



Contents lists available at ScienceDirect

Child Abuse & Neglect

journal homepage: www.elsevier.com/locate/chiabuneg

Research article

Psychopathology among adult survivors of child pornography

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ARTICLE INFO

Keywords:

Child pornography
Guilt
Avoidance
Embarrassment
Psychopathology

ABSTRACT

Background: The majority of studies investigating child pornography have focused on conceptualizing the problem and the harm of the crime, evaluating the risk for child pornography offending, or discuss preventive measures. Little is known about survivors of this type of crime. **Objective:** This research explores the relationship between child pornography victimization and psychopathology in adulthood. Specifically, we examined the contribution of emotional reactions at the time of the crime and shortly after (guilt, embarrassment and avoidance) on psychopathology among adult survivors of child pornography.

Participants and setting: The study was conducted among 107 child pornography adult survivors, aged 18–63 (M = 39.48, SD = 12.31). All participants were sexually molested during the crime.

Methods: An online survey was completed by a convenience sample of adult survivors of child pornography.

Results: Findings indicate survivor's current age predicted current psychopathology symptoms. Survivor's emotional reactions of guilt and embarrassment at the time of the crime and shortly after were significantly associated with elevated psychopathology, above and beyond demographic characteristics and features of the crime.

Conclusions: The present results suggest the way survivors of child pornography react to the crime might shape their mental health in the long term.

1. Introduction

According to the United States Criminal Code (18 USCS 2256), child pornography (CP), also known as child sexual abuse images, is the visual depiction of sexually explicit conduct involving persons under age 18. Sexually explicit conduct includes acts such as intercourse, bestiality and masturbation, as well as a lascivious exhibition of the genitals or the pubic area. Although the U.S. federal statute defines youth under 18 as legally able to consent to sexual intercourse (age 16 and older in most states), they cannot consent to being photographed in sexually explicit poses. Further, adults who persuade or induce minors to create sexually explicit images are generally considered as CP producers. Many states mirror federal law, although there is some variation in the definition of child pornography and the content that is proscribed.

The majority of studies investigating CP have focused on conceptualizing the problem and the harm of the crime (e.g., Martin, 2015; Martin & Slane, 2015; Martin & Alaggia, 2013), evaluating the risk for CP offending (Eke, Helmus, & Seto, 2018; Neutze, Seto, Schaefer, Mundt, & Beier, 2011; Seto & Eke, 2017), CP offenders' or consumers' motivation (e.g., Quayle & Taylor, 2002; Quayle, Vaughan, & Taylor, 2006), preventive measures (e.g., Beier et al., 2015), and perceptions of practitioners and therapists (e.g., Martin,

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<https://doi.org/10.1016/j.chiabu.2019.104189>

Received 11 March 2019; Received in revised form 23 July 2019; Accepted 10 September 2019
0145-2134/ © 2019 Published by Elsevier Ltd.

2014). Data from survivors themselves is scarce. Information about the experiences of CP survivors is rarely collected directly from them. For example, one study which sought to understand CP survivors experiences explored clinician's perceptions of CP survivors experiences and long-lasting challenges (Von Weiler, Haardt-Becker, & Schulte, 2010). Only recently, research surveying CP survivors themselves was published (Canadian Centre for Child Protection, 2017; Gewirtz-Meydan, Walsh, Wolak, & Finkelhor, 2018). This research sheds light on their complex experience and the unique features and impact of this crime.

Child pornography has a substantial impact on the emotional state of survivors in the short and long-term. Survivors of CP report feeling ongoing fear over the circulation or resurfacing of their images online, as well as worry about being recognized in public (Binford, Giesbrecht-McKee, Savey, & Schwartz-Gilbert, 2015; Gewirtz-Meydan et al., 2018). The sharing of images and the public accessibility of the images is one of the most difficult aspects of the crime to overcome (Canadian Centre for Child Protection, 2017) and contributes to the feelings of ongoing vulnerability (Gewirtz-Meydan et al., 2018), helplessness (Von Weiler et al., 2010) and powerlessness (Canadian Centre for Child Protection, 2017). These feelings are illustrated in the testimony of "Amy," a young woman whose images have become some of the most widely distributed CP images on the Internet, in the case of Paroline vs. United States: "It is hard to describe what it feels like to know that at any moment, anywhere, someone is looking at pictures of me as a little girl being abused by my uncle and is getting some kind of sick enjoyment from it. It's like I am being abused over and over and over again." (Binford et al., 2015).

A recent report indicates survivors of CP experience many struggles in their adulthood as a result of the crime, including anxiety and depression, sleeping problems, hypervigilance, low body image, suicidal ideation and attempts, relationship and sexual difficulties, self-harm and paranoia (Canadian Centre for Child Protection, 2017). These struggles negatively impact their family and social life, and their ability to maintain a job or pursue academic education (Canadian Centre for Child Protection, 2017). Although few studies about the impact of CP exist, there is considerable research on the impact of sexual abuse more generally. A recent meta-analysis reported that sexual abuse is associated with adult psychopathology and severity of the symptomology (Dworkin, Menon, Bystrynski, & Allen, 2017). As CP images are often part of long-term sexual abuse (Gewirtz-Meydan et al., 2018), survivors may suffer cumulative trauma exposure – together, the abuse itself and the images taken may have a significant impact on survivors' mental health condition. The existence of the images may also significantly reduce the ability of survivors to cope with daily events, exacerbate stressors of the crime and inhibit the recovery process. However, no study we are aware of has explored this.

For many CP survivors, the images created are part of sexual abuse which occurred over a substantial period of time, often beginning when they were quite young (Canadian Centre for Child Protection, 2017; Gewirtz-Meydan et al., 2018). According to Gewirtz-Meydan et al. (2018), 83% of CP survivors were under the age of twelve when they were first photographed, and according to the Canadian Centre for Child Protection (2017), 87% of CP survivors were under the age of twelve. Among trauma-exposed adults, younger age at trauma exposure is associated with increased risk for posttraumatic stress disorder (PTSD) (Brewin, Andrews, & Valentine, 2000; Ozer, Tschann, Pasch, & Flores, 2004). Yet, it has also been argued older age at sexual abuse is associated with a higher risk for psychopathology (Cutajar et al., 2010), as survivors have more awareness that these experiences are taboo and stigmatizing (Ruggiero, McLeer, & Dixon, 2000). In a recent meta-analysis on the relationship between child sexual abuse (CSA) characteristics and victim age, younger victims had more frequent abuse across a longer duration of time, and perpetrators were more likely to be relatives of the victim compared to older victims. Other research has also found being a victim of intrafamilial abuse is highly correlated with being a younger age at the time of the abuse (Ventus, Antfolk, & Salo, 2017).

In two studies conducted among CP survivors, perpetrators were mostly family members or acquaintances, and the crime lasted over a year for most of the survivors (Gewirtz-Meydan et al., 2018; Canadian Centre for Child Protection, 2017). This aligns with a considerable number of studies among CSA survivors, indicating sexual abuse that is perpetrated by a close relative or other trusted acquaintance can have more severe long-term consequences than isolated incidents perpetrated by strangers (Kendall-Tackett, Williams, & Finkelhor, 1993; Kerting & Feinauer, 1999; Molnar, Buka, & Kessler, 2001). Assaults perpetrated by known individuals may disrupt the child's beliefs about trust and intimacy, which in turn can cause more psychopathology than assaults perpetrated by strangers. Another explanation for more significant psychopathology among assaults perpetrated by known individuals is that the child may live with the perpetrator or be dependent on him or her. This could make the child more vulnerable to further abuse and also inhibit disclosure and help-seeking (Paine & Hansen, 2002). Finally, it is possible that children abused by acquaintances have more psychopathology symptoms because they receive more negative reactions such as disbelief than those victimized by strangers (Ullman, 2007). However, the perpetrator's identity and relationship to the victim is not always predictive of psychopathology, as other studies report no difference in adult symptomology of children sexually victimized by a family member or an acquaintance, and those victimized by a stranger (Goldsmith, Freyd, & DePrince, 2012; Lucenko, Gold, & Cott, 2000).

Child pornography may have a different impact on survivors depending on demographic characteristics, such as age, gender, and education. Because these variables were not extensively examined in previous CP studies, we reviewed studies on child abuse and sexual assaults. While studies failed to find an association between current age after CSA and psychopathology (Campbell, Dworkin, & Cabral, 2009; Dworkin et al., 2017), research indicates a decrease in psychopathology over time (Miller-raff & Howell, 2015; Steine et al., 2017). Meaning, it is possible the age of the survivor is negatively associated with psychopathology. In terms of gender, research on the relations between gender and psychopathology in the aftermath of child abuse is inconsistent. While some studies indicate female survivors of child abuse suffer significantly more mental health problem than male survivors (Ashraf, Niazi, Masood, & Malik, 2019; Thompson, Kingree, & Desai, 2004; Ullman & Filipas, 2005; Walker, Carey, Mohr, Stein, & Seedat, 2004), other studies report no gender differences in rates of posttraumatic stress symptoms (Chaplo, Kerig, Modrowski, & Bennett, 2017; Dworkin et al., 2017). Finally, less educated survivors of sexual assault also report more negative effects such suicide attempts (Ullman & Brecklin, 2002), self-blame (Long, Ullman, Starzynski, Long, & Mason, 2007) as well as comorbid PTSD and drinking problems (Ullman, Filipas, Townsend, & Starzynski, 2006). Considering differences in psychopathology, it might be that survivors who are able to

complete their education despite the trauma exposure are likely to reflect a somewhat higher- functioning than survivors who dropped out of educational opportunities. In a study conducted among CP survivors, 58% reported they were unable to complete schooling/ their desired level of education, and 43% experienced absences/illnesses or breakdowns which interrupted their education (Canadian Centre for Child Protection, 2017). Therefore, it could be that lower levels of education may also be associated with more psychopathology symptoms among CP survivors as well.

In a convenience study of survivors of CP, participants almost equally reported knowing and not knowing for a fact that their images were illegally distributed (Gewirtz-Meydan et al., 2018). A recent study addressed the debate about seeking information and images from the crime as adult survivors (Ost & Gillespie, 2018). According to the study, disclosing information regarding abusive images could empower now-adult survivors but could cause them further psychological harm and suffering as well. Although many times trauma survivors relive the traumatic event even after it ended (American Psychiatric Association, 2013), this tendency might be intensified in cases when there is an ongoing threat for additional trauma exposure (e.g., the distribution of the images). Both scenarios of knowing that the images are distributed vs. not knowing whether the images are distributed reflect a sensitive condition wherein survivors might experience a considerable threat for further trauma exposure and also a lack of a sense of closure (Canadian Centre for Child Protection, 2017; Gewirtz-Meydan et al., 2018). Thus, the implications of knowing vs. not knowing if the images were distributed require further investigation.

The reactions of survivors to being photographed or filmed include negative feelings such as guilt and embarrassment and worries about being recognized and judged by their appearance in the images (looking as if they were a willing participant) (Canadian Centre for Child Protection, 2017; Gewirtz-Meydan et al., 2018). Avoidance reactions are also common among CP survivors as they report avoiding being photographed or videoed by family or friends, refusing to discuss the images with law enforcement or therapists, and even denying the existence of the images (Gewirtz-Meydan et al., 2018; Muir, 2005; Von Weiler et al., 2010). Although these reactions may be helpful for the child in the short-term, they may intensify emotional distress in the long-term.

Guilt is defined as self-blame or a distressing sense of responsibility for events and behaviors (Kubany et al., 1996). Trauma-related guilt, which is a specific form of self-blame, accords with a belief that one should have thought, felt, or behaved differently during the trauma (Kubany et al., 1996). Similar to CSA survivors, children who are victims of CP may experience considerable guilt, as a result of being blamed and encountering negative reactions from others regarding the abuse (Finkelhor & Browne, 1985). This, in turn may impact their self-concept as well as the way that they understand the abuse (MacGinley, Breckenridge, & Mowll, 2019). Supporting this view, research has indicated that engaging in self-blame at the time of CSA was associated with more PTSD symptoms (Ullman, 2007). In contrast, in the process of healing from CSA, many survivors acquire a new understanding of abuse and come to believe that they are not to blame (Draucker et al., 2011).

Embarrassment has long been thought to be a less intense version of shame. Yet further research established embarrassment is a distinct emotional experience that differs along a number of significant psychological dimensions from other self-consciousness emotions (e.g., guilt, shame and pride). Embarrassment emerges within an interpersonal situation, rather than experienced alone and resulted from events that involved either real or imagined exposure to others (commonly acquaintances and strangers as opposed to loved ones) (Keltner & Buswell, 1997; Tangney, Miller, Flicker, & Barlow, 1996). Embarrassment often occurs more suddenly, with a greater sense of surprise, and may be accompanied by obvious physiological changes (e.g., blushing, increased heart rate) and by a greater sense of exposure and conspicuousness (Tangney et al., 1996). To date, no research has explored embarrassment among CP survivors. Empirical evidence regarding embarrassment in CSA survivors is limited, suggesting that embarrassment may be more likely to occur during investigative interviews following the disclosure of CSA by the survivor (Furniss, 1998). This might be applicable to CP survivors as well, given the challenges faced by survivors during investigation. Turning to authorities can be extremely embarrassing while knowing that professionals and law enforcement view the images. Although CP survivors do not have to deal with the disbelief of authorities as the images validate their story (Gewirtz-Meydan et al., 2018), the images presented, expose them in an almost extreme way and therefore may rise feelings of embarrassment. This emotional reaction, in turn, may inhibit additional disclosure or seeking help and support, which often minimizes the effects of abuse and maximizes one's ability to make sustainable life changes (Draucker et al., 2011).

Avoidance is a maladaptive affect regulation strategy often adopted by CSA survivors (Deblinger, McLeer, Atkins, Ralphe, & Foa, 1989; Rosental, Rasmussen-Hall, Palm, Batten, & Follette, 2005; Safren, Coleman, & Thiim, 2018). The immediate reaction of avoidance can regulate stress and negative emotions originating from the trauma exposure by allowing emotional and physical distance from trauma reminders (Roth & Cohen, 1986). The long-term reaction of avoidance may serve the individual in the minimization of distress and of intrusive re-experiencing symptoms (Roth & Cohen, 1986). However, there is extensive evidence that deliberate avoidance can be unhelpful for the majority of trauma survivors (Brewin & Holmes, 2003; Walsh, Fortier, & Dilillo, 2010). In fact, the general tendency to avoid or escape, used as a coping style, may exacerbate psychological distress and PTSD symptoms in individuals who were exposed to trauma (Orcutt, Pickett, & Pope, 2005; Plumb, Orsillo, & Luterek, 2004; Reddy, Pickett, & Orcutt, 2006) and specifically CSA (Marx & Sloan, 2002; Polusny, Rosenthal, Aban, & Follette, 2004; Rosental et al., 2005). In a recent study, CSA duration was significantly associated with adult PTSD symptom severity and with avoidant coping, and avoidant coping partially accounted for the relationship between CSA duration and total trauma symptom severity (Safren et al., 2018). Therefore, it is important to explore avoidance reaction and its relations with psychopathology among CP survivors.

1.1. The present study

In the present study, we sought to understand what predicts adult psychopathology among CP survivors. Based on previous studies on CSA, we examined whether reactions to the crime—feeling guilty over the creation of the images, avoidance of being

Table 1
Characteristics of Respondents (N = 107).

Measure		
Gender, number (%)	Female	71 (66.4%)
	Male	36 (33.6%)
Age, mean (SD)		39.48 (12.31)
Race and Ethnicity, number (%)	None-Hispanic White	95 (88.8%)
	None-Hispanic Black	3 (2.8%)
	Asian	0 (0%)
	American Indian or Alaska	3 (2.8%)
	Hispanic	0 (0%)
	Other	2 (1.9%)
	Skipped	4 (3.7%)
Marital Status, number (%)	Married or living with a partner	56 (52.3%)
	Separated or divorced	13 (12.1%)
	Widowed	1 (0.9%)
	Other	36 (33.6%)
	Skipped	1 (0.9%)
Education level, number (%)	Some high school or less	5 (4.7%)
	High school graduate or G.E.D.	7 (6.5%)
	Some college or technical school	34 (31.8%)
	College graduate	37 (34.6%)
	Post-college degree	24 (22.4%)

photographed, and embarrassment related to authorities seeing the images– predicted current psychopathology levels, above and beyond the effects of demographic characteristics (gender, current age, and education) and crime characteristics (the age of the child at the time of the crime, the duration of the crime, the identity of the perpetrator, and whether knowing the images were distribute).

Guilt, avoidance and embarrassment are all emotional reactions that may arise from the traumatic experience of CP, and perhaps also affect its long term implications for survivor's mental health. Findings from this study can assist professionals who work with CP survivors to learn about maladaptive reactions to the crime and specific features that contribute to psychopathology in a survivor's adult life.

2. Method

2.1. Participants

The sample included 107 survivors of CP. The majority self-identified as female and white. Participants ranged in age from 18 to 63, with a mean age of 39.48 (SD = 12.31). About half the sample was married or living with a partner (52%); Twelve percent were divorced or separated; 0.9% were widows, and one-third of participants were single, other (34%). Participants were highly educated; 35% had a college degree, and 22% had a post-college degree. Only 5% did not complete high school. In addition, all participants were sexually molested during the crime. Characteristics of respondents are presented in Table 1. Table 2 documents the

Table 2

Descriptive statistics for characteristic of child pornography, participants' reactions to being sexually abused photographed or filmed and participants' symptomatology (n = 107).

Measure		
Age when images were first created, mean (SD)		6.18 (4.35)
Relationship to perpetrator, number (%)	Family member	66 (61.7%)
	Acquaintance	41 (38.3%)
Duration of the crime, number (%)	Less than a year	19 (17.8%)
	A year or more	88 (82.2%)
Whether the images were illegally shared or given to other people, number (%)	No or don't know	52 (48.6%)
	yes	55 (51.4%)
Guilt for being photographed, mean (SD)		3.31 (0.90)
Avoidance of being photographed (after the crime), mean (SD)		2.98 (0.92)
Embarrassment related to authorities seeing the images, mean (SD)		3.21 (0.97)
TSC, mean (SD)		69.30 (24.99)

characteristic of the crime, participants' reactions to the crime and their psychiatric symptomatology.

2.2. Procedure

We conducted an online survey of a convenience sample of adult survivors of CP production as part of a larger research project to improve responses to survivors depicted in CP ([The National Center for Victims of Crime, 2014](#)). Several victim service organizations and support groups for adult survivors of CSA agreed to send email invitations with links to listserv members or to post invitations on their websites. The survey was accessible through Qualtrics, a secure web-based survey data collection system. The survey took 15 min to complete on average and was open from January 9, 2013, to September 30, 2013. The survey was anonymous, and no data were collected that linked participants to recruitment sources. The [masked for review] Institutional Review Board (IRB) approved all procedures and instruments.

Clicking on the link to the survey brought potential respondents to a page that provided information about the purpose of the study, the nature of the questions, and a consent form (e.g., the survey was voluntary; respondents could skip any questions or quit at any time; responses would be anonymous). The first page also offered online resources, a telephone hotline for survivors of child abuse, and researcher contact information. Participants could skip any question by leaving it blank or selecting a "Skip question" option. We did not offer incentives for completion.

A total of 339 participants entered the survey site. Only 190 indicated they were eligible by answering yes to the initial question, which asked: *Just to confirm, are you an adult (age 18 or older) who was pictured in child pornography? CP refers to images (pictures or videos) of minors age 17 or younger that depict explicit sexual acts, focus on genitals or show nudity in a sexual context. The perpetrator may have created the images or may have convinced the child to create them.* Of those, only 133 completed the survey and only 107 respondents completed all questionnaires related to the current study and were included in the present study.

2.3. Measures

Measures were developed and piloted with input from the projects' Advisory Committee, a panel of 19 experts who had experience working with CP survivors. These included practitioners, law enforcement, FBI professionals, attorneys, victim advocates, as well as an adult survivor. Members of the panel participated in conference calls to discuss the goals and structure of the survey. The panel also reviewed, commented on and pretested drafts of the survey. The survey consisted of several sections:

2.3.1. Demographic characteristics and questions about the crime

We asked about personal characteristics at the time of the survey (gender, age, race and ethnicity, marital status, and education level). Questions about the crime included the age at the time of the crime (age entered), relationship to the perpetrator (family member/ acquaintance/ met on the Internet/ someone else), duration of the crime (one day or less/ more than a day to one week/ a week to a month/ 1 month to 3 months/ 6 months to one year/ more than a year), how much time passed since the crime (within the past year/ between one and five years ago/ between five and ten years ago/ more than 10 years ago), whether the crime was reported (yes/ no), whether images were illegally shared or given to other people (yes/ no), and if the perpetrator was prosecuted and convicted (yes/ no). All questions had an option of "don't know" and "skip this question." An overview of the CP crime characteristics can be found elsewhere ([Gewirtz-Meydan et al., 2018](#)).

2.3.2. Reactions to the crime

Participants were asked about their reactions to being depicted in images by presenting 12 possible reactions that were developed by the project's Advisory Committee. Participants were asked to rate how often they experienced each reaction during the crime and shortly after (in the investigation if any), using a 4-point scale ranging from "never" to "all the time." In the present study we examined the role of three reactions in predicting adult psychopathology: Feeling guilty for the creation of the images (*Feeling it was your fault the images were created*), feeling embarrassed about authorities and professionals viewing images (*Feeling embarrassed about police, social workers or people in the court system seeing the images*), and avoiding being photographed (*Refusing to be photographed or videoed by family or friends*).

2.3.3. Psychopathology

Psychopathology was measured by the Trauma Symptom Checklist (TSC-40; [Elliot & Briere, 1992](#)), which assesses common forms of posttraumatic distress. Participants responded to each item using a 4-point Likert scale with responses ranging from 0 (never) to 4 (often). The TSC-40 consists of 6 subscales: dissociation (six items), anxiety (nine items), depression (nine items), Sexual Assault Trauma Index SATI (seven items), sexual problems (eight items), and sleep disturbances (six items). In the present study, we used the total score, which was calculated as a sum of all forty items. The total score demonstrated good internal consistency in this study ($\alpha = .96$).

2.4. Data analysis

To handle missing data and determine whether missing data were random or biased we conducted analyses of differences using Little's Missing Completely at Random (MCAR) test ([Collins, Schafer, & Kam, 2001](#)). The analysis revealed that the data were missing completely at random, $\chi^2(556) = 606.474, p = 0.068$. We used SPSS 25, employing a maximum-likelihood (ML) estimation

procedure for handling missing data, which is considered to be an optimal method for attrition (Collins et al., 2001).

To explore the associations among demographic characteristics (age, gender, education), characteristics of CP (age when images were first created, relationship to the perpetrator, duration of the crime and whether the images were illegally shared or given to other people), participants' reactions to being sexually abused photographed or filmed as children (guilt, avoidance and additional embarrassment from authorities and professionals involved seeing the images), and participants' psychiatric symptomatology as adults (TSC total score), we conducted Pearson correlations and chi-square tests. Prior to conducting the analyses, we coded education level into a dichotomous variable so that a high level of education consisted of a college degree or a higher and lower level of education consisted of high school or less. Pearson correlations were conducted to explore the associations between continuous/dichotomous variables and continuous variables. Chi-square tests were conducted to explore the associations between dichotomous variables.

To explore the relationship between participants' reactions to being sexually abused photographed or filmed as children (i.e., guilt, avoidance and additional embarrassment related to authorities seeing the images) and psychiatric symptomatology as adults, above and beyond demographic characteristics and characteristics of CP, a hierarchical regression analysis was conducted. The analysis included three blocks. The first block consisted of demographic characteristics (i.e., age, gender, and education). The second block consisted of characteristics of CP (i.e., age when images were first created, relationship to the perpetrator, duration of the crime and whether the images were illegally shared or given to other people). The third block consisted of participants' reactions to being sexually abused photographed or filmed (i.e., guilt, avoidance and embarrassment related to authorities seeing the images).

2.5. Results

2.5.1. Associations among demographic characteristics, characteristics of child pornography, participants' reactions to being sexually abused photographed or filmed and psychopathology symptomatology

Table 3 presents the correlations among the study's variables. Demographic characteristics were related to participants' reactions to being sexually photographed or filmed and psychiatric symptomatology. Participants' age was significantly associated with participants' reactions to being sexually photographed or filmed as well as their psychiatric symptomatology - the younger the survivor, the higher the levels of guilt for being photographed, embarrassment related to authorities seeing the image, avoidance of being photographed as well as TSC total score. Women had higher levels of guilt for being photographed and embarrassment related to authorities seeing the images compared to men. Participants with low levels of education had higher levels of avoidance of being photographed than participants with high levels of education.

Characteristics of CP consisting of the age when images were first created and the duration of the crime were significantly associated with participants' avoidance of being photographed. The younger the age when images were first created, and the duration of CP as more than a year were related to higher the levels of avoidance of being photographed.

Results also indicated significant associations between participants' reactions to the crime and psychopathology symptomatology. The higher the guilt for being photographed, higher avoidance of being photographed and more embarrassment related to authorities seeing the images, the higher the levels of TSC total score.

2.5.2. Predicting adult psychopathology among CP survivors

Table 4 presents the results of a hierarchical regression model predicting TSC total score. The model explained 40.7% of the variance of TSC total score, $F(10,96) = 6.59, p < .001; 35.9\%$. The effects of participants' demographic characteristics were non-significant except for age, with younger survivors having significantly higher levels of TSC total score. The effects of the characteristics of CP were non-significant. Reactions to being sexually photographed or filmed were significantly associated with

Table 3
Associations among the study variables (n = 107).

Measure	1	2	3	4	5	6	7	8	9	10	11
1. Current age	-										
2. Gender	-.09	-									
3. Education	.29**	(6.60**)	-								
4. Age when images were first created	-.12	-.20*	.04	-							
5. Relationship to perpetrator	.08	(18.45**)	(2.29)	-.44***	-						
6. Duration of the crime	-.10	(.74)	(.01)	-.51***	(.8.86**)	-					
7. Whether the images were illegally shared or given to other people	.00	(.38)	(.26)	-.25**	(2.63)	(5.82*)	-				
8. Guilt for being photographed	-.19*	.21*	-.01	-.02	.09	.00	.13	-			
9. Embarrassment related to authorities seeing the images	-.29**	.24*	-.01	.13	-.09	-.06	.01	.32**	-		
10. Avoidance of being photographed	-.25**	.05	-.20*	-.30**	.03	.31**	.15	.21*	.23*	-	
11. TSC total score	-.35***	.08	-.16	-.17	.04	.19	.08	.34***	.49***	.37***	-

Note. Values of gender: 0 = male, 1 = female; values of education: 0 = low, 1 = high; values of relationship to perpetrator: 0 = acquaintance, 1 = family member; values of duration of the crime: 0 = up until a year, 1 = a year or above; values of whether the images were illegally shared or given to other people: 0 = no or don't know, 1 = yes. TSC = Trauma Symptom Checklist. Chi-square coefficients appear in parentheses. * = $p < .05$; ** = $p < .01$; *** = $p < .001$.

Table 4

Regression standardized coefficients predicting participants' psychiatric symptomatology (n = 107).

	Predicting variables	TSC total score	
		β	R ² change
Block 1	Current age	-.32**	.13**
	Gender	.07	
	Education	-.08	
Block 2	Current age	-.35**	.04
	Gender	.04	
	Education	-.05	
	Age when images were first created	-.19	
	Relationship to perpetrator	-.06	
	Duration of the crime	.06	
	Whether the images were illegally shared or given to other people	.02	
Block 3	Current age	-.19*	.23***
	Gender	-.12	
	Education	-.05	
	Age when images were first created	-.19	
	Relationship to perpetrator	.02	
	Duration of the crime	.07	
	Whether the images were illegally shared or given to other people	-.03	
	Guilt for being photographed	.17*	
	Avoidance of being photographed	.11	
Embarrassment related to authorities seeing the images	.41***		

Note. Values of gender: 0 = male, 1 = female; values of education: 0 = low, 1 = high; values of relationship to perpetrator: 0 = acquaintance, 1 = family member; values of duration of the crime: 0 = up until a year, 1 = a year or above; values of whether the images were illegally shared or given to other people: 0 = no or don't know, 1 = yes. TSC = Trauma Symptom Checklist * = $p < .05$; ** = $p < .01$; *** = $p < .001$.

psychopathology, apart from the avoidance of being photographed, which was not significant. Higher levels of guilt for being photographed, as well as more embarrassment related to authorities seeing the images, were related to higher TSC total scores.

3. Discussion

This study is the first study we are aware of to explore the relationship between CP survivors' reactions during or shortly after the crime and psychopathology in adulthood. In terms of the sociodemographic variables and the variables related to the crime, only the survivors' current age was predictive of higher levels of psychopathology in adulthood. While there is little support from past meta-analyses regarding the relations between current age and psychopathology in the aftermath of sexual abuse (Campbell et al., 2009; Dworkin et al., 2017), in the present study younger survivors reported higher levels of psychopathology. It is possible that the intensity of psychopathology symptoms decreases with time. Previous studies exploring PTSD trajectories among children with maltreatment histories, provide some support for this idea, indicating that the majority of the samples show decrease in symptoms over time (Nugent et al., 2009; Steine et al., 2017). Also, within the present sample of CP survivors with an age range of 18–63, it is likely that younger survivors had a different experience of CP. As new media emerges, CP images can be more easily and widely distributed. Images uploaded to the Internet and the darknet cannot easily be tracked and deleted, and even when they are, it is possible they were already downloaded or kept by a screenshot. For younger survivors, the new media may extend uncertainty about the images and decreases the likelihood ever to gain full control about the images whereabouts. As a result, the negative effect of CP crime could rise accordingly. However, it is notable that even controlling for CP characteristics, the emotional reactions during the crime and shortly after – guilt for the creation of the images and embarrassment related to authorities seeing the images – were significantly associated with psychopathology in adulthood. This suggests that professionals who work with adult survivors need to address maladaptive reactions in the wake of the crime as a way to decrease the risk for psychopathology in the future.

3.1. The role of guilt in predicting psychopathology among CP survivors

Many CP survivors believe the images present a picture as if they were willing to participate or even enjoyed being filmed – something that later caused them much guilt (Gewirtz-Meydan et al., 2018). They felt as if the images are “proof” for them that they are at fault for the creation of the images (Gewirtz-Meydan et al., 2018). The present study found that feeling guilty about being depicted in sexual images is a key feature in predicting psychopathology. This finding corresponds with several studies indicating guilt generated by childhood trauma can mediate the relationship between trauma exposure and current psychopathology (Muris et al., 2016; Webb, Heisler, Call, Chickering, & Colburn, 2007) and psychological distress (Wolfe-Clark et al., 2017). The degree of self-blame, are shown to predict current psychopathology even more than objective characteristics of the abuse (e.g., number of different types of abusive events and the duration of the abuse) (Lange et al., 1999). Previous research demonstrates that guilt protects youth from the development of externalizing problems after an abuse or a traumatic exposure (Kochanska, Barry, Jimenez, Hollatz, & Woodard, 2009; Muris et al., 2016), yet is significantly associated with internalizing problems such as depression and

anxiety (Muris et al., 2016; Webb et al., 2007). It is also possible that guilt plays a mediating role between the abuse and psychopathology. When a child experiences guilt (e.g., feeling blame for the activity or for keeping the abuse a secret), it impacts the child's self-concept (Finkelhor & Browne, 1985), which can in turn mediate the relationship between the sexual abuse and psychopathology (Keshet & Gilboa-Schechtman, 2017; Turner, Finkelhor, & Ormrod, 2010).

3.2. *The role of embarrassment related to authorities viewing images and psychopathology among CP survivors*

Survivors of CSA generally do not tend to report their abuse to authorities. The literature describes various barriers and facilitators affecting self-disclosure among survivors of CSA (Hébert, Tourigny, Cyr, Meduff, & Joly, 2009; London, Bruck, Ceci, & Shuman, 2005; Morrison, Bruce, & Wilson, 2018; Schönbacher, Maier, Mohler-Kuo, Schnyder, & Landolt, 2012; Sivagurunathan, Orchard, MacDermid, & Evans, 2019). In CP crimes, the images present survivors naked and in sexual positions, which may increase their feeling of embarrassment and loss of dignity (Stroud, 2014). Also, the existence of the images can increase survivors' concern over what people who view the images may think when they see them. If survivors look as if they cooperated or even enjoyed the activities, this may cause significant embarrassment. The existence of the images and films may sometimes allow law enforcement or people close to the victim to judge the victim by seeing that they were smiling in the picture or by seeming to suggest that they let the abuse happen (Palmer, 2005; Von Weiler et al., 2010). The embarrassment survivors feel around turning to authorities and professionals, especially when they have to re-expose themselves by being seen in the images by professionals, is understandable. Nevertheless, it may exacerbate their distress.

Feeling embarrassment may inhibit survivors from receiving the help and support they need to overcome the distress related to trauma exposure. It may lead survivors to evade disclosing the crime inflicted on them, or alternatively to not sharing their feelings and experiences fully and sincerely. In this way, survivors may not get the professional support and guidance that they need and may even experience further isolation and loneliness, which could aggravate their plight. Furthermore, survivors' emotional reaction of embarrassment may act as trauma reminder, leading to the re-experiencing of reliving of past abuse when survivors had felt humiliated and mortified. Under these conditions, the interactions with authorities and professionals may not only be inefficient or unhelpful but could also be experienced as traumatic and harmful. Given that the present study did not explore these offered mechanisms, the present explanations are speculative, and further research is highly needed before any definite conclusion could be drawn.

Contrary to expected, avoidance of being photographed had a non-significant effect in predicting psychopathology. These findings are somehow surprising, given the evidence regarding the relations between avoidance and psychopathology among trauma survivors (Marx & Sloan, 2002; Polusny et al., 2004; Rosental et al., 2005). One explanation for the current results suggests that the item used in this study, does not necessarily reflect an avoidance reaction. Specifically, in this study, we asked participants to report whether they avoid being photographed. It might be that for many CP survivors being filmed is not perceived as trauma reminder that should be avoided, and thus evading being filmed does not increase the risk for psychopathology. Alternatively, it might be that avoidance being filmed does reflect avoidant strategy, yet the reactions of guilt and embarrassment have such a profound impact on psychopathology that their effects overshadow the implications of avoidance. Future research that will explore the effects of avoidance reaction on later psychopathology among CP survivors is necessitated to promote our understanding on this subject matter.

3.3. *Limitations*

Although this study provided a much-needed focus on whether characteristics of CP and reactions to this crime predict psychopathology in adulthood, it has some limitations. First, the present study was cross-sectional, and causal conclusions cannot be drawn. Current psychopathology could also influence the survivor's memory and reporting about their reaction to the abuse, making causal relationships problematic. In addition, given that this study is retrospective, survivor's memories and feelings could have been affected over time. Second, participants might have suffered from additional sexual abuse incidences, and/ or other types of victimizations apart from those that occurred during the CP crime. Unfortunately, we did not have data regarding additional victimizations or about other adversities participants in the study experienced as children. Hence, one cannot negate the possibility that the level of psychopathology found could be impacted by other life adversities. Third, given that we did not have a comparison group of sexually abused survivors without CP involvement, we could not differentiate between the effects of the sexual abuse itself and the images involved. Therefore, we do not know if the reactions reported are specific to the images or to the abuse. Future studies should employ a longitudinal design in order to follow survivors of CP and survivors of sexual abuse alone while assessing other types of victimizations. Lastly, the current data were collected using an online self-report format. Therefore, responses were limited to those who had access to computers and were interested in completing a study of this nature and may not reflect the typical experience of CP survivors.

3.4. *Implications and future research*

Our results indicate that the current age of adult survivor of CP as well as survivors' guilt and embarrassment are related to their level of psychopathology. Clinicians need to be aware that younger survivors of CP may suffer from elevated distress and psychopathology. This might be rooted, at least in part, in the effects of CP production happening in the social media era. The rapid pace of sharing images, the permanence of the abusive images and the concerns regarding the production and distribution of the images and feelings of helplessness, all create complex traumatization which may be challenging for therapists (Martin, 2014; Muris et al., 2016).

Additionally, as the present results indicated, survivors' reactions of guilt and embarrassment deepen their distress, predicting elevated psychopathology.

Yet few therapeutic interventions are specifically geared to working with this population. The [National Children's Advocacy Center \(2018\)](#) bibliography on CP cites articles on producers and consumers, survivors, and effects of this crime but lacks a section on therapeutic interventions. Future research is required to understand not only the unique characteristics of this population but also the singular interventions that are needed in order to alleviate the suffering of this population.

Future research should take into account the sexual abuse during the CP crime and attempt to identify the differentiated effects of CP. Further research is also needed to understand how and in what circumstances survivors alter their thinking about their experience and overcome their traumatic past. One encouraging development is that since 2017 the National Children's Alliance, the member organization of Children's Advocacy Centers (CAC) in the United States, has dedicated more than 1.5 million dollars annually for CACs to competitively bid on projects to develop programs for children in sexually abusive photographs or films ([National Children's Alliance, 2017](#)). The next step is for researchers and agencies working with survivors to compile what we know and what gaps remain.

3.5. Conclusion

The present study found that younger survivors suffered higher levels of psychopathology in adulthood. Specific reactions to the crime, guilt about the crime and embarrassment related to authorities seeing the images, were predictive of adult psychopathology, above and beyond the effects of demographic and crime characteristics.

The findings of our study highlight the need to identify and treat children who experience CP. Immediate therapy is preferable considering the impact that emotional responses during the crime and shortly after have on mental health outcomes in adulthood. Clinicians should consider addressing maladaptive reactions to the crime within therapy and use appropriate approaches to treat each reaction (e.g., using cognitive behavior therapy to treat the feeling of guilt). Finally, special techniques to decrease the feeling of embarrassment among CP survivors should be designed and utilized.

Acknowledgments

We are grateful for the courage and candor of the survivors who participated in this research. The study was funded by the Office of Victims of Crime, Department of Justice, under a grant awarded to the National Center for Victims of Crime, which subcontracted with the Crimes against Children Research Center to conduct the data collection. The National Children's Alliance and an Advisory board of experts assisted.

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