The Impact of Caregiver Belief and Support on Childhood PTSS Presentation in Substantiated Child Sexual Abuse Cases

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Dedication

This work is dedicated to survivors of sexual abuse and their families, including those represented in the data as well as those I have worked with throughout my career. Their resilience and courage inspire my clinical work and exploration of prevention and postvention strategies. I also dedicate this work to professionals who support children and families impacted by sexual abuse.

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Abstract

The Impact of Caregiver Belief and Support on Childhood PTSS Presentation in Substantiated Child Sexual Abuse Cases

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Background: Children and adolescents who have been sexually abused are at a greater risk for physical, emotional, and behavioral problems throughout their life. However, the literature on outcomes of child sexual abuse contains many underexplored domains, especially those relating to children's families. This is a critical element when considering the dependency that children innately have on their families, only increased while recovering from a trauma. The present study examined the impact of caregiver belief and support on child outcomes, as well as the relationship between caregiver belief and support, in substantiated sexual abuse cases. *Methods:* Data from 94 extended forensic interview cases was retrospectively analyzed. The analysis evaluated the influence of child factors, abuse factors, and family factors on child trauma symptom scores (as measured by the Trauma Symptom Checklist for Children [TSCC] and Trauma Symptom Checklist for Young Children [TSCYC]) and child behavior problem scores (as measured by the Child Behavior Checklists [CBCL] for ages 1.5-5 and 6-18). *Results:* Caregiver belief was predictive of lower trauma symptom scores measured by the TSCC (p=0.02). Girls had lower trauma symptom scores than boys, as measured by the TSCYC (p=0.02), and lower problem behavior scores measured by the CBCL 6-18 (p=0.05). In a post-hoc analysis of independent t-tests, TSCC trauma symptom scores were lower in children whose caregiver believed their allegation (p=0.02) and supported them in the aftermath (p=0.04). However, TSCYC trauma symptom scores were reported as higher in children whose caregiver

supported them (p=0.05). Overall, caregiver belief and support appeared to have a significant correlation (p<0.001). *Conclusions:* Future research in the risk and resilience of child sexual abuse survivors should consider caregiver belief and support as distinct yet related concepts. Caregivers who believe and support the child may be more aware of potential trauma symptoms and child behavior problems. Different perspectives (i.e. child-report, caregiver-report) should be used to assess trauma symptoms and child behavior problems in research and practice.

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Chapter 1: Introduction

Child sexual abuse remains a pervasive issue worldwide, impacting up to 12.7% of children before they turn 18 years (Stoltenborgh et al., 2014). Sexual abuse disproportionately impacts girls at a prevalence rate of 8-31% and 3-17% for boys (Barth et al., 2013). The impact of sexual abuse in childhood can be life-altering and enduring. In fact, development of post-traumatic stress disorder (PTSD) occurs in about 25% of all youth exposed to sexual abuse (Alisic et al., 2014).

In addition to a substantial prevalence and PTSD rates, child maltreatment is associated with other poor short- and long-term health and mental health outcomes. Gruhn and Compas's (2020) meta-analysis, including 35 studies of children and adolescents, demonstrated significantly negative impacts of child abuse on youth's emotional regulation, avoidance (i.e., emotional suppression), and responses to stressful life events. Additionally, Humphreys et al. (2020) demonstrated a greater prevalence and more severe symptoms of depression in maltreated children and adolescents in their meta-analysis of 190 studies using the Child Trauma Questionnaire (Bernstein et al., 1994). The results of this meta-analysis indicated that while type of maltreatment influenced severity of depression symptoms, that all types of child maltreatment, including sexual abuse, are significantly associated with depression.

These poor mental health outcomes in survivors of childhood maltreatment continue into adulthood. Nelson et al. (2017) included 184 studies in their meta-analysis and found that childhood maltreatment led to an earlier onset and more severe diagnosis of depression. These results indicated that survivors of childhood abuse were 2.66 times more likely to meet criteria for depression as adults. Gardner et al. (2019) found significant associations between childhood maltreatment and adult anxiety disorders and post-traumatic stress disorder in their meta-analysis

of 96 studies. Other meta-analyses have indicated a link between childhood maltreatment and bipolar, psychotic, and eating disorders, as well as suicidality and substance misuse (Agnew-Blais & Danese, 2016; Angelakis et al., 2019; Caslini et al., 2016; Hailes et al., 2019; Thomas et al., 2019).

In addition to mental health concerns, the literature has clarified the negative impact of childhood maltreatment on physical health. Wegman and Stetler's (2009) meta-analysis noted significant health differences between adult survivors of child abuse and the general population. Results from the 24 studies they analyzed indicated significantly more negative health outcomes in neurological, musculoskeletal, respiratory, cardiovascular, gastrointestinal, and metabolic categories. Irish et al.'s (2010) meta-analysis reflected these higher rates of health concerns, such as higher rates of pain, gynecological, and obesity issues among adult survivors of childhood sexual abuse compared to the general population in their analysis of 31 studies. Given these deleterious outcomes, it is important that child abuse is prevented and that in the event of abuse, the subsequent problems are inhibited or minimized.

Chapter 2: Review of Literature

The literature on outcomes of child sexual abuse contains many underexplored domains, especially those relating to children's families. This is a critical element when considering the dependency that children innately have on their families, only increased while recovering from a trauma. Exploring these factors may help clarify the roles they play in the aftermath of sexual abuse as beneficial or detrimental to a child's recovery.

2.1 Risk, Protective Factors, and Resilience

Risk factors are considered elements that contribute to negative outcomes after exposure to adversity, while protective factors are understood as elements preventing or inhibiting

negative outcomes (Fraser et al., 2004). Risk and protective factors can have a converse relationship, wherein the presence of a risk factor can moderate the presence of a protective factor (Pollard et al., 1999). Protective factors can also counteract or inhibit risk factors (Werner, 2000). Resilience refers to an individual's capacity to successfully overcome stressful life events or circumstances (Werner, 2000). The conceptualization of risk and protective factors requires a biopsychosocial-cultural understanding of resilience (Bogenschneider, 1996). This includes elements within various levels of an individual's ecological map, such as individual characteristics (i.e. temperament or internal resources), family dynamics, community factors, and a broader social and systemic context (Corcoran & Nichols-Casebolt, 2004).

Though each risk and protective factor is important in creating an understanding of how a child can overcome adversity, it is critical to recognize that there are differences in the weight each factor carries in the context of a person. For example, factors related to family dynamics can be considered more influential on a child's resilience due to children's inherent reliance on caregiving figures (Masten, 2013).

Utilizing risk and resilience as a framework for understanding a children's responses to sexual abuse highlights the need for consideration of the various levels of survivors' ecological maps that interact to shape children's development. Indeed, individual characteristics are just one aspect of children's development, and children's surrounding systems are just as critical in understanding their resilience after abuse (Corcoran & Nichols-Casebolt, 2004).

The pervasiveness of sexual abuse warrants an understanding of risk and protective factors after child sexual abuse has occurred in order to improve the short- and long-term emotional and physical health of child maltreatment victims as well as the economic health of their communities (Benuto & O'Donohue, 2015; Fang, 2012; John-Baptiste Bastien, 2020;

Kaffman, 2009). Additionally, because investigations of child sexual abuse can be a critical piece for many children who have experienced sexual abuse, garnering information from a child forensic evaluation process can help shed light on the reality of this situation.

2.2 PTSD

Because of the demonstrated negative effects sexual abuse has on children, many studies have explored risk and protective factors influencing children's response to this type of trauma. PTSD is a diagnosis in the *Diagnostic and Statistical Manual of Mental Disorders* which can include symptoms of re-experiencing, avoidance, negative thoughts and feelings, and hyperarousal (5th ed.; DSM-5; American Psychiatric Association, 2013). Children's gender and exposure to other stressors such as family income, presence of other maltreatment or trauma, reaction to disclosure, and details of exposure are all related to the development and severity of childhood PTSD (Alisic et al., 2014; Domhardt et al., 2015; McTavish et al., 2019). In their systematic review of 20 studies, McTavish et al. (2019) identified that the exposure type and invasiveness level of sexual abuse was positively related to PTSD in child survivors.

Additionally, Domhardt et al. (2015) evaluated resiliency factors in children after sexual abuse in their systematic review. In their evaluation of 37 studies, they identified a child or adolescent's attitude toward school, engagement with education, and emotional or interpersonal competence as primary protective factors against the development of PTSD. While the authors' findings indicated that social and community support appeared to reduce the likelihood of PTSD in child survivors, attachment to family or friends was only significant for female survivors.

The literature has explored the relationship between parenting or parent-child relationships and children's response to sexual abuse. In their meta-analysis of 14 studies, Williamson et al. (2017) found that negative parenting (i.e., overprotection, hostility) was a

modest predictor of PTSD in youth and that positive parenting (i.e., warmth, support) was not significantly associated with child PTSD symptoms in either direction. Similarly, Afzal et al.'s (2022) systematic review found that both parental overprotection and avoidance of the topic of trauma by parents in discussion with their children was significantly related to children's PTSD symptoms.

2.3 Behavior Problems

The aftermath of childhood sexual abuse may have more consequences than solely PTSD. Indeed, many children exhibit marked changes in their behavior, such as disengagement from school and other activities, substance misuse, and suicidal behavior (Hailes et al., 2019; Maniglio, 2015; Miller et al., 2013). In his systematic review of 36 studies, Maniglio (2015) found a positive association between child behavior problems and severity of sexual abuse. Similarly, in a systematic review looking at child maltreatment, Maguire et al. (2015) noted a relationship between behavioral issues such as defiance or aggression and the frequency, severity, and chronicity of the maltreatment.

2.4 Depression

An additional consideration of childhood mood and behavioral concerns after trauma exposure is depression. In their systematic review, Vibhakar et al. (2019) found that almost 25% of children exposed to trauma met diagnostic criteria for depression. Further, children who were exposed to trauma were 2.6 times more likely to develop depression than their non-exposed counterparts (Vibhakar et al., 2019). The prevalence and risk for depression may be even higher in populations of sexual abuse survivors (Hailes et al., 2019). Claxton et al.'s (2021) systematic review of 57 studies evaluated factors impacting depression following childhood trauma. The

study indicated that PTSD symptoms, low social support following the trauma, and avoidance had the strongest associations with depression.

2.5 Forensic Interviews

After an allegation of child sexual abuse is disclosed and an investigation is prompted, the child is interviewed by a trained forensic interviewer to inform the investigation and determine, among other things, the reliability of the claim. The interviewer relies on the child's statements, behavior, and affect throughout the interview to substantiate or unsubstantiate an allegation, as well as to rule in or out potential alternative explanations for the child's statements, behavior and affect. Forensic interviews are semi-structured and tailored to the child's developmental level. The interviewer seeks to ask narrative-prompting or open-ended questions whenever possible to establish chronology, clarity, and reliability of disclosure.

There are 4 phases including rapport-building, narrative practice, narration of the topic of concern, and closure (Office of Juvenile Justice and Delinquency Program [OJJDP], 2015). The time spent in each phase is determined by the forensic interviewer based on the engagement of the child and developmental considerations. Though single-session forensic interviews have been considered the best approach for investigative purposes. as well as the limited potential for re-exposure to traumatic content for the child, multiple-session (used interchangeably here with "extended") forensic evaluations may be indicated given the complexities of child sexual abuse cases and to obtain a "complete abuse narrative" (American Professional Society on the Abuse of Children [APSAC], 2012; Duron & Remko, 2020, p. 140; Faller et al., 2010). Children rarely disclose sexual abuse immediately. In fact, there is often a significant time delay between initial abuse and disclosure (Paine & Hansen, 2002). Research suggests that this delay can depend on the child's relationship to the perpetrator, a child's confusion or mixed emotions about the abuse,

and age or developmental level (Duron & Remko, 2020; Hershkowitz et al., 2005; McElvaney, 2015). As a result, forensic interviews taking place in multiple sessions may help a child develop trust with the interviewer and feel more comfortable in disclosing any occurrence of abuse in the interview.

In an extended forensic evaluation, the phases of an interview are elongated and include additional steps (Carnes, 2005, as cited in Cronch et al., 2006). First, the evaluator may or may not collect pertinent information about the case prior to meeting with the child depending on the circumstances of the case. Then, the rapport-building phase is similar to a single-session forensic interview in that it includes the typical developmental assessment and setting of interview rules and expectations of the process for the child. Next, the extended forensic evaluator collects data from tests measuring trauma symptoms, child behavioral concerns, sexualized behaviors, and others (Cronch et al., 2006). Once this is completed, the evaluator asks the child questions about the alleged abuse in a non-leading and developmentally appropriate way. Once the interviewer has obtained relevant background about a child's case, the interviewer also explores alternative hypotheses to rule in or out possible explanations for the statements, behavior, and affect besides sexual abuse. This helps to clarify facts and bolster the strength of the investigation (Korkman et al., 2017). The closure of the extended interview includes clarifying allegation details made by the child and discussing safety with the child.

2.6 Elements to Consider in an Evaluation of Risk and Protective Factors

In an evaluation of protective factors in the aftermath of sexual abuse, there are many elements to consider. Child-specific factors such as age, race, and gender are important to include since few of these variables have been explored as factors specific to sexual abuse cases.

This is a large gap considering the prevalence and complexities of sexual abuse. Abuse-specific factors, including type of sexual abuse and the child's relationship to the perpetrator may impact a child's presenting response. These factors are critical elements in the dynamics of sexual abuse and have little exploration and consensus in the current literature. Many family factors, such as maternal reaction to pregnancy, caregiver belief of sexual abuse allegation, and caregiver support after the allegation is relatively limited or unclear in existing research.

2.7 Child Factors

Age

Children's age at the time of a traumatic event may impact whether he or she develops PTSD. Evidence from a recent meta-analysis suggests that younger children, ages six years and younger, who have been exposed to trauma have a PTSD prevalence rate of 21% (Woolgar et al., 2022). The authors compared this to the prevalence rate range of 17%-33% for a pooled sample of children and adolescents in Alisic et al.'s (2014) meta-analysis, indicating that older children may not experience PTSD as often as younger children after a traumatic event. Older age may serve as a protective factor for children because of the inherent dependence younger children have on others to assist in their recovery as well as their capacity to understand the abuse based on their cognitive, social, and emotional development.

Race

The evidence on race and ethnicity as a factor in the development of PTSD in children is unclear. A meta-analysis of 37 studies with more than 3 million participants made up of children and adults found no relationship between race or ethnicity and development of PTSD after a traumatic event (Chen et al., 2010). Pumariega et al.'s (2022) recent literature review suggests that there may be higher risk of development of trauma-related disorders in youth with minority

race or ethnicity backgrounds compared to children and adolescents with White or European-American family histories, implying that identifying as non-White and non-European may be a risk factor for children who have experienced trauma in the United States. The authors point to disproportionate access to medical and mental health care and stressors related to discrimination as a possible explanation for this discrepancy.

Gender

There is conflicting information on gender and PTSD development after sexual abuse. Alisic et al.'s (2014) meta-analysis identified that girls are almost twice as likely to develop PTSD as a result of interpersonal trauma compared to boys. This finding is supported by Trickey et al.'s (2014) meta-analysis, which found that the elevated risk for females increases with age after exposure to any type of trauma. However, in their meta-analysis of 28 studies, Boumpa et al. (2022) concluded that there was a very slight, but not a significant, difference between gender and PTSD development after childhood sexual abuse. Therefore, the role of gender as a risk or protective factor for PTSD development after sexual abuse is unclear.

2.8 Abuse Factors

Abuse type

Sexual abuse can vary in type and level of invasiveness. Sexual abuse can include non-physical acts, such as showing a child sexually explicit materials, and physical acts, including inappropriate touching, sexual contact, and rape. The type of sexual abuse is often referred to as "severity" in the literature, which leads to conflicting definitions and inconsistent data because some studies use the term to refer to the level of threat experienced by the victim, while others are referring to the type of abuse (Trickey et al., 2012). The use of the words "severity" also discounts that non-physical sexual abuse can still be experienced as severe by the child.

Nonetheless, in his analysis of four previous meta-analyses, Maniglio (2012) identified that childhood sexual abuse is related to higher rates of psychological diagnosis in adulthood, including PTSD, regardless of the severity of sexual abuse experienced.

There is more clarity in research distinguishing the type of sexual abuse. Literature indicates that sexual abuse involving penetration may exacerbate children's post-trauma responses. A meta-analysis of 37 studies determined that the lifetime prognosis of PTSD and other mental health disorders was most pervasive in survivors of childhood sexual abuse involving penetration (Chen et al., 2010). The authors found that abuse type may serve as a risk factor for PTSD and other psychological responses for the survivor in childhood and into adulthood.

Child's relationship to perpetrator

The perpetrator of child sexual abuse typically has a relationship with the child victim. The perpetrator could be a member of the family, such as a parent, guardian, sibling, other family member, or other person in the child's life such as peers, coaches, neighbors, etc. The literature on the impact of this relationship to mental health outcomes is conflicting, largely due to the relationship being defined in different ways. In Kiser et al.'s (2014) study of over 2,100 youth with physical and/or sexual trauma histories, they found a significantly higher rate of PTSD, behavior problems, depression, and dissociation among youth who were sexually abused by a non-caregiver, which could include family members, such as siblings and non-caregiving extended family. In contrast, Canton-Cortes & Canton's (2009) comparison study measured PTSD symptoms associated with child sexual abuse perpetrated by a family member, including caregivers and non-caregivers (i.e. siblings, extended family). Their study yielded results

indicating higher levels of PTSD symptoms in survivors who were victimized by a family member.

2.9 Family Factors

Reaction to pregnancy

A maternal emotional response to pregnancy may be a factor in the level of stress the mother is exposed to while pregnant, depending on the response. There is little research on a mother's emotional reaction to learning of her pregnancy and the impact on her stress levels or its influence on parenting approach when the child is born. Saleem and Surkan (2014) analyzed data from a longitudinal study of over 4,600 children based on surveyed parents and their children's kindergarten teachers as part of the Early Childhood Longitudinal Study Birth Cohort. Their results indicated that maternal-reported unwanted pregnancy was associated with lower socioemotional development scores in children as reported by the kindergarten teachers. In other words, unwanted pregnancy served as a risk factor for problems relating to socioemotional development within this study. Since socioemotional development and ability to garner strong familial bonds and friendships plays a role in resilience after exposure to trauma, it is possible that the impact of the maternal reaction to pregnancy will influence the child's resilience in the aftermath of sexual abuse (Hebert et al., 2014, Trickey et al., 2012).

Caregiver belief of disclosure

There is limited current literature on caregiver belief following a child's disclosure of sexual abuse. Elliot & Carnes' (2001) review of the literature examined non-offending caregivers' belief (i.e., the child's accusation is considered true by the caregiver) and support (i.e., protective action or supportive responses that take place after a disclosure). Pintello & Zuravin (2001) collected data from 435 non-offending mothers of sexually abused children and

identified that they were less likely to believe the child's disclosure if they were in a romantic relationship with the perpetrator. This is consistent with other studies (Johnson et al., 2024; Lyon & Kouloumpos-Lenares, 1987, as cited in Elliot & Carnes, 2001).

The literature also suggests that younger children alleging sexual abuse may be more likely to be believed than older children (Pintello & Zuravin, 2001; Sirles & Franke, 1989, as cited in Elliot & Carnes, 2001). Additionally, Pintello & Zuravin (2001) found that mothers were more likely to believe their child's disclosure if the mother was an adult when she gave birth to her first child compared to mothers who gave birth in adolescence. They also found a negative correlation between a mother's belief of the disclosure and child's sexualized behavior. Johnson et al.'s (2024) secondary analysis of 500 cases demonstrated increased likelihood of belief when the child disclosed to the non-offending caregiver first. Although there is little recent research on this topic, belief of a non-offending caregiver may improve a child's mental health and social function after exposure to sexual abuse, serving as a protective factor against problems with emotional and social functioning (Lovett, 2004).

Caregiver support after disclosure

The research exploring the impact of caregiver support on child functioning after a disclosure of sexual abuse is mixed across studies, likely due, in part, to the variations of "support" in definition and measurement. Bolen et al. (2015) suggest eight elements of caregiver support following abuse disclosures: basic needs, safety and protection, decision making, active parenting, instrumental support, availability, sensitivity to child, and affirmation. Bolen & Gergely's (2015) systematic review of 29 studies found only a small effect size in the relationship between caregiver support and child post-disclosure functioning, with parental support only minimally impacting child's acting out behaviors (ES= -.149), depression (ES= -

.167), and self-perception (ES= .170). This weak relationship is supported by more recent studies (Wamser-Nanney, 2017; Wamser-Nanney et al., 2020). Conversely, Trikey et al.'s (2012) meta-analysis of 64 studies identified that low social support (including from peers and family) as well as low family functioning were significantly associated with the development of PTSD in children and adolescents exposed to trauma.

The age of the child and the parent's relationship to the perpetrator may influence parental support after disclosure, with older children and children abused by someone close to their parent receiving less support (Everson et al., 1989, as cited in Elliot & Carnes, 2001; Lyon & Kouloumpos-Lenares, 1987, as cited in Elliot & Carnes, 2001; Pintello & Zuravin, 2001). In their study of sexual abuse across three generations, Leifer et al. (2001) found that mothers were less likely to be supportive if they were in relationships with or financially dependent on the perpetrator. Additionally, mothers may be more likely to provide support after a child's disclosure if they have lower levels of perceived distress and if they believe the disclosure. (Rancher et al, 2023). Domhardt et al.'s (2015) review indicated that timing of support may be a factor. The authors found a positive relationship between immediate parental support and children's resilience after a disclosure of sexual abuse.

Chapter 3: Methodology

The study employed a correlational and cross-sectional study design and convenience sampling to evaluate the relationship between child post-traumatic stress symptoms and behavioral issues and child variables, abuse variables, and family variables. The data was extracted from previously substantiated extended forensic evaluation cases by a forensic evaluation expert.

3.1 Purpose of the Study

The research question was, what are the factors associated with clinical levels of PTSD and behavioral problems in children who have been sexually abused and involved in an extended forensic evaluation for child sexual abuse?

The author hypothesized the following:

1. PTSD symptoms will be predicted by child, abuse, and family variables amongst children who have experienced sexual abuse.
2. Child behavior problems will be predicted by child, abuse, and family variables amongst children who have experienced sexual abuse.

3.2 Administrative Arrangements

An agreement with the expert forensic evaluator was reached in order for the principal investigator to have access to the data. The principal investigator had access to client files and documentation, including child and family history, the evaluator's summary report, reports from collateral contacts such as CPS, law enforcement, schools, and other service providers, and standardized assessments such as the Child Behavior Checklist (CBCL), the Trauma Symptom Checklist for Children (TSCC), and the Trauma Symptom Checklist for Young Children (TSCYC).

The principal investigator was responsible for identifying cases and collecting, recording, and securely storing deidentified data. After the secure deidentification and collection of the data, the researcher employed a statistician through the University of Pennsylvania's network to assist with data analysis.

3.3 Human Subjects

Given the study design involved no interaction with active clients, there was not a concern for the study impacting the well-being of subjects and no need for consent. As a result, the University of Pennsylvania's Institutional Review Board (IRB) deemed the study exempt from IRB approval. Therefore, the risk of the study involved the assurance of confidentiality and data security. Data or confidentiality breaches were prevented by the use of locked cabinets for case files, deidentifying data effectively, encrypted software, and secure servers. The minimal risk posed to subjects was reasonable given the anticipated benefits to the field's knowledge base.

3.4 Setting

The data was collected in New York State between the years of 2007-2022. The majority of extended forensic evaluations took place at local Child Advocacy Centers at the request of the contracting agency, which included child protection agencies within New York State, family court, prosecution offices, and law firms dealing with civil litigation. Referrals were made to the expert forensic interviewer to substantiate claims of child sexual abuse in the context of child protection investigations, criminal investigations, and custody disputes involving the child. The referring agencies determined the need for extended forensic interviews based on the dynamics of the child, family, allegation, or investigation and the agency's capacity to make an informed determination. Cases that were deemed too complicated to assess within the agency or that the agency determined required an expert evaluator's opinion were referred to the expert evaluator. For each substantiated case, between one to three interview sessions took place involving the child and at least one caregiver.

3.5 Sample

The study used a convenience sample from the expert forensic evaluator's cases. According to Cohen (1992), in order to achieve a medium effect size at alpha (α) = .05 and power = .80, the sample size required was 97 (Table 2, p. 158).

Inclusion Criteria:

1. Cases must be substantiated for sexual abuse by the expert forensic evaluator.
2. Cases must have a completed Child Behavior Checklist (CBCL) and either Trauma Symptom Checklist for Children (TSCC) or Trauma Symptom Checklist for Young Children (TSCYC) questionnaires.

Exclusion Criteria:

1. Cases that have a sibling also meeting the inclusion criteria.

Siblings inherently share family characteristics. Therefore, in order to prevent the overrepresentation of family traits and dynamics, more than one child from each family will not be included in the sample.

The total cases that met the necessary criteria was n=94. This only minimally impacted the effect of the total sample. Data from each case will be retrieved through exploration of the hard copy files with all identifying information redacted.

3.6 Measures

The source of the data was a collection of hard copy case files including a semi-structured history of the child and family the expert evaluator's written summary report of the case, the Child Behavior Checklist (CBCL), and the Trauma Symptom Checklist for Children (TSCC) or the Trauma Symptom Checklist for Young Children (TSCYC) depending on the age

and developmental level of the child. The data extracted from these case files will be stored in a secure data entry system. The inclusion criteria will be met through the sampling procedure.

Dependent Variables – PTSD Symptoms

PTSD symptoms are captured using interviewer-administered measures including the Trauma Symptom Checklist for Young Children (TSCYC, ages 3-12 years) and the Trauma Symptom Checklist for Children (TSCC, ages 8-16 years). The TSCYC is a 90-question assessment administered to the caregiver of a young child using a Likert scale to describe how often a child exhibits certain trauma-specific behaviors (Briere et al., 2001). The TSCC is a 54-question measure administered directly to the older child using the same Likert response system (Briere, 1996). Both the TSCYC and the TSCC have good reliability, acceptable or good validity, and have been tested with children exposed to sexual abuse (Briere, 1996; Briere et al., 2001). Due to the similarities in these two measures, their use has been established in the literature to measure post-trauma symptoms in samples of children with a large age range (Dillard et al., 2019; Lee et al., 2022; Overbeek et al., 2013).

The evaluator administered and scored the test measures. The results were interpreted based on the protocols described by both the TSCC and TSCYC's manuals. In cases of children who could be assessed using either measure based on their age, the evaluator made a determination on whether to use the TSCC, the TSCYC, or both depending on the child's developmental level, availability of a caregiver's report, and other factors.

Dependent Variables – Child Behavioral Issues

This dependent variable will be measured by the CBCL/1.5-5 and CBCL/6-18. The CBCL/1.5-5 is a 99-item questionnaire for parents or caregivers of children 18 months-5 years old. Respondents rate their child's mood and behavior problems on a 3-point Likert scale where

0 = “Not True,” 1= “somewhat true,” and 2 = “very true” (Achenbach & Rescorla, 2000). The CBCL/6-18 is a 112-item parent report questionnaire assessing both adaptive and problem behaviors in children ages 6-18 years (Achenbach & Rescorla, 2001). Parent responses to questions about the child’s behavior are measured on a 0-2 scale where 0 = “Not true,” 1= “somewhat true,” and 2 = “very true.” Both versions of the CBCL have demonstrated good internal consistency, reliability and validity (Nakamura et al., 2009; Warnick et al., 2007). The CBCLs were administered and scored by the evaluator.

Independent Variables

Table 3.1 Proposed Factors Impacting Child Outcomes

Child Variables	**Definition**	**Operationalization**	**Description**
Age	The age (in years) of the child at the time of intake	Ratio measure: Years of age	Parent response to the question about the child: Age?
Race/ethnicity	Racial identity or ethnicity as defined by the client upon intake	Nominal measure: Black or African American, White (non-Hispanic), White (Hispanic), Asian, American Indian, Pacific Islander, Other	Parent response to the questions: Mother’s ethnicity? and Father’s ethnicity?
Gender	Gender identity of the child as identified upon intake	Nominal measure: Girl or boy	Determined by evaluator’s notes during intake with parent
Abuse Variables			
Abuse type	Whether or not penetration was involved in the substantiated sexual abuse	Nominal measure: Yes or no	Evaluator’s notes from the child’s forensic evaluation
Relationship to perpetrator	Whether the offender was considered a caregiver (adult who lived in the child’s home) or non-caregiver	Nominal measure: Caregiver or non-caregiver	Child’s response to the question about sexual abuse: Who?
Family Variables			
Reaction to pregnancy	Whether or not the mother’s self-reported emotion to learning of her pregnancy with the child was positive	Nominal measure: Positive, ambivalent, or not positive	Parent response to the question: What was the mother’s emotion when she found out that she was pregnant?

Caregiver belief	Child's perception of whether their allegation was believed	Nominal measure: Believed or other	Child response to the question: How does Mom/Dad feel about this?
Caregiver support	Child's perception of support received from parent(s) after disclosure	Nominal measure: Positive or other	Child response to the question: How have people reacted to you [after disclosure]?

3.7 Analysis

The relationships between the dependent variables and the independent variables were first analyzed using multiple regression methods. The goal of the analysis was to explore the independent variables' contributions to clinical symptoms of PTSD or other behavioral issues after the experience of sexual abuse.

3.8 Data Preparation

Categorical independent variables were transformed into binary variables prior to hypothesis testing to allow for their inclusion in multiple regression analysis. *AbuseTypeBinary* was created by collapsing Type of Abuse into Penetration = 1 and No penetration (inappropriate touching, sexual contact) = 0. *RelationshipPerpBinary* was created by collapsing Relationship to perpetrator into Caregiver = 1 and Non-caregiver (other adults, siblings, and peers) = 0. *CaregiverBeliefBinary* was created by collapsing Caregiver Belief into Believed = 1 and Not believed (unsure and no) = 0. *CaregiverSupportBinary* was created by collapsing Caregiver Support into Positive = 1 and Not Positive (ambivalent and not supportive) = 0. A second measure of the trauma dependent variable, *TSCYC_Trauma,* was calculated by combining two of the three TSCYC trauma symptom sub-scales (Posttraumatic Stress-Intrusion, Posttraumatic Stress-Avoidance).

Prior to hypothesis testing, tests of normality of continuous variables were conducted using skew and kurtosis statistics. The skew statistic for the TSCYC variable was the only one

that suggested a non-normal distribution (2.18) although the kurtosis value (6.26) was within the acceptable range. A histogram revealed four outliers that were likely the cause of the skew. The outliers (72, 80, 90, 104) were Winsorized to the score at the 94th percentile (58) and skew statistics re-run. The skew statistic for the Winsorized TSCYC variable was within the range considered reflective of a normal distribution (0.40) and was thus used in hypothesis testing.

Tests of multicollinearity among independent variables were also conducted, with values for Caregiver Belief and Caregiver Support surpassing the accepted $VIF \leq 2$ in models that included TSCC and CBCL/1.5-5 as dependent variables. Separating the two variables into two models for each dependent variable reduced each of the VIF values to acceptable levels (see Table 3.2 and 3.3). Therefore, two models will be tested each for TSCC and CBCL/1.5-5: one with Caregiver Belief and one with Caregiver Support.

Table 3.2

Collinearity Statistics for TSCC Score

	Model 1		Model 2		Model 3	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
Age	0.67	1.50	0.77	1.30	0.84	1.19
Gender	0.77	1.30	0.82	1.22	0.51	1.98
Abuse Type	0.76	1.32	0.75	1.34	0.61	1.63
Relationship Perp	0.95	1.06	0.95	1.05	0.78	1.28
Caregiver Belief	0.32	3.17	0.71	1.41		
Caregiver Support	0.33	3.08			0.91	1.10

Table 3.3

Collinearity Statistics for CBCL 1.5 to 5 Score

	Model 1		Model 2		Model 3	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
Age	0.80	1.26	0.89	1.13	0.84	1.19
Gender	0.50	1.99	0.63	1.60	0.51	1.98
Abuse Type	0.61	1.64	0.71	1.42	0.61	1.63
Relationship Perp	0.78	1.29	0.84	1.19	0.78	1.28
Caregiver Belief	0.33	3.07	0.92	1.09		
Caregiver Support	0.33	3.05			0.91	1.10

3.9 Data Analysis Plan

To describe the sample as a whole, descriptive statistics were summarized for all variables. Means, standard deviations, minimum scores, and maximum scores were calculated for continuous variables (PTSD symptoms, child behavior problems, child age). Frequencies were summarized for categorical variables (child race, relationship to perpetrator, mother's reaction to pregnancy, gender, type of abuse, caregiver belief, and caregiver support).

Hypothesis Testing

Multiple regression analysis was used to test six models of the relationship between the two dependent variables (trauma and child behavior problem) and the four independent variables (type of abuse, relationship to perpetrator, caregiver belief, and caregiver support):

Model 1: *TSCC = age + gender + type of abuse + relationship to perpetrator + caregiver belief*

Model 2: *TSCC = age + gender + type of abuse + relationship to perpetrator + caregiver support*

Model 3: *TSCYC = age + gender + type of abuse + relationship to perpetrator + caregiver belief + caregiver support*

Model 4: *CBCL (1.5 to 5) = age + gender + type of abuse + relationship to perpetrator + caregiver belief*

Model 5: *CBCL (1.5 to 5) = age + gender + type of abuse + relationship to perpetrator + caregiver support*

Model 6: *CBCL (6 to 18) = age + gender + type of abuse + relationship to perpetrator + caregiver belief + caregiver support*

Exploratory Analysis

Eight One-Way Analysis of Variance (ANOVA) tests will be used to compare differences in means of PTSD symptoms and child behavior problems by race and mother's reaction to pregnancy:

1. *TSCC_Trauma* (DV) by race (IV)
2. *TSCYC_Trauma* (DV) by race (IV)
3. *CBCL_6to18* (DV) by race (IV)
4. *CBCL_1to5* (DV) by race (IV)
5. *TSCC_Trauma* (DV) by mother's reaction to pregnancy (IV)
6. *TSCYC_Trauma* (DV) by mother's reaction to pregnancy (IV)
7. *CBCL_6to18* (DV) by mother's reaction to pregnancy (IV)
8. *CBCL_1to5* (DV) by mother's reaction to pregnancy (IV)

Chapter 4: Results

A total of 94 youth participated in the study. As shown in Table 4.1, 25.5% of the sample reported being White/Caucasian (*n*=24), 24.5% reported being Black or African American (*n*=23), 40.4% reported being Hispanic or Latino (*n*=38) and 1.1% reported being American

Indian (*n*=1). Most of the youth identified as female (*n*=76, 80.9%), 19.1% identified as male (*n*=18) and no one identified as non-binary (*n*=0). As shown in Table 4.1, the mean age of the youth in the sample was 9 years (*sd*=3.61).

Table 4.1

Demographic Characteristics of the Sample

		N	%
Age Group	Ages 4 to 5	19	20.2
	Ages 6 to 17	75	79.8
	Total	94	100
Race	African American	23	24.5
	Asian	1	1.1
	Native American	1	1.1
	Hispanic	38	40.4
	White	24	25.5
	Other	6	6.4
	Missing	1	1.1
	Total	94	100
Gender	Male	18	19.1
	Female	76	80.9
	Total	94	100

As depicted in Table 4.2, the most common Abuse Type was Penetration (*n*=54, 57.4%). Inappropriate Touching was the second most common (*n*=22, 23.4%) and Sexual Contact was the least common (*n*=18, 19.1%). The most common Relationship to Perpetrator was a Parent or Caregiver (*n*=77, 81.9%), followed by Other Adult (*n*=12, 12.8%), Sibling (*n*=3, 3.2%), and Peer (*n*=2, 2.1%).

Most of the youth were believed by a caregiver (*n*=56, 59.6%), while a portion were either not believed (*n*=21, 22.3%) or the caregiver was unsure of their belief in the allegation

(*n*=14, 14.9%). Less than half of the participants were supported by a caregiver (*n*=43, 4.7%), with 35.1% of caregivers indicating Not Supportive attitudes (*n*=33) and 11.7% showing Ambivalent support (*n*=11). Data on caregiver belief and support could not be identified in 3.2% and 7.4% of cases, respectively. The mother's reaction to pregnancy was not reported in many of the cases (*n*=30). Of those reported, 38.3% had Positive reactions (*n*=36), 26.6% had Ambivalent reactions (*n*=25), and 3.2% had Negative reactions (*n*=3).

Table 4.2

Clinical Characteristics of the Sample

		N	%
Abuse Type	Penetration	54	57.4
	Inappropriate touching	22	23.4
	Sexual contact	18	19.1
	Total	94	100
Relationship to Perpetrator	Parent	77	81.9
	Otl Caregiver	12	12.8
	Sibling	3	3.2
	Peer	2	2.1
	Total	94	100
Caregiver Belief	Believed	56	59.6
	Unsure	14	14.9
	Did not believe	21	22.3
	Missing	3	3.2
	Total	94	100
Caregiver Support	Supportive	43	45.7
	Ambivalent	11	11.7
	Unsupportive	33	35.1
	Missing	7	7.4
	Total	94	100
Reaction to Pregnancy	Positive	36	38.3
	Ambivalent	25	26.6
	Negative	3	3.2
	Missing	30	31.9
	Total	94	100

Table 4.3

Descriptive Statistics of Continuous Variables

	N	Mean	SD	Mn	Max
Age	94	9.04	3.61	4	17
CBCL (1.5 to 5)	20	48.15	39.10	9	154
CBCL (6 to 18)	58	42.19	30.39	1	117
TSCC Score	39	12.59	6.63	1	24
TSCYC Score	64	43.34	14.13	27	104

4.1 Hypothesis Testing

As shown in Table 4.4, the combination of variables in the first model explained 25% of the variance TSCC scores [R^2=0.25, F (5, 30) = 1.98, p<0.11]. In this model Caregiver Belief significantly predicted lower average trauma scores as measured by the TSCC, with children whose caregiver believed their report of abuse scoring, on average, ~6.5 points lower than children whose parents did not believe or were unsure (B=-6.47, p=0.02) when controlling for age, gender, abuse type, and relationship to the perpetrator.

Model two explained 18% of the variance TSCC scores [R^2=0.25, F (5, 28) = 1.24, p<0.32]. No variables significantly predicted differences in scores.

Table 4.4

Multiple Regression Analysis of TSCC Scores

	Model 1					Model 2				
	B	SE	*B*	t	p-value	B	SE	*B*	t	p-value
(Constant)	13.31	6.96		1.91	0.07	14.21	8.32		1.71	0.10
Age	0.07	0.45	0.03	0.16	0.88	-0.01	0.53	-0.01	-0.02	0.98
Gender	-0.17	2.94	-0.01	-0.06	0.95	0.41	3.14	0.03	0.13	0.90
Abuse Type	4.31	2.59	0.31	1.66	0.11	2.82	2.56	0.20	1.10	0.28
Relationship Perp	-0.67	3.45	-0.03	-0.19	0.85	-1.79	3.57	-0.09	-0.50	0.62
Caregiver Belief	-6.47	2.57	-0.47	-2.52	0.02					
Caregiver Support						-4.99	2.76	-0.37	-1.81	0.08
	R^2 = 0.25, F (5, 30)=1.98, p= 0.11					R^2 = 0.18, F (5, 28)=1.24, p= 0.32				

As shown in Table 4.5, the combination of variables explained 22% of the variance TSCYC scores *[R^2=0.22, F (*6, 53) = 2.43*, p*<0.04]. In this model only gender significantly predicted differences in trauma as measured by the TSCYC, with girls scoring, on average, ~9.5 points lower on the TSCYC than boys *(B*=-9.45*, p*=0.02*)* when controlling for age, abuse type, relationship to the perpetrator, caregiver belief, and caregiver support.

Table 4.5

Multiple Regression Analysis of TSCYC Scores

	B	SE	*B*	t	p-value
(Constant)	42.15	4.71		8.94	<.001
Age	0.43	0.50	0.11	0.86	0.39
Gender	-9.45	3.06	-0.40	-3.09	0.00
Abuse Type	2.62	2.33	0.15	1.12	0.27
Relationship Perp	1.40	2.65	0.07	0.53	0.60
Caregiver Belief	-2.72	3.21	-0.15	-0.85	0.40
Caregiver Support	5.85	3.17	0.32	1.84	0.07

R^2 = 0.22, *F* (6, 53)=2.43, *p*= 0.04

As shown in Table 4.6, the combination of variables in the first model explained 26% of the variance CBCL/1.5-5 scores *[R^2*=0.26*, F (*5, 14*)* = 0.99*, p*<0.46]. No variables in the model were significant predictors of differences in child behavior problems as measured by the CBCL/1.5-5. The combination of variables in the second model explained 26% of the variance CBCL/1.5-5 scores *[R^2*=0.26*, F (*5, 13*)* = 0.92*, p*<0.50]. No variables in the model were significant predictors of differences in behavior problems as measured by the CBCL/1.5-5.

Table 4.6

Multiple Regression Analysis of CBCL (1.5 to 5) Scores

	Model 1					Model 2				
	B	SE	*B*	t	p-value	B	SE	*B*	t	p-value
(Constant)	139.89	74.93		1.87	0.08	141.89	82.10		1.73	0.11
Age	-17.15	16.71	-0.25	-1.03	0.32	-17.65	18.61	-0.25	-0.95	0.36
Gender	-34.98	24.15	-0.42	-1.45	0.17	-34.07	28.16	-0.41	-1.21	0.25
Abuse Type	15.61	20.94	0.20	0.75	0.47	15.54	24.08	0.20	0.65	0.53
Relationship Perp	8.71	18.71	0.12	0.47	0.65	8.80	20.23	0.12	0.44	0.67
Caregiver Belief	-3.41	19.19	-0.04	-0.18	0.86					
Caregiver Support						-4.52	19.57	-0.06	-0.23	0.82
	$R^2 = 0.26$, $F(5, 14)=0.99$, $p= 0.46$					$R^2 = 0.26$, $F(5,13)=0.92$, $p<0.50$				

As shown in Table 4.7, the combination of variables explained 20% of the variance CBCL/6-18 scores [R^2=0.20, F (6, 45) = 1.82, p<0.12]. In this model only gender significantly predicted differences in child behavior problems as measured by the CBCL/6-18, with girls scoring, on average, 20 points lower on the CBCL/6-18 than boys (B=-20.37, p=0.05) when controlling for age, abuse type, relationship to the perpetrator, caregiver belief, and caregiver support.

Table 4.7

Multiple Regression Analysis of CBCL (6 to 18) Scores

	B	SE	*B*	t	p-value
(Constant)	54.53	21.55		2.53	0.02
Age	1.66	1.48	0.17	1.13	0.27
Gender	-20.37	10.06	-0.31	-2.03	0.05
Abuse Type	0.04	7.34	0.00	0.01	1.00
Relationship Perp	-13.08	9.29	-0.19	-1.41	0.17
Caregiver Belief	-10.15	10.23	-0.19	-0.99	0.33
Caregiver Support	2.39	9.85	0.05	0.24	0.81

$R^2 = 0.20$, $F(6, 45)=1.82$, $p= 0.12$

4.2 Post-hoc Analyses

The two DVs (trauma and child behavior) were each assessed using two measures designed for specific age groups (i.e., CBCL/1.5-5 was developed for children that were 1.5-5 years old; CBCL/6-18 was developed for children 6-18 years old). Therefore, the sample size for each regression analysis was reduced to only those in the age group assessed using that specific measure, which may have resulted in a sample too small to detect an effect. To address these small n's, a series of independent t-tests were conducted in which each independent variable was tested alone with each measure of the two DVs.

Abuse Type

As shown in Table 4.8, trauma symptoms did not differ significantly between children whose abuse included penetration and those whose abuse did not include penetration in either the TSCC or TSCYC groups. Similarly, child behavior problems did not differ significantly between children whose abuse included penetration and those whose abuse did not include penetration in either the CBCL/1.5-5 or CBCL/6-18 groups.

Table 4.8

Independent t-tests of Differences in Dependent Variables by Abuse Type

		Mean	SD	SE Mean	Mean Diff	t-value	df	2-tailed p-value
TSCC	Penetration	13.16	6.16	1.23	1.70	0.73	36	0.47
	No Penetration	11.46	7.83	2.17				
TSCYC	Penetration	42.13	8.86	1.57	1.67	0.74	61	0.46
	No Penetration	40.45	9.05	1.63				
CBCL (1.5-5)	Penetration	45.73	38.30	11.55	-5.38	-0.30	18	0.77
	No Penetration	51.11	42.19	14.06				
CBCL (6 to 18)	Penetration	43.32	32.55	5.85	5.09	0.65	55	0.52
	No Penetration	38.23	25.15	4.93				

Relationship to Perpetrator

As shown in Table 4.9, trauma symptoms did not differ significantly between children whose perpetrator was a caregiver and those whose perpetrator was not a caregiver in either the TSCC or TSCYC groups. Similarly, child behavior problems did not differ significantly between children whose perpetrator was a caregiver and those whose perpetrator was not a caregiver in either the CBCL/1.5-5 or CBCL/6-18 groups.

Table 4.9

Independent t-tests of Differences in Dependent Variables by Relationship to Perpetrator

		Mean	SD	SE Mean	Mean Diff	t-value	df	2-tailed p-value
TSCC	Caregiver	12.41	6.96	1.19	-1.59	-0.44	36	0.66
	Non-Caregiver	14.00	4.69	2.35				
TSCYC	Caregiver	41.86	9.14	1.29	3.19	1.11	60	0.27
	Non-Caregiver	38.67	8.13	2.35				
CBCL (1.5-5)	Caregiver	51.79	45.58	12.18	16.19	0.77	17	0.45
	Non-Caregiver	35.60	15.29	6.84				
CBCL (6 to 18)	Caregiver	39.98	30.56	4.41	-6.47	-0.61	55	0.55
	Non-Caregiver	46.44	21.65	7.22				

Caregiver Belief

As shown in Table 4.10, trauma scores as measured by the TSCC (child report) were, on average, 5 points lower among children whose caregivers believed their reports of abuse compared to those whose caregiver did not believe them or was unsure [$t(35)=-2.49$, $p=0.02$]. Mean scores did not differ between the two groups amongst those whose trauma was measured by the TSCYC (caregiver report). Child behavior problems did not differ significantly between children whose caregivers believed them and those who did not/were unsure in either the CBCL/1.5-5 or CBCL/6-18 groups.

Table 4.10

Independent t-tests of Differences in Dependent Variables by Caregiver Belief

		Mean	SD	SE Mean	Mean Diff	t-value	df	2-tailed p-value
TSCC	Believed	10.39	5.75	1.199	-5.25	-2.49	35	0.02
	Did not Believe	15.64	6.97	1.86				
TSCYC	Believed	42.61	8.98	1.46	2.61	1.11	61	0.27
	Did not Believe	40	9.41	1.88				
CBCL (1.5-5)	Believed	44.77	35.98	9.98	-9.66	-0.52	18	0.61
	Did not Believe	54.43	46.72	17.66				
CBCL (6 to 18)	Believed	41.31	32.70	5.53	-0.50	-0.06	54	0.95
	Did not Believe	41.81	26.35	5.75				

Caregiver Support

As shown in Table 4.11, trauma scores as measured by the TSCC (child report) were, on average, ~5 points lower among children whose caregiver supported them compared to those whose caregiver did not support them [$t(33)=-2.15$, $p=0.04$]. Trauma scores as measured by the TSCYC (caregiver report) were, on average, ~5 points higher among children whose caregiver supported them compared to those whose caregiver did not support them [$t(55)=1.99$, $p=0.05$]. Child behavior problems did not differ significantly between children whose caregivers supported them and those who did not in either the CBCL/1.5-5 or CBCL/6-18 groups.

Table 4.11

Independent t-tests of Differences in Dependent Variables by Caregiver Support

		Mean	SD	SE Mean	Mean Diff	t-value	df	2-tailed p-value
TSCC	Positive	9.94	5.72	1.39	-4.61	-2.15	33	0.04
	Not Positive	14.56	6.87	1.62				
TSCYC	Positive	43.90	9.46	1.70	4.64	1.99	59	0.05
	Not Positive	39.27	8.69	1.59				
CBCL (1.5-5)	Positive	43.30	35.40	11.19	-11.03	-0.59	17	0.57
	Not Positive	54.33	46.30	15.43				
CBCL (6 to 18)	Positive	38.64	30.91	5.84	-2.04	-0.26	51	0.79
	Not Positive	40.68	24.36	4.87				

In addition to the t-tests for independent variables, the relationship between Caregiver Belief categories and Caregiver Support categories was explored (see Table 4.12) using a Chi-square test of Independence. Overall, caregiver belief was significantly related to caregiver support [X^2 (4, N=87) = 50.08, p<0.001], with more cases in the *supportive caregiver* category amongst children whose parents believed them than would be expected if there were no relationship (*Std. Res* = 3.00. p<0.05) and fewer cases in the *unsupportive caregiver* category than would be expected (*Std. Res* = -3.10, p<0.05). Additionally, there were fewer cases in the *supportive caregiver* category amongst children whose parents were unsure in their belief than would be expected if there were no relationship (*Std. Res* = -2.60. p<0.05) and more cases in the *unsupportive caregiver* category than would be expected (*Std. Res* = 2.00, p<0.05). Finally, there were fewer cases in the *supportive caregiver* category amongst children whose parents did not believe them than would be expected if there were no relationship (*Std. Res* = -2.60. p<0.05) and more cases in the unsupportive caregiver category than would be expected (*Std. Res* = 3.20, p<0.05).

Table 4.12

Chi-square Test of Independence Between Caregiver Belief and Caregiver Support

		Caregiver Support			
Caregiver Belief		Supportive	Ambivalent	Unsupportive	Total
Believed	N	41	5	6	52
	Std Res	3.00	-0.60	-3.10	
Unsure	N	0	4	10	14
	Std Res	-2.60	1.70	2.00	
Did not believe	N	2	2	17	21
	Std Res	-2.60	-0.40	3.20	
Total	N	43	11	33	87

X^2 (4, N=87)=50.08, p<0.001

Exploratory Analysis

Analysis of Variance tests found no mean differences across race for TSCC scores [F (3, 34) = 0.47, p=0.71), TSCYC scores [F (3, 58) = 0.06, p=0.98], CBCL (1.5 to 5) scores [F (3,16) = 0.74, p=0.54], or CBCL (6 to 18) scores [F (3, 51) = 0.53, p=0.67]. See Table 3.12 for additional detail.

Table 4.13

Analysis of Variance Comparing Mean TSCC, TSCYC, and CBCL Scores by Race

		Sum of Squares	df	Mean Square	F-value	p-value
TSCC	Between Groups	66.16	3	22.05	0.47	0.71
	Within Groups	1602.68	34	47.14		
	Total	1668.84	37			
TSCYC	Between Groups	17.23	3	5.74	0.06	0.98
	Within Groups	5185.49	58	89.41		
	Total	5202.71	61			
CBCL (1.5-5)	Between Groups	3542.99	3	1181.00	0.74	0.54
	Within Groups	25509.56	16	1594.35		
	Total	29052.55	19			
CBCL (6 to 18)	Between Groups	1316.74	3	438.91	0.53	0.67
	Within Groups	42386.64	51	831.11		
	Total	43703.38	54			

Analysis of Variance tests found no mean differences across mother's reaction to the pregnancy (positive, negative, neutral) for TSCC scores [F (2, 19) = 0.42, p=0.66), TSCYC scores [F (2, 49) = 1.43, p=0.25], CBCL (1.5 to 5) scores [F (1,12) = 0.80, p=0.39], or CBCL (6 to 18) scores [F (2, 39) = 0.12, p=0.89]. See Table 4.14 for additional detail.

Table 4.14

Analysis of Variance Comparing Mean TSCC, TSCYC, and CBCL Scores by Mother's Reaction to Pregnancy

		Sum of Squares	df	Mean Square	F-value	p-value
TSCC	Between Groups	32.20	2	16.10	0.42	0.66
	Within Groups	721.67	19	37.98		
	Total	753.86	21			
TSCYC	Between Groups	238.03	2	119.01	1.43	0.25
	Within Groups	4091.67	49	83.50		
	Total	4329.69	51			
CBCL (1.5-5)	Between Groups	1077.74	1	1077.74	0.80	0.39
	Within Groups	16177.69	12	1348.14		
	Total	17255.43	13			
CBCL (6 to 18)	Between Groups	164.41	2	82.21	0.12	0.89
	Within Groups	26142.09	39	670.31		
	Total	26306.50	41			

Chapter 5: Discussion

This study examined the relationship between child-, abuse-, and family-specific factors and child PTSD and behavior outcomes after an extended forensic interview in substantiated sexual abuse cases. Utilizing the retrospective analysis design enabled the study to evaluate case data spanning over two decades of extended forensic evaluations. The results provide context to the current literature using a risk and resilience lens in order to incorporate a strengths-based perspective on child outcomes after abuse. Additionally, examining risk and protective factors within the current study enabled a more effective evaluation of the child's environment in an understanding of outcomes.

5.1 Summary of Findings

The age range in this sample was 4-17 years. A large majority of the participants were female, consistent with the literature suggesting that girls are more likely to be sexually abused than boys. Racial minorities were also disproportionately represented in the sample, but it remains unclear if there is a higher rate of child sexual abuse among these population groups in the geographic area or if there is a higher rate of reports and investigations into these cases, leading to more referrals for extended forensic evaluation by an expert evaluator.

A majority (57%) of children disclosed penetration as the abuse type. Because it is frequently referenced as the more severe type of abuse in much of the literature, this is a surprising finding. This could be explained by the fact that every case in the sample was deemed appropriate to be evaluated by an expert in an extended format. A large majority of the relationship to perpetrator was a parent or caregiver (81.9%). This is likely skewed to reflect that many of these cases were being investigated by CPS, which only investigates abuse perpetrated by an adult legally responsible for a child.

Almost 60% of the sample had a caregiver who believed the child's disclosure, and more than a fifth did not believe the child (22.3%). Fewer were unsure (14.9%). Although at a lower level overall, a similar pattern was indicated for caregiver support: 45.7% of children were supported, 11.7% of children's caregivers were ambivalent, and 35.1% were not supportive.

Caregiver support was correlated with lower trauma scores on the TSCC (child report), but higher trauma scores on the TSCYC (caregiver report). Put simply, children self-reported lower trauma symptoms when they were supported by a caregiver, and caregivers were more likely to report higher trauma symptoms in their children when they were supportive. There was no relationship between CBCL scores (caregiver-report) and caregiver support. The results of the

Chi-square test of Independence revealed a strong correlation between caregiver belief and caregiver support.

Caregiver belief and TSCC (child-report) trauma symptom scores were demonstrated to have a negative correlation in the multiple regression analysis, suggesting that caregiver belief may be protective against post-traumatic stress symptoms perceived by the child. These same results were echoed in the results of the t-test analysis. However, there was no correlation between caregiver belief and trauma scores measured by the TSCYC (caregiver-report) or child behavior problems (caregiver-report) in either the multiple regression analysis or the t-tests.

Gender was a predictor for TSCYC (caregiver-report) posttraumatic symptoms. Girls, on average, scored lower than boys on this measure. Interestingly, gender was not significant in TSCC (child-report) or CBCL (caregiver-report) scores. This may reflect the differences in how children's behaviors are perceived and interpreted by adults based on gender.

The multiple regression analysis revealed that gender was also predictive of caregiver-reported child behavior problems in this sample. Boys aged 6-18 years were significantly more likely to score higher on the CBCL than girls. Interestingly, there was not a significant relationship between CBCL scores and gender in the 1.5-5 years old age group.

The results of the multiple regression analyses were limited as a result of the separation of the total sample into smaller subsamples based on the different measures used. Given the smaller size of the subsamples, t-tests explored the relationship between each independent variable and dependent variable. Abuse type and relationship to perpetrator did not indicate a relationship with trauma symptoms or child behavior problems in the sample.

5.2 Implications

Caregiver Belief and Support

Given the limited research exploring the relationship between caregiver belief and support, this study sought to examine if a correlation existed. Overall, the present data suggests a significant relationship between belief and support, indicating that they are often aligned more than would be statistically expected of two variables. However, the results from this study demonstrate that caregiver belief does not always translate to caregiver support after children disclose sexual abuse. Almost 60% of the children in the sample of 94 cases were believed by a caregiver, but only 46% were supported by those caregivers in the aftermath. This may be due, in part, to the financial, relational, or emotional dependence that caregivers have on potential perpetrators (Leifer et al., 2001; Pintello & Zuravin, 2001).

It is also intriguing that the findings of this study's multiple regression analysis were mirrored in the t-tests for caregiver belief, but caregiver support had no findings in the initial multiple regression analysis yet demonstrated a relationship with both the TSCC and TSCYC in the t-tests. This suggests that caregiver support may be a more nuanced variable in child resilience, which is perhaps reflected in the results of Boley & Gergely's (2015) meta-analysis indicating a weak, if present, relationship between caregiver support and child resilience.

Caregiver Belief

Both the multiple regression and t-tests analyses demonstrated that TSCC (child-report) scores were lower in children believed by their caregiver, which could indicate that caregiver belief is a protective factor against PTSD symptoms. Since the TSCC is a child-report measure, this demonstrates that children who were believed by a caregiver perceived fewer trauma symptoms within themselves. There was no relationship between caregiver belief and TSCYC

(caregiver-report) scores, suggesting that caregiver belief may have a greater resilience impact on older children (who would have responded to the TSCC) than younger children. This finding would be aligned with the results of Woolgar et al.'s meta-analysis (2022).

Caregiver Support

The relationship between caregiver support and trauma symptomology differed depending on whether trauma symptoms were assessed by caregivers (TSCYC) or children (TSCC). This data suggests that support may be a protective factor against trauma symptoms, as children self-reported (using the TSCC) lower trauma symptoms when they were supported by their caregiver. This result is similar to findings in Trickey et al.'s (2012) meta-analysis. For the younger children, when parents reported trauma symptoms (using the TSCYC), supportive caregivers reported more trauma symptoms in their child. This could be explained by a supportive caregiver being inherently more likely to perceive and report a child's trauma symptoms as opposed to a caregiver who is ambivalent or not supportive.

Gender

The finding that caregivers rated girls as being more resilient when considering TSCYC scores is inconsistent with the results found in Alisic et al.'s systematic review (2014), which indicated an increased likelihood of PTSD symptoms in girls of all ages compared to boys. Additionally, Trickey et al.'s meta-analysis (2014) noted that older girls had higher trauma symptoms than younger girls after sexual abuse. This result may be reflected in the gender-based findings from the current study wherein younger girls were rated as having lower trauma scores on the TSCYC by their caregiver. However, since there was no gender correlation found using the TSCC (child-report for older children), these results do not conclusively echo those from

Trickey et al. (2014). These results also could suggest that caregivers may perceive the child's trauma symptomology differently based on the child's gender.

Caregivers of older boys (6-18 years) were more likely to report behavior problems than caregivers of girls of the same age group. Similar to the results of the trauma symptoms being assessed by the TSCYC, this could indicate a gender bias in the way caregivers perceive the child's behavioral problems. However, this finding was not held in the younger age group (ages 1.5-5 years) in the current study. These results, in conjunction with those of the trauma symptoms assessed by the TSCYC, may additionally suggest that caregivers' perception of their child's behavior and trauma symptomology based on gender may only shift as they age.

Trauma Symptom Measures

The differences in findings between caregiver belief and the TSCC versus the TSCYC highlight important variations between the two trauma symptom measures aside from the ages of the children assessed using each. First, despite matching the type of trauma symptoms measured in both the TSCC and TSCYC in this study, there are differences in both the number of items measuring these symptoms as well as the content of the items themselves.

Second, the child is the respondent in the TSCC measure (for ages 7-17 years) whereas the caregiver provides the responses for the TSCYC (for ages 3-12 years). This is a significant difference in subjective report, especially considering that many of the items are assessing for internalized symptoms, which are inherently more difficult for a caregiver to be aware of without communication from the child. Essentially, one measure is used to evaluate the child's perspective of their own trauma symptoms and the other measure is used to measure the caregiver's perspective of the child's trauma symptoms.

Several studies have used the combination of the TSCC and the TSCYC to explore trauma symptoms in children similar to the current study, and these studies also separated findings for each given the differing respondent (parent or child) (Dillard et al., 2019; Lee et al., 2022; Overbeek et al., 2013). Lanktree et al. (2008) evaluated the validity of these two measures compared to each other. The results demonstrated moderate convergent and discriminative validity, suggesting the two measures are measuring a similar phenomenon, but not identical. Since each measure requires different respondents, the authors recommend that both measures can be used most effectively in practice settings in order to include both the perspective of the child and the caregiver.

The disparity found between TSCC (child-report) and TSCYC (caregiver-report) scores in their relationship to caregiver support in this study could be explained by the difference in respondent. Children who were supported or believed by a caregiver identified fewer trauma symptoms in themselves. Supportive caregivers, who responded using the TSCYC, may have been more likely to be engaged and attentive to potential post-trauma symptoms, and therefore reported higher rates of symptoms. An additional consideration of this data is that the nature of these cases are child abuse investigations. It is possible that both the caregiver's and the child's reports could be biased, depending on the perceived potential outcome of their responses.

5.3 Limitations

The study was limited by the retrospective design in that the research question and variables were identified after the data had been collected. Additionally, the study employed a correlational, cross-sectional design, so causation cannot be determined. The sample is also not generalizable to all cases of sexual abuse, given that the current study only examined cases that had been substantiated after an extended forensic evaluation, usually for investigative purposes.

Additionally, the length of time between exposure to sexual abuse and the forensic evaluation was not assessed. Therefore, the responses to the CBCL, TSCYC, and TSCC measures in addition to caregiver belief and support could have been impacted by the differences in the lapse of time across cases.

The uses of different measures to accurately depict the dependent variables created small subsample sizes, limiting the power of the multiple regression analysis and ability to compare results between groups. The differences between measures includes the person responding to the measures. In the CBCL and the TSCYC, the caregiver was the respondent, whereas the child responded in the TSCC. Therefore, the subjectivity of the respondents in all DV measures may limit the current study. In particular, the motivations of the respondents in the CBCL could be responsible for the absence of relationships with independent variables except for gender, especially since the measures were administered as part of an extended forensic evaluation.

5.4 Suggestions for Future Research

The evidence suggests that more robust research needs to be done to evaluate protective factors for child outcomes after a disclosure of sexual abuse. Specifically, future research should consider the use of instruments requiring different respondents in an attempt to more accurately measure and appraise trauma symptoms. Using measures such as the TSCC (child-report) and the TSCYC (caregiver-report) provide two equally important perspectives about the same variable, and it is important to consider the other possible factors impacting the results (i.e. a supportive caregiver responding to the TSCYC). The clinical implications of this should also be considered by those assessing and treating child trauma symptoms.

Child behavior problems should be further evaluated, specifically in children under the age of 5. The explanations behind the difference in behavior problems between genders should

also be expanded upon. It may be beneficial to consider the source and the context of the measure responses, which is beyond the scope of the current study.

Caregiver belief and caregiver support should be considered in future explorations of child sexual abuse outcomes. These variables should continue to be explored as distinct, given the results of the current study indicate that they are correlated but certainly separate concepts. Further, the variables impacting the discrepancies between caregiver belief and support should be explored further, such as income dependence, interpersonal violence, and family culture as this may provide valuable insight into prevention of child sexual abuse. Further exploration of these may also enlighten the understanding of risk and protective factors in the aftermath of child sexual abuse. In the field of child advocacy, and within the context of Child Advocacy Centers, social workers, advocates, and clinicians should seek to identify and alleviate the barriers to belief and support that caregivers face.

5.5 Conclusion

This study serves as an attempt to find clarity in the literature on risk and protective factors on child sexual abuse outcomes. Though limited by design and sample size, the results suggest that caregiver belief and caregiver support may be significant protective factors for child post-trauma symptoms. Further, the data suggests that supportive caregivers are more likely to perceive and report child PTSD symptomology. This study has demonstrated that the child's perception of trauma symptoms can vary from the caregiver's perception, and may depend on the context of possible protective factors, such as caregiver support. Further, gender discrepancies in child outcomes after sexual abuse were highlighted, with girls being rated as having lower trauma symptom scores and child behavior problems by their caregiver. The current study

reinforces that the dynamics of caregiver belief and support are particularly important to understand, given the discrepancies between them and the impact of them on the child.

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