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**CHILD SEXUAL ABUSE: DEVELOPMENT OF PSYCHIATRIC
DISORDERS AND INTERVENTIONS**

by

Toshikazu Kuroda

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of the requirements for the degree**

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Running Head: CHILD SEXUAL ABUSE: DEVELOPMENT OF PSYCHIATRIC

Child Sexual Abuse: Development of Psychiatric Disorders and Interventions

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Abstract

Child sexual abuse has become a serious social concern due to the recent report of its higher incidence rate than commonly believed. This form of child abuse has been proposed to bring about adverse effects on children's development since more than one century ago. However, research over past decades reveals that effects of sexual abuse are extremely complex and diverse. Particularly, there appear to be many unclear factors increasing the probability for the development of psychiatric disorders in sexually abused children. The present paper investigated how child sexual abuse creates diversity over the course of the victims' development from multiple perspectives. Then it attempted to find developmentally appropriate interventions for victims existing particular psychiatric symptoms.

Introduction

Child sexual abuse (CSA) refers to activities involving a child with an intention for sexual gratification (Finkelhor, 1994). According to the Third National Incidence Study of Child Abuse and Neglect, approximately 217,700 children were reported to have a history of sexual abuse experience in 1993 (Sedlak & Broadhurst, 1996). Diverse long-term effects of sexual abuse have been reported among its victims (e.g., Cole & Putnam, 1992). The present paper will review discussions of biological, behavioral, and environmental perspectives on the development of such effects due to CSA. Then it will seek characteristics of effective intervention for a particular age group with a specific psychiatric symptom.

History of Scientific Studies on Child Sexual Abuse

CSA is not a recent topic. Rather, it has existed throughout recorded history (Demause as cited in Green, 1993). However, this issue had not been discussed in a scientific community until 1896, the year Sigmund Freud claimed a relationship between a case of neurosis as a result of incest at the Viennese Society of Psychiatry and Neurology. Freud's seduction theory regarding an etiology of neurosis brought a controversy to a scientific community which continues today. However, Freud himself modified his argument by saying that the cause of neurosis was one's sexual fantasy instead of childhood seduction experiences (Shultz & Shultz, 2004).

The scientific community, during the first half of twentieth century, neglected the

topic of child maltreatment, until Kempe and his colleagues published a very influential article, *Battered Child Syndrome*, in 1962 (as cited in Green, 1993). Green points out that Kempe's book about childhood physical abuse led to scientists' interest in CSA once again in the 1970's. Since then, a considerable amount of evidence for a link between CSA and psychiatric disorders has been reported. Ironically, "[l]ater evidence indicates that childhood sexual abuse is far more common than Freud may have been prepared to accept" (Shultz & Shultz, 2004, p. 408).

Psychiatric Disorders Associated with CSA

Researchers have reported a variety of psychiatric disorders among CSA survivors. These include posttraumatic stress disorder (PTSD), major depression, suicidal behavior and/or suicidal ideation, substance abuse, anxiety disorders (e.g. generalized anxiety disorder, phobias, panic disorder, and obsessive-compulsive disorder), somatization disorders, sexual dysfunction, bulimia, dissociative disorders (e.g. dissociative identity disorder, previously called multiple personality disorder) and borderline personality disorder (e.g., Briere & Elliot, 1994; Cole & Putnam, 1992; and Green, 1993). In addition, several CSA-associated dysfunctions have been reported. These include cognitive distortions (e.g. low self-esteem, chronic perceptions of helplessness, hopelessness, and danger, etc.), chronic irritability, compulsive and indiscriminate sexual activity, and interpersonal difficulties (Briere & Elliot, 1994).

Some researchers suggest that these psychiatric disorders and dysfunctions appear to follow some pattern. For example, Green (1993) points out that there are both immediate and long-term symptoms. Immediate symptoms include anxiety disorders, PTSD, major depression, low self-esteem, and disturbances in sexual behavior. Likewise, long-term symptoms include anxiety disorders, delayed PTSD, major depression, low self-esteem, suicidal behavior, substance abuse, sexual dysfunctions, hysterical symptoms, borderline personality disorder, and dissociative identity disorder. As Green points out, some long-term symptoms are the ones carried over from immediate symptoms (e.g. chronic anxiety) whereas some correspond with the advanced age (e.g. eating disorders). There are some CSA-related abnormal behaviors that are seen in childhood. One is sexually reactive incest in which a child victim of CSA becomes a perpetrator of sexual assault (Ascione, personal communication, Fall, 2005). Another example is involved with animal care. Friedrich (1997) reports that sexually abused children in both genders tended to touch the animal's genitalia more pervasively than non-abused children did, although it is not necessarily an unusual behavior among non-abused preschoolers. Furthermore, puberty seems to be a critical period, in general, during which many forms of psychiatric disorders emerge, especially for females (Putnam & Trickett, 1997).

Although many forms of psychiatric disorders are associated with CSA, some disorders are linked more closely than other disorders with CSA. Cole and Putnam (1992)

point out that CSA, particularly incest, has been reported with a significantly higher chance rate among people suffering from borderline personality disorder, dissociative identity disorder, somatoform disorders, eating disorders, and substance use disorder in women.

Does Child Sexual Abuse Have a Magic Bullet Effect on Psychiatric Disorders?

Some people suspect that CSA has a magic bullet effect on psychiatric disorders because it is an absolutely unacceptable, traumatic, emotional experience to the victims. As supporting evidence for this claim, Boney-McCoy and Finkelhor (1996) in their longitudinal, prospective study argue that youth victimization (e.g., sexual abuse) made an independent contribution to posttraumatic stress symptoms and depression even after controlling for prior symptoms as well as parent-child relationships. However, other researchers are skeptical about such a finding. For example, Nash, Neimeyer, Hulsey, and Lambert (1998) point out methodological limitations in Boney-McCoy and Finkelhor's study.

Implication of Prospective Longitudinal Studies

It is important to note that most findings about CSA come from retrospective studies. Although a retrospective study is a valuable research design, the samples may not include CSA victims who do not show any psychiatric symptom. A prospective, longitudinal study is methodologically stronger for this type of investigation. One study was done in New Zealand by Fergusson, Horwood, and Lynskey (1996) with 1019 participants over 18 years from the children's birth. These participants were classified into one of four groups based on the

severity of CSA: 1) no reported history of CSA; 2) non-contact CSA only; 3) contact CSA without attempted or completed intercourse; and 4) contact CSA with attempted or completed vaginal, oral or anal intercourse. Then, they made the following conclusion:

[W]hile CSA was a significant risk factor for later psychiatric disorder, the impact of this factor on the risk of disorder may not be as large and pervasive as has sometimes been claimed. The estimates from this study suggest that approximately 10 % to 20 % of the risk of psychiatric disorder in young adults may be accounted for by exposure to CSA (P 11).

Their finding is one piece of evidence against the controversial magic bullet effect of CSA on psychiatric disorders and suggests the existence of the complex interaction effect with multiple variables (e.g., risk and resilience factors). One way to consider such variables is a developmental approach to psychopathology. Specifically, developmental psychopathologists take “genetics, constitutional, neurobiological, biochemical, behavioral, psychological, environmental, and sociological” (Cicchetti, 1990, p.265) analyses into account in order to elucidate the complex nature of the development of psychiatric disorders. The present paper will focus on the biological, behavioral, and environmental perspectives on a developmental perspective.

Normal Development

Any living organism on earth starts interacting with the environment from the beginning of its existence. For example, mammalian infants are born with abundant but

simple neural circuits which allow them to prepare for many kinds of environment after birth (Carlson, 2005). In human beings, the most influential environment on one's postnatal development is the primary caretaker. Because the newborn is not capable of living alone, his/her development is highly contingent on the quality of parenting. Proper, adequate communication with the environment promotes the infant's neurological development and physiological regulation which, in turn, promotes further communication with the environment (Cicchetti, 1991).

One special skill that human children develop is the use of language. A "burst" of language acquisition is seen during toddler and preschool years (Cole, Cole, & Lightfoot, 2005). The acquisition of verbal behavior helps the growing children deal more efficiently with complex environmental demands. Once a child enters middle childhood, individual differences increase. As the child enters the wider environment, the influence of an environment other than that of the primary caretaker and other family members becomes powerful. The child is likely to enter an in an educational setting where he/she learns academic and interpersonal skills from teachers and peers. The beginning of adolescence is marked by puberty. This biological growth lets the adolescent become aware of his/her own sexuality. Both biological growth and environment continue to have an impact on the adult development.

Pathological Development

Biological Perspective

At the neurological level, there appears to be a less sensitive period to the exogenous stress (Teicher, Andersen, Polcari, Anderson, and Navalta, 2002) presumably for the rapid establishment of a dependent relationship with a caretaker. Specifically, the experiment with an animal model suggests that “the lack of significant change in gene expression within the neonate amygdale [which is responsible for the learning of fear] appear to prevent fear learning at a time during development that would hinder the attachment process” (Roth & Sullivan, 2005, p. 829). This may become disadvantageous for an infant who is unfortunately placed in an abusive environment. The infant is likely to attach to his/her abusive caretaker and is likely to keep having experiences which prompt abnormal brain development.

Particularly, the development of hemispheres and the corpus callosum is altered among sexually abused children. In a normal population, the neural activity of the left frontal area is associated with positive feelings while the right frontal area is associated with negative feelings (Michel, et al., 2004). An EEG study by Ito, Teicher, Glod, and Ackerman (1998) revealed that a group of children (mean age of 10.7; all right-handed) with a history of intense physical or sexual abuse had a less developed left hemisphere compared to children in an equivalent comparison group with no history of abuse. However, their right hemispheres appeared normal. This might be why sexually abused children tend to show negative emotions

(e.g. depression) more frequently.

The corpus callosum is a bundle of axons that sits in the center of the brain and allows hemispheric communication. This region of the brain seems to be vulnerable to the adverse effects (e.g., excessive levels of stress hormones) of sexual abuse, especially in girls. Damage to the corpus callosum is associated with the diminished hemispheric communication (Teicher et al., 2002). Teicher et al. point out that this may explain why patients with borderline personality disorder “shift rapidly from a logical and possible overvaluing left hemisphere state to a highly negative, critical, and emotional right hemisphere state” (p. 412).

Behavioral Perspective

Pavlovian Conditioning

Three kinds of main learning processes have been identified: Pavlovian conditioning, operant conditioning, and modeling. Pavlovian conditioning is a learning process in which a conditioned stimulus (CS) gets associated with an unconditioned stimulus (US). Consequently, the presentation of CS elicits the response (conditioned response; CR) which is the same as (or sometimes exactly opposite to) the one followed by the presentation of the US. In the context of sexual abuse, the US is abuse experience, the UR is negative emotions (e.g., fear), the CS is any environmental stimuli associated with abuse experience, and the CR is negative emotion elicited by the CS. Thus, sexually abused children may experience negative emotions in the presence of similar environmental stimuli (e.g., adult males) to the original CS (a male

perpetrator) through a phenomenon called generalization (Wheeler & Berliner, 1988).

Furthermore, Wheeler and Berliner indicate that “through higher-order conditioning, these more recently conditioned cues for anxiety could themselves become paired with other, previously neutral stimuli, producing still more cues for anxiety” (1988, p. 230). As a result, the CSA victims may frequently experience negative emotions. The recurrent experience of a traumatic event seen in PTSD is an example of Pavlovian conditioning: some CS triggers the re-experiencing phenomenon (Pistorello, Follette, & Hayes, 2000). However, Pistorello et al. point out that the long-term effect of the CR is maintained by operant conditioning, which is discussed below.

Operant Conditioning

Operant conditioning provides a powerful explanation for the development of most, if not all, CSA-related psychiatric disorders. The basic formula or unit in operant conditioning is a three-term contingency ($S^D-R \rightarrow S^{R+}$ in the case of positive reinforcement stimulus).

Although the initial behavior may be novel or unlearned, it is the consequence (S^{R+}) which shapes the behavior, and it is the discriminative stimulus (S^D) which elicits the behavior.

Specifically, the environment (S^{R+}) *selects* the behaviors which function in the environment (Skinner, 1971), whether these behaviors are overt or covert, and then the organism performs the selected behavior with the increased probability in the same or similar environment (S^D) in the future.

Skinner admitted the impact of heredity on behaviors (Mazur, 2006), but it is a history of contingencies which makes complex behaviors possible (Cheney, personal communication, June, 2006). And maladaptive behaviors, including behaviors that psychologists and psychiatrists call “psychiatric disorders,” are not an exception to this rule. Thus, the diversity in psychiatric disorders seen among CSA victims is the result of a history of one’s contingencies – contingencies in which behaviors that society considers maladaptive are reinforced or selected by the abusive environment. Additionally, from a developmental perspective, it is important to consider what behaviors a person is capable of performing at a given age because those behaviors are the ones that are subject to the operant conditioning.

The development of dissociative identity disorder can be explained by operant conditioning. Some researches indicate that dissociative experiences (e.g., visual hallucinations, spontaneous trance states, amnesia, rapid shifts in demeanor, imaginary playmates, and sleepwalking) are common phenomena in preschool for children. However, while the frequency of dissociative experiences decreases as non-abused children grow up, it does not appear to decrease in sexually abused children (Cole & Putnam, 1992). Thus, preschoolers are capable of performing dissociative behaviors (though the reason for this is another discussion and requires further investigation). From a behavior analytic perspective, the elevated frequency of dissociative behaviors is due to the functionality of those behaviors in the abusive environment: dissociative behaviors result in some (presumably internal or

covert) reinforcement.

One notable feature in dissociative identity disorder is amnesia (Oltmanns & Emery, 2004) and this can also be explained by operant conditioning. Phelps (2000) argues that an abused child in a chaotic environment could never “learn to predict what produced or avoided abuse or reinforcement (love) and came to increasingly attend to himself or herself since other individuals provided unreliable discriminative stimuli as to how to behave” (p. 243).

According to Skinner, memory is nothing but behavior and the probability of remembering depends on discriminative stimuli (cited in Phelps, 2000). This suggests that the abused child who responds in the presence of some internal discriminative stimuli (such as moods and thoughts, which are the products of other three-term contingencies) with extreme sensitivity shows dramatic changes in memory as well as in personality (Kohlenberg & Tsai as cited in Phelps, 2000).

It is important to note that operant conditioning is not as simple as has been described. Operant conditioning actually consists of many principles (e.g., schedule of reinforcement), which make the course of one’s development even more complex. There also may be principles undiscovered up to date. Some of these are likely to elucidate unresolved mysteries in the development of psychiatric disorders. For example, some people may wonder why psychiatric disorders show a high resistance to change or persistence even long after the person left the abusive environment. Persistence of behavior actually has been studied in

behavior analysis [e.g., the behavioral momentum theory proposed by Nevin (Mazur, 2006)].

However, this topic has been investigated in relatively simple experimental settings and requires further investigations before being applied to the complex problems such as child sexual abuse.

Additionally, behavior analysis provides the reason why findings are inconclusive about the effects of risk and resilient factors on the development of psychiatric disorders. The concepts such as “factors” obscure or neglect the importance of the consequences followed by behaviors. Factors are only discriminative stimuli; they do not shape the behaviors even though some discriminative stimuli may be more frequently associated with the reinforcement which shapes the behavior than other discriminative stimuli. Thus, the present author proposes that the use of “factors” is not a helpful way to find the etiology of psychiatric disorders, although it provides a plausible description.

Modeling

The third type of learning is modeling, a process learning by observing someone else’s behaviors. Although this probably does not play a major role in the development of psychiatric disorders in sexually abused children, it may have some influence. For example, sexually reactive incest as mentioned before may be an outcome of modeling. However, it accounts only for the initial elicitation of maladaptive behaviors. The maintenance of such behaviors is again likely to be a result of operant conditioning.

Environmental Perspective

The nature of an abusive environment is important to be considered. Regarding family environment, Howes, Cicchetti, Toth, and Rogosch (2000) found that families in which a sexual abuse case was reported were characterized by “a pattern of affect dysregulation, disorganized roles and chaotic interactions, and rigid relationship skills” (p. 104). This suggests that sexually abused children are under the risk of acquiring maladaptive behaviors through abuse experiences. They are also under the risk of deprivation of the environment which facilitates the learning of adaptive behaviors for children. And this may expose the children to other maladaptive behaviors. These increase the probability that children will rely on maladaptive behaviors.

Society requires children to participate in social settings. For example, 6-year-old children in the United States start learning academic and social skills with peers at school. This new environment may give sexually abused children both positive and negative experiences. On the positive side, these children have opportunities to leave their abusive environment, and they may get an opportunity to learn adaptive and functional behaviors from people outside the abusive family environment. This facilitates the learning of adaptive behaviors (Cole & Putnam, 1992). However, on the negative side, sexually abused children may receive negative environmental feedback in their interactions with peers and teachers because of the neurological and behavioral shortcomings they have acquired in their abusive

family environment.

In a study by Erikson, a sample of sexually abused children was described as “anxious, inattentive, and unable to understand classroom expectations. Sexually abused children were unpopular with peers, and their interactions were marked by withdrawal or aggression” (as cited in Cicchetti & Toth, 1995, P 16). Without some intervention, these children are unlikely to learn adaptive behaviors even in the new environment, and they may even learn further maladaptive behaviors. For example, sexually abused children may be more likely to become involved with delinquency where maladaptive behaviors often get reinforced. They may tend to become involved with the abusive romantic relationship. Moreover, adolescent girls with a history of CSA may tend to get pregnant, leading to a number of potential negative outcomes. Therefore, some environmental management and skill building interventions are necessary for many victims of CSA.

Purpose of the Present Study

The importance of developmental perspective on the CSA-associated psychiatric disorders has been discussed up to this point. A similar trend is seen in the intervention in general: clinicians today are aware of the importance of considering their clients’ developmental stage. However, it has not explicitly discussed which form of intervention is more effective than others for a particular age group of participants with a history of CSA. Thus, the present study took a developmental perspective in the meta-analysis of those

scientifically rigorous experiments. Only those outcome studies in which random assignment was conducted were included because random assignment passively controls multiple confounding variables at once. These studies were classified in terms of the participants' age group. Then, each age group was sub-classified according to the participants' diagnosis. The goal of the present study was to find characteristics of effective interventions for a particular age group with a particular diagnosis.

Method

A literature search using PsycINFO was conducted in July, 2006, to retrieve currently available meta-analytic treatment outcome papers on interventions for CSA victims. The terms "sexual abuse," "treatment outcomes," "psychotherapeutic outcomes," and "review" were entered as keywords. Table 1 is a list of the retrieved meta-analytic articles. Each study included in those articles was reviewed. Those studies which met following criteria were included for the present study:

- 1) The researcher(s) had to specify the use of randomization when assigning participants into one of treatment or control groups.
- 2) The targets of the intervention had to be the victims of CSA.
- 3) The study had to include at least one comparison group (e.g., control group).
- 4) The researchers(s) had to use at least one standardized measurement. Any measurement developed by the researchers themselves as well as any measurement without psychometric properties information was not considered as a standardized measurement in the present study.
- 5) The results of the study had to specify the number of participants in each group, mean(s) and standard deviation(s) in each group for each standardized measurement. (Note: Some studies were included because the missing data were available from the researchers.

Additionally, although Verleur, Hughes, and de Rios' (1986) study included in Nurcombe, Wooding, Marrington, Bickman, and Roberts' (2000) meta-analytic article does not specify that they used random assignment, their study was included in the present study because Nurcombe et al. indicate that it is one of experiments that used random assignment. Moreover, the present author came to know about an additional study that used random assignment (this is a 2004 paper by Cohen, Deblinger, Mannarino, & Steer) through a personal communication with the first author (Cohen, personal communication, December 31, 2006). On the other hand, Monck, Bentovim, Goodall, et al.'s (1996) study included in Nurcombe et al.'s meta-analytic article was removed because this study was published as a book; the present author was not able to get it from a library at his institution. Consequently, a total of 16 studies that used random assignment were included in the present study. Variables coded in the present study were scores of standardized measurements that were used in the included studies.

Table 2 shows demographic characteristics of participants in each study. These papers were divided into participants' age groups (0-12 as childhood; 0-18 as childhood-adolescence; 13-18 as adolescence; and >18 as adulthood) as well as the participants' diagnosis. (Note: PTSD was only a diagnosis that was specified in the included studies.) And the data were analyzed separately by these age groups in accordance with the purpose of the present study.

Cohen's d was calculated by the present author as an effect size for each standardized measurement. Cohen's d was used in the present study because it would provide a practical interpretation (i.e. small, medium, or large size). Two different sets of formulae were used depending on the type of mean comparison as below. When means were compared between two scores of the same group (i.e. two dependent groups), the following set of formulae (Gravetter & Wallnau, 2005) was used:

$$d = \frac{\bar{X}_D}{s_D}; \text{ where } \bar{X}_D = \frac{\sum D}{n} \text{ and } s_D = \sqrt{\frac{SS_D}{df}}; \text{ where } SS_D = \sum D^2 - \frac{(\sum D)^2}{n}$$

Note that D in the formulae is a difference score (posttest or follow-up – pretest). Although Becker (2000) shows the way to obtain Cohen's d by using pooled standard deviation of the dependent groups, Cohen's d obtained in his way may be affected by individual differences within the group. Gravetter and Wallnau's formula is robust to such a within-group differences and so was selected for the present study.

On the other hand, when the mean comparison was between two independent groups (either between two treatment groups or between treatment and control groups), the following set of formulae (Gravetter & Wallnau, 2005) was used:

$$d = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{s_p^2}}; \text{ where } s_p^2 = \frac{SS_1 + SS_2}{df_1 + df_2}; \text{ where } SS = s^2 \times df$$

This set of formulae uses a pooled standard deviation derived from a standard deviation of each of the two groups. Note that the means, degrees of freedom, and standard deviations were derived from the results at posttest or follow-up (but not pretest) with a subscript of “1,” indicating the first group. Also note that when the two treatment groups were compared, the sign of Cohen’s d depends on which treatment group was used as a baseline. For example, if the sign is plus, the mean of the first group is higher than that of the second group.

An effect size was interpreted as small when $0 < |d| < 0.2$; medium when $0.2 < |d| < 0.8$; and large when $|d| > 0.8$ (Gravetter & Wallnau, 2005). Moreover, an interpretation of the direction or sign of Cohen’s d would depend on 1) which group mean was treated as a baseline and 2) the measurements that were used (i.e., a higher score indicates the improvement on some measures and deterioration on others). A summary of measures used in the included studies including an indication of what direction would indicate “improvement” on scores is included on Appendix A.

Result

Childhood

There were two studies in which participants were between 0 and 12 years old. None of them had any specific diagnoses as inclusion criterion. Table 3 provides a summary of

effect sizes in each reference. (Note: All effect sizes in Tables 3 through 8 are for the posttest unless specified otherwise.)

Cohen and Mannarino (1996) compared cognitive-behavioral therapy adapted for sexually abused preschool children (CBT-SAP) with nondirective supportive therapy (NST). Parents participated in the treatment as well. Both treatment modules consisted of twelve individual sessions. A summary of scores on two standardized measures were available: Child Behavior Checklist (CBCL) and Child Sexual Behavior Inventory (CSBI). Authors indicate that random assignment yielded equivalent groups. Effect sizes were calculated for CBT-SAP with NST as a baseline, and a total of five effect sizes were calculated. Results indicate that the participants in both treatment groups improved their scores on both measures. CBT-SAP was moderately to strongly more effective in reducing problematic internalizing (ES = -0.79), externalizing (ES = -0.40), and sexual behaviors (ES = -0.60); NST was somewhat more effective in enhancing children's social competence.

Deblinger, Stauffer, and Steer (2001) compared cognitive-behavioral group therapy (CBGT) and supportive group therapy (SGT). Nonoffending mothers participated in the treatment as well. Both treatment modules consisted of eleven weekly sessions, 1 hour 45 minutes (plus 15 minutes for joint parent and child activity session) per session for CBGT and 1 hour 45 minutes per session for SGT. The authors indicated that random assignment yielded equivalent groups regarding the participants' background. Child participants were assessed

using the PTSD section of the Schedule for Affective Disorders and Schizophrenia for School-Aged Children (K-SADS-E), the PTSD subscale in CBCL, CSBI-3, and What If Situation Test (WIST). Effect sizes were calculated for CBGT with SGT as a baseline at the posttest and the 3-month follow-up, and a total of 16 effect sizes were calculated. Results indicate that both treatment modules were moderately effective in reducing inappropriate sexual behaviors at posttest (ES = -0.74 for CBGT and -0.47 for SGT). However, these benefits appeared to last longer in the SGT group compared to the CBGT group (the mean differences between follow-up and posttest shown in Deblinger et al.'s study were 0.17 and 2.04, respectively). Effects of the two treatments in the reduction of PTSD symptoms measured on K-SADS-E were almost equivalent (ES = -0.73 for CBGT and -0.74 for SGT). But the effect lasted longer in SGT than CBGT (the mean differences between posttest and follow-up shown in Deblinger et al.'s study were -0.87 and 1.19, respectively). However, this long-term reduction of PTSD symptoms was not observed on CBCL.

Childhood-Adolescence

Six studies were conducted using childhood-adolescence participants. Of those, four studies were categorized for PTSD and two studies for no specific diagnosis. Tables 4 and 5 provide summaries of the results.

Posttraumatic Stress Disorder

Table 4 provides a summary of the four studies in which the participants met full or

partial criteria for PTSD. King, Mullen, Myerson, Heyne, Rollings, Martin, and Ollendick (2000) compared child only cognitive behavioral therapy (C-CBT) and family CBT (F-CBT) with a control group. Both treatment modules consisted of twenty 50-minutes weekly sessions. Participants met full or at least several PTSD criteria. A summary of scores on four standardized measures was available: Fear Thermometer (FT), Revised Children's Manifest Anxiety Scale (R-CMAS), Child Depression Inventory (CDI), and the CBCL. Authors indicate that there were no significant differences across groups regarding socioeconomic variables (e.g., age, gender, and socioeconomic status). Effect sizes were calculated for both treatment modules with a control group as a baseline at posttest and 12-week follow-up. A total of 24 effect sizes were calculated. Results indicate that both treatment groups improved on all measures. Both treatments were moderately effective in mitigating the children's anxiety. F-CBT was strongly effective (ES = -0.87) in reducing PTSD symptoms while C-CBT was moderately effective (ES = -0.32) at posttest. This difference remained at the follow-up.

Deblinger, Lippmann, and Steer (1996) compared mother only cognitive behavioral therapy (M-CBT), mother and child CBT (MC-CBT), and child only CBT (C-CBT) with a control group. All three treatment modules consisted of twelve weekly sessions but sessions in MCBT and CCBT lasted for 45 minutes whereas sessions in MCCBT lasted for 80-90 minutes. The majority of the children (71%) were diagnosed as PTSD. Some met other

diagnoses. Child participants were assessed using the PTSD section of K-SADS-E, State/Trait Anxiety Inventory for Children (STAIC), CDI, and CBCL. Effect sizes were calculated for M-CBT, MC-CBT, and C-CBT with a control group as a baseline at posttest. A total of 18 effect sizes were calculated. The results indicate that all treatment groups showed improvement on all measures. All treatment modules were effective in mitigating PTSD symptoms. Particularly, MC-CBT and C-CBT were strongly effective ($d = -0.88$ and -0.91 , respectively). All treatment modules were moderately effective on the mitigation of depressive symptoms.

Berliner and Saunders (1996) compared group therapies consisting of stress inoculation training and gradual exposure (GT-SIT) with standard group therapy (GT). Both treatment modules consisted of ten weekly sessions. Eighty-one percent of participants were diagnosed with PTSD. Authors indicate that there were no significant differences between groups in demographic characteristics or abuse case characteristics. A summary of scores on five standardized measures was available: Fear Survey Schedule for Children-Revised (FSSC-R), RCMAS, CBCL, CDI, and CSBI. (Note: Effect sizes for Behavior-Profile Total in CBCL were dropped due to suspicion of potential errors on reported standard deviations.) Effect sizes were calculated for GT-SIT with GT as a baseline at posttest, 1-year and 2-year follow-ups. A total of 45 effect sizes were calculated. Results indicate that while both treatment groups improved on all measures, GT-SIT was moderately more effective than GT

in mitigating the children's anxiety and fear in the long run although these benefits were not apparent at posttest. GT was moderately more effective than GT-SIT in enhancing social competence and in reducing internalizing behaviors.

Cohen, Deblinger, Mannarino, and Steer (2004) compared Trauma-focused cognitive-behavioral therapy (TF-CBT) with child-centered therapy (CCT). Primary caretakers participated in the treatment. Each treatment in both treatment modules consisted of twelve 90-minute weekly sessions. The PTSD section of the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL) was employed for diagnosis. The participants had to meet at least five diagnostic criteria and at least one symptom in each of three PTSD clusters for sexual abuse-related PTSD defined in the DSM-IV. Eighty-nine percent met the full criteria. A summary of five standardized measures for children's outcomes was available: K-SADS-PL, CBCL, CDI, STAIC, and CSBI. Effect sizes were calculated for TF-CBT with CCT as a baseline at the posttest. A total of 11 effect sizes were calculated. Results indicate that while both treatment groups improved mean scores on all measurements, TF-CBT was moderately more effective than CCT in mitigating PTSD symptoms (ES = -0.49 for reexperiencing, -0.72 for avoidance, and -0.37 for hypervigilance subscales) and somewhat more effective in the reduction of problematic behaviors (ES = -0.38 for behavior profile total), in the reduction of internalizing and externalizing behaviors (ES = -0.42 and -0.29, respectively), in the reduction

of anxiety (ES = -0.25 for state anxiety and -0.37 for trait anxiety), and in the reduction of sexual behaviors (ES = -0.23). However, there was no difference between groups in terms of the enhancement of social competence.

Not Specified

Table 5 provides a summary of the two studies in which participants were not diagnosed. Cohen and Mannarino (1998) compared sexual abuse-specific cognitive behavioral therapy (SAS-CBT) with nondirective supportive therapy (NST). Nonoffending parents participated in the treatment. Both treatment modules consisted of 90 minutes, 12 weekly sessions. A summary of scores on four standardized measures was available: CBCL, STAIC, CDI, and CSBI. Authors indicate one significant difference at the pretest between groups: SAS-CBT group had significantly lower score than NST group on Social Competence in CBCL. Thus, its effect size was dropped out from an analysis. Effect sizes were calculated for SAS-CBT with NST as a baseline at posttest. A total of seven effect sizes were calculated. Results indicate that all scores improved for both groups. SAS-CBT was moderately effective in reducing internalizing behaviors, depression, and sexual behaviors compared to NST. There were minimal differences between groups in the reduction of CBCL's total score and externalizing behaviors.

Celano, Hazzard, Webb, and McCall (1996) compared the Recovering from Abuse Program (RAP; treatment module based on Finkelhor and Browne's traumagenic dynamics

model) with unstructured supportive therapy (UST). Nonoffending female caretakers participated in the treatment. Both treatment modules consisted of eight 1-hour sessions. Two scores in for children's outcomes were available: CBCL and Children's Impact of Traumatic Events Scale-Revised (CITES-R). (Note: The effect sizes for Betrayal and Traumatic Sexualization subscales in CITES-R were dropped from the analysis due to a lack of information about the direction of the improvement.) Effect sizes were calculated for RAP with UST as a baseline at posttest. A total of six effect sizes were calculated. Results indicate that while both treatment groups improved their scores in most measurements, RAP was somewhat more effective on the mitigation of PTSD symptoms (ES = -0.21) and trauma-related beliefs (ES = -0.50 for self-blame, ES = -0.31 for betrayal, and ES = -0.32 for traumatic sexualization).

Adolescents

There were two studies whose participants consisted of only adolescents. Neither reference had any specific diagnosis as a part of the inclusion criteria. Table 6 provides a summary of the results.

Baker (1985) compared Rogerian individual therapy (RIT) with Rogerian group therapy (RGT). RIT consisted of ten 60-minutes weekly sessions whereas RGT consisted of six 90-minutes weekly sessions. A summary of scores in three standardized measurements was available: Piers Harris Children's Self Concept Scale, Institute for Personality and Ability

Testing Anxiety Scale, and Institute for Personality and Ability Testing Depression Scale.

Effect sizes were calculated for RIT with RGT as a baseline at posttest. A total of three effect sizes were calculated. Results indicate that while both RIT and RGT groups improved scores in all measurements, RGT was strongly effective in enhancing self-concept (ES = 1.42).

Verleur, Hughes, and de Rios (1986) compared female-headed group therapy with a control group. Weekly-sessions for the treatment group lasted for 6 months. A summary of scores in one measurement, Coopersmith Self-Esteem Inventory (CSI), was available. Because the authors provided data for individual participants, Cohen's *d* was calculated for the pretest/posttest effect as well as the treatment/control posttest effect. A total of three effect sizes were calculated. Results indicate that the treatment was very effective in enhancing self-esteem (ES = 1.58). Although the self-esteem in the control group increases as well (ES = 1.18), the treatment group showed greater enhancement compared to the control group (ES = 1.18 for the group-comparison effect size).

Adulthood

There were seven studies in which participants were older than 18 years old. Of those, two studies had PTSD as a part of the inclusion criteria and the rest did not have any specific diagnosis for the inclusion.

Posttraumatic Stress Disorder

Table 7 provides a summary of the two studies in which the participants met full

criteria for PTSD. Classen, Koopman, Nevill-Manning, and Spiegel (2001) compared trauma-focused and present-focused group therapy (combined) with a control group. The treatment module consisted of twenty-four 90-minute weekly sessions. Participants were all diagnosed with PTSD based on DSM-IV. A summary of scores on two standardized measures was available: Trauma Symptom Checklist 40 (TSC-40) and Inventory of Interpersonal Problems (IIP). Authors provided a list of mean difference scores and standard deviations from 6-month follow-up to pretest (but not posttest). Thus, only a formula $d = \frac{\bar{X}_D}{s_D}$ was used. A total of 30 effect sizes were calculated. Results indicate that the treatment was effective in all subscales of two measurements except for sleep difficulties in TSC-40. Particularly, the treatment group had reductions in dissociation (ES = -0.81) and sexual abuse trauma (ES = -0.72) subscales of TSC-40 as well as in vindictiveness (ES = -1.07) and nonassertiveness (ES = -0.71) subscales of IIP. On the other hand, the control group had relatively smaller effect sizes on these subscales.

Zlotnick, Shea, Rosen, Simpson, Mulrenin, Begin, and Pearlstein (1997) compared affect-management group therapy with a control group. The treatment module consisted of fifteen weekly 2-hour sessions. All participants met criteria for PTSD assessed with the Clinician Administered PTSD Scale. Authors reported no significant differences in the demographic characteristics or in pretest means on outcome measures. Authors presented their results from three standardized measures: Davidson Trauma Scale (DTS), Crime-Related

Posttraumatic Stress subscale of the Symptom Checklist 90-R (SCL-90-R), and Dissociative Experiences Scale (DES). Effect sizes were calculated for the treatment group with a control group as a baseline at posttest. A total of three effect sizes were calculated. Results indicate that the treatment was effective in decreasing PTSD symptoms as measured with two standardized measurements: SCL-90-R (ES = -1.13) and DTS (ES = -0.85). The treatment group also had lesser dissociative symptoms as measured with DES.

Not Specified

Table 8 provides a summary of the four studies in which the participants were not diagnosed. Stalker and Fry (1999) compared individual therapy (IT) with group therapy (GT). Both treatment modules incorporated a feminist therapy and strengths perspective. IT consisted of ten 50-minute sessions whereas GT consisted of ten 90-minute sessions. A summary of scores on five standardized measures was available: Global Severity Index in Symptom Checklist (SCL-90-R), DES, Posttraumatic Stress Scale (PTSS), TSC-40, and Global Assessment Scale (GAS). Authors indicate that there were no significant differences between the two groups on any outcome measure or on the demographic characteristics at pretest. The present author received the original data from the second author (R. Fry, personal communication, September 20, 2006) because standard deviations were missing, and he used them to calculate Cohen's *d*. But Cohen's *d* was not calculated for the follow-ups because about a half of the participants sought further treatment during these follow-ups. Effect sizes

were calculated for IT with GT as a baseline. A total of five effect sizes were calculated.

Results indicate that both treatment groups were, in general, equally effective. Only the PTSS (ES = 0.24) reached a medium effect size, indicating that IT was superior in reducing PTSD symptoms.

Rieckert and Moller (2000) compared group rational-emotive behavior therapy with a control group. The treatment module consisted of ten 2-hours sessions weekly. None of the participants met criteria for PTSD or mood disorder. A summary of scores on six standardized measures was available: Beck Depression Inventory (BDI), State-Trait Anxiety Inventory (STAI), State-Trait Anger Expression Inventory (STAXI), Guilty Inventory (GI), CSI, and Golombok-Rust Inventory of Sexual Satisfaction (GRISS). The present author received the original data from an assistant of the original authors (L. R. Marieanna, personal communication, October 16, 2006) because means and standard deviations were missing. Effect sizes were calculated 1) for each group between posttest and pretest and between 8-week follow-up and pretest and 2) for a group-comparison with the control group as a baseline at posttest and follow-up. However, the authors report that the treatment group had the significantly higher mean scores on the BDI, on STAI, in State Anger and Anger-Out subscales in STAXI, on State Guilt subscale in GI, and in GRISS, and significantly lower mean score in CSI at pretest, compared to the control group. Because of the excessive numbers of differences at the pretest, the present author dropped out the majority of

group-comparison effect sizes. Consequently, a total of 40 effect sizes were calculated. Given pretest/ posttest effect sizes, the treatment had a powerful effect on the mitigation of depression, current anxiety, anger, current guilty feeling, and sexual problems as well as on the enhancement of self-esteem at posttest. And these positive effects remained at the 8-week follow-up.

Edmond and Wambach (1999) compared individual eye movement desensitization and reprocessing therapy (EMDR) and individual therapy (IT) with a control group. Both treatment modules consisted of six 90-minute sessions. A summary of scores on four standardized measures was available: STAI, Impact of Events Scale (IES), BDI, and Belief Inventory (BI). Because the authors report that more than half of the participants received additional treatment before the completion of the three-month follow-up, effect sizes were only evaluated for the posttest in each treatment group with the control group as a baseline. A total of eight effect sizes were calculated. Results indicate that all effect sizes were medium to large size in the direction of improvement. EMDR was more effective than IT in reducing depression (ES = -0.74 and -0.44, respectively), in reducing current anxiety (ES = -1.35 and -0.91, respectively), and in reducing distorted belief (ES = -1.01 and -0.68, respectively) whereas IT was more effective in reducing posttraumatic stress symptoms (ES = -1.24) than EMDR (ES = -1.09).

Alexander, Neimeyer, Follotte, Moore, and Harter (1989) compared interpersonal

transaction group therapy (IT-GT) and process group therapy (PGT) with a control group.

Both treatment modules consisted of ten 90-minute weekly sessions. A summary of scores on four standardized measures was available: BDI, Social Adjustment Scale (SAS), SCL-90-R, and Modified Fear Survey (MFS). Effect sizes were calculated for each treatment group with a control group as a baseline at posttest. Effect sizes at the 6-month follow-up were unobtainable due to missing data in the control group. A total of eight effect sizes were calculated. The results indicate that IT-GT was more effective than PGT in reducing psychological distress measured with SCL-90-R (ES = -0.55 and 0.08, respectively) and depressive symptoms (ES = -0.60 and -0.14, respectively). On the other hand, PGT was more effective in enhancing the participants' social functioning level. (Note: In SAS, the lower the score is, the higher the social functioning level is.)

Discussion

Interventions for CSA victims have not explicitly been discussed from a developmental perspective. The purpose of the present study was to seek features of effective interventions for a particular age group with a particular diagnosis. However, an insufficient number of studies using the same standardized measurement(s) made it difficult to make a firm conclusion about what really reduced psychiatric symptoms and what enhanced adaptive behaviors. Nonetheless, some general findings can be addressed. First, CBT used in childhood studies appeared to be effective in reducing the problem behaviors (e.g., PTSD symptoms,

internalizing, externalizing, and sexual behaviors). Further, CBT appears to be more effective than nondirective therapies. This suggests that CBT provided an additional enhancement on the effect of the treatment during this developmental stage. However, an evidence for the long term effects of CBT was not provided; this may be a more important discussion for younger sexually abused children.

A similar result was found in childhood-adolescence studies with a diagnosis of PTSD: directive treatments were generally more effective on the reduction of posttraumatic stress symptoms. This suggests that the acquisition of new skills reduces the maladaptive behaviors in children. Furthermore, the participation of family member(s) in the treatment in studies of King et al. (2000) and Deblinger et al. (1996) had broader improvement in behaviors. This was presumably because the enhanced quality of the family environment led to the more efficient acquisition of new adaptive behaviors for the children. Thus, potentially, the involvement of family members may enhance the overall efficacy of intervention.

It is interesting that diversity in the treatment modules was seen more frequently in adulthood studies compared to other age groups. The more interesting finding, however, was that participants who received some type of treatment in studies of Rieckert and Moller (2000), Edmond and Wambach (1999), and Alexander et al. (1989) showed the reduction of depressive symptoms as measured with BDI. Similar results were seen in the reduction of current anxiety as measured with STAI in Rieckert and Moller's (2000) and Edmond &

Wambach's (1999) studies.

Limitations of the Present Study

There were some limitations in the present study. First, there were few directly comparable studies used in the present study in terms of the differences in age groups, diagnoses, treatment modules, and standardized measurements. A treatment outcome study of CSA in which random assignment is used is relatively rare, in general. This was presumably due to a variety of difficulties (e.g., an ethical issue regarding random assignment). Second, differences in characteristics of the participants across studies may be confounding variables. For example, differences in severity of CSA that the participants experienced may have influenced the results. Third, even though all studies included in the present study used random assignment, it did not guarantee the equivalent pretest means across groups. In fact, there were some unreliable values of Cohen's d in the present study. In order to deal with this issue, more sophisticated statistical analyses are recommended in future studies. For example, Cohen et al. (2004) provided effect sizes that were obtained through analysis of covariance (ANCOVA). Although effect sizes in their study were not provided in the present study – in order to strictly follow the same formulae above in all analyzed papers – the ANCOVA is a way to control for potentially differential pretest scores across groups. The use of ANCOVA in future studies will make it easier to interpret the results.

Recommendation

While treatment outcome studies provide some answers as to what enhances the quality of life, and these findings can be applied to the real life settings relatively easily, the behavior analytic research may provide to a better solution. For example, the clarification of mechanisms of how maladaptive behaviors persist even out of the abusive environment will have a huge impact on the clinical field. Nonetheless, basic research in behavior analysis, in general, has often been neglected from people in clinical fields. There appear to be many unbeknown basic behavioral principles – beyond respondent and operant conditionings – to clinical researchers and clinicians. Thus, the clinical researchers should pay more attention to new findings from research in behavior analysis. And the clinicians should be more knowledgeable about behavior analysis.

Conclusion

The present paper has discussed how sexual abuse in childhood creates diversity in the course of the victims' development from multiple perspectives. It has also attempted to find what enhances the quality of those victims' lives at specific developmental stages. Cognitive-behavioral therapy provided an additional enhancement to nondirective therapies on the effect of intervention in childhood as well as in childhood-adolescence. Particularly, the involvement of family members appears to enhance the overall efficacy of intervention on these developmental stages. An interesting finding in adulthood studies was that participants

who received some different types of interventions showed the reduction of depressive symptoms. It is recommended to integrate the treatment outcome studies with the findings from behavior analytic research. The investigation of CSA has to develop itself in order to answer many of the questions that have been raised since more than 100 years ago.

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Table 1

A List of Retrieved Meta-analytic Treatment Outcome Articles

- de Jong, T. L., & Gorey, K. M. (1996). Short-term versus long-term group work with female survivors of childhood sexual abuse: A brief meta-analytic review. *Social Work with Groups, 19(1)*, 19-27.
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Table 2
Reference List Analyzed in the Present Study

Author(s)	Age N= Gender	Ethnicity (%)	Form of sexual abuse (%)/ Frequency of sexual abuse (%) [Onset age]	Perpetrator (%)	
Cohen and Mannarino (1996)	Range: 2.1-7.1 N= 67 Gender: Both	Caucasian: 54 African-American: 42 Other: 4	Genital fondling only: 46 Vaginal/oral intercourse only: 26 Oral/genital contact: 22 Breasts fondling: 3 Other/unknown: 3 (Note: most intrusive type)	Once: 25 2-5: 26 6-10: 15 >10: 29 ?: 5 [No data]	Biological father: 15 Biological mother: 2 Mother's paramour: 10 Uncle: 7 Baby-sitter: 7 Older child: 13 Multiple/other: 46
Deblinger et al. (2001)	Mean: 5.45 N= 44 Gender: Both Female: 61%	White: 64 Black: 21 Hispanic: 2 Other: 14	Penile penetration: 16 No penile penetration: 84	Once: 34 >1: 66 [Mean: 4.50]	Father/stepfather: 9 Adult relative: 13.6 Adult nonrelative: 13.6 Sibling: 4.5 Related older peer: 25 Nonrelated older peer: 34
King et al. (2000) ^b	Range: 5-17 N= 36 Gender: Both Female: 69%	No data	Genital fondling only: 14 Vaginal/anal intercourse only: 19 Digital penetration of anus/vagina only: 11 Multiple: 56	Range: 1-33 [No data]	Biological father: 11 Stepfather: 8 Family friend: 14 Neighbor: 14 Professional: 8 Acquaintance: 22 Older youth: 11 Other: 11
Deblinger et al. (1996)	Range: 7-13 N= 90 Gender: Both Female: 83%	Caucasian: 72 African-American: 20 Hispanic: 6 Other: 2	Sexual touching: 45 Simulated intercourse: 7 Oral-genital contact: 17 Penile penetration of vagina/anus: 33	Once: 18 2-10: 47 11-50: 22 >50: 13 [No data]	Father/stepfather: 32 Adult relative: 19 Adult nonrelative: 22 Older peer: 20 Multiple: 7
Berliner and Saunders (1996) ^b	Range: 4-13 N= 80 Gender: Both Female: ~89%	Caucasian: 73-75 African-American: 8-16 Hispanic: 3-8 Other: 6-10	Rape: 41-49 Attempted rape: 3-6 Molestation: 36-56 Attempted molestation: 0-4 Noncontact: 0-4	>1: 75-78 [No data]	Parent: 38 Sibling: 2-13 Other relative: 10-25 Acquaintance: 13-27 Professional: 3-10 Stranger: 9-13
Cohen et al. (2004) ^b	Range: 8-14.92 N= 203 Gender: Both Female: 79%	White: 60 African American: 28 Hispanic: 4 Biracial: 7 Other: 1	Penile penetration: 37.4 Digital penetration: 22 Oral/genital abuse: 20.1 Simulated intercourse: 10.3 Nongenital touching under clothes: 4.4 Sexual touching over clothes: 2.9 Other: 3.9 (Note: most intrusive type)	Median: 4 Range: 1-1000 [Mean: 8.90]	Stepparent: 23 Biological/adaptive parent: 7 Other adult relative: 16.3 Other adult nonrelative: 20.7 Stranger: 2.5 Sibling: 6.4 Older peer (relative): 6.4 Older peer (nonrelative): 12.3 Multiple: 5
Cohen and Mannarino (1998) ^b	Range: 7.2-15.3 N= 49 Gender: Both Female: 69%	Caucasian: 59 African American: 37 Hispanic: 2 Biracial: 2	Intercourse: 54 Fondling: 44 Oral-genital: 2 (Note: most severe form)	Once: 36 2-5: 20 6-10: 8 >10: 33 ?: 3 [No data]	Father: 10 Stepfather: 13 Mother's paramour: 10 Uncle: 3 Grandfather: 5 Older Peer: 15 Brother: 13 Other: 31
Celano et al. (1996)	Range: 8-13 N= 32 Gender: Female	African-American: 75 Caucasian: 22 Hispanic: 3	Vaginal/anal intercourse: ~50 Digital penetration of the vagina, oral sex, or attempted intercourse: ~25 Fondling: ~25	No data [No data]	(Male: 100) Paternal caregiver role: 25 Other family member: 31 Acquaintance: 31 Stranger: 13
Baker (1985)	Range: 13-17 N= 39 Gender: Female	White: 79 Black: 21	(From fondling to intercourse) Sexual intercourse: 15	No data [No data]	Natural father: 21 Stepfather or mother's cohabiter: 36 Step-uncle: 8 Babysitter: 5 Neighbor: 3 Schoolmate: 5 Foster father: 5 Brother: 8

					Male friends of family: 10
Verleur et al. (1986)	Range: 13-17 N= 30 Gender: Female	No data	No data	No data [No data]	Intrafamilial incest: 100
Classen et al. (2001) ^b	Mean: 38.4 N= 52 Gender: Female	White: 64 Hispanic: 15 Black: 8 Native American: 4 Other 10	No data	≥2: 100 [No data]	No data
Zlotnick et al. (1997)	Mean: 39 N= 33 Gender: Female	White: 97 Native American: 3	No data	No data [Mean: 6.86]	Intrafamilial: 77 Parental: 35
Stalker and Fry (1999)	Range: 20-60 N= 65 ^c Gender: Female	No data	Vaginal intercourse: 42	No data [Mean: 7]	Father/stepfather: 50 Brother/Step-brother: 29 Uncle: 16 Grandfather: 8 Male family friend: 13 Other adult male: 9 Older non-adult male: 15 Male babysitter: 0.01
Rieckert and Moller (2000)	Range: 20-35 N= 42 Gender: Female	No data	Penetration: 43	Average duration: 7 yrs Period: Age 3-15	Father or a close family member: 88
Edmond and Wamback (1999)	Mean: 35 N= 59 Gender: Female	White: 85	No data	Duration of >5 yrs: 50 3-4/month- 3-5/week: 61 [Mean: 6.5]	Biological father: 42 Grandfather: 24 Brother/half-brother: 23 Male friend: 18 Uncle: 15 Stepfather: 12 Mother: 7 (Multiple: 47.5)
Alexander et al. (1989)	Range: 23-55 N= 57 Gender: Female	Caucasian: 76 Black: 24	Fondling only: ~33 Oral/genital contact: 15 Sexual intercourse: >50	Average duration: 7 yrs [Age < 6: ~33%] [Age 6-11: ~50%] [Adolescence: ~17%]	Natural father: 70 Stepfather: 33 Male relative: 11

Note. ^aNumbers of completers. ^bIndication that information was extracted from a table in the original study.

^cNumbers of completers at the post-test.

Table 3

Effect Sizes in Childhood Studies without Specific Diagnosis

		CBCL ^a					PTSD	CSBI ^b	K-SADS-E ^c PTSD Section	WIST
		Social Competence	Behavior Profile-Total	Internalizing	Externalizing					
Cohen and Mannarino (1996)	CBT adapted for sexually abused preschool children vs. Nondirective supportive therapy (Baseline)	-0.22	-0.62	-0.79	-0.40			-0.60		
Deblinger et al. (2001) ^d	Cognitive-behavioral group therapy						Post/Pre: -0.66	Post/Pre: -0.74	Post/Pre: -0.73	Post/Pre: 0.51
	Supportive group therapy						Post/Pre: -0.46	Post/Pre: -0.47	Post/Pre: -0.74	Post/Pre: -0.14
	Cognitive-behavioral group therapy vs. Supportive group therapy (Baseline)						Posttest: 0.02 Follow-up: -0.01	Posttest: 0.39 Follow-up: 0.60	Posttest: 0.07 Follow-up: 0.35	Posttest: 0.20 Follow-up: -0.14

Note. ^aCohen and Mannarino (1996) used 1983 version and Deblinger et al. (2001) used 1991 version. ^bBoth Cohen and Mannarino (1996) used 1992 version.

Deblinger et al. (2001) used CSBI-3. ^cDeblinger et al. (2001) used 1982 version. ^dPost/Pre effect sizes were provided in the original article.

Table 4

Effect Sizes in Childhood-Adolescence Studies with Diagnosis of Full or Partial PTSD in Majority of the Participants

		FT	R-CMAS ^a	CDI ^b	CBCL ^c	K-SAD S-E ^d	K-SADS-PL	STAIC ^e	FSSC-R	CSBI ^f
						PTSD section	PTSD, Psychosis, and Substance use disorder sections			
King et al. (2000)	Child-alone CBT vs. Control group (baseline)	-0.51 (-0.23)	Total: -0.47 (-0.62)	-0.31 (-0.27)	PTSD Scale: -0.32 (-0.49) Internalizing: 0.19 (-0.25) Externalizing: 0.55 (-0.43)					
	Family CBT vs. Control group (baseline)	-0.38 (-0.71)	Total: -0.32 (-0.66)	-0.29 (-0.11)	PTSD Scale: -0.87 (-0.83) Internalizing: -0.45 (-0.89) Externalizing: 0.30 (-0.02)					
Deblinger et al. (1996)	Mother only CBT vs. Control group (baseline)			-0.47	Internalizing: -0.41 Externalizing: -0.81	-0.55		State: -0.01 Trait: -0.20		
	Mother and child CBT vs. Control group (baseline)			-0.74	Internalizing: -0.37 Externalizing: -0.54	-0.88		State: -0.13 Trait: -0.48		
	Child only CBT vs. Control group (baseline)			-0.68	Internalizing: -0.15 Externalizing: -0.15	-0.91		State: -0.73 Trait: -0.37		
Berliner and Saunders (1996)	Group therapy consisting of stress inoculation training and gradual exposure vs. Standard group therapy (baseline)		Total anxiety: 0.01 (-0.30) [-0.38] Physiological anxiety: 0.08 (-0.40) [-0.52] Worry/oversensitivity: -0.06 (-0.37) [-0.28] Concentration: 0.10 (-0.04) [-0.28]	0.10 (-0.30) [-0.19]	Social competence: -0.29 (-0.71) [-0.33] Behavior profile total (Drop) Internalizing: 0.38 (0.31) [0.24] Externalizing: 0.49 (0.51) [0.23]			Total fear: -0.11 (-0.38) [-0.33] Failure/criticism: -0.06 (-0.45) [-0.41] Fear of unknown: -0.01 (-0.27) [-0.34] Injury/small animals: -0.20 (-0.18) [-0.23] Danger/death: -0.14 (-0.43) [-0.25] Medical fears -0.02 (-0.06) [-0.22]	0.37 (0.30) [0.11]	
Cohen et al. (2004)	Trauma-focused CBT vs. Child centered therapy (Baseline)			-0.40	Social competence: 0.08 Behavior profile total: -0.38 Internalizing: -0.42 Externalizing: -0.29		Reexperiencing -0.49 Avoidance: -0.72 Hypervigilance: -0.37	State: -0.25 Trait: -0.37		-0.23

Note. Effect sizes without the parenthesis are for the posttest, with the parenthesis “()” for the first follow-up, the parenthesis “[]” for the second follow-up.

^aKing et al. (2000) used 1978 version and Berliner and Saunders (1996) employed 1985 version. ^bKing et al. (2000) used 1981 version, Deblinger et al. (1996) and Cohen et al. (2004) used 1985 version, and Berliner and Saunders (1996) used 1992 version. ^cKing et al. (2000) used 1991 version, Deblinger et al. (1996) and Berliner and Saunders (1996) used 1983 version, and Cohen et al. (2004) used 1991 version. ^dDeblinger et al. (1996) used 1982 version. ^eDeblinger (1996) and Cohen et al. (2004) used 1973 version. ^fBerliner and Saunders (1996) and Cohen et al. (2004) used 1992 version.

Table 5
Effect Sizes in Childhood-Adolescence Studies without Specific Diagnosis

	Treatment module	CBCL ^a					STAIC ^b	CDI ^c	CSBI ^d	CITES-R
		Social Competence	Total Score	Internalizing	Externalizing	PTSD subscale				
Cohen and Mannarino (1998)	Sexual abuse-specific CBT vs. Nondirective supportive therapy (Baseline)	(Drop)	-0.07	-0.29	0.10		State: -0.08 Trait: -0.18	-0.61	-0.24	
Celano et al. (1996)	Recovering from abuse program vs. Unstructured supportive therapy (Baseline)			0.09	-0.71	-0.19				PTSD: -0.21 Self-Blame: -0.50 Betrayal: (dropped) Traumatic sexualization: (dropped) Powerlessness: -0.64

Note. ^aCohen and Mannarino (1998) used 1983 version and Celano et al. (1996) used 1991 version. ^bCohen and Mannarino (1988) used 1973 version. ^cCohen and Mannarino (1988) used 1985 version. ^dCohen and Mannarino (1988) used 1992 version.

Table 6
 Effect Sizes in Adolescence Studies without Specific Diagnosis

		Piers Harris Children's Self Concept Scale	Institute for Personality and Ability Testing Anxiety Scale	Institute for Personality and Ability Testing Depression Scale	CSI
Baker (1985)	Rogerian individual therapy vs. Rogerian group therapy (Baseline)	-1.42	0.09	0.18	
Verleur et al. (1986)	Female-headed group therapy				Post/Pre: 1.58
	Control group				Post/Pre: 1.18
	Female-headed group therapy vs. Control group (Baseline)				Posttest: 1.18

Note. Verleur et al. (1986) used 1981 version CSI.

Table 7
 Effect Sizes in Adulthood Studies with Diagnosis of Full PTSD

		TSC-40 ^a	IIP	DTS	SCL-90-R ^b Crime-Related Posttraumatic Stress Scale	DES ^c
Classen et al. (2001)	Trauma-focused and Present-focused (combined) group therapy	Follow-up/Pretest Anxiety: -0.28 Depression: -0.46 Dissociation: -0.81 Sexual abuse trauma: -0.72 Sexual problems: -0.39 Sleep difficulties: -0.05 Total Score: -0.48	Follow-up/Pretest Vindictive: -1.07 Cold: -0.55 Social Avoidance: -0.53 Nonassertive: -0.71 Exploitable: -0.46 Overly nurturant: -0.59 Intrusive: -0.61 Domineering: -0.66			
	Control group	Follow-up/Pretest Anxiety: -0.07 Depression: -0.33 Dissociation: -0.09 Sexual abuse trauma: -0.21 Sexual problems: -0.23 Sleep difficulties: -0.44 Total Score: -0.27	Follow-up/Pretest Vindictive: -0.23 Cold: -0.39 Social Avoidance: -0.29 Nonassertive: 0.03 Exploitable: 0.07 Overly nurturant: -0.47 Intrusive: -0.38 Domineering: -0.61			
Zlotnick et al. (1997)	Affect-management group therapy vs. Control group (Baseline)			-0.85	-1.13	-0.84

Note. ^aClassen et al. (2001) used 1992 version. ^bZlotnick et al. (1997) used 1983 version. ^cZlotnick et al. (1997) used 1986 version.

Table 8
Effect Sizes in Adulthood Studies without Specific Diagnosis

		SCL-90-R ^a	DES ^b	PTSS	TSC-4 0 ^c	GAS	BDI ^d	STAT ^e	STAXI	GI	CSI ^f	GRISS	IES	BI	SAS	MFS
								State Anxiety		State Guilt						
Stalker and Fry (1999)	Individual therapy vs. Group therapy (Baseline)	GSI: -0.09	-0.11	-0.24	Total: -0.09	0.12										
Rieckert and Moller (2000)	Group rational-emotive behavior therapy						{-2.72} -2.32	{-2.78} -1.94	State Anger: {-2.05} -1.78 Anger-In: {-1.03} -1.03 Anger-Out: {-1.05} -0.97 Anger Control: {-1.19} -1.18	{-1.11} -2.09	{1.49} 1.11	{-1.07} -1.03				
	Control group						{0.04} 0.02	{0.39} -0.39	State Anger: {0.54} 0.11 Anger-In: {0.04} -0.17 Anger-Out: {0.04} -0.02 Anger Control: {-0.10} -0.06	{0.01} 0.13	{-0.79} -0.62	{0.65} 0.80				
	Group rational-emotive behavior therapy vs. Control group (Baseline)						(Drop)	(Drop)	State Anger: (Drop) Anger-In: -0.89 (-0.56) Anger-Out: (Drop) Anger Control: -1.09 (-0.81)	(Drop)	(Drop)	(Drop)				
Edmond and Wambach (1999)	Individual EMDR therapy vs. Control group (Baseline)						-0.74	-1.35					-1.09	-1.01		
	Individual therapy vs. Control group (Baseline)						-0.44	-0.91					-1.24	-0.68		
Alexander et al. (1989)	Interpersonal transaction group therapy vs. Control group (Baseline)	Global: -0.55					-0.60								-0.26	-0.04
	Process group therapy vs. Control group (Baseline)	Global: 0.08					-0.14								-0.40	0.24

Note. Effect sizes without the parenthesis are for the posttest, with the parenthesis “()” for the follow-up, the parenthesis “{ }” for the posttest/pretest, and the parenthesis “|” for the follow-up/pretest.

^aStalker and Fry (1999) used the Global Severity Index of 1992 version SCL-90-R and Alexander et al. (1989) used 1983 version SCL-90-R (as a global measure of

psychological distress). ^bStalker and Fry (1999) used 1993 version DES-2. ^cStalker and Fry used 1992 version. ^dRieckert and Moller (2000) used 1961 version, Edmond et al. (1999) used 1993 version, and Alexander et al. (1989) used 1972 version. ^eRieckert and Moller (2000) and Edmond et al. (1999) used 1983 version. ^fRieckert and Moller (2000) used 1981 version.

Appendix A

	Year	Subscale (if any): Direction of improvement	What it measures
Child Behavior Checklist (CBCL)	1983	Social Competence subscale: Higher Behavior Profile-Total: Lower Internalizing: Lower: Lower Externalizing: Lower	Social functioning and behavioral problems
	1991	Social Competence: Higher Behavior Profile-Total: Lower Internalizing: Lower score Externalizing: Lower score PTSD Scale: Lower score	
Child Sexual Behavior Inventory (CSBI)	1992	Lower score	Children's sexual behavior
Child Sexual Behavior Inventory-3 (CSBI-3)	No Info.	(Presumably the same as CSBI)	
Kiddie Schedule for Affective Disorder and Schizophrenia for School Age Children-Epidemiologic version (K-SADS-E)	1982	PTSD Scale: Improve = lower score	PTSD
Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL)	1996	All subscales: Lower	(PTSD, Psychosis, and Substance Use Disorders sections were used in this study)
What If Situation Test (WIST)	1997	Higher	Knowledge and skills to cope with hypothetical abusive situation
Fear Thermometer (FT)	1988	Lower	Current emotional distress
Revised Children's Manifest Anxiety Scale (R-CMAS)	1978	Lower	Chronic anxiety
	1985	Total anxiety: Lower All subscales: Lower	
Children's Depression Inventory (CDI)	1981	Lower	Depressive symptoms
	1985	Lower	
	1992	Lower	
State/Trait Anxiety Inventory for Children (STAIC)	1973	*State anxiety: Lower Trait anxiety: Lower	Present anxiety (State) and anxiety as a characteristic (Trait)
Fear Survey Schedule for Children Revised (FSSC-R)	1983	Total fear: Lower All subscales: Lower	Nature and extent of children's fear
Children's Impact of Traumatic Events Scales Revised (CITES-R)	1991	PTSD: Lower Self-blame: Lower Powerlessness: Lower	PTSD symptoms and trauma-related beliefs
Piers Harris Children's Self Concept Scale	1969	Higher	Self-concept
Institute for Personality and Ability Testing Anxiety	No Info.	Lower	Anxiety

Scale			
Institute for Personality and Ability Testing Depression Scale	No Info.	Lower	Depression
Coopersmith Self-Esteem Inventory (CSI)	1981	Higher	Self-esteem (Self-evaluative attitude)
Trauma Symptom Checklist 40 (TSC-40)	1992	Total score: Lower All subscales: Lower	Traumatic impact (dissociation, anxiety, depression, sexual abuse trauma, sleep disturbance, and sexual problem)
Inventory of Interpersonal Problems (IIP)	1988	All subscales: Lower	Vindictive, cold, social avoidance, nonassertive, exploitable, overly nurturant, intrusive, domineering
Davidson Trauma Scale (DTS)	1995	Lower	Frequency and severity of PTSD
Symptom Checklist 90-R (SCL-90-R)	1983	a) Global measure: Lower b) Crime-related posttraumatic stress scale: Lower	a) Psychological distress (somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoia, and psychoticism) b) PTSD symptomatology
	1992	Global Severity Index: Lower	Psychological symptom pattern
Dissociative Experiences Scale (DES)	1986	Lower	Dissociative symptomatology
Dissociative Experiences Scale (DES-2)	1993	Lower	Frequency of dissociative experiences
Global Assessment Scale (GAS)	1976	Higher	Current psychosocial functioning
Posttraumatic Stress Scale (PTSS)	No Info.	Lower	Frequency of PTSD symptoms
Beck Depression Inventory (BDI)	1961	Lower	Severity of depression
	1972	Lower	
	1993	Lower	
State/Trait Anxiety Inventory (STAI)	1983	State anxiety: Lower	Present anxiety
State/Trait Anger Expression Inventory (STAXI)	1988	**State Anger subscale: Improve = Lower Anger-In subscale: Improve = Lower Anger-Out subscale: Improve = Lower Anger Control subscale: Improve = Lower	Experience, expression, and control of anger
Guilty Inventory (GI)	1992	State guilt: Lower	Present guilty feeling
Golombok-Rust Inventory of Sexual Satisfaction (GRISS)	1986	Lower	Prevalence and severity of sexual problems
Impact of Events Scale (IES)	1979	Lower	Posttraumatic stress symptoms
Belief Inventory (BI)	1985	Lower	Common distorted beliefs among adult survivors of childhood sexual abuse
Social Adjustment Scale (SAS)	1974	Lower	Social functioning
Modified Fear Survey (MFS)	1980	Lower	Common fears experienced by victims of rape as well as fears in other situations