Published in final edited form as:

J Consult Clin Psychol. 2003 June ; 71(3): 575–586.

A Prospective Investigation of the Impact of Childhood Sexual Abuse on the Development of Sexuality

Jennie G. Noll,

University of Southern California School of Social Work

Penelope K. Trickett, and

University of Southern California School of Social Work

Frank W. Putnam

Department of Pediatrics, Cincinnati Children's Hospital Medical Center

Abstract

The sexual attitudes and activities of 77 sexually abused and 89 comparison women (mean age = 20.41, $SD = 3.38$) were assessed 10 years after disclosure in a longitudinal, prospective study of the long-term effects of childhood sexual abuse. Abused participants were more preoccupied with sex, younger at first voluntary intercourse, more likely to have been teen mothers, and endorsed lower birth control efficacy than comparison participants. When psychological functioning earlier in development was examined, sexual preoccupation was predicted by anxiety, sexual aversion was predicted by childhood sexual behavior problems, and sexual ambivalence (simultaneous sexual preoccupation and sexual aversion) was predicted by pathological dissociation. Findings also indicate that biological father abuse may be associated with greater sexual aversion and sexual ambivalence.

The late 1980s and early 1990s saw a steady increase in the reporting of childhood sexual abuse in this country. According to the Third National Incidence and Prevalence Study, supported by the National Center of Child Abuse and Neglect (1996), approximately 220,000 children each year were recognized (by public protective service agencies) as having experienced significant “harm” through childhood sexual abuse, and another 100,000 children were recognized as “endangered” of being sexually abused. These numbers represent an increase of 87% and 125% respectively over those reported in 1988 (National Center of Child Abuse and Neglect, 1988). Yearly estimates of reported childhood sexual abuse peaked in 1992 and, because of changes in protective service procedures and policy as well as of increased prevention and criminal justice efforts, these numbers seem to have been declining ever since (Jones, Finkelhor, & Kopiec, 2001). Even though substantiated cases of childhood sexual abuse appear to be on the decline, the fact remains that a substantial proportion of young people growing up in recent decades experienced inappropriate, unwanted, or disturbing sexual trauma, and these people are just now beginning to take on the developmental tasks of late adolescence and early adulthood—a period saturated with issues of sexuality, identity, and intimacy.

The effects of childhood sexual abuse are thought to be largely deleterious and possibly pervasive throughout development. Reviews of research on the effects of sexual abuse have been provided by Beitchman et al. (1992); Kendall-Tackett, Williams, and Finkelhor (2001);

and Trickett and Putnam (1998). Because of its explicit sexual nature, the impact of childhood sexual abuse likely differs from other forms of child maltreatment in that there are increased possibilities for the development of sexual distortions¹ as issues of sexuality and intimacy become more salient. Indeed, many studies have reported a link between childhood sexual abuse and subsequent distortions in sexuality including heightened sexual activity and permissive attitudes (e.g., Browning & Laumann, 1997; Miller, Monson, & Norton, 1995), prostitution (e.g., Cunningham, Stiffman, Dore, & Earls, 1994; Widom & Kuhns, 1996), early pregnancy (e.g., Fiscella, Kitzman, Cole, Sidora, & Olds, 1998; Stock, Bell, Boyer, & Connell, 1997), sexual risk-taking behaviors (e.g., Brown, Kessel, Lourie, Ford, & Lipsitt, 1997; Brown, Lourie, Zlotnick, & Cohn, 2000), early coitus (e.g., Fiscella et al., 1998; Miller et al., 1995), sexual avoidance or sexual dysfunction (Jackson, Calhoun, Amick, Maddever, & Habif, 1990; Wyatt, 1991), and compulsive sexual behaviors (e.g., Friedrich, Urquiza, & Beilke, 1986; McClellan et al., 1996).

Although it appears that the association between childhood sexual abuse and subsequent sexual distortion is unequivocal, research in this area has yielded inconsistent results. Some studies have reported a relatively strong association between childhood sexual abuse and sexual distortion (e.g., Stock et al., 1997; Wyatt, 1991), whereas other studies have reported zero or only marginal associations (e.g., Herrenkohl, Herrenkohl, Egolf, & Russo, 1998; Smith, 1996; Widom & Kuhns, 1996). There are several reasonable explanations for these inconsistencies.

First, there are vast methodological inconsistencies that plague this area of research. The majority of studies are cross-sectional, relying on retrospective self-reports of childhood sexual abuse. Many of these studies contain relatively high-risk samples (e.g., teen mothers, psychiatric inpatients, prostitutes), have no meaningful comparison group, and no means of controlling for extraneous factors that could confound results. The few longitudinal studies in existence are either relatively short-term studies (Smith, 1996), suffer from high attrition rates (Widom & Kuhns, 1996), or are not truly prospective in nature (Herrenkohl et al., 1998).

Second, there are inconsistencies in the operational definitions of childhood sexual abuse varying from noncontact abuse or any unwanted sexual experience (e.g., Brown et al., 1997; Stock et al., 1997; Widom & Kuhns, 1996) to contact abuse including genital fondling or penetration (e.g., Fergusson et al., 1996; Noll, Trickett, & Putnam, 2000). Differing definitions regarding what constitutes abuse can result in fluctuating conclusions about the impact of early sexual trauma on later sexual distortion. Further, many studies lack details about the characteristics of abuse (e.g., perpetrator identity, duration, age at onset, extent of physical coercion) even in the face of mounting empirical evidence suggesting that these variables are important predictors of outcomes (e.g., Friedrich, Grambsch, Damon, & Hewitt, 1992; Herman, Russell, & Trocki, 1986; Trickett, Noll, Reiffman, & Putnam, 2001).

Third, there is likely more than one developmental trajectory describing the effects of sexual trauma on later sexuality. There is evidence for heightened sexuality or sexual preoccupation such as excessive masturbation, sexual obsession, increased sex play, and early coitus as well as evidence for sexual aversion and avoidance such as negative feelings about sex, sexual dysfunction, greater anxiety regarding sex, more sexual guilt, and an avoidance of sexual thoughts and feelings. There is also the third possibility that there are those who experience both a sexual preoccupation and an aversion toward sex simultaneously—those

¹We use the term *sexual distortion* deliberately. Extant literature as well as current theory suggest that childhood sexual abuse impacts not only behavior but affect and cognitions as well. Terms such as *sexualized behavior* or *sexual acting-out* do not capture the full realm of the particular sequelae that we intend to describe.

who believe sex is undesirable but who also possess a compulsion to engage in sexual activity. Little empirical work has been done to identify distinct trajectories within the same sample, and those who have attempted to do so have essentially been unsuccessful (e.g., Browning & Laumann, 1997). Operational definitions of sexuality are often limited to either promiscuity or aversion and assessments are rarely comprehensive enough to measure both.

The current study is a long-term prospective, longitudinal study in which the participants were assessed several times over a 10-year period starting in mid- to late childhood, through adolescence, and into early adulthood. The study included a well-matched comparison group and assessed potentially confounding control variables throughout development. The operational definition of childhood sexual abuse was well conceptualized and stringent (disclosure of abuse in childhood, genital contact abuse by a family member, and abuse confirmed by child protective service agencies), and details of the sexual abuse experience were assessed comprehensively by caseworker reports. A comprehensive assessment of both sexual attitudes and activity was used to ensure that multiple aspects of sexual distortion could be examined reliably.

The present study focused on three main hypotheses:

Childhood sexual abuse would be associated with heightened sexual preoccupation and activity including early ages at voluntary coital initiation, greater numbers of sex partners, greater occurrences of sexually transmitted diseases and HIV risk behaviors, ineffective birth control usage, higher pregnancy rates, and lower ages at birth of first child.

A subset of sexually abused participants would exhibit sexual ambivalence or a heightened sexual preoccupation coupled with greater sexual aversion.

Sexually abused participants who experienced severe abuse or who experienced biological father (BF) abuse would exhibit more pronounced sexual distortion.

Method

Participants

Participants are the subjects of a longitudinal study of the long-term impact of child sexual abuse on female development. Abused females were referred by protective service agencies in the greater Washington, D.C., metropolitan area. Eligibility criteria for inclusion in the study were (a) the victim was female, aged 6 to 16 years; (b) disclosure of substantiated, referring abuse occurred within 6 months of participation; (c) sexual abuse involved genital contact and/or penetration; (d) the perpetrator was a family member, including parent, stepparent, sibling, uncle, or mother's live-in boyfriend; and (e) a nonabusing parent or guardian (usually the child's mother) was willing to participate.

To recruit the comparison sample, we put requests for participants in community newspapers and posted them in welfare, daycare, and community facilities in the same neighborhoods in which the abused girls lived. In 70% of the cases the comparison and abused girls resided in the same zip code district; in 20% of the cases they resided in adjacent zip code districts; and in the remaining 10% of the cases they resided in comparable, nearby districts. On a 12-item scale designed to measure exposure to psychosocial stressors extracted from the Diagnostic Interview for Children and Adolescence (DICA; Welner, Reich, & Herjanic, 1987), abused and comparison participants did not differ with respect to the sum of nonsexual-abuse items (i.e., witnessing violence, death in the family, physical abuse or assault, natural disasters), but they did differ on the item assessing involvement with the law enforcement (17% of the abused group, 2% of the

comparison group, $p < .05$). Comparison girls were similar to the abused girls in terms of ethnic group, age, predisclosure socioeconomic status (SES), and family constellation (one- or two-parent families). All families ranged from low to middle SES, with mean Hollingshead (1975) scores of approximately 35 (defined as blue-collar or working class). Forty-nine percent of the sample was Caucasian, 46% African American, 4% Hispanic, and 1% Asian American.

The initial assessment (Time 1) sample consisted of 84 abused and 82 comparison participants composing the total sample of 166 and ranged in age from 5.91 to 16.89 years ($M = 11.11$, $SD = 3.02$). Four follow-up interviews were conducted (Times 2 through 5). Participants ranged in age at Time 2 from 6.92 to 18.20 years ($M = 12.22$, $SD = 2.96$); Time 3 from 7.78 to 20.22 ($M = 13.42$, $SD = 3.00$); Time 4 from 10.63 to 25.91 ($M = 18.05$, $SD = 3.42$); and Time 5 from 13.31 to 28.27 ($M = 20.41$, $SD = 3.38$).

The sample at Time 5 consisted of 143 of the original 166 participants. To maximize the total n sample to be used for the present prospective analyses, outcome data from 16 participants who attended the Time 4 assessment but did not attend the Time 5 assessment were also used, which resulted in a sample size of 159 ($143 + 16$). The 16 participants from Time 4 did not differ significantly from the Time 5 sample with respect to minority status, SES, marital or cohabitation status, or group membership, but they were younger ($M = 18.53$, $SD = 3.25$, $p = .04$).² The retention rate for the present set of analyses is thus 95.78% (159 of 166).

During the course of the interviews 12 comparison participants revealed that they had been victims of childhood sexual abuse and were dropped from analyses resulting in a total sample of 147 (77 abused, 70 comparison). Because of this loss, 19 new comparison families were recruited (using the same procedures as described earlier for drawing the initial sample) for participation in Times 4 and 5. Data from these participants were used in cross-sectional analyses bringing the total sample for Time 5 to 166 (77 abused, 89 comparison).³

Abused and comparison groups did not differ with respect to age, minority status, or SES, but a greater percentage of the abused group reported being married or cohabiting by the Time 5 assessment relative to the comparison group (32.50% and 12.41%, respectively, $p = .002$).

Measures

Sexual Activities and Attitudes Questionnaire (SAAQ)—This measure was developed for use in the present study and includes 35 items modeled after the Sex Activity Questionnaire for Girls and Boys (Udry, 1988) and 5 items modeled after the Fear of Sex subscale from the Children's Impact of Traumatic Events Scale (Wolfe, Gentile, Michienzi, & Sas, 1991). Because the assessment of sexual behavior is extremely sensitive, especially for adolescents, we sought to maximize our ability to obtain accurate information by assessing both sexual activity and attitudes. All participants were asked to respond to items concerning voluntary sexual activity, not about sexual activity forced on them (i.e., sexual abuse experiences). The SAAQ was administered with a multimedia computer from which

²These 16 participants were added to outcome analyses to maximize the retention rate and to maximize the variance associated with within-person variation for longitudinal analyses. This strategy was deemed preferable to analyses where selective attrition might obscure results (i.e., the most disturbed of participants may likely be the ones who do not show up for reassessment). These procedures have been used in other published articles (e.g., see Trickett et al., 2001). Analyses were rerun without these 16 participants and results were essentially the same as analyses conducted which included these 16 participants.

³These 19 participants were added for use in cross-sectional analyses only. Analyses were rerun without these 19 participants, and the results were essentially the same.

the participant hears questions read through headphones, and she can “click” on answers that enter directly into the computer for analyses. This method of administration provides an atmosphere of anonymity without embarrassment or fear of offending a live interviewer. Computerized methods have been shown to elicit more accurate responses than face-to-face interviews in the assessment of sensitive materials in adolescent samples (Turner et al., 1998). The SAAQ is programmed with a divergent questioning scheme according to the way in which participants respond to specific items. All participants were administered the initial set of items having to do with sexual attitudes, behaviors, and activities in general. If participants indicated that they have had voluntary sexual intercourse, a second set of items was administered, and those who have been pregnant received a third set of additional items.

Sexual activity variables gleaned from the SAAQ for the current analyses were as follows: (a) percentage who have had voluntary intercourse (1 = yes, 0 = no); (b) age at first voluntary intercourse (1 = 12 years old or younger;⁴ 2 = 13–14 years old; 3 = 15–16 years old; 4 = 17–18 years old; 5 = 19–20 years old; 6 = 21 years old or older); (c) number of sexual intercourse partners in the past year (1 = 1; 2 = 2 or 3; 3 = 4–7; 4 = 7–10; 5 = more than 10); (d) birth control efficacy (scored from 1 = “I never use birth control”, to 6 = “For sure, every time I have sex I use birth control”); (e) number of HIV risk behaviors: a linear combination of 11 (1 = yes, 0 = no) questions specific to HIV risks including having had intercourse without a condom, having had intercourse with an IV-drug user, having had “one-night-stand” intercourse encounters, and so forth; (f) percentage reporting any sexually transmitted diseases including chlamydia, gonorrhea, syphilis, genital warts, genital herpes, or Hepatitis B or C (1 = yes, 0 = no); (g) Pregnancy history including number of pregnancies, whether participants have had at least one abortion, and whether participants are currently trying to conceive (1 = yes, 0 = no); and (h) reproductive history including whether participants have given birth at least once (1 = yes, 0 = no), participants’ age at the birth of first child, number of children (range: 1 to 4), and percentage of mothers who have children by more than one partner, or percentage of families with more than one BF.

Forty-three nonbranching items having to do with sexual attitudes were factor analyzed and 4 reliable, invariant (from Time 4 to Time 5, see Results section) sexual attitude factors emerged including Sexual Permissiveness, Sexual Preoccupation, Negative Attitude Toward Sex, and feeling internal and external Pressure to Engage in Sex. The results of the factor analysis and the accompanying psychometrics are included in Table 1 and are discussed in the Results section. *Sexual aversion* was defined as low scores on the Sexual Permissiveness subscale plus high scores on the Negative Attitude Toward Sex subscale ($-1 \times$ permissiveness + negative attitudes). *Sexual ambivalence* was created by adding scores on the Sexual Preoccupation subscale to scores on the sexual aversion variable.

Abused profile subgroups—Information about the sexual abuse was obtained with the Caseworker Abuse History Questionnaire (CAHQ; included in an appendix in Trickett, Reiffman, Horowitz, & Putnam, 1997). Six principal characteristics of abuse were identified including (a) age at onset; (b) duration; (c) perpetrator identity—classified as BF, other father figure including mother’s live-in boyfriend, or other relative; (d) severity of abuse ranging from genital fondling to penetration; (e) abuse by multiple perpetrators; and (f) physical violence or threats of violence accompanying the abuse.

In previous work (Trickett et al., 2001) a hierarchical cluster analysis was performed to determine how the sample might be partitioned into meaningful profile subgroups on the

⁴It should be noted that, even if “voluntary,” intercourse with a child under the age of 12 violates criminal sexual assault statutes in some states. Researchers and clinicians should be aware of their mandated reporting requirements whenever attempting to assess such sexual histories.

basis of the abuse characteristics derived from the CAHQ. The multiple perpetrator (MP) subgroup ($n = 23$) was composed of girls who had been abused by multiple perpetrators, none of whom were their BF; the abuse was over a relatively short period of time but was likely to have been accompanied by pronounced physical violence. The single perpetrator (SP) subgroup ($n = 34$) experienced abuse by a single perpetrator who was not the BF, the duration of the abuse was relatively short, and violence was not frequent. The BF subgroup ($n = 20$) was characterized by abuse by the BF over a long period, beginning at a relatively young age with a low occurrence of physical violence.

Psychological functioning—To ascertain the extent to which the variance of sexual activity and attitude outcome variables could be explained by confounding psychological functioning, we assessed several psychological inventories earlier in development. Depression was measured at Time 1 ($\alpha = .86$) and Time 4 ($\alpha = .79$) with the Child Depression Inventory (Kovacs, 1981). Trait anxiety was measured at Time 1 ($\alpha = .87$) and Time 4 ($\alpha = .88$) via the State–Trait Anxiety Scale (Spielberger, 1973). Dissociation was measured at Time 1 ($\alpha = .90$) by mother's reports using the Childhood Dissociation Checklist (Bernstein & Putnam, 1987) and at Time 4 ($\alpha = .94$) by self-reports using the Adolescent Dissociative Experiences Scale (Armstrong, Putnam, Carlson, Libero, & Smith, 1997). These two devices yield information about the extent of dissociative experiences (while not under the influence of alcohol or drugs) such as amnesia, perplexing forgetfulness, absorption and enthrallment, depersonalization and derealization, and passive influence phenomena. A taxon subscale of eight items indicative of pathological dissociation (Waller, Putnam, & Carlson, 1996) was used in the current analyses. Childhood sexual behavior problems were measured only in childhood at Time 1 ($\alpha = .92$) by mother reports using the Child Sexual Behavior Inventory (Friedrich et al., 1992). This device assesses inappropriate sexual behaviors such as public displays of sexualized behavior, inappropriate sex play, and excessive masturbation.

Procedures

At Time 1, participants responded to the self-report psychological functioning questionnaire items that were read to them. Mothers completed informant measures while the child was being tested as part of a 2-hr testing session designed to assess a host of physical, psychological, and social development variables. At Times 4 and 5, participants completed paper-and-pencil versions of the self-report psychological functioning questionnaires and then completed the computerized SAAQ as part of a 3–4-hr session. Those under the age of 18 were accompanied by a non-abusing caretaker (usually the mother). Neither the caretakers nor the researchers were present in the room when the computerized assessment took place. Monetary compensation was awarded at the completion of the assessments in accordance with the guidelines put forth by the National Institutes of Health Normal Volunteer Program.

Results

Factor Analysis of SAAQ

As the structure of the SAAQ had not previously been explored, an exploratory analysis was performed on the Time 4 data, and the structure was then confirmed with factorial invariance on the Time 5 data. This procedure was used to (a) avoid doing both exploratory and confirmatory analyses on the same data and (b) to provide a stringent test that the constructs measured at Time 4 in adolescence could be derived with confidence at Time 5 in early adulthood. An exploratory common factors analysis of 43 pre-branching SAAQ items was conducted using SAS 6.12 (SAS, 1996) for those who participated in the Time 4 assessment. A scree plot of the eigenvalues indicated that four factors be extracted. Promax

(oblique) rotation to an Equamax target was used to maximize simple structure. Table 1 contains the standardized regression coefficients (factor loadings), alpha reliabilities/internal consistencies, and factor intercorrelations. Factor loadings in bold are hypothesized and/or theoretically sound, whereas those underlined are dual and/or secondary hyperplane loadings. The four common factors account for 78% of the variance.

A test of factorial invariance was performed to demonstrate that the solution derived from the Time 4 data could be confirmed in the Time 5 data and that the factor structure was invariant across the two times of measurement. The test for metric invariance (Horn & McArdle, 1992) is a stringent test of whether the structure of data is the same across groups or occasions using LISREL 8.12 (Joreskog & Sorbom, 1993). The factor loading parameters derived from the Time 4 data were constrained to be equal (or invariant) to the factor loading parameters derived for the Time 5 data. The difference in fit between the model where loadings are allowed to be freely estimated and the model where the loadings are constrained to be equal is a test of the metric invariance. These four factors were shown to be metrically invariant across the two times of measurement. The chi-square value for the free model was 2,147 with 1708 degrees of freedom, and the chi-square value for the constrained model was equal to 2,199 with 1751 degrees of freedom. The change in chi-square (52) was not sufficiently large relative to the change in degrees of freedom (43), suggesting that the two models are not statistically different from one another and that the factor loading parameter estimates can be considered invariant across times.

The four factors, labeled according to the items that overdetermine each, are as follows: (a) Sexual Permissiveness (12 items, $\alpha = .96$)—permissive attitudes toward a relatively normative set of desires and behaviors including intimate affection, light and heavy petting, and voluntary intercourse. (b) Sexual Preoccupation (15 items, $\alpha = .91$)—having positive attitudes toward and high frequency of masturbation, being turned-on by pornographic pictures or sexual themes, and thinking about sex frequently. (c) Negative Attitude Toward Sex (10 items, $\alpha = .85$)—having attitudes that sex is dirty and embarrassing, being frightened by sex, believing that sex results in the loss of respect for self and from friends, and worrying about becoming pregnant. (d) Pressure to Engage in Sex (internal and external, 6 items, $\alpha = .70$)—belief that a sense of maturity and respect from friends will be gained, that sex is expected, and that one will feel more loved and wanted upon having sex. Factor intercorrelations are sufficiently low relative to alpha reliabilities indicating that each factor is independent, yet the constructs are somewhat related (see Table 1).

Sexually Abused and Comparison Group Differences

As responses on the SAAQ could be affected by marital or cohabitation status (e.g., married participants may report a relatively low number of partners or relatively high sexual activity compared with those who are not married) and as groups differed significantly with respect to this variable, it was deemed essential to statistically control for marital or cohabitation status in all further analyses. Also, many constructs are age sensitive (e.g., sexual permissiveness becomes more “normative” as participants get older) and, as participants span a relatively large age range, age was also controlled in all further analyses.

Table 2 contains SAAQ variable means, standard deviations, and percentages for the total sample and individually for the abused and comparison groups. To exact some control over the experimentwise alpha, we tested omnibus multivariate analysis of variance (MANOVA) models for each set of SAAQ variables in Table 2 to determine whether the groups differed significantly with respect to the dependent variables while controlling for age and marital or cohabitation status.

A main effect for group was significant for the first set of dependent variables, $F(6, 57) = 2.53, p = .01$. Post hoc comparisons revealed that abused participants were more preoccupied with sex, $F(1, 162) = 3.98, p = .04$. A main effect for group was significant for the second set of dependent variables, $F(9, 126) = 3.11, p = .002$. Post hoc comparisons revealed that abused participants were significantly younger at the age of first voluntary intercourse, $F(1, 134) = 15.18, p = .0002$, and endorsed significantly lower birth control efficacy, $F(1, 133) = 11.66, p = .0008$ (percentage currently trying to conceive was also controlled in this analysis). A main effect for group was significant for the third set of dependent variables, $F(4, 42) = 4.71, p = .003$. Post hoc comparisons revealed that abused participants were significantly younger at the birth of first child, $F(1, 45) = 12.32, p = .0004$, and were significantly more likely to have had teenage births, $F(1, 45) = 16.35, p = .0001$.

Psychological Functioning and Sexual Distortion

To test whether psychological functioning measured earlier in development had an effect on sexual distortion, we tested longitudinal structural models with LISREL 8.12 (Joreskog & Sorbom, 1993) where distinct sexual distortion variables (i.e., sexual preoccupation and sexual aversion) measured at Time 5 were the outcome variables of interest. Pathological dissociation, trait anxiety, and depression were measured at Time 1 in childhood and again at Time 4 in adolescence. Childhood sexual behavior problems were measured only at Time 1. For each variable in Figure 1, the factor loading path (not shown) was fixed to the value of the alpha reliability for the measure and the error/uniqueness path (not shown) was fixed at one minus alpha. By analyzing only the percentage of reliable measurement variance this procedure allows for the approximation of latent space estimates (Loehlin, 1987). Age and marital or cohabitation status were residualized by use of multiple regression prior to structural analyses.

To discern the unique contribution of abuse status in the prediction of the Time 5 outcomes, we examined the psychological variables as potential developmental confounds in a temporal sequence. In the model depicted in Figure 1, each variable from a previous time point was hypothesized to predict all variables at later time points. The model tested in Figure 1 required that (a) all paths from abuse status predict all Time 1, Time 4, and Time 5 variables; (b) all Time 1 variables predict all Time 4 and Time 5 variables; and (c) all Time 4 variables predict Time 5 variables. For ease of interpretation, we depict only paths with significant standardized estimates in Figure 1. Because they were of secondary interest to the theory being modeled, within-time correlations (not shown) were fixed to the values reported in the Appendix and were not estimated to preserve degrees of freedom. The correlation between outcomes was of primary interest and, therefore, was freely estimated and is depicted in the figure.

The model in Figure 1 fits the data reasonably well, $\chi^2(30, N = 147) = 101.20$ (goodness-of-fit index = .89, normed fit index = .94, comparative fit index = .95, root-mean-square error of approximation = .08). Results indicated that childhood sexual abuse remained a significant predictor of sexual preoccupation ($\beta = .30, p < .05$) over and above pathological dissociation, depression, anxiety, and sexual behavior problems measured at previous time points. In addition, trait anxiety measured at Time 4 was a significant predictor of sexual preoccupation ($\beta = .23, p < .05$). Childhood sexual abuse was predictive of Time 1 sexual behavior problems ($\beta = .25, p < .05$) and of Time 1 pathological dissociation ($\beta = .36, p < .01$). Time 1 anxiety predicted Time 4 anxiety ($\beta = .24, p < .05$).

The extent to which psychological variables can moderate (Baron & Kenny, 1986) the relationship between childhood sexual abuse and later sexual distortion was examined with a multiple group structural model where the Time 1 and Time 4 psychological variables were hypothesized to predict Time 5 outcomes (Figure 2). To conclude that significantly different

relationships exist across groups, we performed one-degree-of-freedom, nested chi-square tests of cross-group equality constraints (Raykov, 1997). Significant estimates for each group are depicted in Figure 2 (estimates for the abused group are depicted *above* estimates for the comparison group).

Results indicated that a significant group moderator exists between childhood sexual behavior problems and sexual aversion (chi-square change from base model = 29.67 for df change = 1, $p < .01$) indicating that childhood sexual behavior problems were predictive of sexual aversion, but only for the abused group. Time 4 trait anxiety remained a significant predictor of sexual preoccupation, but there was not a significant difference between the beta for the abused group and the beta for the comparison group (chi-square change from base model = 3.28 for df change = 1, $p = .18$). The abused and comparison groups differed significantly in the relationship between Time 1 pathological dissociation and pathological dissociation at Time 4 (chi-square change from base model = 5.66, for df change = 1, $p < .05$).

To explore the idea that both a sexual preoccupation and a sexual aversion can exist in the same individual, we created a variable named *sexual ambivalence* by adding scores on the sexual preoccupation factor to scores on the sexual aversion variable as described above. This variable was not included in the structural equation models of Figures 1 and 2 because of its linear dependence with the other outcomes. Instead, a linear regression model was performed in which sexual ambivalence was regressed on abuse status and the Time 1 and Time 4 psychological variables simultaneously. Table 3 shows that abuse status was not a significant predictor of sexual ambivalence ($\beta = .07$, $p = .45$). Time 4 pathological dissociation was the only significant predictor ($\beta = .22$, $p = .03$) when in company with all other hypothesized predictors.

Abused Profile Subgroup Findings

On the basis of the clustering of abused participants in our previous work (see Method section), the abused group was split into three profile subgroups based on the characteristics of abuse experiences. The findings in Table 4 suggest that there are some important differences within the sexually abused group regarding the three types of sexual distortion. A MANOVA model was proposed in which the three sexual distortion types were entered as the dependent variables and the four-level grouping variable (three abused subgroups and the comparison group) was entered as the independent variable. With age and marital or cohabitation status covaried, a main effect for the four-level grouping variable was found to be significant, $F(3, 160) = 3.21$, $p = .03$. Post hoc analyses indicated that participants in the SP subgroup scored significantly higher than the comparison group on the Sexual Preoccupation factor. Results also indicated that the BF subgroup scored significantly higher on the sexual aversion outcome variable than both the SP subgroup and the comparison group and that the BF subgroup scored significantly higher than all other groups on the sexual ambivalence outcome variable.

Discussion

The primary goal of this article was to use data from a longitudinal, prospective study to better understand the effects of childhood sexual abuse on the development of sexual distortion in late adolescence and early adulthood. The current study is one of the few prospective studies to examine this relationship and is the only study to simultaneously use a stringent definition of childhood sexual abuse, examine the differential effects of the abuse characteristics, use a well-matched comparison group, and retain a large portion of the original sample (over 95%) for reassessment approximately 8 to 10 years after disclosure. The current study also used a relatively comprehensive assessment of sexual activity as well

as sexual attitudes facilitating the examination of several distinct types of sexual distortion including sexual preoccupation, sexual aversion, and a sexual ambivalence (a preoccupation coupled with an aversion).

Findings reported here support the notion that childhood sexual abuse may be a risk factor for early and risky sexual activity and teenage motherhood. Sexually abused participants reported being significantly younger at the age of voluntary intercourse, reported less birth control efficacy, were younger at the birth of their first child, and were more likely to be teen mothers than were comparison participants. As Finkelhor and Brown's (1985) traumagenic dynamics model would stipulate, it is possible that by adolescence negative sexual labels (stigmas) associated with being a victim of childhood sexual abuse are integrated into the self-concept, facilitating the formation of a compulsive replication of certain sexual feelings and experiences learned from the abuse. These repetitions may be played out in situations that resemble the abuse, resulting in an overgeneralization of the abuse experience to other close relationships. Such ideas may result in an inability to glean non-sexual or emotional rewards from relationships, therefore placing victims in potentially risky or exploitive sexual situations (Downs, 1993; Noll et al., 2000).

The association between childhood sexual abuse and early motherhood is not well understood, but there has been speculation that having a child can function as a way of compensating for feelings of inadequacy and loneliness (Horowitz, Klerman, Kuo, & Jekel, 1991) and low self-esteem (Caldas, 1993). It is possible that the abuse survivor views having a baby as healing and somehow redemptive. She may believe that she has the power to create the one person who will always love and never abandon her. Clearly, additional research regarding attitudes toward pregnancy and motherhood needs to be conducted to glimpse an accurate picture of this dynamic.

Sexually abused participants also endorsed more attitudes indicative of sexual preoccupation than did comparison participants, and this association remained even when prior psychological functioning such as depression, anxiety, dissociation, and sexual behavior problems was controlled. Sexual preoccupation may be an indication of unexpressed or internalized sexual compulsions. Sexual compulsion or preoccupation that is not acted on may get expressed in the form of continued pornography consumption, excessive masturbation, and an overactive sexual fantasy life. Unexpressed or internalized sexual compulsions can also be displaced and expressed through other obsessive compulsive behaviors and anxiety disorders (i.e., obsessive compulsive disorder, compulsive spending, overeating, and excessive gambling; Rinehart & McCabe, 1998). This idea is consistent with the findings reported here in that the only psychological variable to predict sexual preoccupation above and beyond the occurrence of childhood sexual abuse was trait anxiety measured in adolescence.

The abused subgroup that seemingly experienced relatively less severe forms of abuse, the SP group (abuse by a single perpetrator who was not the biological father, little physical violence, and shorter durations) displayed the highest levels of sexual preoccupation. A few studies have documented that participants with this sort of abuse are most likely those who appear to be asymptomatic immediately following or shortly after disclosure (Elliott & Briere, 1994) but are more disturbed than other abused participants over the long term (Trickett et al., 2001). Because the abuse may have been deemed "mild" and participants may have presented asymptomatic, initial intensive treatment may not have been received to the degree necessary to combat later distortion. Sexual preoccupation may constitute a "sleeper effect" (Briere, 1992) that is triggered as issues of sexual identity become more salient. Participants in this subgroup also experienced the onset of abuse at older ages than did other abused participants. This onset of abuse may likely have coincided with the very

beginnings of sexual identity formation thus contributing to the repetition compulsion of sexual preoccupation.

Sexual aversion may develop as unpleasant memories and affect associated with traumatic sexualization become associated with subsequent sexual arousal. There may be a specific aversion to sexual thoughts, feelings, and situations reminiscent of the abusive experience. This negative association with sex may interfere with sexual pleasure and may even result in sexual dysfunction. Our results indicate that sexual behavior problems in childhood were associated with sexual aversion and that this association was evident only for the abused group. Sexual behavior problems in childhood are identified through an observer suggesting that such public displays of inappropriate sexual behavior have not gone unnoticed, at least by the mother, and likely by others in society. In addition to the stigma associated with being a victim of sexual abuse, survivors who exhibit sexual behavior problems in childhood may experience additional stigma associated with these public displays. The shame associated with being abused may thus be compounded. The child may internalize this stigma resulting in an overgeneralization of the abusive experience to other potential sex partners and to a general aversion or avoidance of sexual thoughts, feelings, and situations (Finkelhor & Brown, 1985).

Participants who were abused by their BF in the absence of physical coercion for long durations at young ages endorsed attitudes indicative of sexual aversion to a greater extent than other abused and comparison participants. It is likely that the betrayal of trust experienced by this subgroup is profound. When someone who is expected to be the child's protector causes harm, and sexual boundaries are grossly distorted, the child may overgeneralize the abuse experience to all or most men, resulting in sexual and social withdrawal.

Sexual ambivalence results when sexual preoccupation and sexual aversion occur simultaneously. Despite feelings of shame and betrayal, sexually ambivalent individuals may maintain a seemingly contradictory compulsion to recreate the sexual arousal associated with sexual exploitation. Our results indicate that persistent pathological dissociation is the strongest predictor of sexual ambivalence above and beyond the experience of childhood sexual abuse. Pathological dissociation was shown to be pervasive throughout development for abused participants, whereas childhood pathological dissociation is likely dissipated by adolescence for comparison participants. This difference can be explained by the idea that there are relatively benign childhood dissociations that normally subside by adolescence but that, if allowed to persist, become maladaptive in adolescence (Putnam, 1997). Persistently dissociative individuals have been known to behave in a certain way in one state and behave in a contradictory manner in another—such as would be required for sexual ambivalence to occur.

The BF-abused subgroup displayed significantly higher sexual ambivalence than all other groups. As is seen in this sample as well as in others (Russell, 1986), abuse perpetrated by a BF is often done so in the absence of physical force or violence. However, the absence of physical force does not negate the very real power differential that exists between the victim and the perpetrator. A victim not physically forced into adult-child sexual relations may be more likely to consider herself a willing participant in the abuse and engage in self-blame to a greater degree than someone for whom culpability lies indisputably with the perpetrator. This guilt and self-blame may result in considerable confusion about issues surrounding sexual arousal, thus contributing to the development of sexual ambivalence.

It should be noted that this sample may not include the most disturbed of the abused population for several reasons. For example, to qualify for participation in the study the

abused participants had to be referred by a social service agency and have a nonabusing caretaker (usually the biological mother) who agreed to participate. Also, whereas this study used a relatively large sample as compared with other longitudinal studies, the sample size, particularly within the abuse profile subgroups, is smaller than ideal. It is also recognized that the *R*-square values for models tested here are not exceptionally high, indicating that there are variance components of outcomes that were not measured in the current design. Therefore, these findings should be replicated before generalizing to the larger abused population, and future designs should include clinically relevant predictor variables across several developmental stages to more adequately model the dynamics of the long-term effects of childhood sexual abuse.

Longitudinal research in general has been criticized for including possible cohort effects. To minimize such cohort effects, our initial design was cross-sequential, meaning that the initial sample included participants from a wide age range and making it possible to do both cross-sectional within-time analyses as well as longitudinal analyses across time (Bell, 1953; Wohlwill, 1970). It is recognized that the cross-sequential design may result in a potential lack of homogeneity with regard to developmental stage at any given time point. Although chronological age is held constant in each analysis, this statistical control does not necessarily equate participants developmentally.

An important conclusion generated by this research is that no sexual abuse should be considered to be mild. Results reported here indicate that distinct patterns of sexual distortion may arise for abuse survivors who experienced differing forms of childhood sexual abuse. These variations are based on a host of abuse characteristics including perpetrator identity, duration of abuse, age at onset, the presence of physical force, and so forth, and delineations along a continuum of mild to severe are not adequate to describe the long-term sexual development of sexually abused women.

Childhood sexual abuse may put women at risk for sexual distortion later in adolescence or early adulthood. Sexual distortion can take many forms, and each form can be independently predicted by distinct psychological functioning variables earlier in development. Effective interventions might include treatment of anxiety and dissociative symptoms, a reversal of potential sexual stigmatizations, and the rebuilding of trust and empowerment. Treatment should either continue into and through adolescence or be revisited when issues of sexuality are developmentally salient.

Acknowledgments

This research has been supported in part by National Institute of Mental Health Grant MH-48330 and National Center on Child Abuse and Neglect Grant 90CA1549. We thank Lief A. Noll, James J. Theisen, Kathleen Galleher, and Grayson N. Holmbeck for insightful comments on earlier versions of this article.

References

- Armstrong JA, Putnam FW, Carlson EB, Libero DZ, Smith SR. Development and validation measure of adolescent dissociation: The Adolescent Dissociative Experiences Scale. *Journal of Nervous and Mental Disease* 1997;185:1–7.
- Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology* 1986;51:1173–1182. [PubMed: 3806354]
- Beitchman JH, Zucker K, Hood HE, daCosta GA, Akman CF, Cassavia S. A review of the long-term consequences of child sexual abuse. *Child Abuse & Neglect* 1992;16:101–118. [PubMed: 1544021]
- Bell RQ. Convergence: An accelerated longitudinal approach. *Child Development* 1953;24:145–152. [PubMed: 13141335]

- Bernstein EM, Putnam FW. Development, reliability and validity of a dissociation scale. *Journal of Nervous and Mental Disease* 1986;174:727–735. [PubMed: 3783140]
- Briere, JN. *Child abuse trauma: Theory and treatment of the lasting effects*. Thousand Oaks, CA: Sage; 1992.
- Brown LK, Kessel SM, Lourie KJ, Ford HH, Lipsitt LP. Influence of sexual abuse on HIV-related attitudes and behaviors in adolescent psychiatric inpatients. *Journal of the American Academy of Child and Adolescent Psychiatry* 1997;36:316–322. [PubMed: 9055511]
- Brown LK, Lourie KJ, Zlotnick C, Cohn J. Impact of sexual abuse on the HIV-risk-related behavior of adolescents in intensive psychiatric treatment. *American Journal of Psychiatry* 2000;157:1413–1415. [PubMed: 10964856]
- Browning CR, Laumann EO. Sexual contact between children and adults: A life course perspective. *American Sociological Review* 1997;62:540–560.
- Caldas SJ. Current theoretical perspectives on adolescent pregnancy and childbearing in the United States. *Journal of Adolescent Research* 1993;8:4–20. [PubMed: 12285963]
- Cunningham RM, Stiffman AR, Dore P, Earls F. The association of physical and sexual abuse with HIV-risk behaviors in adolescence and young adulthood: Implications for public health. *Child Abuse & Neglect* 1994;18:233–245. [PubMed: 8199905]
- Downs WR. Developmental considerations for the effects of childhood sexual abuse. *Journal of Interpersonal Violence* 1993;8:331–345.
- Elliott DM, Briere J. Forensic sexual abuse evaluations of older children: Disclosures and symptomatology. *Behavioral Sciences and the Law* 1994;12:261–277.
- 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 & Adolescent Psychiatry* 1996;35:1365–1374. [PubMed: 8885591]
- Finkelhor D, Brown A. The traumatic impact of child sexual abuse: A conceptualization. *American Journal of Orthopsychiatry* 1985;55:530–541. [PubMed: 4073225]
- Fiscella K, Kitzman HJ, Cole RE, Sidora KJ, Olds D. Does child abuse predict adolescent pregnancy? *Pediatrics* 1998;101:620–624. [PubMed: 9521944]
- Friedrich WN, Grambsch P, Damon L, Hewitt SK. Child Sexual Behavior Inventory: Normative and clinical comparisons. *Psychological Assessment* 1992;4:303–311.
- Friedrich WN, Urquiza AJ, Beilke R. Behavior problems in sexually abused young children. *Journal of Pediatric Psychology* 1986;11:47–57. [PubMed: 3958867]
- Herman J, Russell D, Trocki K. Long-term effects of incestuous abuse in childhood. *American Journal of Psychiatry* 1986;143:1293–1296. [PubMed: 3766794]
- Herrenkohl EC, Herrenkohl RC, Egolf BP, Russo JM. The relationship between early maltreatment and teenage parenthood. *Journal of Adolescence* 1998;21:291–303. [PubMed: 9657896]
- Hollingshead, AF. *Four Factor Index of Social Status*. Department of Sociology, Yale University; New Haven, CT: 1975.
- Horn JL, McArdle JJ. A practical and theoretical guide to measurement invariance. *Experimental Aging Research* 1992;18:117–144. [PubMed: 1459160]
- Horowitz SM, Klerman LV, Kuo H, Jekel J. Intergenerational transmission of school-age parenthood. *Family Planning Perspectives* 1991;23:168–177. [PubMed: 1936218]
- Jackson JL, Calhoun KS, Amick AE, Maddever HM, Habif VL. Young adult women who report childhood intrafamilial sexual abuse: Subsequent adjustment. *Archives of Sexual Behavior* 1990;19:211–221. [PubMed: 2360872]
- Jones LM, Finkelhor D, Kopiec K. Why is sexual abuse declining? A survey of state child protection administrators. *Child Abuse and Neglect* 2001;25:1139–1158. [PubMed: 11700689]
- Joreskog, KG.; Sorbom, D. *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Chicago: Scientific Software International; 1993.
- Kendall-Tackett, KA.; Williams, LM.; Finkelhor, D. Impact of sexual abuse on children: A review and synthesis of recent empirical studies. In: Bull, R., editor. *Children and the law: The essential readings*. Essential readings in developmental psychology. Malden, MA: Blackwell; 2001. p. 31-76.

- Kovacs M. Rating scales to assess depression in school-aged children. *Acta Paedopsychiatrica* 1981;46:305–315. [PubMed: 7025571]
- Loehlin, JC. Latent variable models: An introduction to factor, path, and structural analysis. Hillsdale, NJ: Erlbaum; 1987.
- McClellan J, McCurry C, Ronnei M, Adams J, Eisner A, Storck M. Age of onset of sexual abuse: Relationship to sexually inappropriate behaviors. *Journal of the American Academy of Child and Adolescent Psychiatry* 1996;34:1375–1383. [PubMed: 8885592]
- Miller BC, Monson BH, Norton MC. The effects of forced sexual intercourse on White female adolescents. *Child Abuse & Neglect* 1995;19:1289–1301. [PubMed: 8556443]
- National Center of Child Abuse and Neglect (NCCAN). Pub. No. NIS-2, CD-11794. Washington, DC: U.S. DHHS; 1988. Study of national incidence and prevalence of child abuse and neglect.
- National Center of Child Abuse and Neglect (NCCAN). Pub. No. NIS-3, CD-23595. Washington, DC: U.S. DHHS; 1996. Third study of national incidence and prevalence of child abuse and neglect.
- Noll JG, Trickett PK, Putnam FW. Social network constellation and sexuality of sexually abused and comparison females in childhood and adolescence. *Child Maltreatment* 2000;5:321–335.
- Putnam, FW. Dissociation in children and adolescents: A developmental perspective. New York: Guilford Press; 1997.
- Raykov T. Equivalent structural equation models and group equality constraints. *Multivariate Behavioral Research* 1997;32:95–104.
- Rinehart NJ, McCabe MP. An empirical investigation of hypersexuality. *Sexual & Marital Therapy* 1998;13:369–384.
- Russell, DEH. The secret trauma: Incest in the lives of girls and women. New York: Basic Books; 1986.
- SAS Institute. SAS 6.12. Cary, NC: Author; 1996.
- Smith C. The link between childhood maltreatment and teenage pregnancy. *Social Work Research* 1996;20:131–141.
- Speilberger, CD. State–Trait Anxiety Inventory for Children. Palo Alto, CA: Consulting Psychologist Press; 1973.
- Stock JL, Bell MA, Boyer DK, Connell FA. Adolescent pregnancy and sexual risk-taking among sexually abused girls. *Family Planning Perspectives* 1997;29:200–227. [PubMed: 9323495]
- Trickett PK, Noll JG, Reiffman A, Putnam FW. Variants of intrafamilial sexual abuse experience: Implications for long-term development. *Journal of Development and Psychopathology* 2001;13:1001–1019.
- Trickett, PK.; Putnam, FW. Developmental consequences of child sexual abuse. In: Trickett, PK.; Schellenbach, C., editors. *Violence against children in the family and the community*. Washington, DC: American Psychological Association; 1998. p. 39–56.
- Trickett, PK.; Reiffman, A.; Horowitz, LA.; Putnam, FW. Characteristics of sexual abuse in a sample of girls and female adolescents. In: Cicchetti, D.; Toth, SL., editors. *Rochester Symposium on Developmental Psychopathology: Vol. VIII. The effects of trauma on the developmental process*. Rochester, NY: University of Rochester Press; 1997. p. 289–314.
- Turner CF, Ku L, Rogers SM, Lindberg LD, Pleck JH, Sonenstein FL. Adolescent sexual behavior, drug use, and violence: Increased reporting with computer survey technology. *American Association for the Advancement of Science* 1998;280(5365):867–873.
- Udry, R. The Sexual Activity Questionnaire for Girls and Boys. University of North Carolina; Chapel Hill: 1988.
- Waller NG, Putnam FW, Carlson EB. Types of dissociation and dissociative types. *Psychological Methods* 1996;1:300–321.
- Welner Z, Reich W, Herjanic B. Reliability, validity, and parent-child agreement studies of the Diagnostic Interview for Children and Adolescents (DICA). *Journal of the American Academy of Psychiatry* 1987;26:649–653.
- Widom CS, Kuhns JB. Childhood victimization and subsequent risk for promiscuity, prostitution, and teenage pregnancy: A prospective study. *American Journal of Public Health* 1996;86:1607–1612. [PubMed: 8916528]

- Wohlwill, JF. Methodology and research strategy in the study of developmental change. In: Goulet, LR.; Baltes, PB., editors. *Life-span developmental psychology*. New York: Academic Press; 1970. p. 49-64.
- Wolfe VV, Gentile C, Michienzi T, Sas L. The Children's Impact of Traumatic Events Scale: A measure of post-sexual-abuse PTSD symptoms. *Behavioral Assessment* 1991;13:359–383.
- Wyatt GE. Child sexual abuse and its effects on sexual functioning. *Annual Review of Sex Research* 1991;2:249–266.

Figure 1.

Time 1 and Time 4 psychological predictors of Time 5 sexual distortion for sexually abused ($n = 77$) and comparison ($n = 70$) females. Significant (at $p < .05$) standardized parameter estimates shown. Within-time intercorrelations are fixed to values reported in the Appendix and are not shown.

Figure 2.

Multiple group structure of Time 1 and Time 4 psychological predictors of Time 5 sexual distortion. Significant (at $p < .05$) abused group ($n = 77$) standardized parameter estimates depicted above comparison group ($n = 70$) estimates. Bold arrows depict significant group moderators at $p < .01$. Within-time intercorrelations are fixed to values reported in the Appendix and are not shown.

Table 1

Rotated Factor Pattern of 43 Sexual Activity and Attitude Items Composing Four Factors

Items: Item content	Sexual Permissiveness	Sexual Preoccupation	Negative Attitude Toward Sex	Pressure to Engage in Sex
Factor 1				
Romantic kissing	.94	-.10	.17	.14
Felt private parts under clothes	.93	.01	.02	-.10
Private parts felt under clothes	.90	-.01	-.01	-.01
Private parts felt over clothes	.89	.02	.01	-.10
“Necked” or “made-out”	.88	.03	.02	.07
Romantic arm around partner	.87	-.02	.12	.09
Felt private parts over clothes	.83	.05	-.01	-.10
Have had sexual intercourse	.76	.06	-.01	-.10
Romantic holding of hands	.73	.05	.04	.07
Likely to have intercourse	.53	-.01	<u>-.39</u>	.01
Would like to have intercourse	.49	.17	<u>-.35</u>	.14
OK for people my age to have sex	.42	-.01	<u>-.39</u>	-.01
Factor 2				
Read books/magazines about sex	-.10	.77	.01	.09
Sexual pictures turn-on	-.11	.76	.03	.10
Movies/television love scenes turn-on	.04	.71	.13	.21
Fantasize or daydream about sex	-.10	.69	-.10	.09
Attractive female turn-on	.05	.68	.06	<u>-.30</u>
Attractive male turn-on	.18	.66	.11	-.10
People without clothes turn-on	.07	.66	.03	<u>-.30</u>
Masturbation frequency	.07	.64	-.01	-.20
Dancing turn-on	-.01	.61	-.10	.11
Seeing romantic kissing turn-on	-.01	.61	.04	.19
Own body turn-on	.05	.59	.07	.01
Masturbation doesn't hurt you	.11	.52	-.20	-.10
Sexual dreams turn-on	-.02	.44	-.10	.19
Songs with sexual content turn-on	-.11	.43	-.10	<u>.31</u>
Think about sex often	<u>.26</u>	.42	-.20	.06
Factor 3				
Having sex would hurt my health	.10	-.01	.76	-.10
Lose respect for myself	-.20	.09	.72	-.10
Thinking of sex upsets me	.10	.01	.70	.04
Frightened when thinking of sex	.11	.01	.69	.09
Sex is dirty	.09	-.10	.65	.02
Lose the respect of friends	<u>-.30</u>	.23	.52	.07
Would be embarrassed	<u>-.31</u>	.10	.48	.02
Never want to think about sex	-.10	-.20	.46	-.01

Items: Item content	Sexual Permissiveness	Sexual Preoccupation	Negative Attitude Toward Sex	Pressure to Engage in Sex
I wish sex did not exist	.08	-.01	.45	-.02
Worry about getting pregnant	-.10	-.02	.36	.06
Factor 4				
Would feel more mature	-.01	-.01	.04	.63
Person would like me more	.09	-.10	.07	.57
Would feel more loved and wanted	.11	.08	-.20	.50
Gain the respect of my friends	-.01	-.01	.01	.49
Do sexual things because expected	.09	.08	<u>.33</u>	.41
Show the person I liked them	.08	.11	-.20	.37
Factor intercorrelations ^a				
1. Sexual Permissiveness	.96	.42	-.65**	.14
2. Sexual Preoccupation	.44**	.91	-.27*	.15
3. Negative Attitude Toward Sex	-.55**	-.39**	.85	-.05
4. Pressure to Engage in Sex	.03	.25*	.02	.70

Note. Hypothesized loadings are in bold, hyperplane loadings are underlined.

^a Abused group correlations below the italic diagonal, comparison group correlations above diagonal. Correlations are not significantly different across groups. Alpha reliabilities are depicted in diagonal.

* $p < .05$.

** $p < .01$.

Adjusted Raw Means and Standard Deviations Shown for Abused and Comparison Group Differences in Time 5 Sexual Activity and Attitude Variables and Progeny Variables

Table 2

Variable	Total		Abused		Comparison	
	M	SD	M	SD	M	SD
Set 1: Time 5 SAAO responders	n = 166		n = 77		n = 89	
Sexual Permissiveness	49.67	12.60	48.52	13.24	50.66	12.09
(possible range: 12–60)						
Sexual Preoccupation	39.66	11.37	41.41	11.05	38.14	11.37
(possible range: 15–75)						
Negative Attitude Toward Sex	18.38	6.31	17.94	5.99	18.76	5.56
(possible range: 10–50)						
Pressure to Engage in Sex	14.48	3.97	15.08	4.26	13.97	3.67
(possible range: 6–30)						
% reporting any STDs	26.49	44.27	32.44	45.13	21.48	43.01
% who have had intercourse	83.13	37.55	83.92	35.10	82.45	39.45
Set 2: Have had sexual intercourse:	n = 138		n = 66		n = 72	
Age at first intercourse ^a	2.93	1.27	2.60	0.94	3.23	0.99
(approximations in years)	(≈ 15.00)		(≈ 14.00)		(≈ 15.50)	
No. of partners in past year ^b	2.76	1.25	2.89	1.28	2.64	1.21
Birth control efficacy ^{c,d}	4.16	2.04	3.56	4.90	4.70	5.00
No. of HIV-risk behaviors						
(possible range: 0–11)	3.96	1.83	4.15	1.93	3.78	1.71
% who have been pregnant	53.17	50.13	52.95	49.12	55.62	50.22
No. of pregnancies (range: 0–5)	0.98	1.20	1.05	1.29	0.90	1.10
% who have had at least one abortion	22.46	41.88	22.33	42.55	22.58	42.22
% currently trying to conceive	8.70	28.27	12.62	34.55	5.09	20.45
% who have given birth	35.51	48.01	37.06	49.50	34.08	46.38
Set 3: Have given birth at least once:	n = 49		n = 27		n = 22	
Age at birth of first child (years)	19.48	1.99	18.70	1.91	20.43	1.74

Variable	Total		Abused		Comparison		p
	M	SD	M	SD	M	SD	
% teenage births	61.22	49.22	82.32	39.47	35.32	49.23	.0001**
No. of children	1.51	0.79	1.60	0.83	1.39	0.72	.37
% families with more than one biological father	20.40	25.55	28.75	26.62	10.17	29.15	.11

Note. Adjustments are made for age and marital or cohabitation status; *p* values correspond to post hoc, univariate tests. SAAQ = Sexual Activities and Attitudes Questionnaire; STD = sexually transmitted disease.

^aVariables are scored 1 = 12 years old or younger; 2 = 13–14 years old; 3 = 15–16 years old; 4 = 17–18 years old; 5 = 19–20 years old; 6 = 21 years old or older.

^bVariables are scored 1 = 1; 2 = 2 or 3; 3 = 4–7; 4 = 7–10; 5 = more than 10.

^cVariables are scored from 1 = *I never use birth control*, to 6 = *For sure, every time I have sex I use birth control*.

^dPercentage currently trying to conceive is also controlled.

* *p* < .05.

** *p* < .01.

Table 3Standardized Regression Weights for Variables Predicting Sexual Ambivalence ($R^2 = .19$)

Independent variable	β	p
Abuse status	.07	.45
Age (years)	-.14	.08
Marital/cohabitation status	-.16	.09
T1 sexual behavior problems	.19	.13
T1 dissociation	-.04	.74
T1 anxiety	-.09	.41
T1 depression	-.08	.40
T4 dissociation	.22	.03
T4 anxiety	.20	.09
T4 depression	-.18	.09

Note. $N = 147$ (77 abused; 70 comparison). Bold font indicates a significant loading. Results were not significantly different across groups. T1 = Time 1; T4 = Time 4.

Sexual Distortion by Abused Profile Subgroups

Table 4

Distortion type	MP subgroup (<i>n</i> = 34)		SP subgroup (<i>n</i> = 23)		BF subgroup (<i>n</i> = 20)		Comparison (<i>n</i> = 89)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Sexual preoccupation	38.83	12.23	42.74	9.83 ^a	42.13	12.87	38.14	11.37
Sexual aversion ^b	0.05	1.14	-0.18	0.73	0.42	1.21 ^{a,c}	-0.04	0.99
Sexual ambivalence ^d	0.02	0.89	0.01	0.84	0.61	1.17 ^{a,c,e}	-0.13	1.00

Note. Age and marital or cohabitation status are controlled in each analysis. Post hoc Student Newman-Keuls tests were performed to discern which means differed significantly from one another while controlling for multiple tests. MP = multiple perpetrator abused profile subgroup; SP = single perpetrator abused profile subgroup; BF = biological father abused profile subgroup.

^aDiffers from comparison group at *p* < .05.

^b(-1 × sexual permissiveness) + negative attitude toward sex; *z* scores presented.

^cDiffers from SP subgroup at *p* < .05.

^dSexual preoccupation + sexual aversion; *z* scores presented.

^eDiffers from MP subgroup at *p* < .05.

Appendix

Partial Correlations of Variables Used in Analyses: Age and Marital or Cohabitation Status Partialled

Variable	Sex preocc	Sex averse	Sex ambig	T1cdi	T1anx	T1cdc	T1csbi	T4cdi	T4anx	T4ades
T1cdi	-.11	.11	.03	—						
T1anx	-.06	.20*	.17	.39*	—					
T1cdc	-.08	.22*	.18*	.11	.20*	—				
T1csbi	-.06	.27*	.24*	.06	.23*	.74*	—			
T4cdi	.01	-.01	-.01	.20*	.14	.09	.10	—		
T4anx	.11	.12	.21*	.19*	.31*	.10	.15	.59*	—	
T4ades	.01	.18*	.20*	.22*	.22*	.20*	.23*	.38*	.48*	—
AgeInt	-.10	.06	-.03	-.05	-.18*	-.22*	-.18*	-.04	-.05	-.10
NumPart	.04	-.28**	-.20*	.02	.03	-.05	-.02	.11	.13	.18
BCEff	-.03	-.16	-.16	-.15	-.02	-.14	-.12	-.04	-.05	-.19*
HIV	.24**	-.25**	-.01	.06	.09	-.01	-.04	.16	.12	-.02
STDs	.06	-.08	-.01	.01	.09	-.10	-.04	.01	.08	-.02
Preg	-.07	-.07	-.12	.04	.06	.04	.15	-.09	-.10	-.09
Abort	.04	-.02	.01	.05	.01	-.10	-.03	-.04	-.05	.02
PregTry	-.05	.06	.01	.32*	.12	.15	.04	-.01	.01	.09
Birth	-.22**	.01	-.18*	.10	.01	.05	.02	.17*	.02	-.04
AgeChl	-.34*	.03	-.24	-.17	-.01	-.19	-.11	-.24	-.07	-.19
Teen	.33*	-.05	.21	.16	-.05	.14	.21	.16	-.06	-.01
#Child	.10	-.11	-.01	.12	-.18	.10	.01	.21	-.01	.11
MultiFath	-.05	-.14	-.16	.15	-.06	.16	-.07	.17	.03	.26
Age	.44*	-.54*	-.27*	-.04	-.05	-.21*	-.29*	.05	-.02	-.20*
MarCoh	.22*	-.26*	-.12	.04	-.09	-.05	.01	.08	-.08	-.07

Note. Sex preocc = sexual preoccupation; Sex averse = sexual aversion; Sex ambig = sexual ambiguity; T1cdi = Time 1 child depression inventory; T1anx = Time 1 trait anxiety; T1cdc = Time 1 childhood dissociation checklist; T1csbi = Time 1 childhood sexual behaviors inventory; T4cdi = Time 4 child depression inventory; T4anx = Time 4 trait anxiety; T4ades = Time 4 adolescent dissociative experiences scale; AgeInt = age at first intercourse; NumPart = number of sexual partners past year; BCEff = birth control efficacy; HIV = HIV-risk behaviors; STDs = sexually transmitted diseases; Preg = have been pregnant; Abort = have had an abortion; PregTry = currently trying to conceive; Birth = have given birth; AgeChl = age at birth of first child; Teen = teen mother; #Child = number of children; MultiFath = multiple biological fathers per family; Age = age at outcome assessment; MarCoh = marital or cohabitation status at outcome.

$p < .05$
*

NIH-PA Author Manuscript

NIH-PA Author Manuscript

NIH-PA Author Manuscript