

Factors That Mediate Treatment Outcome of Sexually Abused Preschool Children

JUDITH A. COHEN, MD; ANTHONY P. MANNARINO, PHD

Accepted February 22, 1996.

Dr. Cohen is Associate Professor of Psychiatry, Medical College of Pennsylvania and Hahnemann University, Allegheny Campus. Dr. Mannarino is Professor of Psychiatry and Director, Child and Adolescent Services, Department of Psychiatry, Medical College of Pennsylvania and Hahnemann University, Allegheny Campus. Drs. Cohen and Mannarino are Co-Directors of the Center for Traumatic Stress in Children and Adolescents at Allegheny General Hospital, Pittsburgh.

This research was funded by the National Center on Child Abuse and Neglect, grant 90-CA-1526. The authors thank Karen Drudy, M.S., Mary McCracken, L.S.W., Ann Marie Kotlik, and Julia Peters, M.S., for their contributions to this project. They also thank the following consultants for their help: Lucy Berliner, M.S.W., David A Brent, M.D., William N. Friedrich, Ph.D., and Joseph M. Strayhorn, M.D.

Reprint requests to Dr. Cohen, Department of Psychiatry, Allegheny General Hospital, 320 E. North Avenue, Pittsburgh, PA 15212.

ABSTRACT

Objective: The role of demographic, developmental, and familial mediating factors on treatment outcome of sexually abused preschool children was evaluated.

Method: Sixty-seven sexually abused preschool children and their parents were evaluated shortly after disclosure of sexual abuse and then were provided with one of two treatment interventions. At the completion of treatment, the parents and their children were reevaluated. Parents completed the Child Behavior Checklist, the Child Sexual Behavior Inventory, and the Weekly Behavior Report to measure a variety of emotional and behavioral symptoms in children. Parents also completed the Beck Depression Inventory, the Family Adaptability and Cohesion Evaluation Scale-III, the Parent Emotional Reaction Questionnaire, the Parental Support Questionnaire, and the Maternal Social Support Index. Children completed the Preschool Symptom Self-Report to assess self-reported affective symptoms and the Battelle Developmental Inventory and the Peabody Picture Vocabulary Test to assess developmental level.

Results: Correlational analyses were conducted to analyze the relationships between the hypothesized mediating variables and the outcome measures at posttreatment across the two treatment groups. Multiple regression analyses were also performed. Both parental depression and parental emotional distress correlated significantly with several of the child outcome measures. Battelle scores were significantly negatively correlated with several outcome measures. Multiple regression analyses demonstrated that the Parent Emotional Reaction Questionnaire remained a highly significant predictor of treatment outcome.

Conclusions: The findings indicate a strong correlation between parental emotional distress related to the abuse and treatment outcome in sexually abused preschool children, independent of the type of treatment provided. The findings indicate the importance of addressing parental distress related to the abuse in providing effective treatment to sexually abused preschool children. *J. Am. Acad. Child Adolesc. Psychiatry, 1996, 35(10):1402-1410.*

Key Words: child sexual abuse, preschool children, mediating factors, parental depression, parent interventions.

Empirical knowledge in the field of child sexual abuse has expanded greatly in the past decade. Researchers have extensively documented the wide variety of symptoms experienced by sexually abused children, including anxiety (Mannarino et al., 1989, 1991) [25,26], sexually inappropriate behaviors (Friedrich et al., 1992a) [16], depression (Wozencraft et al., 1991) [32], and posttraumatic stress disorder symptoms (Deblinger et al., 1989; McLeer et al., 1988) [11,27], as well as elevated scores on parent-

report measures of general child psychopathology (Conte and Schuerman, 1987; Einbender and Friedrich, 1989; Mannarino et al., 1991) [9,13,26]. Research has also confirmed that some sexually abused children do not manifest significant psychological symptoms when evaluated shortly after the abuse occurred (Finkelhor, 1990) [15].

In an attempt to understand this wide variation in symptomatology, some researchers have examined the impact of possible mediating factors on symptom formation. We have documented that preabuse factors such as past developmental or psychiatric difficulties and stressful life events that occurred prior to the sexual abuse were associated with increased behavioral and emotional problems, depression, and poor self-esteem in these children (Mannarino et al., 1994) [24]. Abuse factors such as severity, duration, and the identity of the perpetrator have been found to be associated with symptomatology in some studies (Mannarino et al., 1991) [26], although other investigators have not demonstrated such a relationship (Finkelhor, 1990) [15].

Familial factors have been found to mediate symptomatology in sexually abused children as well. For example, lack of maternal support (Everson et al., 1989; Friedrich et al., 1992b; Hewitt, 1991) [14,17,19] and maternal depression (Kinard, 1995) [21] have been documented to correlate with greater behavioral and emotional symptoms in sexually abused children. Also, we found that higher levels of stressful parental reaction to the sexual abuse, as measured by the Parent Emotional Reaction Questionnaire (PERQ), were significantly associated with parent-rated behavior problems as well as sexual behavior problems (Mannarino and Cohen, in press) [23]. Finally, several child-related factors have been shown to mediate symptom formation following sexual abuse in school-age children. Specifically, abuse-related attributions and perceptions (such as feeling responsible for the abuse, feeling different from peers, and feeling that others do not believe you) were highly predictive of psychological symptomatology (Mannarino and Cohen, 1996) [22].

We designed a structured short-term cognitive-behavioral treatment model to address sexual abuse-related issues, including many of the child and familial mediating factors discussed above. This model was adapted for young children as the Cognitive Behavioral Therapy for Sexually Abused Preschoolers (CBT-SAP) (Cohen and Mannarino, 1993) [6]. This model targets many of the common symptoms that these young children experience as demonstrated by the available empirical research, including sexually inappropriate behaviors (Friedrich et al., 1992a) [16], anxiety, aggression, and sadness (Gomes-Schwartz et al., 1990; Kendall-Tackett et al., 1993) [18,20], and regressive behaviors (White et al., 1988) [31]. It also addresses several themes or issues which have been shown to be both prevalent and predictive of symptomatology in older sexually abused children (Mannarino and Cohen, 1996; Mannarino et al., 1994) [22,24].

Specific parent issues addressed in the CBT-SAP model include ambivalence in belief of the child's abuse, ambivalent feelings toward the perpetrator, attributions regarding the abuse, feeling that the child is "damaged," providing appropriate emotional support to the child, management of inappropriate child behaviors (including regressive and sexual behaviors), management of fear and anxiety symptoms, and parental issues related to the parent's own history of abuse. Specific child issues addressed in this model include safety education and assertiveness training, identification of appropriate versus inappropriate touching, attributions regarding the abuse, ambivalent feelings toward the perpetrator, regressive and inappropriate behaviors, and fear and anxiety. Interventions include the use of cognitive reframing, thought stopping, positive imagery, contingency reinforcement programs, parent management training, and problem-solving. Psychoeducational and supportive interventions are also incorporated in the CBT-SAP model. Further details regarding this treatment model are described elsewhere (Cohen and Mannarino, 1993) [6].

CBT-SAP was used as the index treatment in an empirical treatment outcome study comparing CBT-SAP to nondirective supportive therapy (NST) (Brent, 1990) [5], both provided individually to children and their primary caretakers. The results of that study indicated that CBT-SAP was significantly more effective than NST in reducing symptomatology in young sexually abused children (Cohen and

Mannarino, 1996a) [7]. The present article examines the role of demographic, developmental, and familial mediating factors on treatment outcome. We hypothesized that after controlling for initial (pretreatment) symptomatology, some of these factors would significantly mediate treatment outcome. In particular, because the PERQ was such a strong mediator of initial symptom formation in sexually abused children, we hypothesized that parental emotional reaction to the abuse would mediate treatment outcome independent of the type of treatment provided.

METHOD

The methodology for the treatment outcome study has been described in detail previously (Cohen and Mannarino, 1996a) [7]. General methodology will be discussed below.

Sample Selection

The initial subject population consisted of 86 sexually abused children aged 3 through 6 years. Sexual abuse was defined as sexual exploitation involving physical contact between a child and another person. Physical contact included anal, genital, oral, and/or breast contact.

Inclusionary criteria included the following. The child had to have experienced some form of sexual abuse as defined above, with the most recent episode of sexual abuse having occurred no more than 6 months prior to referral to the study. Both boys and girls were included in the study. The age range was 2.11 to 7.1 years. Where applicable, the sexual abuse had to have been reported to Child Protective Services prior to the child's acceptance into the study. Because of the very young age of these subjects, we believed it particularly important for there to be some form of independent abuse validation prior to inclusion in the study. Specifically, the child's verbal report of sexual abuse was necessary, but not sufficient, for inclusion in the study. In all cases, a child was included only if the child also had either a Child Protective Services-indicated report, if there had been independent confirmation of abuse by the agency in Pittsburgh with recognized expertise in conducting investigative evaluations, or if there was physical evidence of sexual abuse.

Because the primary goal of treatment in the study was symptom reduction, subjects had to reach a minimal level of symptomatology in order to be included. Minimal symptomatology was defined as either a Weekly Behavior Report (WBR) (Cohen and Mannarino, 1996b) [8] total behavior score of > 7 or any sexually inappropriate behavior reported on the Child Sexual Behavior Inventory (CSBI) (Friedrich et al., 1992a) [16]. (A WBR Total score of 7 indicates that the child has displayed on average one problematic behavior per day. This score is mildly elevated from the WBR scores of a normal control group, but the difference is not statistically significant [$p < .05$] [Cohen and Mannarino, 1996b] [8].) Consent had to be given by the subject's parent prior to inclusion in the study. (For the sake of brevity, throughout this report the term "parent" will be used to indicate the primary caretaker who participated in this study. In some cases, this was not a biological parent. In only two cases was the participating parent a male.)

Exclusionary criteria included mental retardation or pervasive developmental disorder, psychotic symptoms, a serious medical illness, psychotic disorder or active substance abuse in the parent participating in treatment, or the lack of a long-term caretaker to participate in the study (i.e., if a child was expected to remain with the present caretaker for less than 12 months, the child was not included).

Subjects were referred to our treatment clinic from regional rape crisis centers, Child Protective Services, pediatricians, psychologists, community mental health agencies, county and municipal police departments, and the judicial system. No recruitment advertisements were placed.

Sample Characteristics

Eighty-six subjects were recruited for the study. Of these, six dropped out after completing one or two treatment sessions (early dropouts) and seven dropped out after completing three to eight sessions (late dropouts). In addition, six subjects were removed from the study prior to completion of treatment because of persistent sexually inappropriate behavior. (This was defined as sexualized behavior involving physical touching of another child or an adult for two consecutive weeks after the issue had been addressed as defined in the assigned treatment modality. This provision for removal from the study if

dangerous behavior persisted was deemed to be an ethical necessity.) Thus, a total of 67 subjects completed the treatment and were included in the data analysis.

The three types of noncompleters (early dropouts, late dropouts, and removed subjects) did not differ from each other with regard to demographics, initial symptomatology, or initial scores on mediating factors. No significant differences were found between noncompleters and completers with regard to any of these factors except that the noncompleters were of a lower socioeconomic status (SES) than the completers ($F = 2.16, p < .05$). This difference, although statistically significant, reflected a difference of only one SES level (IV versus V) in the Hollingshead classification.

With regard to the treatment completers, mean age was 4.68 years (range 2.11 to 7.1 years); 58% were female and 42% were male. Racial composition was 54% Caucasian, 42% African-American, and 4% other. Mean SES was Hollingshead IV. Forty-one percent of the subjects were in kindergarten or entering first grade, 28% were in preschool, 20% stayed home with a parent, and 10% were in day care or in a baby-sitting arrangement. Seventy-five percent of the subjects lived with one or both biological parents, 3% lived with adoptive parents, 4% lived with grandparents, 3% lived with other relatives, 13% lived with a long-term foster parent, and 2% lived with another caretaker.

With regard to sexual abuse, 25% had been abused once, 26% had been abused 2 to 5 times, 15% had been abused 6 to 10 times, 29% had been abused > 10 times, and in 5% of the cases, the number of abuse episodes was not known. The identity of the perpetrator was as follows: 15% biological father, 2% biological mother, 10% mother's paramour, 7% uncle, 7% baby-sitter, 13% older child/adolescent, and 46% multiple abusers or other. The types of abuse experienced were 46% genital fondling only, 26% vaginal and/or anal intercourse, 22% oral-genital contact, 3% fondling of breasts, and 3% other or unknown. (These percentages reflect the most intrusive type of abuse experienced by the subject; 34% of the subjects experienced more than one type of abuse.)

Instruments

Two categories of instruments were used in this study. Outcome measures assessed the child's symptomatology at different times during the study (pre- and posttreatment). Because of the young age of these children, all but one of these outcome measures were completed by the parent. The child self-report measure, the Preschool Symptom Self-Report, was not found to be useful (Cohen and Mannarino, 1996a) [7] and was not included in data analyses for the present report.

The second category of instruments measured possible mediating factors in treatment outcome. These included measures of child developmental level and receptive vocabulary, administered to the child. They also included measures of parental and familial functioning which were hypothesized to mediate symptomatic improvement when initial symptomatology was controlled for; these instruments were all completed by the parent. These instruments are discussed below.

Outcome Measures. Each parent completed the Child Behavior Checklist (CBCL) (Achenbach and Edelbrock, 1983) [1]. This measure was developed as a descriptive rating measure to assess both adaptive competencies and behavior problems. The CBCL includes items that identify a variety of behavioral and adjustment problems. There are also questions related to the child's activities and interests, social relationships, and academic functioning at school (Social Competence scale). A variety of child behavior profiles have been constructed from the CBCL. These profiles were based on factor analyses of the CBCLs of 450 children who had been referred for outpatient mental health services because of behavioral and/or emotional problems. Test-retest reliability over a 1-week time interval was calculated to be .88. There are norms for both the Social Competence scales and Behavior Problems scales.

Although there are different report forms and profiles for 2- to 3-year-olds and for 4- through 11-year-old boys and girls (Achenbach et al., 1987) [2], we used only the 4- through 11-year-old forms. Thus, parents of 3-year-old subjects completed the 4- through 11-year-old CBCL form. Although this was not ideal, it made it possible to conduct comparisons of initial and follow-up scores (as all of the 3-year-olds would have turned 4 years by the completion of the 12-month follow-up), and it allowed us to include the 3-year-olds in the CBCL group analysis rather than analyzing their scores separately. (There is not precise overlap in the factors between the two profiles.)

To measure sexualized behaviors, parents also completed the CSBI. This instrument is a 42-item inventory of sexual behavior ranging from normal behaviors (example: "pretends to be the opposite sex

when playing") to explicit sexual activity (Friedrich et al., 1992a) [16]. On a 4-point scale, the frequency with which the child has shown each behavior within the previous 6 months (from "never" to "at least once a week") is rated. The CSBI is the only empirical scale that specifically examines sexual behavior in children. Test-retest reliability after 1 month has been found to be .80. The CSBI has been administered to parents of normal children (N = 1,100) and psychiatric outpatients as well as to parents of sexually abused children. Norms are available for these populations.

Parents also completed the WBR (Cohen and Mannarino, 1993, 1996b) [6,8]. The WBR was developed to measure the frequency of 21 specific problematic preschooler behaviors over the course of any given week. It provides a more exact measure of the frequency of these behaviors than general behavioral rating scales, which do not precisely measure frequency (i.e., "often or always" on the CBCL or "at least once a week" on the CSBI). This allows the parent to document the exact number of times the behavior has occurred over the course of the week by providing daily time blocks for recording each behavior. Thus, for each week, the WBR tracks both the types of problematic behaviors and the total number of discrete episodes that occur. Psychometric properties of the WBR were evaluated using 59 normal preschool children recruited from day-care and preschool facilities. Test-retest reliability was .79 for types of behaviors and .91 for total behaviors. Internal consistency was high (Cronbach's alpha = .73). The WBR also was highly correlated with the CBCL Internalizing, Externalizing, and Behavior Problems Total scales (Cohen and Mannarino, 1996b) [8].

Measures of Mediating Factors. The Beck Depression Inventory (BDI) was completed by parents to measure their own depressive symptoms. The BDI consists of 21 self-rated statements, rated from 0 to 3 in intensity. It is one of the most widely used adult self-report measures of depression (Beck et al., 1979) [3]. A meta-analysis of the BDI internal consistency yielded a mean coefficient alpha of .81 for nonpsychiatric subjects. Concurrent validity is also adequate, with mean correlations of the BDI and clinical ratings and the Hamilton Psychiatric Rating Scale for Depression being .60 and .74, respectively, with nonpsychiatric subjects (Beck et al., 1988) [4].

Parents also completed the Family Adaptability and Cohesion Evaluation Scales-III (FACES-III). This scale consists of 20 items that measure family adaptability and cohesion (Olson et al., 1985) [29]. Family adaptability is defined as the extent to which a family is flexible and able to change the way it functions in response to situational and developmental stress. Family cohesion is defined as the degree to which family members are emotionally supported, as well as how bonded or separated they are. Each item consists of a statement regarding some aspects of family functioning (e.g., "We like to do things with just our immediate family," etc.). The parent is asked to describe his or her family at that point in time with regard to each item on a 5-point scale ranging from "almost never" to "almost always." Test-retest reliabilities for the Cohesion and Adaptability scales have been reported to be, respectively, .77 and .62, and .68 for the Total scale. Factor analysis demonstrated high interitem correlation within each scale (Olson et al., 1985) [29]. Norms are available for parents.

To evaluate the parents' emotional reaction to the child's sexual abuse, parents completed the PERQ (Table 1). We designed this instrument to measure parental emotional reactions to their child's being sexually abused. It examines such reactions as fear, guilt, anger, embarrassment, and feeling upset. The PERQ consists of 15 items that describe specific parental emotional reactions to their child's being sexually abused. Parents are asked to rate each item on a 5-point scale (e.g., 1 = never, 5 = always) regarding how well it describes their emotional response to their child's sexual abuse.

1. I have felt upset about my child being abused.
 2. I think about what happened to my child while I am working.
 3. I have felt sad about my child being abused.
 4. I am afraid of what other people will think about my child being abused.
 5. I feel that I should have been able to keep the abuse from happening.
 6. I have felt ashamed since I learned about my child being abused.
 7. I have trouble falling asleep at night because I think about what happened to my child.
 8. I have felt angry about my child being abused.
 9. Since I learned about my child being abused, I have been having headaches, stomachaches, etc.
 10. I have felt embarrassed about my child being abused.
 11. I have cried about my child being abused.
 12. I have felt embarrassed about my child being abused.
 13. I have felt responsible for my child being abused.
 14. I have felt nervous since I learned that my child was abused.
 15. I feel guilty that I did not know about the abuse sooner.
- When this scale is administered, the parent is instructed to reflect the parent on a scale of 1 to 5 that best describes his or her reaction to the event above (1 = never, 2 = rarely, 3 = sometimes, 4 = frequently, 5 = always).

Table 1. Parent Emotional Reaction Questionnaire

Internal consistency for the PERQ has been calculated to be .87. Two-week test-retest reliability has been computed to be .90. We used the PERQ to measure factors that mediate symptomatology in sexually abused school-age children. As noted above, the PERQ was found to significantly predict symptomatology in these children (Mannarino and Cohen, in press) [23].

To assess parental behaviors and attitudes toward the child related to the abuse, parents completed the Parental Support Questionnaire (PSQ). We designed the PSQ to measure parental cognitions and perceptions of their own behaviors in response to their child's sexual abuse experience. The PSQ consists of 19 items that examine the degree and kind of perceived parental support provided to the sexually abused child and the nature of the attributions that parents make regarding responsibility for the abuse (i.e., who is to blame). Parents are instructed to rate each item on a 5-point scale regarding how well it describes their response to their child's sexual abuse. Internal consistency for the PSQ has been calculated to be .73 and .70 for the "Support" and "Blame" subscales, respectively. Test-retest reliabilities after 2 weeks have been computed to be .70 for the Support subscale, .83 for the Blame subscale, and .82 for the Full scale.

The Maternal Social Support Index (MSSI) (Paskoe et al., 1988) [30] is an interview completed by the parent which assesses social support available to mothers of abused children. It includes four areas of support: emotional, advice, companionship, and practical aid. Test-retest reliability and internal consistency was .72 over a period of 6 to 8 weeks. Internal consistency ranged from .60 to .63. The MSSI was positively correlated with the Dyadic Adjustment Scale ($r = .39, p < .001$) and inversely correlated with the Center for Epidemiological Studies-Depression Scale ($r = -.30, p < .001$).

To assess the child's developmental level, the Battelle Developmental Inventory (Battelle) and the Peabody Picture Vocabulary Test-Revised (PPVT-R) were administered to the child.

The Battelle, a developmental evaluation tool, is widely used to assess functioning of children aged birth to 8 years in a variety of domains (Newborg et al., 1984) [28]. It includes scales for personal-social (Pers), adaptive (Adapt), motor, communication (Commun), and cognitive (Cognit) development. It was standardized on a national sample of 800 children and provides standard scores, percentile ranks, and age equivalents. Test-retest reliabilities ranged from .84 to .99 and interrater reliability coefficients ranged from .85 to .99.

The PPVT is a widely used instrument that measures receptive vocabulary in children aged 2.5 years and older (Dunn and Dunn, 1981) [12]. The child is asked to point to the appropriate picture in response to a stimulus word spoken by the examiner. Items are scored either "correct" or "incorrect"; raw scores may be converted to percentile rank, to an age-equivalent score, or to a standard score equivalent. Although the PPVT-R does not convert directly to IQ, it is highly correlated with IQ scores. The PPVT-R is normed on a representative nationwide sample rather than predominantly white males, who were the

standardization sample for the PPVT. For purposes of data analysis, the PPVT standardized score was used.

Procedures

Potential subjects were screened by telephone for appropriateness of inclusion. If the perpetrator was a parent, he or she was not permitted to participate in the assessments or treatment. During the initial assessment meeting, the project coordinator explained the study, the parent signed the consent form, and the parent and child then completed their respective instruments. Following the initial assessment, subjects were randomly assigned to one of the two treatment conditions using Efron's biased coin toss as described previously (Cohen and Mannarino, 1996a) [7]. An initial treatment session occurred within 1 week of the initial assessment. Each subject received 12 treatment sessions. Treatment sessions were approximately an hour and a half long. The therapist spent 50 minutes with the parent and then spent 30 to 40 minutes with the child. Weekly appointments were arranged at the parent's convenience. The expectation was that the treatment would be completed within 12 weeks; however, because of illness, transportation problems, etc., some families took as long as 16 weeks to complete treatment. At the completion of treatment, the assessment instruments were readministered.

RESULTS

Correlational analyses were conducted to analyze the relationships between the hypothesized mediating factors and the outcome measures at posttreatment across the two treatment groups. Multiple regression analyses were then performed on each outcome measure, with the mediating factors being the predictor variables. The pretreatment score of each outcome measure was entered initially into each equation as a covariate. Demographic and abuse-related variables were entered next. These included identity of perpetrator, type of abuse, number of abusive episodes, age, gender, race, school placement (in school/preschool/day care or home with parent), and family composition. Results of these analyses are summarized in Table 2, Table 3, and Table 4.

	FACTS-II			PBAQ	PQ			WBI		
	CB	Col	Alp		Support	Blame	Total	Col	Total	Total
CBQ										
Not Comp	.18*	.27*	-.12*	-.11	.11	.08	.11	.08	.16	.11
Internalizing	.27**	.11	.11	.07*	.08	.07	.08	.08	.08	.11
Externalizing	.17*	.01	.27*	.07*	.11	.11	.11	.05	.18	.08
BT	.07*	.08	.11	.07*	.11	.11	.11	.05	.18	.08
CSQ										
CBQ	.27*	.11	-.12*	.11	.11	.08	.11	-.12*	.08	.08
WBI										
CBQ	.17*	.11	-.12*	.07*	.11	.11	.11	.05	.18	.08
Total	.17*	.11	.11	.07*	.11	.11	.11	.05	.18	.08

Note: CBQ = Child Behavior Inventory; FACTS-II = Family Adaptability and Cohesion Evaluation Index-II; Col = Cohesion; Alp = Altruism; PBAQ = Parent-Reported Abuse Questionnaire; PQ = Parent Support Questionnaire; WBI = Whisker Index; CBQ = Child Behavior Inventory; Not Comp = Social Comparison; BT = Behavior Problem Total; CSQ = Child Social Behavior Inventory; WBI = Whisker Index Report.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2. Correlations between Familial Mediating Factors and Outcome Measures at Posttreatment (T₂)

	PPVT-R (Standard)	Battelle					
		Per	Adap	Comm	Cogn	Total	
CBCL							
Soc Comp	.29*	.154	.26	.152	.145	.26	.194
Internalizing	.173	.162	-.111	-.192	-.143	-.155	-.197
Externalizing	-.094	-.104	-.113	-.186	-.217*	-.266*	-.147
BPT	.177	.166	-.107	-.188	-.154	-.143	-.187
CSBI							
Total	.179	-.128	.111	.163	.164	-.166	-.111
WBR							
Type	.198	-.257*	-.217*	-.258*	-.302**	-.407**	-.347**
Total	.113	-.202**	-.259*	-.289*	-.428**	-.525**	-.389**

Note: PPVT-R = Peabody Picture Vocabulary Test Revised; Battelle = Battelle Developmental Inventory; Per = general social; Adap = adaptivity; Comm = communication; Cogn = cognitive; CBCL = Child Behavior Checklist; Soc Comp = Social Competence; BPT = Behavior Problem Total; CSBI = CSBI total Behavior Inventory; WBR = Weekly Behavior Report.
* p < .05. ** p < .01.

Table 3. Correlations between Developmental Mediating Factors and Outcome Measures at Posttreatment (T₂)

Developmental Variable	Significant Posttreatment Variables	β ¹ Change	β ² Change
Social Competence	CBCL	.11	.11
	Internalizing	-.08	-.08
	Externalizing	.07	.07
	Behavior Problems Total	-.07	-.07
	WBR Type	-.07	-.07
	WBR Total	-.07	-.07
	CSBI	-.07	-.07
Internalizing	CBCL	.11	.11
	WBR Type	.07	.07
Externalizing	CBCL	.11	.11
	WBR Type	.07	.07
Behavior Problems Total	CBCL	.11	.11
	WBR Type	.07	.07
WBR Type	CBCL	.11	.11
	WBR Total	.07	.07
WBR Total	CBCL	.11	.11
	WBR Type	.07	.07
CSBI	CBCL	.11	.11
	WBR Type	.07	.07

Table 4. Multiple Regression: Significant Correlates of Outcome

As demonstrated in [Table 2](#), both parental depression (BDI) and parental emotional distress (PERQ) correlated significantly with the Internalizing, Externalizing, and Behavior Problems Total scales of the CBCL and the WBR type and total number of behaviors. Also, parental depression was significantly related to sexual behavior problems (CSBI). In addition, the FACES-III cohesion factor was positively correlated with CBCL Social Competence while the FACES-III adaptability factor was negatively associated with CBCL Social Competence but positively related to CBCL Externalizing problems. The latter two findings were unexpected. There were no significant correlations between the PSQ or MSSSI and any outcome measures, except that PSQ Total score was positively correlated with the WBR Type score. This finding was also unexpected.

With regard to developmental measures, the only significant PPVT-R correlation was with social competence. All of the Battelle scales were significantly negatively correlated with WBR Type and Total scores, that is, the higher the developmental level, the lower the WBR score. The Battelle Cognitive Development and Communication scales were also significantly negatively correlated with CBCL Externalizing scores.

When pretreatment scores on outcome measures were controlled by including them as initial covariates, multiple regression analyses demonstrated that the PERQ remained a highly significant predictor of treatment outcome. Specifically, the PERQ was the only significant predictor variable for the CBCL Internalizing, Externalizing, and Behavior Problems Total scales and predicted a portion of the total variance on the WBR type of behaviors. Age also explained 14% of the total variance on the WBR type of behaviors and 6% of the variance on WBR total behaviors. (Older age was a significant predictor

of better outcome on both WBR scales.) In a similar manner, higher communication ability as measured by the Battelle was a significant predictor of better treatment outcome on both WBR scales. Numerous factors predicted CBCL Social Competence scores at posttreatment. Finally, the FACES-III adaptability factor explained an additional 6% of the total variance on the WBR Total scale.

DISCUSSION

The present study attempted to evaluate factors that predict treatment outcome in young sexually abused children. The results indicate that parental depression and parental emotional reaction to the child's abuse were strongly correlated with behavioral and emotional difficulties in the child. Independent of the type of treatment received and controlling for pretreatment scores, multiple regression analyses demonstrated that the degree of parental distress experienced in response to the child's abuse as measured by the PERQ was a strong predictor of emotional and behavioral difficulties in the child. This finding is consistent with our earlier findings that the PERQ was a strong mediating factor in initial symptom formation and in symptom persistence in sexually abused children (Mannarino and Cohen, in press) [23]. It is also consistent with other researchers' reports that parental depression is strongly associated with psychological difficulties in abused children (Kinard, 1995) [21], although the significant correlations between parental BDI scores and child outcome measures in the present study were not sustained in the multiple regression analysis. Thus, in our study, BDI scores did not independently predict treatment outcome. The fact that the PERQ was not correlated with the CSBI scores at posttreatment may in part be due to the fact that six children with severe sexually inappropriate behaviors were removed from the study prior to completing treatment. It is also possible that sexualized behavior is less impacted by parental emotional distress than are other behavioral and emotional symptoms in these children.

Numerous factors significantly affected social competence scores. This is not surprising in very young children, who develop socially competent behaviors largely in response to appropriate models in their environment. Aside from demographic factors, the most significant mediators of social competence were parental PERQ and BDI scores.

It is possible that the strong relationship between parental emotional distress and child outcome measures were in part due to modeling, in that the child may learn fewer adaptive coping behaviors from a parent who is having difficulty coping with his or her own emotional stress. It is very likely that such a parent would be less emotionally and/or physically available to the child to provide needed emotional support. It is also possible that a biological factor may play a role in coping style or capacity, such that the ability to recover from emotional stress is in part genetically transmitted. Whatever the explanation for this association, the strong mediating impact of the PERQ emphasizes the importance of assessing the parent's emotional response to his or her child's sexual abuse. This finding is supported by Deblinger (1995) [10], who demonstrated that sexually abused children whose parents were included in active treatment showed greater improvement in behavioral symptoms than those whose parents were not provided with treatment. Thus, addressing the parent's emotional distress by providing treatment to the parent as well as the sexually abused child would be an important component in resolving the negative psychological impact of this experience. The findings from this study are consistent with our previous project which demonstrated that the PERQ was a strong mediating factor in initial symptom formation following child sexual abuse (Mannarino and Cohen, in press) [23].

The association between both age and developmental level as measured by the Battelle, and treatment outcome as measured by the WBR, is also significant. This is most likely because the WBR was written to specifically identify problems in younger sexually abused children. It should be noted that 3- and 4-year-olds scored higher on the WBR than 5- and 6-year-olds at pretreatment (Cohen and Mannarino, 1996b) [8]. The fact that 3- and 4-year-olds scored higher on the WBR than 5- and 6-year-olds, both at pretreatment and posttreatment, while controlling for pretreatment scores, indicates that this instrument may be fairly specific to younger children. As such, it may be an important instrument for use with younger sexually abused children, both clinically and in research endeavors.

Although space limitations precluded inclusion of these analyses, we did evaluate the impact of mediating factors within each treatment group at posttreatment. While the familial factors were generally correlated with outcome in a similar manner in both treatment groups, there was a significant difference between the two groups with regard to developmental factors. Specifically, at posttreatment in the CBT-

SAP group, Battelle scores were significantly negatively correlated with CBCL Externalizing and WBR Type and Total scores, but no such correlations were found in the NST group. These findings suggest that, as expected, the cognitive-behavioral interventions may be more effective in reducing symptoms in children with more sophisticated communication and cognitive skills, whereas these skills were less important when receiving supportive therapy. This was supported in the regression analyses, in that higher communication scores on the Battelle predicted better outcome on the WBR scales.

The association of familial adaptability with externalizing behaviors and poorer social competence was an unexpected finding. However, in a previous study (Mannarino and Cohen, in press) [23], we also found a positive relationship between FACES-III adaptability and the CBCL Externalizing scale. It is possible that one aspect of familial adaptability measured by the FACES-III includes an unusually high degree of parental tolerance of negative or socially inappropriate behaviors, even though these parents recognize the abnormality of such behaviors. This type of "adaptability" could explain these findings to some extent.

As noted above, the child self-report instrument used in this study was not useful in measuring symptomatology or detecting clinical changes. Possible reasons for this have been discussed previously (Cohen and Mannarino, 1996a) [7]. Given the limitations in obtaining self-reports from very young children, it is important to address the issue of alternative methods of obtaining multisource data. The two options which we considered in the treatment design were having school/preschool teachers complete rating instruments or having the therapists rate behavioral changes themselves. In our pilot sample, most parents had opposed the idea of requesting information from school or preschool teachers, because of their concerns about confidentiality. (This was despite the fact that our clinic does not have a name that would identify the children as having been sexually abused.) An additional source of concern was that a substantial proportion of the children in the pilot study did not attend preschool. (This was also true in the study sample in that 30% of the children in this study were not enrolled in school or preschool.) For these reasons, teacher reports were not requested as part of this study. Therapist report of symptomatic improvement was not included in the study design because it would obviously have introduced the possibility of reporter bias. However, one or both of these options may be desirable in addition to relying on parental and child self-reports of symptomatology. An alternative possibility may be to design a specific task that measures certain relevant behavioral and/or emotional variables, to be performed by the preschool subjects on videotape and then independently rated. The value of this type of outcome measure remains to be evaluated.

Clinical Implications

As noted above, the major clinical implication of this study is that parental emotional distress in response to the sexual abuse of a young child is a factor that strongly affects outcome, regardless of the type of treatment provided or the child's initial symptomatology. Thus, assessing this variable and providing appropriate psychotherapeutic interventions for distressed parents may be of critical importance in resolving the child's emotional and behavioral difficulties. The results of the original report from this project (Cohen and Mannarino, 1996a) [7] indicated that an intervention that specifically addresses parental cognitions, perceptions, and appropriate coping responses with regard to the child's abuse is more effective in decreasing child symptomatology than is supportive counseling alone. Together, these findings indicate the clinical importance of specifically assessing and addressing parental emotional distress in the treatment of young sexually abused children.

Another clinical implication of this study is that the WBR appears to be an instrument with particular sensitivity to the difficulties experienced by very young sexually abused children, and as such it may be a very useful instrument for monitoring symptomatology and clinical improvement in this population.

REFERENCES

Achenbach TM, Edelbrock CS (1983), Manual for the Child Behavior Checklist. Burlington, VT: Queen City Printers.

Achenbach TM, Edelbrock CS, Howell CT (1987), Empirically based assessment of the behavioral/emotional problems of 2 and 3 year old children. *J Abnorm Psychol* 15:629-650.

- Beck AT, Rush AT, Shaw BF, Emery G (1979), *Cognitive Therapy of Depression*. New York: Guilford Press.
- Beck AT, Steer RA, Garsin MA (1988), Psychometric properties of the Beck Depression Inventory: twenty five years of evaluation. *Clin Psychol Rev* 8:77-100.
- Brent DA (1990), Depressed adolescent suicide attempters: a clinical trial. Funded research proposal and supportive relationship treatment manual, MH 46500, NIMH.
- Cohen JA, Mannarino AP (1993), A treatment model for sexually abused preschoolers. *J Interpers Violence* 8:115-131.
- Cohen JA, Mannarino AP (1996a), A treatment outcome study for sexually abused preschool children: initial findings. *J Am Acad Child Adolesc Psychiatry* 35:42-50.
- Cohen JA, Mannarino AP (1996b), The Weekly Behavior Report: a parent-report instrument for sexually abused preschoolers. *Child Maltreatment* 1(4).
- Conte JR, Schuerman JR (1987), The effects of sexual abuse on children: a multidimensional view. *J Interpers Violence* 2:380-390.
- Deblinger E (1995), Cognitive behavior therapy for post-traumatic stress disorder in sexually abused children. Presented at the San Diego Conference on Responding to Child Maltreatment.
- Deblinger E, McLeer SV, Atkins M, Ralphe D, Foa E (1989), Post-traumatic stress in sexually abused children: physically abused and non-abused children. *Int J Child Abuse Negl* 13:403-408.
- Dunn LM, Dunn LM (1981), *Peabody Picture Vocabulary Test-Revised Manual*. Circle Pines, MN: American Guidance Service.
- Einbender A, Friedrich W (1989), The psychological functioning and behavior of sexually abused girls. *J Consult Clin Psychol* 57:155-157.
- Everson MD, Hunter WM, Runyan DK, Edelsohn GA, Coulter ML (1989), Maternal support following disclosure of incest. *Am J Orthopsychiatry* 59:197-207.
- Finkelhor D (1990), Early and long-term effects of child sexual abuse: an update. *Prof Psychol Res Pract* 21:325-330.
- Friedrich WN, Grambsch P, Damon L et al. (1992a), The Child Sexual Behavior Inventory: normative and clinical comparisons. *Psychol Assess* 4:303-311.
- Friedrich WN, Luecke WJ, Beilke RL, Place V (1992b), Psychotherapy outcome of sexually abused boys: an agency study. *J Interpers Violence* 7:396-409.
- Gomes-Schwartz B, Horowitz J, Cardarelli A (1990), *Child Sexual Abuse: The Initial Effects*. Newbury Park, CA: Sage.
- Hewitt SK (1991), Preschool children's responses to alleged sexual abuse at intake and one year follow-up. Presented at the San Diego Conference on Responding to Child Maltreatment.
- Kendall-Tackett K, Williams LM, Finkelhor D (1993), The impact of sexual abuse on children: a review and synthesis of recent empirical studies. *Psychol Bull* 113:164-180.
- Kinard EM (1995), Mother and teacher assessments of behavior problems in abused children. *J Am Acad Child Adolesc Psychiatry* 34:1043-1053.
- Mannarino AP, Cohen JA (1996), Abuse related attributions and perceptions, general attributions and locus of control in sexually abused girls. *J Interpers Violence* 11:162-180.
- Mannarino AP, Cohen JA (in press), Family-related variables and psychological symptom formation in sexually abused girls. *J Child Sexual Abuse*.
- Mannarino AP, Cohen JA, Berman SR (1994), The relationship between preabuse factors and psychological symptomatology in sexually abused girls. *Child Abuse Negl* 18:63-71.
- Mannarino AP, Cohen JA, Gregor M (1989), Emotional and behavioral difficulties in sexually abused girls. *J Interpers Violence* 4:437-451.
- Mannarino AP, Cohen JA, Smith JA, Moore-Motley S (1991), Six and twelve month follow-up of sexually abused girls. *J Interperson Violence* 6:494-511.
- McLeer SV, Deblinger E, Atkins MS, Foa EB, Ralphe DL (1988), Post-traumatic stress disorder in sexually abused children: a prospective study. *J Am Acad Child Adolesc Psychiatry* 138:119-125.
- Newborg J, Stock JR, Wnek L, Guidubaldi J, Svinicki J (1984), *Battelle Developmental Inventory Examiner's Manual*. Allen, TX: DLM Teaching Resources.
- Olson DH, Portner J, Lavee Y (1985), *Faces-III Manual*. St Paul, MN: Family Social Science, University of Minnesota.
- Paskoe J, Ialong NS, Horn W, Reinhart MA, Perradatto D (1988), The reliability and validity of the Maternal Social Support Index. *Fam Med* 20:271-276.
- White S, Halpin BM, Strom GA, Santilli G (1988), Behavioral comparisons of young sexually abused, neglected, and non-referred children. *J Clin Child Psychol* 17:53-61.
- Wozencraft T, Wagner W, Pelligrin A (1991), Depression and suicidal ideation in sexually abused children. *Child Abuse Negl* 15:505-511.

J Am Acad Child Adolesc Psychiatry 1996 October;35(10):1402-1410
Copyright © 1996 American Academy of Child and Adolescent Psychiatry. All rights reserved
Published by Lippincott Williams & Wilkins