Clinical and Institutional Interventions and Children's Resilience and Recovery from Sexual Abuse

Carolyn Moore Newberger, Ed.D.

Isabelle M. Gremy, M.D.

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During the past 25 years there has been an explosion of reported cases of child sexual abuse, and heightened concern about its effects on children's subsequent development. Despite this concern, our understanding of the effects of childhood sexual abuse remains limited, in part due to the methodological limitations of much research in this area. Until recently, current knowledge has rested primarily on clinically based descriptive studies and retrospective surveys of adults abused during their childhoods.

Isolated clinical impressions, retrospective interviews of adult psychiatric patients, inconsistent definitions, and surveys limited by high refusal rates and self report of past events can yield a confusing picture as to how sexual abuse affects children. Although studies are not consistent in `finding links between particular abuse characteristics and predictable outcomes, most studies report significant associations between a childhood history of sexual abuse and various deleterious outcomes in children and in adults (e.g., Ackerman, Newton, McPherson, Jones, & Dykman, 1998; Beitchman, Zucker, Hood, daCosta, & Akman, 1991; Boney-McCoy & Finkelhor, 1996; Collings, 1995; Conte, 1989; de Young, 1982; Dinwiddie, Heath, Dunne, Bucholz, Madden, Slutske, Bierut, Statham, & Martin, 2000; Elliott, & Tarnowski,1990; Fleming, Mullen, Sibthorpe, & Bammer, 1999; Kendler, Bulik, Silberg, Hettema, Myers, & Prescott, 2000; Mcleer, Dixon, Henry, Ruggiero, Escovitz, Niedda, & Scholle, 1998; Nelson, Heath, Madden, Cooper, Dinwiddie, Bucholz, Glowinski, McLaughlin, Dunne, Statham, & Martin, 2002; Newberger, Gremy, Waternaux, & Newberger, 1993; Polusny & Follette, 1995; Tong, Oates, & McDowell, 1987; Young, Bergandi, & Titus, 1994).

Longitudinal studies further support the growing evidence that sexual abuse contributes to serious emotional and behavioral problems. (E.g., Boney-McCoy & Finkelhor, 1996; Brown, Cohen, Johnson, & Smailes, 1999; Fergusson, Horwood & Lynskey, 1996; Johnson, Cohen, Brown, Smailes, & Bernstein, 1999; Kendall-Tackett, Williams, & Finkelhor, 1993; Mullen, Martin, Anderson, Romans, & Herbison. 1996). In contrast, some investigators report few or no effects (e.g., McLeer, Deblinger, Henry, & Orvaschel, 1992).

An issue with many of the studies of sexual abuse outcomes for children lies in their reliance on maternal report. When children's self-reports rather than maternal reports of children's emotional states are used, different findings emerge. Mothers report more severe symptoms in their children than their children report for themselves (Newberger, Gremy, Waternaux, &

Newberger, 1993). When children report their own feelings, differences between sexually abused children and children in normal populations are less consistently found (Mannarino, Cohen, Smith, & Moore-Motily, 1991).

Perhaps in part due to their own distress, mothers of sexually abused children may over-report their children's emotional distress (Cohen & Mannarino, 1988; Everson, Hunter, Runyon, Edelsohn & Coulter, 1989). Alternatively, children may underreport, and mothers may be more sensitive to their children's emotional states. This interpretation is supported by the preponderance of studies using a variety of methodologies that find both shorter and longer-term emotional effects of childhood sexual abuse. Recent research also reveals that childhood abuse changes the brain in ways that may enduringly compromise emotional stability (Bremner, 2003; Cromdie, 2003, Putnam and Trickett, 1997).

Rind, Tromovitch, & Bauserman (1998) created considerable controversy when they reported that a meta-analysis of childhood sexual abuse in college samples revealed no lasting effects of sex between adults and "consenting" children. Such conclusions are contradicted by other meta-analyses that find significant effects of child sexual abuse on adjustment in children and adults (Jumper, 1995; Neumann, Houskamp, Pollock, & Briere, 1996; Paolucci. Genuis, & Violato, 2001). From a survey of 13 municipally based studies conducted since 1990 with more than 100 participants, Fergusson and Mullen (1999) calculated odds ratios that demonstrate connections between childhood sexual abuse and an increase in incidence of major depression, eating disorders, suicidal and self-damaging behavior, post-traumatic stress disorder, and sexual problems in adulthood.

Although particular aspects of victimization, such as the use of force and the relationship of the perpetrator to the child (Cosentino, 1996; Fergusson, et al., 1996; Friedrich, Urquiza & Beilke, 1986; Mennen, 1993), and penetration (Mannarino, et al., 1991) have been associated with differences in measures of emotional symptoms, research findings remain unclear concerning the contributions of specific victimization experiences to later pathology and distress (see Beitchman, Zucker, Hood, daCosta, Akman, & Cassavia, 1992). Furthermore, children with comparable experiences have been shown to respond in very different ways (Newberger & De Vos, 1988; Tufts New England Medical Center, 1984; Conte, 1989, Kendall-Tackett, et al., 1993).

Broad categories of childhood stressors, including assault and victimization, appear to be associated with behavioral and

emotional symptoms (Tiet, Bird, Hoven, Moore, Wu, Wicks, Jensen, Goodman, & Cohen, 2001). A major recent analysis from the National Survey of Adolescents finds that child sexual abuse is particularly associated with symptoms consistent with Post Traumatic Stress Disorder (PTSD), often accompanied by comorbid conditions (Kilpatrick, Ruggiero, Acierno, Saunders, Resnick, & Best, 2003).

The consensus of the majority of researchers and practitioners in the field is that child sexual abuse is associated with a range of short-term and long-term emotional and adjustment problems, but that not all individuals will be similarly affected (see Paolucci, Genuis, & Violato, 2001; Putnam, 2003). Friedrich (1990) emphasizes that "protective factors" modulate the impact of sexual abuse. Friedrich and other investigators posit that these factors help to explain the resilience of sexual abuse survivors that do not demonstrate serious psychosocial or psychiatric difficulties. Protective factors may include supportive family environments, school success, problem solving skills and positive peer relations (Cohen & Mannarino, 1998; Leim, James, O'Toole, & Boudewyn, 1997; Moran & Eckenrode, 1992; Romans, Martin, Anderson, O'Shea, & Mullen, 1995; Spaccarelli, 1994; Spaccarelli & Kim, 1995).

Developers of the transactional approach for understanding adversity and its outcomes stress the explanatory power of studying transactions among persons and events prospectively in our efforts to discern cause and effect relationships and interactions that may modify those relationships. Such prospective studies provide opportunities not only to define how risk factors unfold over time, but also what contributes to resilience in the face of risk (Cicchetti & Rizley, 1981; Lutha & Cicchetti, 2000; Sameroff, 2000). The conceptual framework for this study draws on such approaches to adversity and outcomes that recognize the importance of context and that seek to understand resilience as well as risk (Banyard, Williams, & Siegel, 2001; Conte & Schuerman, 1987; Lynch M., & Cicchetti D., 1998; Spaccarelli & Kim, 1995; Testa, Miller, Downs, & Panek, 1992; Tremblay & Piche, 1999). We examine particularly interventions children receive following disclosures and their roles in mediating whatever effects sexual abuse independently exerts.

Because characteristics of a presumably traumatizing experience provide only limited information about its impact (Friedrich, 1990; Garmezy, 1991; Rutter, 1987), we share a belief in the importance of an ecological perspective on the lives of child sexual abuse victims, if we are to understand the various ways

that victims respond over time. Events and responses of others following a traumatic experience have important implications for children's resilience and recovery. Several investigators have identified protective and risk factors that buffer and exacerbate the effects of physical abuse on children and the interactive nature of those relationships over time (e.g., Belsky, 1993; Cicchetti, & Rogosch, 2002; Kim, & Cicchetti, 2003; Wind & Silvern, 1994). Events following the disclosure of sexual abuse have also been hypothesized to influence the extent to which a child will suffer enduring harm (Banyard, Williams, & Siegel, 2001; Conte, 1989; Finkelhor & Browne, 1985; Friedrich & Reims, 1987; Newberger & De Vos, 1988; Testa, et al., 1992). The purpose of this study is to examine the formal actions taken by professional following sexual abuse disclosures - those interventions designed to investigate, protect, prosecute, and treat child sexual abuse and its victims. We are concerned to understand what interventions children receive, which children receive them, and how these interventions influence children's resilience and recovery during the year following children's enrollment in this study.

METHODS

Sample. The sample is comprised of children that had recently disclosed that they had been sexually abused. The disclosures of eligible children had to have been confirmed either through protective service substantiation or confession, and the children could not have major physical or mental disabilities. Forty-nine children age six through 12 and their mothers participated. Thirty-six children (73.5 percent) are White; 10 (20 percent) are African American, and 3 (6 percent) are Hispanic. Thirty-four are female (69.4 percent) and 15 (31 percent) are male, consistent with the gender distributions of other reported sexually abused samples (Finkelhor, 1990). Socioeconomic status is quite evenly distributed in the sample from levels two through five on the Hollingshead Four-factor Index of Social Status (level 2: 26.5 percent; level 3: 22.4 percent; level 4: 20.4 percent; level 5: 30.6 percent) (Hollingshead, 1979). Please note that on the Hollingshead scale, level one represents the highest social class status; level five the lowest status.

The sexual abuse disclosed by the sample appears to be quite severe. For 32 children (68 percent), digital or genital penetration of the anus or vagina occurred. Nineteen children were reported to have experienced anal or vaginal intercourse. Oral sex was imposed on 23 children (47.6 percent). Six children (12 percent) were molested by biological fathers, nine (18.4 percent) by father figures, 11 (24 percent) by other family members, and 16 (36 percent) by known but unrelated perpetrators

(baby-sitters, older children, a scout master). Three children (six percent) were molested by strangers. More than half the children (53 percent) were abused by someone from within the family. Nine children were abused by more than one assailant. Duration of the abuse ranged from a single incident to five years. Thirty children (61 percent) were abused more than once, with a mean duration of seven months. Force was either threatened or used on 35 children (71 percent).
Of the forty-nine children enrolled in this study, forty-five (91.8%) participated in the 12-month follow-up. As one child did not complete the full complement of measures required for these analyses, this paper reports data from 44 subjects. Five children were unavailable: four White and one African-American; two male and three female; and one from socio-economic status (SES) level two, one from level three, and three from level five. With all five children, digital or genital penetration of the anus or vagina by a single assailant was reported (one biological father; one other relative; three known but unrelated perpetrators), with a mean duration of 6.8 months. Force was reported against three of the children. There are no significant differences in the distributions of demographic or victimization variables between the original sample and the sample of children completing the study.

Recruitment. We recruited subjects as close to disclosure as possible, but were also concerned to include only children where sexual abuse had been confirmed with reasonable certainty. In Massachusetts, the Department of Social Services is required to investigate a report of alleged sexual abuse within 72 hours of the report's being filed and to complete the investigation within seven days. At the time of the first interview, the protective service investigation had been completed for all subjects.

Potential participants were identified from the intake records of the Emergency Department of Children's Hospital in Boston and from four prosecutors' (district attorneys') offices in the greater Boston area. In Massachusetts the Department of Social Services refers all substantiated cases of child sexual abuse by law by to the local prosecutor. Mothers of the identified children were sent letters introducing the study and were later contacted by telephone to request their participation. The initial interviews were conducted within two to four months of the children's disclosures in all but a few cases. Seventy-seven eligible families were contacted over a two-year period, and 50 (65 percent) agreed to participate. One family was dropped from the study when new evidence suggested that the child had not been abused. Anonymous background data collected on all children eligible for the study indicates that children whose parents did

and did not participate are comparable on age, gender, race, SES, and their relationship to the alleged perpetrator.

It is important to note that this was not a clinical sample, but a sample recruited from the community of sexually abused children. This made recruitment and follow-up particularly difficult. However, a non-clinical sample avoids a potential overstating of clinical symptoms (Beitchman, et al., 1991). Interviewing procedures. Two female interviewers with social work, psychology, or special education backgrounds interviewed children and their mothers separately in their homes. Three interviews were administered: at recruitment, and six and 12 months following the initial interview.

Measurement. Data for this report were collected from mothers on demographic characteristics, victimization experiences, and clinical and institutional interventions received by the children and their families. Psychological symptoms experienced by the children were assessed with self-report measures. Please note that as a condition of access to the children in our sample, the district attorneys required that we use only standardized measures and not interview them about their victimization experiences.

Demographic variables. Background information was collected on the age, gender, and ethnic status of the child, and on the socioeconomic status of the family.

Sexual abuse variables. Four characteristics of sexual abuse are assessed: severity of the sexual act(s), use of force, duration of the abuse, and identity of the perpetrator. A severity scale was designed for this study. An expert panel of professionals in the field assigned weights from one to ten to each of several sexual acts. The scores of each act were summed and divided by the number of raters to yield a severity score, which ranges from 0.5 to 7.5. More intrusive acts such as anal or vaginal intercourse are weighted more heavily than acts such as kissing or fondling.

Force is coded into three categories: no use of force; threat of force; and use of force. Duration is defined as the length of time between the first and last abuse incidents. The relationship of the child to the perpetrator is coded as intrafamilial or extrafamilial. Intrafamilial perpetrators include biological fathers, and father figures such as stepfathers or mothers' boyfriends, or uncles, cousins, and siblings. Extrafamilial perpetrators include unknown or known assailants with no familial relationship.

Clinical and institutional intervention variables. Three types of interventions are examined: protective; criminal justice; and mental health. Only contacts in which the child participated are measured for this analysis. This information was gathered from the children's mothers. Protective intervention variables include the number of interviews with protective service social workers, the number of police interviews, and whether or not the child was placed outside the home. Criminal justice intervention variables include the number of district attorney contacts, the number of contacts with a victim witness advocate, and the number of times a child testified in deposition or in court.

Mental health intervention variables include the duration in weeks of mental health contacts (evaluation and/or treatment) between disclosure and the final interview for this study; duration in weeks of mental health contact prior to disclosure; psychiatric hospitalization; and timeliness of the initiation of contact. An onset of treatment scale was constructed with values ranging from zero to 14. A value of zero represents mental health involvement prior to disclosure, one through 12 represents months from disclosure to the first mental health contact during the year following disclosure, 13 represents contact which began later than one year after disclosure, and 14 represents no mental health interventions received. Treatment modality (individual, group, and family) is also assessed.

Children's emotional status. Children's psychological symptoms were assessed through two widely-used self-report measures of children's subjective feelings: the Children's Depression Inventory (CDI) (Glascoe & Ireton 1995; Kovacs, 1981); and the Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 1985).

The Children's Depression Inventory (CDI) is a 27 item self-report questionnaire. Each item contains three statements, such as: "I am sad once in a while. I am sad many times. I am sad all the time." The child is asked to select the sentence from each group that best describes his or her feelings during the previous two weeks. Statements are assigned a numerical value from zero to two. The higher the numerical value, the more clinically severe the behavior being rated. The depression score is the sum of the values of the statements selected.

The Revised Children's Manifest Anxiety Scale (RCMAS) is a 37 item self-report questionnaire. The child answers yes or no to statements such as: "I worry about what is going to happen." The anxiety score is the sum of positive responses. The RCMAS has been standardized taking into account age, gender, and race. It also contains a lie scale to identify children who over-

respond positively to the questions. The standardized T score was used for these analyses. Both scales also have clinical cut-off ratings established by their authors.

The validity and reliability of both the CDI and the RCMAS have been extensively studied and demonstrated (Finch, Saylor, & Edwards, 1985; Kazdin, Franch, & Unis, 1983; Kazden & Petti, 1982; Kovacs, 1981; 1985; Pela & Reynolds, 1982; Reynolds, 1981; Reynolds & Richmond, 1985). Twelve-month test-retest reliability on this sample is high both for the CDI ($r=.504$, $p<.000$) and for the RCMAS ($r=.406$, $p<.01$).

Although maternal reports of children's feelings and behavior were also obtained for this study, these data are not used in this analysis. In this study, maternal reports of children's symptoms are closely associated with mothers' own self-reported symptoms, and not with their children's self-reports, as is discussed in a previous report (Newberger, et al., 1993). Furthermore, studies of other populations suggest that parental report of children's symptoms may not be reliable (see Achenbach, McConaughy, & Howell, 1987; Everson, et al., 1989).
Data analysis. Paired sample t-tests are used to compare children's anxiety and depression scores at the time of the initial interview with their scores at the time of the 12-month follow-up. T-tests are also employed to compare sample means with population norms.

Change over time in children's anxiety and depression scores are measured in two ways: by subtracting scores on the 12-month follow-up from initial interview scores, yielding a change score for the 12 month interval; and by calculating the slope of change, taking into account scores from all three interviews. Because some children were not able to be located for the six-month interview, but were subsequently found in time to complete the 12-month interview, we have not done separate analyses taking into account the wave two data. The slope methodology allows us to evaluate change over time, incorporating all three data points where available, while not losing the nine subjects where only the initial and 12 month interviews were conducted. For each child, the slope of recovery is calculated by fitting a regression line to his or her scores over time (OLS linear regression). If there were no change, the slope of the line would be zero. T-tests are used to determine whether the slopes differed from zero.

Spearman correlations are used to assess the associations of demographic and victimization variables with intervention variables; to examine associations between demographic,

victimization, and intervention variables and children's depression and anxiety scores on the initial and the 12-month interview; and to examine associations between demographic, victimization, and intervention variables and changes in children's depression and anxiety scores over the 12-month interval.

Regression analyses are also performed to assess the impact of interventions on depression and anxiety scores over time. Initial anxiety and depression scores are controlled in these analyses due to the correlations between scores on the initial and the twelve-month interviews. Only the 45 children who completed the study are included in analyses examining interventions, their distributions, and their consequences.

RESULTS

Emotional responses and recovery.

Anxiety and depression following disclosure. At the time of the children's initial interviews, there is evidence that both anxiety and depression are greater than would be normally expected. Although their mean anxiety t score of 52.7 (SD10.7, range: 30-71) does not differ significantly from the mean of 50 expected in a normal population ($t=1.39$ $p=.17$), when the distribution of the scores is examined, ten children (23 percent) are found to have scores above the clinical cut-off level of 63 established by the authors of the measure. In a normal population one would expect ten percent of the children to have scores of 63 or above. Among the children in this sample, then, very high levels of anxiety are found at over twice the rate normally expected.

A similar pattern is found with the children's reported symptoms of depression. Their mean score of 9.57 (SD 6.44, range: 0-32) on the Children's Depression Inventory is not significantly different from the normal mean score of 9 found in nonpsychiatric populations ($t=.61$, $p=.54$). However, 13 of the children (27 percent) report levels of depression above the clinical cut-off level of 12, in contrast with an expected 10 percent of a normal population. Overall, 18 of the children (38 percent) report themselves as seriously anxious and/or depressed.

Neither anxiety nor depression scores are related to any of the victimization variables on this first interview. Specifically, there are no discernable relationships between our indices of emotional outcome and the identity of the perpetrator, the severity, or the duration of the abuse, or with the use of force. However, as the age of the child increases, the level of anxiety appears to increase as well ($r=.30$, $p<.04$). Additionally, a marginally significant correlation is found between socioeconomic

status and depression scores, suggesting that more economically disadvantaged children may suffer greater symptoms of depression ($r=.25$, $p<.09$). Regression models combining demographic and victimization variables do not significantly contribute to the prediction of anxiety or depression scores.

Anxiety and depression over time. By the 12-month interview, children were reporting significantly fewer symptoms of anxiety and depression. For example, the mean standardized anxiety score decreased from 52.15 to 44.8. A paired t test reveals that this difference is highly unlikely to have occurred by chance ($t=4.38$ $p<.001$). The mean depression score also decreased significantly, from 9.57 to 7.2 ($t=2.68$, $p<.05$).

When the slopes of change in anxiety and depression scores across the three interviews are calculated, clear declines are found, indicating improvement in the children's emotional states ($t=-2.184$, $p<.04$ and $t=-4.131$, $p<.0002$ respectively). Not only do both anxiety and depression scores decrease over the one-year interval, 12-month interview mean scores are below the means expected in a normal population (44 percent [SD 9.13] vs. 50 percent [SD 10] for anxiety; 7.2 [SD 5.26] vs. 9.7 [SD 7.3] for depression). On both tests, however, mean scores remain within the normal range of variation. Looking at clinical cutoffs, at the 12-month interview, only two of the children (4.5 percent) have anxiety scores above the clinical level. Depressive symptoms, on the other hand, appear to be more persistent, with seven of the children (16 percent) continuing to report symptom levels within the clinical range. It should also be noted that anxiety and depression scores are strongly intercorrelated on both the initial and the 12-month interviews ($z=2.63$, $p<.01$; $z=3.205$, $p=.001$, respectively), as has been found in other studies (e.g., Kovacs, 1985).

No relationships are found between children's ages, ethnic background, or socioeconomic status and recovery over time. Similarly, no clear relationships emerge between victimization experiences and changes in children's emotional status. Interventions following sexual abuse disclosures.

The distribution of interventions. Despite an overall pattern of improvement, there is considerable variation in children's recovery. In order better to understand this variation, the protective, criminal justice, and mental health interventions that children received are examined.

Protective interventions. A protective service worker met at least once with a majority of the children (84 percent),

averaging four encounters. Thirty-four children (77 percent) met at least once with a police officer, with a mean of two contacts. The physical custody of seven children (16 percent) changed between disclosure and the 12-month follow-up.
Children's ethnic background is strongly associated with placement outside the home (Fisher's Exact Test, $p<.011$). Of the twelve children of color who completed the study, five (42 percent) had been placed. In contrast, only two of the 32 White children (7 percent) were placed. This relationship remains even when controlling in regression analyses for the other demographic variables and for victimization variables. No relationships are found between protective interventions and any of the victimization variables, or initial anxiety and depression scores

Criminal justice interventions. Although all children in the sample had been referred to their local district attorney's office, not all were seen by a member of the district attorney's staff or culminated in court proceedings. Thirty children (68 percent) had face-to-face meetings with an attorney, averaging three encounters and ranging from one contact to 14. A victim witness advocate, who provides guidance and support to families involved with the criminal justice system, met with twenty-two (50 percent) of the children. Fifteen (34 percent) of the children's cases involved court appearances. Eight children testified once, seven testified two or three times. Both district attorney contacts and victim witness advocacy services are associated with court appearances made by the child ($r=.576$, $p<.0002$; $r=.354$, $p<.03$, respectively).

The social status of the family is significantly related to all three criminal justice variables. Higher social status is associated with more district attorney contacts ($r=-.5$, $p<.001$), more victim witness advocacy ($r=-.386$, $p<.01$), and more court involvement ($r=-.301$, $p<.05$). These relationships remain when victimization and other demographic variables are stratified in regression analyses. Furthermore, relationships between SES and district attorney contacts, and between SES and victim witness advocacy remains when court testimony is partialled out. In other words, children from higher status homes received more attorney and victim witness advocacy contacts whether or not the case moved into adjudication.

Not surprisingly, age is also related to children's court involvement. Older children testified more frequently than younger children ($r=.301$, $p<.05$). Age is unrelated, however, to district attorney or victim witness advocate contacts, and no other demographic variables are related to any of the criminal justice interventions. One victimization variable is related to

involvement in the criminal justice system. If force was used, children had more district attorney contacts ($r=.348$, $p<.03$) and more meetings with victim witness advocates ($r=.36$, $p<.03$). Their cases were not, however, more likely to go to court. Neither the severity of the abuse, its duration, or the child's relationship with the perpetrator appeared to influence the extent of criminal justice involvement. No relationships are found between initial anxiety scores and any of the criminal justice interventions. Initial depression scores, on the other hand, are associated with a greater number of district attorney contacts ($r=.335$, $p<.04$).

Mental health interventions. By the 12-month interview, most children in the sample had met at least once with someone identified by the mother as a mental health professional. Of the 44 children that completed the 12-month follow-up, 15 (34 percent) were in outpatient treatment at the time of disclosure and seven (16 percent) received some kind of mental health contact within one month of disclosure. On the other hand, six of the children (13.6 percent) were not seen until more than a year after disclosure and two children (4.6 percent) did not receive any mental health response at all. Among the children that received outpatient mental health interventions, the duration of contact ranged from a single encounter to 258 weeks (for one child who had been in treatment for four years prior to disclosure). The average length of time in treatment following disclosure was 57 weeks (SD 34). Most children were seen individually rather than in group or family therapy configurations.

Ethnic background and mental health interventions. Several relationships are found between children's ethnic backgrounds and outpatient mental health interventions. Children of color tended to wait longer for an initial contact than did White children (Mann Whitney U $z = -1.795$, $p<.07$), even when social class and severity of the abuse is stratified in regression analyses ($t=1.918$, $p<.07$; $t=2.25$, $p<.03$, respectively). This relationship also remains when stratifying for anxiety and depression scores on the initial interview ($t=2.05$, $p<.05$; $t=2.13$, $p<.04$, respectively). Minority children also received fewer weeks of treatment following disclosure than did White children (Mann Whitney U, $z=-2.004$, $p<.05$), even though there were no ethnic differences in mental health treatment prior to disclosure. The relationship between ethnic background and duration of treatment remains when controlling in regression analyses for SES ($t=1.92$, $p<.06$), severity of the abuse ($t=2.108$, $p<.04$), initial anxiety scores ($t=2.131$, $p<.04$), and initial depression scores ($t=2.26$, $p<.03$).

Children of color were also more likely to be psychiatrically hospitalized than White children. Six children were psychiatrically hospitalized at some point during the interval between disclosure and the 12-month follow-up interview. Four of the 12 minority children were hospitalized (33 percent), in contrast to only two of the 33 White children (6 percent) (Fisher's Exact Test, $p=.0385$).

Victimization variables and mental health treatment. Two victimization variables are associated with outpatient mental health contacts. Children with more severe abuse received more types of treatment ($r=.37$, $p<.02$), and victimization that endured longer is associated with a longer period of time in treatment following disclosure ($r=.459$, $p<.003$). No relationships are found between the use of force or the child's relationship to the perpetrator and any of the outpatient mental health intervention variables. For children who were not in treatment prior to disclosure, no relationship is found between anxiety or depression scores and the timing or duration of outpatient mental health intervention following disclosure. The child's initial mental health status is, however, related to receiving treatment prior to disclosure. The longer a child had been in therapy before disclosure, the less anxiety and depression reported on the initial interview ($r=-.309$, $p=.05$; $r=-.313$, $p<.05$, respectively). Children with more severe abuse were more likely to be hospitalized ($r=.39$, $p<.03$).

The impact of interventions on recovery. In order to examine the impact of interventions on children's anxiety and depression scores over time, we first looked at relationships between specific interventions and children's anxiety and depression scores on the 12-month follow-up interview. Because children's mental health status on the initial interview is closely associated with their scores on each of the subsequent interviews, initial anxiety and depression scores are controlled in these analyses. Relationships are also examined between interventions and changes over time in anxiety and depression scores. Because children with initially higher scores show more decline over the course of the study, initial symptom scores are also stratified in these analyses.

Protective interventions. The more social services contacts children received, the more anxiety they reported on the 12-month follow-up, when the influence of anxiety scores on the initial interview are partialled out ($t=1.994$, $p<.05$). Social service contacts are also related to increases in anxiety scores over time ($t=1.994$, $p<.05$). Neither custody changes nor police

contacts are related to changes in anxiety and depression scores. Furthermore, no relationships are found between depression scores and protective interventions.

Criminal justice Interventions. No clear relationships are found between anxiety and depression scores at the 12-month interview and contacts with either legal staff or victim-witness advocates at the district attorneys' offices. Nor are there any associations found between these contacts with criminal justice professionals and children's recovery. Of note is a lack of significant relationships between court appearances and anxiety or depression scores at the 12-month follow-up, or with anxiety or depression change over time.

Mental health interventions. Several relationships emerge between mental health intervention variables and improvement in both depression and anxiety scores over the duration of the study. Specifically, the earlier the initiation of mental health contact the greater the improvement in depression scores ($r=.349$, $p<.03$), and, more marginally, with anxiety scores ($r=.286$, $p<.07$). However, nearly one-third of the children in the sample were seeing a therapist at the time of disclosure. When we partial out the effects of treatment prior to disclosure, the relationships between the onset of treatment and changes in anxiety and depression scores no longer reach statistical significance.

The amount of time a child was in treatment, however, is associated with changes in depression scores. The longer a child received mental health services (counting services received both before and after disclosure), the greater the improvement in depression scores ($r=-.304$, $p<.05$). When we examine only the 34 children who were not in mental health treatment at the time of disclosure, the relationship between the duration of treatment and improvement in depression scores, although weakened, remains ($r=-.291$, $p<.07$). There is no association between treatment duration and changes in anxiety scores.

DISCUSSION

It is puzzling that on the initial interview, children's mean anxiety and depression scores were not significantly higher than published norms. This pattern has also been observed by other investigators of child sexual abuse outcomes using both maternal report and child self-report measures (e.g., Mannarino, et al., 1991). When the distribution of scores is examined, however, greater than twice as many children as expected report symptoms at the higher end of the range. In contrast, there is no overrepresentation at the extremely low end. This skewing of the distribution toward the higher values suggests that with a larger

sample, significant differences might have been found between sexually abused children and normal populations.

Discrepancies between our findings that sexual abuse variables do not predict depression and anxiety scores and some other studies' findings of relationships between specific sexual abuse variables and elevated symptomatology warrants further investigation. In our previous analysis comparing maternal reports of children's symptoms on the CBCL and children's self-reports of depression and anxiety, we found that, in contrast with the children's self-reports, mothers' reports of symptom severity are associated with the identity of the perpetrator and the severity of the victimization (Newberger, et al., 1993). Further, we found that maternal reports of children's symptoms are associated with their own, but not with their children's, self-reports of psychological distress. This suggests the importance of the source of information when assessing children's emotional states. In studies linking specific victimization variables with maternal reports of their children's symptoms, relationships may be at least in part an artifact of maternal report.

The improvement seen in children's anxiety and depression scores over the one-year time frame of this study is a welcome finding, and is consistent with other short-term longitudinal studies (e.g., Kendall-Tackett et al., 1993; Runyan, Everson, Edelsohn, Hunter, & Coulter, 1988). The majority of longer-term studies, on the other hand, report higher levels of dysfunction among individuals with sexual abuse histories than among comparison populations (see Fergusson & Mullen, 1999; Tebbutt, Swanston, Oates, & O'Toole, 1997).

It is noteworthy that symptom improvement in our sample is not related to characteristics of the sexual abuse. This finding points to the importance of examining other factors that may contribute to risk and to resilience, including professional responses after disclosure as potential moderators of the effects of victimization experiences.

Once sexual abuse was disclosed, every child in this study received some form of institutional or professional response. There was, however, considerable variation in the types and amounts of interventions received. Our data suggest that several interventions influence children's anxiety and depression over time. Protective service visits, for example, are associated with higher anxiety at the 12-month follow-up. However, children who received more protective service contacts were also more likely to be placed outside the home, with its additional mental health risks (Lyon, Benoit, O'Donnell, Getson, Silber, & Walsh,

2000; Tuma, 1989). With this small sample it is not possible to tease apart the emotional toll expected by placement from the affects of social worker involvement with the child and family.

Mental health interventions, on the other hand, appear to be beneficial for the children in this study as well as other studies (Cohen & Mannarino, 1998; Finkelhor, & Berliner, 1995; King, Tonge, Mullen, Myerson, Heyne, Rollings, Martin, & Ollendick, 2000). The earlier children began treatment prior to and following disclosure and the longer they were in treatment, the greater the reduction in depression scores. When we examined separately the children who had not received treatment prior to disclosure, the length of time in treatment continued to predict psychological improvement. In this study, we do not directly distinguish between evaluation and treatment contacts. Our experience is that evaluation and treatment are not always clearly distinguished or understood by mothers, nor are they necessarily clearly distinct. A sensitive evaluator often serves a therapeutic function as well. In order to avoid confusion as to the definition of phases of intervention received, we chose simply to count all contacts as mental health intervention.

We do not find differences in outcome as a consequence of the type of therapy received, perhaps because only a few children received family or group treatment and for all but one child these modalities supplemented individual therapy. Although mental health treatment cannot definitively be said to be a causal factor in improved outcomes, it certainly signals a more positive outcome. More troubling is the strong correlation between race and a child's chance of ever entering into therapy. Tingus and her colleagues report a comparable finding in their study of factors associated with entry into therapy for children evaluated for sexual abuse. White children between the ages of seven and 13 were most likely to receive therapy (Tingus, Heger, Foy, & Leskin, 1996).

Within the criminal justice system, not surprisingly, children whose abuse involved force and who were older were more likely to be involved in prosecution. More surprising is the finding that criminal justice involvement was also greater for children from families with higher social class status than for children from lower social class backgrounds. In part this may reflect reluctance among poorer families to become involved with a system they may not trust to help them. However, even among children whose cases were prosecuted, children from lower status families received fewer victim witness advocacy contacts, which support families through the court process. This suggests that poorer families may not be receiving the support they need to cope with

and to participate more fully in bringing their children's cases to court, a process that may be beneficial (Runyan, et al, 1988).

Racial differences are also noted for both protective and mental health interventions. Compared to White children, children of color were more likely to be placed outside the home, to receive later and less outpatient therapy during the time frame of this study, and were more likely to be psychiatrically hospitalized. These differences cannot be explained by other demographic variables, by initial mental health status, or by differences in victimization experiences. At the 12-month interview, the mothers whose children had not received mental health attention were asked to explain the reasons. They reported that either they had not been referred to such services or, in one case, a Latina mother could not communicate with her English-speaking social worker. An African-American mother, distraught about her daughter's deepening depression following a gang rape, asked the interviewer to help her find a therapist for her daughter. Had she not been a participant in this study, she would not have known where to turn. These troubling findings are consistent with a growing body of research revealing that children of color are over-represented in foster care (Garland, Ellis-MacLeod, Landsverk, Ganger, & Johnson, 1998), and under-represented as recipients of mental health services (Temkin-Greener & Clark, 1988; U.S. Department of Health and Human Services, 1999; U.S. Department of Health and Human Services, 2001).

How can this lack of services be explained? One unavoidable possibility is bias in response to populations from different ethnic backgrounds (Snowden, 2003, Whaley, 1998). In several studies professionals responded to case vignettes differently when racial characteristics of the vignette characters are changed (Giovannoni, & Bacerra, 1979; O'Toole, Turbett, & Nalepka, 1983; Turbett, & O'Toole, 1983). In an epidemiologic study of child abuse incidence and reporting by hospitals, Hampton and Newberger (1985) report that lower social status and minority background rather than severity of injury predicted whether a child identified by hospital physicians as abused actually got reported. In one study of placement decisions for sexually abused children, race did not predict which children would be placed in alternative care (Hunter, Coulter, Runyan, & Everson, 1990). In a more recent study of caseworker assessment of parental attachment, White caseworkers gave African American mothers more negative assessments than they gave White mothers. African American caseworkers did not exhibit a similar bias (Surbeck, 2003).

There is considerable evidence that the mental health system discriminates against children of color (Mennen, 1995; U.S. Department of Health and Human Services, 2001; Wade, 1993, Whaley, 1998). In a study of juvenile offenders, for example, race (as well as gender and marital history of the parents) predicted whether an adolescent was placed in the juvenile justice or the mental health system, with Black adolescents overrepresented in the juvenile justice system (Westendorp, Brink, Roberson, & Ortiz, 1986). Personality/psychopathology variables, on the other hand, did not predict in which system a youth would be placed.

Racial differences in mental health interventions could be explained in several ways. It might represent cultural differences in mental health help-seeking behavior. Yet data from the Yale Epidemiologic Catchment Area project indicate that attitudes toward specialty mental health services as well as perceived access to mental health services do not differ significantly between Black and White respondents (Leaf, Bruce, Tischler, & Holzer, 1987). Alternatively, mental health services might not be acceptable to ethnic minorities (Flaskerud, 1986). Some studies find that African-Americans are more likely to seek mental health services than Whites (Broman, 1987), while others report that they are less likely to seek mental health services (Hall & Tucher, 1985; Millet, Sullivan, Schwebel, & Myers, 1996). One study of kept follow-up appointments of 76 sexually assaulted children seen in the emergency room of an inner city pediatric hospital found no racial differences in compliance (Bryne, & Valdiserri, 1982).

A third possibility, not incompatible with the first two, is that racial groups differ in their needs for mental health and protective services. There is some support for this theory in studies reporting higher levels of depression among both Black populations (Carter, 1974) and Latino populations (Sanders-Phillips, Moisan, Wadlington, Morgan, & English, 1995) than among other population groups. However, differences in the interpretation of diagnostic criteria often result in more severe diagnoses for minorities (Griffith, 1977; Loring, and Powell, 1988; Wade, 1993).

The more plausible difference in need is in the direction of greater, rather than less, need. Both the Institute of Medicine and the Surgeon General's report on mental health conclude that serious psychopathology affects a very high proportion of children, with minority children particularly affected (Institute of Medicine, 1989, 2003; U.S. Department of Health and Human Services, 1999; U.S. Department of Health and Human Services,

2001). About 12 percent of all children are estimated to have a diagnosable mental illness, and only about one-third of these children receive any treatment. With minority children, however, about 20 percent are estimated to be burdened with serious emotional problems, and an even smaller percentage of these children receive treatment. These findings suggest an enormous reservoir of children, and especially minority children, in need, and would argue for more, rather than less, mental health attention for children of color.

Among children at risk are those that have been sexually abused (Dinwiddie, et al, 2000; Institute of Medicine, 1989, 2003; Mrazek, & Mrazek, 1981; Paolucci, et al., 2001). Yet in a record review of over 200 reported cases of sexual abuse, Adams-Tucker (1984) found that only 12 percent of the children received psychiatric referrals, with Black boys least likely to be referred and White girls most likely to be referred. We believe that minority children who are sexually abused and do not receive mental health services experience a triple burden: they are at risk because they have been sexually abused; they are potentially more vulnerable to adverse mental health consequences following trauma because of higher rates of preexisting mental health problems; and they are less likely to receive mental health treatment following the disclosure of their abuse.

If there are social class and racial differences in how sexually abused children are treated, then those differences are likely to be seen in greater and greater disparities in mental health functioning between poor and privileged, and between White and minority children who share this particular risk. These findings may also reflect the harsh realities of getting services to underserved populations, such as lack of access to center-based services, lack of supports to enable mothers to bring their children to regular outpatient visits, and the steady erosion of mental health services. These findings are also of concern in light of current trends toward managed care and limitations on the amount of treatment children are permitted to receive. A national survey conducted by Consumer Reports on mental health effectiveness indicates that longer-term therapy is more beneficial than short-term treatment (Consumer Reports, 1995). An analysis of the methodology of that study concludes that it is to be taken seriously, not only for its conclusions, but also for its methods (Seligman, 1995). This lends additional support to our findings suggesting that sexually abused children require longer-term treatment for recovery. Yet in a rationed system, children whose parents do not have the resources to purchase private services are unlikely to receive the treatment they need.

The findings of this study are of great concern. They add to the growing literature on racial and ethnic bias in the systems that purportedly serve children and families in our country. There may be many reasons for this bias, not all intentional, but bias can also be indirect, unintentional and ambivalent (Snowden, 2003). Whatever the reasons for bias, its effects are unacceptable.

Our findings also offer hope, however, as the sexually abused children in our sample appear to respond positively to therapy. Other researchers also find that therapy, as well as remaining in the home, are positively associated with resilience and recovery in victims of child sexual abuse (Cohen, & Mannarino, 1998; Finkelhor, & Berliner, 1995; King, et al, 2000; Merrick, Allen, & Sedahlia, 1994; Trowell, Kolvin, & Weeramanthri, 2002). On both counts, children of color appear to be short-changed.

The findings reported in this study must be viewed as preliminary, for several reasons, including the relatively small sample size and lack of a normative comparison group. Furthermore, the one year follow-up period does not allow us to monitor the termination points of ongoing interventions, to identify children who receive interventions after the study is over, and to identify longer-term intervention effects. As with any longitudinal study, the possibility of regression to the mean must also be of concern. For that reason, we chose to collect data at three points in time, thereby lessening the possibility that longitudinal change could represent a regression effect. In addition, the lack of a control group and methodological limitations of correlation allow us only to suspect the causal benefits of mental health services related to outcome.

This study raises many questions for future research. Our findings of discrepancies between maternal and child reports of children's symptoms suggest how vulnerable research findings are to methodological realities. There has been to date insufficient attention to how methodology affects the conclusions drawn from sexual abuse research. An analysis of the impact on empirical research findings of particular methodological choices, such as sample sources, measurement tools, and informants would help clarify both the nature of sexual abuse outcomes and appropriate methodologies for the study of this complex phenomenon.

The content of sexually abused children's experiences only begin to be explored in this study. As described above, one condition of access to this study's sample was that the children not be interviewed about their sexual victimization. An exploration in future research of children's phenomenological experiences of

victimization and the interventions that follow would provide critical new information on how children construct their experience and the relation between those constructions and child outcome. Research on the cognitive mediation of aggression suggests that it is the meaning that children make of events, rather than the events themselves, that exerts influence on the child (Dodge, Bates, & Pettit, 1990).

There is also a need for continued exploration of how and for whom interventions exert their influence. Such research could define more precisely the nature of the interventions children receive, and larger samples would allow the effects of these interventions, as well as interactions among them, to be more clearly discerned.

Another area for continued research is in the further examination of racial and social class differences in the provision and utilization of interventions for sexually abused children. For example, an intriguing finding in this study was that the four hospitalized children of color had normal depression and anxiety scores and the two hospitalized White children had scores above the clinical cut-off levels. Because these numbers were so small, they could not be meaningfully analyzed. Were such patterns to be replicated in a larger sample, they would point toward an important context in which racial bias might need to be examined. Can the findings of this study be replicated in a larger and more diverse sample? Do other minority groups receive differing patterns of care? Our hope is that future research will continue to explore reasons for demographic differences in interventions sexually abused children receive, such as accessibility and availability of services, acceptability of services to people from different backgrounds, and ethnic or social class biases on the part of providers toward diagnosis, parental compliance and family safety, and the value of investing resources.

Despite the limitations of this research, the issues raised by these findings are of great importance for the health and welfare of children and consequently for practice and policy, particularly at a time of major cutbacks in programs for children. We believe that it is urgently important to examine how services are delivered to children, the beneficial and harmful impacts of those services, and to ensure that all sexually abused children receive the interventions they require to enable as complete a recovery as possible.

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