PSYCHOPATHOLOGY AMONG ADULT SURVIVORS OF IN-PERSON AND ONLINE CHILD SEXUAL ABUSE

A thesis presented to the faculty of the Graduate School of Western Carolina University in partial fulfillment of the requirements for the degree of Master of Arts in Psychology.

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TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

PSYCHOPATHOLOGY AMONG ADULT SURVIVORS OF IN-PERSON AND ONLINE CHILD SEXUAL ABUSE

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While an extensive body of research has documented the deleterious consequences of in-person child sexual abuse (CSA), there is a paucity of literature on the sequela of online child sexual abuse. With the sexual abuse of youth increasingly occurring online, it is crucial that more research attention is devoted to this issue to better meet the mental health needs of people who have experienced online CSA. To address this research gap, this study examined the following hypotheses: 1) Online child sexual abuse (image-based abuse, sexual solicitation, & commercial sexual activity) will positively and significantly relate to psychopathology symptoms in adulthood (PTSD, depression, SAD); 2) Online child sexual abuse will account for additional variation in psychopathology symptoms in adulthood above and beyond what is accounted for by in-person child sexual abuse; 3) Online child sexual abuse will account for additional variation in perceived powerlessness in adulthood above and beyond what is accounted for by in-person child sexual abuse; and 4) Being made the subject of child sexual abuse imagery (CSAI) will positively and significantly relate to SAD in adulthood, with perceived powerlessness having a significant moderating effect on this relationship. Data was collected from October 2023 to January 2024 at Western Carolina University. Adults (age 18 years or older) were recruited for

this online survey study via social media platforms. In-person child sexual abuse was assessed with the Maltreatment History and Impact Questionnaire (Solomon, 2023), while online CSA wase assessed with items our team developed and sampled from other child maltreatment studies. PTSD was assessed with the PTSD Checklist for the DSM-5 (Weathers et al., 2013). SAD was assessed with the Severity Measure for Social Anxiety Disorder (Craske et al., 2013). Depressive symptoms were assessed with the 9-item Patient Health Questionnaire (Kroenke et al., 2001). Powerlessness was assessed with a 3-item scale developed by Coffey et al. (1996). Data were analyzed using SPSS Version 29.0. Results supported hypotheses 1, 2, and 3. Implications for clinical practice and future directions for research are discussed.

CHAPTER ONE: LITEARTURE REVIEW

The years succeeding the start of the new millennium have been marked by incredible technological innovation, most notably the advent and rapid proliferation of handheld devices, social media platforms, and messaging apps (Caffo, 2020). Advances such as these in digital and communications technologies have transformed the lives of most of the world's inhabitants- particularly children and adolescents, a group for whom media and technology are now a central part of their daily lives from an increasingly young age (Keeley & Little, 2017; Rideout & Robb, 2020). While digitalization has brought with it many benefits, it has also engendered novel challenges. Specifically, the digital revolution has further complicated child maltreatment, particularly child sexual abuse (Lindenbach et al., 2021; United Nations Office on Drugs and Crime [UNODC], 2015).

Child sexual abuse (CSA) is the involvement of a child in sexual activity that they do not fully comprehend, are unable to give informed consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society (adapted from World Health Organization [WHO], 1999). Although numerous studies have observed a steady and significant decline in child sexual abuse rates from the early 1990s to 2022 (Finkelhor et al., 2024; Finkelhor & Jones, 2012), CSA remains a significant public health problem today (Longobardi et al., 2022), with an estimated 10.7% to 17.4% of girls and 3.8% to 4.6% of boys in the United States experiencing contact sexual abuse during their childhood (Townsend & Rheingold, 2013).

CSA is prevalent across all socioeconomic and ethnic groups (Finkelhor, 1993), and numerous factors are associated with an increased risk for victimization. Child-related factors

that may pose a risk for CSA victimization include having an intellectual (Horner-Johnson & Drum, 2006) or physical disability (Putnam, 2003; Westcott & Jones, 1999), being a girl (Fergusson et al., 1996; Finkelhor, 1993), using drugs or engaging in delinquent behavior (Assink et al., 2019), having a low level of social skills (Assink et al., 2019), and frequent use of the internet (Assink et al., 2019). Several environmental factors may also increase a child's risk for CSA victimization, such as intimate partner violence between the child's parents, parental substance abuse, growing up in a non-nuclear family, and parental psychiatric/mental/or physical problems (Assink et al., 2019).

Consequences of Child Sexual Abuse

The sequela of child sexual abuse is multifarious, encompassing both immediate and long-term physical, behavioral, and psychological effects that may persist through adulthood (Johnson, 2004). While research within this area of investigation has relied primarily on cross-sectional research methodologies, which preclude the ability to infer causal links, the aggregate of positive findings in the literature provides ample evidence to support the view that child sexual abuse is a significant risk to health and well-being across the lifespan (Briere, 1992).

Researchers across various disciplines, including psychology, biology, and endocrinology, have generated a wealth of data suggesting a link between CSA and negative physical health outcomes (De Bellis et al., 1994; Parker & Nemeroff, 2021). Health-related consequences of CSA may arise shortly following the abuse, including sexually transmitted infections (Hammerschlag, 1998; Rimsza & Niggemann, 1982), pregnancy (Rimsza & Niggemann, 1982), urinary tract infections (Reinhart & Adelman, 1989), and genital trauma (e.g., bruises, lacerations) (Modelli et al., 2012). Recent studies have also demonstrated that the pernicious effects of CSA on physical health can continue well into adulthood (Chartier et al., 2009). For

example, a systematic literature review by Irish et al. (2010) linked a history of CSA with higher rates of negative physical health symptoms in adulthood, particularly general health (e.g., negative perceptions of overall physical health), gynecologic (e.g., chronic pelvic pain), pain (e.g., headaches), and cardiopulmonary symptoms (e.g., irregular heartbeat). Having a history of CSA has also been found to increase an individual's risk of engaging in health risk behaviors. For example, in their 2009 study, Chartier and colleagues (2009) found that Ontario residents (N = 8,116) with a history of CSA were more likely to engage in health risk behaviors, such as smoking and alcohol abuse, compared to Ontario residents without a history of child sexual abuse. Taken together, the existing literature provides extensive support that CSA may adversely affect physical well-being across the lifespan.

In addition to adverse physical and behavioral consequences, a considerable amount of research has established a relationship between CSA and negative mental health outcomes (Bak-Klimek et al., 2013). While not all survivors of CSA will experience severe psychological distress (Bak-Klimek et al., 2013), having a history of CSA has been associated with an increased risk of developing concurrent and future psychopathologies (Cicchetti et al., 2010; Del Giudice et al., 2011; McLaughlin et al., 2010), including depression (Widom et al., 2007), anxiety disorders (Stein et al., 1996), and posttraumatic stress disorder (Ehring et al., 2014). Furthermore, there is some evidence for the relation between CSA characteristics and the severity of psychopathology symptoms in adulthood (Adams et al., 2018). For example, a study by Adams et al. (2018) found that the duration and severity of CSA was significantly related to psychopathology in a sample of late adolescents and emerging adults (N = 1,270), and the effect of these CSA characteristics on psychopathology differed between sexes. Specifically, duration

of CSA predicted PTSD symptoms in females but not males, and sexual abuse severity predicted fewer PTSD symptoms in males but not females (Adams et al., 2018).

The Internet and CSA

Advances in digital and communications technologies have further complicated child sexual abuse [Lindenbach et al., 2021; United Nations Office on Drugs and Crime (UNODC), 2015]. For instance, the advent and rapid proliferation of handheld devices, social media platforms, and messaging apps has enhanced offenders access to victims and to child sexual abuse material, making it possible for child sexual abuse to occur in the absence of physical contact between an offender and child (UNODC, 2015). In cases where child sexual abuse is occurring in-person, digitalization has supplied new means of engaging other offenders in the crime. For example, live streaming of CSA involves broadcasting acts of CSA to people anywhere in the world-typically offenders who pay to watch or "direct" the sexual abuse of children (ECPAT International & WeProtect Global Alliance, 2022). There are numerous types of online child sexual abuse, which can be divided into 3 broad categories: image-based abuse (e.g., child sexual abuse imagery), sexual solicitation (e.g., unwanted sexual questions), and commercial sexual exploitation.

Image-Based Abuse

The first category of online CSA, image-based abuse, primarily refers to situations involving the creation and/or distribution of sexually explicit videos or photos of someone younger than 18 years of age. However, it also includes situations in which someone under 18 years of age is exposed to sexually explicit photos or videos without their consent. 4 main types of image-based abuse include: 1) child sexual abuse imagery (CSAI), 2) sextortion, 3) revenge porn, and 4) unwanted exposure to sexual imagery.

Child sexual abuse imagery. United States federal law defines child pornography (the legal term for CSAI) as "any visual depiction of sexually explicit conduct involving a minor (someone under 18 years of age)" (Department of Justice, 2020). Child sexual abuse imagery is not a novel phenomenon (Westlake, 2020). The world's first photograph was taken in 1826, and the creation of child sexual exploitation material shortly followed (Westlake, 2020). For example, one of the earliest producers of child sexual exploitation material, Charles Dodgson (better known as Lewis Carroll), is believed to have produced pornographic images of girls as young as 6 during the 19th century (Bullough, 2004; Jenkins, 2001). Prior to the advent of the Internet, CSAI was expensive to obtain (e.g., domestic videos in the United States sold for around $50; Burgess, 1984) and difficult to share with others (e.g., offenders had to rely on physical exchanges or the U.S. postal service to distribute CSAI; Westlake, 2020). Furthermore, this imagery was primarily created by offenders with direct physical access to children (Jenkins, 2001; Wortley & Smallbone, 2012). Today, CSAI can be more easily and widely shared due to the advent of the Internet and other communication technologies, such as peer-to-peer file sharing, instant messaging, and social media (Gewirtz-Meydan et al., 2019; Jenkins, 2001; Westlake, 2020). Additionally, self-produced CSAI has become more common (Ericksen et al., 2014), with the majority of self-produced CSAI considered to be coercive and solicited by adults (Quayle et al., 2018). Due to changes such as these, it has been speculated that research focusing on the experiences of older CSAI survivors may not fully reflect the experiences of younger CSAI survivors (Gewirtz-Meydan et al., 2019).

There is growing support that a considerable amount of youth have experienced image-based online sexual abuse (Finkelhor et al., 2022). In a nationally representative survey study conducted by Finkelhor et al. (2022), young adults aged 18 to 28 years (N = 2,639) completed an

online questionnaire in which they were asked questions about childhood experiences of online and technology-facilitated CSA. During their childhood, 2.0% of participants experienced someone taking or making a sexual picture or video of them without their permission and 4.9% of the sample experienced someone sharing a sexual picture or video of them with others without their permission (Finkelhor et al., 2022). Furthermore, the prevalence rate of self-produced child sexual abuse imagery (i.e., providing images to perpetrators who shared them without permission, providing a self-produced image under pressure or force, and sharing self-produced images with adults or in commercial image transactions) was 7.2%.

Child protection agencies tasked with investigating online child sexual exploitation as well as researchers in this area have identified several factors related to an increased risk of being made the subject of CSAI. Recent reports from child protection organizations indicate that the majority of children depicted in CSAI are young children and tweens (e.g., 98% age 13 and under according to the Internet Watch Foundation [2021]; 87% age of 11 and under according to the Canadian Centre for Child Protection [2017]). These figures are consistent with a study by Gewirtz-Meydan et al. (2018) which found that in a sample of child pornography survivors (N = 133), 83% were 12 years old or younger when they were first photographed. Furthermore, 74% of participants reported that the CP images were part of long-term sexual abuse that lasted more than one year (Gewirtz-Meydan et al., 2018). There is also support that CSAI is likely to become increasingly violent and depict more sexually explicit acts as the age of the child in the imagery decreases (Canadian Centre for Child Protection, 2017).

In addition to age, gender is also related to the risk of experiencing CSAI victimization. Just as girls are more likely to experience CSA than boys (Townsend & Rheingold, 2013), the likelihood of being made the subject of CSAI is higher for girls. For example, Quayle and Jones

(2011) reported that the odds of sexualized child abuse images depicting females versus males were about 4 to 1. However, a report from the Internet Watch Foundation (2021) revealed that nearly all (97%) of CSAI identified by their agency in 2021 depicted girls, which may suggest that the gender discrepancy in CSAI victimization rates is widening. Although boys are less likely than girls to be the subject of CSAI, imagery involving the sexual abuse of boys is more likely to involve Category A sexual abuse (i.e., penetrative sexual activity, sexual activity with an animal or sadism; Sentencing Council, 2013) (Internet Watch Foundation, 2021).

Traditionally, the literature on CSAI has focused on offender-related concerns (e.g., likelihood of CSAI offending [Eke et al., 2019]) and views on the crime and its consequences from the perspective of professionals who play a part in confronting it (e.g., Martin, 2014; Martin & Alaggia, 2013) (Gewirtz- Meydan et al., 2018). More recent attention, however, has emphasized explorations about survivors' CSAI experiences from their own point of view (e.g., Gewirtz-Meydan et al., 2019). The majority of these studies have used open-ended responses to gain insights into the effects of CSAI, and none used a sample of survivors of CSA that did not involve the creation of CSAI (Gewirtz-Meydan et al., 2018; Lindenbach et al., 2022). Therefore, it is still unclear whether online child sexual exploitation, such as CSAI, differs from contact child sexual abuse in the traumatic effect it has on survivors (Lindenbach et al., 2022). However, there are numerous characteristics of CSAI that may exacerbate the trauma stemming from the original sexual abuse. First, unlike exclusively in-person child sexual abuse, there is not always a clear "end" to child sexual abuse that has been recorded or photographed. That is, CSAI is next to impossible to permanently destroy once it has been circulated online, which can contribute to the ongoing victimization of affected individuals (Binford, 2015; Martin, 2014). This sentiment was emphasized among adult survivors of CSAI in an online survey study conducted by the

Canadian Centre for Child Protection (2017). When asked to describe how the CSAI impacted them differently from the child sexual abuse itself, 67% of participants mentioned that the imagery is permanent and could potentially be distributed indefinitely, 35% of participants mentioned feeling powerless about the imagery depicting their abuse, and 22% pointed to the feeling of being abused "over and over". Further complicating this issue is the fact that CSAI can now be more easily and widely shared (Gewirtz-Meydan et al., 2019).

In addition to feelings of revictimization and powerlessness, CSAI may intensify feelings of shame and guilt stemming from the CSA (Canadian Centre for Child Protection, 2017; Ericksen et al., 2014). For example, in 2018, Gewirtz-Meydan and colleagues conducted an online survey study with a convenience sample of CSAI survivors (N = 133). The main and first major theme which emerged after thematically analyzing open-ended responses about the impact of and reaction towards the crime was guilt and shame. Some survivors noted these feelings in response to believing that others viewing the CSAI may believe they enjoyed the abuse or willingly participated (Gewirtz-Meydan et al., 2018). For others, feelings of guilt and shame were related to their desire at the time of the crime to become famous from the CSAI (e.g., "I thought the images were a big deal in a positive way, because they were going to make me a movie star…"; Gewirtz-Meydan et al., 2018).

Sextortion. A second type of image-based abuse, known as sexual coercion or "sextortion", occurs when someone uses pressure or threats to obtain the sexual cooperation of a person who is younger than 18 years old (Federal Bureau of Investigation, 2023; Gámez-Guadix & Incera, 2021). Sextortion typically involves an adult threatening to share sexually explicit videos or photographs of a child unless the child creates more sexual imagery, performs sexual acts on a webcam, or sends the offender money. The Federal Bureau of Investigation (FBI) has observed a

rise in sextortion cases targeting minors (FBI, 2023), and these cases tend to have "more minor victims per offender than all other child sexual exploitation offenses" (U.S. Department of Justice, 2016). For this reason, sextortion was described by the U.S. Department of Justice (2016) as "by far the most significantly growing threat to children." Similar to CSAI, there is a dearth of research on sextortion (Patchin & Hinduja, 2020).

Revenge porn. A third type of image-based abuse is revenge porn (also known as "non-consensual pornography"; Patchin & Hinduja, 2020). Revenge porn refers to distributing sexually explicit videos or photographs to intentionally harm the person depicted in the imagery (Citron & Franks, 2014). Although CSAI may also include the distribution of sexual imagery, revenge porn is distinct in that the sharing of sexual imagery is usually carried out to intentionally and publicly humiliate the victim (Citron & Franks, 2014; Patchin & Hinduja, 2020; Stroud, 2014). Likewise, revenge porn differs from sextortion in that- unless the threat of distribution is carried out- sextortion tends to be a private form of image-based abuse while revenge porn tends to be a public form of image-based abuse (Patchin & Hinduja, 2020). The first academic study to exclusively focus on mental health effects in revenge porn cases was conducted by Bates in 2017. In this study, 18 adult female revenge porn survivors were interviewed about the effects of revenge poor victimization. Many survivors reported experiencing psychological effects following the distribution of their imagery, specifically PTSD, anxiety, and depression (Bates, 2017). Some survivors also reported experiencing suicidal ideation. In addition to psychopathology, a subtheme that emerged after coding the interview responses was "loss of control". For example, one survivor expressed that the loss of control over the imagery was the most traumatic aspect of experiencing revenge porn victimization (Bates, 2017).

Unwanted exposure. The final type of image-based abuse involves someone intentionally exposing a person under the age of 18 to sexually explicit photographs or videos when they did not want to view this imagery. Examples of unwanted sexual imagery exposure include an adult sending an unsolicited picture of their genitals to a teenager on social media or an adult forcing a child to watch pornography. Most research examining the effects of sexual imagery exposure on children and adolescents is focused on teenagers who intentionally view pornography (e.g., Malamuth & Huppin, 2005). Therefore, less is known about the experiences of youth who are intentionally exposed to sexual imagery against their will by an adult or someone at least 5 years older than them. However, studies of children inadvertently exposed to Internet pornography may provide insight into consequences of this image-based abuse. While not all children and adolescents experience distress following accidental sexual imagery exposure (Flood, 2009), adverse emotional and psychological responses have been reported by some of these youth (Kaiser Family Foundation, 2001; Thornburgh & Lin, 2002). For example, 6% of 10- to 17-year-olds reported feeling distressed due to accidentally viewing a sexually explicit image (Thornburgh & Lin, 2002).

Unwanted Sexual Solicitation

The second category of online CSA, online sexual solicitation, refers to explicit sexual questions, sexual conversations, or requests to engage in sexual activities made to someone under the age of 18 by a peer or an adult (Baumgartner et al., 2010; Madigan et al., 2018). Examples of online sexual solicitation include asking a child sexual questions in a private chat room (Gámez-Guadix & Incera, 2021), making sexual comments on social media posts (Festl et al., 2019), or asking a teenager to livestream a sexual act (Koops et al., 2018). There is support that youth face a high risk of experiencing this type of online CSA, with a meta-analysis by

Madigan et al. (2018) finding that approximately one in nine youth have experienced online sexual solicitation.

Numerous demographic factors have been assessed in regard to their ability to predict the risk of experiencing online sexual solicitation. While some researchers have found that teenagers are more likely than young children to be the target of online sexual solicitation (Wolak et al., 2004), others have found that age does not significantly relate to the likelihood of experiencing this type of victimization (Madigan et al., 2018). Likewise, there are mixed results on how gender relates to the likelihood of sexual solicitation victimization, with some studies finding females to have a higher risk than males of being solicited online (Baumgartner et al., 2010; Mitchell et al., 2001) and other research finding males to have a higher risk than females (Madigan et al., 2018). There is support, however, that sexual orientation relates to the risk of experiencing this type of online CSA. For example, a study by Gámez-Guadix & Incera (2021) found that sexual minority youth (specifically, bisexual, gay, pansexual, asexual, or queer adolescents) were significantly more likely to experience unwanted sexual questions compared to heterosexual youth. In addition to demographic factors, other predictors of online sexual solicitation include a history of offline child maltreatment [specifically sexual abuse (Jonsson et al., 2019; Wright & Donnerstein, 2014) and physical abuse (Jonsson et al., 2019)] and depression (de Santisteban & Gámez-Guadix, 2018).

Similar to image-based sexual abuse, online sexual solicitation has received less research attention than other child welfare issues (Mitchell et al., 2001). However, a growing body of research has identified a relationship between online sexual solicitation and negative psychological outcomes. For example, a study by Festl et al. (2019) found that online sexual victimization experiences involving sexual solicitation were significantly associated with

increased depression and anxiety among a sample of 14- to 20-year-old German Internet users (*N* = 1,033). Furthermore, online sexual solicitation was found to exacerbate existing trauma-symptoms among female adolescents (*n* = 154) with a history of in-person child maltreatment (Maas et al., 2018). In addition to psychological concerns, online sexual solicitation is associated with emotional concerns. In a random sample of 10- to 17-year-old Internet users (*N* = 1,501), 19% had been the target of online sexual solicitation during the past year. Among those youth who had been targeted, 25% reported high levels of distress following the incident (Mitchell et al., 2001). Online sexual solicitation may also adversely affect emotional and psychological well-being by increasing loneliness and decreasing life satisfaction (Festl et al., 2019).

Online Commercial Sexual Exploitation

The final category of online child sexual abuse, online commercial sexual exploitation (OCSE), describes any online activity involving the sexual abuse or exploitation of a person younger than 18 years of age in exchange for something of value, such as money or drugs (Finkelhor et al., 2022; Office of Juvenile Justice & Delinquency Prevention, 2023). Youth may be involved in these activities voluntarily (e.g., a teenager selling nude pictures of themselves) or involuntarily (e.g., a child is forced to perform sexual acts on a livestream by an adult who benefits financially from the abuse). Little research attention has been devoted to this type of online victimization, so the long-term consequences of OCSE remain unclear.

Online CSA and Powerlessness

Taken together, online child sexual abuse such as image-based abuse, sexual solicitation, and commercial sexual exploitation represent "an issue that is proving exponentially complex as technology ceaselessly evolves at a faster rate than its consequences can be understood and addressed" (Caffo, 2021). The relationship between some forms of online CSA and various

mental health outcomes has started to receive more attention from researchers in recent years; however, less is known about factors that may strengthen or weaken these relationships. Across numerous qualitative studies, perceived powerlessness has emerged as a common stressor experienced by online sexual abuse survivors. For example, the Canadian Centre for Child Protection (2017) reported that many survivors of CSAI felt that the CSAI impacted them differently from the child sexual abuse itself because the CSAI created a unique sense of powerlessness. For example, the survivors noted that they were powerless to stop the circulation of CSAI or control who viewed the imagery. Similarly, in a study by Bates (2017), female revenge porn survivors noted that their inability to control their images, body, and agency was a particularly traumatic aspect of experiencing online sexual victimization. More research is needed to determine whether perceived powerlessness may moderate the relationship between CSAI and psychopathology in adulthood. In other words, it is unclear whether a victim's feelings of powerlessness about being made the subject of CSAI strengthens or weakens the relationship between CSAI and symptoms of social anxiety, PTSD, and depression in adulthood. Additionally, more research is needed to assess whether online child sexual exploitation accounts for additional variation in perceived powerlessness above and beyond what is accounted for by in-person CSA.

Online CSA and Social Anxiety Disorder

An area of research that has also received little attention to date is whether there is a relationship between online CSA and symptoms of social anxiety disorder in adulthood. This is despite the fact that self-reports from survivors have noted struggles with social difficulties following online CSA, such as feeling anxious in social situations (Bates, 2017; Canadian Centre for Child Protection, 2017), avoiding social situations (Canadian Centre for Child Protection,

2017; NCMEC, 2019), and feeling like they are being judged by others (Canadian Centre for Child Protection, 2017). For example, when a survivor of CSAI was asked to describe how the existence or distribution of child sexual abuse imagery impacts them differently from the hands-on abuse they experienced, they reported, “I often feel like a hunted animal. It’s very clear that this is due to the existence of photo imagery, because that is specifically what also makes the outside world very dangerous. In the past if someone said they knew me from somewhere, then I would completely lose it inside. I find it difficult to be somewhere where there’s lots of people. I believe everybody thinks I’m dirty (Canadian Centre for Child Protection, 2017).” Additionally, during a roundtable discussion of the impacts of surviving online CSA, a survivor reported, “I do not want to socialize; I’m scared to step out of the door (NCMEC, 2019).” Complicating treatment for symptoms of SAD among this group is that some of the worries among online CSA survivors which contribute to their social distress (e.g., being recognized or stalked by someone who viewed their CSAI) are plausible and not necessarily the result of cognitive distortions (Canadian Centre for Child Protection, 2017), which are often the focus of SAD treatment (Rodebaugh et al., 2004). Gaining more information on the relationship between online CSA and symptoms of SAD is crucial in helping mental health professionals better understand the unique needs of this population, which in turn may help clinicians tailor psychotherapeutic interventions to promote resilient outcomes among survivors.

CHAPTER 2: THE CURRENT STUDY

While an extensive body of research has documented the deleterious consequences of in-person child sexual abuse, there is a paucity of literature on the sequela of online child sexual abuse. In recent years, studies have emerged which suggest a relationship between certain types of online CSA and mental distress. For example, a study by Festl et al. (2019) found a relationship between online sexual solicitation and depression and anxiety. Additionally, Say et al. (2015) found a relationship between child sexual abuse with a digital component and PTSD and depressive disorder. However, in Say and colleagues (2015) study, CSA with a digital component was a broader concept than online CSA as it included cases of CSA that occurred exclusively in-person (e.g., a child was sexually abused in-person by someone who knew about their CSAI) along with various types of online CSA (e.g., CSAI creation, CSAI sharing, CSAI threatened sharing, and online sexual solicitation) in analyses. Additionally, this study did not examine other online victimization experiences- particularly self-produced CSAI (coercively produced or noncoercively produced; shared with permission or shared without permission), sexual imagery exposure (wanted exposure or unwanted exposure), threatened sharing of sexual messages, revenge porn, and online commercial sexual exploitation- or potential moderators of the observed relationship between online CSA and psychopathology. Lastly, the relationship between online CSA and social anxiety disorder has not been elucidated. Overall, it is unclear whether online child sexual abuse differs from in-person child sexual abuse in the traumatic effect it has on victims (Lindenbach et al., 2021). With the sexual abuse of youth increasingly occurring online (Canadian Centre for Child Protection, 2017; Internet Watch Foundation, 2021), it is crucial that more research attention is devoted to this issue to better meet the mental health

needs of people who have experienced online CSA. To address this research gap, the proposed study examined the following hypotheses:

Hypothesis I: Online child sexual abuse (image-based abuse, sexual solicitation, & commercial sexual activity) will positively and significantly relate to psychopathology symptoms in adulthood (PTSD, depression, SAD) To test this hypothesis, a series of Pearson correlations between online sexual abuse experiences will be conducted. The variables in these analyses are online CSA, PTSD, depression, and SAD.

Hypothesis II: Online child sexual abuse will account for additional variation in psychopathology symptoms in adulthood above and beyond what is accounted for by in-person child sexual abuse. To test this hypothesis, multiple hierarchical linear regressions predicting PTSD, depression, and SAD will be conducted. Step 1 of the hierarchical linear regression will include in-person child sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect and step 2 will include the addition of online child sexual abuse (the variable of interest). A significant change in R^2 from step 1 to step 2 is expected.

Hypothesis III: Online child sexual abuse will account for additional variation in perceived powerlessness in adulthood above and beyond what is accounted for by in-person child sexual abuse. To test this hypothesis, multiple hierarchical linear regressions predicting perceived powerlessness will be conducted. Step 1 of the hierarchical linear regression will include in-person child sexual abuse (the predictor variable being controlled for) and step 2 will include the addition of online child sexual abuse (the variable of interest). A significant change in R^2 from step 1 to step 2 is expected.

Hypothesis IV: Being made the subject of child sexual abuse imagery (CSAI) will positively and significantly relate to SAD in adulthood, with perceived powerlessness having a significant moderating effect on this relationship. This is possible given that people who were made the subject of CSAI have described feeling powerless to stop the continuous distribution of materials depicting their abuse and have noted experiencing distress when interacting with others due to fears that they may have viewed their CSAI (Binford, 2015; Martin & Alaggia, 2013). To test this hypothesis, a moderated multiple regression analysis will be conducted.

Method

Participants

This study was conducted from October 2023 to January 2024 at Western Carolina University. An a priori power analysis was conducted using G*Power version 3.1.9.6 (Faul et al., 2007) to estimate the minimum sample size required to test the study hypotheses. Results indicated the required sample size to achieve 95% power for detecting a medium effect at a significance criterion of $\alpha = .05$ was $N = 89$ for linear multiple regression. Therefore, the sample size needed for this study was 89 participants. To achieve a sufficient sample size, participant recruitment occurred via social media platforms, including "Reddit": a social media website where users share and discuss an array of content (e.g., images, videos, text-based posts) which is promoted by site members through voting. For the purposes of this study, participants were recruited from various subreddits (i.e., smaller communities within Reddit). Recruiting participants in this manner had the advantage of allowing for free and rapid data collection from large samples of a specific population (Shatz, 2017). If subreddits allowed survey recruitment links to be displayed on their subreddit, a link to participate in the proposed study was posted.

Inclusion criteria for participation in this study included being an adult (age 18 years or older) and passing the engagement check (described in more detail below).

459 people accessed the Qualtrics survey by January 2024. Of these people, 458 consented to participate. However, 16 people did not provide their age, 4 people reported being under the age of 18, and 1 person reported being 200 years old. This data was not included, which brought the sample size down to 437 people. 98 people did not meet the duration criteria, which brought our final sample size to 339 people. The majority of these participants were assigned female at birth and White. The ages of the sample ranged from 18 to 70 years of age, with a mean of 33.80 (SD = 11.89). See Table 1 for more information regarding the sample demographics.

Procedure

An online survey research design was employed. This consisted of the informed consent process for the study, a 112-item survey, and a mental health resources page. The online survey was expected to take less than 20 minutes and was administered online using the WCU-supported Qualtrics survey development software program. Administering the survey in this manner was suspected to reduce participant burden by allowing participants to complete assessments outside of a lab setting and at a time and place convenient to them. Furthermore, collecting data via Qualtrics allowed for data to be recorded automatically and electronically. This survey was anonymous.

Materials

Engagement Items

To determine if participants were attentive in the survey process, the total time spent taking the online questionnaire was examined. Participants needed to spend at least 224 seconds

(~ 2 seconds per item) taking the entire survey to be considered engaged. The data of participants who do not meet this engagement criteria was not included in the study.

Demographic/Background Information

Participants were asked to provide information about their gender, race/ethnicity, age, and sexual orientation. These items can be found in Appendix A.

Child Maltreatment

In-person child sexual abuse was assessed with the Maltreatment History and Impact Questionnaire (Solomon, 2023). This 25-item self-report measure examines emotional abuse, emotional neglect, physical neglect, physical abuse, sexual abuse, positive parenting, corporal punishment, and physical fight experiences between parents. Participants were asked to rate how often they experienced certain adverse or benevolent experiences before the age of 18 using a 4-point Likert scale ranging from "Never" (0) to "Often" (3). Participants were also asked to rate how often they are bothered by thoughts of their experiences as an adult using a 4-point Likert scale ranging from "Never" (0) to "Often" (3) (participants also had the option of selecting "N/A"); however, the current study only utilized the history questions. Sample items include, "A caregiver called me insulting names or swore at me" and "Someone older than me showed me their genitals." The Maltreatment History and Impact Questionnaire can be found in Appendix B. In this study, Cronbach's alpha for the 20 items used on the MHIQ was .90.

Online child sexual abuse was measured with 16 items which were either adapted from Finkelhor et al. (2022) or developed by this research team for this study (see). Participants were asked to indicate how often they experienced 12 different types of online child sexual abuse experiences before the age of 18, such as revenge porn or online sexual interactions with an older individual. Sample items include, "Someone took or made a sexual picture or video of you

experiencing unwanted penetration of your vagina or anus, or of you being forced to perform or receive other sexual acts, such as oral sex or sexual touching." and "Someone used the internet or a cell phone to ask you to do something sexual that you did not want to do." Responses were recorded on a 4-point Likert scale ranging from "Never" (0) to "Often" (3). The 16 items measuring online child sexual abuse can be found in Appendix C. In this study, Cronbach's alpha for the OCSA items was .93.

Psychological Symptomology

PTSD. Posttraumatic stress disorder (PTSD) was assessed with the 20-item PTSD Checklist for the DSM-5 (PCL-5; Weathers et al., 2013). This self-report measure examines the DSM-5 symptoms of PTSD by asking participants to rate how often they have been bothered by symptoms over the last month. Sample items include, "Repeated, disturbing, and unwanted memories of the stressful experience?" and "Blaming yourself or someone else for the stressful experience or what happened after it?". Responses were recorded on a 5-point Likert scale ranging from "Not at all" (0) to "Extremely" (4) and were summed to provide a total severity score ranging from 0-80. There are no empirically derived PTSD severity ranges for the PCL-5; however, current psychometric work supports a PCL-5 cutoff score ranging from 31-33 as indicative of probable PTSD diagnosis (Veterans Affairs, 2020). While examining the psychometric properties of the PCL-5 in a sample of trauma-exposed college students, PCL-5 scores demonstrated strong internal consistency ($\alpha = .94$), test-retest reliability ($r = .82$), and convergent (rs = .74 to .85) and discriminant (rs = .31 to .60) validity (Blevins et al., 2015). In this study, Cronbach's alpha for the PCL-5 was .95. The PCL-5 can be found in Appendix D.

SAD. Social anxiety disorder (SAD) was assessed with the APA's emerging dimensional measure of social anxiety, the Severity Measure for Social Anxiety Disorder (SAD-D; Craske et

al., 2013). This 10-item measure was designed to evaluate social anxiety symptoms on a dimensional level in clinical practice and research settings (LeBeau et al., 2012; LeBeau et al., 2016). Additionally, it is recognized as the only social anxiety scale that is based on DSM-5 criteria (Wong et al., 2016). The SAD-D examines DSM-5 symptoms of SAD by asking participants to rate how often they have had certain thoughts, feelings, and behaviors about social situations during the past week. Responses are recorded on a 5-point Likert scale ranging from "Never" (0) to "All of the time" (4). Sample items include, "Felt anxious, worried, or nervous about social situations" and "Felt a racing heart, sweaty, trouble breathing, faint, or shaky in social situations." Scores are summed and range from 0-40, with higher scores indicating greater severity of social anxiety symptoms. When Rice et al. (2021) examined the factor structure of the English-language version of the SAD-D in a non-clinical Australian sample (N = 999), the SAD-D demonstrated excellent internal consistency (α = .95). In this study, Cronbach's alpha for the SAD-D was .94. The SAD-D can be found in Appendix E.

Depression. Depressive symptoms were assessed with the 9-item Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001). This self-report measures assesses participants on each of the nine criteria on which the DSM-IV diagnosis of depressive disorders is based by asking them to rate how often they have been bothered by various problems over the last two weeks (Kroenke et al., 2001). Sample items include, "Little interest or pleasure in doing things" and "Feeling bad about yourself- or that you are a failure or have let yourself or your family down." Responses were recorded on a 4-point Likert scale ranging from "Not at all" (0) to "Nearly every day" (3). Responses were summed to get a score ranging from 0-27, with a score between 1-4 representing minimal depressive symptoms, 5-9 representing mild symptoms, 10-14 representing moderate symptoms, 15-19 moderately severe symptoms, and 20-24 severe

symptoms. The internal reliability of the PHQ-9 has been found to be excellent ($\alpha = 0.89$) in a study involving patients in primary care clinics (Kroenke et al., 2001). In this study, Cronbach's alpha for the PHQ-9 was .89. See Appendix F for these items.

Powerlessness

Powerlessness was assessed with a 3-item scale developed by Coffey et al. (1996). This scale was designed to evaluate the degree to which CSA survivors feel powerless about their child sexual abuse experiences now, from their adult perspective (Coffey et al., 1996). Sample items include, "How powerless do you feel about this experience?" and "How defenseless do you feel about this experience?" Responses were recorded on a 7-point Likert scale from "Not at all" (1) to "Very much so" (7). In the current study, these items were only administered to participants who reported a history of child maltreatment. For participants who did not report these experiences, scores of "0" were entered into SPSS so the hypotheses could be tested. The powerlessness scale demonstrated strong internal consistency ($\alpha = .94$) in a study of adult women with a history of child sexual abuse ($N = 192$) (Coffey et al., 1996). In the current study, Cronbach's alpha for these powerlessness items was .98. Coffey and colleagues (1996) Powerlessness scale can be found in Appendix G.

Results

While cleaning the data, missing variables were observed in the data set. However, the data observed to be missing among each measure was low. Therefore, it was concluded that the missing values are not related to any specific values or variables and were missing at random. Given that our study had a large sample size and sufficient power, the missing data is not believed to be skewing the results or acting as a confounding variable. To deal with missing data, complete case analysis (i.e., listwise case exclusion) was used.

Descriptive Statistics

Descriptive statistics for all study variables are reported in Table 1. When looking at measures of psychopathology, the mean PCL-5 score among this sample was 42.09 (SD = 19.24), the mean PHQ-9 score was 13.91 (SD = 6.95), and the mean SAD-D score was 20.24 (SD = 10.41). When looking at child maltreatment, emotional neglect had the highest mean at 8.98 (SD = 3.12) while in-person sexual abuse had the lowest mean at 3.05 (SD = 3.49). See Table 1 and 2 for more information about these descriptive statistics.

Table 1

Demographic Variables

Variable	*n*	*%*
Sex Assigned at Birth		
Female	288	85
Male	51	15
Gender		
Man	63	18.6
Woman	236	69.6
Trans/Transgender	21	6.2
Gender Queer	10	2.9
Gender Non-Conforming	9	2.7
Gender Fluid	6	1.8
Gender Non-Binary	23	6.8
Gender Expansive	2	0.6
Open Option	7	2.1
Sexual Orientation		
Straight/Heterosexual	155	45.7
Lesbian	21	6.2
Gay	12	3.5
Bisexual	62	18.3
Pansexual	27	8.0
Asexual	22	6.5
Queer	22	6.5
Questioning	11	3.2
Open Option	7	2.1
Ethnicity		
Black or African American	11	3.0
Hispanic, Latino/a or Spanish origin	20	6.0
White	296	87.0
Asian	25	7.0
American Indian or Indigenous or Alaska Native	5	1.0
Middle Eastern or North African	6	2.0
Native Hawaiian or Other Pacific Islander	1	< 1.0
Open Option	16	5.0
Multiracial	38	11.0

Table 2

Descriptive Statistics of Child Maltreatment Variables

Variable	Possible range	*M*	*SD*	#	%
Child Maltreatment Positive Screen					
Emotional abuse				318	93.8
Emotional neglect				330	97.3
Physical abuse				258	76.1
Physical neglect				252	74.3
In-person sexual abuse				220	64.9
Online sexual abuse				201	59.3
Child Maltreatment Total Score					
Emotional abuse	0 - 12	6.46	3.33		
Emotional neglect	0 - 12	8.98	3.12		
Physical abuse	0 - 12	3.52	3.16		
Physical neglect	0 - 12	3.21	2.99		
In-person sexual abuse	0 - 12	3.05	3.49		
Online sexual abuse	0 - 44	6.09	8.63		

Hypothesis I

To address the first hypothesis ("Online child sexual abuse [image-based abuse, sexual solicitation, & commercial sexual activity] will positively and significantly relate to psychopathology symptoms in adulthood [PTSD, depression, SAD]"), a series of Pearson correlations were conducted. There was a moderate relationship between online CSA and PTSD

symptoms, $r = .37$, $N = 292$, $p < .001$, with online CSA experiences associated with higher levels of PTSD symptoms. There was also a moderate positive correlation between online CSA and MDD symptoms ($r = .28$, $N = 292$, $p < .001$) and online CSA and SAD symptoms ($r = .33$, $N = 292$, $p < .001$). Results from these analyses are provided in Table 3. Thus, hypothesis I was supported.

Table 3

Pearson Product-Moment Correlations Between Psychopathology and Online Child Sexual Abuse

Scale	1	2	3	4
1. Online CSA	-			
2. PTSD	.37**	-		
3. MDD	.28**	.74**	-	
4. SAD	.33**	.68**	.59**	-

Hypothesis II

To address hypothesis II ("Online child sexual abuse will account for additional variation in psychopathology symptoms in adulthood above and beyond what is accounted for by in-person child sexual abuse."), multiple hierarchical linear regressions predicting PTSD, MDD, and SAD were conducted.

Hierarchical multiple regression was used to assess the ability of online child sexual abuse to predict levels of PTSD symptoms after controlling for the influence of in-person child maltreatment. In-person child sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect were entered at Step 1, explaining 35% of the variance in PTSD symptoms. After entry of online child sexual abuse at Step 2, the total variance explained by the model as a whole was 37%, $F(6, 283) = 28.17$, $p < .001$. Online child sexual abuse explained an additional 2.3% of the variance in PTSD symptoms after controlling for in-person child

maltreatment, *R* square change = .023, *F* change (1, 283) = 11.61, *p* = .001. In the final model, the effect size of online child sexual abuse was .18. See Table 4 for the results of this analysis.

Hierarchical multiple regression was also used to assess the ability of online child sexual abuse to predict levels of MDD symptoms after controlling for the influence of in-person child maltreatment. In-person child sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect were entered at Step 1, explaining 23% of the variance in MDD symptoms. After entry of online child sexual abuse at Step 2, the total variance explained by the model as a whole was 25%, $F(6, 306) = 16.61$, $p < .001$. Online child sexual abuse explained an additional 1.8% of the variance in MDD symptoms after controlling for in-person child maltreatment, *R* square change = .018, *F* change (1, 306) = 7.20, $p = .008$. In the final model, the effect size of online child sexual abuse was .15. See Table 5 for the results of this analysis.

When hierarchical multiple regression was used to assess the ability of online child sexual abuse to predict levels of SAD symptoms after controlling for the influence of in-person child maltreatment, in-person child sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect were entered at Step 1, explaining 19% of the variance in SAD symptoms. After entry of online child sexual abuse at Step 2, the total variance explained by the model as a whole was 23%, $F(6, 300) = 14.66$, $p < .001$. Online child sexual abuse explained an additional 3.4% of the variance in SAD symptoms after controlling for in-person child maltreatment, *R* square change = .034, *F* change (1, 300) = 13.07, $p < .001$. In the final model, the effect size of online child sexual abuse was .21. See Table 6 for the results of this analysis. Taken together, hypothesis II was supported.

Table 4

Regression Analysis Predicting PTSD Symptoms from Child Maltreatment Experiences

Predictor	*B*	*SE*	β	*t*	*p*	r_{sp}	*M*	*SD*
Step 1								
In-person sexual abuse	1.32	.30	.23	4.40	<.001	.21		
Physical abuse	-1.02	.38	-.17	-2.71	.007	-.13		
Physical neglect	.67	.39	.11	1.73	.09	.08		
Emotional abuse	2.34	.43	.40	5.41	<.001	.26		
Emotional neglect	.91	.39	.15	2.34	.02	.11		
Step 2								
In-person sexual abuse	1.01	.31	.18	3.28	.001	.15	3.01	3.40
Physical abuse	-1.00	.37	-.17	-2.71	.007	-.13	3.64	3.21
Physical neglect	.37	.39	.06	.94	.35	.04	3.30	3.02
Emotional abuse	2.32	.43	.40	5.46	<.001	.26	6.55	3.33
Emotional neglect	.90	.38	.15	2.35	.02	.11	9.00	3.17
Online sexual abuse	.38	.12	.18	3.25	.001	.15	6.26	8.81

Note. Effect size r_{sp} is the semi-partial Pearson correlation. In Step 1, R-square was .35 and R-square change was .35. In Step 2, R-square was .37 and R-square change was .02.

Table 5

Regression Analysis Predicting MDD Symptoms from Child Maltreatment Experiences

Predictor	*B*	*SE*	β	*t*	*p*	r_{sp}	*M*	*SD*
Step 1								
In-person sexual abuse	.34	.11	.17	3.05	.003	.15		
Physical abuse	-.27	.15	-.12	-1.87	.06	-.09		
Physical neglect	.22	.15	.09	1.47	.14	.07		
Emotional abuse	.62	.17	.29	3.77	<.001	.19		
Emotional neglect	.35	.15	.16	2.36	.02	.12		
Step 2								
In-person sexual abuse	.25	.12	.12	2.16	.03	.11	2.99	3.43
Physical abuse	-.27	.14	-.12	-1.87	.06	-.09	3.54	3.18
Physical neglect	.11	.15	.05	.73	.47	.04	3.27	3.00
Emotional abuse	.62	.16	.29	3.80	<.001	.19	6.52	3.31
Emotional neglect	.35	.15	.16	2.39	.02	.12	9.01	3.14
Online sexual abuse	.12	.05	.15	2.68	.008	.13	6.12	8.65

Note. Effect size r_{sp} is the semi-partial Pearson correlation. In Step 1, R-square was .23 and R-square change was .23. In Step 2, R-square was .25 and R-square change was .02.

Table 6

Regression Analysis Predicting SAD Symptoms from Child Maltreatment Experiences

Predictor	*B*	*SE*	β	*t*	*p*	r_{sp}	*M*	*SD*
Step 1								
In-person sexual abuse	.27	.17	.09	1.58	.12	.08		
Physical abuse	-.40	.22	-.12	-1.79	.07	-.09		
Physical neglect	.59	.23	.17	2.60	.01	.13		
Emotional abuse	.93	.25	.31	3.68	<.001	.19		
Emotional neglect	.25	.23	.08	1.10	.27	.06		
Step 2								
In-person sexual abuse	.09	.18	.03	.49	.63	.02	2.98	3.41
Physical abuse	-.39	.22	-.12	-1.82	.07	-.09	3.56	3.19
Physical neglect	.38	.23	.11	1.66	.10	.08	3.28	3.01
Emotional abuse	.93	.25	.30	3.74	<.001	.19	6.53	3.33
Emotional neglect	.25	.22	.08	1.11	.27	.06	9.02	3.15
Online sexual abuse	.25	.07	.21	3.62	<.001	.18	6.14	8.69

Note. Effect size r_{sp} is the semi-partial Pearson correlation. In Step 1, R-square was .19 and R-square change was .19. In Step 2, R-square was .23 and R-square change was .03.

Hypothesis III

To test hypothesis III ("Online child sexual abuse will account for additional variation in perceived powerlessness in adulthood above and beyond what is accounted for by in-person child sexual abuse."), a multiple hierarchical linear regression predicting perceived powerlessness was conducted. To check for multicollinearity, the relationship between in-person child sexual abuse and online child sexual abuse was examined prior to running this analysis. There was a moderate positive correlation between in-person and online sexual abuse, $r = .41$, $N = 213$, $p = .00$. In-person child sexual abuse was entered at Step 1, explaining 12% of the variance in perceived powerlessness. After entry of online child sexual abuse at Step 2, the total variance explained by the model as a whole was 52%, $F(2, 311) = 165.25$, $p < .001$. Online child sexual abuse explained an additional 40% of the variance in perceived powerlessness after controlling for in-person child maltreatment, *R* square change = .40, *F* change (1, 311) = 254.21, $p < .001$. In the final model, the effect size of online child sexual abuse was .67. See Table 7 for the results of this analysis. Thus, hypothesis III was supported.

Table 7

Regression Analysis Predicting Powerlessness from Child Maltreatment Experiences

Predictor	*B*	*SE*	β	*t*	*p*	r_{sp}	*M*	*SD*
Step 1								
In-person sexual abuse	.50	.08	.35	6.49	<.001	.35	2.99	3.42
Step 2								
In-person sexual abuse	.11	.06	.07	1.69	.09	.07		
Online sexual abuse	.39	.03	.69	15.94	<.001	.63	6.11	8.64

Note. Effect size r_{sp} is the semi-partial Pearson correlation. In Step 1, R-square was .12 and R-square change was .12. In Step 2, R-square was .52 and R-square change was .40.

Hypothesis IV

To address hypothesis IV, ("Being made the subject of child sexual abuse imagery (CSAI) will positively and significantly relate to SAD in adulthood, with perceived powerlessness having a significant moderating effect on this relationship."), a moderated multiple regression analysis was planned. Before completing the moderated multiple regression analysis, an interaction term was created and assessed for significance using hierarchical linear regression. SAD was regressed onto CSAI, perceived powerlessness, and the interaction between CSAI and perceived powerlessness (see Table). Below, semi-partial Pearson's *r* (r_{sp}) are reported as a measure of effect size for coefficients (Dudgeon, 2016). CSAI and perceived powerlessness were entered in the first step of the model and the interaction term was entered into the second step. The first step of the model accounted for 12.4% of the variance, $R^2 = .124$, $F(2, 306) = 21.58$, $p < .001$. In this first step, CSAI was not significantly associated with SAD, $B = .28$, $SE = .18$, b = .10, $t(306) = 1.52$, $p = .13$, 95% CI [-.08, .63], $r_{sp} = .08$. However, perceived powerlessness was positively and significantly associated with SAD, $B = .61$, $SE = .14$, b = .29,

$t(306) = 4.36$, $p < .001$, 95% CI [.33, .88], $r_{sp} = .23$. Adding the interaction term to the second step of the model did not account for additional variance, $\Delta R^2 = .00$, $B = .04$, $SE = .04$, b = .18, $t(305) = 1.05$, $p = .29$, 95% CI [-.03, .11], $r_{sp} = .06$. Because the interaction term in the second step of the model was not significant, a PROCESS macro could not be carried out. See Table 8 for the results of this analysis. Thus, hypothesis IV was not supported.

Table 8

Regression Analysis Predicting SAD from CSAI

Predictor	*B*	*SE*	β	*t*	*p*	r_{sp}	*M*	*SD*
Step 1								
CSAI	.28	.18	.10	1.52	.13	.08	1.76	3.73
Powerlessness	.61	.14	.29	4.36	<. 001	.23	4.56	4.91
Step 2								
CSAI	-.15	.44	-.05	-.34	.74	-.02	1.76	3.73
Powerlessness	.56	.15	.26	3.83	< .001	.21	4.56	4.91
CSAI x Powerlessness	.04	.04	.18	1.05	.29	.06	17.74	45.15

Note. Effect size r_{sp} is the semi-partial Pearson correlation. In Step 1, R-square was .12 and R-square change was .12. In Step 2, R-square was .13 and R-square change was .003.

Discussion

While the digital revolution has brought about many benefits that have enhanced the lives of most of the world's inhabitants, it has also further complicated efforts to combat child sexual abuse (Lindenbach et al., 2021; United Nations Office on Drugs and Crime [UNODC], 2015). Most notably, it has engendered novel means of abusing a child via the internet or cellphone, which can be divided into 3 broad categories: image-based abuse (e.g., child sexual abuse imagery), sexual solicitation (e.g., unwanted sexual questions), and commercial sexual exploitation. Given that media and technology are now a central part of children's lives from an increasingly young age (Keeley & Little, 2017; Rideout & Robb, 2020)- and the sexual exploitation of youth is increasingly occurring online (Canadian Centre for Child Protection, 2017; Internet Watch Foundation, 2021)- it is crucial for researchers to devote attention to this issue to better serve the mental health needs of online child sexual abuse survivors. This is especially important since studies have emerged which suggest a relationship between certain types of online CSA and mental distress (e.g., online sexual solicitation and depression and anxiety; Festl et al., 2019). However, the relationship between other types of online child sexual abuse (e.g., sexually imagery exposure, revenge porn, online commercial sexual exploitation) and psychopathology in adulthood (e.g., SAD) has not been investigated. For this reason, it is unclear whether online child sexual abuse differs from in-person child sexual abuse in the traumatic effect it has on victims (Lindenbach et al., 2021). To address this research gap, the current study assessed the relationship between various types of online CSA and psychopathology (PTSD, MDD, and SAD) in adulthood using Pearson correlations and hierarchical linear regressions. Using social media recruitment, a final sample size of 339 adults was achieved. The sample was

primarily White and assigned female at birth. Additionally, a little over 50% of the sample reported a sexual orientation that falls within the LGBTQ+ community (e.g., gay, lesbian).

In order to be included in the analyses, participants must have spent at least 224 seconds (~ 2 seconds per item) taking the survey; however, engagement items were not utilized (e.g., "Do your best to select "Yes" to this question.") in the survey. Because participants were not required to take the survey and did not have an incentive to participate (e.g., a gift card raffle, course credit), it is unlikely that participants completed this survey while not engaging with items. While cleaning the data, missing variables were observed in the data set. However, the data observed to be missing among each measure was low. Therefore, it was concluded that the missing values were not related to any specific values or variables and were missing at random. Given that the study had a large sample size and sufficient power, the missing data is not believed to be skewing the results or acting as a confounding variable.

The sample reported a fairly high rate of psychopathology symptoms. The average PCL-5 score in this study was 42.09, which falls well above the suggested cut-off score of 31-35 that is indicative of probable PTSD diagnosis (Veterans Affairs, 2020). Furthermore, the mean PHQ-9 score was 13.91, which falls in the Moderate severity range for depressive symptoms (Kroenke et al., 2001). Lastly, the mean SAD-D score was 20.24 out of a score range of 0-40. One possible explanation for the high rate of psychopathology symptoms observed among the sample is that participants felt comfortable disclosing their distress on an online questionnaire where their responses would be anonymous. This explanation is supported by research indicating that when a human interviewer is gathering information for research, participants tend to give answers that portray themselves in a positive light, while participants who complete online surveys tend to be more willing to share sensitive or negative details about their personal lives (Keeter, 2015).

Given that rates of child maltreatment experienced by participants in this study were high, it is also possible the high rates of psychopathology observed in this study are related to these adverse experiences. This explanation is supported by numerous studies identifying a relationship between child maltreatment and adverse mental health outcomes in adulthood (e.g., Bak-Klimek et al., 2013).

In line with hypothesis I, online child sexual abuse (image-based abuse, sexual solicitation, & commercial sexual activity) positively and significantly related to psychopathology symptoms in adulthood (PTSD, depression, SAD) when tested with a series of Pearson correlations. This finding is consistent with a previous study by Festl et al. (2019) which found a relationship between online sexual solicitation and depression and anxiety among a sample of German Internet users between 14-20 years of age. However, to the best of the current researchers' knowledge, this is the first study to investigate the relationship between online CSA and symptoms of social anxiety disorder in adulthood. Survivors of online CSA (particularly survivors of CSAI) have reported social difficulties following their abuse (e.g., "I do not want to socialize; I'm scared to step out of the door."; NCMEC, 2019). Consistent with online CSA survivor reports of social difficulties following their abuse, the present study identified a positive and significant relationship between online CSA and SAD in adulthood.

To the current researchers' knowledge, this was also the first study to demonstrate that online CSA accounted for additional variation in psychopathology symptoms in adulthood above and beyond what was accounted for by in-person CSA. When online CSA was added to the second step of several hierarchical linear regressions predicting PTSD, MDD, and SAD in adulthood, online CSA emerged as the second strongest significant predictor of psychopathology symptoms out of all child maltreatment experiences in two out of the three analyses.

Interestingly, emotional abuse was the strongest significant predictor of adult psychopathology symptoms in all three analyses. While previous research has not examined the predictive strength of emotional abuse compared to online CSA, the present study's findings are consistent with a study by Cecil et al. (2017) which found that emotional abuse was the main independent predictor of psychiatric symptomatology over and above other maltreatment types in a sample of high-risk youth. This study's findings may be explained by the unique nature of online CSA and emotional abuse. Specifically, compared to other types of child maltreatment, online CSA and emotional abuse are unique in that they are able to occur even in the absence of physical contact between an offender and child. For example, online CSA can occur when CSAI circulates on social media and emotional abuse can occur over the phone.

In addition to looking at the relationship between online CSA and psychopathology symptoms, this study examined the relationship between online CSA and perceptions of powerlessness since this variable has emerged as a common stressor experienced by online CSA survivors across numerous qualitative studies (e.g., Bates, 2017; Canadian Centre for Child Protection, 2017). Consistent with hypothesis III, online CSA explained additional variation in perceived powerlessness in adulthood above and beyond what is accounted for by in-person CSA. To the current researchers' knowledge, this is the first study to identify a relationship between online CSA and perceived powerlessness.

The present study was also interested in learning more about factors that may strengthen or weaken the relationship between online CSA adverse mental health outcomes. For this reason, this study investigated whether being made the subject of CSAI positively and significantly related to SAD in adulthood, with perceived powerlessness having a significant moderating effect on this relationship. It was expected that this relationship would be identified since people who

were made the subject of CSAI have described feeling powerless to stop the continuous distribution of materials depicting their abuse and have noted experiencing distress when interacting with others due to fears that they may have viewed their CSAI (Binford, 2015; Martin & Alaggia, 2013). However, this hypothesis was not supported in the present study. It is possible that this hypothesis was not significant because certain types of CSAI may be stronger predictors of psychopathology and more susceptible to the moderating effect of perceived powerlessness than others.

Limitations

When discussing the results of this study, some limitations should be noted. First, the ability to infer causality between child maltreatment experiences and psychopathology symptoms and perceived powerlessness in adulthood is limited due to the cross-sectional design of this study. Second, with 87% of the sample consisting of White adults, the sample was not racially or ethnically diverse. Additionally, with 85% of the sample consisting of adults who were assigned female at birth, diversity related to sex assigned at birth was also lacking in this study. Next, the sample consisted of adults 18 years of age and older. Because technology has advanced so rapidly in recent years, the results may not generalize to younger samples who have likely had different experiences with technology. Lastly, the powerlessness items in this study were only useful for people who had experienced maltreatment, which limits the interpretability of the present study's findings.

To address these limitations, future research should utilize a more diverse, younger sample to evaluate these research questions. In this study, online CSA included three different categories of abusive events. Future research should examine whether certain types of online CSA (e.g., sextortion) are stronger predictors of psychopathology in adulthood than other types

of online CSA. The current study did not examine whether demographic variables (e.g., gender, sexual orientation, race) significantly related to online CSA, so future research may also consider investigating the relationship between online CSA and demographic variables. Future research should also use a powerlessness scale that is appropriate for all participants regardless of their child maltreatment history.

Clinical Implications

The present study's findings may have important implications for clinical practice. First, when mental health providers and other professionals (e.g., doctors, forensic interviewers) are screening individuals for a history of trauma, it is imperative to inquire about online child sexual abuse experiences in addition to other forms of maltreatment. Given that a positive significant relationship was identified between online CSA and psychopathology symptoms in adulthood, clinicians working with online CSA survivors should consider evaluating clients for symptoms of PTSD, MDD, and SAD and utilize evidence-based, trauma-informed treatments to alleviate distress. Additionally, online CSA accounted for additional variation in psychopathology symptoms in adulthood above and beyond what was accounted for by in-person CSA. Therefore, mental health professionals working with survivors of online CSA should educate themselves on the unique aspects of online CSA that differ from other forms of child maltreatment and may contribute to mental distress (e.g., the ongoing nature of the trauma, legal issues). Doing so may help clinicians better tailor intervention services to meet the needs of survivors. Intervention services designed for online CSA survivors should also take into consideration how professionals can empower survivors. For example, clinicians working with survivors of online CSA should include a focus on helping clients regain a sense of power and control over their future during the course of treatment. At the most basic level, clinicians may achieve this goal by involving clients

in shared decision making about treatment goals and planning. Law enforcement, victim advocates, and other professionals working closely with survivors of online CSA should also consider ways in which they can enhance survivors' feelings of power and control (e.g., educating survivors about free services that can help remove or stop online sharing of CSAI, such as "Take It Down").

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Appendix A: Demographic Questions

Please complete the following information about yourself:

What is your age?

Ethnicity (choose all that apply):

_____ Black or African American

_____ Hispanic, Latino/a, or Spanish origin

_____ White

_____ Asian

_____ American Indian or Indigenous or Alaska Native

_____ Middle Eastern or North African

_____ Native Hawaiian or Other Pacific Islander

_____ Open Option: _____

Please indicate your highest attained level of education obtained:

_____ Less than a High School Diploma

_____ High School Diploma or GED equivalent

_____ Associates Degree or Certification (Technical College)

_____ Bachelor's degree

_____ Master's or Other Professional Degree

_____ Doctorate degree

What was the sex you were assigned at birth (previously referred to “biological sex”)

_____ Male
_____ Female

_____ Intersex

What is your gender identity - with which of these do most you identify?

_____ Man

_____ Woman

_____ Trans/Transgender

_____ Gender Queer

_____ Gender Non-Conforming

_____ Gender Fluid

_____ Gender Non-Binary

_____ Gender Expansive

_____ Open Option:_____

How would you identify your sexual orientation? With which one of these do you most identify?

_____ Straight / Heterosexual

_____ Lesbian

_____ Gay

_____ Bisexual

_____ Pansexual

_____ Asexual

_____ Queer

_____ Questioning

_____ Open Option: _____

Appendix B: MHIQ

Maltreatment History and Impact Questionnaire

Below is a list of experiences that some people have while growing up. For each item, please indicate how often you had that experience before the age of 18 on a scale from 0 (Never) to 3 (Often). If you had that experience, also indicate how often you are bothered by thoughts of that experience currently as an adult. Some items ask about caregivers, who could be a parent, stepparent, grandparent, or other significant person who took care of you growing up. The complete rating scale is below.

0 - Never

1 - Rarely

2 - Sometimes

3 – Often

	How often did this happen to you before the age of 18?				How often are you bothered by thoughts of this as an adult?				
1. A caregiver called me insulting names or swore at me.	0	1	2	3	NA	0	1	2	3
2. A caregiver told me that I had done a good job.	0	1	2	3	NA	0	1	2	3
3. I felt unloved by a caregiver.	0	1	2	3	NA	0	1	2	3
4. A caregiver did something to make me feel afraid of them.	0	1	2	3	NA	0	1	2	3
5.A caregiver put me in time out.	0	1	2	3	NA	0	1	2	3
6. A caregiver slapped or punched me.	0	1	2	3	NA	0	1	2	3
7. I didn't feel supported by a caregiver.	0	1	2	3	NA	0	1	2	3
8. A caregiver threatened to hurt me, but didn't do it.	0	1	2	3	NA	0	1	2	3
9. A caregiver didn't give me enough food to eat.	0	1	2	3	NA	0	1	2	3
10. A caregiver gave me a reward for good behavior.	0	1	2	3	NA	0	1	2	3
11. I had to wear dirty clothes to school.	0	1	2	3	NA	0	1	2	3
12. Someone made me have oral sex with them.	0	1	2	3	NA	0	1	2	3
13. A caregiver spanked me so hard it left a mark such as a bruise or welt.	0	1	2	3	NA	0	1	2	3
14. I felt like a caregiver didn't want me around.	0	1	2	3	NA	0	1	2	3

Maltreatment History and Impact Questionnaire

15. A caregiver said that they hated me.	0	1	2	3	NA	0	1	2	3
16. A caregiver burned me on purpose.	0	1	2	3	NA	0	1	2	3
17. Someone older than me touched my private parts.	0	1	2	3	NA	0	1	2	3
18. A caregiver did not take care of my needs because they were drinking or doing drugs.	0	1	2	3	NA	0	1	2	3
19. Someone older than me showed me their genitals.	0	1	2	3	NA	0	1	2	3
20. I didn't feel like a part of my family.	0	1	2	3	NA	0	1	2	3
21. A caregiver spanked me, but it did not leave a mark.	0	1	2	3	NA	0	1	2	3
22. A caregiver hit me with something other than a belt or switch.	0	1	2	3	NA	0	1	2	3
23. Someone put their penis or another object inside my vagina or butt when I didn't want them to.	0	1	2	3	NA	0	1	2	3
24. I was sick, but nobody took me to the doctor or gave me medicine.	0	1	2	3	NA	0	1	2	3
25. I saw my caregivers physically fighting with each other.	0	1	2	3	NA	0	1	2	3

Key:

Emotional Abuse: 1, 4, 8, 15

Emotional Neglect: 3 7 14 20

Physical Neglect: 9 11 18 24

Physical Abuse: 6 13 16 22

Sexual Abuse: 12 17 19 23

Positive Parenting: 2 5? 10

Corporal Punishment: 21

Parents Physical Fight: 25

Appendix C

ONLINE CSA ITEMS

Below is a list of experiences that some people have while growing up. For each item, please indicate how often you had that experience before the age of 18 on a scale from 0 (Never) to 3 (Often). If you had that experience, also indicate how often you are bothered by thoughts of that experience currently as an adult. The complete rating scale is below.

0 - Never
1 - Rarely
2 - Sometimes
3 – Often

		How often did this happen to you before the age of 18?
Nonconsensual Image Misuse	1. Someone shared with other people a sexual picture or video of you without your permission.	0 1 2 3
Revenge Porn	2. Someone intentionally shared with other people a sexual picture or video of you without your permission to intentionally cause you harm.	0 1 2 3
Nonconsensual Image Taking	3. Someone took or made a sexual picture or video of you without your permission. 4. Someone took or made a sexual picture or video of you while you were	0 1 2 3

	incapacitated due to drugs or alcohol. 5.Someone took or made a sexual picture or video of you experiencing unwanted penetration of your vagina or anus, or of you being forced to perform or receive other sexual acts, such as oral sex or sexual touching.				
Forced Image Recruitment	6.Someone threatened, tried to force you, or strongly pressured you to provide sexual pictures or videos online or through a cell phone.	0	1	2	3
Threatened Sharing of Sexual Imagery	7.Someone threatened to share a sexual picture or video of you to get you to do something- like take or send other sexual pictures of yourself, have a sexual relationship with them, pay them money, or something else.	0	1	2	3
Threatened Sharing of Sexual Messages	8.Someone threatened to share with others sexually explicit messages (e.g,. texts) that you wrote.	0	1	2	3
Unwanted Sexual Talk	9.Someone used the internet or a cellphone to try to get you to talk about sex when you did not want to.	0	1	2	3
Unwanted Sexual Questions	10.Someone used the internet or a cell phone to ask you for sexual information about yourself when you did not want to answer those questions. This means very personal questions, like what your body looks like or sexual things you have done.	0	1	2	3

Unwanted Sexual Acts Requests	11.Someone used the internet or a cell phone to ask you to do something sexual that you did not want to do.	0	1	2	3
Exposure to Sexual Imagery	12.Someone used the internet or a cell phone to show you sexual pictures or videos.	0	1	2	3
Older Partner	13.You had intimate sexual conversations (online or through a cell phone) with a person who was 5 or more years older than you. 14.You shared sexual pictures or videos of yourself (online or through a cell phone) with a person who was 5 or more years older than you.	0	1	2	3
Commercial Talk, Images, or Other Sexual Activity	15.You engaged in sexual talk over the internet or cellphone in exchange for money, drugs, or other valuable items.	0	1	2	3
Commercial Talk, Images, or Other Sexual Activity	16.You made, sent, or posted sexual pictures of videos of yourself over the internet or through a cellphone in exchange for money, drugs, or other valuable items.	0	1	2	3
Commercial Talk, Images, or Other Sexual Activity	17.You did another sexual activity not previously mentioned over the internet or through a cellphone in exchange for money, drugs, or other valuable items.	0	1	2	3

CSAI: 1, 2, 3, 4, 5, 7, 14, 16

Appendix D

PCL-5

Instructions: Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

In the past month, how much were you bothered by:	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Repeated, disturbing, and unwanted memories of the stressful experience?	0	1	2	3	4
2. Repeated, disturbing dreams of the stressful experience?	0	1	2	3	4
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?	0	1	2	3	4
4. Feeling very upset when something reminded you of the stressful experience?	0	1	2	3	4
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?	0	1	2	3	4
6. Avoiding memories, thoughts, or feelings related to the stressful experience?	0	1	2	3	4
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?	0	1	2	3	4
8. Trouble remembering important parts of the stressful experience?	0	1	2	3	4
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?	0	1	2	3	4
10. Blaming yourself or someone else for the stressful experience or what happened after it?	0	1	2	3	4
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?	0	1	2	3	4
12. Loss of interest in activities that you used to enjoy?	0	1	2	3	4
13. Feeling distant or cut off from other people?	0	1	2	3	4
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?	0	1	2	3	4
15. Irritable behavior, angry outbursts, or acting aggressively?	0	1	2	3	4
16. Taking too many risks or doing things that could cause you harm?	0	1	2	3	4
17. Being "superalert" or watchful or on guard?	0	1	2	3	4
18. Feeling jumpy or easily startled?	0	1	2	3	4
19. Having difficulty concentrating?	0	1	2	3	4
20. Trouble falling or staying asleep?	0	1	2	3	4

Appendix E

Severity Measure for Social Anxiety Disorder (Social Phobia)—Adult

Name:_____ **Age:** _____ **Sex: Male** ❑ **Female** ❑ **Date:**_____

Instructions: The following questions ask about thoughts, feelings, and behaviors that you may have had about *social situations*. Usual social situations include: public speaking, speaking in meetings, attending social events or parties, introducing yourself to others, having conversations, giving and receiving compliments, making requests of others, and eating and writing in public. **Please respond to each item by marking (✓ or x) one box per row.**

							Clinician Use
	During **the PAST 7 DAYS**, I have…	Never	Occasionally	Half of the time	Most of the time	All of the time	Item score
1.	felt moments of sudden terror, fear, or fright in social situations	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
2.	felt anxious, worried, or nervous about social situations	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
3.	had thoughts of being rejected, humiliated, embarrassed, ridiculed, or offending others	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
4.	felt a racing heart, sweaty, trouble breathing, faint, or shaky in social situations	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
5.	felt tense muscles, felt on edge or restless, or had trouble relaxing in social situations	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
6.	avoided, or did not approach or enter, social situations	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
7.	left social situations early or participated only minimally (e.g., said little, avoided eye contact)	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
8.	spent a lot of time preparing what to say or how to act in social situations	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
9.	distracted myself to avoid thinking about social situations	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
10.	needed help to cope with social situations (e.g., alcohol or medications, superstitious objects)	❑ 0	❑ 1	❑ 2	❑ 3	❑ 4	
						Total/Partial Raw Score:	
						Prorated Total Raw Score: (if 1-2 items left unanswered)	
						Average Total Score:	

Appendix F

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

ID #: _____ **DATE:** _____

Over the last *2 weeks,* how often have you been bothered by any of the following problems? *(use "✓" to indicate your answer)*	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so figety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself	0	1	2	3

Appendix G

Stigma

1. How ashamed do you feel about this experience?
2. How much do you think others would blame you for what happened?
3. How much do you think you were different from other kids because of this experience?
4. How much do you feel tainted ("dirtied") by this experience?

Betrayal

1. How much do you feel your trust was violated by this experience?
2. How much do you feel betrayed by this?
3. How much do you feel people who you trusted let you down by what happened?
4. How much do you feel that your faith in another person was broken by this experience?

Powerlessness

1. How powerless do you feel about this experience?
2. How helpless do you feel about this experience?
3. How defenseless do you feel about this experience?

Self-Blame

1. How much do you feel you were personally to blame for what happened?
2. How much do you feel that the type of person you are, rather than your behavior at the time, is to blame for this sexual experience?
3. How much do you feel that your behavior at the time, rather than the type of person you are, is to blame for this sexual experience?
4. How much do you feel to blame for this sexual experience happening at all such that it might not have happened if you weren't involved?
5. How much do you feel to blame for this sexual experience occurring because you were not able to modify or change it more than you did?
6. How much do you feel to blame for this sexual experience occurring because you acted in a way to allow it to happen?
7. How much do you feel any guilt related to this sexual experience?