

Sexual posttraumatic stress among investigators of child sexual abuse material

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Abstract The current study aims to examine the sexual posttraumatic stress symptoms (sexual PTSS) among investigators of child sexual abuse material (CSAM). Previous findings indicated that sexual PTSS has a unique impact on mental health and well-being compared with traditional PTSS, highlighting a gap in the literature on how exposure to CSAM affects investigators, including their sexual lives. This study sought to fill this gap by examining the sexual PTSS of CSAM investigators. The sample included 500 participants (61% male and 37.4% female) who were police investigators, forensic examiners, and others connected with the criminal justice system across the USA. Participants answered questions about their CSAM exposure and mental health (depression, anxiety, PTSS, and sexual PTSS). The study found that the content of CSAM, mental health symptomatology, being a female investigator, and live streaming of CSAM were associated with increased sexual PTSS. The results suggest that viewing CSAM may affect the sexual response of some investigators and that certain aspects of the job may increase the risk of sexual PTSS. The study highlights the need for wellness programs to provide support related to the possible effects of CSAM on investigators' sexual response.

Statement of relevance to a police audience

The findings of this study have important implications for law enforcement officers who are exposed to child sexual abuse material (CSAM) as part of their investigative work. The study identified several factors associated with increased sexual posttraumatic stress symptoms (PTSS) among investigators who view CSAM, including the content of CSAM, live streaming, mental health (such as posttraumatic stress disorder [PTSD], anxiety, and depression), and being a female investigator.

These results indicate that viewing CSAM is significantly associated with the sexual response of some investigators and certain aspects of the job may increase the risk of sexual PTSS. Although awareness of and discussions about mental health in law enforcement have progressed, there is still a need to address sexual health concerns related to CSAM exposure. To effectively support the well-being of investigators who have viewed CSAM, it would be beneficial for wellness programs to include targeted interventions and resources that address its potential effects on sexual response. By acknowledging and addressing this issue, law enforcement

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agencies can better assist their officers in navigating the complex challenges associated with investigating CSAM and promote overall mental and sexual health in the profession.

CSAM has become a serious problem in the USA and worldwide, fostered by the development of online and digital technologies (Wolak *et al.*, 2011, 2014). According to federal statutes, CSAM is the 'visual depiction of sexually explicit conduct involving a minor (someone under 18 years of age)' (U.S. Department of Justice, 2020, para. 1). Since the expansion of the internet in the mid-1990s, a growing number of cases involve the possession, distribution, and production of CSAM. In the course of handling cases of CSAM, police investigators and forensic examiners may be exposed to considerable quantities of material that portray graphic rape and child sexual abuse (Wortley *et al.*, 2014). Forensic examiners specialize in digital forensics and handle technical analysis, while investigators conduct broader criminal investigations, working together to seek justice for victims. These images can be extremely disturbing because they violate strongly held standards of ethical behaviour and depict egregious, offensive, and disturbing acts involving child victims. The content of CSAM viewed by investigators can vary substantially among cases and may include images or videos of male and female children of any age (0–17 years old) and depict anything from body images to sexual activities between an adult and a child or even the rape and torture of a child (Leclerc *et al.*, 2022).

Previous research indicated that investigators of CSAM may experience significant emotional, cognitive, social, and behavioural consequences as a result of viewing CSAM (Burns *et al.*, 2008; Krause, 2009; Powell *et al.*, 2015; Leclerc *et al.*, 2022). Among the negative consequences of viewing CSAM, investigators may experience PTSS (Burns *et al.*, 2008; Perez *et al.*, 2010; Bourke and Craun, 2014), poor psychological well-being (Perez *et al.*, 2010), generalized distrust of people (Perez *et al.*, 2010), reduced interest in intimacy (both emotional and physical) with their partner and discomfort engaging in routine physical interaction with their children (Powell *et al.*, 2015), isolation from other law enforcement personnel (Burns *et al.*,

2008), overprotectiveness of children and family (Burns *et al.*, 2008; Perez *et al.*, 2010), and heightened awareness of child exploitation (Burns *et al.*, 2008). Physical reactions reported by investigators include headaches, mood swings, severe tiredness or exhaustion, sleep deprivation, and numbness (Burns *et al.*, 2008; Powell *et al.*, 2015). Law enforcement officers in cases involving CSAM also score significantly higher on PTSD measures when compared with their non-CSAM-exposed peers and experience various forms of PTSS such as high levels of intrusive imagery, hypervigilance, and moodiness (Burns *et al.*, 2008; Perez *et al.*, 2010; Seigfried-Spellar, 2018). In a study by Powell *et al.* (2015), investigators described 'switching off' at the end of the day by distancing themselves from their partners and avoiding routine physical interactions with their children.

Sexual PTSS

According to the DSM-5 (American Psychiatric Association, 2013), PTSS consist of four clusters: intrusion (e.g. flashbacks, nightmares), avoidance (e.g. avoidance of trauma-related thoughts or feelings and reminders), alterations in cognition and mood (e.g. overly negative thoughts and assumptions about oneself or the world, negative affect), and hyperarousal symptoms (e.g. irritability and aggression, difficulty sleeping). A wealth of data shows trauma can affect multiple aspects of holistic well-being, including sexual response (Yehuda *et al.*, 2015). Theories of embodiment explain that trauma is reflected in the body and that the memory of trauma is stored in the somatosensory system (van der Kolk, 2014; Ensink *et al.* 2016). Traumatic experiences that are stored and expressed in the body, including sensations, emotions, and physical responses and can also explain one's sexual difficulties. PTSS related to sexual response are termed sexual PTSS, a concept firmly grounded in the DSM-5 criteria that refers to the manifestation of trauma symptoms (e.g. intrusiveness, avoidance, change in mood and cognition, hypervigilance, dissociation, interpersonal distress) during sexual response (Gewirtz-Meydan and Lassri, 2023). Specifically, the trauma becomes embedded in sexual behavioural

patterns and expressed by unique sexual patterns tied to the trauma.

Sexual PTSS has primarily been investigated in the context of survivors of child sexual abuse survivors (Gewirtz-Meydan, 2022; Gewirtz-Meydan and Lassri, 2022; Gewirtz-Meydan and Godbout, 2023). However, given the close nature of CSAM that investigators are exposed to during their work, which includes explicit CSA content, studying sexual PTSS in this context is highly applicable. The explicit and distressing nature of the materials investigators encounter can have a significant impact on their mental and emotional well-being (Perez *et al.*, 2010; Wortley *et al.*, 2014; Wößner and Graf, 2016; Brady, 2017; Krieger, 2017; Seigfried-Spellar, 2018; Leclerc *et al.*, 2022), potentially leading to symptoms similar to those experienced by CSA survivors. Therefore, it is essential to consider and address the potential implications of sexual PTSS among investigators exposed to CSAM to provide appropriate support and mitigate the psychological consequences they may face.

In the realm of investigative work involving CSAM, the impact of direct and vicarious exposure on investigators' sexual PTSS warrants careful examination. Notably, direct exposure to explicit CSAM may trigger distressing flashbacks during investigators' sexual activity, resulting in intrusiveness and interference with their sexual response. These intrusive thoughts can be intensified by triggers like sounds or sights reminiscent of the disturbing materials they have encountered, thereby compounding their distress. As a coping mechanism, some investigators may resort to avoidance behaviours, avoid sexual interaction or sexual-related stimuli, distance themselves from their partner, or even dissociate during sex to avoid being triggered (Powell *et al.*, 2015). Investigators may also avoid some sexual acts or experiences that remind them of CSAM that they watched as part of their job or that irritate them (i.e. negative changes in thinking and mood). Although this prior research did not examine the reasons behind this outcome, it is possible that work-related exposure to CSAM may link sexual activity with negative emotions such as anxiety, fear, and disgust. Finally, hypervigilance, as a part of hyperarousal, might limit an individual's ability to focus on pleasurable sensations and could

exacerbate sexual distress (Yehuda *et al.*, 2015). Given the potential effect of sexual PTSS on psychological, relational, and sexual well-being (Gewirtz-Meydan, 2022; Gewirtz-Meydan and Lassri, 2022; Gewirtz-Meydan and Godbout, 2023), it is important to examine and address these symptoms in investigators exposed to CSAM materials.

Current study

Previous research has examined sexual PTSS among survivors of childhood sexual abuse (Gewirtz-Meydan and Lassri, 2023); however, sexual PTSS has not been examined among investigators of CSAM, who are regularly exposed to difficult materials. In addition, although PTSS and sexual PTSS are both related to traumatic response, previous research found that sexual PTSS has a unique and unshared effect on mental health and well-being (Gewirtz-Meydan and Lassri, 2023). Based on these findings and the gap in the literature on how CSAM exposure affects investigators' sexual lives, the current study examined the sexual PTSS of investigators exposed to CSAM. We examined the association between sexual PTSS and the characteristics of investigators (years in the field, agency type), sociodemographic variables, characteristics of CSAM exposure (length, content, intensity, perceived control over work), and mental health symptomatology (PTSD, anxiety, and depression).

Method

Participants

Participants were 698 police investigators, forensic examiners, and others connected with the criminal justice system across the USA who were exposed to CSAM as part of their profession. The current paper included participants who reported any CSAM exposure as part of their profession and completed 85% of the survey questions, resulting in an analytic sample of 500 participants. Sixty-one percent of participants were male and 37.4% were female; most were aged 35–44 (39.8%), with 21.6% aged 25–34 and 29.8% aged 45–54. Most participants were White (85.8%) and

7.3% were Hispanic or Latino. Slightly more than half (52.8%) of participants were investigators only, 20.6% were forensic examiners only, and 26.6% were both investigators and forensic examiners. Further details of the sample are depicted in [Table 1](#).

Procedure

Participants were recruited via the National Criminal Justice Training Center, including through announcements at the July 2021 Internet Crimes Against Children (ICAC) Virtual Conference and October 2021 ICAC Virtual Commanders Meeting, through training courses, through the ICAC list-serv, and through invitations to prior students at the centre with 'forensic' in their title.

Participants completed an anonymous survey hosted by Qualtrics, an online survey data collection system. Participants were told the study sought to understand the impact of work-related exposure to CSAM. The data collection period was from July to December 2021. Participants were told they could skip any questions they did not want to answer. To ensure anonymity, we turned off all Qualtrics tracking features, like IP address, longitude, and latitude.

We also encouraged participants to take the survey while in their internet browser's 'incognito' mode and instructed them on how to do this. The recruitment methodology using announcements at national conferences and trainings resulted in a convenience sample, in contrast to a probability sample, so a meaningful response rate could not be calculated. At the end of the survey, participants received resources where they could learn more about trauma and well-being and seek help if needed (e.g. National Suicide Prevention Lifeline, National Mental Health Information Center, the International Association of Chiefs of Police mental wellness for police officers' website). All data were collected under the approval of the [masked for review] Institutional Review Board.

Measures

The measures consisted of established scales and those developed for the current study. Newly developed items were designed through interviews and

consultations with criminal justice personnel and mental health providers.

CSAM exposure. Questions about CSAM exposure identified how often (i.e. days per month) they reviewed CSAM, how much CSAM they viewed (i.e. still images, videos, and livestream videos), and how often ('never', 'sometimes', 'often', or 'all the time') they reviewed 13 types of content (e.g. children aged 5 or younger, involving sound). The 13 content types were combined to create a total CSAM score ($\alpha = 0.95$; $M = 33.9$, $SD = 8.3$). Participants were also asked how much control they felt they had over assigned work ('no control', 'some control', or 'a lot of control') and how often they hear about the final case resolution ('never', 'sometimes', 'often', or 'all of the time').

Sexual PTSS. Sexual PTSS was measured based on four questions selected from the Posttraumatic Sex Scale (Gewirtz-Meydan and Lassri, 2023), which were adapted to the experience of CSAM investigators (rather than their original focus on sexual abuse experiences). Participants were asked to rate on a scale from 1 (*rarely or never*) to 5 (*very often*) how often during sexual activity they (a) feel distant and cut off from their sexual partner ($n = 348$, 70%); (b) are suddenly reminded by images or videos of CSAM they had to view during work ($n = 274$, 55%); (c) experience negative feelings (e.g. irritation, anger) related to images or videos of CSAM they had to view during work ($n = 240$, 48%); and (d) avoid some sexual acts or experiences that remind them of images or videos of CSAM they were required to watch as part of their job ($n = 251$, 50%). For participants who answered all four questions ($n = 185$, 37%), items were combined to create a total scale score ($\alpha = 0.85$), with higher scores representing more sexual PTSS ($M = 6.57$, $SD = 3.07$). Given this wide range of responses to the four sexual PTSS questions, individual scale items were also sometimes used in analyses along to the overall score.

Mental health symptomatology. Depression and anxiety were measured using the Patient Health Questionnaire-4 (Kroenke et al., 2009). The scale

Table 1: Demographic characteristics by response to sexual PTSS questions

Characteristic	All participants	No answers	At least one answer	<i>p</i>
	(<i>n</i> = 500)	(<i>n</i> = 103)	(<i>n</i> = 397)	
	% (<i>n</i>)	% (<i>n</i>)	% (<i>n</i>)	
Gender				
Male	61.4 (307)	56.3 (58)	62.7 (249)	0.11
Female	37.4 (187)	40.8 (42)	36.5 (145)	
Non-binary	0.2 (1)	0	0.3 (1)	
Decline to answer	1.0 (5)			
Age				
18–24	0.8 (4)	0	1.0 (4)	0.32
25–34	21.6 (108)	20.0 (20)	22.3 (88)	
35–44	39.8 (199)	36.0 (36)	41.4 (163)	
45–54	29.8 (149)	33.0 (33)	29.4 (116)	
55–64	6.6 (33)	11.0 (11)	5.6 (22)	
65–74	0.2 (1)	0	0.3 (1)	
Decline to answer	1.2 (6)			
Hispanic ethnicity	7.3 (35)	7.2 (7)	7.3 (28)	0.98
Race ^a				
White	85.8 (429)	79.6 (82)	87.4 (347)	0.04
Black or African American	3.0 (15)	7.8 (8)	1.8 (7)	0.001
Asian or Pacific Islander	2.8 (14)	2.9 (3)	2.8 (11)	0.94
Native American or Alaska Native	1.2 (6)	1.0 (1)	1.3 (5)	0.81
Mixed racial background	3.0 (15)	1.0 (1)	3.5 (14)	0.17
Marital status				
Married	70.2 (351)	59.2 (61)	73.1 (290)	0.01
Unmarried but living with partner	6.4 (32)	5.8 (6)	6.5 (26)	
Separate or divorced	9.4 (47)	14.6 (15)	8.1 (32)	
Widowed	0.8 (4)	2.9 (3)	0.3 (1)	
Single (never married)	11.2 (56)	14.6 (15)	10.3 (41)	
Decline to answer	2.0 (10)			
Children younger than 18 (any)	63.0 (315)	60.2 (62)	63.7 (253)	0.51
Grandchildren younger than 18 (any)	9.6 (48)	10.7 (11)	9.3 (37)	0.68
Years in current position				
Less than 1	8.4 (42)	12.6 (13)	7.3 (29)	0.44
2–3	32.0 (160)	33.0 (34)	31.7 (126)	
4–6	22.6 (113)	17.5 (18)	23.9 (95)	
7–10	15.6 (78)	12.6 (13)	16.4 (65)	
11–15	12.0 (60)	13.6 (14)	11.6 (46)	
16–20	6.2 (31)	7.8 (8)	5.8 (23)	
More than 20	3.2 (16)	2.9 (3)	3.3 (13)	
Decline to answer				
Years in field				
Less than 1	1.2 (6)	1.0 (1)	1.3 (5)	0.44
2–3	6.6 (33)	4.9 (5)	7.1 (28)	
4–6	11.2 (56)	11.7 (12)	11.1 (44)	
7–10	16.8 (84)	22.3 (23)	15.4 (61)	
11–15	22.0 (110)	19.4 (20)	22.7 (90)	
16–20	19.6 (98)	14.6 (15)	20.9 (83)	
More than 20	22.6 (113)	26.2 (27)	21.7 (86)	

Table 1. Continued

Characteristic	All participants	No answers	At least one answer	<i>p</i>
	(<i>n</i> = 500)	(<i>n</i> = 103)	(<i>n</i> = 397)	
	% (<i>n</i>)	% (<i>n</i>)	% (<i>n</i>)	
Job position ^b				
Forensic examiner only	20.6 (97)	20.8 (20)	20.6 (77)	0.13
Investigator only	52.8 (248)	60.4 (58)	50.8 (190)	
Forensic examiner and investigator	26.6 (125)	18. (18)	28.6 (107)	
Work in ICAC Task Force Program	87.8 (439)	86.4 (89)	88.2 (350)	0.89
Time spent on ICAC investigations				
Less than 25%	23.9 (105)	19.1 (17)	25.1 (88)	0.18
25%–49%	22.5 (99)	20.2 (18)	23.1 (81)	
50%–74%	11.9 (52)	7.9 (7)	12.9 (45)	
75% or more	41.0 (180)	51.7 (46)	39.3 (134)	
Not sure	0.7 (3)	1.1 (1)	0.6 (2)	
Place of residence				
Large city (more than 300,000 people)	22.0 (109)	28.0 (28)	20.5 (81)	0.41
Smaller city (100,000–300,000 people)	28.0 (139)	28.0 (28)	28.0 (111)	
Town (20,000–100,000 people)	28.8 (143)	23.0 (23)	30.3 (120)	
Small town (2,500–20,000 people)	17.1 (85)	16.0 (16)	17.4 (69)	
Rural area (fewer than 2,500 people)	4.0 (20)	5.0 (5)	3.8 (15)	
Missing	0.8 (4)			
Types of crimes investigated ^a				
Internet crimes against children	93.4 (467)	95.1 (98)	92.9 (369)	0.42
Other cybercrimes	43.8 (219)	39.8 (41)	44.8 (178)	0.36
Homicide	43.4 (217)	33.0 (34)	46.1 (183)	0.02
Fraud	37.4 (187)	36.9 (38)	37.5 (149)	0.91
Family and sexual violence	61.8 (309)	47.6 (49)	65.5 (260)	0.001
Crimes against property	33.2 (166)	33.0 (34)	33.3 (132)	0.96
Narcotics	25.4 (127)	24.3 (25)	25.7 (102)	0.77
Gang violence	14.4 (72)	15.5 (16)	14.1 (56)	0.71
Type of agency				
Federal	11.6 (58)	17.5 (18)	10.1 (40)	0.19
State	24.4 (122)	24.3 (25)	24.4 (97)	
Local	62.6 (313)	58.3 (60)	63.7 (253)	
Non-profit	1.0 (5)	0	1.3 (5)	
Other	0.4 (2)	0	0.5 (2)	

^a Multiple responses were possible.

^b Sample size was 470 due to small cell sizes for other types of positions, which were excluded from this comparison (e.g. prosecutor (*n* = 6), probation and parole (*n* = 10), forensic interviewer (*n* = 9), and other (*n* = 5)).

presents a list of four problems, two about anxiety (e.g. ‘feeling nervous, anxious, or on edge’) and two about depression (e.g. ‘feeling down, depressed, or hopeless’). Participants were asked to indicate how much each problem had bothered them in the past 2 weeks from 0 (*not at all*) to 3 (*nearly every day*).

Items were combined to create a total scale score ($\alpha = 0.84$), with higher scores representing more symptomatology ($M = 5.77$, $SD = 2.33$).

PTSD was measured using the PTSD Checklist for DSM-5 (Blevins et al., 2015). The measure presents four reactions that some people have in response to

a very stressful experience (e.g. feeling distant or cut off from other people) and asks respondents to indicate how much they have been bothered by each in the past month. Response options range from 1 (*not at all*) to 5 (*extremely*). Items were combined to create a total scale score ($\alpha = 0.79$), with higher scores representing more PTSD symptomatology ($M = 6.52$, $SD = 2.75$).

Participant demographics. Information gathered about the respondents included their current job description (coded as forensic examiner only, investigator only, or both), the types of crimes they investigate, years in their current position and law enforcement, whether they work as part of the ICAC Task Force program, gender, age, race, ethnicity, marital status, number of children and grandchildren who are currently minors, and type of community (large city, small town, etc.).

Statistical analysis

The number of responses to the four sexual PTSS items varied. To better understand the characteristics of participants who did not want to answer questions on this topic, a detailed analysis of those who answered at least one of the four sexual PTSS questions versus those with no answers was conducted using chi-square statistics. Specifically, we compared the demographic (chi-square) and mental health characteristics (bivariate logistic regression) of participants who answered at least one sexual PTSS question compared with those who did not answer any items. Next, bivariate relationships were examined between different types of CSAM exposure (duration, frequency, content) with the full sexual PTSS measure and subitems (distant, intrusive, negative feelings, avoidance) using linear regression and beta coefficients. Next, pairwise correlations were conducted to examine the relationships between the full scale and individual sexual PTSS items with PTSD, depression or anxiety, being female, and total CSAM content exposure score. Finally, six linear regressions were performed to investigate the connections between demographic characteristics and CSAM exposure details with (a) the

full scale; (b) distant item; (c) intrusive item; (d) negative feelings item; (e) avoidance item; and (f) generalized PTSD symptomatology scale. The focus was on the significant relationships identified in the initial analysis. To address missing data for individual generalized PTSD items, a best-set regression method was used. This imputation process relied on responses to the other three PTSD items, four depression and anxiety items, seven subjective well-being items, years in the field, gender, and age. The imputation process affected less than 2% of the data, ensuring that the majority of the information was accounted for and preserved.

Results

Who answered questions about sexual PTSS?

Given the large amount of missing data on the sexual PTSS items, we analysed relationships between participant mental health and well-being and demographic characteristics between those who answered at least one of the four sexual PTSS questions versus those who did not answer any: 397 participants (79%) answered at least one sexual PTSS item. Of these, 26% answered one question, 15% answered two, 13% answered three, and 47% answered all four. A few significant demographic differences emerged between participants who did and did not answer at least one sexual PTSS question (Table 1). Those who answered were more likely than those who did not answer to investigate crimes involving family and sexual violence (65.5% vs. 47.6%, respectively; $p = 0.001$) and homicides (46.1% vs. 33.0%, $p = 0.02$). Those who answered at least one sexual PTSS question were also more likely to be White (87.4% vs. 79.6%; $p = 0.04$) and married (73.1% vs. 59.2%; $p = 0.01$).

Participants with elevated depression and anxiety (unadjusted odds ratio [OR] = 1.37, 95% CI [1.21, 1.56], $p < 0.001$) and higher PTSD scores (OR = 1.19, 95% CI [1.09, 1.31], $p < 0.001$) were significantly more likely to answer at least one sexual PTSS item (not shown in table).

Relationship between CSAM exposure measures and sexual PTSS

Duration of CSAM exposure, measured by length of time working CSAM cases, and frequency of CSAM exposure, measured by the number of days viewing CSAM in a typical month, were not related to sexual PTSS—either the full scale or individual items (Table 2). Similarly, amount of CSAM exposure, measured by a high number of still images (10,000 or more, which is 1 standard deviation above the mean) and a high number of videos (5,000 or more, also 1 standard deviation above the mean) in a given month, was also not related to sexual PTSS. Viewing a livestream of CSAM was positively related to the full sexual PTSS scale ($\beta = 0.19, p < 0.05$) and negative feelings ($\beta = 0.19, p < 0.01$). Having more perceived control over assigned work was related to less

sexual PTSS (full scale: $\beta = -0.14, p < 0.05$). Most individual types of content were related to the full scale and the intrusive thoughts, negative feelings, and avoidance items. Total CSAM content score was significantly related to the full scale ($\beta = 0.19, p < 0.01$) and intrusive thoughts, negative feelings, and avoidance.

Correlations between sexual PTSS, mental health, gender, profession, and CSAM content score

The full sexual PTSS scale was positively correlated with PTSD ($r = 0.50, p < 0.001$), depression and anxiety ($r = 0.33, p < 0.001$), and CSAM content score ($r = 0.19, p < 0.01$; Table 3). Female investigators were also more likely to have higher sexual PTSS scores ($r = 0.52, p < 0.001$). The same was true for each sexual PTSS item. Notably, CSAM

Table 2: Relationships between CSAM exposure types, experience and training, and sexual PTSS

Characteristic	Full scale	Distant	Intrusive	Negative feelings	Avoidance
	(<i>n</i> = 185)	(<i>n</i> = 348)	(<i>n</i> = 274)	(<i>n</i> = 240)	(<i>n</i> = 251)
	β	β	β	β	β
CSAM exposure					
Time working CSAM cases	-0.04	-0.05	-0.03	0.02	-0.07
Days viewing CSAM in typical month	0.06	-0.01	0.07	0.10	0.04
High number of still images viewed per month	0.05	0.04	0.001	-0.02	0.04
High number of videos viewed per month	0.04	0.02	0.01	-0.01	0.05
Any livestream videos viewed per month	0.19*	0.08	0.11	0.19**	0.13
Control over assigned work	-0.14*	-0.10	-0.05	-0.11	-0.09
Knowledge of final case resolution	-0.09	-0.06	-0.03	-0.03	-0.07
Monthly frequency of viewing CSAM types					
Children aged 5 or younger	0.12	0.06	0.10	0.09	0.09
Children aged 6–10	0.15*	0.10	0.14*	0.12	0.15*
Graphic	0.13	0.03	0.12*	0.15*	0.17**
Sexual contact between a child and adult	0.16*	0.08	0.13*	0.12*	0.15*
Penetration of child, including oral sex	0.15*	0.08	0.13*	0.13*	0.13*
Violence beyond sexual assault	0.17*	0.10	0.09	0.09	0.12*
Children posing	0.15*	0.11*	0.14*	0.12	0.15*
Multiple children	0.07	0.05	0.07	0.11	0.10
Children clearly under influence of alcohol or drugs	0.16*	0.05	0.03	0.12	0.15*
Multiple offenders	0.14	0.07	0.06	0.10	0.12
Fetishes	0.24**	0.11*	0.12*	0.17**	0.15*
Sound	0.17*	0.09	0.13*	0.14*	0.11
CSAM exposure score	0.19**	0.09	0.13*	0.15*	0.17**

* $p < .05$. ** $p < .01$. *** $p < .001$.

content score was not significantly related to generalized PTSD ($r = 0.06$, $p = 0.21$) or depression and anxiety ($r = 0.01$, $p = 0.83$). No significant differences between participants who were or were not forensic examiners were noted for any sexual PTSS, mental health, or CSAM content exposure measures.

Multivariate relationships between demographic variables and CSAM exposure and sexual PTSS

Considering other relevant factors (i.e. having children or grandchildren, being married, viewing livestreamed CSAM), CSAM content exposure was significantly related to sexual PTSS (full score: $\beta = 0.17$, $p = 0.03$), intrusive thoughts ($\beta = 0.10$, $p = 0.05$), and avoidance ($\beta = 0.17$, $p = 0.007$; Table 4). Women were also significantly more likely than their male counterparts to have elevated sexual PTSS—both the full scale and individual items. Being female and CSAM content score was not related to generalized PTSD.

Discussion

The current study explored how being exposed to CSAM regularly might be associated with sexual PTSS. Given that previous studies have predominantly focused on PTSD symptoms (Burns *et al.*, 2008; Perez *et al.*, 2010; Bourke and Craun, 2014), the current study offers a unique glimpse into how

CSAM exposure may be related to sexual PTSS and relatedly, sexual well-being. Findings from the current study indicate that the frequency, duration, and amount of exposure to CSAM were not related to sexual PTSS. However, CSAM content, livestreamed CSAM, mental health (including PTSD, anxiety, and depression), and being a female investigator were all associated with elevated sexual PTSS scores.

Viewing of livestreamed CSAM videos was positively related to sexual PTSS and experiencing negative feelings related to images or videos of CSAM during sex. It is possible that livestreamed CSAM poses unique challenges for law enforcement; its dynamic nature, compared with viewing static images or content, may indeed create a stronger connection between CSAM exposure and its impact on investigators. Given the existing literature on the effects of CSAM and their duration and frequency on investigators presents mixed findings, the current finding regarding livestreaming is particularly crucial in clarifying the link between CSAM and its impact on individuals. The unique challenges posed by livestreamed CSAM for law enforcement personnel deserve attention. Livestreaming can be more difficult to detect once the stream has ended (unless screenshots were taken), and a fast response from law enforcement is necessary to capture evidence and track down the streamer. If the streaming is not recorded, it is most likely that no evidence remains. This places law enforcement personnel under a lot of pressure to respond, and the speed and real-time

Table 3: Pairwise correlations among key study constructs

Construct	1	2	3	4	5	6	7	8	9	10
1. Full scale	1.0									
2. Distant	0.77***	1.0								
3. Intrusive thoughts	0.88***	0.46***	1.0							
4. Negative feelings	0.88***	0.46***	0.76***	1.0						
5. Avoidance	0.79***	0.46***	0.71***	0.70***	1.0					
6. PTSD	0.50***	0.28***	0.32***	0.34***	0.37***	1.0				
7. Depression or anxiety	0.33***	0.20***	0.24***	0.33***	0.23***	0.58***	1.0			
8. Female	0.23***	0.14**	0.18**	0.13*	0.21***	0.01	0.06	1.0		
9. Forensic examiner	-0.01	-0.02	-0.01	0.00	0.04	0.05	0.05	-0.17***	1.0	
10. CSAM score	0.19**	0.09	0.13*	0.15*	0.17**	0.06	0.01	-0.11**	0.13**	1.0

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4: Personal and CSAM exposure related to sexual PTSS

Demographic characteristics	Full scale		Distant		Intrusive		Negative feelings		Avoidance		PTSD	
	(n = 185)		(n = 348)		(n = 274)		(n = 240)		(n = 251)		(n = 500)	
	β	p	β	p	β	p	β	p	β	p	β	p
Female	0.24	0.002	0.17	0.002	0.19	0.002	0.13	0.05	0.21	0.001	-0.01	0.89
Any children or grandchildren	0.01	0.85	0.00	0.97	0.01	0.93	0.03	0.64	0.09	0.15	-0.03	0.55
Married	0.04	0.62	0.08	0.16	0.04	0.55	0.03	0.66	-0.06	0.40	-0.11	0.02
Livestreamed CSAM	0.07	0.36	0.05	0.36	0.05	0.39	0.11	0.10	0.02	0.70	-0.00	0.98
CSAM exposure score	0.17	0.03	0.10	0.09	0.10	0.05	0.12	0.07	0.17	0.007	0.07	0.14

Models included constructs significant at the bivariate level.

nature of livestreaming makes it extremely difficult. The existence of livestreamed CSAM can result in reduced control over the case, which is vital for investigators (Burns et al., 2008; Powell et al., 2015; Mitchell et al., 2022); thus, it is not surprising these negative feelings may also take a toll on their sexual response and well-being (Yehuda et al., 2015).

In this study, we found that the frequency and duration of viewing CSAM were not related to sexual PTSS among law enforcement. However, the content of the material was significantly associated with sexual PTSS, feeling distant and cut off from sexual partners, having intrusive thoughts and negative emotions about CSAM during sex, and avoiding sexual acts or experiences that could be a reminder of CSAM content. This association remained significant even after controlling for other relevant factors (i.e. having children or grandchildren, being married, and viewing livestreamed CSAM). More severe CSAM might involve penetration of a child, oral sex, violence, multiple children, children under the influence of alcohol or drugs, multiple offenders, fetishes, and sound. These elements may be more distressing for investigators and perhaps associated with elevated negative emotions (such as shame, sadness, and anger). This finding corresponds with previous research indicating that the degree of negative impact of CSAM on investigators appears to vary markedly based on the content (Burns et al., 2008; Powell et al., 2015; Leclerc et al., 2022). However, notably, CSAM content was not associated with PTSD or depression and anxiety. This finding may be explained by the sexual nature of CSAM, which may more easily be triggered

during (and via) investigators' sexual lives. When images leave a lasting impression on law enforcement personnel, they may intrude in their sexual domain and be paired with negative emotions (Yehuda et al., 2015).

Sexual PTSS was positively correlated with other aspects of investigators' mental health. Because sexual PTSS is a form of trauma that manifests in the sexual domain, it is not surprising it is associated with other mental health problems such as PTSD, depression, and anxiety (Gewirtz-Meydan and Lassri, 2023). This finding raises concerns because it implies that some investigators are dealing with mental and sexual difficulties at the same time, and although their mental health issues may be addressed in wellness programs (Mitchell et al., 2022), it is not clear if sexual PTSS is discussed in this programming.

Women were significantly more likely than their male counterparts to have elevated sexual PTSS. This was true for the full sexual PTSS scale (for those who answered all four questions) and individual questions. One possible explanation is rooted in the understanding that women's sexuality is often characterized as more responsive than spontaneous, as suggested by Basson (2000). This means that women's sexual experiences may be more influenced by exposure to CSAM, which could subsequently affect their sexual PTSS scores. Furthermore, women tend to respond differently to traumatic events compared with men. They often have a heightened perception of threat and loss of control, experience higher levels of peritraumatic dissociation, possess fewer social support

resources, and employ more emotion-based coping styles (Olf, 2017; Olf *et al.*, 2007). These gender differences in response to trauma could contribute to the elevated levels of sexual PTSS observed among women in this study. Another crucial factor to consider is that women are more likely to have previous experiences of sexual assault and abuse (Pereda *et al.*, 2009; Stoltenborgh *et al.*, 2011; Barth *et al.*, 2013). Although the current study did not account for this aspect, previous studies showed that past traumatic experiences could contribute to heightened levels of sexual PTSS among female investigators (Gewirtz-Meydan and Lassri, 2023). Finally, it is possible female investigators might be more affected by viewing CSAM due to the potential prevalence of depictions of girls in these videos compared with boys (Mitchell *et al.*, 2011; INTERPOL, 2018). The process of identification with the victims portrayed in such materials may elicit heightened emotional responses in female investigators, potentially impacting their experiences with sexual PTSS. However, this specific aspect has not been examined in the current study and requires further investigation.

The analysis of missing data revealed some intriguing patterns that shed light on the sensitivity and taboo nature of sexual PTSS in law enforcement. Law enforcement officers who answered at least one sexual PTSS question were more likely to be White and married, suggesting that these characteristics may be related to their level of comfort discussing sexuality. Furthermore, the presence of elevated levels of depression, anxiety, and PTSD among participants who answered at least one sexual PTSS question indicates a potential association between mental health and willingness to engage with this topic. This finding suggests that individuals who were more aware of and interested in sexual PTSS were more likely to respond, whereas those who were less aware or felt uncomfortable due to the sensitive nature of the questions were less likely to respond.

These results underscore the need to consider the privacy, sensitivity, and taboo associated with sexual health issues when collecting data from law enforcement officers. Investigators and wellness programs should be mindful of the cultural

and social contexts surrounding this topic, which may be unfamiliar or uncomfortable for many individuals in the law enforcement community. Although awareness of and discussions about mental health issues have progressed, the topic of sexual health, particularly in relation to post-traumatic stress, remains relatively unexplored and challenging to address. These findings highlight the importance of creating a safe and inclusive environment for law enforcement officers to comfortably share their experiences and concerns regarding sexual PTSS.

Limitations

The results of the present study should be considered in light of its limitations. First, data were collected via a convenience sample, which might not be representative of the population of investigators and forensic examiners who view CSAM. Moreover, self-selection bias could have occurred, especially with questions about sexuality, such that law enforcement personnel's level of resilience may have influenced their willingness to participate in the survey and report on their exposure to CSAM and its impact on their sexuality. This bias could have resulted in an overrepresentation of individuals with higher resilience who were less affected by viewing CSAM or an underrepresentation of those with lower resilience who were more affected by viewing CSAM. Second, the study was based on self-report measures, which are subject to response bias. This is especially true for sensitive and taboo topics such as sexuality. Third, because the design was cross-sectional, causal relations between study variables cannot be inferred. Finally, in the current study, we used a scale that was originally validated among sexual abuse survivors, to assess sexual PTSS following child sexual abuse. Modifying the questions to the experience of CSAM investigators may not capture the unique nuances of sexual PTSS resulting from CSAM exposure. Differentiating between PTSS from abuse experiences and CSAM exposure is crucial to avoid confounding interpretations. Future research should develop context-specific scales to accurately assess sexual PTSS related to CSAM exposure.

Clinical and research implications

The recognition of the wide range of challenges police and law enforcement face significantly improves the understanding of the implications and recommendations arising from the current study findings. One crucial clinical implication is that exposure to CSAM can impact investigators' sexual response and increase the risk of sexual posttraumatic stress symptoms (PTSS), particularly in the case of livestreamed CSAM or specific content. This finding emphasizes the wide range of challenges police and law enforcement face across the world may be facing during their work and the urgent need for specialized training and support for investigators who encounter such materials. Strategies for early detection, efficient response protocols, and emotional management should be implemented. Promoting a sense of control and empowerment among investigators is crucial. In addition, based on our findings, we suggest that integrating sexual health assessments and interventions in support frameworks is also important.

After acknowledging the difficulties in investigator's sexual well-being, police agencies can take several actions to support their staff and address the issue of sexual PTSS among investigators exposed to CSAM. First, they can provide specialized training programs that educate investigators about the psychological impact of CSAM exposure and equip them with effective coping strategies. Creating a supportive work environment is crucial, wherein regular debriefing sessions and peer support networks allow for open communication and sharing of experiences, especially experiences in sensitive and taboo areas such as sexuality. However, not all investigators may find sharing their personal experiences beneficial or suitable for their coping mechanisms, especially in such a sensitive and taboo topic. Thus, diverse approaches and support systems to ensure their well-being. This includes ensuring access to confidential mental health services, such as counselling, therapy, and potentially sex therapy, to provide targeted support when needed. Additionally, implementing wellness programs that prioritize overall well-being, including sexual health, and fostering peer support networks can further enhance support systems. Wellness programs

could offer support to personnel who have viewed CSAM related to its possible effects on their sexual response, such as mindfulness training, which has been empirically validated for the treatment of sexual difficulties in individuals with trauma (Brotto *et al.*, 2012). Mindfulness may allow law enforcement personnel to cope with difficult emotions related to their sexual experiences with more flexibility and less rumination, suppression, or overidentification, thereby improving sexual response (Brotto *et al.*, 2012; Godbout *et al.*, 2020). By adopting these approaches, police forces can effectively support their staff and tackle the challenges associated with sexual PTSS in the context of CSAM investigations.

Future research should account for early trauma and adversity, which can be associated with elevated sexual PTSS. In addition, moderating variables should be examined (e.g. social support, cognitive schemas, emotional regulation), alongside other mental health conditions such as somatization, dissociation, and attention-deficit/hyperactivity disorder, which may also explain the variance in sexual PTSS. In addition, further investigation is needed to examine if and how investigating CSAM is associated with other sexual behaviours (e.g. engaging in risky sex, compulsive pornography use, compulsive masturbation) and conditions (e.g. sexual distress, sexual functioning).

Additional future research questions include: Who is in the best position to support investigators' sexual well-being and mental health following their difficult job of viewing CSAM? What is the relationship between CSAM exposure and the different mechanisms by which this exposure can affect someone's sexuality? In-depth studies examining investigators' treatment preferences and their willingness to access help regarding their sexuality are a critical first step in clinician engagement. Furthermore, although some interventions focus on improvement of sexual response following trauma, none have been studied among CSAM investigators. Accordingly, it is unclear whether extant treatments are helpful, do more harm than good, or have other unknown iatrogenic effects. Although these existing treatments likely will demonstrate efficacy over time, it is important for researchers to better understand the needs of this unique population to address

their symptoms, given their consistent exposure to explicit CSAM.

Conclusion

The results of the current study show that certain factors, such as CSAM content, livestreamed CSAM, mental health (including PTSD, anxiety, and depression), and being a female investigator, were associated with increased sexual PTSS among law enforcement officers who viewed CSAM. These findings suggest that for some investigators, viewing CSAM may affect their sexual response and that certain aspects of the job may increase the risk of sexual PTSS. Despite progress in terms of increasing awareness and comfort with discussing mental health among law enforcement who view CSAM, there is still a need to address sexual health concerns. Therefore, it may be beneficial for wellness programs to provide support for personnel members who have viewed CSAM related to its possible effects on their sexual response.

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References

- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th edn). doi:10.1176/appi.books.9781585629992.
- Barth, J., Bermetz, L., Heim, E., Trelle, S., and Tonia, T. (2013). 'The Current Prevalence of Child Sexual Abuse Worldwide: A Systematic Review and Meta-analysis'. *International Journal of Public Health* 58(3): 469–483. doi:10.1007/s00038-012-0426-1
- Basson, R. (2000). 'The Female Sexual Response: A Different Model'. *Journal of Sex and Marital Therapy* 26(1): 51–65. doi:10.1080/009262300278641.
- Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., and Domino, J. L. (2015). 'The Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5): Development and Initial Psychometric Evaluation'. *Journal of Traumatic Stress* 28(6): 489–498. doi:10.1002/jts.22059.
- Bourke, M. L. and Craun, S. W. (2014). 'Secondary Traumatic Stress among Internet Crimes Against Children Task Force Personnel: Impact, Risk Factors, and Coping Strategies'. *Sexual Abuse: Journal of Research and Treatment* 26(6): 586–609. doi:10.1177/1079063213509411.
- Brady, P. Q. (2017). Crimes against caring: Exploring the risk of secondary traumatic stress, burnout, and compassion satisfaction among child exploitation investigators. *Journal of police and criminal psychology*, 32: 305–318.
- Brotto, L. A., Seal, B. N., and Rellini, A. (2012). 'Pilot Study of a Brief Cognitive Behavioral versus Mindfulness-based Intervention for Women with Sexual Distress and a History of Childhood Sexual Abuse'. *Journal of Sex & Marital Therapy* 38(1): 1–27. doi:10.1080/0092623X.2011.569636.
- Burns, C. M., Morley, J., Bradshaw, R., and Domene, J. (2008). 'The Emotional Impact on and Coping Strategies Employed by Police Teams Investigating Internet Child Exploitation'. *Traumatology* 14(2): 20–31. doi:10.1177/1534765608319082.
- Ensink, K., Berthelot, N., Biberdzic, M., and Normandin, L. (2016). The mirror paradigm: Assessing the embodied self in the context of abuse. *Psychoanalytic Psychology*, 33(3): 389–405. doi:10.1037/pap0000018.
- Gewirtz-Meydan, A. and Lassri, D. (2023). 'Sex in the Shadow of Child Sexual Abuse: The Development and Psychometric Evaluation of the Post-Traumatic Sexuality (PT-SEX) Scale'. *Journal of Interpersonal Violence* 38(5–6): 4714–4741. doi:10.1177/08862605221118969.
- Godbout, N., Bakhos, G., Dussault, E., and Hébert, M. (2020). 'Childhood Interpersonal Trauma and Sexual Satisfaction in Patients Seeing Sex Therapy: Examining Mindfulness and Psychological Distress as Mediators'. *Journal of Sex and Marital Therapy* 46(1): 43–56. doi:10.1080/0092623X.2019.1626309.
- INTERPOL. (2018). Towards a Global Indicator on Unidentified Victims in Child Sexual Exploitation Material. The full report can be retrieved from www.ecpat.org.
- Krause, M. (2009). 'Identifying and Managing Stress in Child Pornography and Child Exploitation Investigators'. *Journal of Police and Criminal Psychology* 24(1): 22–29. doi:10.1007/s11896-008-9033-8.
- Krieger III, C. N. (2017). *Understanding the impact of secondary traumatic stress on crimes against children investigators*. Tarleton State University.
- Kroenke, K., Spitzer, R. L., Williams, J. B. W., and Löwe, B. (2009). 'An Ultra-brief Screening Scale for Anxiety and Depression: The PHQ-4'. *Psychosomatics* 50(6): 613–621. doi:10.1016/s0033-3182(09)70864-3.
- Leclerc, B., Cale, J., Holt, T., and Drew, J. (2022). 'Child Sexual Abuse Material Online: The Perspective of Online Investigators on Training and Support'. *Policing: A Journal of Policy and Practice* 16(4): 762–776. doi:10.1093/police/paac017.
- Mitchell, K. J., Gewirtz-Meydan, A., O'Brien, J., and Finkelhor, D. (2022). 'Practices and Policies Around Wellness: Insights from the Internet Crimes against Children Task Force Network'. *Frontiers in Psychiatry* 13: 931268. doi:10.3389/fpsy.2022.931268.

- Olf, M. (2017). 'Sex and Gender Differences in Post-traumatic Stress Disorder: An Update'. *European Journal of Psychotraumatology* 8: 1–2. doi:10.3402/ejpt.v5.25547
- Olf, M., Langeland, W., Draijer, N., and Gersons, B. P. R. (2007). 'Gender Differences in Posttraumatic Stress Disorder'. *Psychological Bulletin* 133(2): 183–204. doi:10.1037/0033-2909.133.2.183.
- Pereda, N., Guilera, G., Forns, M., and Gómez-Benito, J. (2009). 'The Prevalence of Child Sexual Abuse in Community and Student Samples: A Meta-analysis'. *Clinical Psychology Review* 29(4): 328–338. doi:10.1016/j.cpr.2009.02.007.
- Perez, L. M., Jones, J., Englert, D. R., and Sachau, D. (2010). 'Secondary Traumatic Stress and Burnout among Law Enforcement Investigators Exposed to Disturbing Media Images'. *Journal of Police and Criminal Psychology* 25(2): 113–124. doi:10.1007/s11896-010-9066-7.
- Powell, M., Cassematis, P., Benson, M., Smallbone, S., and Wortley, R. (2015). 'Police Officers' Perceptions of their Reactions to Viewing Internet Child Exploitation Material'. *Journal of Police and Criminal Psychology* 30(2): 103–111. doi:10.1007/s11896-014-9148-z.
- Seigfried-Spellar, K. C. (2018). 'Assessing the Psychological Well-being and Coping Mechanisms of Law Enforcement Investigators vs. Digital Forensic Examiners of Child Pornography Investigations'. *Journal of Police and Criminal Psychology* 33(3): 215–226. doi:10.1007/s11896-017-9248-7.
- Stoltenborgh, M., Van Ijzendoorn, M. H., Euser, E. M., and Bakermans-Kranenburg, M. J. (2011). 'A Global Perspective on Child Sexual Abuse: Meta-analysis of Prevalence Around the World'. *Child Maltreatment* 16(2): 79–101. doi:10.1177/1077559511403920.
- U.S. Department of Justice. (2020). *Citizen's Guide to U.S. Federal Law on Child Pornography*. <https://www.justice.gov/criminal-ceos/citizens-guide-us-federal-law-child-pornography> (Accessed 7 May 2023).
- van der Kolk, B. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. Viking.
- Wößner, G., and Graf, J. (2016). Psychological Stress and Coping Strategies among Child Pornography Police Investigators: a qualitative analysis.
- Wolak, J., Finkelhor, D., and Mitchell, K. (2011). 'Child Pornography Possessors: Trends in Offender and Case Characteristics'. *Sexual Abuse* 23(1): 22–42. doi:10.1177/1079063210372143.
- Wolak, J., Liberatore, M., and Levine, B. N. (2014). 'Measuring a Year of Child Pornography Trafficking by U.S. Computers on a Peer-to-peer Network'. *Child Abuse & Neglect* 38(2): 347–356. doi:10.1016/j.chiabu.2013.10.018.
- Wortley, R., Smallbone, S., Powell, M., and Cassematis, P. (2014). *Understanding and Managing the Occupational Health Impacts on Investigators of Internet Child Exploitation*. <https://discovery.ucl.ac.uk/id/eprint/1447785/> (Accessed 7 May 2023).
- Yehuda, R., Lehrner, A., and Rosenbaum, T. Y. (2015). 'PTSD and Sexual Dysfunction in Men and Women'. *Journal of Sexual Medicine* 12(5): 1107–1119. doi:10.1111/jsm.12856.