

# **A replication of the meta-analytic examination of child sexual abuse by Rind, Tromovitch, and Bauserman (1998)**

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## **Abstract**

Research conducted during the 1970s, 1980s, and 1990s consistently reported widely accepted negative outcomes associated with child sexual abuse. In [1998, Rind, Tromovitch, and Bauserman](#) conducted a meta-analysis challenging the four most often reported correlates of child sexual abuse. The present study attempted to reexamine the four main objectives of the Rind et al. (1998) study, correcting for methodological and statistical problems identified by [Dallam et al. \(2001\)](#) and [Ondersma et al. \(2001\)](#). [The current meta-analysis supported the findings by Rind et al. \(1998\)](#) in that child sexual abuse was found to account for 1% of the variance in later psychological outcomes, whereas family environment accounted for 5.9% of the variance. In addition, the current meta-analysis supported the finding that there was a gender difference in the experience of the child sexual abuse, such that females reported more negative immediate effects, current feelings, and self-reported effects. The implications of these findings, problems with replicating the Rind et al. (1998) meta-analysis, and future directions are discussed.

## **1. Introduction**

Although child sexual abuse has been researched for more than half a century, the majority of research and public attention to the topic began in the 1970s ([Finkelhor, 1984](#)). Some of the increased attention was attributed to the child abuse movement; others claim the increase in attention was a function of the women's movement (Finkelhor, 1984). Whatever the reason, a great deal of research was published in the area. Moreover, practitioners were noting significant increases in the numbers of individuals being referred as victims of child sexual abuse (Finkelhor, 1984).

Research was moving beyond describing case studies and instead focused on specific characteristics of the abuse

(e.g., intra- versus extra-familial abuse, the type of abuse, duration of abuse, and age at onset for victim)

in an attempt to determine differential outcomes for victims.

Many individuals began to accept the often repeated outcomes of these studies. This included findings

- that child sexual abuse resulted in harm to the victim,
- that this harm was pervasive,
- that the correlates associated with child sexual abuse are long lasting, and
- that males and females are equally affected  
([Rind, Tromovitch, & Bauserman, 1998](#)).

These unconditionally accepted outcomes were not seriously questioned until the 1980s and 1990s

(i.e., [Bauserman & Rind, 1997](#); [Beitchman et al., 1992](#); [Constantine, \[1979 &\] 1981](#); [Kilpatrick, 1987](#)).

During this time, researchers suggested that family environment problems are moderators of child sexual abuse, resulting in an inability to draw causal inferences about the apparent effects of child sexual abuse on psychological adjustment (Rind et al., 1998).

In contrast, other reviews ([Briere & Runtz, 1993](#); [Glod, 1993](#); [Urquiza & Capra, 1990](#)) maintained that a causal relationship could be inferred between child sexual abuse and maladjustment based on correlational data.

[Rind et al. \(1998\)](#) conducted a meta-analysis using 59 studies based on college samples to test the four assumed outcomes or “facts” associated with child sexual abuse.

### **1.1. The results of the meta-analysis yielded five main findings:**

1. individuals with a history of sexual abuse were slightly less well adjusted than control groups;
2. family environment explained more variance in outcomes than child sexual abuse;
3. negative effects are not typically intense or pervasive;
4. the relationship between child sexual abuse and maladjustment was stronger for females than for males; and
5. outcomes for males who were in the consenting group (i.e., consented to a sexual interaction) for child sexual abuse were no different from those in control groups.

Based on their findings, which did not support the generally accepted views regarding outcomes of child sexual abuse, Rind et al. suggested that researchers should utilize a more neutral term for child sexual abuse under certain circumstances. The authors suggested the term “adult-child sex,” which they consider to be value neutral, to describe sexual encounters between children and adults that are not necessarily abusive. However, if the sexual encounter is forced or coerced and results in a negative reaction, then the term “child sexual abuse” could still be used ([Rind et al., 1998](#)).

## 1.2. Reactions to the Rind *et al.* (1998) meta-analysis

The analysis and conclusions by Rind *et al.* (1998) proved to be extremely controversial. Pedophilia advocacy groups used the study to support their view that sexual encounters between children and adults are not detrimental and therefore should be legal. The news media and popular press picked up the story of the research suggesting that child sexual abuse is not necessarily detrimental.

The controversy reached the point at which the US House of Representatives passed [a resolution](#) condemning any inference from the article that a sexual relationship between an adult and a willing child is not harmful.

The American Psychological Association restated its stance that child sexual abuse is harmful to the victim

[\(Ondersma, Chaffin, Berliner, Cordon, Goodman, & Barnett, 2001\)](#).

Critiques of the work of Rind *et al.* soon followed.

### 1.2.1. [Dallam \*et al.\* \(2001\)](#)

identified several statistical errors they believe adversely affected the results and conclusions drawn from the meta-analysis.

They stated that Rind *et al.* (1998) incorrectly used the Pearson correlation coefficient ( $r$ ) as the effect size statistic, when Cohen's measure of effect size ( $d$ ) should have been used.

For a fixed value of  $d$ , the value of  $r$  will approach 0 as the prevalence of the phenomenon approaches either 0 or 1. Cohen's measure of effect size is not affected by the base rate of the independent variable in the population, whereas the Pearson correlation coefficient can yield a misleading measure of association depending upon the prevalence in the population. The use of the Pearson correlation coefficient for studies that used group comparison designs with unequal proportions in the groups resulted in clinically large effects that could have been represented by small Pearson  $r$  values.

Similarly, [Dallam \*et al.\* \(2001\)](#) argued that a bi-serial correlation should have been used to detect differences in the meta-analysis because there was not a true dichotomization for child sexual abuse

(i.e., there is not a clear division between those who were and were not abused).

Most studies utilized in the meta-analysis dichotomized child sexual abuse, although child sexual abuse is a problem with differing degrees of severity and is best conceived on a continuum.

Rind *et al.* (1998) used a point-bi-serial  $r$ , which should be used only when there is a true dichotomization. In this instance, where there is an underlying continuum, the bi-serial correlation should be used (Dallam *et al.*, 2001).

Rind *et al.* (1998) interpreted the effect size using the variance accounted for,  $r^2$ , although it is generally agreed that it should not be used as an effect size estimate, as its practical significance is

usually misinterpreted ([Dallam et al., 2001](#); [Rosenthal, 1994](#)).

A small value of  $r^2$  could translate into a large real-world effect that may be missed because of the use of this statistic. However, the criticism of using  $r^2$  as the effect-size measure is factually inaccurate, as Rind et al. (1998) used  $r$  as the effect size measure.

The authors also argued that Rind et al. (1998) incorrectly interpreted the magnitude of the overall child sexual abuse adjustment effect by using the variance accounted for, when they should have used the binomial effect size display.

The binomial effect size display shows the practical importance of an effect size so that if effect size  $r$  were .04 then the binomial effect size display would result in an interpretation of a 4% change between groups.

Although the debate over the use of  $r^2$  or the binomial effect size display as the measure of variance explained is valid, Dallam et al. incorrectly confused the use of  $r^2$  as an interpretation of the magnitude of an effect with an actual measure of the effect size itself.

### 1.2.2. [Ondersma et al. \(2001\)](#)

published another critique of Rind et al.'s (1998) meta-analysis. They contended that the foundation of the Rind et al. study was limited by the narrow definition of *harm* used. Rind et al. used a measurable definition of harm, namely, as an adverse affect on the individual's psychological functioning.

Ondersma et al. (2001) argued that there are numerous other types of harm, including interpersonal maladjustment, school maladjustment, or both. Ondersma et al. argued that the effect size needs to be considered in context. The reported effect sizes appear to be small, and are described as small under [Cohen's \(1988\)](#) definition.

However, these small effect sizes can be important and relevant to large numbers of people if the phenomenon is common. Because child sexual abuse appears to be relatively common, these small effect sizes could translate into a large number of people affected. Effect sizes do not take into consideration clinical significance and can therefore be misleading (Ondersma et al., 2001).

However, the significance of this criticism is called into question because Rind et al. (1998) were not denying possible real-world effects. Instead, Rind et al. reported that they had found small effect sizes and that the magnitude of the association between child sexual abuse and later maladjustment has been typically overestimated.

Ondersma et al. (2001) stated that the data would have been different had Rind et al. (1998) not collapsed across the age of the victim, arguing that age of victimization has been linked to child sexual abuse outcomes.

### 1.2.3. *Other criticisms of the meta-analysis are*

that the empirical harm standard

(which defines abuse based on harm that can be measured or harm that is clearly evident)

was used to define child sexual abuse.

Problems with the empirical harm standard are

- that it allows acts that are intentional and harmful (e.g., throwing a child into a swimming pool), but not necessarily abusive, to be labeled abusive;
- that labeling a behavior as abusive requires evidence that a large number of adults have been adversely affected by the behavior; and
- that defining abuse in this form does not allow for the *causation* of harm to be proven experimentally.

Other criticisms of Dallam et al. (2001) and Ondersma et al. (2001) included

- the lack of generalizability of the findings related to college samples,
- failure to point out alternative explanations for their results, and
- failure to correct for base rate differences between males and females.

#### *1.2.4. [Rind, Tromovitch, and Bauserman \(2001\)](#) responded to these criticisms*

citing research that disproved the idea that child sexual abuse victims are not commonly found in college samples. They also argued that the effect size estimates found in high school, college, and national samples are all similarly small in magnitude.

In regard to the use of the Pearson  $r$  as the effect size measure, Rind et al. pointed out that they used [Rosenthal's \(1994\)](#) formula for converting  $r$  to  $d$ , which takes into consideration population prevalence. In using this statistical procedure, Rind et al. (1998) assumed that the prevalence was 50/50 for child sexual abuse and control populations and produced values for  $d$  that are as small.

In addition, Rind et al. (2001) pointed out that Dallam et al.'s (2001) criticism regarding base rate differences for men and women was based on misunderstanding of Rind et al.'s (1998) conclusions. The argument that base rate differences between genders caused the effect sizes for men and women to appear different is unjustified because Rind et al. never concluded that those effect sizes were different. In fact, Rind et al. indicated that the contrast between those effect sizes was non-significant.

To address the criticisms of Ondersma et al. (2001) and Dallam et al. (2001) concerning the usage of flawed methodology, we conducted a re-examination of the Rind et al. (1998) study utilizing the recommended statistics.

### **1.3. Current review**

#### *1.3.1. The following analysis will attempt*

to reexamine the original meta-analysis procedures conducted by Rind et al. (1998), taking into consideration the criticisms of the statistical procedure (i.e., the use of Pearson  $r$  as the effect size

measure) by Dallam et al. (2001) and Ondersma et al. (2001).

We will examine the effect sizes for child abuse symptoms to determine the relationship between child sexual abuse and adjustment in the samples. The magnitude of the relationship between child sexual abuse and later maladjustment in the sample college populations will be determined.

We will also examine the relationship between child sexual abuse and family environment, as well as symptoms and family environment, to ascertain the role of child sexual abuse in producing symptoms.

The relationship between gender and later maladjustment will be examined in conjunction with gender differences in self-reported effects and reactions to child sexual abuse.

The effect size metric used in this study will be Cohen's  $d$ , in accordance with criticisms of Dallam et al. (2001) and Ondersma et al. (2001).

Many of the criticisms of the meta-analysis by Rind et al. (1998) are common to all research on child sexual abuse

(i.e., non-uniform definition of child sexual abuse, use of college samples)

and cannot be specifically remedied in the current analysis.

### 1.3.2. *We hypothesize*

that when effect sizes are recalculated for the 59 studies, a statistically significant relationship will be found between child sexual abuse and psychological adjustment

(operationalized using 18 psychological correlates:

- alcohol problems,
- anxiety,
- depression,
- dissociation,
- eating disorders,
- gender,
- interpersonal sensitivity,
- locus of control,
- obsessive-compulsive symptomatology,
- paranoia,
- phobia,
- psychotic symptoms,
- self-esteem,

- sexual adjustment,
- social adjustment,
- somatization,
- suicidal ideation, and
- overall adjustment).

**We [1] hypothesize that** using Cohen's *d* as the effect size measure, as suggested by Dallam et al. (2001), will result in an *increase* in the magnitude of the effect sizes.

**We also [2] hypothesize that** when the effect size measure is changed to Cohen's *d*, the results will support a relationship between family environment and child sexual abuse, and this relationship will *increase* in magnitude compared with the original finding of Rind et al. (1998).

**Similarly, we expect [3]** an increase in the relationship between gender and psychological maladjustment, as well as an *increase* in the gender differences between self-reported effects and reactions, compared with Rind et al.'s (1998) meta-analysis.

## 2. Methods

### 2.1. Sample

Rind et al. (1998) conducted a literature search for child sexual abuse studies in the databases:

- PsycLit from 1974 until 1995,
- Sociofile from 1974 until 1995,
- PsycInfo from 1967 until 1995,
- Dissertation Abstracts International from the beginning until 1995, and
- ERIC from 1966 until 1995.

The studies were located by using one of the following keywords: *adjustment* or *effect* or *effects*, *college* or *undergraduate* or *undergraduates*, and *sex abuse* or *sexual abuse* or *child* and *adult* and *sexual*.

Other studies included were based on personal knowledge (Rind et al., 1998) or from the reference list of studies that had been selected.

The selection of studies included research that provided results related specifically to college students. To be included in the analysis the study had to meet the following criteria:

- contain an appropriate control group or a distinct sexual abuse group,
- report data on at least one correlate of child sexual abuse, and
- include enough data to compute effect sizes.

Studies that contained information on self-reported correlates of child sexual abuse or self-reported reactions to child sexual abuse (in the form of neutral, positive, or negative effects/reactions) were also

included (Rind et al., 1998).

Rind et al. (1998) applied specific statistical procedures to deal with the selected studies.

- When a study provided separate statistics for two distinct samples (including males and females) the samples were treated separately.
- When a study provided results from different measures for a specific psychological correlate, the effect size was computed for each result and averaged using a Fisher z transformation.

This procedure provided one mean effect size for that specific psychological correlate, which was then considered to be the symptom-level effect size.

The final procedure occurred when studies provided results from multiple psychological correlates based on one sample. In this instance, Rind et al. used Fisher z transformation to average the symptom-level effect sizes into a sample level effect size. A meta-analysis was conducted on these sample-level effect sizes.

Rind et al. also analyzed the multiple psychological correlates separately by means of multiple symptom level meta-analyses.

This selection process resulted in

- 36 published studies,
- 21 unpublished dissertations, and
- 2 unpublished master's theses.

From these studies, Rind et al. (1998) used

- 70 independent samples to estimate prevalence rates,
- 54 samples to find 54 sample-level effect sizes and
- 214 symptom-level effect sizes,
- 21 samples that provided retrospective self-reported data on reactions to abuse,
- 10 samples that provided self-reported current reactions to abuse, and
- 11 samples that provided self-reported effects.

The number of participants on which conclusions were drawn included

- 35,703 participants to compute prevalence rates,
- 15,824 participants to compute effect sizes for the psychological correlates, and
- 3,136 participants to compute effect sizes for self-reported reactions and effects of child sexual abuse.

Because certain studies

([Haugaard & Emery, 1989](#); [Schultz & Jones, 1983](#))



did not include exact sample sizes, they were not included in the above totals. Therefore, the estimate of the number of participants provided here can be assumed to be conservative (Rind et al., 1998).

Fifty-five of the original 59 independent research studies used in Rind et al.'s (1998) meta-analysis were used in the current analysis.

Studies were excluded for one of two reasons:

- (1) the article, dissertation, or thesis could not be obtained when requested or
- (2) an effect size could not be computed based on the information provided (e.g., only means, percentages were provided).

The reasons for the exclusion of a study will be discussed further in the Discussion section.

## 2.2. Procedures

All articles for this meta-analysis were obtained through journals and requests for theses and dissertations from colleges and universities. Before the meta-analysis was begun, each of the **55 studies** was coded for the following information:

- (1) statistics on psychological correlates of child sexual abuse, including means and standard deviations;
- (2) types of psychological correlates reported;
- (3) statistics regarding intervening variables and psychological correlates;
- (4) gender of participants;
- (5) definition of child sexual abuse utilized;
- (6) reactions of victims to abuse;
- (7) self-reported effects data;
- (8) types of family environment measures used; and
- (9) statistics on family environment measures.

The differences

- between child sexual abuse and control participants in adjustment (based on scores on psychological measures),
- the differences between child sexual abuse and control participants in family environment, and
- the relationship between family environment and adjustment (scores related to the 18 psychological correlates) were examined.

Rind et al. (1998) found 18 psychological correlates, besides family environment, as a result of their coding. These correlates were

- alcohol problems,

- anxiety,
- depression,
- dissociation,
- eating disorders,
- hostility,
- interpersonal sensitivity,
- locus of control,
- obsessive-compulsive symptoms,
- paranoia,
- phobia,
- psychotic symptoms,
- self esteem,
- sexual adjustment,
- social adjustment,
- somatization,
- suicidal ideation and behavior, and
- wide adjustment.

### 2.3. Statistical Analyses

The effect size used in this review is *Cohen's d*. Two effect size programs were used to compute *Cohen's d* from the wide array of significance tests used in the studies being examined. These programs are

- ES: A Computer Program for Effect Size Calculation ([Shadish, Robinson, & Lu, 1999](#)) and
- the Effect Size Determination Program ([Wilson, 2001](#)).

Some studies reported results separately for different types of child sexual abuse participants (i.e., extra-familial, intra-familial).

When calculating *Cohen's d* for these studies, the child sexual abuse groups were collapsed into one group and compared with the control group.

Because *Cohen's d* can be affected by sample size, a correction was used for each *d* value to produce an unbiased effect size estimate, also known as Hedges's *g* ([Hedges & Olkin, 1985](#)). A larger sample size produces a more accurate effect size estimate and should therefore be accorded more weight in a meta-analysis.

For each study, an effect size was computed for every psychological correlate and family characteristic

reported. If multiple measures of the same psychological correlate were reported in a study, the effect size estimates were aggregated using techniques described in [Lipsey and Wilson \(2001\)](#).

Similarly, effect size estimates were combined within studies and within correlates to create mean effect size estimates. The meta-analyses across studies, psychological correlates, and family characteristics produced a *weighted mean effect-size estimate*.

Procedures for conducting a meta-analysis from Lipsey and Wilson included the calculation of three specific statistics.

Hedge's  $g$  was multiplied by the inverse variance weight (inverse of the squared standard error), the inverse variance weight was multiplied by the squared value of Hedges's  $g$ , and the inverse variance weight was squared.

Using the inverse variance weight is a method of correcting for the differing precision of effect size estimates by weighting each effect size by its associated precision. These were used in computing

- the weighted mean effect size,
- the standard error of the weighted mean effect size,
- the  $z$  value, and  
the lower and upper bounds of the confidence interval
  
- (found for each study, correlate, family factor, correlate by family, gender, and self-reported effect and reaction).

Statistical significance of the mean weighted effect size estimate was calculated by computing the 95% *confidence interval (CI)* of the effect size. If the confidence interval did not contain zero, the effect size estimate was determined to be significant.

In addition, for every set of effect sizes the homogeneity of variance was calculated using a  $Q$  value as described in [Lipsey and Wilson \(2001\)](#).

If the set of effect sizes was not homogeneous, a random-effects model was used to account for the random sources of variance in the data set. The random-effects model takes into account that the variance associated with each effect size estimate entails variance associated with the standard error and variance that is randomly distributed.

By using the methods-of-moment estimate (see [Lipsey and Wilson, 2001](#)) this random source of variance can be estimated. Using a random-effects model produces a larger confidence interval as a result of adding an estimate of the random source of variance that reduces the accuracy of the effect size estimate.

The procedure for applying a random-effects model to reach homogeneity is described in Lipsey and Wilson.

### 3. Results

#### 3.1. Child Sexual Abuse and Psychological Adjustment

To investigate **hypothesis 1**, the relationship between child sexual abuse and psychological adjustment, effect sizes were computed for the 55 studies used in this meta-analysis.

The unbiased effect size estimate (Hedges's  $g$ ) for each study is presented in [Table 1](#).

The meta-analysis of these effect sizes yielded a weighted mean effect size of .20 with a 95% confidence interval of .16 to .23, which is statistically significant. According to Cohen's guidelines, this effect size estimate is small and [indicates that child sexual abuse accounts for only 1% of the variance in psychological adjustment \(Cohen, 1988\)](#).

The test of homogeneity of the variances produced a  $Q$  value of 175.40, which exceeds the chi-square critical value at the  $p < .05$  level.

The random-effects model was used to correct for the homogeneity of variances, and produced a weighted mean effect size of .20, with a 95% confidence interval of .08 to .32.

Both meta-analyses yielded an effect size estimate that is small according to Cohen's guidelines, and [suggests that the typical assumption that child sexual abuse results in intense and pervasive harm is not accurate](#).

The relationship between child sexual abuse and all 18 psychological correlates was also examined by means of a meta-analysis ([Table 2](#)).

The meta-analysis yielded 16 significant psychological correlates. The weighted mean effect sizes for these correlates were overall small in magnitude according to Cohen's guidelines, ranging from .04 to .36.

This suggests that [in general, child sexual abuse victims were significantly less well-adjusted than the control participants, although the small effect sizes suggest that the harm is not intensive](#).

However, the original meta-analysis produced twelve significant  $Q$  values, which means that the hypothesis of homogeneity was rejected for those twelve psychological correlates.

For these twelve correlates, a random-effects model was used to correct for homogeneity ([Table 3](#)).

When a random effects model was used, only two correlates remained significant:

- anxiety and
- depression.

The correlates that were found to be significant and homogeneous were

- dissociation,
- hostility,

- psychotic symptoms,
- somatization,
- anxiety, and
- depression.

By correcting for heterogeneous variances within the sample, the original assumption that 16 psychological correlates were significant is found to be false.

The significant effect size estimates ranged from .21 to .36, with the majority being under .30, which are still small in magnitude.

**Hypothesis 1** was partially supported, as an overall apparent effect of child sexual abuse and psychological adjustment was detected. However, [the effect size is small](#), and when homogeneity of the variances is corrected for, the number of significant psychological correlates decreases dramatically.

Using Cohen's *d* did not produce the hypothesized increase in relationship between child sexual abuse and psychological adjustment.

### 3.2. Child Sexuality, Environment and Abuse

**Hypothesis 2** concerns the relationship between child sexual abuse, symptoms, and family environment.

Rind et al. (1998) delineated six general categories of family environment factors:

- nonsexual abuse and neglect,
- adaptability,
- conflict and pathology,
- family structure,
- support and bonding, and
- traditionalism.

Because Rind et al. did not provide an operational definition of these factors, the studies used in this meta-analysis to compute these factors are listed in [Table 4](#).

Measures that appeared to represent any of the six categories of family environment factors were used.

The results of the meta-analyses for the six family-environment factors as a function of child sexual abuse are presented in [Table 5](#).

Only one factor, family structure, was heterogeneous in the original meta-analysis and did not require applying the random-effects model.

The overall weighted mean effect size across family factors was .27, with a range of .10 to .72. Three of the six family factors were significant (after correcting for homogeneity):

- abuse and neglect,
- conflict or pathology, and
- traditionalism.

The values of the effect sizes indicate that child sexual abuse victims are in family environments marked by significantly more problems than control participants.

Meta-analyses were also conducted for studies that reported statistics concerning the 18 psychological correlates as a function of family environment factors. The results of the meta-analyses are presented in [Table 6](#).

The 13 psychological correlates that could be coded (from the data in the 55 studies) were all significant and homogeneous.

The effect size estimates ranged from .36 to .68, which are medium based upon Cohen's guidelines.

The overall effect size across all psychological correlates was .53, which indicates a medium relationship between family environment and psychological correlates.

In terms of the variance accounted for, family environment accounts for about 5.9% of the variance in psychological correlates.

**Hypothesis 2** was partially supported because [the effect size supports a significant relationship between family environment and child sexual abuse](#).

However, there was not an increase in the magnitude of the relationship between family environment and child sexual abuse relative to that reported by Rind et al. (1998).

The statistics provide support for the possibility that [family environment may have more of an effect on later psychological adjustment than child sexual abuse](#) (based on the variances accounted for).

### **3.3. Gender Differences and Child Sexual Abuse**

To investigate **Hypothesis 3**, the relationship between gender and effect of child sexual abuse, meta-analyses were conducted for each study-level effect size according to gender. The results of these meta-analyses are presented in [Table 7](#).

The effect size estimates for both genders were significant and homogeneous, indicating that the control group was better adjusted for both genders.

However, when the effect size estimates for females and males were compared, no significant difference was found,  $F(1, 57) = .621, p = .43$ .

To further examine gender differences in the experience of child sexual abuse, males and females were compared on their self-reported reactions to and effects from abuse. Meta-analyses were conducted examining retrospectively recalled immediate reactions, current reflections, and self-reported effects of males and females. The results of these meta-analyses are presented in [Table 8](#).

All three effect sizes were found to be significant and homogeneous. Large effect sizes were found for retrospectively recalled immediate reactions and current feelings, indicating that [females reported significantly more negative reactions and feelings to their abuse when compared with males](#).

The effect size estimate for self-reported effects was small, indicating that although females reported more negative symptoms than males, the relationship was small in magnitude.

**Hypothesis 3** was partially supported in that there was an increase in the relationship between retrospectively recalled immediate reactions and current feelings and gender compared with those reported by Rind et al. (1998).

In addition, there was a gender difference for self-reported effects. However, no significant difference was found between the effect size estimates of psychological adjustment by gender.

## 4. Discussion

**The current study** was a re-examination of the [Rind et al. \(1998\)](#) meta-analysis of child sexual abuse outcomes.

**The original meta-analysis** was extremely controversial because the findings did not support the four assumed properties of child sexual abuse:

- (1) child sexual abuse inevitably causes harm,
- (2) the harm is pervasive to individuals with a history of child sexual abuse,
- (3) the harm is intense, and
- (4) child sexual abuse is a comparable experience for both males and females.

**Several published criticisms** of the meta-analysis claimed to invalidate its findings.

**The current analysis** addressed an important methodological criticism of the original meta-analysis and re-analyzed the data to determine the relationship between

- child sexual abuse,
- long-term psychological adjustment,
- the mediating effect of family environment, and
- gender differences.

**The results** of the current meta-analysis [support the original findings of Rind et al. \(1998\)](#).

[Child sexual abuse accounted for only 1% of the variance in later psychological adjustment, whereas family environment accounted for 5.9% of the variance.](#)

In addition, significant gender differences were found for the self-reported reactions and effects, indicating that [child sexual abuse is experienced more negatively by females than males](#).

Although the overall results of the current meta-analysis and Rind et al.'s meta-analysis are similar, an exact re-examination of the meta-analysis was not possible and resulted in numerous differences in the

statistics used to compute the meta-analysis.

#### **4.1. Problems with the Replication of the Rind et al. (1998) Study**

When attempting to reanalyze the original meta-analysis by Rind et al. (1998), numerous problems were encountered. Four studies from the original analysis were omitted. These studies and the reasons for omission are presented in [Table 9](#).

One of the reasons for not including a study in the current meta-analysis was that the data provided in the study did not provide sufficient information to compute an effect size estimate. Cohen's  $d$  can be computed from a wide range of statistics, including means and standard deviations,  $t$ -tests,  $F$  values, and chi-square.

(For a more detailed list, see [Shadish et al., 1999](#).)

In studies such as those presented in Finkelhor ([1979b](#), [1984](#)), where the necessary statistics were not included, an effect size estimate cannot be computed.

It is questionable how accurate an effect size estimate Rind et al. (1998) obtained from the data included in those studies. Studies included in the current meta-analysis that used imprecise estimates of Cohen's  $d$  also bring into question the techniques used by Rind et al. in computing effect sizes.

[Sedney and Brooks \(1984\)](#) provided sample sizes and percentages for 18 different symptoms across type of abuse (intra-familial, extra-familial, combined) and no abuse.  $P$  values are included for symptoms that were found to be significant. Cohen's  $d$  was computed in this study by utilizing the  $p$  values to provide what is considered to be an imprecise measure of  $d$  ([Shadish et al., 1999](#)). However, by using this procedure to compute Cohen's  $d$ , any symptom that was not found significant was excluded from analysis.

It is unclear how Rind et al. (1998) computed an effect size from these data, and based on what was found in the coding of the current meta-analysis, the study should have been excluded.

Another example of a study that only provides data to compute effect sizes for statistically significant results is [Kinzl et al. \(1994\)](#).

(An attempt was made to contact Rind et al. concerning how these effect size estimates were calculated, but we received no response.)

Problems with accurate re-examination also occurred during the coding of the 6 *family environment* variables. Because neither an operational definition of the variables nor a list of which studies were used to compute each factor was provided by Rind et al. (1998), it was difficult to accurately replicate the coding of Rind et al.

For this analysis, the family variables were coded according to how the instrument used in the study was described. This resulted in a difference in the number of effect sizes used in the current meta-analysis and Rind et al. to compute these factors.



There are numerous other differences between the current meta-analysis and Rind et al.'s meta-analysis (e.g., the effect sizes reported for each study, correlate, family factor, correlate by family factor, and the number of effect sizes used in computation).

The fact that Rind et al. did not provide sufficient information to fully replicate their meta-analysis is a legitimate criticism of their meta-analysis.

#### **4.2. Comparison of Current Findings and Rind et al's (1998) Findings**

According to the results of the Rind et al. (1998) meta-analysis, the magnitude of the relationship between child sexual abuse and psychological adjustment was small,  $r = .09$ , meaning that child sexual abuse accounted for less than 1% of the variance in adjustment.

The current meta-analysis also found a small effect size of .20, indicating that child sexual abuse accounted for 1% of the adjustment variance.

Even with the numerous differences in coding of studies, the overall results of both meta-analyses are almost identical, and support the claim made by Rind et al. that child sexual abuse is not typically associated with intense harm in a college population.

The initial meta-analysis of the 18 psychological correlates yielded very similar results in both meta-analyses. Both studies indicated all correlates to be significant except for locus of control. However, the current meta-analysis found that self-esteem was not a significant correlate. After correcting for the homogeneity of the variance, we found that only six of the correlates remained significant.

This finding differs from Rind et al.'s (1998) findings as a result of differing methods used to correct for heterogeneous variances. We used a random-effects model, whereas Rind et al. eliminated outliers from the analysis. This method eliminates data that differ greatly from the norm of the data set and therefore decreases the range of effect sizes.

Because a random effects model does not eliminate any values from the data set and attempts to represent the excess variability that randomly exists in the data set, it is a more accurate way of correcting for heterogeneous variances ([Lipsey & Wilson, 2001](#)).

Therefore, Rind et al.'s (1998) finding that 17 of the 18 psychological correlates were significantly associated with child sexual abuse was not supported in the current meta-analysis.

After taking into consideration the differences in coding the six family environment factors in Rind et al. (1998) and the current meta-analysis, it is not surprising that there are differences.

Rind et al. found that all six factors were significantly related to child sexual abuse, whereas we found that only three factors (abuse and neglect, conflict or pathology, traditionalism) were significantly related to child sexual abuse after correcting for homogeneity of the variances.

These results support Rind et al.'s assertion that child sexual abuse and family environment are confounded in the college population, with child sexual abuse victims having more problematic family

environments.

Numerous coding differences produced a large difference in the results of the meta-analyses of the relationship between family environment and symptoms.

Six of the 18 psychological symptoms that were examined as a function of family environment variables in the Rind et al. (1998) meta-analysis could not be computed in the current meta-analysis. This was the result of a lack of data in the 55 studies that measured these six symptoms in the context of family environment variables. Which studies were used by Rind et al. to compute these specific symptoms is unknown, and results in a less than-perfect re-examination.

However, the current meta-analysis found that the psychological correlates that were reported as a function of family factors that could be computed were statistically significant

(i.e., anxiety, depression, dissociation, hostility, interpersonal sensitivity, obsessive-compulsive, paranoia, phobia, psychotic symptoms, sexual adjustment, suicide, wide adjustment).

These twelve correlates were also significant in the Rind et al. (1998) meta-analysis. The overall effect size across all the correlates by family factors in the Rind et al. meta-analysis was medium ( $r = .29$ ). We also found a medium association between family environment and symptoms ( $ES = .53$ ), [supporting the assertion by Rind et al. that within a college population, family environment is a more important predictor of psychological symptoms than child sexual abuse.](#)

Overall, the current examination of gender differences in the outcome of child sexual abuse supported the results of Rind et al. (1998). Both meta-analyses found no difference between the male and female effect sizes for adjustment, while finding significant effects for gender differences in the self-reported reactions to and effects from child sexual abuse.

However, the current meta-analysis found the effect sizes for retrospectively recalled immediate reactions and current feelings to be larger than those reported by Rind et al. [Both meta-analyses found that females viewed their abuse more negatively than males.](#)

### 4.3. Assumed Properties of Child Sexual Abuse

The four assumed outcomes of child sexual abuse (Rind et al., 1998) were directly addressed in the current meta-analysis.

- ➔ [1] The assumption that child sexual abuse results in *intense and pervasive harm* was examined in the current study by analyzing the interrelations among child sexual abuse, psychological adjustment, and family environment for child sexual abuse victims and non-victims.

The finding that family environment is confounded with child sexual abuse suggests that poor adjustment is not solely the result of child sexual abuse. Therefore, [direct causality between child sexual abuse and later maladjustment should not be inferred.](#)

- [2] The assumption that child sexual abuse *inevitably* causes harm to the victim was not supported. The fact that the effect sizes found were small in magnitude also suggests that
- [3] the assumption that child sexual abuse results in harm that is pervasive and intense in the child sexual abuse population is questionable.
- [4] Gender differences in the self reported reactions to and effects from child sexual abuse indicate that the experience is not equivalent for both genders.

#### 4.4. Implications for the Criticisms of the Rind et al. (1998) Meta-analysis

The current study re-examined the Rind et al. (1998) meta-analysis in light of methodological criticisms. The main criticism examined in the current meta-analysis was that utilizing a different effect size measure, specifically Cohen's *d*, would result in significantly different outcomes. This criticism was not supported in the current meta-analysis.

#### 4.5. Directions for Future Research

The current meta-analysis and the Rind et al. (1998) meta-analysis point to numerous opportunities for future research. The studies used in the meta-analysis were conducted between the years of 1967 to 1995. It would be worthwhile to conduct a similar meta-analysis including child sexual abuse studies published from 1995 to the current year.

Detailing any changes between the populations across the different time periods could provide important insights into child sexual abuse in current society.

Because family environment was found to be associated with subsequent psychological outcomes in child sexual abuse victims, this area warrants more research. The idea that family environment can be separated from child sexual abuse and measured separately is debated within the field and is an important issue for conducting treatments with child sexual abuse victims.

Identification of specific types of family environments that are protective versus harmful to children who experience child sexual abuse can aid mental health professionals in working with the families of victims of sexual abuse

In addition, the implication of our findings for mental health professionals who conduct interventions with child sexual abuse victims cannot be overlooked.

Rind et al.'s (1998) statement that their research suggests child sexual abuse may need to be conceptualized *on an individual basis* that is dependent upon the reaction of the victim is supported in the current meta-analysis.

The samples studied in the original 1998 meta-analysis and the current meta-analysis only included college populations. Although [Rind et al. \(2001\)](#) supported the use of college populations by showing that this population is comparable with the national sample, it is necessary to collect data for child sexual abuse victims outside of the college population.

After numerous studies have been conducted using other samples, a comparison can be made between the results of the current meta-analysis and one conducted on a new sample.

Some individuals may argue that Rind et al.'s (1998) analysis and this re-examination provide support for those who question or deny that child sexual abuse can *sometimes* be associated with severe psychological harm.

The authors of the current research would hesitate to support such a general statement. Instead, our results, and the results of the Rind et al. meta-analysis, can be interpreted as providing a hopeful and positive message to therapists, parents, and children.

[Child sexual abuse does not necessarily lead to long-term harm](#). The finding that there is a possibility of a positive prognosis for future adjustment in child sexual abuse victims can play an integral part in therapy.

We suggest that future research focus on the potential moderating variables

(i.e., family environment characteristics, therapeutic interventions, or possible genetic predispositions)

that enable certain individuals to be resilient in the face of sexual abuse.

## 5. References

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