Child Abuse & Neglect 118 (2021) 105133

Contents lists available at ScienceDirect

Child Abuse & Neglect

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

Collecting and viewing behaviors of child sexual exploitation material offenders

Chad M.S. Steel [a,b,*], Emily Newman [a], Suzanne O'Rourke [a], Ethel Quayle [a]

[a] University of Edinburgh, Teviot Place, EH8 9AG, UK
[b] George Mason University, Fairfax, VA, USA

ARTICLE INFO

Keywords:
Child pornography
Child sexual exploitation material
Collecting behavior
Recidivism
Novelty seeking

ABSTRACT

Background: The collecting behaviors of child sexual exploitation material (CSEM) offenders provide insight into their cognitions and motivations that have clinical applications.
Objective: This study analyzed the CSEM collecting and viewing behaviors of previously convicted offenders.
Participants and settings: A postal letter soliciting participation in an online survey was sent to adults previously convicted of CSEM offenses in the United States. Comparison information from a non-offending population of adults within the United States ($N = 524$) was collected and compared to the CSEM respondents ($N = 78$).
Method: A mixed-methods approach was utilized. The CSEM group was compared to a gender-matched sample from the non-offending group for general adult sexual exploitation material (SEM) viewing. Exploratory analyses of CSEM offender behaviors related to collecting, collection diversity, and recidivism were conducted.
Results: The majority (78%) of the offenders did not organize their content and 74% deleted their entire collection on at least one occasion. Offenders viewed more diverse categories of adult SEM than non-offenders, including more bestiality, hentai, teen, and nudist/naturist material. None of the offenders viewed CSEM exclusively, and 74% viewed more adult SEM than CSEM. The age range of CSEM content viewed did not support highly preferential viewing but did support general novelty seeking. The self-reported recidivism rate was 10%, with infrequent post-conviction CSEM activity.
Conclusion: Treatment professionals should not assume that pedophilic interests are the sole or even primary motivator for CSEM behavior. Problematic Internet usage, general pornography consumption, coping issues, or novelty seeking may be more appropriate targets for some offenders.

1. Introduction

The collecting and viewing habits of child sexual exploitation material (CSEM) offenders have been previously identified as an important characteristic of offending behavior (Quayle & Taylor, 2002). Collecting behavior itself has been noted as being of primary importance for a subset of collectors - for example, Krone (2004) noted that "Digital technology and the Internet make it possible for child pornography consumers to become obsessive collectors so that the collection of images becomes an end in itself." Despite the

* Corresponding author at: MS 2B5, George Mason University, Fairfax, VA, 22030, USA.
E-mail address: c.m.s.steel@sms.ed.ac.uk (C.M.S. Steel).

https://doi.org/10.1016/j.chiabu.2021.105133
Received 30 January 2021; Received in revised form 10 May 2021; Accepted 11 May 2021
0145-2134/Published by Elsevier Ltd.

interest in collecting behavior, minimal work has been done looking at the content of collections and the overall activities of CSEM offenders related to their collections. Prior research has identified a larger consumption of CSEM by an individual when compared to their adult sexual exploitation material (SEM) consumption as an indicator of pedophilia (Seigfried-Spellar & Rogers, 2014), and prior work has looked at the age and gender distribution of individuals in the corpus of known victims (Quayle & Jones, 2011). Additionally, prior work has identified a relationship between the quantity and composition of CSEM collections and contact offending behaviors, including victim selection (Long et al., 2013). In one of the few studies looking specifically at digital evidence from case studies, Glasgow (2010) identified characteristics of CSEM and SEM collections that point to preferential interest, but population-based quantitative research looking at specific collections is lacking. Studying the content of CSEM collections and the associated viewing behaviors over time can assist in the understanding of the breadth and depth of pedophilic and hebephilic interests and inform treatment interventions.

Chronophilias, the sexual preference for children based on age including but not limited to pedophilia and hebephilia, have been proposed as a potential independent sexual preference (i.e., separate and distinct from gender-oriented sexual preferences) (Seto, 2017), and this has been supported in preliminary studies (Walton & Duff, 2017). Pedophilic interest in particular has been previously cited as a primary motivation for CSEM offending, with 60% of offenders exhibiting phallometric response to CSEM material and CSEM viewing behavior proposed as a diagnostic indicator for pedophilia (Seto et al., 2006). Pedophilia has additionally been proposed to be better represented as a continuum as opposed to a taxon (Stephens et al., 2017), though how this is reflected in the behavior of CSEM offenders has not been explored.

The importance of pedophilic interest as the primary driver for a majority of CSEM offenders has been questioned, particularly in light of novelty-seeking behavior and general deviance (Quayle, 2020), and the evidence that a significant proportion of offenders do not exhibit a phallometric response (Seto et al., 2006). Problematic Internet usage in general (Quayle & Taylor, 2003), as well as pornography addiction (Seto et al., 2010) are potential drivers of CSEM activities separate from pedophilic interest. CSEM consumers are also frequent consumers of other deviant pornography (Endrass et al., 2009). Deviant categories can be identified based on statistical deviation from general public usage, for example Hald and Štulhofer (2016) identified sadomasochism, fetishism, violent sex, BDSM, and bizarre or extreme SEM as deviant based on a latent class analysis. Seigfried-Spellar and Rogers (2013) found that CSEM consumers were more likely to consume deviant pornography such as bestiality content and were also frequent consumers of adult content (60% viewed adult and bestiality content), and Fortin and Proulx (2019) identified a progression of deviance in terms of both age and extremity of SEM consumed over time. Additionally, prior work has shown that engagement with CSEM may be principally through a transition from adult SEM viewing (Garman et al., 2019).

In terms of post-conviction interactions, little work has been done to identify actual recidivism rates and the extent of re-engagement in collecting and viewing activities. Extant work has centered on subsequent arrests and convictions. In examining CSEM-related arrests approximately five years after a CSEM-only offense, Seto and Eke (2015) identified CSEM-only offenders as having a 7% recidivism rate, and Eke et al. (2011) found the rate to be 6.8%. Faust et al. (2015) found an even lower rate for CSEM offenders of 1.6% at a mean of five years following initial conviction. While the overall rates were low, they are considered to be lower bounds, as a percentage of recidivists will not be caught.

The treatment of individuals who commit CSEM offenses can take multiple forms, and developing an effective treatment approach can be informed by an assessment of the collecting and viewing behaviors of the patient. Pre-conviction, treatment may rely on addressing pedophilic interests and distorted cognitions surrounding CSEM content and the associated victims (Levenson et al., 2019). The German Dunkelfeld project, for example, targets self-reported pedophiles, and uses a mix of cognitive behavioral and pharmacological approaches. The project's primary treatment targets include coping skills, emotional self-regulation, victim empathy, and offense-supportive cognitions (Beier et al., 2015), and reports of its efficacy have been mixed (Beier, 2016; Mokros & Banse, 2019). Post-conviction, treatment may be directed at reducing recidivism, and target criminogenic needs. The Internet Sex Offender Treatment Program (I-SOTP) combines aspects of Problematic Internet Use (Quayle & Taylor, 2003) and the Good Lives Model (Ward & Stewart, 2003), focusing in part on distorted, offense-supportive cognitions; increased victim empathy; replacing the use of CSEM as part of a coping strategy; and developing pro-social behaviors (Middleton et al., 2009). Both treatment paths can utilize a behavioral approach, addressing the activities that facilitate the patient's engaging in problematic viewing habits.

Potential differentiators informing treatment choice include the presence of specific, pedophilic interests and the absence or presence of compulsions underlying collecting behavior. For non-pedophilic CSEM offenders, novelty-seeking may be more important than the content (Knack et al., 2020), or collecting itself (including the act of searching) may be a more important driver (Quayle & Taylor, 2002). This research seeks to evaluate CSEM consumers' viewing habits as well as the content of and their interaction with their CSEM collections, including the breadth of that content and its composition, to better understand their behaviors.

Previous research into the collecting and viewing behaviors of CSEM offenders has generally utilized one of three approaches - directly interviewing offenders, obtaining investigative case file information, or performing digital forensics analyses. Direct interviews of offenders have provided details on their motivations for collecting and viewing (Quayle & Taylor, 2002), but suffer from potential social desirability bias, which has driven the need to supplement interview data on CSEM technical behaviors with other information for assessment purposes (Seto & Eke, 2017). Investigative case files have provided large-scale statistical information on CSEM offenders based on information collected by law enforcement (and have included follow-on interviews with law enforcement) and are useful in identifying long term trends (Seto & Eke, 2015; Wolak et al., 2005, 2011, 2012), but are limited by nature of investigative files (e.g., information on adult SEM viewing or the specific categories of CSEM may not be captured as they are not elements of the criminal code). Forensic reviews of the devices of CSEM offenders have provided a more granular view of CSEM content stored by offenders, and avoid issues with self-reporting bias (Fortin & Proulx, 2019; Glasgow, 2010), but may not capture all viewing activity (due to the lack of forensic artifacts) and are limited to the timeframe a particular device was used.

This research seeks to better quantify and qualify the collecting and viewing behaviors of CSEM offenders through an exploratory cross-sectional study using online anonymous surveys to reduce reporting bias due to the sensitive nature of the topic and associated stigmatization. First, the scale of traditional collecting was defined by asking about attempts to find and obtain content from a specific series or of a specific victim (Jenkins, 2001; Taylor & Quayle, 2003). The organization of this content, and the rate and reasons for deleting the content, were ascertained. Second, the diversity of the CSEM with respect to age and gender of the individuals depicted (including adult SEM) were quantified. The categories of both adult SEM and CSEM viewing were identified and compared to a reference population of non-offenders. Finally, any post-conviction viewing was evaluated and reviewed for any correlation with prior mental health treatment to identify any potential treatment effect on recidivism.

2. Methods

This research utilized a mixed methods approach to analyze the collecting and viewing behaviors of individuals previously convicted of CSEM offenses. The analyses performed were broken into three categories - collecting behaviors, collection diversity, and recidivism. The details of each of the analyses are identified below, followed by the analytical tests performed. The data for the study was collected using online surveys. The surveys were made anonymous to facilitate greater disclosure due to the sensitive and potentially stigmatizing nature of the topic. Additionally, any disclosures of CSEM offending made through a non-anonymized survey would have been subject to mandatory reporting requirements in the United States, and as such ethics necessitated anonymity.

The surveys required participants to consent to all aspects of the study before proceeding to the questions. Once they consented, participants were able to withdraw from the study at any point until final submission. Because the study was anonymized, individualized consent forms were not collected nor maintained, and the option to withdraw a participant's data following submission was not possible.

2.1. Participants and setting

This research was conducted using data obtained through two anonymous online surveys hosted through the University of REDACTED's Qualtrics instance. The public survey was of non-offenders, specifically English-speaking adults in the United States, and consisted of 11 demographic questions and 30 questions related to adult SEM viewing and beliefs about CSEM offenders. Participants were recruited by Qualtrics using their Qualtrics Panel service (*Online panels: Get responses for surveys & research | Qualtrics,* n.d.). No direct compensation was provided to the participants of the public survey by the researchers, however Qualtrics compensates research panel members, the details of which are proprietary to Qualtrics. A total of 524 participants successfully completed the survey and associated integrity checks. Because the population of previously convicted CSEM offenders who specified a gender identity (0.99, $n = 77$) identified primarily as male (0.95, $n = 74$) or gender variant/non-conforming (0.04, $n = 3$), only the subset from the reference population identifying with those options ($n = 254$) were used for comparisons in this research.

The second survey solicited responses from individuals previously convicted of child pornography offenses within the prior 10 years. The individuals were English-speaking adults within the United States solicited via postal mail based on their inclusion in two sex offender registries for the states of Texas and Illinois, which were selected based on the availability of both offense and residence data[1]. The participants were not provided any direct compensation, but were eligible to win one of two $150 gift cards from Amazon. Participants completing the survey were provided an anonymous link to a separate survey to optionally enter their email addresses. Every email address was entered into a drawing made by an independent party, and two participants were sent electronic gift cards from Amazon for the amount noted. The email addresses were not linked to specific responses and were deleted following the drawing to further ensure the anonymity of the participants. Of the solicitations sent ($N = 2508$), 141 individuals responded by taking an online survey that included 10 demographic questions[2] and 80 questions related to their beliefs and behaviors associated with their CSEM activities. The survey contained two integrity check questions, one multiple choice question and one embedded within a matrix, to confirm attention. Of those starting the survey, three respondents declined the informed consent and were not presented the questions. Additionally, 40 respondents failed to complete the survey in its entirety and partial responses were not maintained (this was done to allow individuals to opt-out at any point by stopping the survey). Twenty respondents failed the integrity checks, resulting in a total of 78 responses.

2.2. Ethics

Ethical approval was received from the Research Ethics Committee at the University of REDACTED on May 20, 2020. Additionally, Institutional Review Board approval was received from REDACTED University on May 13, 2020.

[1] Sex offender registries in the United States vary by state in terms of who is required to register, what information is made available on registrants related to the specific offenses for which they were convicted, the availability of the data for bulk download, and the usage limitations on that data. Illinois and Texas were chosen because they required CSEM offenders to register, included sufficient information to exclude minors who had registered, provided for bulk download of their data, and did not limit research usage of their registry information.

[2] The sex of the offenders was not asked for anonymity reasons, specifically to reduce the risk of matching an individual response to the state data, which contained sex as a demographic category.

2.3. Offender collecting behavior

General collecting behavior was assessed by asking respondents if they ever tried to collect all of the images in a given series or for a given individual depicted. The respondents were additionally asked how they had organized their collections (multiple selections were permitted) based on common categorizations found during digital forensics examinations (Steel, 2014):

- All in the same directory
- By the age of the individual portrayed
- By the acts performed
- By how much I like the content
- I only viewed content, I didn't download it
- Other

Individuals selecting "Other" were asked to provide a text explanation.

Respondents were additionally asked if they had ever deleted their entire collection. If they had deleted their collection, they were asked an open-ended question about why they had deleted it and the results qualitatively analyzed for themes using inductive coding as noted below.

2.4. Collection diversity

To evaluate the diversity of sexual content collected by the previously convicted CSEM offenders and how that differed from the reference population, a series of popular categories of adult SEM as well as more deviant SEM such as bestiality were identified. Respondents were asked to select all of the categories in which they had viewed adult SEM on at least one occasion. The categories were identified based on the top eight categories identified by the Pornhub Insights team as the most popular on their site, the largest adult SEM site on the Internet (*The 2019 year in review – Pornhub insights, n.d.*). Additionally, four categories of deviant SEM frequently associated with CSEM (Endrass et al., 2009; Seigfried-Spellar & Rogers, 2013; Steel, 2014) were identified for inclusion - bestiality, nudism/naturism, rape/forced sex, and hentai. The categories were presented in a randomized order to both populations. The previously convicted CSEM offender population was additionally asked in which of those categories they specifically viewed CSEM content.

In addition to the diversity in the content depicted, the ages depicted were elicited from the previously convicted CSEM offender population based on the totality of their viewing history. The respondents were asked to indicate what percentage of pornography they ever viewed was CSEM as opposed to adult SEM, as well as what percentage of the CSEM they ever viewed fell into each of six evenly distributed age groups covering all minors (0–17). The weighted average age for each of the respondents was calculated as the average of the median age for each group multiplied by the percentage for that group. Finally, they were asked the total percentage of CSEM they had ever viewed in which child was male and what percentage the child was female.

2.5. Recidivism

Self-reported recidivism was measured by asking respondents to indicate their viewing of CSEM since their conviction in five categories, with any viewing (endorsement of any category except the final one) considered recidivating behavior. The categories were used instead of a simple yes/no question to reduce minimization and provide additional resolution on post-conviction activities. With the exception of the first and last categories, the amounts in the other categories were intentionally left unspecified to allow the respondents to answer in the context of their own prior offending:

- I only viewed it once or twice but did not continue doing so
- I have viewed it very infrequently
- I have viewed it frequently
- I have viewed it on a regular basis
- I have not viewed any since my conviction

Respondents were asked through a yes/no question if they had ever attended counselling or treatment related to their CSEM activities.

2.6. Analysis

The demographics for the groups were evaluated for significant differences using a one-tailed, two proportion z-test for the categorical data proportions and a Wilcoxon ranked sum test for the income data, with a Bonferroni correction applied for multiple comparisons.

Chi-square tests were used for categorical comparisons and proportion comparisons, and for assessing any correlation between recidivism and prior treatment. Distributions of collection size were evaluated using a one-tailed *t*-test. For the continuous data, one-way ANOVA tests followed by a pairwise Tukey analysis (where appropriate) corrected for multiple comparisons was used. For the

qualitative questions, common words and phrases were identified and were inductively grouped to facilitate the identification of common themes. The selected responses were included with no edits to spelling, punctuation, or grammar. All results were collected and analyzed using R, with a p value of 0.01 used for statistical significance tests (where appropriate).

3. Results

The respondents to the public survey were diverse as to sex, sexual orientation, age, relationship status, gender identity, race, employment, and education. The previously convicted offender sample was demographically reflective of the CSEM offender community, with 95% ($n = 74$) of respondents identifying as males, 72% ($n = 56$) as heterosexual, and 88% ($n = 69$) as white or Caucasian. The only areas with significant differences between the gender-matched sample and the previously convicted offender sample were that the offenders were more likely to be bisexual ($z = 3.70$, $p < .01$) and to have a liberal arts degree ($z = 3.79$, $p < .01$), whereas the public matched sample were more likely to be heterosexual ($z = -4.30$, $p < .01$), black or African American ($z = -3.65$, $p < .01$), and married ($z = -3.91$, $p < .01$) using one-tailed, two proportion z-tests with Bonferonni corrections applied. Additionally, the offender group was found to have a lower income using a Wilcoxian ranked sum test ($W = 12{,}792$, $p < .01$). Full demographic details of the respondents can be found in Appendix A.

3.1. Offender collecting behavior

For general collecting behavior, 42% ($n = 33$) of respondents confirmed that they had attempted to collect all of the pictures of a series or of an individual and 58% ($n = 45$) had never attempted to do so. When organizing their content, the majority of individuals, 78% ($n = 62$), did not employ any organization or bundled all of their content into the same directory (Table 1). Of the remainder, the most common organization method was by how much they liked particular content at 8% ($n = 6$), followed by the acts depicted in that content at 6% ($n = 5$), with only 5% ($n = 4$) organizing by the age of the individual portrayed.

For collection maintenance, 74% ($n = 58$) of respondents indicated that they deleted their entire collection at least once. Of those who deleted their collections 47% ($n = 27$) had a theme present in their explanations of why they did so of guilt, shame, and remorse, example statements of which included:

- "I was absolutely repulsed and sick to my stomach that I had sunken to such lows. I knew this was exploitative and I was ashamed. I was frightened and knew this was illegal behavior which could ruin my life-which it did."
- "Shame and embarrassment of what I was doing, fear of being caught, regret for doing it."
- "Trying to stop. Disgusted with myself."

The combination of guilt and shame associated with deletions was also noted by several individuals as being cyclic:

- "Usually every time after I finished masturbating I felt ashamed and realized that was not the life I wanted to live. So I'd delete everything only to redownload it later"
- "I knew my deviant behavior was a problem and I had promised to rehabilitate myself. I would delete my entire collection but always go back and view/download after a period of time. This would occur numerous times over a few year [sic] period. It wasn't until after I was caught that I came to the realization that I was an addict and that deleting my collection was a standard phase of remorse in the cycle that I was stuck repeating time and time again."
- "Guilt. Anger. Shame. Admitting to it to wife and family. Seeking help. Deletion was always part of the cycle."

A second theme present was a desire to stop (often co-existing with the first theme), expressed by 33% ($n = 19$) of respondents:

- "I was addicted to pornography. I would delete and saved [sic] adult SEM or child SEM shortly after I would save it. I would delete it with the thought that [sic] is the last time I am going to look at this crap."
- "I was trying to stop looking at it, but the urges were to [sic] great and I went back to it."

Twenty six percent ($n = 15$) highlighted fear, focused on a fear of getting caught and the associated consequences:

Table 1
Organization of collections.

Categorization	Proportion and # of respondents
All in the same directory/no organization	0.78 (n = 62)
By how much I like the content	0.08 (n = 6)
By the acts performed	0.06 (n = 5)
By the age of the individual portrayed	0.05 (n = 4)
I only viewed content, I didn't download it	0.04 (n = 3)
By content type (images v. videos)	0.03 (n = 2)
Other (please specify)	0.08 (n = 6)

- "Combination of fear of getting caught and not wanting to be attracted to [sic] child sem anymore."
- "Fear of doing something unethical, immoral, and illegal. Fear of encountering law enforcement."

A final theme present in 14% ($n = 8$) of the responses was the deletion of content as part of routine computer hygiene practices or as a specific countermeasure related to CSEM viewing:

- "I was looking for certain adult users. I deleted all after every search."
- "I deleted everything I downloaded after every session."

3.2. Collection diversity

Of the offender group, 100% of respondents ($n = 78$) indicated that they had viewed adult SEM in at least one of the enumerated categories, compared to 79% ($n = 200$) of the public group. Overall, the previously convicted offender group was more likely to view adult SEM in every category. Table 2 shows the adult SEM viewing of the offender group compared to the public group, and the adult SEM viewing of offender group to CSEM viewing of the offender group for each of the enumerated categories. Additionally, the ratio of offender viewing to public viewing is shown to indicate relative differences in viewing. In particular, the ratio between the previously convicted offender group and the reference population was highest in the bestiality (15.8:1), hentai (5.6:1), teen (5:1), and nudist/naturist (4.7:1) categories. Additionally, the number of categories viewed, indicating the breadth of content viewed, was significantly higher using a one-tailed *t*-test, $t(113) = 14.4$, $p < .01$, for the offender group ($m = 7.12$, $sd = 2.88$) than the reference group ($m = 1.93$, $sd = 2.44$).

For age diversity, the average respondent in the offender group indicated that they viewed primarily adult SEM over their total viewing history ($m = 71.8$, $sd = 29.8$), with four respondents indicating 100% adult SEM[3] and no individuals indicating that they exclusively viewed CSEM. Overall, 74% ($n = 58$) indicated that they viewed more adult SEM than CSEM. For the ages portrayed, the largest age band represented by proportion of total CSEM viewed was 15–17 ($m = 0.37$, $sd = 0.33$), and the lowest age represented was 0–2 ($m = 0.02$, $sd = 0.11$) (Table 3). When evaluating the diversity of age groups viewed by each user, the median number of age ranges viewed was 4 (representing a span of 11 years), with a mode of 6, and 23% ($n = 18$) of individuals viewed at least some content in all of the age ranges. All but two of the individuals, 95% ($n = 76$), exhibited a flat or strictly decreasing distribution of viewing in other age bands when compared to their age band of most frequent viewing. Looking at the weighted average of ages viewed in CSEM material, the mean age viewed overall was 12.5 ($sd = 2.7$). Sexual orientation was not found to be correlated with the weighted average age of content viewed based on a one-way ANOVA ($F(3,74) = 0.72$, $p = .54$).

In addition to age diversity, the diversity of male/female composition of the content was found to be high. The content viewed was found to be primarily female ($m = 0.74$, $sd = 0.33$), but only 4% ($n = 3$) viewed exclusively male content and 24% ($n = 19$) viewed exclusively female content, leaving 72% ($n = 56$) having viewed both male and female content. An ANOVA showed a difference between groups based on self-reported sexual orientation of the respondents in the percentage of content viewed ($F(3,74) = 25.7$, $p < .01$). A pairwise Tukey analysis, correcting for the number of comparisons, found that there were significant differences between the Heterosexual and Homosexual groups (0.71, $p < .01$, 95% CI [0.50, 0.93]), with those in the Heterosexual group having a higher mean percentage of female content (86%) compared to the Homosexual group (14%), and between the Bisexual and Homosexual groups (0.55, $p < .01$, 95% CI [0.28, 0.83]), with the Bisexual group having a higher mean percentage of female content (70%) compared to the Homosexual group (14%).

3.3. Recidivism

Overall, the self-reported recidivism rate was 10% ($n = 8$), with a small number of individuals indicating that they viewed CSEM once or twice (0.05, $n = 4$) or very infrequently (0.05, $n = 4$). No individuals indicated that they viewed CSEM more than very infrequently.

A large proportion of the respondents (0.94, $n = 73$) indicated that they had engaged in mental health treatment (the type of treatment or voluntariness was not elucidated) for their CSEM activities. Seven of the individuals that viewed CSEM following their conviction had attended treatment, and one individual had not. No statistically significant effect was identified related to recidivism between the treatment and non-treatment groups ($\chi 2 = 0.55$, $df = 1$, $p = .46$, 95% CI [−0.46, 0.25]).

4. Discussion

The primary goal of this study was to investigate the collecting and viewing behaviors of previously convicted CSEM offenders. The study found that collecting behavior was not present in the majority of offenders but a substantial minority (42%) did report collecting behavior, and that collections were deleted by many respondents as part of a guilt/shame cycle. Additionally, CSEM offenders reported diverse viewing habits in terms of both the age range and breadth of content consumed.

A substantial minority (42%) of the CSEM respondents reported collecting behavior, specifically trying to obtain all of the images or

[3] One individual denied personally viewing any CSEM. The others may be a result of rounding off percentages - the slider used for the question did not allow for increments below half a percent.

Table 2
Pornography viewing habits of offenders and non-offenders.

Category	SEM proportion (offender)	CSEM proportion (offender)	SEM proportion (public)	Offender/public SEM ratio	$\chi 2$
Bestiality	0.44	0.18	0.03	15.82	$\chi 2 = 88.2, p < .01$
Hentai	0.54	0.31	0.09	5.95	$\chi 2 = 73.2, p < .01$
Teen	0.90	0.71	0.18	4.96	$\chi 2 = 131.6, p < .01$
Nudist/naturist images	0.68	0.59	0.15	4.66	$\chi 2 = 83.4, p < .01$
Anal	0.76	0.36	0.17	4.37	$\chi 2 = 92.1, p < .01$
Rape/forced sex	0.31	0.31	0.07	4.34	$\chi 2 = 28.2, p < .01$
Japanese	0.69	0.38	0.17	4.19	$\chi 2 = 78.1, p < .01$
Lesbian	0.81	0.37	0.25	3.21	$\chi 2 = 75.7, p < .01$
Amateur	0.90	0.71	0.29	3.12	$\chi 2 = 88.1, p < .01$
Ebony	0.47	0.15	0.21	2.23	$\chi 2 = 19.3, p < .01$
MILF	0.63	0.10	0.32	1.97	$\chi 2 = 22.7, p < .01$

Table 3
Composition of collections by age.

Age range	Mean	SD	Kurtosis	Skew
0..2	0.02	0.11	0.65	0.08
3..5	0.03	0.07	0.07	0.03
6..8	0.09	0.15	0.14	0.03
9..11	0.17	0.17	0.02	0.01
12..14	0.32	0.24	0	0.01
15..17	0.37	0.33	−0.01	0.01

videos related to a particular victim or in a particular series. This behavior may not be unusual or related directly to CSEM - mainstream adult pornography sites organize or tag content based on the individuals depicted, and searches for specific adult film stars are highly represented in search volume (*The 2019 year in review – Pornhub insights, n.d.*). Additionally, the importance of the collection is tempered by the large number of individuals (74%) that deleted their entire collection at some point, showing that fear of discovery, desire to stop, or general shame and guilt outweighed, at least at a point in time, the desire to maintain their content. This is further supported by the lack of any particular categorization of CSEM collections by the majority of respondents.

What was not measured by this research is the difference between CSEM collecting behavior that is consistent with typical adult pornography collecting patterns and behavior that is pathological, i.e., obsessive behavior. At the extreme, stalking behavior such as trying to identify and contact victims (*US v. Hoffman, Case 2:08-CR-027-GMN-GWF,* 2013) has been seen in CSEM cases, but similar stalking behavior has also been seen with adult film actors (Clarridge & Sullivan, 2011). As such, non-pathological collecting behavior alone should not be considered a treatment target, but rather should be further evaluated for the presence of obsessions or fixations or similar behaviors of clinical interest.

Looking at the public's reported consumption of pornography in this research, if we define deviance as anything more than a standard deviation from the mean viewing proportion, only rape/forced sex and bestiality content would qualify as deviant. While previously convicted CSEM offenders had higher overall proportions in all categories, the ratios for bestiality, hentai, teen, and nudist/naturist images showed the highest differences between offender and general public viewing, with a higher prevalence within offender viewing. When asked about the specific categories viewed in both their adult SEM and CSEM viewing, including those identified as deviant, the offender group viewed all specific categories of pornography less frequently in their CSEM viewing with the exception of rape/forced sex. This potentially highlights CSEM as a separate category of deviance, as opposed to a modifier to other categories of deviance, but additional research is necessary to confirm these results.

The diversity in viewing habits extended to age-related viewing as well. Most consumers viewed pedophilic CSEM content, with only 6% of offenders viewing exclusively hebephilic content, though this may be influenced by the sample and a result of higher prosecution rates in cases of content depicting younger victims when compared to content depicting victims closer to 18. The indicators are that only a very small subset of offenders (12%) target a single age group and that adult pornography usage is more prevalent than CSEM usage. Even amongst previously convicted CSEM offenders, the prevalence of a preferential offender (Lanning, 1987) and highly specific collecting behavior (Howitt, 1995) does not appear to be well supported as a widespread phenomenon. This may be partially reflective of the more ready availability of content that was not present in the earlier days of the Internet, but it also may be reflective of prior qualitative responses during interviews reflecting socially acceptable rationalizations (Quayle & Taylor, 2002), e.g., identifying collecting behavior as a more acceptable explanation than pedophilic interest or general interest in deviant pornography.

The sexual orientation of the respondents was found to be related to the proportion of male/female content viewed between the heterosexual and homosexual identification groups as well as the homosexual and bisexual identification groups, but was not significantly correlated with the age of the content viewed. Seto (2017), in defining chronophilias, predicted that there would be interactions of age interests with gender orientation. The research was not intended to identify specific diagnostic criteria for the

presence of a chronophilia (Seto, 2017), so generalization of the results is not reasonable, but the lack of correlation between sexual orientation and age and the correlation between sexual orientation and ratio of male/female content do not necessarily support the concept of CSEM viewing behavior being an independent construct.

Multiple respondents noted that their guilt and shame were cyclic, leading to their deleting their collections only to restart the activity at a later point. The expression of guilt is encouraging for treatment and has been shown to be positive in addressing transgressions (Baumeister et al., 1995), however the use of CSEM as a dysfunctional coping mechanism (Knack et al., 2020; Merdian et al., 2018) may encourage this becoming a vicious cycle that requires outside action to break, similar to substance abuse issues (Dearing et al., 2005). The cyclic nature of deletions highlights an important consideration for future research that utilizes digital forensics examinations - the forensic artifacts identified may only represent a subset of viewing history and caution is warranted related to drawing any conclusion about long term behavior.

For recidivism, the self-reported rate (10%) is slightly higher than previous work looking at individuals who had a second conviction for CSEM offenses. This is consistent with some offenders recidivating but not being caught, however the level of self-reported activity in the population was reported as very low. Most of the sample reported having received treatment related to CSEM, and the small number that had not received treatment limited the ability to detect a treatment effect (if any) on recidivism.

The research shows that, at a minimum, clinicians need to avoid making specific assumptions regarding CSEM viewing activities before engaging in a treatment plan. Detailed questions about the specific technical behaviors a patient engaged in may be more helpful than self-reporting of reasons for viewing, which are subject to social desirability-based biases (and routine use of penile plethysmography is not practical).

5. Limitations

This research was conducted on a relatively small sample of English-speaking adults from two states within United States and further work is needed to generalize the results beyond that population. There are known quality problems with the use of Internet surveys in research, but built-in quality and attention checks and a conservative approach to the results included are believed to have minimized those issues. The response rate from the individuals previously convicted of CSEM offenses was low, but consistent with other research using sex offender registry data (Tewksbury, 2006). Additionally, the anonymous nature of the surveys precluded asking follow-up questions or performing verifications of the responses received.

While shame and guilt may have different clinical implications and be separate and distinct, with shame indicating feeling bad about the self and guilt feeling bad about an act or behavior, this research was not designed to distinguish between them and further work is required to obtain finer resolution on the distinction (Dearing et al., 2005).

The results must be viewed in the context of prosecutorial discretion. Prosecution of offenders who viewed content with younger victims depicted is higher in the United States and any correlated behaviors may be over-represented. The mean age of interest in CSEM material is useful for comparisons within the offender population as well as for evaluating breadth, but cannot be considered an average “age of interest”. Because the majority of SEM viewing was adult and was not incorporated into this number, the actual mean age of interest is likely much higher.

Offender motivations are more likely to be complex in nature. An individual having pedophilic indicators, including responses to phallometric testing, does not necessarily mean that is their primary motivation for the offending behavior. Despite the prevalence of pedophilic indicators, general problematic pornography usage, problematic internet use and novelty seeking may be more important behaviors to target than an interest in pre-pubescent children. Newer treatment programs incorporating these factors have been developed but empirical outcomes are not year available (Henshaw et al., 2020). Additionally, it should not be assumed that collecting behavior is pathological without strong confirmation before addressing it as a criminogenic target.

6. Conclusions

Individuals who view CSEM were found to have diverse interests in all types of SEM, and 74% viewed more adult SEM than CSEM. Their diversity in interests extends to the sex and the ages of the individuals portrayed, which was indicated by the low number of exclusive male/female viewers and in the breadth of age categories viewed by most respondents. This highlights the need in risk assessments to avoid assumptions about the likelihood of a potential contact offense based on the individuals a CSEM offender has access to, especially when derived from a potentially non-representative sample of CSEM content found forensically. The regular deletion of content as part of a viewing/guilt-remorse/deletion cycle must also be considered for both digital forensics (viewing length may be longer than indicated by the content present) and for treatment composition. Asking about collecting behaviors, past deletions and the reasons underlying both behaviors may help elicit relevant specifics on an individual's mindset, as well as an understanding of the triggers and cues that led to re-engagement.

Appendix A

Table A
Detailed demographics of respondents.

Demographic category	Offender ($n = 78$)	Public-gender matched (n = 254)
Sexual orientation		
Bisexual	0.14 ($n = 11$)	0.03 (n = 7)
Heterosexual (straight)	0.72 (n = 56)	0.91 ($n = 231$)
Homosexual (gay)	0.13 ($n = 10$)	0.05 ($n = 13$)
Other	0.01 (n = 1)	0.01 (n = 3)
Prefer not to say	0 ($n = 0$)	0 (n = 0)
Age distribution		
18–24	0.01 (n = 1)	0.17 ($n = 44$)
25–34	0.28 ($n = 22$)	0.11 ($n = 27$)
35–44	0.24 (n = 19)	0.17 ($n = 42$)
45–54	0.17 (n = 13)	0.24 ($n = 61$)
55–64	0.22 ($n = 17$)	0.19 ($n = 47$)
65 or older	0.08 (n = 6)	0.13 ($n = 32$)
Gender identity		
Female	0 (n = 0)	0 (n = 0)
Gender variant/non-conforming	0.04 (n = 3)	0 (n = 1)
Male	0.95 (n = 74)	1 ($n = 253$)
Not listed	0.01 (n = 1)	0 (n = 0)
Prefer not to answer	0 (n = 0)	0 (n = 0)
Transgender male	0 (n = 0)	0 (n = 0)
Relationship status		
Divorced	0.23 (n = 18)	0.09 (n = 23)
In a domestic partnership or civil union	0.03 (n = 2)	0.03 (n = 7)
Married	0.23 (n = 18)	0.48 ($n = 122$)
Other	0 (n = 0)	0 (n = 1)
Separated	0.04 (n = 3)	0 (n = 1)
Single, but cohabiting with a significant other	0.04 (n = 3)	0.05 (n = 12)
Single, never married	0.41 (n = 32)	0.32 ($n = 82$)
Widowed	0.03 (n = 2)	0.02 (n = 6)
Race (multiple selections permitted)		
American Indian or Alaska Native	0.01 (n = 1)	0.02 (n = 5)
Asian	0 (n = 0)	0.04 ($n = 9$)
Black or African American	0.01 (n = 1)	0.17 (n = 42)
Hispanic or Latino	0.12 (n = 9)	0.07 (n = 19)
Native Hawaiian or Pacific Islander	0.01 (n = 1)	0 (n = 1)
Other	0.01 (n = 1)	0.01 (n = 3)
White or Caucasian	0.88 (n = 69)	0.75 ($n = 191$)
Employment status		
Not working (disabled)	0.13 (n = 10)	0.05 (n = 12)
Not working (looking for work)	0.15 ($n = 12$)	0.09 ($n = 24$)
Not working (other)	0.04 (n = 3)	0.02 (n = 6)
Not working (retired)	0.09 (n = 7)	0.17 ($n = 43$)
Not working (temporary layoff from a job)	0.03 (n = 2)	0.05 (n = 13)
Working (paid employee)	0.49 ($n = 38$)	0.54 ($n = 137$)
Working (self-employed)	0.08 (n = 6)	0.07 (n = 19)
Education level		
Less than high school diploma	0 (n = 0)	0.01 (n = 3)
High school graduate (high school diploma or equivalent including GED)	0.13 (n = 10)	0.24 (n = 62)
Some college but no degree	0.29 (n = 23)	0.19 ($n = 49$)
Associate degree in college (2-year)	0.13 (n = 10)	0.1 (n = 25)
Bachelor's degree in college (4-year)	0.33 ($n = 26$)	0.26 ($n = 67$)
Master's degree	0.09 (n = 7)	0.13 (n = 32)
Professional degree (JD, MD)	0 (n = 0)	0.03 (n = 7)
Doctoral degree	0.01 (n = 1)	0.04 (n = 9)
Degree field		
Business	0.13 (n = 10)	0.17 (n = 42)
Computer Science	0.06 (n = 5)	0.07 (n = 19)
Education	0.04 (n = 3)	0.04 (n = 11)
Engineering	0.08 (n = 6)	0.06 ($n = 16$)

(*continued on next page*)

Table A (*continued*)

Demographic category	Offender ($n = 78$)	Public-gender matched (n = 254)
Government/Political Science	0.03 (n = 2)	0.02 (n = 5)
Liberal Arts	0.12 (n = 9)	0.02 (n = 5)
Nursing	0 (n = 0)	0.01 (n = 3)
Other	0.06 (n = 5)	0.08 (n = 20)
Physical Science	0.03 (n = 2)	0.02 (n = 5)
Psychology	0 (n = 0)	0.02 (n = 6)
Social Sciences	0.06 (n = 5)	0.03 (n = 8)
Employment position		
Computer, engineering, and science	0.06 (n = 5)	0.1 (n = 25)
Construction and extraction	0.03 (n = 2)	0.04 (n = 11)
Education, legal, community service, arts, and media	0 (n = 0)	0.05 (n = 12)
Farming, fishing, and forestry	0.01 (n = 1)	0 (n = 0)
Healthcare practitioners and technical	0.01 (n = 1)	0.04 (n = 9)
Installation, maintenance, and repair	0.06 (n = 5)	0.01 (n = 2)
Management, business, and financial	0.05 (n = 4)	0.15 ($n = 37$)
Military	0 (n = 0)	0 (n = 1)
Office and administrative support	0.05 (n = 4)	0.03 (n = 7)
Production	0.09 (n = 7)	0.04 (n = 11)
Retired	0.15 (n = 12)	0.2 (n = 52)
Sales and related	0.08 (n = 6)	0.04 (n = 10)
Service	0.09 (n = 7)	0.11 (n = 27)
Transportation and material moving	0.04 (n = 3)	0.04 (n = 11)
Unemployed	0.26 (n = 20)	0.15 (n = 38)
Income		
$0–9999	0.09 (n = 7)	0.09 (n = 22)
$10,000–20,000	0.19 (n = 15)	0.07 ($n = 19$)
$20,001–29,999	0.1 (n = 8)	0.1 (n = 25)
$30,000–40,000	0.24 (n = 19)	0.1 (n = 26)
$40,001–50,990	0.09 (n = 7)	0.14 ($n = 35$)
$50,991–67,000	0.08 (n = 6)	0.07 (n = 19)
$67,001–79,000	0.1 (n = 8)	0.12 ($n = 31$)
$79,001–100,000	0.05 (n = 4)	0.12 (n = 31)
$100,001–190,000	0.05 (n = 4)	0.12 ($n = 31$)
Greater than $190,000	0 (n = 0)	0.06 (n = 15)

References

Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1995). Personal narratives about guilt: Role in action control and interpersonal relationships. *Basic and Applied Social Psychology, 17*(1–2), 173–198. https://doi.org/10.1080/01973533.1995.9646138

Beier, K. M. (2016). Proactive strategies to prevent child sexual abuse and the use of child abuse images: The German Dunkelfeld-project for adults (PPD) and juveniles (PPJ). In E. L. Jeglic, & C. Calkins (Eds.), *Sexual violence: Evidence based policy and prevention* (pp. 249–272). Springer International Publishing. https://doi.org/10.1007/978-3-319-44504-5_14.

Beier, K. M., Grundmann, D., Kuhle, L. F., Scherner, G., Konrad, A., & Amelung, T. (2015). The German Dunkelfeld project: A pilot study to prevent child sexual abuse and the use of child abusive images. *The Journal of Sexual Medicine, 12*(2), 529–542. https://doi.org/10.1111/jsm.12785

Clarridge, C., & Sullivan, J. (2011, January 27). Porn-star stalker: Pierce County man gets 4-month sentence. *The Seattle Times.* https://www.seattletimes.com/seattle-news/porn-star-stalker-pierce-county-man-gets-4-month-sentence/.

Dearing, R. L., Stuewig, J., & Tangney, J. P. (2005). On the importance of distinguishing shame from guilt: Relations to problematic alcohol and drug use. *Addictive Behaviors, 30*(7), 1392–1404. https://doi.org/10.1016/j.addbeh.2005.02.002

Eke, A. W., Seto, M. C., & Williams, J. (2011). Examining the criminal history and future offending of child pornography offenders: An extended prospective follow-up study. *Law and Human Behavior, 35*(6), 466–478. https://doi.org/10.1007/s10979-010-9252-2

Endrass, J., Urbaniok, F., Hammermeister, L. C., Benz, C., Elbert, T., Laubacher, A., & Rossegger, A. (2009). The consumption of internet child pornography and violent and sex offending. *BMC Psychiatry, 9*, 43. https://doi.org/10.1186/1471-244X-9-43

Faust, E., Bickart, W., Renaud, C., & Camp, S. (2015). Child pornography possessors and child contact sex offenders: A multilevel comparison of demographic characteristics and rates of recidivism. *Sexual Abuse: A Journal of Research and Treatment, 27*(5), 460–478. https://doi.org/10.1177/1079063214521469

Fortin, F., & Proulx, J. (2019). Sexual interests of child sexual exploitation material (CSEM) consumers: Four patterns of severity over time. *International Journal of Offender Therapy and Comparative Criminology, 63*(1), 55–76. https://doi.org/10.1177/0306624X18794135

Garman, J. D., Sample, L. L., & Steele, S. A. (2019). From playboy to prison: When pornography use becomes a crime. *Deviant Behavior*, 1–19. https://doi.org/10.1080/01639625.2019.1647923

Glasgow, D. (2010). The potential of digital evidence to contribute to risk assessment of internet offenders. *Journal of Sexual Aggression, 16*(1), 87–106. https://doi.org/10.1080/13552600903428839

Hald, G. M., & Štulhofer, A. (2016). What types of pornography do people use and do they cluster? Assessing types and categories of pornography consumption in a large-scale online sample. *Journal of Sex Research, 53*(7), 849–859. https://doi.org/10.1080/00224499.2015.1065953

Henshaw, M., Arnold, C., Darjee, R., Ogloff, J. R. P., & Clough, J. A. (2020). Enhancing evidence-based treatment of child sexual abuse material offenders: The development of the CEM-COPE program. *Trends & Issues in Crime and Criminal Justice, 607*, 1–13. https://www.aic.gov.au/publications/tandi/tandi607.

Howitt, D. (1995). Pornography and the paedophile: Is it criminogenic? *The British Journal of Medical Psychology, 68*(1), 15–27. https://doi.org/10.1111/j.2044-8341.1995.tb01810.x

Jenkins, P. (2001). *Beyond tolerance: Child pornography on the internet.* NYU Press. https://play.google.com/store/books/details?id=4_wTCgAAQBAJ.

Knack, N., Holmes, D., & Fedoroff, J. P. (2020). Motivational pathways underlying the onset and maintenance of viewing child pornography on the internet. *Behavioral Sciences & the Law, 38*(2), 100–116. https://doi.org/10.1002/bsl.2450

Krone, T. (2004). A typology of online child pornography offending. In *Australian Institute of Criminology Canberra*. http://www.academia.edu/download/34504961/_4F8B4249-7BEE-4F57-B9ED-993479D9196D_tandi279.pdf.

Lanning, K. V. (1987). Child molesters: A behavioral analysis. For law-enforcement officers investigating cases of child sexual exploitation. ERIC. https://eric.ed.gov/?id=ED307532.

Levenson, J. S., Grady, M. D., & Morin, J. W. (2019). Beyond the "ick factor": Counseling non-offending persons with pedophilia. *Clinical Social Work Journal*. https://doi.org/10.1007/s10615-019-00712-4

Long, M. L., Alison, L. A., & McManus, M. A. (2013). Child pornography and likelihood of contact abuse: A comparison between contact child sexual offenders and noncontact offenders. *Sexual Abuse: A Journal of Research and Treatment.*. https://doi.org/10.1177/1079063212464398

Merdian, H. L., Perkins, D. E., Dustagheer, E., & Glorney, E. (2018). Development of a case formulation model for individuals who have viewed, distributed, and/or shared child sexual exploitation material. *International Journal of Offender Therapy and Comparative Criminology, 0306624X17748067*. https://doi.org/10.1177/0306624X17748067

Middleton, D., Mandeville-Norden, R., & Hayes, E. (2009). Does treatment work with internet sex offenders? Emerging findings from the Internet Sex Offender Treatment Programme (i-SOTP). *Journal of Sexual Aggression, 15*(1), 5–19. https://doi.org/10.1080/13552600802673444

Mokros, A., & Banse, R. (2019). The "Dunkelfeld" project for self-identified pedophiles: A reappraisal of its effectiveness. *The Journal of Sexual Medicine, 16*(5), 609–613. https://www.sciencedirect.com/science/article/pii/S1743609519304114.

Online panels: Get responses for surveys & research | Qualtrics. (n.d.). Qualtrics. Retrieved February 8, 2020, from https://www.qualtrics.com/research-services/online-sample/.

Quayle, E. (2020). Online sexual deviance, pornography and child sexual exploitation material. *Forensische Psychiatrie, Psychologie, Kriminologie*. https://doi.org/10.1007/s11757-020-00607-y

Quayle, E., & Jones, T. (2011). Sexualized images of children on the internet. *Sexual Abuse: A Journal of Research and Treatment, 23*(1), 7–21. https://doi.org/10.1177/1079063210392596

Quayle, E., & Taylor, M. (2002). Child pornography and the internet: Perpetuating a cycle of abuse. *Deviant Behavior, 23*(4), 331–361. https://doi.org/10.1080/01639620290086413

Quayle, E., & Taylor, M. (2003). Model of problematic internet use in people with a sexual interest in children. *Cyberpsychology & Behavior: The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society, 6*(1), 93–106. https://doi.org/10.1089/109493103321168009

Seigfried-Spellar, K. C., & Rogers, M. K. (2013). Does deviant pornography use follow a Guttman-like progression? *Computers in Human Behavior, 29*(5), 1997–2003. https://doi.org/10.1016/j.chb.2013.04.018

Seigfried-Spellar, K. C., & Rogers, M. K. (2014). Using internet artifacts to profile a child pornography suspect. *Journal of Digital Forensics, Security, and Law, 9*(1), 57–66. https://docs.lib.purdue.edu/cit_articles/1/.

Seto, M. C. (2017). The puzzle of male chronophilias. *Archives of Sexual Behavior, 46*(1), 3–22. https://doi.org/10.1007/s10508-016-0799-y

Seto, M. C., Cantor, J. M., & Blanchard, R. (2006). Child pornography offenses are a valid diagnostic indicator of pedophilia. *Journal of Abnormal Psychology, 115*(3), 610–615. https://doi.org/10.1037/0021-843X.115.3.610

Seto, M. C., & Eke, A. W. (2015). Predicting recidivism among adult male child pornography offenders: Development of the Child Pornography Offender Risk Tool (CPORT). *Law and Human Behavior, 39*(4), 416–429. https://doi.org/10.1037/lhb0000128

Seto, M. C., & Eke, A. W. (2017). Correlates of admitted sexual interest in children among individuals convicted of child pornography offenses. *Law and Human Behavior, 41*(3), 305–313. https://doi.org/10.1037/lhb0000240

Seto, M. C., Reeves, L., & Jung, S. (2010). Explanations given by child pornography offenders for their crimes. *Journal of Sexual Aggression, 16*(2), 169–180. https://doi.org/10.1080/13552600903572396

Steel, C. (2014). *Digital child pornography: A practical guide for investigators*. Lily Shiba Press. https://market.android.com/details?id=book-FOyLAwAAQBAJ.

Stephens, S., Leroux, E., Skilling, T., Cantor, J. M., & Seto, M. C. (2017). Taxometric analyses of pedophilia utilizing self-report, behavioral, and sexual arousal indicators. *Journal of Abnormal Psychology, 126*(8), 1114–1119. https://doi.org/10.1037/abn0000291

Taylor, M., & Quayle, E. (2003). *Child pornography: An internet crime*. Psychology Press. https://market.android.com/details?id=book-No-oUrLizYkC.

Tewksbury, R. (2006). Sex offender registries as a tool for public safety: Views from registered offenders. *Western Criminology Review, 7*(1), 1–8. https://westerncriminology.org/documents/WCR/v07n1/wcr-071-4702-sexoffender.pdf.

The 2019 year in review – Pornhub insights. (n.d.). Retrieved April 6, 2020, from https://www.pornhub.com/insights/2019-year-in-review.

US v. Hoffman, Case 2:08-CR-027-GMN-GWF. D. Nev. https://scholar.google.com/scholar_case?case=14396003435427634906, (2013)

Walton, J. S., & Duff, S. (2017). "I'm not homosexual or heterosexual, I'm paedosexual": Exploring sexual preference for children using interpretive phenomenology. *Journal of Forensic Practice.*. https://doi.org/10.1108/JFP-06-2016-0028/full/html

Ward, T., & Stewart, C. A. (2003). The treatment of sex offenders: Risk management and good lives. *Professional Psychology: Research and Practice, 34*(4), 353–360. https://doi.org/10.1037/0735-7028.34.4.353

Wolak, J., Finkelhor, D., & Mitchell, K. (2011). Child pornography possessors: Trends in offender and case characteristics. *Sexual Abuse: A Journal of Research and Treatment, 23*(1), 22–42. https://doi.org/10.1177/1079063210372143

Wolak, J., Finkelhor, D., & Mitchell, K. J. (2005). Child-pornography possessors arrested in internet-related crimes: Findings from the National Juvenile Online Victimization Study. https://scholars.unh.edu/ccrc/33/.

Wolak, J., Finkelhor, D., & Mitchell, K. J. (2012). Trends in arrests for child pornography possession: TheThird National Juvenile OnlineVictimization Study (NJOV-3). https://scholars.unh.edu/ccrc/46/.