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LOYOLA UNIVERSITY OF CHICAGO

A META-ANALYTIC INVESTIGATION OF THE  
RELATIONS OF CHILD SEXUAL ABUSE  
TO ADULT PSYCHOLOGICAL ADJUSTMENT

A THESIS SUBMITTED TO  
THE FACULTY OF THE SCHOOL OF EDUCATION  
IN CANDIDACY FOR THE DEGREE OF  
MASTER OF ARTS

DEPARTMENT OF COUNSELING AND EDUCATIONAL PSYCHOLOGY

BY

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CHICAGO, ILLINOIS

MAY, 1992

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## CHAPTER I

### INTRODUCTION

Prevalence rates of females sexually abused as children range from 6% to 62% of the samples studied (Finkelhor, 1986). While the rate of abuse is somewhat lower for males in our society, studies estimate that between 3% and 30% of males have been sexually molested as children (Finkelhor, 1986).

Despite this conflicting evidence regarding the documentation of prevalence rates of child sexual abuse in America, this phenomenon is becoming increasingly recognized for its importance. Researchers have now begun to explore the impact of such abuse on the victims, both in terms of the recent aftermath of the experience, and in relation to adjustment levels among adults who experienced sexual abuse during their formative years.

As has been the case with prevalence rate research, studies addressing the relationship between experiencing sexual abuse as a child and the level of subsequent adult adjustment also yield mixed results. Despite the contradictory information presented in many of these studies, the general picture portrayed here is that many persons who were sexually molested as children have impaired

mental health as adults. These findings are supported in both clinical samples and in samples of the general population (Finkelhor, 1988).

Studies of adult female survivors of child sexual abuse show that 20 to 50 percent of these women have identifiable mental health impairments (Finkelhor, 1988). The most common effects documented include anxiety, depression, dissociation, sexual problems and substance abuse. The occurrence of additional problems has also been confirmed (Finkelhor, 1988), including poor self-esteem, hostility towards parents, men, or others, feelings of isolation, sleep disturbances, and eating disorders.

Recently, theorists and clinicians working in the field of sexual abuse have begun to develop models to explain the occurrence of these particular effects in former sexual abuse victims. One model, using theoretical constructs regarding the process of traumatization as a conceptual framework was designed to specify how and why sexual abuse results in trauma for its victims. This model, referred to as the Traumagenic Dynamics Model of Child Sexual Abuse (Finkelhor and Browne, 1985), consists of four traumagenic components (traumatic sexualization, stigmatization, betrayal, and powerlessness. The assumption here is that the interaction of these four components following the sexual abuse of a child alter the child's cognitive and emotional orientation to the world and create trauma by

distorting a child's self-concept, world view, and affective capacities. These alterations are considered to be significant influences in the psycho-social development of sexually abused children and provide us with a framework for better understanding the adjustment process of the adult who was sexually abused as a child.

The first dynamic associated with this model, traumatic sexualization, refers to the process in which a child's sexuality is shaped in a dysfunctional fashion as a result of the sexual abuse. The long-term psychological impact associated with this dynamic may include confusion about sexual identity and norms, and an aversion to sex or intimacy. Stigmatization, the second dynamic attributed to this model, refers to the negative connotations communicated to the child concerning the abuse experience, which then become incorporated into the child's self-concept and world view. The psychological impact associated with stigmatization that may follow the child into adulthood includes guilt and shame, low self-esteem, and a sense of being different from others. Betrayal refers to the child victim's experience when they realize that someone on whom they are dependent has caused them harm, either by directly committing the sexually abusive act, or failing to prevent it from happening. In adults, these betrayal experiences can lead to depression, extreme dependency, impaired ability in trusting others, anger, and hostility. Powerlessness is



the final dynamic associated with this model. This component of the model describes the process of an interruption of the victim's will, desires, and sense of efficacy. The psychological effects attributed to powerlessness in adult survivors of child sexual abuse often include anxiety and fear, low self-efficacy, development of a world view from a victim's perspective, and identification with the aggressor.

Several qualitative reviews exist in the literature which summarize the specific results of studies designed to determine the nature of the relationship between child sexual abuse and adult psychological adjustment. Constantine (1981) reviewed 30 studies on the impact of childhood incest and sexual encounters with adults. He evaluated the studies in terms of outcomes experienced by the subject populations. Study results were described in terms of negative, neutral, or positive outcomes. Constantine (1981) concluded that the literature did not clearly show an inevitable outcome or set of emotional reactions to incest or to sexual encounters of children with adults. He also reported that the more negative outcomes of sexual abuse were associated with "ignorance of sexuality, negative attitudes toward sex, tense situations, force, coercion or brutality, and with unsupportive, uncommunicative or judgmental adult reactions" (p. 238).

A more comprehensive review of studies addressing the

impact of child sexual abuse was conducted by Browne and Finkelhor (1986). Their analysis on both the initial and long-term effects of child sexual abuse was limited to studies conducted on female victims of child sexual abuse. They found that the empirical studies included in their review confirm opinions reported in the clinical literature that adult women who were sexually abused as children are more likely to experience depression, self-destructive behavior, anxiety, isolation and stigma, poor self-esteem, a tendency towards revictimization, and substance abuse. In their review, Browne and Finkelhor (1986) concluded that empirical evidence now exists in the literature which suggests that a history of sexual abuse is associated with greater risk for problems with mental health and adjustment in adulthood. Despite these findings the authors also noted that the degree of impairment in psychological adjustment experienced by adult victims of child sexual abuse remains unclear.

Schetky (1988) conducted a qualitative review which summarized the literature on the long-term effects of child sexual abuse. Studies are cited that support the presence of long-term effects of child sexual abuse ranging from depression, low self-esteem, and psychiatric hospitalizations to learning difficulties, somatization disorder, and poor parenting. A discussion of abuse variables examined in outcome studies suggests

contradictory results in this area of research, and cautious interpretation is suggested.

Bagley and Young (1990), in their review of the sequels of sexual abuse in childhood, determined that sexual abuse survivors often experience impaired self-esteem resulting from the abusive experience, are at a long-term risk for developing depression and suicidal ideation, and that the prevalence of low self-esteem among these women will be greater than the prevalence of depression at any point in time (Bagley and Young, 1990).

The most recent qualitative literature review of the long-term effects of child sexual abuse to appear in the literature was conducted by Beitchman, Zucker, Hood, daCosta, Akman, and Cassavia (1992). In this review, considerable support for the hypothesis that women who reported a history of child sexual abuse (as compared to women who did not report a history of such abuse) were more likely to experience anxiety and fear, depression and depressive symptomatology, and may be more likely to experience suicidal ideations and behaviors.

All of the literature reviews discussed above (Constantine, 1981; Browne and Finkelhor, 1986; Schetky, 1988; Bagley and Young, 1990; and Beitchman, et. al., 1992) also discuss the relation more specific of abuse-related variables (e.g., duration /severity of abuse, age at onset of abuse, etc.) on long-term effects. Although there are no

abuse specific variables agreed upon as being consistently associated with a worse prognosis (Browne and Finkelhor, 1986), there is a trend reported among the studies that may indicate that abuse by fathers or stepfathers has a more negative impact, as does abuse involving genital contact and the presence of force or coercion.

An increasing body of research relating the experience of child sexual abuse to impairments in adult psychological adjustment now exists in the literature. Taken as a whole, this research appears to confirm the theoretical conceptualization presented by Finkelhor and Browne (1985). The present investigation is an attempt to more accurately synthesize the findings of the reviews discussed above by conducting a more extensive analysis of the available literature in the area. The meta-analysis includes studies overlooked by prior reviews or studies published subsequent to these reviews. In contrast to the reviews discussed above, this meta-analysis is restricted to research studies that were designed to determine the nature of the relationship between child sexual abuse and impaired psychological adjustment among adult survivors, as measured by psychological symptomatology, depression, and self-esteem. These areas represent the majority of long-term adjustment difficulties reported in the literature.

This investigation was also undertaken in an attempt to improve the precision of these earlier reviews by using a

quantitative meta-analytic methodology. Meta-analysis enables the reviewer to transform the results of related studies to a common statistical metric, and to provide an accurate estimate of the strength of the hypothesized relationship. In addition, advances in the statistical theory of meta-analysis (Hedges and Olkin, 1985) now provide methods for estimating the degree to which various study characteristics account for relationship variance across studies. In sum, this meta-analytic investigation was designed to test the hypothesis that child sexual abuse relates positively to impairments in the psychological adjustment of adult survivors (of child sexual abuse) as measured by the presence of psychological symptomatology, depression, and low self-esteem. When appropriate, possible moderators of these relationships (based on methodological concerns discussed in the literature) are also explored.

## CHAPTER II

### METHOD

#### Selection of Studies

Three strategies were used to locate studies for the present meta-analysis. Initially, computer searches of Psychological Abstracts, Sociofile, Educational Resources Informations Center (ERIC) and Dissertation Abstracts data bases were conducted, using sexual abuse and effects as qualifying terms. Next, reference lists of all articles discovered in the computer searches were then systematically examined in an attempt to locate additional studies. Finally, the tables of contents of the 17 journals and two books containing articles generated through the prior two procedures were searched to locate other articles appropriate for the meta-analyses.

These techniques generated an initial sample of 63 published and unpublished studies. It should be noted that unpublished studies were not included in the final analyses for several reasons. Examination of reference lists of the studies located by the procedures described above initially identified 11 unpublished studies (six conference presentations and five dissertations) relevant to the topic under investigation. Two of the six conference presentations

were later discovered in published format and were included in the meta-analyses. Two additional unpublished presentations were obtained and later rejected for failing to meet one or more of the criteria for inclusion in the meta-analyses discussed below. Attempts to secure the two remaining conference presentations through contacting the authors proved unsuccessful. The five dissertations discovered through searching the Dissertation Abstracts data base were unavailable through traditional inter-library loan procedures. Initial attempts to contact the dissertation authors failed to secure the studies. Financial limitations prohibited the purchasing of these dissertations, and time restrictions limited efforts to recover the studies through other non-traditional methods. For these reasons, it is recognized that a sample bias favoring published studies may exist that could affect the adequate representation of studies from the research domain.

To be included in the meta-analyses, a study had to meet the following criteria: (a) The study had to be designed as an inquiry of adult subjects regarding childhood sexual experiences. In addition, the design of the study had to permit the discrimination between those subjects who were sexually abused as children and those who were not so abused; (b) The study had to include some formalized measure of current psychological adjustment (psychological symptomatology, depression, or self-esteem); and (c)

sufficient statistical information to calculate appropriate effect size estimates had to be included in the study.

From the sample of 52 published studies remaining, 24 were eliminated for failure to meet one or more of the criteria for inclusion in the meta-analyses listed above. Ten studies did not measure psychological adjustment, and 14 studies contained insufficient information to permit the calculation of appropriate effect size estimates. Seven of these 14 studies did not contain a non-abused control group for comparative purposes. Finally, it should be noted that attempts to contact authors of the remaining seven studies proved unsuccessful in generating the necessary information to calculate effect size estimates.

Of the remaining 28 studies, Feinauer (1988; 1989) used the same subject sample. Therefore, only Feinauer's 1988 study was included. Two other studies (Briere and Runtz, 1986; and Briere, 1988) also used the same sample. However, only Briere and Runtz's 1986 study was used. Thus, a final set of 26 published studies (with 30 different subject samples) was used in the meta-analyses reported below. In the meta-analysis for psychological symptomatology, 23 samples from 20 studies were used. In the depression meta-analysis, 20 samples from 18 studies were used, 12 of which were also included in the psychological symptomatology meta-analysis. The final meta-analysis for self-esteem used 12 samples from 10 studies, seven of which were also used in



the meta-analysis for psychological symptomatology, and five of which were also included in the depression meta-analysis. Appendix A lists the studies that were included, indicating which studies were used in each meta-analysis.

#### Variables Coded From Each Study

The following information, when reported, was coded from each study: (a) year of publication ; (b) source of data (journal, book, or conference presentation); (c) method of discovery (data base, reference lists, or journal/book contents); (d) number of subjects (men, women, abused and control); (e) subject demographical information such as age, race, marital status, economic status, number of children, etc.; (f) variables related to the abuse, including age at onset and termination of abuse, number and age of perpetrator(s), relationship of perpetrator to victim, duration of abuse or number of abusive incidents, type of abuse experienced, and presence/absence of threat or coercion; (g) definition of sexual abuse used in the study; (h) source of subjects (community, clinical, student, or other; (i) focus of study (intrafamilial, intra/extrafamilial); (j) specific dependent measure of psychological adjustment used to calculate effect size estimates; and (k) effect size estimate for psychological symptomatology, depression, or self-esteem.

#### Computation and Analyses of Effect Sizes

Procedures used to compute and analyze effect size

estimates for the three meta-analyses were similar to those outlined in Multon, Brown, and Lent (1991). The effect size estimate used in all three meta-analyses was  $\underline{r}_u$ , the unbiased correlation between childhood sexual abuse and psychological symptomatology in the first meta-analysis, between childhood sexual abuse and adult depression in the second meta-analysis, and between childhood sexual abuse and adult self-esteem in the third meta-analysis (Hedges and Olkin, 1985). To calculate  $\underline{r}_u$ , first the reported correlations were recorded from each study, or if correlations were not reported in a particular study, indices of association were calculated from reported test statistics following procedures outlined by Rosenthal (1984).

Next, all estimates of association were transformed to Fisher's  $\underline{z}$ 's, with standard  $\underline{r}$  to  $\underline{z}$  transformation tables. A weighted estimate of the common correlation across all samples ( $\underline{z}_{++}$ ) was then computed with the formula provided by Hedges and Olkin (1985),

$$\underline{z}_{++} = \sum_{j=1}^k w_{1j}(\underline{z}_{1j}) \quad (1)$$

in which  $w_{1j} = (\underline{n}_{1j} - 3) / \sum_{j=1}^k (\underline{n}_{1j} - 3)$ ,  $\underline{z}_{1j}$  is the  $\underline{z}$  transformed  $\underline{r}$ ,  $\underline{n}_{1j}$  is the number of subjects within each sample, and  $k$  is the total number of samples. Then, to test the hypothesis that  $\underline{z}_{++}$  differs from zero,  $\underline{z}_{++}(\underline{N} - 3k)^{1/2}$  was computed, in which  $\underline{N}$  is the total number of subjects across

samples (Hedges and Olkin, 1985). Significance was tested against a two-tailed critical value of the standard normal curve (i.e.,  $p < .05$ ,  $z = 1.96$ ). Finally,  $z_{i.}$  was converted back to its associated  $r$  ( $r_{i.}$ ) with  $r$  to  $z$  transformation tables, and 95% confidence intervals around  $r_{i.}$  were calculated with standard procedures.

To determine whether studies share a common effect size, the homogeneity of all three sets (psychological symptomatology, depression, self-esteem) of effect sizes was tested by solving the equation (Hedges and Olkin, 1985),

$$Q_T = \sum_{j=1}^k (n_{1j} - 3)(z_{1j} - z_{++})^2 \quad (2)$$

which is distributed as a  $\chi^2$  with  $k - 1$  degrees of freedom and in which  $k$ ,  $n_{1j}$ ,  $z_{1j}$ , and  $z_{++}$  are defined as in Equation 1. If the results of this analysis rejected the null hypothesis of a common (homogeneous) effect size, then outliers and bivariate correlations between effect sizes and study characteristics were examined to identify study characteristics that might explain substantial portions of effect size variance. Both categorical and continuous models (Hedges and Olkin, 1985) of identified study characteristics were then tested for their abilities to explain effect size variance.

Tests of categorical models involved first partitioning the studies into different classes on the basis of identified study characteristics, and then calculating a

weighted estimate of the overall effect size ( $z_{1+}$ ) within each class by an adaptation of Equation 1,

$$z_{1+} = \sum_{j=1}^n (w_{1j})(z_{1j}), \quad (3)$$

in which  $m$  is the number of samples within the class.

The homogeneity of effect size estimates ( $z_{1+}$ ) across classes was then tested by solving the equation adapted from Hedges and Olkin (1985),

$$Q_b = \sum_{i=1}^p (N_{i+} - 3m)(z_{i+} - z_{++})^2 \quad (4)$$

which is distributed as a  $\chi^2$  with  $p - 1$  degrees of freedom and in which  $p$  is the number of classes,  $N_{i+}$  is the number of subjects within each class, and  $m$ ,  $z_{i+}$ , and  $z_{++}$  are as defined in Equations 2 and 3. A significant  $Q_b$  suggested that the effect size estimates ( $z_{i+}$ ) differed across classes and that the study characteristic identified might be an important moderator of effect size estimates, provided that, in subsequent tests of within-class effect size variability, the effect size estimates within classes were found to be homogeneous.

The final step then involved calculating for each class a within-class homogeneity statistic ( $Q_{wi}$ ), adapted from Equation 2,

$$Q_{wi} = \sum_{j=1}^n (n_{1j} - 3)(z_{1+} - z_{++})^2 \quad (5)$$

and then summing individual  $Q_{wi}$  values over all classes to

arrive at an overall within-class fit statistic  $Q_w$ , which is distributed as a  $\chi^2$  with  $k - p$  degrees of freedom. A failure to reject the null hypothesis of no within-class effect size variability on the basis of  $Q_w$ , coupled with a significant  $Q_b$ , suggested that the identified study characteristic provided an adequate model of effect size variability because the effect sizes differed across classes and were homogeneous within classes. A significant  $Q_w$ , on the other hand, suggested that the study characteristic did not provide a completely adequate moderator because effect sizes remained heterogeneous within classes. Individual  $Q_{wi}$  values, which are distributed as  $\chi^2$  with  $m - 1$  degrees of freedom were then inspected to identify which classes demonstrated significant within-class variability.

## CHAPTER III

### RESULTS

#### Psychological Symptomatology Meta-Analysis

##### Description of study characteristics. Table 1

summarizes the major characteristics of the studies used in this meta-analysis. The 20 studies yielded a total of 23 samples from which effect size estimates could be directly recorded or calculated following the procedures outlined above. The analysis included a total of 6,878 subjects across the 23 samples (M=299, mdn.=195, range=40-1358). Samples were drawn from the community (26%), clinical settings (30.4%), student populations (21.8%), and combinations of these three sample sources (other, 21.8%). The majority of studies in this analysis were published in 1988 (43.5%), and this was also the median year of publication.

Thirteen different measures of psychological symptomatology were used in the studies; nine of these were standardized measures, while four studies each used measures designed by the author(s). No usable studies appeared in the first year of the review (1978) or the final year of the review (1991).

The majority of studies in this analysis focused on abuse that occurred outside the family as well as incestuous abuse (86.9%). The studies were approximately evenly divided with regards to the definition of sexual abuse

Table 1

## Characteristics of Studies Included in the Meta-Analyses

| Characteristic              | Analyses       |          |          |          |            |          |          |          |             |          |          |          |
|-----------------------------|----------------|----------|----------|----------|------------|----------|----------|----------|-------------|----------|----------|----------|
|                             | Psychological  |          |          |          | Depression |          |          |          | Self-Esteem |          |          |          |
|                             | Symptomatology |          |          |          | Depression |          |          |          | Self-Esteem |          |          |          |
|                             | <u>k</u>       | <u>n</u> | <u>%</u> | <u>M</u> | <u>k</u>   | <u>n</u> | <u>%</u> | <u>M</u> | <u>k</u>    | <u>n</u> | <u>%</u> | <u>M</u> |
| Year of publication         |                |          |          |          |            |          |          |          |             |          |          |          |
| 1978                        | 0              |          | 0.0      |          | 1          |          | 5.0      |          | 0           |          | 0.0      |          |
| 1984                        | 2              |          | 8.7      |          | 1          |          | 5.0      |          | 1           |          | 8.3      |          |
| 1985                        | 1              |          | 4.3      |          | 2          |          | 10.0     |          | 1           |          | 8.3      |          |
| 1986                        | 4              |          | 17.4     |          | 4          |          | 20.0     |          | 3           |          | 25.0     |          |
| 1987                        | 1              |          | 4.3      |          | 0          |          | 0.0      |          | 0           |          | 0.0      |          |
| 1988                        | 10             |          | 43.5     |          | 5          |          | 25.0     |          | 0           |          | 0.0      |          |
| 1989                        | 3              |          | 13.1     |          | 3          |          | 15.0     |          | 3           |          | 25.0     |          |
| 1990                        | 2              |          | 8.7      |          | 2          |          | 10.0     |          | 2           |          | 16.7     |          |
| 1991                        | 0              |          | 0.0      |          | 2          |          | 10.0     |          | 2           |          | 16.7     |          |
| Focus of Study <sup>a</sup> |                |          |          |          |            |          |          |          |             |          |          |          |
| Intrafamilial               | 2              |          | 13.1     |          | 3          |          | 15.0     |          | 2           |          | 10.0     |          |
| Intra/extra-<br>familial    | 21             |          | 86.9     |          | 17         |          | 85.0     |          | 10          |          | 83.7     |          |
| Sample source               |                |          |          |          |            |          |          |          |             |          |          |          |
| Community                   | 6              |          | 26.0     |          | 4          |          | 20.0     |          | 3           |          | 16.7     |          |
| Clinical                    | 7              |          | 30.4     |          | 5          |          | 25.0     |          | 1           |          | 8.3      |          |
| Student                     | 5              |          | 21.8     |          | 5          |          | 25.0     |          | 4           |          | 33.3     |          |
| Other <sup>b</sup>          | 5              |          | 21.8     |          | 6          |          | 30.0     |          | 4           |          | 33.3     |          |

(table continues)

| Characteristic          | Analyses       |          |          |          |            |          |          |          |             |          |          |          |
|-------------------------|----------------|----------|----------|----------|------------|----------|----------|----------|-------------|----------|----------|----------|
|                         | Psychological  |          |          |          |            |          |          |          |             |          |          |          |
|                         | Symptomatology |          |          |          | Depression |          |          |          | Self-Esteem |          |          |          |
|                         | <u>k</u>       | <u>n</u> | <u>%</u> | <u>M</u> | <u>k</u>   | <u>n</u> | <u>%</u> | <u>M</u> | <u>k</u>    | <u>n</u> | <u>%</u> | <u>M</u> |
| Definition <sup>c</sup> |                |          |          |          |            |          |          |          |             |          |          |          |
| Contact Abuse           | 12             |          | 52.2     |          | 11         |          | 55.0     |          | 7           |          | 58.3     |          |
| Non-contact Abuse       | 10             |          | 43.5     |          | 8          |          | 40.0     |          | 4           |          | 33.3     |          |
| Consensual              | 1              |          | 4.3      |          | 1          |          | 5.0      |          | 1           |          | 8.4      |          |
| Sample size             |                |          |          |          |            |          |          |          |             |          |          |          |
| Male                    | 4              | 1938     | 28.2     | 484.5    | 3          | 662      | 18.7     | 220.7    | 3           | 622      | 26.3     | 207.3    |
| Female                  | 19             | 4940     | 71.8     | 260.0    | 17         | 2884     | 81.3     | 169.6    | 9           | 1740     | 73.7     | 193.3    |
| Total                   | 23             | 6878     |          | 299.0    | 20         | 3546     |          | 177.3    | 12          | 2362     |          | 196.8    |

Note: k=number of samples; n=number of subjects; M=mean number of subjects

a=Intrafamilial - victims of incestuous abuse only, intra/extrafamilial - victims of incestuous abuse and abuse by perpetrator outside the family.

b=Other includes study samples derived from combinations of community, clinical, and student populations.

c=Refers to definition of sexual abuse used in each study:

Contact Abuse: Age difference of at least 3-5 years between perpetrator and victim, victim under age 16, includes sexual contact experiences only (e.g., intercourse, fondling, etc).

Non-contact Abuse: In addition to contact abuse as described above, also includes non-contact experiences (e.g., exposure, etc.).

Consensual: Study definition does not discriminate between abusive sexual experiences and consensual sex play with peers.



employed. 52.5% used contact abuse definitions, while 43.5% used non-contact definitions (definitions defined in Table 1), though one study (Sedney and Brooks, 1984) also included consensual childhood sex experiences with peers in it's definition of sexual abuse.

Unbiased effect size estimate. Summary data presented in the first row of Table 2 allow an estimation, based on the studies included in this meta-analysis, of the hypothesized relationship between experiencing sexual abuse in childhood and the presence of psychological symptomatology as an adult. The unbiased effect size estimate ( $\underline{r}_u$ ) was .27, which, as shown by it's 95% confidence interval and associated significance test ( $\underline{z}=43.44$ ,  $p<.001$ ), differed significantly from zero.

Homogeneity of effect sizes. The aggregate effect size estimate of .27 provides moderate support for the hypothesis of a positive relationship between experiencing sexual abuse in childhood and impaired psychological adjustment in adult life, as measured by the presence of psychological symptomatology. The calculation of the homogeneity statistic,  $Q_r$  (see first row, Table 2), however, indicated significant heterogeneity among effect size estimates.

Tests of categorical models. Inspection of outliers and bivariate correlations between study characteristics and effect sizes identified four study characteristics, all representing categorical variables, that might explain

Table 2

## Psychological Symptomatology Effect Size Estimates and Tests of Categorical Models

| Sample/Class        | k  | m | n <sub>ij</sub> | z <sub>++</sub> | z <sub>i+</sub> | r <sub>u</sub> | 95% C.I. for r <sub>u</sub> | Q <sub>B</sub> | Q <sub>T</sub> | Q <sub>wi</sub> |
|---------------------|----|---|-----------------|-----------------|-----------------|----------------|-----------------------------|----------------|----------------|-----------------|
| Total sample        | 23 |   | 6878            | .2768           |                 | .27            | .20-.32                     |                | 147.77*        |                 |
| Sample source       |    |   |                 |                 |                 |                |                             | 65.75*         |                |                 |
| Community           | 3  |   | 3787            | .2975           |                 | .29            | .16-.32                     |                |                | 35.82*          |
| Clinical            | 7  |   | 562             | .2801           |                 | .27            | .23-.41                     |                |                | 5.21            |
| Student             | 5  |   | 1282            | .0908           |                 | .09            | .05-.15                     |                |                | 3.81            |
| Other               | 5  |   | 1247            | .4043           |                 | .38            | .21-.45                     |                |                | 36.61*          |
| Definition          |    |   |                 |                 |                 |                |                             | 15.28*         |                |                 |
| Contact abuse       | 12 |   | 1766            | .2019           |                 | .20            | .13-.27                     |                |                | 13.73           |
| Non-contact abuse   | 10 |   | 5010            | .3061           |                 | .30            | .25-.35                     |                |                | 118.32*         |
| Consensual          | 1  |   | 102             | .1610           |                 | .16            | .03-.35                     |                |                | 0.00            |
| Date of publication |    |   |                 |                 |                 |                |                             | 20.25*         |                |                 |
| 1978-1987           | 8  |   | 1766            | .1764           |                 | .18            | .16-.24                     |                |                | 6.78            |
| 1988-1991           | 15 |   | 5347            | .3027           |                 | .29            | .20-.36                     |                |                | 119.54*         |
| Gender              |    |   |                 |                 |                 |                |                             | 1.06           |                |                 |
| Male                | 4  |   | 1938            | .2971           |                 | .29            | .23-.31                     |                |                | 44.05*          |
| Female              | 19 |   | 4940            | .2694           |                 | .26            | .19-.31                     |                |                | 102.87*         |

Note: k = number of samples in overall analysis; m = number of samples in classes; n<sub>ij</sub> = number of subjects; z<sub>++</sub> = overall effect size estimate; z<sub>i+</sub> = within-class effect size estimate; r<sub>u</sub> = unbiased effect size estimate; C.I. = Confidence interval; Q<sub>B</sub> = between-class homogeneity statistic; Q<sub>T</sub> = overall homogeneity statistic; Q<sub>wi</sub> = within-class homogeneity statistic.

\*p < .001.

significant amounts of effect size variance. The last four panels of Table 2 present tests of these categorical models. The results indicated that three of the four identified study characteristics yielded significant between-class effects ( $Q_b$ ). It appears that effect size estimates from student samples were significantly lower than those obtained from community, clinical, and other sources (samples derived from combinations of community, clinical and student populations). Studies using a non-contact definition of abuse (which included both contact and non-contact experiences as defined in Table 1) generated a slightly larger effect size estimate than did those studies that limited the definition of sexual abuse to contact experiences only. The third categorical variable, date of publication, made slight distinctions between effect size estimates; those samples from studies published since 1988 yielded higher effect size estimates than did the samples from studies published prior to 1988.

Despite the significance of the between class effects ( $p < .001$ ), none of these categorical models can be regarded as completely adequate because examination of the within-class homogeneity of effect size estimates led to the rejection the null hypothesis of no difference between effect size estimates within classes (summing across the individual  $Q_{w1}$  values in each panel yielded  $Q_w$  estimates of 81.45, 132.05, and 126.32 for source of sample, definition

of abuse, and date of publication, respectively; all  $p$ 's  $< .001$ ). Further investigation of the individual  $Q_{wi}$  statistics does reveal some significant homogeneity of effect size estimates within three of the four categorical models presented in Table 2. Samples pooled from clinical and student populations seem to be more adequate explanations of within-class (sample source) effect size variance (as indicated by the homogeneity of their individual  $Q_{wi}$  values) than do samples pooled from community or other (combinations) populations. Samples using a contact definition of abuse resulted in significantly homogeneous effect size estimates, as did samples from studies published between 1978 and 1987.

### Depression Meta-Analysis

Description of study characteristics. Table 1 also summarizes the major characteristics of the 18 studies used in this meta-analysis, 12 of which were also used in the psychological symptomatology meta-analysis. The 18 studies produced 20 samples, with a total sample size of 3,546 subjects ( $M=177.3$ ,  $mdn.=102.5$ ,  $range=40-498$ ). Sample source approximated equal distribution across community (20%), clinical (25%), student (25%), and other (combination, 30%) populations. Studies included in the depression meta-analysis appeared in the literature from 1978-1991.

Nine different measures of depression were used in the studies; one study used subjects self-report as a measure of

depression, the remaining studies used depression inventories such as the Beck Depression Inventory (Beck and Beamesderfer, 1974) or depression sub-scales of other standardized assessment instruments.

The majority of studies used in this meta-analysis focused on victims of extrafamilial as well as intrafamilial abuse (85%). Eleven (55%) of the samples used a contact definition of abuse, while eight (40%) employed a non-contact definition of abuse, and one study (Kilpatrick, 1986) used a consensual definition of sexual abuse.

Unbiased effect size estimate. Summary data from the first row of Table 3 reveals a small but significant relationship between experiencing sexual abuse in childhood and levels of depression among adults. The unbiased effect size estimate,  $r_u$ , was .22, which, as shown by its 95% confidence interval and associated significance test ( $z=27.61$ ,  $p<.001$ ), differed significantly from zero.

Homogeneity of effect sizes. The aggregate effect size estimate of .22 provides moderate support for the hypothesis of a positive relationship between experiencing sexual abuse in childhood and impaired psychological adjustment in adult life, as measured by levels of depression among subjects. The calculation of the homogeneity statistic,  $Q_r$ , presented in the first row of Table 3, indicated significant heterogeneity among effect size estimates.

Table 3

## Depression Effect Size Estimates and Tests of Categorical Models

| Sample/Class        | k  | m | n <sub>ij</sub> | z <sub>++</sub> | z <sub>i+</sub> | r <sub>U</sub> | 95% C.I. for r <sub>U</sub> | Q <sub>B</sub> | Q <sub>T</sub> | Q <sub>wi</sub> |
|---------------------|----|---|-----------------|-----------------|-----------------|----------------|-----------------------------|----------------|----------------|-----------------|
| Total sample        | 20 |   | 3546            | .1723           |                 | .22            | .21-.35                     |                | 54.11*         |                 |
| Sample source       |    |   |                 |                 |                 |                |                             | 49.64*         |                |                 |
| Community           | 4  |   | 774             | .1750           |                 | .17            | .11-.49                     |                |                | 12.14**         |
| Clinical            | 5  |   | 292             | .3521           |                 | .34            | .20-.53                     |                |                | 9.01            |
| Student             | 5  |   | 1235            | .0850           |                 | .09            | .03-.25                     |                |                | 7.30            |
| Other               | 6  |   | 1245            | .3509           |                 | .34            | .25-.37                     |                |                | 6.20            |
| Definition          |    |   |                 |                 |                 |                |                             | 33.09*         |                |                 |
| Contact abuse       | 11 |   | 1249            | .2513           |                 | .25            | .25-.45                     |                |                | 12.36*          |
| Non-contact abuse   | 8  |   | 1799            | .1402           |                 | .14            | .10-.26                     |                |                | 23.04*          |
| Consensual          | 1  |   | 498             | .4240           |                 | .40            | .05-.51                     |                |                | 0.00            |
| Date of publication |    |   |                 |                 |                 |                |                             | 2.26           |                |                 |
| 1978-1987           | 8  |   | 1707            | .2457           |                 | .24            | .16-.42                     |                |                | 46.25*          |
| 1988-1991           | 7  |   | 879             | .0668           |                 | .07            | -.12-.26                    |                |                | 35.89*          |

Note: k = number of samples in overall analysis; m = number of samples in classes; n<sub>ij</sub> = number of subjects; z<sub>++</sub> = overall effect size estimate; z<sub>i+</sub> = within-class effect size estimate; r<sub>U</sub> = unbiased effect size estimate; C.I. = Confidence interval; Q<sub>B</sub> = between-class homogeneity statistic; Q<sub>T</sub> = overall homogeneity statistic; Q<sub>wi</sub> = within - class homogeneity statistic.

\*p < .001, \*\*p < .01.

Tests of categorical models. Three study

characteristics representing categorical variables were identified that might explain significant amounts of effect size variance. Table 3 presents tests of these categorical models. The results indicated that two of the three identified study characteristics produced significant between-class effects ( $Q_b$ ). It appears that effect size estimates of samples using student populations were significantly lower than effect size estimates from samples drawn from clinical or other populations. Samples where researchers used a non-contact definition of sexual abuse yielded smaller effect size estimates than did those samples where researchers used a contact or consensual definition of sexual abuse.

These categorical models cannot be interpreted as being completely adequate in spite of the significant between-class effects, due to the fact that effect size estimates remained significantly heterogeneous within each class (as evidenced by significant  $Q_w$  values of 34.65 and 35.4 for sample source and definition, respectively; both  $p$ 's  $< .01$ ). However, as in the psychological symptomatology meta-analysis, samples drawn from clinical and student populations displayed significantly homogeneous effect size estimates ( $Q_{wi}$ ).

## Self-Esteem Meta-Analysis

Description of study characteristics. Table 1 provides summary data from the studies used in this meta-analysis. Ten studies were used in the meta-analysis for self-esteem, seven of which were also used in the meta-analysis for psychological symptomatology, and five of which were also used in the meta-analysis for depression. The 10 studies produced 12 samples, with an overall subject size of 2,362 ( $M=196.83$ ,  $mdn.=149.5$ ,  $range=40-498$ ). No studies appeared during the years 1978, 1987, and 1988 in this analysis. As was the case in the previous two meta-analyses, the majority of samples focused on adult survivors of extrafamilial as well as incestuous abuse (83.3%). Only one study (Bagley and McDonald, 1984) used a clinical sample. Seven samples (58.3%) used a contact definition of abuse, while four (33.3%) used a non-contact definition of abuse and one study (8.4%) used a consensual definition of sexual abuse.

The studies used four well known standardized measures of self-esteem in their analyses. For the self-esteem meta-analysis, positive correlations reported in Table 4 indicate a relationship between experiencing sexual abuse in childhood and the presence of low self-esteem as adults (higher scores for abused subjects on the self-esteem measures used in the studies were indicative of greater self-esteem impairment, as compared to non-abused controls).



Unbiased effect size estimate. The unbiased effect size estimate presented in the first row of Table 4,  $r_u$ , was .17, which, as shown by its 95% confidence interval and associated significance test ( $z=20.02$ ,  $p < .001$ ), differed significantly from zero.

Homogeneity of effect size estimates. The overall effect size estimate of .17 provides moderate support for the hypothesis of a positive relationship between experiencing sexual abuse in childhood and impaired psychological adjustment in adult life, as measured by the level of self-esteem impairment. The calculation of the homogeneity statistic,  $Q_T$  (see first row, Table 4), indicated significant heterogeneity among effect size estimates.

Tests of categorical models. Four study characteristics, each representing categorical variables, were identified which might explain significant amounts of effect size variance. Table 4 presents tests of these categorical models. The results indicated that all four of the identified study characteristics produced significant between-class effects ( $Q_b$ ). Samples drawn from student subject populations yielded significantly lower effect size estimates, when compared to samples from community, clinical, and other (combination) populations. In fact, as evidenced by the negative direction of the effect size, it was found that abused subjects from student populations had

Table 4

## Self-Esteem Effect Size Estimates and Tests of Categorical Models

| Sample/Class        | k  | m | n <sub>ij</sub> | z <sub>++</sub> | z <sub>i+</sub> | r <sub>u</sub> | 95% C.I. for r <sub>u</sub> | Q <sub>B</sub> | Q <sub>T</sub> | Q <sub>wi</sub> |
|---------------------|----|---|-----------------|-----------------|-----------------|----------------|-----------------------------|----------------|----------------|-----------------|
| Total sample        | 12 |   | 2362            | .1723           |                 | .17            | .14-.34                     |                | 85.95*         |                 |
| Sample source       |    |   |                 |                 |                 |                |                             | 64.59*         |                |                 |
| Community           |    | 3 | 470             | .3593           | .34             |                | .16-.56                     |                |                | 5.88            |
| Clinical            |    | 1 | 44              | .3770           | .36             |                | .14-.58                     |                |                | 0.00            |
| Student             |    | 4 | 1011            | -.0177          | -.02            |                | -.14-.10                    |                |                | 2.35            |
| Other               |    | 4 | 837             | .2861           | .28             |                | .13-.35                     |                |                | 8.86***         |
| Definition          |    |   |                 |                 |                 |                |                             | 65.43*         |                |                 |
| Contact abuse       |    | 7 | 853             | .2872           | .28             |                | .22-.46                     |                |                | 25.10*          |
| Non-contact abuse   |    | 4 | 1011            | -.0177          | -.02            |                | -.14-.10                    |                |                | 2.35            |
| Consensual          |    | 1 | 498             | .3650           | .35             |                | .15-.55                     |                |                | 0.00            |
| Date of publication |    |   |                 |                 |                 |                |                             | 15.30**        |                |                 |
| 1978-1987           |    | 5 | 1483            | .2349           | .23             |                | .11-.35                     |                |                | 30.27*          |
| 1988-1991           |    | 7 | 879             | .0668           | .07             |                | -.12-.26                    |                |                | 40.81*          |
| Gender              |    |   |                 |                 |                 |                |                             | 29.61*         |                |                 |
| Male                |    | 3 | 622             | -.0163          | -.02            |                | -.05-.35                    |                |                | 17.46*          |
| Female              |    | 9 | 1740            | .2398           | .24             |                | .17-.37                     |                |                | 64.25*          |

Note: k = number of samples in overall analysis; m = number of samples in classes; n<sub>ij</sub> = number of subjects; z<sub>++</sub> = overall effect size estimate; z<sub>i+</sub> = within-class effect size estimate; r<sub>u</sub> = unbiased effect size estimate; C.I. = Confidence interval; Q<sub>B</sub> = between-class homogeneity statistic; Q<sub>T</sub> = overall homogeneity statistic; Q<sub>wi</sub> = within-class homogeneity statistic.

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

somewhat higher levels of self-esteem than did their non-abused counterparts, though the strength of this correlation is not significant. The non-contact abuse group (see middle panel, Table 4) also yielded a negative effect size. It is important to note, however, that this group of samples was identical to the student sample described above. Thus, all samples using exclusively student sample sources also used a non-contact definition of abuse and produced an effect size in contrasting direction to other samples within these two classes (sample source and definition). In the self-esteem meta-analysis, a third negative effect size was discovered, among samples presenting data for male abuse victims. These results suggest that males abused sexually during childhood subsequently present with higher levels of self-esteem than do females who were abused sexually during childhood. Two studies included in the analysis for the gender (male) categorical variable were also studies included in the student sample and non-contact definition classes.

These categorical models cannot be interpreted as being completely adequate due to the fact that effect size estimates remained significantly heterogeneous within each class as evidenced by significant  $Q_w$  values for sample source ( $Q_w=17.09$ ,  $p<.05$ ), definition ( $Q_w=27.45$ ,  $p <.01$ ), date of publication ( $Q_w=71.08$ ,  $p <.001$ ), and gender ( $Q_w=81.71$ ,  $p <.001$ ). However, further examination of individual  $Q_{wi}$  values show that samples drawn from community

and student populations, and those samples using a non-contact definition of abuse did yield significantly homogeneous effect size estimates.

## CHAPTER IV

### DISCUSSION

The meta-analyses presented here provide some support for the hypothesized debilitating relationships of childhood sexual abuse to adult psychological adjustment. Effect size estimates in all three analyses (.27 for psychological symptomatology, .22 for depression, and .17 for self-esteem), suggest that, across a variety of sampling methods, definitions of sexual abuse, date of publication, and gender of subjects, experiencing sexual abuse as a child accounts for approximately 7% of the variance in subject's psychological symptomatology, approximately 5% of the variance in subjects level of depression, and approximately 3% of the variance in their self-esteem.

In addition to overall effect sizes, these meta-analyses revealed significant heterogeneity among effect size estimates. This finding suggests that the relationship of child sexual abuse to adult psychological adjustment (psychological symptomatology, depression, and self-esteem) may vary across the identified study characteristics. Although the analyses of potential moderator variables did not yield completely adequate models of effect size variability, they did produce several findings of relevance that statistically confirm methodological concerns expressed in the literature relevant to current research efforts in the area. The implications of these findings are briefly

discussed and interpreted.

The first condition moderating effect size variability examined sampling populations and their relationship to effect size estimates in each of the three meta-analyses. In the meta-analyses for psychological symptomatology, depression, and self-esteem, samples drawn from student populations yielded significantly lower effect size estimates than did community, clinical, or other sample populations. These findings indicate that adult survivors of child sexual abuse among student populations experience a lesser degree of psychological adjustment impairment than do former child sexual abuse victims among community and clinical populations. These results confirm previous reviewer's suspicions that sampling bias may exist in student populations. Schetky (1988) cautions that student samples may include more well adjusted survivors of child sexual abuse with higher I.Q.'s and higher socio-economic status, two factors which may influence the psychological adjustment processes of sexual abuse victims. In the self-esteem meta-analysis, there was no relationship between experiencing sexual abuse in childhood and later self-esteem impairments. This may possibly be explained by the fact that sexual abuse survivors, having withstood traumatic experiences at an early age, may be better able to adjust to the transition to college living than non-abused controls, an important variable which has not yet been controlled for

in studies using student populations. Another possible explanation can be offered with respect to the relatively young age of abused subjects found in student populations. It is possible that, among subjects in this population, that negative long-term effects may have not yet manifested. Also, the fact that these former abuse victims have recently left the abusive environment may be distorting their performance on the specific measures of adjustment.

The expectation often expressed in the literature reviews on the long-term effects of child sexual abuse is that studies from clinical samples yield larger effect sizes (e.g., Constantine, 1981). The meta-analyses findings related to psychological symptomatology and self-esteem, however, failed to confirm this hypothesis. The meta-analysis for depression did yield higher effect size estimates for clinical populations than for community and student populations. These results do not support Browne and Finkelhor's (1986) findings that depression is the most common symptom among adults molested as children, as the unbiased effect size estimate for depression among clinical populations was approximately the same as the effect size estimate for self-esteem impairments in the general population.

Despite the rejection of the null hypothesis of no within-class effect size variability across sample source, some significant findings related to the homogeneity of

effect size estimates were discovered. Clinical and student populations yielded significantly homogeneous effect size estimates in all three meta-analyses, while community samples yielded homogeneous results only in the meta-analysis for self-esteem. These significant within-class homogeneity statistics would seem to confirm that effect size estimates across populations remained consistent and may in part explain the true nature of the relationship under investigation in the meta-analyses.

The second study characteristic identified as a potential moderating variable of effect size estimates was definition of sexual abuse used by the researcher(s) in each study. Despite the concern expressed in the literature that a lack of a uniform definition of sexual abuse may influence study outcomes (Browne and Finkelhor, 1986; Schetky, 1988), results of the meta-analyses reported here failed to significantly confirm this suspicion. The significance of the homogeneity of effect size estimates across classes ( $Q_B$ ) initially suggested that definition of sexual abuse may be an important moderator of effect size variability within each of the three meta-analyses. Further examination of the within-class homogeneity statistic ( $Q_{wi}$ ) and the within-class fit statistic ( $Q_w$ ) failed to confirm the adequacy of this initial assumption. Unbiased effect size estimates ( $\underline{r}$ ) varied slightly across definitions of abuse for each of the meta-analyses, yet interpretation of the only



significant difference in effect size estimates within the definition moderating variable (self-esteem meta-analysis) may be misleading. In the meta-analysis for self-esteem, non-contact abuse samples showed significantly lower levels of self-esteem impairment. However, the four samples using a non-contact definition of abuse are the same four samples that were conducted on student populations. Differences in effect size estimates, then, may be due to the nature of the sample population, the definition of abuse used by the researcher(s), or an interaction of these two factors.

The third identified study characteristic attempting to account for effect size variability was year of publication. Information prior to 1988 has suggested that studies with improved methodological design were beginning to appear in the literature (Finkelhor, 1979; Constantine, 1981; Browne and Finkelhor, 1986) and that such studies would yield more reliable, accurate results of the long-term effects of child sexual abuse (Finkelhor, 1979; Browne and Finkelhor, 1986; and Schetky, 1988). To determine if in fact this was true, effect size estimates from studies published prior to 1988 were compared to effect size estimates obtained from studies published from 1988-1991. Failure to reject the null hypothesis of no between-class differences in effect size estimates based on the  $Q_b$  statistic (between-class homogeneity) initially indicated that date of publication may be an important factor in accounting for effect size

variance in the meta-analyses for psychological symptomatology and self-esteem. However, further examination of the individual  $Q_w$  values failed to accurately support this study characteristic as an effective predictor of effect size variance. In addition, analyses of individual  $Q_w$  (within-class homogeneity) values indicated significant heterogeneity of effect sizes within classes, with one exception (samples from studies published prior to 1988 produced significantly homogeneous effect size estimates in the meta-analysis for psychological symptomatology). These results failed to support the predictions implied by the reviewers cited above, that studies published in or after 1988 would generate more accurate, homogeneous effect size estimates. Some differences in unbiased effect size estimates approached significance. In the meta-analysis for psychological symptomatology, studies published since 1988 produced slightly higher effect size estimates ( $\bar{r}_u = .29$ ) than did studies published prior to 1988 ( $\bar{r}_u = .18$ ). In the meta-analysis for self-esteem, however, the inverse relationship between effect size estimates and date of publication appeared to be true, with studies published prior to 1988 generating an average unbiased effect size ( $\bar{r}_u$ ) of .23, while studies published since 1988 generated an  $\bar{r}_u$  of .07.

Gender of subjects was the final potential moderator of effect size variance explored in the meta-analyses. The

between-class homogeneity statistic ( $Q_b$ ) rejected the null hypothesis of no significant difference between gender and the remaining classes (date of publication, definition, and sample source) only in the meta-analysis for self-esteem. However, a significant within class homogeneity statistic, ( $Q_w$ ), failed to provide support for gender as an accurate predictor of effect size variance in this meta-analysis. Factors which may have influenced these findings include societal acceptance of early sexual activity among males and a greater stigmatization associated with abuse by a same-sex perpetrator. Examination of the unbiased effect size estimates for male and female subjects in the self-esteem analysis appear to suggest that adult male subjects who were sexually abused as children have currently higher levels of self-esteem than adult female victims of child sexual abuse. Although this is consistent with some reports in the literature (Constantine, 1981), due to the nature of the samples of male subjects used in this analysis (two of the three male samples yielded negative correlations - these two samples of males were student samples from the same study using a non-contact definition of abuse and the majority of perpetrators were females in both of these samples) generalization of these results is limited.

It is important to note that the conclusions drawn from these meta-analyses were somewhat compromised by the less than optimal data-reporting practices in this literature.

It is likely that the four moderator variables identified in the analyses may interact in ways that could not be completely analyzed because of an insufficient data base. Fourteen potential studies were eliminated for failing to report information needed to calculate appropriate effect size estimates. This researcher is in agreement with other reviewers (Finkelhor, 1986; Schetky, 1988; etc.) who stress the importance of including a control group in studies of long-term effects of sexual abuse. Seven of these 14 studies which did include a control group had to be rejected for insufficient data reporting practices. As other meta-analysts (e.g., Oliver and Spokane, 1983; Multon, Brown, and Lent, 1991) have recommended, researchers need to ensure reporting of all summary statistics, regardless of statistical significance.

The insufficient data reporting practices by researchers of studies included in the present meta-analyses significantly limited the exploration of other potential moderating variables. Several qualitative reviews (Constantine, 1981; Conte, 1985; Browne and Finkelhor, 1986; Schetky, 1988; and Beitchman, et.al., 1992) have narratively evaluated the relationship of abuse specific variables to degree of long-term effects experienced by survivors of child sexual abuse. Consideration of abuse specific variables as moderators of effect size variance in the current meta-analyses was not possible, as the majority of

primary researchers either did not conduct statistical analyses of degree of effects experienced by abuse specific variables, or, if such analyses were conducted, results were not reported and were unobtainable.

From the set of 26 published studies selected for inclusion in the meta-analyses, three studies by the same primary author reported correlational analyses between abuse specific variables and current adjustment (Briere and Runtz, 1986; 1988; Briere and Zaidi, 1989). These studies reported significant relationships between abuse variables such as number of perpetrators, severity of abuse, parental abuses (incest), duration of abuse, and elevated symptomatology as measured by standardized assessment instruments or psychiatric diagnoses.

Additional methodological shortcomings prevalent in studies assessing the long-term effects of child sexual abuse may also be compromising the results of the meta-analyses and warrant some discussion. Such factors include differentiating effects of the abuse from conditions that predispose to it and distinguishing between effects of sexual abuse and traumatic events which may have occurred since the sexual abuse was experienced and the time of assessment (Schetky, 1988). Keeping in mind the empirical evidence which supports the hypothesis that sexually abused children often experience a tendency towards revictimization throughout their lives (Browne and Finkelhor, 1986; Schetky,

1988; and Beitchman, et. al., 1992), future research will need to control for these elements through more carefully designed studies which use more thorough evaluative interviewing procedures, and matching of subjects and controls with these considerations in mind.

Another variable with significant treatment and research implications that is seldom controlled for in sexual abuse effects research is the impact that family variables have on the predisposition to the occurrence of sexual abuse and subsequent adjustment of the child sexual abuse victim. Two studies which did not meet the criteria for inclusion in the meta-analyses (due to insufficient information which prevented the calculation of effect size estimates) did address the role of family functioning in moderating the victim's adjustment to sexual abuse. Alexander and Lupfer (1987) found that families of sexually abused women were self-rated by these adult victims as being less cohesive and adaptive than families of women who were not sexually abused. They also discovered that these families were characterized as rigid and unresponsive to change, two family characteristics which may hinder the victim's adjustment to the sexual abuse.

A similar study (Testa, et. al., 1990) found that women who were sexually abused as children and told the non-offending parent(s) of the abuse were more likely to be currently better adjusted psychologically if they received

positive support from their family than women who received negative support (such as disbelief by parents and family members) or women who did not tell of the abuse. These findings were consistent for abused women drawn from both clinical and community samples.

Beitchman, et. al., (1992) have suggested that parental attitudes towards the child and the child's role in the event are important determinants of the long-term impact of child sexual abuse. In order to more accurately ascertain why certain victims of child sexual abuse experience difficulties in adjustment as adults, future research efforts must scientifically examine the role of family variables prior to the occurrence of sexual abuse, as well as the impact of family characteristics present upon disclosure of the abuse which may influence the victim's adjustment.

A final suggestion for the direction of future research in this arena is to examine possible racial differences with regards to the occurrence of sexual abuse and the adjustment of child sexual abuse victims. A well designed community study by Russell, Schurman, and Trocki, (1988) discovered that Afro-American women who were sexually abused as children were more likely to describe their victimization experience as being extremely upsetting than were white sexually abused women from the same community sample. Additional studies which suggest ethnic differences between

Afro-American and white women regarding the prevalence of sexual abuse and subsequent victim adjustment include Peters (1988) and Wyatt, (1985; 1990). One study (Stein, Golding, Siegel, Burnam, and Sorenson, 1988) examined ethnic differences between Hispanic-American victims of sexual abuse and Caucasians who were sexually abused as children. Although the exact impact of ethnicity on circumstances of sexual abuse and subsequent adjustment has yet to be firmly established in the literature, the studies discussed here indicate the importance of attending to these potential ethnic differences in future research.

The results of these meta-analyses indicate that child sexual abuse is mildly related to impairments in psychological adjustment of adult survivors in ways that confirm Finkelhor and Browne's (1985) theory of traumagenic dynamics of child sexual abuse. Evidence for a number of factors that may moderate effect sizes was found. These findings, along with the confirmation of several methodological shortcomings among the studies included in the meta-analyses, provide some constructive directions for future research and scientific inquiry. First, studies will need to use more sophisticated sampling procedures rather than relying on samples of convenience, to obtain a more accurate representation of the population for research purposes. Second, researchers attempting to examine the relationship of abuse specific variables to adjustment



outcome will need to employ larger groups of abused subjects, as well as improved design techniques which will allow the grouping of subjects according to variables (and combinations of variables) of the sexually abusive experience. Separate data analyses of these groups will then permit the researcher to statistically examine the role of abuse specific variables in the victim's subsequent adjustment. Other factors which may influence the adjustment process following the occurrence of sexual abuse, such as family variables and ethnicity, need to be controlled for in future research attempts, in order to generate a better understanding of the components necessary for the facilitation of appropriate adjustment among the victims of child sexual abuse.

The results of this investigation indicated that studies conducted with student populations yield significantly lower, homogeneous effect size estimates, when compared to community, clinical, or other (combination) populations. This suggests a more positive adjustment following sexual abuse among subjects in this population. Determination of factors which facilitate appropriate adjustment, then, could be discovered by future research efforts examining the adjustment process of former sexual abuse victims found among student populations.

The finding of significant heterogeneity among effect sizes in each of the three meta-analyses also has some

important implications for future inquiry. The development of theoretically based assessment instruments specifically designed to measure adjustment difficulties related to the trauma of sexual abuse is needed. Although some researchers have begun this process (Briere and Runtz, 1987; Edwards and Donaldson, 1988), reliable measures designed for implementation with this special population should remain an area of focus for improving the comprehensiveness of future research.

In sum, the results of this investigation support the initial hypothesis that child sexual abuse is positively related to impairments in the psychological adjustment of adult survivors of child sexual abuse. It was found that the single factor of experiencing sexual abuse as a child accounts for significant amounts of the variance in the psychological symptomatology, depression, and self-esteem among the subjects examined by the studies included in the meta-analyses. In addition, variables accounting for significant portions of effect size variance among the studies analyzed here were identified. The findings presented and discussed above, especially those concerning student population samples, provide important suggestions for the direction of future research efforts attempting to explain and predict facilitative adjustment of child sexual abuse victims.

## Appendix A

## Studies Used in the Meta-Analyses

(The meta-analysis in which a study was included is noted in parentheses after each reference.)

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The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

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4/17/92



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