

Secondary Publication



Peschka, Lasse; Schobel, Susanne; Arend, Charlotte; u. a.

The Relationship Between Offense-Supportive Cognitions and Childhood Trauma in Offending and Non-Offending Men with (Exclusive) Pedo-, Hebe-, and Teleiophilia Who Seek Voluntary Treatment

Date of secondary publication: 06.07.2026

Version of Record (Published Version), Article

Persistent identifier: urn:nbn:de:bvb:473-irb-115976x

Primary publication

Peschka, Lasse; Schobel, Susanne; Arend, Charlotte; u. a. (2026): The Relationship Between Offense-Supportive Cognitions and Childhood Trauma in Offending and Non-Offending Men with (Exclusive) Pedo-, Hebe-, and Teleiophilia Who Seek Voluntary Treatment, in: Deviant behavior : an interdisciplinary journal, London [u.a.]: Taylor & Francis, Vol. 47, No. 7, pp. 1365–1384, doi: 10.1080/01639625.2025.2477254.

Legal Notice

This work is protected by copyright and/or the indication of a licence. You are free to use this work in any way permitted by the copyright and/or the licence that applies to your usage. For other uses, you must obtain permission from the rights-holders.

This document is made available under a Creative Commons license.



The license information is available online:

<https://creativecommons.org/licenses/by/4.0/legalcode>

The Relationship Between Offense-Supportive Cognitions and Childhood Trauma in Offending and Non-Offending Men with (Exclusive) Pedo-, Hebe-, and Teleiophilia Who Seek Voluntary Treatment

Lasse Peschka ^{a,b}, Susanne Schobel^c, Charlotte Arend^a, Göran Hajak^a, Claus-Christian Carbon ^b, Kolja Schiltz ^c, and Ralf Bergner-Köther ^{a,b}

^aPsychiatric Outpatient Clinic, Bamberg, Germany; ^bUniversity of Bamberg, Bamberg, Germany; ^cLudwig-Maximilians-University Munich, Munich, Germany

ABSTRACT

Offense-supportive cognitions are a major dynamic risk factor for child sexual abuse (CSA) (re)offending. Theories about offense-supportive cognitions claim that they are affected by childhood abuse experiences. The present study investigated whether offense-supportive cognitions are associated with adverse childhood experiences in a male sample ($N = 386$) entering preventive treatment to avoid (re)offending. The sample consisted of men with (exclusive) pedo-, hebe-, and teleiophilia who did or did not commit CSA or offenses related to CSA material (CSAM). Offense-supportive cognitions were assessed by the Bumby Molest Scale and childhood adversity by the Childhood Trauma Questionnaire. An analysis using Bayesian ordinal logit models indicated an overall weak positive relationship between offense-supportive cognitions and sexual and other forms of childhood trauma in patients with pedo-hebephilia (sexual interest in pre- and early-pubescent body schema). In patients with exclusive teleiophilia (sexual interest in post-pubescent body schema only), only sexual abuse was predictive of offense-supportive cognitions. The mostly weak effects found in the present study do not correspond with the theoretical assumptions. We discuss the methodological and conceptual issues that might lead to underestimating the effects and measures to address these issues.

ARTICLE HISTORY

Received 7 October 2024
Accepted 4 March 2025

Introduction

The increasing number of prosecutions of child sexual abuse material (CSAM; also called “child pornography”; Seto 2021) offending and studies investigating internet traffic data (Bissias et al. 2016; Wolak, Liberatore, and Levine 2014) show that CSAM offending is a growing issue worldwide. In Germany, the number of prosecuted CSAM offenses increased between 2020 and 2021 by 108.8% (Bundeskriminalamt 2022). Using a German sample representative regarding age and education, Dombert et al. (2016) found that 1.7% of males used CSAM, 0.8% reported having committed offline child sexual abuse (CSA), and 0.7% both CSA and CSAM offending. Looking at CSA in Germany, the official police crime statistics reported a one-year increase in prosecutions by 6.3% (Bundeskriminalamt 2022). The issue of

CONTACT Lasse Peschka  lasse.peschka@uni-bamberg.de  Department for Sexual Medicine, Psychiatric Outpatient Clinic, St.-Getreu-Str. 18, Bamberg 96049, Germany

© 2025 The Author(s). Published with license by Taylor & Francis Group, LLC.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

CSA remains a serious concern worldwide as well. About 7% of men and 19% of women report sexual abuse victimization prior to the age of 18 in meta-analyses using international samples (Pereda et al. 2009; Stoltenborgh et al. 2011). The number of unreported CSA and CSAM offenses is estimated to be 30 times higher (Stoltenborgh et al. 2011). This difference seems important, considering the negative consequences for minors who were victimized. These consequences are well studied (Danese and McEwen 2012; Lippus et al. 2020) and emphasize the severity of the issue.

Theories and empirical investigations that try to explain CSA and CSAM offending describe several relevant factors, including offense-supportive cognitions (Finkelhor 1984; Seto 2019). Such attitudes, also called distorted beliefs, child abuse myths, or distorted cognitions, have been related to CSA and CSAM (re)offending in forensic (Craig et al. 2007; Mann, Hanson, and Thornton 2010) and non-forensic settings (Neutze et al. 2012). While the term cognitive distortions clearly underlines the risk that such attitudes pose in the context of CSA, such cognitions are not always unfounded in reality. For example, as resilience studies showed, not all children suffer severe negative consequences from CSA (Domhardt et al. 2015); however, using this empirical finding to justify CSA or CSAM offenses is clearly a distortion. In the following, we will use the term offense-supportive cognitions, but again emphasize that such beliefs can never justify CSA or CSAM offenses.

Offense-supportive cognitions encompass attitudes, beliefs, minimizations, denials, excuses, justifications, or rationalizations that might support CSA and CSAM offending (Ó Ciardha and Gannon 2011; Ó Ciardha and Ward 2013). In light of such a loosely defined construct, several theories concerning offense-supportive cognitions have been proposed to provide a coherent framework for the phenomenon (Ó Ciardha and Ward 2013). To our knowledge, the most recent theory is the multi-mechanism theory of cognitive distortions (MMT-CD; Szumski et al. 2018) that tries to integrate previously provided theories. In essence, the MMT-CD assumes a dual-process model (automatic and quick versus conscious and deliberate processing) in which cognitive distortions arise through three mechanisms: (1) basic non-situation specific cognitions about CSA, (2) cognitions that occur right before an offense, and (3) post-hoc rationalizations. While the mechanisms underpinning cognitive distortions differ, the content of these distortions can appear identical (e.g., “children do initiate sex with adults” as a basic belief or post-hoc rationalization). In this paper, we will use the term offense-supportive cognitions to refer to the loosely defined broad concept of cognitive distortions and will follow Szumski et al. (2018) more clearly defined terms when necessary.

Cognitions described in mechanism one as basic and non-situation specific are either normative implicit cognitions that protect the individual from committing CSA or distorted implicit cognitions that increase the risk of offending. The authors argued that distorted implicit cognitions arise from adverse childhood experiences such as rejection and abuse and that positive childhood experiences facilitate normative implicit cognitions. While a relationship between childhood experiences and offense-supportive attitudes seems convincing, no statements about the expected effect sizes are provided and only a few articles (discussed in the following two paragraphs) exist that investigate this claim empirically.

The theoretical claim draws on research that suggests an association between CSA and childhood trauma. The abused-abuser hypothesis states that abuse and, especially, sexual abuse experiences in childhood could lead to CSA and CSAM offending behavior (Alanko et al. 2017; Freund and Kuban 1994; Freund, Watson, and Dickey 1990) and, as sometimes stated in psychodynamic theory, to the development of pedophilia (Eberhaut et al. 2023). Retrospective research mostly supported such claims, showing an association between victimization and sexual offending (Aebi et al. 2015; Alanko et al. 2017; Connolly and Woollons 2008; Gerwinn et al. 2018; Jahnke, Schmidt, and Hoyer 2023; Jespersen, Lalumière, and Seto 2009; Seto and Lalumière 2010; Simons, Wurtele, and Durham 2008; Stephens et al. 2023). However, prospective studies showed much weaker or no such associations (Leach, Stewart, and Smallbone 2016; Ogloff et al. 2012; Salter et al. 2003). Further, the MMT-CD does not specify whether offense-supportive cognitions are affected by general childhood abuse and sexual abuse differently.

While numerous studies exist that explore the relationship between childhood trauma and CSA, only a few studies are known to us that investigated the relationship between childhood trauma and offense-supportive cognitions specifically (Blank et al. 2018; Chopin, Fortin, and Paquette 2022; Craissati, McClurg, and Browne 2002; Zakreski et al. 2024). This is striking, as offense-supportive cognitions could be an important mediator between childhood trauma and CSA and CSAM offending. Similarly, Cuadra et al. (2014) suggested that the relationship between adverse childhood experiences and offending could be mediated by non-sexual offense-supportive cognitions, such as rationalizations of criminal behavior (measured by a criminal thinking style questionnaire). Marziano et al. (2006) suggested that early sexual abuse experiences influence the Dangerous World implicit theory. Further, other research found a relationship between attachment styles and offense-supportive cognitions (Wood and Riggs 2008). To the best of our knowledge, only this very limited amount of scientific studies exist that investigated the relationship between childhood trauma and CSA and CSAM-specific offense-supportive cognitions. Importantly, only Zakreski et al. (2024) employed a community sample of individuals with violent sexual interest or attraction to children and differentiate between different types of childhood trauma (emotional and sexual).

Pedo-hebephilia, CSA and CSAM offending, and offense-supportive cognitions

Although about 50% of people convicted of sexual offending against minors do not fulfill the criteria for pedophilic disorder (Eher, Rettenberger, and Turner 2019; Seto 2008), the diagnosis is found to be related to a higher risk for sexual (re)offending (Hanson and Morton-Bourgon 2005; Seto, Cantor, and Blanchard 2006) and to be associated with CSA and CSAM offense-supportive cognitions (Eberhaut, Briken, and Eher 2020, 2023; Gannon, Ward, and Collie 2007). Several studies found that individuals with pedo-hebephilia (sexual interest in pre- or early-pubescent individuals) score higher in offense-supportive cognition measures compared to individuals without pedo-hebephilia (Jahnke, Schmitt, and Malón 2018). Especially individuals with exclusive pedophilia appear to be prone to endorse offense-supportive cognitions and to pose a higher risk of offending (Biedermann et al. 2023; Eher et al. 2015; Etzler, Eher, and Rettenberger 2020).

Regarding offense-supportive cognitions and past offending behavior, (sexual) offending individuals showed higher scores of offense-supportive cognitions compared to non-offending individuals (Szumski and Bartoszak 2021). Keown, Gannon, and Ward (2010) found significantly higher offense-supportive cognition scores in individuals who offended against children compared to individuals who committed non-sexual offenses. Further, studies suggested an association between recidivism and offense-supportive cognitions (Craig et al. 2007; Helmus et al. 2013; Mann, Hanson, and Thornton 2010). Looking at the difference between CSA and CSAM-offending individuals, Neutze et al. (2012) found small but insignificant differences in CSA-specific offense-supportive cognition scores between mixed, offline, and online offending individuals. This partly contradicts Steel et al. (2020) argument that CSA and CSAM offending imply qualitatively different offense-supportive cognitions and research should use specific measures for each type of offense. As the offense history and pedo-hebephilia seem to effect offense-supportive cognitions, it seems vital to consider pedo-hebephilia and types of offending when studying offense-supportive cognitions.

Present study

This study investigated the relationship between explicit offense-supportive cognitions and childhood trauma in patients with and without (exclusive) pedo-hebephilia who seek treatment either because they have committed CSA or CSAM offenses or feel at risk of offending. In this study, subjects were classified into four groups: exclusive pedo-hebephilia (exclusive sexual attraction toward pre- or early-pubescent body schema), pedophilia (non-exclusive sexual attraction to prepubescent body schema and older), hebephilia (non-exclusive sexual attraction to early-pubescent body schema and older), and teleiophilia (exclusive sexual attraction to post-

pubescent body schema). Additionally, we controlled for lifetime CSA and CSAM offending behavior (categorized as non-offending, online, offline, and mixed offending), as previous research suggested that offense-supportive cognition scores depend on the type of offending behavior (Steel et al. 2020).

We formulated the following research questions:

- (1) Are reports of childhood trauma associated with the endorsement of offense-supportive cognitions in men with and without (exclusive) pedo- or hebephilia when controlling for lifetime offending?
- (2) Do these associations differ depending on the type of childhood trauma (sexual, physical, and emotional)?

Methods

Participants

The present study consists of a total sample of 386 participants who were recruited from three child abuse prevention programs carried out in Bamberg, Germany ($N = 292$) and Munich, Germany ($N = 90$), between January 2016 and June 2023. In Bamberg, the number of patients increased over the years with 13 persons in 2016, over 39 patients in 2019 to 115 persons in 2022. The “Kein Täter Werden” project (“Don’t become an offender” project, funded by the umbrella organization of the statutory health insurance funds, $N = 223$) targets patients with pedophilic disorder (ICD-10, World Health Organization 2016) who have not sexually offended minors or have offended but are currently not under investigation. The “Bavarian Abuse Prevention Program” is funded by the Bavarian Ministry of Justice ($N = 50$) and aims at patients without pedo-hebephilia who offended minors or feel at risk of offending but are not under investigation. The project “Hellfeld – Therapie im Verfahren” (“Project Brightfield – Therapy in Process,” funded by the Bavarian Ministry of Justice, $N = 86$) targets patients with CSA or CSAM offending, regardless of their sexual interest in minors, who are under criminal investigation but are not convicted yet.

The participants were aged between 15 and 79 years ($M = 36.60$, $SD = 13.38$) and consisted of 40 individuals who committed CSA, 164 individuals who committed CSAM, 60 individuals who committed both CSA and CSAM, and 91 individuals who have not sexually offended against minors online or offline. Among all participants, therapists identified 36 persons with exclusive pedo-hebephilia, 125 with (non-exclusive) pedophilia, and 103 with (non-exclusive) hebephilia. In 108 patients, an exclusive teleiophilia and, therefore, no pedo-hebephilia was found. The majority showed a heterosexual orientation (62.7%) followed by 23.1% who were sexually attracted to both the same and opposite sex, and 9.1% whose sexual orientation was targeted to the same sex. For a more detailed description, see Table 1.

Procedure

In most cases patients found the above mentioned child abuse prevention programs on their own, for example through the internet or through public media campaigns. In other cases, they were informed by other healthcare providers, lawyers, or the police. When patients decided to attend the program, they got in contact via phone or e-mail. Before entering therapy, all patients attended a structured two-hour interview with a trained psychologist or psychiatrist and answered a battery of questionnaires, among which are the instruments used in this study, namely the Bumby Molest Scale (BMS; Bumby 1996) and Childhood Trauma Questionnaire (CTQ; Bernstein et al. 2003). In the interview, therapists diagnosed pedophilic disorder (ICD-10, World Health Organization 2016) and other comorbidities and assessed the history of CSA and CSAM offending.

Table 1. Demographic data by sexual interest ($N = 386$).

	Patient Group			
	Exclusive Pedo-Hebephilia ($N = 36$)	Pedophilia ($N = 125$)	Hebephilia ($N = 103$)	Teleiophilia ($N = 108$)
	M (SD)	M (SD)	M (SD)	M (SD)
Age	29.06 (10.44)	35.58 (12.62)	39.56 (12.45)	38.18 (14.64)
	N (%)	N (%)	N (%)	N (%)
Orientation				
Same-sex	16 (45.71)	7 (5.69)	7 (6.86)	5 (4.81)
Opposite-sex	13 (37.14)	75 (60.98)	68 (66.67)	85 (81.73)
Both	6 (17.14)	41 (33.33)	27 (26.47)	14 (13.46)
Lifetime Offending				
Non-Offender	5 (14.29)	17 (14.05)	12 (12.37)	56 (56.0)
Online	18 (51.43)	65 (29.41)	53 (54.64)	28 (28.0)
Offline	2 (5.71)	9 (7.44)	16 (16.49)	12 (12.0)
Mixed	10 (28.57)	30 (24.79)	16 (16.49)	4 (4.0)

In the exploratory interview, therapists informed the patients about the research, emphasized that participation is voluntary, and, if patients agreed, asked them to sign an informed consent form. In patients before age 18 (legal age in Germany), the legal guardians also agreed to the study participation.

As the data were collected over many years in the context of a broader research project, subsets of the data collected in Bamberg are already published elsewhere. While the grouping variables indicating pedo-hebephilia and lifetime offending have been used in other studies as well, the variables of interest in this study (offense-supportive cognitions and childhood trauma) have not been published elsewhere (Publications from the same research project are: hypersexuality and impulsivity, Bergner-Köther et al. 2024; risk assessment and relapse, von Franqué et al. 2023).

Instruments

Bumby Molest Scale

The Bumby Molest Scale (BMS; Bumby 1996) captures offense-supportive cognitions regarding CSA. Thirty-eight statements about CSA are rated by patients on a 4-point ordinal scale from I absolutely disagree (1) to I absolutely agree (4). For instance, one item reads as follows "Some children can behave very seductively." No subscales were reported. The BMS has an internal consistency of 0.96 (Bumby 1996) and was translated into German by Rambow et al. (2008). The Cronbach's alpha in the present study was 0.95.

Childhood Trauma Questionnaire

The Childhood Trauma Questionnaire (CTQ; Bernstein et al. 2003) is considered the most widely used screening instrument internationally to assess maltreatment and traumatic events in childhood and adolescence. It measures trauma and neglect on a 70-item retrospective measure. Experiences of abuse are evaluated on the three dimensions of emotional, physical, and sexual abuse, and experiences of neglect are evaluated on the dimensions of emotional and physical neglect. Each subscale includes five 5-point items ranging from not at all (1) to very often (5). In the present study, the validated short version of the CTQ in German was used, which consists of 28 items. The Cronbach's alphas of the subscales range between 0.55 and 0.89 (Klinitzke et al. 2012). In the present study, we found alpha values between 0.84 and 0.92, except for the physical neglect subscale we found 0.5.

Lifetime sexual offending against minors

In the explorative interview, therapists extensively explored the patient's offending history. After the interview, therapists reported whether the patient has online, offline, mixed, or no history of CSA/

CSAM offending. Online offending refers to the consumption or sharing of CSAM, which was defined as media in which sexual contact with at least one child (younger than 14 years) is depicted or in which children are portrayed fully or partially undressed in a sexually explicit manner. Offline offending refers to CSA that is defined as a sexual act with or in front of a child (younger than 14 years). Therapists reported non-offending when none of the before mentioned was the case and mixed offending when both applied.

(Exclusive) Pedo-, Hebe-, and Teleiophilia

After conducting a detailed sexual anamnesis, therapists diagnosed pedophilic disorder following the ICD-10 criteria (ICD-10: F65.4; World Health Organization 2016). Therapists did not primarily use CSA or CSAM offending as an indicator for pedophilia; instead, they explored the sexually arousing fantasies of the patients in an interview and reported pedo- or hebephilia when the fantasies involved pre- or early-pubescent children. Only when sexual fantasies were not clearly indicating the presence or absence of a sexual interest in minors, other indicators were used (e.g., extensive use of CSAM). When therapists were uncertain about the sexual interest, they discussed it with their colleagues in a team meeting.

In the present article, we refrained from using the term disorder as in single cases, the sexual interest in minors was neither associated with significant distress for the patient nor for potential victims (e.g., patients with pedophilia in the non-offending group). Additionally, we distinguished between patients with a sexual interest in pre-pubescent (pedophilia) and early-pubescent children (hebephilia) and between patients who were exclusively interested in pre- or early-pubescent children and patients interested in adults and minors. Exclusive sexual interest in post-pubescent bodies was referred to as teleiophilia. Therefore, for the present analysis, we separated the sample into four groups: patients with teleiophilia (exclusive sexual interest in post-pubescent bodies), hebephilia (sexual interest in early-pubescent bodies and older), pedophilia (sexual interest in pre-pubescent bodies and older), and exclusive pedo-hebephilia (exclusive sexual interest in pre- and/or early-pubescent bodies).

Statistical analysis

To create the data frame, we used Microsoft Excel. The analysis was performed in R 4.2.3 (R Core Team 2023) using the “Tidyverse” packages (Wickham et al. 2019). For model building, we used the “brms” package (Bürkner 2017, 2018) that is based on Stan probabilistic programming language (Carpenter et al. 2017). Model comparisons were done with the “loo” package (Vehtari, Gelman, and Gabry 2017).

Regression models

To analyze the relationship between offense-supportive cognitions and childhood trauma while controlling for pedo-hebephilia and lifetime offending, we computed Bayesian ordinal logit models (Bürkner and Vuorre 2019; Williams 2016). Ordinal logit models avoid treating Likert-scale data as continuous, as is often the case in psychological research. Instead, the models assume that response categories (“strongly agree,” “slightly agree,” “do not agree,” etc.) are ordered categories that originate from a latent continuous variable. The model estimates the distance between the response categories on the latent construct and uses these estimates in the modeling. The idea of this procedure is similar to the approach propagated by the Item-Response Theory. For a detailed discussion, see Williams (2016), and for a hands-on tutorial, see Bürkner and Vuorre (2019).

We set the sexual interest in minors (teleiophilia, pedophilia, hebephilia, etc.), CTQ mean scores, and lifetime offending as the main effects and added an interaction term between pedo-hebephilia and CTQ. We set the participants’ ID as a random intercept term, as we were

treating each BMS item as a repeated measure (data in long format). We set weakly regularizing priors (normal [0,1] for intercepts and main effects and exponential [10] for random effects). Note that such weakly informative priors lead to similar results as comparable frequentist models but allow for avoiding overfitting without making strong assumptions about the effects of interest. To illustrate how the model adjusted the prior distributions to the data to form the posterior, we added a figure to the data repository showing the prior and posterior distributions of the regression coefficients (<https://osf.io/67jgz/>).

When presenting the results, we reported the mean and the credibility interval (CI; also called compatibility interval) of 95% and 68% computed from the posterior distribution. The intervals are chosen as they reflect the usual choice of 2 SD and 1 SD, respectively. Marginal effects were used to assess the strength of the effects and were calculated by subtracting one estimate from another. See Heiss (2021) for a detailed description of calculating marginal effects in Bayesian modeling. We interpreted distributions of the marginal effects that differ from 0 in 95% of cases as a strong effect and distributions that differ in 68% of cases from 0 as weak. For model comparisons, we computed the difference in expected log predicted density (Δ ELPD, mean $\pm$ standard error). For the interpretation, lower scores of the Δ ELPD indicate better model fit. When a model shows a mean Δ ELPD score that is lower and outside of the range of the standard error of the compared model, the LOO information criterion suggests relevance of the term.

We chose to implement Bayesian models as they handle small sample sizes well avoiding issues of statistical power (McNeish 2016) and as they allow to plot posterior distributions for comprehensible group comparisons. This is especially useful in complex non-linear models in which regression parameters are difficult to interpret.

Ethical approval

This study was granted ethical approval by the local ethics committee of the University of Bamberg, Germany (#2019–10/29 and #2022–07/30) and the ethics committee of the Ludwig-Maximilians University in Munich, Germany (#23–0385).

Results

In the first section of the results, we aimed to analyze the relationship between offense-supportive cognitions and childhood trauma for each group (exclusive pedo-hebephilia, non-exclusive pedo- and

Table 2. Descriptive data of BMS and predictors in the pre-treatment sample.

		Patient Group											
		Exclusive Pedophilia N = 36			Pedophilia N = 125			Hebephilia N = 103			Teleiophilia N = 108		
		M	SD	n	M	SD	n	M	SD	n	M	SD	n
BMS	Sum Score	80.25	20.31	24	67.27	18.89	84	61.37	16.20	80	51.18	11.26	66
CTQ	Sum Score	62.32	16.21	31	59.25	16.54	108	56.56	12.71	87	55.08	12.92	87
	Emotional Abuse	11.90	5.79	32	10.34	5.00	113	9.15	4.10	92	9.13	4.38	92
	Physical Abuse	7.21	3.54	32	7.15	3.84	112	6.54	2.33	94	6.97	3.43	91
	Sexual Abuse	6.28	3.05	32	7.01	3.99	112	6.24	2.44	95	5.80	2.39	92
	Emotional Neglect	13.87	5.72	32	11.69	5.07	112	12.10	4.92	95	10.32	4.12	90
	Physical Neglect	7.77	2.72	31	7.54	2.92	113	7.76	2.49	95	7.23	2.96	90
		n	%		n	%		n	%		n	%	
Offending	Non-Offender	5	14.28		17	14.04		12	12.37		56	56.00	
	Online	18	51.41		65	53.71		53	54.63		28	28.00	
	Offline	2	5.71		9	7.43		16	16.49		12	12.00	
	Mixed	10	28.57		30	24.79		16	16.49		4	4.00	

hebephilia, and exclusive teleiophilia). In the second section, we display the association between offense-supportive cognitions, sexual interest in minors (pedophilia, hebephilia, etc.), and type of offending. In Table 2, readers can find the descriptive data for each patient group.

Predicting offense-supportive cognitions with childhood trauma

To examine the effect of childhood trauma on offense-supportive cognitions, we computed the posterior predictions of BMS responses with the mean CTQ as the predictor grouped by sexual interest while controlling for the type of lifetime offending. Figure 1a depicts the posterior predictions of the probability of endorsing offense-supportive cognitions for different CTQ mean scores grouped by sexual interest, and Figure 1b shows the corresponding marginal effects of a 2-point increase in CTQ mean scores on BMS responses.

The model predicted a positive relationship between childhood trauma and offense-supportive cognition measures in patients with non-exclusive hebephilia, non-exclusive pedophilia, and exclusive pedo-hebephilia and no relationship in patients with exclusive teleiophilia. The analysis of marginal effects indicated a weak effect size in patients with exclusive

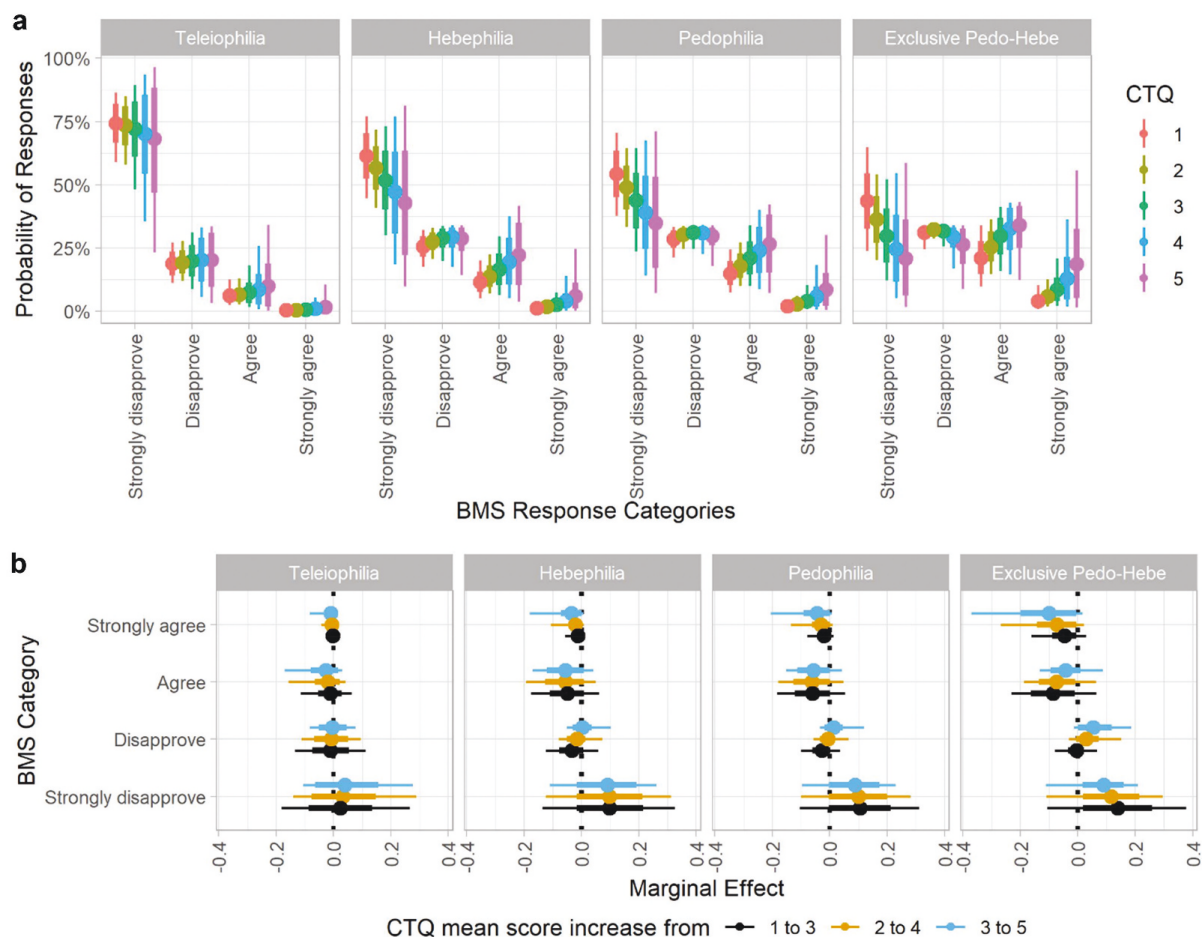


Figure 1. (a) Model predictions for the relationship between mean CTQ scores (colors representing responses in the CTQ from 1 indicating low to 5 indicating high reports of adverse experiences) and ratings in the BMS scale (x-axis shows response categories, i.e. Likert scale, and y-axis shows the probability to respond to an item in that category) by sexual interest (facets). The dots indicate the mean estimate of the probability of responses, the thin error bars show the 95% and the thick bars the 68% CI of the posterior distribution. (b) Marginal effects of a two point CTQ mean score increase (color). The dots indicate the mean estimate of the effect, the thin error bars show the 95% and the thick bars the 68% CI. For example, in the response category strongly disapprove patients with exclusive pedo-hebephilia have a .1 higher probability to respond in that category when the CTQ mean score increases from 3 to 5 and the CI indicates that with a 68% chance the effect is > 0 (blue dot and thick bar in the bottom of the right facet).

pedo-hebephilia and non-exclusive pedophilia (68% of the marginal effect distribution is >0) and no effects in non-exclusive hebephilia and exclusive teleiophilia. LOO information criterion showed a similar model fit in the model with CTQ term compared to a model without the CTQ as a predictor ($\Delta\text{ELPD} = -0.1 \pm 0.5$).

Sexual abuse experiences and offense-supportive cognitions

After finding weak or no effects in the analysis of CTQ mean scores and offense-supportive cognitions, we computed regressions with CTQ subscales instead of CTQ total mean scores. The subscale Sexual Abuse showed the strongest associations. Figure 2a shows the posterior predictions of the Sexual Abuse subscale and Figure 2b the corresponding marginal effects.

The model suggested a positive relationship between sexual abuse-related childhood trauma and offense-supportive cognitions in patients with exclusive teleiophilia, non-exclusive hebephilia, and non-exclusive pedophilia. No association was found in patients with exclusive pedo-hebephilia. The marginal effects indicated a strong impact on patients with non-exclusive pedophilia (95% of the marginal effect distribution is >0) and a weak effect in patients with exclusive teleiophilia and non-exclusive hebephilia (68% of the marginal effect distribution is >0). LOO information criterion showed similar model fits for the models with and without Sexual Abuse as a predictor ($\Delta\text{ELPD} = -0.1 \pm 0.8$).

Other types of childhood trauma and offense-supportive cognitions

The other subscales (physical abuse and neglect and emotional abuse and neglect) showed weak effects. We found weak positive effects (68% of the marginal effect distribution is >0) between Physical Abuse and Neglect subscales and offense-supportive cognitions in patients with exclusive pedo-

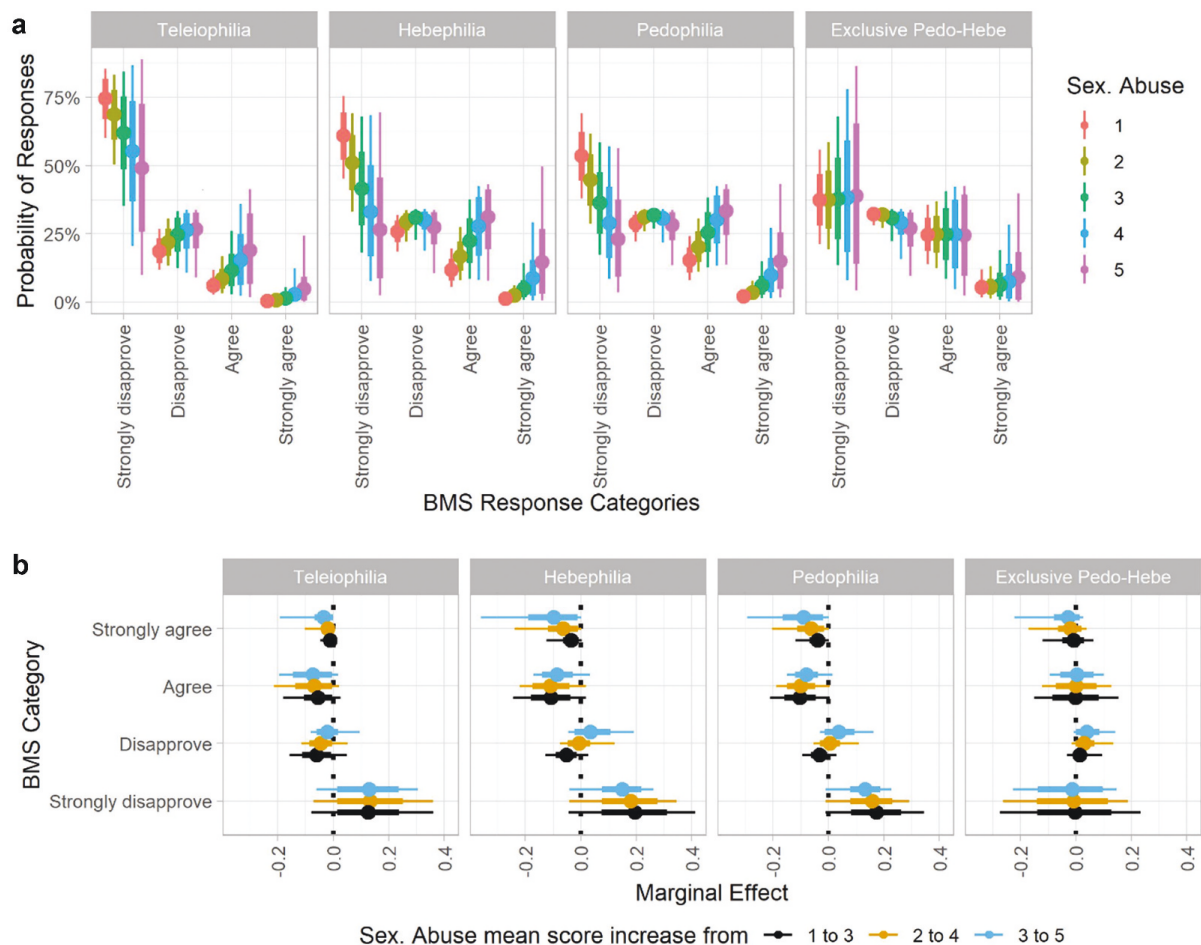


Figure 2. (a) Model predictions of mean scores in the sexual abuse subscale of the CTQ on offense-supportive cognitions. See Figure 1a for further explanation. (b) Marginal effect of sexual abuse subscale ratings. See Figure 1b for further explanation.

hebephilia. In the Emotional Abuse subscale, the model suggested weak effects in patients with non-exclusive pedo- and hebephilia and exclusive pedo-hebephilia. No effects were found in the Emotional Neglect subscale. We decided to omit the figures from the manuscript and provided them in the data repository (<https://osf.io/67jgz/>).

Predicting offense-supportive cognitions with sexual interest and lifetime offending

To analyze the relationship between pedo-hebephilia, lifetime offending, and offense-supportive cognitions, we again computed regressions with BMS as the outcome and sexual interest and lifetime offending as predictors.

Pedo-hebephilia and childhood trauma

The analysis suggested that patients with exclusive pedo-hebephilia scored higher in offense-supportive cognition measures compared to patients with non-exclusive pedophilia, non-exclusive hebephilia, and exclusive teleiophilia, respectively. Marginal effects were weak for comparisons between patients with non-exclusive hebephilia and non-exclusive pedophilia and exclusive pedo-hebephilia (68% of the marginal effect distribution is >0). All other group comparisons showed strong effects (95% of the marginal effect distribution is >0). LOO information criterion suggested similar fits for models with and without sexual interest as a predictor ($\Delta\text{ELPD} = -0.6 \pm 1.9$). Figure 3 shows the posterior distribution and marginal effects by sexual interest (pedo-, hebephilia, etc.).

Lifetime offending and childhood trauma

The analysis of lifetime offending and offense-supportive cognitions suggested that non-offenders scored lower in offense-supportive cognition measures compared to online, and offline, and mixed offending, respectively. Marginal effects indicated weak effects in the comparison between non-offending and online offending and between online and offline offending (68% of the marginal effect distribution is >0). The comparison between non-offending and mixed and offline offending indicated strong effects (95% of the marginal effect distribution is >0). We did not find an effect between mixed and offline offending. LOO information criterion suggested a similar model fit with and without offending as a predictor ($\Delta\text{ELPD} = +0.3 \pm 0.9$). Figure 4 shows the posterior and marginal effects of offending.

Discussion

Offense-supportive cognitions and childhood trauma

In the present study, we analyzed the relationship between childhood trauma (measured with the CTQ) and offense-supportive cognitions (measured with the BMS) in a sample of men with exclusive pedo-hebephilia, non-exclusive pedo-, hebe-, and exclusive teleiophilia who voluntarily sought treatment because they have committed CSA or CSAM offenses or felt at risk of offending. We found weak positive effects of general childhood trauma on offense-supportive cognition measures in patients with exclusive pedo-hebephilia, non-exclusive pedophilia, and non-exclusive hebephilia. No effect of general childhood trauma and offense-supportive cognitions was found in patients with exclusive teleiophilia. The analysis of sexual childhood victimization and offense-supportive cognitions suggested a strong positive effect in patients with non-exclusive pedophilia and weak positive effects in patients with exclusive teleiophilia and non-exclusive hebephilia. No effects could be found in patients with exclusive pedo-hebephilia.

The descriptive data indicated generally higher scores in the childhood trauma measure compared to other studies with community samples (Glaesmer 2016; Häuser et al. 2011; Klinitzke et al. 2012) and other studies using the CTQ in community, forensic, and clinical samples (Alanko et al. 2017; Gerwinn et al. 2018; Marx et al. 2020). Higher scores in the present sample might be due to the sample

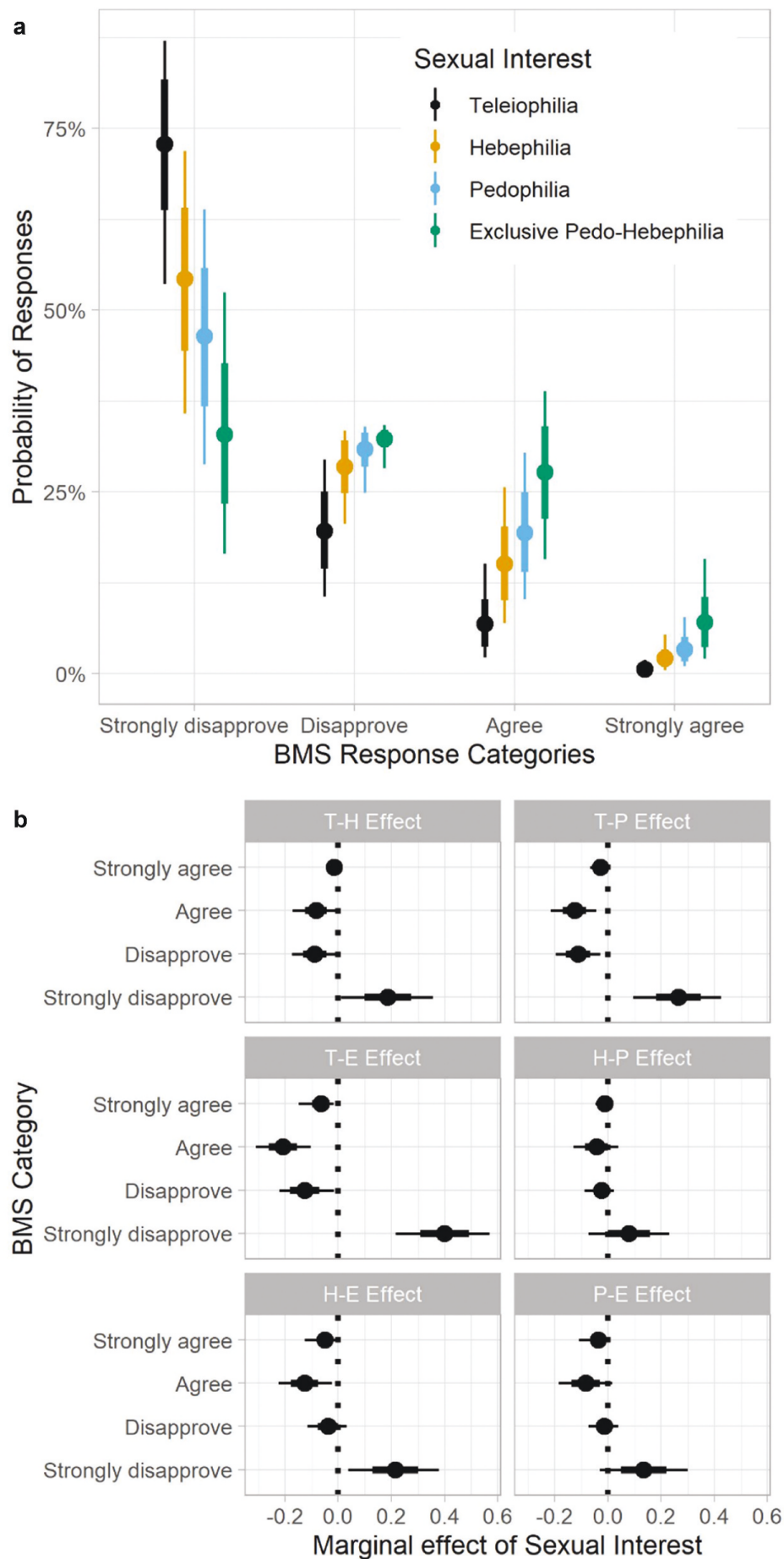


Figure 3. (a) Model predictions of sexual interest (color) on offense-supportive cognitions. See Figure 1a for further explanation. (b) Marginal effects of sexual interest. Facets show effects of the difference between each group (T-H: effect of the difference between patients with teleiophilia versus patients with hebephilia; T-P: teleiophilia versus pedophilia; T-E: teleiophilia versus exclusive pedo-hebephilia; H-P: hebephilia versus pedophilia; H-E: hebephilia versus exclusive pedo-hebephilia; P-E: pedophilia versus exclusive pedo-hebephilia). See Figure 1b for further explanation.

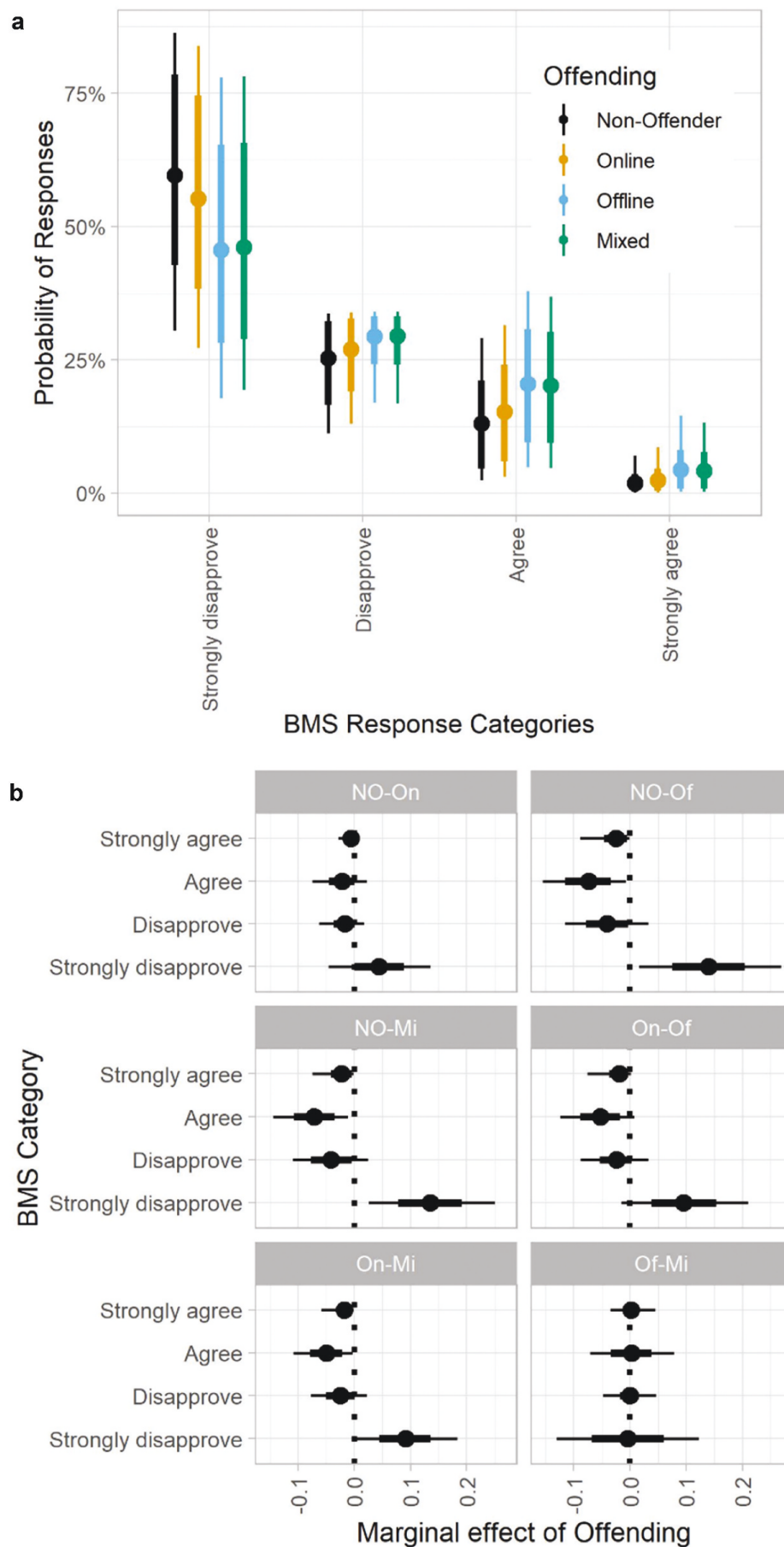


Figure 4. (a) Model predictions of offending (color) on offense-supportive cognitions. See Figure 1a for further explanation. (b) Marginal effects of offending. Facets show effects of the difference between each group (NO = non-offending, On = online offending, Of = offline offending, Mi = mixed offending, NO-On = marginal effect of difference between no versus online offending, etc.). See Figure 1b for further explanation.

characteristics, as higher trauma scores indicate higher psychological distress, which could lead to an increased need for treatment. On the other hand, most of the studies investigating childhood trauma in CSA and CSAM are retrospective, and studies with a longitudinal design found much lower rates of childhood trauma in offending individuals (Leach, Stewart, and Smallbone 2016). This indicates that the high childhood trauma scores found in this study might be due to retrospective biases.

As noted above, we mostly found weak associations between childhood trauma and offense-supportive cognitions. This is in line with previous studies using forensic samples, who as well found a weak to moderate relationship between childhood (sexual) abuse experiences and offense-supportive cognitions (Blank et al. 2018; Chopin, Fortin, and Paquette 2022; Craissati, McClurg, and Browne 2002). These findings partly support the MMT-CD, which claims that childhood trauma is a factor in the development of distorted implicit cognitions (Szumski et al. 2018). Negative childhood experiences can form distorted implicit cognitions that, if not corrected by deliberate thinking (explicit cognitions), increase the likelihood of CSA and CSAM offending.

However, the MMT-CD does not discuss how different types of trauma could affect offense-supportive cognitions differently and, further, it does not clarify how pedo-hebephilia might affect the relationship. This seems important, as different traumas could affect cognitions through different mechanisms. For example, in patients with teleiophilia, we found no relationship between general childhood trauma (CTQ mean score) and offense-supportive cognitions but a weak effect for the Sexual Abuse subscale. This could be explained with social learning theory (Bandura 1986): the sexual abuse experience affects the social learning of the abused child and, therefore, facilitates the development of CSA-related offense-supportive cognitions (Lambie and Reil 2021). All other types of childhood trauma (physical and emotional), however, do not affect CSA-related cognitions in patients with exclusive teleiophilia, as no social learning of sexually abusive behaviors takes place.

Contrary to patients with exclusive teleiophilia, we found effects for Physical and Emotional Abuse and Physical Neglect (but not Emotional Neglect) subscales in the other patient groups with pedo-hebephilia. Similarly, in a community sample of individuals with paraphilic interests, Zakreski et al. (2024) found that only Sexual Abuse and not Emotional Neglect subscales predict offense-supportive cognitions. The study did not include Emotional Abuse and Physical Abuse and Neglect subscales which showed weak effects in the present study as well. In summary, it seems that sexual childhood trauma affects offense-supportive cognitions regardless of the sexual interest in minors. Emotional and physical forms of childhood trauma, however, seem to differ between patient groups. Future research should differentiate between types of childhood trauma and sexual age preference to illuminate the exact mechanisms through which childhood trauma affects cognitions.

Offense-supportive cognitions and (exclusive) pedo- and hebephilia

The analysis indicated that – independent of the offending behavior – patients with exclusive pedo-hebephilia showed higher endorsement of offense-supportive cognitions compared to patients with pedophilia, hebephilia, and teleiophilia, respectively. The sum scores of the BMS found in this study were similar to scores in other samples of treatment-seeking patients with pedo-hebephilia (Beier et al. 2015; Neutze et al. 2012).

As this effect occurred after controlling for the offense history, it can be argued that it is not merely due to post-offense justifications but to more basic beliefs about CSA and CSAM (Szumski et al. 2018). Eberhaut et al. (2023) argued that the higher prevalence of offense-supportive cognitions in groups with pedo-hebephilia could be understood as a reduction of cognitive dissonance that is developed in response to one's own (felt) deviant sexuality. Thus – at least in this sample of treatment-seeking men – it seems that the more pedophilic the interest, the more offense-supportive cognitions are prevalent. This explanation is supported by our finding that patients with exclusive pedo-hebephilia were most prone to offense-supportive cognitions, followed by patients with non-exclusive pedophilia. While Eberhaut, Briken, and Eher (2020, 2023) found that incarcerated individuals with non-exclusive pedophilia and teleiophilia showed comparable scores, we found a continuous increase in offense-

supportive cognitions from teleiophilia over hebe- and pedophilia to exclusive pedo-hebephilia in this treatment-seeking sample. Patients with teleiophilia scored even lower than incarcerated control groups (Arkowitz and Vess 2003; Bumby 1996) and similar to community samples with pedophilia who did not (necessarily) seek treatment (Jahnke et al. 2015).

Offense-supportive cognitions and CSA and CSAM offending

Patients who have committed CSA or both CSA and CSAM offenses showed higher offense-supportive cognition measures compared to non-offending and online offending patients. The higher endorsement of offense-supportive cognitions in offline and mixed offending groups is likely due to the operationalization of the construct (i.e. the BMS). For example, Gannon, Keown, and Rose (2009) – following an implicit theory approach (Ward and Keenan 1999) – found that over 60% of the BMS items measure the two implicit theories Children as Sexual Beings and Nature of Harm. The former implicit theory states that some children actively initiate sex with adults and individuals who share the belief of children as sexual beings, consequently, misinterpret regular child behavior as a sexual invitation. The latter implicit theory characterizes CSA as only harmful for a child if the offense involves physical violence. Both implicit theories concern CSA-specific cognitions. Therefore, at least 60% of the BMS primarily measures CSA-specific offense-supportive cognitions.

To capture not only CSA-specific beliefs, several authors have argued that each type of offense (online versus offline, hands-on versus hands-off) corresponds with different kinds of offense-supportive cognitions (Kuhle et al. 2017; Mann et al. 2007; Steel et al. 2020; Ward 2000; Ward and Keenan 1999). For example, in online offending, other cognitions are involved, such as described more broadly in the Online Disinhibition Effect (Suler 2004), and to measure them, new instruments are required (Paquette and Cortoni 2020). However, Neutze et al. (2012) showed that CSA-specific offense-supportive cognition measures differed, although insignificantly, between online, offline, and mixed offending groups. Similarly, in the present study, CSA-specific offense-supportive cognition scores were also weakly pronounced in patients with CSAM offending compared to patients who did not offend. This indicates that instruments measuring mainly CSA-specific offense-supportive cognitions might at least partly be suitable for individuals with CSAM offending as well.

Compared to incarcerated individuals with CSA offending, this sample scored lower on offense-supportive cognition measures (Bumby 1996; Keown, Gannon, and Ward 2010). This might reflect the motivation for treatment in this sample: following a dual-process model of offense-supportive cognitions (Szumski et al. 2018), individuals who are at risk of offending (e.g., because of pedo-hebephilia) but do not want to offend against minors could indeed have offense supportive implicit cognitions. However, these individuals discard these cognitions via conscious and deliberate processing, which is mirrored in the BMS responses (Cantor and McPhail 2016). This is in line with research suggesting no general but sexuality-specific impulse control issues in treatment-seeking men with pedo-hebephilia (Bergner-Köther et al. 2024; Lampalzer et al. 2021). Contrary to these considerations, Arkowitz and Vess (2003) found similarly low BMS scores for incarcerated individuals with CSA offending compared to patients with (exclusive) pedo-hebephilia in the present study.

Limitations

The effects of childhood trauma on offense-supportive cognitions found in the present study were not consistently strong. The small effects can be explained in several ways and point at the limitations of the present study. First, the MMT-CD assumes that implicit and explicit cognitions are two processes that run simultaneously. We merely measured explicit offense-supportive cognitions via self-report questionnaires and, therefore, this study is likely to underestimate effects of childhood trauma on distorted implicit cognitions as strong normative beliefs about CSA can mask the relationship between implicit offense-supportive cognitions and childhood trauma. It seems important to methodologically distinguish implicit and explicit processing;

however, past studies found no differences between non-sexually offending and sexually offending individuals in implicit measures (Keown, Gannon, and Ward 2010).

While we statistically controlled for pedo-hebephilia and CSA and CSAM offending, which are variables known to be associated with offense-supportive cognitions (Eberhaut et al. 2023; Szumski and Bartoszak 2021), we did not control for other factors that are assumed to affect offense-supportive cognitions (such as attachment style; Szumski et al. 2018). The causal effect of childhood trauma on offense-supportive attitudes is likely not linear but moderated or mediated by a variety of other factors. This is especially important for the interpretation of the effect sizes found in the present study, as with an increasing number of confounding variables (that cannot all be controlled for), the expected effects should become smaller. A similar argument can be found in Papalia, Luebbers, and Ogloff (2018) for the relationship between CSA and general criminal behavior. Future studies should consider such confounding variables as well.

Jahnke, Schmidt, and Hoyer (2023) stressed the importance of assessing the individual evaluations of one's childhood abuse experiences. The perception of childhood experiences as positive or negative arguably affects the development of implicit cognitions. For example, when a patient experiences sexual abuse but reports to consider it non-coercive, it is likely that offense-supportive cognitions, such as that sexual abuse does not harm a child, are endorsed.

The CTQ measures trauma that stems from direct maltreatment or neglect of the child. Adverse childhood experience is a more broadly defined concept that describes direct traumatic childhood experiences as well as indirect adverse experiences, such as exposure to intra-familial violence or loss of or long-term separation from a parent. Research suggests that these adverse experiences can have an effect on health and well-being as well (Lovis-Schmidt et al. 2024). We advise future research to use such broader measures of adverse childhood experience, as the relationship with cognitive distortions could differ from the present findings.

The BMS is a classical measure for offense-supportive cognitions in CSA offending but has been criticized over the last decade (Steel et al. 2020). Future research should use measures that mirror the type of the studied offense (CSA versus CSAM). However, as the research project started in 2016, the discussion about appropriate offense-supportive cognition measures in online sexual offending was still ongoing. To avoid biases due to the instrument, we statistically controlled for offending when analyzing the relationship between childhood trauma and offense-supportive cognitions. Future research should employ more adequate instruments for CSAM offending (Paquette and Cortoni 2020, 2021).

The assessment of the history of offending is merely based on self-report and no official records were conducted. This could bias the offending variable. However, as participation in the prevention programs is voluntary and anonymity is assured, we assume that the information given in the interview is valid. Additionally, no interrater agreement between therapists was assessed. Therefore, the data might be biased by therapists' different definitions of online and offline offending. The same holds for pedo-hebephilia: while therapists adhered to a semi-structured interview guideline and discussed cases in which the sexual interest was uncertain with colleagues, no standardized assessment of the interrater agreement was employed.

Lastly, the sample of the study consisted of treatment-seeking men who have committed CSA or CSAM offenses or feel at risk of offending. The findings can neither be generalized to the general population (and the individuals with pedophilia within this population), nor to samples in non-voluntary settings.

Outlook and implications for practice

The findings of the present study support the link between childhood trauma and offense-supportive cognitions proposed in the MMT-CD and provide estimates of the effect sizes. To validate the current findings and further enhance the understanding of offense-supportive cognitions, future research is

needed that distinguishes between implicit and explicit cognitions, controls for further possible confounding variables, uses prospective designs, or uses more specified measures of offense-supportive cognitions (e.g., CSAM specific instruments).

Professionals working with the described population in legal, social, or mental health settings should carefully explore the individual relationship between possible childhood trauma, CSA or CSAM offending, and offense-supportive cognitions. To assume a direct link between these variables is not supported by the existing evidence and can lead to false decisions in the treatment and risk management of the population.

Data availability statement

Additional figures are provided in the data repository (<https://osf.io/67jgz/>).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the umbrella organisation of the statutory health insurance funds, Germany ("Spitzenverband der gesetzlichen Krankenversicherungen," GKV-SV) and the Bavarian Ministry of Justice, Germany ("Bayerisches Staatsministerium der Justiz").

ORCID

Lasse Peschka  <http://orcid.org/0000-0003-4941-7950>
 Claus-Christian Carbon  <http://orcid.org/0000-0002-3446-9347>
 Kolja Schiltz  <http://orcid.org/0000-0003-3788-3241>
 Ralf Bergner-Köther  <http://orcid.org/0009-0009-5404-9305>

References

- Aebi, M., M. A. Landolt, C. Mueller-Pfeiffer, U. Schnyder, T. Maier, and M. Mohler-Kuo. 2015. "Testing the "Sexually Abused-Abuser Hypothesis" in Adolescents: A Population-Based Study." *Archives of Sexual Behavior* 44(8):2189–99. doi: 10.1007/s10508-014-0440-x.
- Alanko, K., A. F. Schmidt, J. Neutze, E. Bergen, P. Santtila, and M. Osterheider. 2017. "Male Sexual Interest in and Offending Against Children: The Abused-Abuser Hypothesis." *Journal of Forensic Psychology Research and Practice* 17(2):128–44. doi: 10.1080/24732850.2017.1286544.
- Arkowitz, S. and J. Vess. 2003. "An Evaluation of the Bumby RAPE and MOLEST Scales as Measures of Cognitive Distortions with Civilly Committed Sexual Offenders." *Sexual Abuse: Journal of Research and Treatment* 15 (4):237–49. doi: 10.1177/107906320301500402.
- Bandura, A. 1986. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Beier, K. M., D. Grundmann, L. F. Kuhle, G. Scherner, A. Konrad, and T. Amelung. 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):529–42. doi: 10.1111/jsm.12785.
- Bergner-Köther, R., L. Peschka, A. Pastukhov, C.-C. Carbon, S. Steins-Loeber, G. Hajak, and M. Rettenberger. 2024. "The Relevance of Hypersexuality and Impulsivity in Different Groups of Treatment-Seekers with and without (Exclusive) Pedophilia." *Sexual Abuse: Journal of Research and Treatment*. doi: 10.1177/10790632241271204.
- Bernstein, D. P., J. A. Stein, M. D. Newcomb, E. Walker, D. Pogge, T. Ahluvalia, J. Stokes, L. Handelsman, M. Medrano, D. Desmond, et al. 2003. "Development and Validation of a Brief Screening Version of the Childhood Trauma Questionnaire." *Child Abuse and Neglect* 27(2):169–90. doi: 10.1016/S0145-2134(02)00541-0.
- Biedermann, L., R. Eher, M. Rettenberger, K. Gaunersdorfer, and D. Turner. 2023. "Are Mental Disorders Associated with Recidivism in Men Convicted of Sexual Offenses?" *Acta Psychiatrica Scandinavica* 148(1):6–18. doi: 10.1111/acps.13547.

- Bissias, G., B. Levine, M. Liberatore, B. Lynn, J. Moore, H. Wallach, and J. Wolak. 2016. "Characterization of Contact Offenders and Child Exploitation Material Trafficking on Five Peer-To-Peer Networks." *Child Abuse and Neglect* 52:185–99. doi: [10.1016/j.chiabu.2015.10.022](https://doi.org/10.1016/j.chiabu.2015.10.022).
- Blank, C., K. L. Nunes, S. Maimone, C. A. Hermann, and I. V. McPhail. 2018. "Is Childhood Sexual Victimization Associated with Cognitive Distortions, Self-Esteem, and Emotional Congruence with Children?" *The Journal of Sexual Aggression* 24(3):259–73. doi: [10.1080/13552600.2018.1509574](https://doi.org/10.1080/13552600.2018.1509574).
- Bumby, K. M. 1996. "Assessing the Cognitive Distortions of Child Molesters and Rapists: Development and Validation of the Molest and Rape Scales." *Sexual Abuse: Journal of Research and Treatment* 8(1):37–54. doi: [10.1177/107906329600800105](https://doi.org/10.1177/107906329600800105).
- Bundeskriminalamt. 2022. "Vorstellung der Zahlen kindlicher Gewaltopfer - Auswertung der Polizeilichen Kriminalstatistik 2021 [Presentation of the Numbers of Child Victims of Violence - Evaluation of the 2021 Police Crime Statistics]." https://www.bka.de/SharedDocs/Kurzmeldungen/DE/Kurzmeldungen/220530_PK_KindlicheGewaltopfer2021.
- Bürkner, P. C. 2017. "Brms: An R Package for Bayesian Multilevel Models Using Stan." *Journal of Statistical Software* 80 (1). doi: [10.18637/jss.v080.i01](https://doi.org/10.18637/jss.v080.i01).
- Bürkner, P. C. 2018. "Advanced Bayesian Multilevel Modeling with the R Package Brms." *The R Journal* 10(1):395. doi: [10.32614/RJ-2018-017](https://doi.org/10.32614/RJ-2018-017).
- Bürkner, P. C. and M. Vuorre. 2019. "Ordinal Regression Models in Psychology: A Tutorial." *Advances in Methods and Practices in Psychological Science* 2(1):77–101. doi: [10.1177/2515245918823199](https://doi.org/10.1177/2515245918823199).
- Cantor, J. M. and I. V. McPhail. 2016. "Non-Offending Pedophiles." *Current Sexual Health Reports* 8(3):121–28. doi: [10.1007/s11930-016-0076-z](https://doi.org/10.1007/s11930-016-0076-z).
- Carpenter, B., A. Gelman, M. D. Hoffman, D. Lee, B. Goodrich, M. Betancourt, M. Brubaker, J. Guo, P. Li, and A. Riddell. 2017. "Stan: A Probabilistic Programming Language." *Journal of Statistical Software* 76(1):1–32. doi: [10.18637/jss.v076.i01](https://doi.org/10.18637/jss.v076.i01).
- Chopin, J., F. Fortin, and S. Paquette. 2022. "Childhood Victimization and Poly-Victimization of Online Sexual Offenders: A Developmental Psychopathology Perspective." *Child Abuse and Neglect* 129:105659. doi: [10.1016/j.chiabu.2022.105659](https://doi.org/10.1016/j.chiabu.2022.105659).
- Connolly, M. and R. Woollons. 2008. "Childhood Sexual Experience and Adult Offending: An Exploratory Comparison of Three Criminal Groups." *Child Abuse Review* 17(2):119–32. doi: [10.1002/car.1019](https://doi.org/10.1002/car.1019).
- Craig, L. A., D. Thornton, A. Beech, and K. D. Browne. 2007. "The Relationship of Statistical and Psychological Risk Markers to Sexual Reconviction in Child Molesters." *Criminal Justice & Behavior* 34(3):314–29. doi: [10.1177/0093854806291416](https://doi.org/10.1177/0093854806291416).
- Craissati, J., G. McClurg, and K. Browne. 2002. "Characteristics of Perpetrators of Child Sexual Abuse Who Have Been Sexually Victimized as Children." *Sexual Abuse* 14(3):225–39. doi: [10.1177/107906320201400303](https://doi.org/10.1177/107906320201400303).
- Cuadra, L. E., A. E. Jaffe, R. Thomas, and D. DiLillo. 2014. "Child Maltreatment and Adult Criminal Behavior: Does Criminal Thinking Explain the Association?" *Child Abuse and Neglect* 38(8):1399–408. doi: [10.1016/j.chiabu.2014.02.005](https://doi.org/10.1016/j.chiabu.2014.02.005).
- Danese, A. and B. S. McEwen. 2012. "Adverse Childhood Experiences, Allostasis, Allostatic Load, and Age-Related Disease." *Physiology & Behavior* 106(1):29–39. doi: [10.1016/j.physbeh.2011.08.019](https://doi.org/10.1016/j.physbeh.2011.08.019).
- Dombert, B., A. F. Schmidt, R. Banse, P. Briken, J. Hoyer, J. Neutze, and M. Osterheider. 2016. "How Common is men's Self-Reported Sexual Interest in Prepubescent Children?" *Journal of Sex Research* 53(2):214–23. doi: [10.1080/00224499.2015.1020108](https://doi.org/10.1080/00224499.2015.1020108).
- Domhardt, M., A. Münzer, J. M. Fegert, and L. Goldbeck. 2015. "Resilience in Survivors of Child Sexual Abuse." *Trauma, Violence & Abuse* 16(4):476–93. doi: [10.1177/1524838014557288](https://doi.org/10.1177/1524838014557288).
- Eberhaut, S., P. Briken, and R. Eher. 2020. "Die Bedeutung kognitiver Verzerrungen für die Diagnose einer pädosexuellen Präferenzstörung bei inhaftierten Tätern mit Sexualdelikten in Österreich [The Significance of Cognitive Distortions for the Diagnosis of Pedosexual Preference Disorder in Imprison]." *Zeitschrift für Sexualforschung* 33(1):17–28. doi: [10.1055/a-1099-4404](https://doi.org/10.1055/a-1099-4404).
- Eberhaut, S., A. F. Schmidt, R. Banse, and R. Eher. 2023. "Child Abuse Myths are Pedophilic Myths: Cognitive Distortions are Stronger in Individuals Convicted of Sexual Offenses Diagnosed with Pedophilia Compared to Those without Such Diagnosis." *Deviant Behavior* 44(7):1013–25. doi: [10.1080/01639625.2022.2132548](https://doi.org/10.1080/01639625.2022.2132548).
- Eher, R., M. E. Olver, I. Heurix, F. Schilling, and M. Rettenberger. 2015. "Predicting Reoffense in Pedophilic Child Molesters by Clinical Diagnoses and Risk Assessment." *Law and Human Behavior* 39(6):571–80. doi: [10.1037/lhb0000144](https://doi.org/10.1037/lhb0000144).
- Eher, R., M. Rettenberger, and D. Turner. 2019. "The Prevalence of Mental Disorders in Incarcerated Contact Sexual Offenders." *Acta Psychiatrica Scandinavica* 139(6):572–81. doi: [10.1111/acps.13024](https://doi.org/10.1111/acps.13024).
- Etzler, S., R. Eher, and M. Rettenberger. 2020. "Dynamic Risk Assessment of Sexual Offenders: Validity and Dimensional Structure of the Stable-2007." *Assessment* 27(4):822–39. doi: [10.1177/1073191118754705](https://doi.org/10.1177/1073191118754705).
- Finkelhor, D. 1984. *Child Sexual Abuse: New Theory and Research*. New York: Free Press.
- Freund, K. and M. Kuban. 1994. "The Basis of the Abused Abuser Theory of Pedophilia: A Further Elaboration on an Earlier Study." *Archives of Sexual Behavior* 23(5):553–63. doi: [10.1007/BF01541497](https://doi.org/10.1007/BF01541497).

- Freund, K., R. Watson, and R. Dickey. 1990. "Does Sexual Abuse in Childhood Cause Pedophilia: An Exploratory Study." *Archives of Sexual Behavior* 19(6):557–68. doi: [10.1007/BF01542465](https://doi.org/10.1007/BF01542465).
- Gannon, T. A., K. Keown, and M. R. Rose. 2009. "An Examination of Current Psychometric Assessments of Child molesters' Offense-Supportive Beliefs Using ward's Implicit Theories." *International Journal of Offender Therapy and Comparative Criminology* 53(3):316–33. doi: [10.1177/0306624X07312791](https://doi.org/10.1177/0306624X07312791).
- Gannon, T. A., T. Ward, and R. Collie. 2007. "Cognitive Distortions in Child Molesters: Theoretical and Research Developments Over the Past Two Decades." *Aggression & Violent Behavior* 12(4):402–16. doi: [10.1016/j.avb.2006.09.005](https://doi.org/10.1016/j.avb.2006.09.005).
- Gerwinn, H., S. Weiß, G. Tenbergen, T. Amelung, C. Födisch, A. Pohl, C. Massau, J. Kneer, S. Mohnke, C. Kärger, et al. 2018. "Clinical Characteristics Associated with Paedophilia and Child Sex Offending – Differentiating Sexual Preference from Offence Status." *European Psychiatry* 51:74–85. doi: [10.1016/j.eurpsy.2018.02.002](https://doi.org/10.1016/j.eurpsy.2018.02.002).
- Glaesmer, H. 2016. "Assessing Childhood Maltreatment on the Population Level in Germany: Findings and Methodological Challenges." *Child and Adolescent Psychiatry and Mental Health* 10(1):4–9. doi: [10.1186/s13034-016-0104-9](https://doi.org/10.1186/s13034-016-0104-9).
- Hanson, R. K. and K. E. Morton-Bourgon. 2005. "The Characteristics of Persistent Sexual Offenders: A Meta-Analysis of Recidivism Studies." *Journal of Consulting & Clinical Psychology* 73(6):1154–63. doi: [10.1037/0022-006X.73.6.1154](https://doi.org/10.1037/0022-006X.73.6.1154).
- Häuser, W., G. Schmutzer, E. Brähler, and H. Glaesmer. 2011. "Misshandlungen in Kindheit und Jugend: Ergebnisse einer Umfrage in einer repräsentativen Stichprobe der Deutschen Bevölkerung [Maltreatment in Childhood and Adolescence: Results of a Survey in a Representative Sample of the German Population]." *Deutsches Ärzteblatt* 108 (17):287–94. doi: [10.3238/arztebl.2011.0287](https://doi.org/10.3238/arztebl.2011.0287).
- Heiss, A. 2021. "A Guide to Correctly Calculating Posterior Predictions and Average Marginal Effects with Multilevel Bayesian Models." doi: [10.59350/wbn93-edb02](https://doi.org/10.59350/wbn93-edb02).
- Helmus, L., R. K. Hanson, K. M. Babchishin, and R. E. Mann. 2013. "Attitudes Supportive of Sexual Offending Predict Recidivism: A Meta-Analysis." *Trauma, Violence & Abuse* 14(1):34–53. doi: [10.1177/1524838012462244](https://doi.org/10.1177/1524838012462244).
- Jahnke, S., A. F. Schmidt, M. Geradt, and J. Hoyer. 2015. "Stigma-Related Stress and Its Correlates Among Men with Pedophilic Sexual Interests." *Archives of Sexual Behavior* 44(8):2173–87. doi: [10.1007/s10508-015-0503-7](https://doi.org/10.1007/s10508-015-0503-7).
- Jahnke, S., A. F. Schmidt, and J. Hoyer. 2023. "Pedohebephilia and Perceived Non-Coercive Childhood Sexual Experiences: Two Non-Matched Case-Control Studies." *Sexual Abuse* 35(3):340–74. doi: [10.1177/10790632221098341](https://doi.org/10.1177/10790632221098341).
- Jahnke, S., S. Schmitt, and A. Malón. 2018. "What if the Child Appears to Enjoy It? Moral Attitudes Toward Adult–Child Sex Among Men with and without Pedohebephilia." *Journal of Sex Research* 55(7):927–38. doi: [10.1080/00224499.2016.1271101](https://doi.org/10.1080/00224499.2016.1271101).
- Jespersen, A. F., M. L. Lalumière, and M. C. Seto. 2009. "Sexual Abuse History Among Adult Sex Offenders and Non-Sex Offenders: A Meta-Analysis." *Child Abuse and Neglect* 33(3):179–92. doi: [10.1016/j.chiabu.2008.07.004](https://doi.org/10.1016/j.chiabu.2008.07.004).
- Keown, K., T. A. Gannon, and T. Ward. 2010. "What's in a Measure? A Multi-Method Study of Child Sexual offenders' Beliefs." *Psychology Crime & Law* 16(1–2):125–43. doi: [10.1080/10683160802622022](https://doi.org/10.1080/10683160802622022).
- Klinitzke, G., M. Romppel, W. Häuser, E. Brähler, and H. Glaesmer. 2012. "Die deutsche Version des Childhood Trauma Questionnaire (CTQ) – psychometrische Eigenschaften in einer bevölkerungsrepräsentativen Stichprobe [The German Version of the Childhood Trauma Questionnaire (CTQ) - Psychometric Properties in a Population-Represen.] *PPmP - Psychotherapie · Psychosomatik · Medizinische Psychologie* 62(2):47–51. doi: [10.1055/s-0031-1295495](https://doi.org/10.1055/s-0031-1295495).
- Kuhle, L. F., E. Schlinzig, G. Kaiser, T. Amelung, A. Konrad, R. Röhle, and K. M. Beier. 2017. "The Association of Sexual Preference and Dynamic Risk Factors with Undetected Child Pornography Offending." *The Journal of Sexual Aggression* 23(1):3–18. doi: [10.1080/13552600.2016.1201157](https://doi.org/10.1080/13552600.2016.1201157).
- Lambie, I. and J. Reil. 2021. "I was Like a Kid Full of Revenge: Self-Reported Reasons for Sexual Offending by Men Who Were Sexually Abused as Children." *The Journal of Sexual Aggression* 27(3):373–86. doi: [10.1080/13552600.2020.1820088](https://doi.org/10.1080/13552600.2020.1820088).
- Lampalzer, U., S. Tozdan, F. von Franqué, and P. Briken. 2021. "Hypersexuality and Impulsivity in Self-Referred Men with Sexual Interest in Minors: Are They Related? Do They Change During Treatment? An Exploratory Pilot Study." *Sexual Medicine* 9(5):100429. doi: [10.1016/j.esxm.2021.100429](https://doi.org/10.1016/j.esxm.2021.100429).
- Leach, C., A. Stewart, and S. Smallbone. 2016. "Testing the Sexually Abused-Sexual Abuser Hypothesis: A Prospective Longitudinal Birth Cohort Study." *Child Abuse and Neglect* 51:144–53. doi: [10.1016/j.chiabu.2015.10.024](https://doi.org/10.1016/j.chiabu.2015.10.024).
- Lippus, H., M. Laanpere, K. Part, I. Ringmets, and H. Karro. 2020. "What Do We Know About the Impact of Sexual Violence on Health and Health Behaviour of Women in Estonia?" *BMC Public Health* 20(1):1897. doi: [10.1186/s12889-020-09953-2](https://doi.org/10.1186/s12889-020-09953-2).
- Lovis-Schmidt, A., J. Schilling, C. Pudschun, and H. Rindermann. 2024. "Adverse Childhood Experiences and Physical Diseases in Adulthood: A Summary of Meta-Analyses." *Traumatology* 30(2):164–77. doi: [10.1037/trm0000412](https://doi.org/10.1037/trm0000412).
- Mann, R., R. K. Hanson, and D. Thornton. 2010. "Assessing Risk for Sexual Recidivism: Some Proposals on the Nature of Psychologically Meaningful Risk Factors." *Sexual Abuse* 22(2):191–217. doi: [10.1177/1079063210366039](https://doi.org/10.1177/1079063210366039).
- Mann, R., S. Webster, H. Wakeling, and W. Marshall. 2007. "The Measurement and Influence of Child Sexual Abuse Supportive Beliefs." *Psychology Crime & Law* 13(5):443–58. doi: [10.1080/10683160601061141](https://doi.org/10.1080/10683160601061141).

- Marx, C. M., A. N. Tibubos, E. Brähler, and M. E. Beutel. 2020. "Experienced Childhood Maltreatment in a Sample of Pedophiles: Comparisons with Patients of a Psychosomatic Outpatient Clinic and the General Population." *The Journal of Sexual Medicine* 17(5):985–93. doi: [10.1016/j.jsxm.2020.01.019](https://doi.org/10.1016/j.jsxm.2020.01.019).
- Marziano, V., T. Ward, A. R. Beech, and P. Pattison. 2006. "Identification of Five Fundamental Implicit Theories Underlying Cognitive Distortions in Child Abusers: A Preliminary Study." *Psychology Crime & Law* 12(1):97–105. doi: [10.1080/10683160500056887](https://doi.org/10.1080/10683160500056887).
- McNeish, D. 2016. "On Using Bayesian Methods to Address Small Sample Problems." *Structural Equation Modeling: A Multidisciplinary Journal* 23(5):750–73. doi: [10.1080/10705511.2016.1186549](https://doi.org/10.1080/10705511.2016.1186549).
- Neutze, J., D. Grundmann, G. Scherner, and K. M. Beier. 2012. "Undetected and Detected Child Sexual Abuse and Child Pornography Offenders." *International Journal of Law and Psychiatry* 35(3):168–75. doi: [10.1016/j.ijlp.2012.02.004](https://doi.org/10.1016/j.ijlp.2012.02.004).
- Ó Ciardha, C. and T. A. Gannon. 2011. "The Cognitive Distortions of Child Molesters are in Need of Treatment." *The Journal of Sexual Aggression* 17(2):130–41. doi: [10.1080/13552600.2011.580573](https://doi.org/10.1080/13552600.2011.580573).
- Ó Ciardha, C. and T. Ward. 2013. "Theories of Cognitive Distortions in Sexual Offending." *Trauma, Violence & Abuse* 14(1):5–21. doi: [10.1177/1524838012467856](https://doi.org/10.1177/1524838012467856).
- Ogloff, J. R., M. C. Cutajar, E. Mann, P. Mullen, F. T. Y. Wei, H. A. B. Hassan, and T. H. Yih. 2012. "Child Sexual Abuse and Subsequent Offending and Victimization: A 45 Year Follow-Up Study." *Trends & Issues in Crime & Criminal Justice* 440:1–6. doi: [10.52922/ti251190](https://doi.org/10.52922/ti251190).
- Papalia, N., S. Luebbers, and J. R. P. Ogloff. 2018. "Child Sexual Abuse and the Propensity to Engage in Criminal Behaviour: A Critical Review and Examination of Moderating Factors." *Aggression & Violent Behavior* 43 (October):71–89. doi: [10.1016/j.avb.2018.10.007](https://doi.org/10.1016/j.avb.2018.10.007).
- Paquette, S. and F. Cortoni. 2020. "The Development and Validation of the Cognitions of Internet Sexual Offending (C-ISO) Scale." *Sexual Abuse* 32(8):907–30. doi: [10.1177/1079063219862281](https://doi.org/10.1177/1079063219862281).
- Paquette, S. and F. Cortoni. 2021. "Offence-Supportive Cognitions, Atypical Sexuality, Problematic Self-Regulation, and Perceived Anonymity Among Online and Contact Sexual Offenders Against Children." *Archives of Sexual Behavior* 50(5):2173–87. doi: [10.1007/s10508-020-01863-z](https://doi.org/10.1007/s10508-020-01863-z).
- Pereda, N., G. Guilera, M. Forns, and J. Gómez-Benito. 2009. "The Prevalence of Child Sexual Abuse in Community and Student Samples: A Meta-Analysis." *Clinical Psychology Review* 29(4):328–38. doi: [10.1016/j.cpr.2009.02.007](https://doi.org/10.1016/j.cpr.2009.02.007).
- Rambow, J., K. Elsner, S. Feelgood, and J. Hoyer. 2008. "Einstellungen zum Kindesmissbrauch: Untersuchungen mit der Bumby Child Molest Scale bei Missbrauchs- und Gewalttätern [Attitudes towards Child Abuse: Studies with the Bumby Child Molest Scale in Child Abusers and Violent Offenders]." *Zeitschrift für Sexualforschung* 21(4):341–55. doi: [10.1055/s-0028-1098723](https://doi.org/10.1055/s-0028-1098723).
- R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Salter, D., D. McMillan, M. Richards, T. Talbot, J. Hodges, A. Bentovim, R. Hastings, J. Stevenson, and D. Skuse. 2003. "Development of Sexually Abusive Behaviour in Sexually Victimized Males: A Longitudinal Study." *Lancet* 361 (9356):471–76. doi: [10.1016/S0140-6736\(03\)12466-X](https://doi.org/10.1016/S0140-6736(03)12466-X).
- Seto, M. C. 2008. *Pedophilia and Sexual Offending Against Children: Theory, Assessment, and Intervention*. American Psychological Association. doi: [10.1037/11639-000](https://doi.org/10.1037/11639-000).
- Seto, M. C. 2019. "The Motivation-Facilitation Model of Sexual Offending." *Sexual Abuse: Journal of Research and Treatment* 31(1):3–24. doi: [10.1177/1079063217720919](https://doi.org/10.1177/1079063217720919).
- Seto, M. C. 2021. "What Do We Know About Online Sexual Offending?" Pp. 23–31 in *Online Child Sexual Exploitation*, vol. 15, Issue 2, Springer International Publishing. doi: [10.1007/978-3-030-66654-5_3](https://doi.org/10.1007/978-3-030-66654-5_3).
- Seto, M. C., J. M. Cantor, and R. Blanchard. 2006. "Child Pornography Offenses are a Valid Diagnostic Indicator of Pedophilia." *Journal of Abnormal Psychology* 115(3):610–15. doi: [10.1037/0021-843X.115.3.610](https://doi.org/10.1037/0021-843X.115.3.610).
- Seto, M. C. and M. L. Lalumière. 2010. "What is so Special About Male Adolescent Sexual Offending? A Review and Test of Explanations Through Meta-Analysis." *Psychological Bulletin* 136(4):526–75. doi: [10.1037/a0019700](https://doi.org/10.1037/a0019700).
- Simons, D. A., S. K. Wurtele, and R. L. Durham. 2008. "Developmental Experiences of Child Sexual Abusers and Rapists." *Child Abuse and Neglect* 32(5):549–60. doi: [10.1016/j.chiabu.2007.03.027](https://doi.org/10.1016/j.chiabu.2007.03.027).
- Steel, C. M. S., E. Newman, S. O'Rourke, and E. Quayle. 2020. "A Systematic Review of Cognitive Distortions in Online Child Sexual Exploitation Material Offenders." *Aggression & Violent Behavior* 51:101375. doi: [10.1016/j.avb.2020.101375](https://doi.org/10.1016/j.avb.2020.101375).
- Stephens, S., I. V. McPhail, A. Heasman, and C. Gerritsen. 2023. "Examining Psychologically Meaningful Risk Factors for Detected Sexual Offending in a Community Sample of Individuals with and without Sexual Interest in Children." *The Journal of Sexual Aggression* 30(3):372–91. doi: [10.1080/13552600.2023.2192241](https://doi.org/10.1080/13552600.2023.2192241).
- Stoltenborgh, M., M. H. van IJzendoorn, E. M. Euser, and M. J. Bakermans-Kranenburg. 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](https://doi.org/10.1177/1077559511403920).
- Suler, J. 2004. "The Online Disinhibition Effect." *International Journal of Applied Psychoanalytic Studies* 2(2):184–88. doi: [10.1002/aps.42](https://doi.org/10.1002/aps.42).

- Szumski, F., R. M. Bartels, A. R. Beech, and D. Fisher. 2018. "Distorted Cognition Related to Male Sexual Offending: The Multi-Mechanism Theory of Cognitive Distortions (MMT-CD)." *Aggression & Violent Behavior* 39:139–51. doi: 10.1016/j.avb.2018.02.001.
- Szumski, F. and D. Bartoszak. 2021. "Cognitive Distortions and Recidivism in Sexual Offenders Against Children." *Problems of Forensic Sciences* 128(August):191–209. doi: 10.4467/12307483PFS.21.011.15881.
- Vehtari, A., A. Gelman, and J. Gabry. 2017. "Practical Bayesian Model Evaluation Using Leave-One-Out Cross-Validation and WAIC." *Statistics and Computing* 27(5):1413–32. doi: 10.1007/s11222-016-9696-4.
- von Franqué, F., R. Bergner-Koether, S. Schmidt, J. S. Pellowski, J. H. Peters, G. Hajak, and P. Briken. 2023. "Individuals Under Voluntary Treatment with Sexual Interest in Minors: What Risk Do They Pose?" *Frontiers in Psychiatry* 14. doi: 10.3389/fpsy.2023.1277225.
- Ward, T. 2000. "Sexual offenders' Cognitive Distortions as Implicit Theories." *Aggression & Violent Behavior* 5 (5):491–507. doi: 10.1016/S1359-1789(98)00036-6.
- Ward, T. and T. Keenan. 1999. "Child molesters' Implicit Theories." *Journal of Interpersonal Violence* 14(8):821–38. doi: 10.1177/088626099014008003.
- Wickham, H., M. Averick, J. Bryan, W. Chang, L. McGowan, R. François, G. Golemund, A. Hayes, L. Henry, J. Hester, et al. 2019. "Welcome to the Tidyverse." *Journal of Open Source Software* 4(43):1686. doi: 10.21105/joss.01686.
- Williams, R. 2016. "Understanding and Interpreting Generalized Ordered Logit Models." *Journal of Mathematical Sociology* 40(1):7–20. doi: 10.1080/0022250X.2015.1112384.
- Wolak, J., M. Liberatore, and B. N. Levine. 2014. "Measuring a Year of Child Pornography Trafficking by US Computers on a Peer-To-Peer Network." *Child Abuse and Neglect* 38(2):347–56. doi: 10.1016/j.chiabu.2013.10.018.
- Wood, E. and S. Riggs. 2008. "Predictors of Child Molestation." *Journal of Interpersonal Violence* 23(2):259–75. doi: 10.1177/0886260507309344.
- World Health Organization. 2016. *International Statistical Classification of Diseases and Related Health Problems*. 10th ed. World Health Organization.
- Zakreski, E., R. Androvičová, K. Bártová, A. Chronos, L. Krejčová, L. Martinec Nováková, and K. Klapilová. 2024. "Childhood Adversity and Offense-Supportive Cognitions Among Czech Adults with a Sexual Interest in Violence or Children." *Archives of Sexual Behavior* 53(6):2159–72. doi: 10.1007/s10508-024-02837-1.