod, 1987)? What characterizes victims who are inordinately vulnerable to victimization (Koss, 1985; Marx et al., 1996) or who are most likely to confuse sex with intimacy, have difficulty gleaning non-sexual rewards from romantic attachments, utilize sex as a means of gaining attention, and engage in behaviors that are easily misinterpreted by partners as indications sexual consent (Lundberg-Love & Geffner, 1989; Noll, Trickett, & Putnam, 2000)? What are the characteristics of females who continue to be victimized (e.g., aggression, hostility, the tendency to perpetrate violence against a romantic partner) that are precipitants to physical victimization and domestic violence (Capaldi & Clark, 1998; Downs, Smyth, & Miller, 1996; Horwitz, Widom, McLaughlin, & White, 2001; Marx et al., 1996)? Finally, does early trauma result in impaired victim response strategies such as poor recognition of potential danger (Marx, Calhoun, Wilson, Meyerson, & Brit, 1998; Wilson, Calhoun, & Bernat, 1999; Muehlenhard & Linton, 1987) or the use of illicit substances and alcohol that increase victim vulnerability (Abbey, 1991; Koss & Dinero, 1989; Norris & Cubbins, 1992)?

Results from this study highlight increasing concern for the economic impact of childhood adversity. It is becoming clear that the effects of multiple or continued victimizations may have far-reaching public health consequences. The negative effects of repeated victimizations have

been shown to be pervasive and cumulative (Dube et al., 2001; Felitti et al., 1998), increasing victims' risk for a host of mental and physical health problems (Dong et al., 2004; Edwards, 2003), early and increased addiction to illicit drugs (Dong, Anda, Dube, Giles, & Felitti, 2003), HIV and other STD infection (Hillis, Anda, Felitti, & Marchbanks, 2001), and deleterious physiological health outcomes such as smoking, alcohol and drug abuse, obesity, poor diet, physical inactivity, risk for ischemic heart disease, pulmonary disease, and cancer (Dong et al., 2003; Felitti et al., 1998). Hence the various effects of multiple victimizations constitute a large but theoretically preventable source of population *attributable risk* (i.e., the amount of disease or injury that could be eliminated if the risk factor never occurred) for a host of public health problems. As such, intervention and treatment programs for childhood abuse survivors should be viewed as both primary (targeting general risk-factors in order to prevent the occurrence of a condition) and secondary (targeting a high-risk or sub-clinical group in order to prevent the development of a condition) efforts (Teutsch & Harris, 2003). It should be noted that the role of perpetrators contributes substantially to the variance of revictimization and that further study of perpetrator characteristic and behavior is warranted. Knowledge gained from such studies would facilitate the successful design of programs targeting vulnerable victim populations.

Risk reduction programs selectively targeting child abuse victims will likely (1) show increased efficacy over programs designed for non-victims who are at lower risk for continued victimization, (2) increase the probability that members of the targeted high-risk group will have access to the program due to a pre-existing substantial infrastructure for delivery (e.g., child advocacy centers), and (3) offer a pathway for development and validation of large scale, universal prevention efforts targeting victimization and violence related risk-factors such as substance abuse, delinquency, and high-risk sexual activities.

References

- Abbey, A. Misperceptions as an antecedent of acquaintance rape: A consequence rape of ambiguity in communication between women and men.. In: Parrot, A.; Bechhofer, L., editors. *Acquaintance rape: The hidden crime*. John Wiley & Sons; New York: 1991. p. 96-111.
- Arata CM. Coping with rape: The roles of prior sexual abuse and attributions of blame. *Journal of Interpersonal Violence* 1999;14:62-78.
- Arata CM. From child victim to adult victim: A model for predicting sexual revictimization. *Child Maltreatment* 2000;5(1):28-38. [PubMed: 11232060]
- Barnett, D.; Manly, JT.; Cicchetti, D. Defining child maltreatment: The interface between policy and research.. In: Cicchetti, D.; Toth, SL., editors. *Child abuse, child development, and social policy*. Ablex; Norwood, NJ: 1993. p. 7-73.
- Beitchman JH, Zucker KJ, Hood JE, DaCosta GA, Akman D. A review of the short-term effects of child sexual abuse. *Child Abuse & Neglect* 1991;15(4):537-556. [PubMed: 1959086]
- Bonanno GA, Noll JG, Putnam FW, O'Neill M, Trickett PK. Predicting the Willingness to Disclose Childhood Sexual Abuse From Measures of Repressive Coping and Dissociative Tendencies. *Child Maltreatment: Journal of the American Professional Society on the Abuse of Children* 2003;8(4):302-318.
- Boney-McCoy S, Finkelhor D. Prior victimization: A risk factor for child sexual abuse and for PTSD-related symptomatology among sexually abused youth. *Child Abuse & Neglect* 1995a;19(12):1401-1421. [PubMed: 8777692]
- Boney-McCoy S, Finkelhor D. Psychosocial sequelae of violent victimization in a national youth sample. *Journal of Consulting & Clinical Psychology* 1995b;63(5):726-736. [PubMed: 7593865]
- Breitenbecher KH. Sexual revictimization among women: A review of the literature focusing on empirical investigations. *Aggression and Violent Behavior* 2001;6:415-432.
- Breitenbecher KH, Gidycz CA. An empirical evaluation of a program designed to reduce the risk of multiple sexual victimization. *Journal of Interpersonal Violence* 1998;13(4):472-488.

- 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(11):1426–1430. [PubMed: 3674223]
- Capaldi DM, Clark S. Prospective family predictors of aggression toward female partners for at risk young men. *Developmental Psychology* 1998;34:1175–1188. [PubMed: 9823503]
- Carter JC, Bewell C, Blackmore E, Woodside DB. The impact of childhood sexual abuse in anorexia nervosa. *Child Abuse & Neglect* 2006;30(3):257–269. [PubMed: 16524628]
- Carver, K.; Joyner, K.; Udry, JR. National estimates of adolescent romantic relationships.. In: Florsheim, P., editor. *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications*. Department of Psychology; University of Utah: 2003. p. 23-56.
- Casey EA, Nurius PS. Trauma exposure and sexual revictimization risk. *Violence Against Women* 2005;11(4):505–530. [PubMed: 16043560]
- Center for Disease Control and Prevention. Youth risk behavior surveillance–United States. 2000. 1999.
- Cicchetti, D.; Lynch, M. Failures in the expectable environment and their impact on individual development: The case of child maltreatment.. In: Cicchetti, D.; Cohen, J., editors. *Developmental psychopathology, Vol. 2: Risk, disorder, and adaptation*. John Wiley & Sons; Oxford, England: 1995. p. 32-71.
- Cicchetti D, Rogosch FA. The role of self-organization in the promotion of resilience in maltreated children. *Development & Psychopathology* 1997;9(4):797–815. [PubMed: 9449006]
- Classen C, Field NP, Koopman C, Nevill-Manning K, Spiegel D. Interpersonal problems and their relationship to sexual revictimization among women sexually abused in childhood. *Journal of Interpersonal Violence* 2001;2001(16):495–509.
- Classen CC, Palesh OG, Aggarwal R. Sexual Revictimization: A Review of the Empirical Literature. *Trauma, Violence, & Abuse* 2005;6(2):103–129.
- Cloitre M, Cancienne J, Brodsky B, Dulit R, Perry SW. Memory performance among women with parental abuse histories: Enhanced directed forgetting or directed remembering? *Journal of Abnormal Psychology* 1996;105(2):204–211. [PubMed: 8723001]
- Coid J, Petruckevitch A, Feder G, Chung W, Richardson J, Moorey S. Relation between childhood sexual and physical abuse and risk of revictimization in women: A cross-sectional survey. *The Lancet* 2001;358:450–454.
- Davies, JM.; Frawley, MG. *Treating the adult survivor of childhood sexual abuse: A psychoanalytic perspective*. 1994.
- Desai S, Arias I, Thompson MP, Basile KC. Childhood victimization and subsequent adult revictimization assessed in a nationally representative sample of women and men. *Violence & Victims* 2002;17(6): 639–653. [PubMed: 12680680]
- Dong M, Anda RF, Dube SR, Giles WH, Felitti VJ. The relationship of exposure to childhood sexual abuse to other forms of abuse, neglect, and household dysfunction during childhood. *Child Abuse & Neglect* 2003;27:625–639. [PubMed: 12818611]
- Dong M, Giles WH, Felitti VJ, Dube SR, Williams J, Chapman D, Anda RF. Insights into causal pathways for ischemic heart disease: Adversive Childhood Experiences study. *Circulation* 2004;110:1761–1766. [PubMed: 15381652]
- Downs WR, Smyth NJ, Miller BA. The relationship between childhood violence and alcohol problems among men who batter: An empirical review and synthesis. *Aggression and Violent Behavior* 1996;1:327–344.
- Dube SR, Anda RF, Felitti VJ, Chapman D, Williamson DF, Giles WH. Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: findings from the Adverse Childhood Experiences study. *Journal of the American Medical Association* 2001;286:3089–3096. [PubMed: 11754674]
- Edwards V, Holden G, Felitti VJ, Anda RF. Relationship between multiple forms of childhood maltreatment and mental health in community respondents: Results from the Adverse Childhood Experiences Study. *American Journal of Psychiatry* 2003;160:1453–1460. [PubMed: 12900308]
- Feiring C, Taska L, Lewis M. Adjustment following sexual abuse discovery: The role of shame and attributional style. *Developmental Psychology* 2002;38(1):79–92. [PubMed: 11806704]

- Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, Koss MP, Mark JS. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventive Medicine* 1998;14:245–258. [PubMed: 9635069]
- Fergusson DM, Horwood LJ, Lynskey MT. Childhood sexual abuse and psychiatric disorder in young adulthood: II. Psychiatric outcomes of childhood sexual abuse. *Journal of the American Academy of Child and Adolescent Psychiatry* 1996;34:1365–1374. [PubMed: 8885591]
- Fergusson DM, Horwood LJ, Woodward LJ. The stability of child abuse reports: A longitudinal study of the reporting behavior of young adults. *Psychological Medicine* 2000;30(3):529–544. [PubMed: 10883709]
- Finkelhor D, Browne A. The traumatic impact of child sexual abuse: A conceptualization. *American Journal of Orthopsychiatry* 1985;55(4):530–541. [PubMed: 4073225]
- Fergusson DM, Horwood LJ, Woodward LJ. The stability of child abuse reports: A longitudinal study of the reporting behavior of young adults. *Psychological Medicine* 2000;30:529–544. [PubMed: 10883709]
- Gidycz CA, Coble CN, Latham L, Layman MJ. Sexual assault experience in adulthood and prior victimization experiences. *Psychology of Women Quarterly* 1993;17:151–168.
- Gidycz CA, Hanson KA, Layman MJ. A prospective analysis of the relationship among sexual assault experiences: An extension of previous findings. *Psychology of Women Quarterly* 1995;17:151–168.
- Goodman GS, Ghatti S, Quas JA, Edelstein RS, Alexander KW, Redlich AD, Cordon LM, Jones DPH. A prospective study of memory for child sexual abuse: New findings relevant to the repressed-memory controversy. *Psychological Science* 2003;14(2):113–118. [PubMed: 12661671]
- Greene DM, Navarro RL. Situation-specific assertiveness in the epidemiology of sexual victimization among University women. *Psychology of Women Quarterly* 1998;22:589–604.
- Hazzard A. Trauma-related beliefs as mediators of sexual abuse impact in adult women survivors: A pilot study. *Journal of Child Sexual Abuse* 1993;2(3):55–69.
- Hillis S, Anda RF, Felitti VJ, Marchbanks P. Adverse childhood experiences and sexual risk behaviors in women: A retrospective cohort study. *Family Planning Perspectives* 2001;33:206–211. [PubMed: 11589541]
- Himelein MJ. Risk factors for sexual victimization in dating. *Psychology of Women Quarterly* 1995;19:31–48.
- Hollingshead, AF. Four factor index of social status. Department of Sociology, Yale University; New Haven: 1975.
- Horwitz AV, Widom CS, McLaughlin J, White HR. The impact of early childhood abuse and neglect on adult mental health: A prospective study. *Journal of Health and Social Behavior* 2001;42:1184–1201.
- Kendler KS, Bulik CM, Silberg J, Hettema JM, Myers J, Prescott CA. Childhood sexual abuse and adult psychiatric and substance use disorders in women: An epidemiological and co-twin control analysis. *Archives of General Psychiatry* 2000;57(10):953–959. [PubMed: 11015813]
- Koss M. The hidden rape victim: Personality attitudes and situational characteristics. *Psychology of Women Quarterly* 1985;9:193–212.
- Koss M, Dinero TE. Discriminant analysis of risk factors for sexual victimization among a national sample of college women. *Journal of Clinical Psychology* 1989;57:242–250.
- Krahe B, Scheinberger-Olwig R, Waizenhofer E, Kolpin S. Childhood sexual abuse and revictimization in adolescence. *Child Abuse & Neglect* 1999;23(4):382–394.
- Krinsley, KE.; Weathers, FW.; Vielhauer, MJ.; Newman, E.; Walker, EA.; Kaloupek, DG.; Young, LS.; Kimerling, R. Manual for the Evaluation of Lifetime Stressors. National Center for Posttraumatic Stress Disorder Behavioral Science Division; Boston: 1994.
- Lundberg-Love, P.; Geffner, R. Date rape: Prevalence, risk factors and a proposed model.. In: Pirog-Good, MA.; Stets, JE., editors. *Violence in dating relationships*. Praeger; New York: 1989. p. 169-184.
- MacLeod, L. Battered not beaten. Preventing wife beating in Canada.. Advisory Council on the Status of Women. 1987.
- Maker AH, Kemmelmeier M, Peterson C. Child sexual abuse, peer sexual abuse, and sexual assault in adulthood: A multi-risk model of revictimization. *Journal of Traumatic Stress* 2001;14:351–368. [PubMed: 11469162]

- Mandoki CA, Burkhart BR. Sexual victimization: Is there a vicious cycle. *Violence & Victims* 1989;4:179–190. [PubMed: 2487133]
- Marx, BP.; Calhoun, KS.; Wilson, AW.; Meyerson, LA.; Brit, D. The prevention of sexual revictimization: A preliminary investigation.. Paper presented at the 32nd Annual Meeting of the Association for the Advancement of Behavior Therapy; 1998.
- Marx BP, Van Wie V, Gross AM. Date rape risk factors: A review and methodological critique of the literature. *Aggression and Violent Behavior* 1996;1(1):27–45.
- Mayall A, Gold SR. Definitional issues and mediating variables in the sexual revictimization of women sexually abused as children. *Journal of Interpersonal Violence* 1995;10:26–42.
- Merrill LL, Newell CE, Thomsen C, Gold SR, Milner JS, Koss MP. Childhood abuse and sexual revictimization in a female Navy recruit sample. *Journal of Traumatic Stress* 1999;12:211–225. [PubMed: 10378162]
- Messman-Moore TL, Brown AL, Koelsch LE. Posttraumatic symptoms and self-dysfunction as consequences and predictors of sexual revictimization. *Journal of Traumatic Stress* 2005;18(3):253–261. [PubMed: 16281220]
- Messman-Moore TL, Long PJ. The role of childhood sexual abuse sequelae in the sexual revictimization of women: an empirical review and theoretical reformulation. *Clinical Psychology Review* 2003;23(4):537–571. [PubMed: 12788109]
- Muehlenhard CL, Linton MA. Date rape and sexual aggression in dating situations: Incidence and risk factors. *Journal of Consulting & Clinical Psychology* 1987;34:186–196.
- National Center of Child Abuse and Neglect. Second study of national incidence and prevalence of child abuse and neglect. United States Department of Health and Human Services; Washington, D.C.: 1988.
- Noll JG, Horowitz LA, Bonanno GA, Trickett PK, Putnam FW. Revictimization and self-harm in females who experienced childhood sexual abuse: results from a prospective study. *Journal of Interpersonal Violence* 2003;18(12):1452–1471. [PubMed: 14678616]
- Noll JG, Trickett PK, Putnam FW. Social network constellation and sexuality of sexually abused and comparison girls in childhood and adolescence. *Child Maltreatment* 2000;5(4):323–337. [PubMed: 11232260]
- Norris J, Cubbins LA. Dating, drinking, and rape. *Psychology of Women Quarterly* 1992;16:179–191.
- Orcutt HK, Cooper ML, Garcia M. Use of sexual intercourse to reduce negative affect as a prospective mediator of sexual revictimization. *Journal of Traumatic Stress* 2005;18(6):729–739. [PubMed: 16382425]
- Rich CL, Gidycz CA, Warkentin JB, Loh C, Weiland P. Child and adolescent abuse and subsequent victimization: A prospective study. *Child Abuse & Neglect* 2005;29:1373–1394. [PubMed: 16293305]
- Roodman AA, Clum GA. Revictimization rates and method variance: A meta-analysis. *Clinical Psychology Review* 2001;21(2):183–204. [PubMed: 11293365]
- Siegel JA, Williams LM. Risk factors for sexual victimization of women. *Violence Against Women* 2003;9(8):902–930.
- Sorenson SB, Siegel JM, Golding JM, Stein JA. Repeated sexual revictimization. *Violence & Victims* 1991;6:299–308. [PubMed: 1822699]
- Steel JL, Herlitz CA. The association between childhood and adolescent sexual abuse and proxies for sexual risk behavior: A random sample of the general population of Sweden. *Child Abuse & Neglect* 2005;29(10):1141–1153. [PubMed: 16243097]
- Stermac L, Reist D, Addison M, Millar GM. Childhood risk factors for women's sexual victimization. *Journal of Interpersonal Violence* 2002;17(6):647–670.
- Teutsch, S.; Harris, J. Introduction.. In: Haddix, A.; Teutsch, S.; Corso, P., editors. *Prevention Effectiveness*. Oxford University Press; New York: 2003. p. 1-10.
- Thornberry TP, Ireland TO, Smith CA. The importance of timing: The varying impact of childhood and adolescent maltreatment on multiple problem outcomes. *Developmental Psychopathology* 2001;13(4):957–979.
- Tjaden, P.; Thoennes, N. Prevalence, incidence, and consequences of violence against women: Findings from the national violence against women survey. U.S. Department of Justice, Office of Justice

- Programs, National Institute of Justice, Centers for Disease Control and Prevention; Washington , D.C.: 1998.
- Trickett PK, McBride-Chang C. The developmental impact of different forms of child abuse and neglect. *Developmental Review* 1995;15(3):311–337.
- Trickett PK, Noll JG, Reiffman A, Putnam FW. Variants of intrafamilial sexual abuse experience: Implications for short- and long-term development. *Development & Psychopathology* 2001;13(4): 1001–1019. [PubMed: 11771904]
- Tyler KA. Social and emotional outcomes of childhood sexual abuse: A review of recent research. *Aggression and Violent Behavior* 2002;7(6):567–589.
- Urquiza AJ, Goodlin-Jones BL. Child sexual abuse and adult revictimization with women of color. *Violence & Victims* 1994;9(3):223–232. [PubMed: 7647044]
- Van Dorn RA, Mustillo S, Elbogen EB, Dorsey S, Swanson JW, Swartz MS. The effects of early sexual abuse on adult risky sexual behaviors among persons with severe mental illness. *Child Abuse & Neglect* 2005;29(11):1265–1279. [PubMed: 16260038]
- Viera AJ, Garrett JM. Understanding inter-observer agreement: The kappa statistic. *Family Medicine* 2005;37(5):360–363. [PubMed: 15883903]
- Weiss EL, Longhurst JG, Mazure CM. Childhood sexual abuse as a risk factor for depression in women: Psychosocial and neurobiological correlates. *American Journal of Psychiatry* 1999;156(6):816–828. [PubMed: 10360118]
- Wekerle, C.; Avgoustis, E. Child maltreatment, adolescent dating, and adolescent dating violence.. In: Florsheim, P., editor. *Adolescent romantic relations and sexual behavior: Theory, research, and practical implications*. Department of Psychology; University of Utah: 2003. p. 213-241 xvii, 414.
- West CM, Williams LM, Siegel JA. Adult sexual revictimization among black women sexually abused in childhood: A prospective examination of serious consequences of abuse. *Child Maltreatment* 2000;5:49–57. [PubMed: 11232062]
- White HR, Widom CS. Intimate partner violence among abused and neglected children in young adulthood: The mediating effects of early aggression, antisocial personality, hostility and alcohol problems. *Aggressive Behavior* 2003;29:332–345.
- Widom CS, Kuhns JB. Childhood victimization and subsequent risk for promiscuity, prostitution, and teenage pregnancy: a prospective study. *American Journal of Public Health* 1996;86(11):1607–1612. [PubMed: 8916528]
- Widom CS, Morris S. Accuracy of adult recollections of childhood victimization: Part 2. Childhood Sexual Abuse. *Psychological Assessment* 1997;9(1):34–46.
- Williams LM. Recall of childhood trauma: A prospective study of women's memories of child sexual abuse. *Journal of Consulting & Clinical Psychology* 1994;62:1167–1176. [PubMed: 7860814]
- Wilson AE, Calhoun KS, Bernat JA. Risk recognitions and trauma-related symptoms among sexually revictimized women. *Journal of Consulting & Clinical Psychology* 1999;67(5):705–710. [PubMed: 10535237]
- Wolfe DA, Wekerle C, Scott K, Straatman A-L, Grasley C. Predicting Abuse in Adolescent Dating Relationships Over 1 Year: The Role of Child Maltreatment and Trauma. *Journal of Abnormal Psychology* 2004;113(3):406–415. [PubMed: 15311986]
- Wyatt GE, Guthrie D, Notgrass CM. Differential effects of women's child sexual abuse and subsequent sexual revictimization. *Journal of Consulting & Clinical Psychology* 1992;60:167–173. [PubMed: 1592945]

Table 1

Demographic descriptors across sexually abused and comparison groups.

	Total	Abused	Comparison
Variable	N=185	N=91	N=94
Socioeconomic Status ^a	36.86±12.38	36.33±13.48	37.39±11.25
Percent Minority ^b	46	40	51
Age at assessment (range)			
Time 1 (6–16)	11.06±3.23	11.10±3.41	11.01±3.19
Time 4 (11–25)	18.64±4.34	19.13±4.54	18.44±3.99
Time 5 (13–26)	20.65±3.24	21.03±3.42	20.32±3.17
Time 6 (18–27)	24.55±3.50	25.01±4.01	24.12±3.10
N returning for follow-up (Times 4, 5, and/or 6; 96%)	179	89	90
Age at last (final) interview	24.14±3.43	24.86±3.50	24.02±3.36

Note: Means ± Standard Deviations shown where appropriate; Groups did not differ significantly regarding demographic variables.

^a = Socioeconomic status via Hollingshead-II (Hollingshead, 1975).

^b = minority (African American, Hispanic & Asian American) = 0, Caucasian = 1 (i.e., 54% Caucasian, 43% African American, 2% Hispanic, and 1% Asian American).

Table 2
Means, standard deviations and group main effect analyses for victimization variables.

Outcome, Dependent Variable	Total N=179	Abused N=89	Comparison N=90	Odds Ratio	F
Sexual (re)victimization (%)	32.40	40.45	24.44	1.99*	
Physical (re)victimization (%)	49.16	57.30	41.11	1.96*	
Those experiencing sexual (re)victimization	Total n=58	Abused n=36	Comparison n=22		
Peer (re)victimization (%)	22.35	26.97	17.78	1.47	
Non-peer (re)victimization (%)	16.20	22.47	10.00	3.03**	
Contact (re)victimization (%)	25.70	30.34	21.11	1.51	
Age at first (re)victimization (yrs.)	12.93±5.07	11.81±5.53	13.09±4.23		.43
Age at second (re)victimization (yrs.) ^a	15.09±4.61	13.47±4.16	18.13±4.02		3.39*
Those experiencing physical (re)victimization	Total n=98	Abused n=61	Comparison n=37		
Peer (re)victimization (%)	30.18	39.24	22.22	2.26*	
Non-peer (re)victimization (%)	36.09	46.84	26.67	2.53**	
(Re)victimization with Injury (%)	25.44	36.71	15.56	3.21**	
Age at first (re)victimization (yrs.)	10.30±6.54	9.71±6.44	11.08±6.69		.52
Age at second (re)victimization (yrs.) ^b	13.14±6.73	13.30±7.16	12.88±6.19		.94

Note. Means ±Standard Deviations shown when appropriate. SES, minority status, and age at last interview co-varied in group main effect analyses. Group differences in dichotomous outcome variables (e.g., sexual (re)victimization versus no sexual (re)victimization) were analyzed using logistic regression to estimate the likelihood of experiencing the outcome based on group membership (df=1). Group differences (df=1) in continuous outcomes (e.g., age at first (re)victimization) were evaluated via individual F-tests in ANOVA.

* p<.05.

** p<.01

^a = reduced N = 23 (abused = 15; comp = 8)

^b = reduced N = 47 (abused = 30; comp = 17)