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DISSERTATION

Risk of child sexual abuse image offending in undetected pedophiles and hebephiles

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INHALTSVERZEICHNIS

ZUSAMMENFASSUNG

ABSTRACT

Background: A sexual preference for children constitutes a major risk factor for child sexual abuse image (CSAI) offending, although it is neither a necessary nor sufficient condition. To the present, knowledge on the meaning of other risk factors and preventive treatment for CSAI offending is sparse, especially as the majority of cases remain undetected by legal authorities (Dunkelfeld). Previous studies predominantly relied on samples of detected sex offenders (Hellfeld). Those studies revealed that in samples of sex offenders with a sexual deviance the potentially changeable dynamic risk factors (DRFs) sexual preoccupation, sexualized coping, emotional congruence with children and child sexual abuse (CSA)-supportive attitudes increase the risk for child sexual offending. However, the applicability of these findings to samples of undetected pedohebephiles is yet to be determined. Therefore, the present study evaluates whether aforementioned DRFs are applicable to undetected CSAI offending of pedohebephiles. Furthermore, the study investigates whether those DRFs are amenable to treatment.

Method: Based on a sample of undetected men with a sexual preference for children the present study evaluates the association of (1) emotional congruence with children, (2) specific aspects of sexual preference, sexual preoccupation, CSA-supportive attitudes and sexualized coping with CSAI offending, (3) and the effects of a preventive treatment aiming at the reduction of the manifestation of DRFs and CSAI offending behavior.

Results: Results reveal that only some of the DRFs for detected sexual offending investigated in samples of detected sexual offenders are applicable to undetected CSAI offending of pedohebephiles. A central finding is that sexual preoccupation is of utmost importance as a DRF. Moreover, increased “attachment to children” as a main facet of emotional congruence with children increases the risk to offend only in hebephiles. Results also reveal that men sexually preferring both the pre- and early pubescent body age show a higher risk for CSAI offending than those who either prefer the one or the other. Treatment could successfully reduce sexual preoccupation and CSA-supportive attitudes, but showed no effects on the other DRFs. Desistance from CSAI offending was achieved only by few treatment participants.

Implications: The results underline the importance of a differentiated clinical diagnostics of the specific phenomenology of the sexual preference for children, as it is differentially associated with the risk for CSAI offending and moderates the influence of DRFs. Especially sexual preoccupation is linked to the risk for CSAI offending and should therefore be the focus of preventive treatment. An adaption of the treatment to the needs of CSAI offenders appears to be necessary.

KURZFASSUNG

Einleitung: Die sexuelle Präferenz für Kinder stellt einen bedeutenden Risikofaktor für die Nutzung von Missbrauchsabbildungen (CSAI) dar, ist aber nichtsdestotrotz weder eine notwendige noch hinreichende Bedingung. Das derzeitige Wissen zur Bedeutung weiterer Risikofaktoren und präventiven Therapie der CSAI Nutzung ist beschränkt, da die Mehrzahl der Fälle juristisch unbekannt bleibt (i.S.v. Dunkelfeld) und der Erforschung kaum zugänglich ist. Bisherige Studien basieren primär auf Untersuchungen juristisch bekannter Sexualstraftäter (i.S.v. Hellfeld). Sie konnten zeigen, dass bei Sexualstraftätern mit sexueller Devianz, die therapeutisch beeinflussbaren dynamischen Risikofaktoren (DRFen) sexuelle Befasstheit, sexualisiertes Coping, emotionale Kongruenz mit Kindern und missbrauchsbegünstigende Einstellungen sexuelle Übergriffigkeit befördern. Da Analysen zur Übertragbarkeit bis dato noch ausstehen, untersucht die vorliegende Studie, ob besagte DRFen auf pädohebephile CSAI Nutzer aus dem Dunkelfeld übertragbar und therapeutisch beeinflussbar sind.

Methodik: Basierend auf einer Stichprobe von juristisch unbekannten Männern mit einer sexuellen Präferenz für Kinder wurde der Zusammenhang zwischen (1) emotionaler Kongruenz mit Kindern, (2) spezifischen Aspekten der sexuellen Devianz, sexueller Befasstheit, sexualisierter Problembewältigung und missbrauchsbegünstigenden Einstellungen mit der Nutzung von CSAI untersucht, (3) als auch die therapeutische Beeinflussbarkeit dieser Risikofaktoren und der Nutzung von CSAI evaluiert.

Ergebnisse: Die Ergebnisse zeigen, dass nur einige der im Hellfeld identifizierten Risikofaktoren auf die spezifische Gruppe von pädohebephilen CSAI Nutzern im Dunkelfeld übertragbar sind. Ein zentraler Befund ist, dass die sexuelle Befasstheit von übergeordneter Bedeutung und ein wichtiger DRF für die Nutzung von CSAI ist. Darüber hinaus erhöht „Bindung zu Kindern“ als Facette der emotionalen Kongruenz das Risiko, allerdings nur bei hebephilen Männern. Die Analysen zeigten ebenfalls, dass Männer mit einer Präferenz sowohl für das vor- als auch für das frühpubertäre Körperschema (Pädohebephilie) wahrscheinlicher als Männer mit einer Präferenz für das eine oder andere Körperschema CSAI nutzen. Die Therapie reduzierte sowohl sexuelle Befasstheit als auch missbrauchsbegünstigende Einstellungen, zeigte aber keinen Einfluss auf die anderen DRF. Nur wenige Teilnehmer erreichten Abstinenz von der CSAI Nutzung.

Schlussfolgerung: Die Ergebnisse unterstreichen die Bedeutung einer differenzierten Diagnostik der spezifischen Phänomenologien der sexuellen Präferenz für Kinder, da diese unterschiedlich mit dem Risiko für die Nutzung von CSAI assoziiert sind und die Bedeutsamkeit von DRFen moderieren. Besonders die sexuelle Befasstheit steht in einem engen Zusammenhang mit der Nutzung von CSAI, daher sollten therapeutische Interventionen primär auf deren Reduktion abzielen. Deutlich wird die Notwendigkeit einer stärkeren Anpassung der Therapie an die Bedürfnisse von CSAI Nutzern.

INTRODUCTION

Increased use of the internet has coincided with an increase in the use of so-called child pornography, subsequently referred to as “child sexual abuse images” (CSAI)[1]. The prevalence of CSAI content that is available on the internet is unknown[1], but a rising number of individuals are being arrested for child CSAI offenses and appear in clinical or criminal justice settings[2-5]. CSAI offending is no victimless crime as every offense relies on the depiction of an actual child sexual abuse (CSA). CSA can have major negative short- and long-term impacts on the psychological and physiological well-beings of children with high costs for society[6, 7]. Also, there is additional trauma to the victims of CSA when their sexual abuse is depicted[1]. Therefore, the prevention of initial and repeated child sexual victimization by addressing important risk factors in CSAI offenders is of great importance. However, the risk for CSAI offending is difficult to assess, especially as the vast majority of offenses remains undetected by legal authorities[8-10]. As research on risk factors for CSAI offending mostly relies on samples of detected offenders, empirical data on risk factors associated with the more prevalent undetected CSAI offending are sparse. Moreover, the important differentiation of those offenders who only use CSAI (CSAI only) and those who both use CSAI and commit CSA (mixed) is not consistently considered in previous research.

Sexual preference as risk factor for child sexual abuse image offending

Previous research based on forensic samples has revealed the sexual preference for children to be a major risk factor for initial and repeated sexual offenses against children in general and for the use of CSAI in particular[11, 12]. Moreover, when assessed with the use of phallometry, the majority of CSAI offenders seemed to be motivated by a sexual interest in pre- and/or early pubescent children as they showed greater sexual arousal to children than to adults [13]. Also, the DSM-5 considers CSAI offending to be a valid diagnostic indicator for pedophilia[14].

In DSM-5, pedophilia is defined as a sexual preference characterized by recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving sexual activities with a prepubescent child or children persisting for a period of at least 6 months. If such fantasies or behaviors cause either clinically significant distress, interpersonal difficulties, or functional impairment, a pedophilic disorder can be diagnosed[14]. Hebephilia, defined as the sexual preference for early pubescent children, is not recognized as a separate diagnostic category in the DSM classification system and therefore cannot specifically be diagnosed. Besides, each individual could be exclusively (pedophilia, hebephilia, pedo-hebephilia) or non-exclusively (pedo-teleiophilia, hebe-teleiophilia, pedo-hebe-teleiophilia) attracted to (a) body scheme(s) of children. Subsequently, the text refers to the sexual preference for children in general as “pedohebephilia”.

The precise prevalence of the sexual preference for children in the general population is unknown[15, 16], but is estimated to be as much as 1% in the male general population[17]. In an online survey conducted among 8,718 German men, 4.1% reported sexual fantasies involving prepubescent children, and 0.1% reported an exclusive type of pedophilia[18].

Aside from pedohebephilia, multiple paraphilas (i.e., sexual preference for non-human objects, the suffering or humiliation of oneself or one's partner, children and non-consenting persons) and homo- and bisexuality have been identified in previous research as risk factors for sexual offending. When compared to detected CSA offenders, CSAI offenders reported even higher rates of paraphilias[13, 19]. Also, research results suggest that homo- and bisexuality are most likely associated with mixed but also with CSAI only offending[20, 21].

Nonetheless, pedohebephilia and other aspects of sexual preference are neither a necessary nor a sufficient condition for child sexual offending. Instead, sexual offending is determined by a variety of motivations and individual propensities and the risk to sexually (re-)offend is not uniformly distributed over time. Even if deviant aspects of sexual preference in general and pedohebephilia in particular represent important risk factors for child sexual offending, other rather dynamic risk factors come into play when someone acts upon his preference for children[22].

Dynamic risk factors in sexually deviant offenders

Dynamic risk factors (DRFs) are assumed to be associated with the likelihood of reoffending and potentially responsive to treatment and supervision. Therefore, DRFs are important when it comes to the clinical assessment of sexual offenders and planning of effective interventions[11, 22-24]. Research on dynamic risk groups in sexual offenders proposed various DRFs and aspects of antisociality to be of particular importance in the subgroup of sexual offenders with a sexual deviance[25]. The “sexually deviant group” scored high on deviant sexual interests, sexual preoccupation, sexualized coping, emotional congruence with children and CSA-supportive attitudes. Studies on DRFs have not only revealed an association with sexual offending in general, but have also differentiated between types of child sexual offending. Thus, CSA-supportive attitudes were found to be less distinct in CSAI only offenders when compared with CSA and mixed offenders, which might reflect differences in the type of attitudes held[2, 20, 26-32]. Therefore, offense-supportive attitudes of CSAI offenders have also been suggested to revolve around assumptions that justify the use of the internet or CSAI to sexually exploit children. Sexual preoccupation is defined as a highly deviating preoccupation with sexual contents often characterized by a high frequency of sexual fantasies. Previous research underlined its importance as a risk factor for both CSAI and CSA offending[12, 33-36]. Comparing different offender types, studies have found that CSAI offenders show a greater sexual preoccupation than CSA offenders[13, 19, 32, 37], and that mixed offenders compared to CSAI only offenders showed more

deficits in sexual self-regulation[20]. Accordingly, sexualized coping is deemed an important risk factor that is more pronounced in CSAI offenders when compared to CSA offenders[11]. However, emotional congruence with children did not differentiate CSAI only and mixed offenders. Nonetheless, CSA only offenders reported to be emotionally more identified with children than CSAI only offenders[20]. Also, previous research proposes a great link between pedohebephilia and emotional congruence with children[38]. Antisociality as major risk factor for sexual reoffending in detected child sexual offenders[12] seemed to be negligible among undetected pedohebephiles as their manifestations (i.e. psychopathy, prior convictions) were comparable to a sample of normal controls from the community[39, 40].

Treatment of CSAI offenders

So far, there is only few insight about the treatment of CSAI offenders and key questions of what are the most important treatment targets, how they should be achieved and whether treatment is able to reduce recidivism have yet to be addressed[1]. Treatment so far is offered on the basis of past experiences with empirically supported treatment of similar offender populations and knowledge of risk factors that are amenable to change by treatment[41, 42]. To the present, the only evaluated treatment program for the prevention of CSAI use, the Internet Sex Offender Treatment Programme (i-SOTP), specifically addresses incarcerated CSAI offenders[43]. Pre-post-comparison of offense-supportive attitudes and socio-affective functioning revealed meaningful changes. Due to the lack of a comparison group, changes could not definitely be ascribed to treatment but might also be explained by passage of time, ongoing probation, or selection effects. Unfortunately, data on detected and undetected recidivism of the actual behavior was not provided.

Benefits of analyzing CSAI offending in the *Dunkelfeld*

It is commonly known that the vast amount of cases of child sexual offending are never detected by legal authorities and therefore remain in the *Dunkelfeld*[8-10]. However, the majority of studies on CSAI offending have so far been based on samples of detected offenders, thereby limiting the knowledge on the risk factors for CSAI offending in various ways. First, group samplings based on detected index offences are prone to result in biased offender groups. For example, about 12% to 55% of detected CSAI offenders had previously committed both undetected and detected CSA underlining the differentiation of CSAI offenders in CSAI only and mixed offenders[44]. This in turn might result in an over- or underestimation of risk in CSAI only offenders. Second, forensic samples of sexually deviant men might differ substantially in terms of their risk profile and their characterization compared to an undetected offender population from the community. This raises the question of whether results on forensic samples are applicable to the group of undetected CSAI offenders. Third, assessing risk factors as aspects of sexual deviance and paraphilic sexual

preferences from samples of detected offenders is expected to result in inaccurate estimates of their prevalence. Previous studies relying on self-reports usually produced more accurate and even larger numbers of problematic sexual interests and non-reported behaviors[45-47]. Therefore, research in samples outside the forensic context can be beneficial in order to gain more insight into the phenomenon of CSAI offending and thereby improve risk assessment and preventive treatment.

The Present Research

The present research aimed to investigate whether identified DRFs for detected sexual offending in the subgroup of sexually deviant offenders can be applied to undetected CSAI offending in a sample of pedohebephiles. Also, the association of specific aspects of sexual preference with CSAI offending will be evaluated. Study participants were self-referring men from the community who voluntarily sought help to deal with their sexual preference for children and to prevent them from sexually (re-) offending against children. To participate in the *Prevention Project Dunkelfeld* (PPD), individuals had to be undetected by legal authorities by the time of assessment. Three separate research questions were investigated: (1) Is emotional congruence with children associated with CSAI offending?, (2) Are specific aspects of sexual preference as well as sexual preoccupation, sexualized coping and CSA-supportive attitudes risk factors for recent and lifetime CSAI offending?, (3) Is a specialized preventive community-based treatment offer, adapted from sex offender treatment programs, suitable to help reduce the risk to reoffend for the group of undetected CSAI offenders with a pedohebephilic sexual preference? The three questions were investigated in three separate studies, each with their own sample, procedure, and measures.

METHODS

Participants

The partly overlapping samples were recruited from participants in the PPD at the Berlin site. Study participants were included if they were diagnosed with pedophilia or ”paraphilia not otherwise specified” in cases of hebephilia according to the DSM-IV-TR criteria and if they did not fulfill any of the exclusion criteria (see Procedure). All presented data were approved by the ethics commission of the Charité – Universitätsmedizin Berlin (Charité EK-Vorg. Nr.: 1754/Si. 251).

Study 1[48]: For the investigation of emotional congruence with children as a risk factor for CSAI offending a sample of *N* = 217 pedohebephiles was analyzed.
Study 2[49]: To analyze the association of aspects of sexual preference and DRFs with lifetime and recent (within 6 months prior to assessment) CSAI offending *N* = 190 pedohebephiles were investigated.

Study 3[50]: For the evaluation of the treatment of CSAI offenders, data on DRFs and CSAI offending behavior of *N* = 53 men who completed the treatment program between 2005 and 2011 were compared to data of *N* = 22 men who were waiting for treatment to begin in a comparable time span. Of the *N* = 53 treatment participants, subsamples of *n* = 12 non-offenders, *n* = 16 CSAI only offenders and *n* = 16 mixed offenders were analyzed to differentiate treatment efficacy in offender groups.

Procedure

In 2005, the PPD was launched as an approach for the therapeutic prevention of sexual offenses against children. An extensive media campaign encouraged self-identified, judicially unknown pedophiles and hebephiles to seek professional help in order to prevent CSA and/or CSAI (re-)offenses[8]. Providing confidentiality and anonymity and offering professional therapy, the PPD has generated data from self-reports that may prove to be more reliable compared to data from forensic settings and could be of high additive value. Interested individuals contacted the project via email or telephone and were invited for clinical assessments. Based on a multi-methodological clinical diagnostics including a clinical interview and several questionnaires, sociodemographic data, previous child sexual offending behavior, sexual preference based on sexual fantasies during masturbation (body age and gender preference, additional paraphilias) and DRFs for sexual offending were assessed. Also, the motivation for treatment was clarified and aspects of psychopathology evaluated.

Following the clinical interview, inclusion and exclusion criteria for treatment participation were rated. A sexual preference for children was defined as an inclusion criterion. According to the DSM-IV-TR[51], pedophilia was diagnosed if the person reported recurrent and intense sexual thoughts, fantasies, or urges involving prepubescent children (Tanner stage 1) over a period of at least 6 months, as well as resulting clinically significant distress or impairment. Likewise, hebephilia was diagnosed if the participant reported that early pubescent children (Tanner stages 2 & 3) were the focus of sexual thoughts, fantasies, or urges. Because hebephilia is not included as a distinct diagnostic category in the DSM-IV-TR[51], the criteria for the diagnosis of “paraphilia not otherwise specified” were used. A history of CSAI and/or CSA offenses without admission of concomitant sexual thoughts, fantasies, or urges was not considered to be sufficient for the diagnosis of pedophilia and/or hebephilia. Defined exclusion criteria for the presented studies were ongoing legal proceedings for CSAI and/or CSA offenses, additional mental disorders with a need for acute treatment (e.g. acute psychosis or severe depression, suicidality or substance addiction), mental retardation, an age below 18 and insufficient German language skills.

All participants who were diagnosed with either pedophilia and/or hebephilia and did not fulfill any of the exclusion criteria were offered therapy. Group treatment was provided with weekly sessions

and lasted for averaged 12 to 18 months. The treatment program was based on a guided manual, the *Berlin Dissexuality Therapy Program* (BEDIT[52]), and combined cognitive-behavioral, sexological, and medical treatment options. The treatment aimed at acceptance and integration of the sexual preference for children and at the establishment of behavioral control by enhancing self-regulation skills, decreasing risk factors and increasing protective factors. Treatment participation required the participants to pass further assessments at pre-, post- and follow-up therapy.

Study 1[48]: To evaluate whether emotional congruence with children is linked to CSAI, *n* = 30 non-offenders, *n* = 37 CSAI only offenders, *n* = 56 CSA only offenders and *n* = 116 mixed offenders were compared and a multinomial logistic regression analysis was performed in the complete sample of *N* = 217 pedohebephiles.

Study 2[49]: To analyze the association of aspects of sexual preference (pedophilia, hebephilia, exclusivity of pedohebephilia, non-heterosexuality, additional paraphilias) and DRFs (sexual preoccupation, CSA-supportive attitudes, sexualized coping) with recent and lifetime CSAI offending, multinomial logistic regressions were performed in a sample of *N* = 190 pedohebephiles. Of those, *n* = 44 men were non-offenders, *n* = 102 CSAI only offenders and *n* = 44 mixed offenders within the last 6 months prior to assessment. With regard to lifetime CSAI offending, the sample consisted of *n* = 22 non-offenders and CSA only offenders, *n* = 97 CSAI only offenders and *n* = 71 mixed offenders.

Study 3[50]: Utilizing a non-randomized waiting-list control design, a treatment group (TG) of *N* = 53 PPD participants was compared to a waiting list control group of N = 22 (CG) of PPD participants on measures of emotional congruence with children, CSA-supportive attitudes, sexual preoccupation, and sexualized coping, as well as CSAI offending behavior to ascertain treatment-specific change. Between-group analyses pre- and post-treatment were conducted to investigate the relevance of changes. Intra-group analyses in *n* = 12 non-offenders, *n* = 16 CSAI only offenders, and *n* = 16 mixed offenders were conducted to differentiate treatment efficacy in offender subgroups.

Measures

Various self-report instruments were used to assess DRFs for CSA and CSAI offending as well as sexual experiences and behaviors.

Study 1[48]: The revised version of the *Child Identification Scale* (CIS-R[53]) is a scale of 40 items that assesses emotional congruence with children. Higher scores indicate greater identification with children in terms of cognitive and emotional connectedness (Cronbach's α = .82). The manifestation of the sexual preference for children was assessed during the clinical interview and later transformed into a dichotomous variable according to the youngest body age that was

sexually preferred: pedophilia (including pedophilia, pedo-hebephilia, pedo-teleiophilia, and pedo-hebe-teleiophilia) and hebephilia (including hebephiliac, and hebe-teleiophilia).

Study 2[49]: The following aspects of sexual preference were identified during the clinical interview: 1.) Each manifestation of sexual preference for children was assessed and later transformed into dichotomous variables. Hence, two independent variables were coded: pedophilia (including pedophilia, pedo-hebephilia, pedo-teleiophilia and pedo-hebe-teleiophilia) and hebephilia (including hebephilia, pedo-hebephilia, hebe-teleiophilia and pedo-hebe-teleiophilia)., 2.) Exclusivity of a sexual preference for children was coded as exclusive or non-exclusive, depending on an additional teleiophilic preference (i.e. sexual preference for the adult body age). 3.) Sexual gender preference was coded as heterosexual and non-heterosexual (including homo- and bisexuality) according to the gender that figured predominantly in the participant's sexual fantasies during masturbation, irrespective of age.

Sexual offending behavior against children (CSA and/or CSAI) within the 6 months prior to assessment was measured using the following two self-report questionnaires: (1) The *Sexual Behavior Involving Minors Scale – Child Sexual Abuse* (SBIMS-CSA[54]) is a 3-item inventory assessing the frequency of sexual behaviors, including non-corporeal sexual interactions, sexual activities in the presence of (a) child(-ren), and sexual contacts with (a) child(-ren). Items are rated on a 5-point Likert scale, ranging from 1 (never) to 5 (daily). Values range from 3 to 15. Occurrence of CSA within the last 6 months was coded starting at a value of 4. Cronbach's alpha for this study was $\alpha = .99$. (2) The *Questionnaire for Sexually Explicit and Non-Explicit Images of Children and Adults* (Q-SENICA) is an unpublished questionnaire assessing the use of sexually explicit and non-explicit images of children and adults. For this study, a subset of 24 items on the consumption frequency of CSAI and sexually non-explicit images of children within the past 6 months was applied. The items were rated on a 5-point Likert scale ranging from 1 (never) to 5 (daily) and transformed into a dichotomous variable indicating recent CSAI use (yes/no). Cronbach's alpha for this study was $\alpha = .94$.

Paraphilic preferences were assessed in compliance with ICD-10 and, in part, the DSM-IV-TR diagnostic criteria via the subscale "Sexual Preferences" of the *Questionnaire on Sexual Experiences and Behavior* (Q-SEB[55]). For this study, 12 items referring to specific paraphilias, ranging from 1 (not at all arousing) to 5 (very arousing) were considered. Only paraphilias manifesting in fantasies during masturbation were included. The presence of additional paraphilias was coded starting at a value of 3 (medium arousing). Hence, given informations were transformed into a categorial variable according to whether the individual reported at least one additional paraphilia or not. Cronbach's alpha for this study was $\alpha = .69$. Given informations were transformed into a categorial variable according to whether the individual reported at least one additional paraphilia or not.

To assess DRFs, the following self-report measures were used: (1) The *Sexual Behavior Involving Minors Scale – Masturbation Frequency* (SBIMS-MF[54]) is a 4-item inventory assessing sexual preoccupation in terms of frequency of masturbation to sexual fantasies involving children within the 6 months prior to assessment. Occurrence of fantasized sexual interactions is rated on a 5-point Likert scale, ranging from 1 (never) to 5 (daily). Values range from 4 to 20. Cronbach's alpha for this study was α = .78. (2) The *Coping Using Sex Inventory* (CUSI[56]) assesses sexualized coping with 16 items focusing on the use of sex in stressful situations on 4 levels (fantasy, masturbation, CAI use, sexual interaction with a partner). Items are rated on a 5-point Likert scale, ranging from 1 (never) to 5 (very often) with sum scores ranging from 16 to 80. Cronbach's alpha for this study was α = .83. (3) The *Bumby Molest Scale* (BMS[57]) is a 38-item scale measuring maladaptive cognitions and CSA-supportive attitudes. Statements about children and sex with children are rated on a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). Values range from 38 to 152. Higher scores indicate more offence-supportive attitudes and a greater tendency to justify sexual offending. Cronbach's alpha for this study was α = .96.

Study 3[50]: For the assessment of CSA-supportive attitudes with the BMS, sexual preoccupation with the SBIMS-MF, sexualized coping with the CUSI and frequency of CSAI offending with the Q-SENICA see study 2. For the assessment of emotional congruence with children with the CIS-R, see study 1.

Statistical Analyses

All statistical analyses were performed using IBM SPSS Statistics (V 22; http://www-01.ibm.com/software/de/stats22/) and R (V 3.2.2[58]) including the packages VGAM[59] and nnet[60]. A 5% level of significance was chosen for all tests (two-sided) and was adapted for multiple testing using Bonferroni-Holm procedure in study 1 and 2 due to the explorative character of the analysis.

Study 1[48]: Group comparisons were performed using parametric tests, i.e. one-way analysis of variance. Omega-squared (ω2) was used as a measure of effect size. In order to predict lifetime offender status a multinomial regression analysis with a stepwise entry method was performed. To assess model fit, pseudo R-squared measures (Cox & Snell; Nagelkerke) were used.

Study 2[49]: To analyze the association of aspects of sexual preference and DRFs with recent and lifetime CSAI offending behavior, multinomial logistic regressions were performed. In a first step, all 8 risk factors were implemented in a single model as main effects adjusting to each other. To obtain simple models of recent and lifetime CSAI offending with high predictive ability, a stepwise backwards selection was performed. To assess model fit, McFadden´s pseudo R-squared was used.

Study 3[50]: Within- and between-group comparisons on DRFs and sexual behaviors were performed using non-parametric tests: Wilcoxon signed-rank tests for dependent samples and the Mann-Whitney U-Test for independent samples.

RESULTS

Study 1[48]: Group comparisons according to former child sexual offending behavior revealed that offender groups could be distinguished according to their emotional congruence with children. Significant differences in overall CIS-R scores were found between CSAI only and mixed offenders, with the former being less identified with children, $F(3, 235) = 4.16$, $p = .014$, $\omega 2 = .038$. Following, a multinomial logistic regression with a stepwise entry method was performed to assess whether the overall CIS-R score, identified single factors of the CIS-R ("attachment to children", "discontent with adult life", "clinging to childhood") and the sexual preference for children contributed to the prediction of offense group affiliation. Results showed that the sexual preference for children had a significant main effect on group membership, $\chi^2(6, 239) = 14.05$, $p = .029$, as did the interaction of the identified factor "attachment to children" and the sexual preference for children, $\chi^2(6, 239) = 19.51$, $p = .003$. The parameter estimates showed that having a pedophilic sexual preference increases the likelihood of being a mixed offender ($b = 3.38$), Wald $\chi^2(1) = 4.33$, $p = .04$ when compared to non-offenders. In addition, the interaction of a hebephilic sexual preference and the score on the identified factor "attachment to children" of the CIS-R reached statistical significance when compared to non-offenders, $b = 2.81$, Wald $\chi^2(1) = 5.85$, $p = .02$, for CSAI only offending; $b = 2.36$, Wald $\chi^2(1) = 5.15$, $p = .02$, for CSA only offending; and $b = 2.47$, Wald $\chi^2(1) = 5.23$, $p = .02$, for mixed offending. Inclusion of the overall CIS-R score did not contribute significantly to the prediction of the outcome.

Study 2[49]: Regarding recent sexual offending, results of the full multinomial logistic regression including all 8 risk factors (fRC-Model; McFadden´s pseudo R-squared = 0.21; see table 1) demonstrated that with increasing sexual preoccupation, the probability of being a recent CSAI only as well as mixed offender is significantly increased when compared to recent non-offenders. Moreover, with increasing sexual preoccupation the probability of being a recent CSAI only offender compared to recent mixed offenders significantly decreased. The remaining factors showed no significant association with recent sexual offending. The selected model of recent sexual offending (sRC-Model; McFadden´s pseudo R-squared = 0.18; see table 2) comprised the factors hebephilia and sexual preoccupation. Results demonstrated that with increasing sexual preoccupation, the probability of being a recent CSAI only offender compared to recent mixed offenders significantly decreased. Moreover, the probability of being a recent CSAI only as well

as mixed offender compared to recent non-offenders significantly increased. Likewise, hebephilia increased the probability of being a recent CSAI only as well as mixed offender when compared to recent non-offenders.

When it comes to lifetime sexual offending, results of both the full multinomial logistic regression including all 8 risk factors (fLT-Model; McFadden´s pseudo R-squared = 0.17; see table 3) and the selected model including sexual preoccupation, pedophilia, hebephilia, having at least one additional paraphilia, and sexualized coping as remaining predictors (sLT-Model; McFadden´s pseudo R-squared = 0.15; see table 4) showed that with increasing sexual preoccupation, the probability of being a lifetime mixed offender significantly increased when compared to lifetime CSAI only as well as non-offenders. For the remaining parameters, no significant association with lifetime sexual offending was found.

Study 3[50]: A specialized treatment for men with a sexual preference for children reduced DRFs that are associated with child sexual offending. For the comparison of pre- and post-treatment assessments, significant reductions after treatment were reported in CSA-supportive attitudes and sexual preoccupation (see table 7). In comparison, no changes were reported for untreated individuals in the control group during the waiting period. However, neither at pre- nor at post-assessment TG and CG differed regarding DRFs. The investigated treatment change was unequally distributed among the lifetime offender groups (see Table 8). Whereas mixed offenders demonstrated most benefits (reductions regarding CSA-supportive attitudes and sexual preoccupation), CSAI only offenders only reduced their deficits in CSA-supportive attitudes and non-offenders without any lifetime offense history did not change between pre- and post-treatment assessment.

Regarding treatment effects on CSAI offending, self-reported relapses occurred during both, treatment period and waiting period. Differences regarding the distribution of relapse and desistance (see table 7) as well as the frequency of recent CSAI use (see table 5) between TG and CG were not significant. According to self-reports, 29 of 32 previous CSAI offenders reported persistent use of CSAI throughout the treatment period, 15 of which were lifetime mixed offenders and 6 previously detected by the authorities. Comparison of the frequency of CSAI use at pre- and post-treatment did not reveal changes. In addition, 5 men admitted to the first-time use of CSAI, 2 of which had previously been non-offenders and 3 CSA only offenders. However, official recidivism rates for CSAI offenses detected by authorities were 0%.

Table 1. Full multinomial logistic regression for all risk factors in a single model as main effects with regard to recent sexual offending (fRC-model; *N* = 190).

			95% CI for Odds Ratio		
	b (SE)	*p*	Lower Bound	Odds Ratio	Upper Bound
CSAI only vs. non-offender[A]					
Intercept	-4.16 (1.34)	.002			
Non-heterosexuality	0.44 (0.45)	.323	0.65	1.56	3.74
Pedophilia	0.51 (0.54)	.343	0.58	1.67	4.79
Hebephilia	1.82 (0.62)	.004	1.82	6.18	21.01
Exclusivity	-0.25 (0.50)	.611	0.29	0.78	2.07
Additional paraphilias	0.32 (0.44)	.459	0.59	1.38	3.26
Sexual preoccupation	0.31 (0.08)	.000*	1.16	1.37	1.61
Sexualized coping	0.04 (0.03)	.139	0.99	1.04	1.11
CSA-supportive attitudes	-0.01 (0.01)	.572	0.97	0.99	1.02
Mixed vs. non-offender[A]					
Intercept	-8.47 (1.71)	.000			
Non-heterosexuality	0.59 (0.58)	.307	0.58	1.81	5.63
Pedophilia	0.49 (0.66)	.461	0.45	1.63	5.98
Hebephilia	2.17 (0.82)	.008	1.76	8.78	43.87
Exclusivity	-0.29 (0.65)	.658	0.21	0.75	2.67
Additional paraphilias	-0.31 (0.56)	.585	0.25	0.74	2.20
Sexual preoccupation	0.50 (0.09)	.000*	1.38	1.66	1.99
Sexualized coping	0.04 (0.04)	.285	0.97	1.04	1.12
CSA-supportive attitudes	0.01 (0.02)	.492	0.98	1.01	1.04
CSAI only vs. mixed offender[A]					
Intercept	4.31 (1.22)	.000			
Non-heterosexuality	-0.15 (0.45)	.740	0.36	0.86	2.08
Pedophilia	0.02 (0.47)	.962	0.41	1.02	2.57
Hebephilia	-0.35 (0.65)	.587	0.20	0.70	2.50
Exclusivity	0.03 (0.50)	.948	0.39	1.03	2.74
Additional paraphilias	0.63 (0.42)	.130	0.83	1.88	4.23
Sexual preoccupation	-0.19 (0.05)	.000*	0.75	0.83	0.90
Sexualized coping	0.01 (0.03)	.854	0.96	1.01	1.06
CSA-supportive attitudes	-0.02 (0.01)	.105	0.96	0.98	1.00

Note. * Significant result after Bonferroni-Holm correction. [A] = Reference category.

Table 2. Selected multinomial logistic regression after stepwise backward selection with regard to recent sexual offending (sRC-model; *N* = 190).

			95% CI for Odds Ratio		
	b (SE)	*p*	Lower Bound	Odds Ratio	Upper Bound
CSAI only vs. non-offender[A]					
Intercept	-2.99 (0.80)	.000			
Sexual preoccupation	0.34 (0.08)	.000*	1.20	1.40	1.63
Hebephilia	1.51 (0.47)	.001*	1.79	4.52	11.39
Mixed vs. non-offender[A]					
Intercept	-6.37 (1.03)	.000			
Sexual preoccupation	0.53 (0.09)	.000*	1.43	1.69	2.01
Hebephilia	1.88 (0.63)	.003*	1.91	6.53	22.33
CSAI only vs. mixed offender[A]					
Intercept	3.38 (0.74)	.000			
Sexual preoccupation	-0.19 (0.04)	.000*	0.76	0.83	0.90
Hebephilia	-0.37 (0.50)	.462	0.26	0.69	1.85

Note. * Significant result after Bonferroni-Holm correction. [A] = Reference category.

Table 3. Full multinomial logistic regression for all risk factors in a single model as main effects with regard to lifetime sexual offending (fLT-model; *N* = 190).

			95% CI for Odds Ratio		
	b (SE)	*p*	Lower Bound	Odds Ratio	Upper Bound
CSAI only vs. non-offender[A]					
Intercept	-3.83 (1.88)	.042			
Non-heterosexuality	-0.59 (0.55)	.285	0.19	0.56	1.63
Pedophilia	2.19 (1.11)	.048	1.02	8.97	78.97
Hebephilia	2.59 (1.15)	.024	1.40	13.32	127.07
Exclusivity	-0.53 (0.61)	.383	0.18	0.59	1.95
Additional paraphilias	0.54 (0.58)	.352	0.55	1.72	5.36
Sexual preoccupation	0.17 (0.09)	.064	0.99	1.18	1.41
Sexualized coping	0.07 (0.04)	.071	0.99	1.08	1.16
CSA-supportive attitudes	-0.01 (0.02)	.716	0.96	0.99	1.03
Mixed offender vs. non-offender[A]					
Intercept	-6.60 (1.99)	.001			
Non-heterosexuality	-0.28 (0.59)	.629	0.24	0.75	2.38
Pedophilia	2.11 (1.13)	.062	0.90	8.24	75.36
Hebephilia	3.04 (1.19)	.010	2.05	20.99	214.74
Exclusivity	-0.06 (0.65)	.933	0.26	0.95	3.40
Additional paraphilias	-0.24 (0.62)	.702	0.23	0.79	2.66
Sexual preoccupation	0.33 (0.09)	.000*	1.16	1.39	1.66
Sexualized coping	0.05 (0.04)	.209	0.97	1.05	1.14
CSA-supportive attitudes	0.10 (0.02)	.581	0.98	1.01	1.04
CSAI only vs. mixed offender[A]					
Intercept	2.77 (0.98)	.005			
Non-heterosexuality	-0.30 (0.38)	.423	0.35	0.74	1.55
Pedophilia	0.08 (0.40)	.833	0.50	1.09	2.39
Hebephilia	-0.45 (0.52)	.382	0.23	0.64	1.76
Exclusivity	-0.48 (0.42)	.254	0.27	0.62	1.41
Additional paraphilias	0.78 (0.36)	.030	1.08	2.18	4.40
Sexual preoccupation	-0.16 (0.04)	.000*	0.79	0.85	0.92
Sexualized coping	0.02 (0.02)	.376	0.98	1.02	1.07
CSA-supportive attitudes	-0.02 (0.01)	.119	0.97	0.99	1.00

Note. * Significant result after Bonferroni-Holm correction. [A] = Reference category.

Table 4. Multinomial logistic regression after stepwise backward selection with regard to lifetime sexual offending (sLT-model; *N* = 190).

			95% CI for Odds Ratio		
	b (SD)	*p*	Lower Bound	Odds Ratio	Upper Bound
CAI only vs. non-offender					
Intercept	-4.82 (1.62)	.003			
Pedophilia	2.02 (1.09)	.063	0.90	7.57	63.84
Hebephilia	2.80 (1.13)	.013	1.80	16.44	150.06
Additional paraphilias	0.60 (0.57)	.295	0.60	1.82	5.54
Sexual preoccupation	0.15 (0.09)	.091	0.98	1.16	1.37
Sexualized coping	0.08 (0.04)	.036	1.01	1.08	1.17
Mixed offender vs. non-offender					
Intercept	-6.29 (1.69)	.000			
Pedophilia	2.09 (1.11)	.059	0.92	8.10	71.20
Hebephilia	3.02 (1.16)	.009	2.18	20.54	199.30
Additional paraphilias	-0.18 (0.61)	.775	0.25	0.84	2.78
Sexual preoccupation	0.32 (0.09)	.000*	1.16	1.38	1.64
Sexualized coping	0.06 (0.04)	.124	0.98	1.06	1.50
CAI only vs. mixed offender					
Intercept	1.47 (0.77)	.057			
Pedophilia	-0.07 (0.39)	.859	0.44	0.93	1.99
Hebephilia	-0.22 (0.47)	.637	0.32	0.80	2.02
Additional paraphilias	0.77 (0.35)	.028	1.09	2.16	4.30
Sexual preoccupation	-0.17 (0.04)	.000*	0.78	0.84	0.91
Sexualized coping	0.02 (0.02)	.333	0.98	1.02	1.06

Note. * Significant result after Bonferroni-Holm correct

Table 5. Within- and between-group comparison on DRFs and CSAI use in TG and CG at pre- and post-assessments.

	Treatment group (TG *n* = 53)					Control group (CG *n* = 22)					TG vs. CG	
	Pre		Post			Pre		Post			Pre	Post
	M (*SD*)		*M* (*SD*)		Z^a	*M* (*SD*)		*M* (*SD*)		Z^a	Z^b	Z^b
Dynamic risk factors												
Emotional congruence with children	17.98	(6.48)	17.92	(6.90)	-0.61	18.46	(5.58)	18.33	(8.68)	-0.65	-0.28	-0.29
CSA-supportive attitudes	70.88	(17.11)	63.30	(16.68)	-4.47**	74.73	(19.33)	72.50	(19.50)	-0.10	-0.46	-1.80
Sexualized coping	27.33	(8.54)	26.26	(7.71)	-0.80	26.45	(8.66)	25.55	(8.29)	-1.01	-0.33	-0.41
Sexual preoccupation	10.74	(4.26)	9.36	(4.08)	-2.44*	9.82	(4.17)	9.95	(3.79)	-0.18	-0.72	-0.77
Recent CSAI use	1.32	(0.55)	1.43	(0.63)	-1.61	1.48	(0.67)	1.60	(0.63)	-0.92	-0.89	-1.27

Note: [a]Within-group comparison: Wilcoxon-test, Z-values based on negative or positive ranks, asymptotic significances (2-tailed) are significant at *$p < .05$ and **$p < .01$ for each Z-value. [b]Between-group comparison between TG vs. CG at pre- and post-assessment, respectively: Mann-Whitney U-Tests; Z-values are significant at *$p < .05$ and **$p < .01$ (asymptotic significances; 2-tailed).

Table 6. Changes in treatment group on DRFs by groups based on prior lifetime offending behaviors.

	Non-offender (*n* = 12)			CSAI offender (*n* = 16)			Mixed offender (*n* = 16)		
	pre	post		pre	post		pre	post	
	M (*SD*)	*M* (*SD*)	*Z*	*M* (*SD*)	*M* (*SD*)	*Z*	*M* (*SD*)	*M* (*SD*)	*Z*
Dynamic risk factors									
Emotional congruence with children	58.14 (6.72)	59.10 (4.63)	-0.98	58.47 (4.81)	58.67 (6.50)	-1.22	59.12 (6.50)	58.00 (8.96)	-0.56
CSA-supportive attitudes	66.79 (12.94)	64.38 (19.92)	-1.89	70.96 (15.54)	64.96 (14.75)	-2.55*	77.15 (20.65)	68.58 (17.67)	-2.12*
Sexualized coping	27.21 (11.41)	27.38 (7.92)	-0.83	28.48 (7.37)	26.33 (7.11)	-1.33	25.40 (8.77)	25.75 (9.09)	-0.13
Sexual preoccupation	2.36 (1.20)	2.25 (0.91)	-1.53	2.72 (0.87)	2.49 (0.98)	-0.49	2.74 (1.33)	2.43 (1.06)	-2.11*

Note: Wilcoxon-test, Z-values based on negative or positive ranks, asymptotic significances (2-tailed) are significant at *$p < .05$, **$p < .01$, ***$p < .001$ for each Z-value. Please find all abbreviations in the index of abbreviations.

Table 7. Relapse, lapse and beginning of CSAI offending by lifetime CSAI offenses in the course of treatment (TG n=53) and over the waiting period (CG n=22).

	Lifetime CSAI offenses		No lifetime CSAI offenses	
	TG (*n*=32) *n* (%)	CG (*n*=17) *n* (%)	TG (*n*=21) *n* (%)	CG (*n*=5) *n* (%)
Relapse	29 (91)	13 (76)	-	-
No lapse	3 (9)	4 (24)	16 (76)	4 (80)
Beginning	-	-	5 (24)	1 (20)
Detected CSAI offenses	0 (0)	0 (0)	0 (0)	0 (0)

Notes: χ^2-statistics yielded no significant differences in numbers of relapse and beginning between TG and CG.

DISCUSSION

Previous findings from research in detected sexual offenders with a sexual deviance found the DRFs sexual preoccupation, sexualized coping, emotional congruence with children and CSA-supportive attitudes as well as aspects of their sexual preference to be the main risk factors for sexual offending behaviors. The present study aimed at not only testing the applicability of these factors to a clinical sample of undetected pedohebephiles outside of the forensic setting but also to the subgroup of undetected CSAI offenders. Furthermore, effects of a specialized treatment program (i.e. BEDIT[52]) for undetected pedohebephiles were evaluated in terms of the reduction of DRFs and the prevention of CSAI offending. Results reveal that only some factors are of relevance and that only parts of the model are applicable to the particular sample of undetected CSAI offenders. Therefore, it seems that a focus on detected offenders with a sexual deviance suggests a broader and more general clinical phenomenology, whereas the focus on undetected CSAI offenders with a sexual preference for children suggests CSAI use to be a more specific phenomenon. Further, results show that the treatment provided in the PPD is able to reduce DRFs. However, treatment attained desistance from CSAI offending only in few of those pedohebephiles that were CSAI offenders at intake.

Aspects of sexual preference as risk factors for undetected CSAI offending

When it comes to aspects of sexual preference, present results promote that only the sexual preference for children contributes to the risk for CSAI offenses whereas additional paraphilias, non-heterosexuality and exclusivity of sexual preference for children did not show any association with CSAI offending. In study 1 pedophilia is linked to lifetime mixed offending and in study 2

hebephilia is associated with recent CSAI only and mixed in contrast to non-offending. At first glance these results seem contradictory but as both studies differ in their composition of the variables “pedophilia” and “hebephilia” (see section “measures”) results rather bring close that the specific subgroups of pedo-hebephiles and pedo-hebe-teleiophiles are those that incorporate an increased risk for CSAI offending, especially mixed offending. These results underline the importance of a differentiated and precise clinical diagnostics, given that respective subgroups of pedohebephiles differ in their risk for CSAI offending. Consequently, all phenomenologies of the sexual preference for children should be assessed separately in terms of risk assessment and treatment planning.

Dynamic risk factors and their association with CSAI offending

The central finding of this research is that sexual preoccupation is an important and unambiguous DRF for undetected CSAI only and mixed offending. More precisely, both recent and lifetime mixed offenders show increased levels of sexual preoccupation. This is indicative of their higher risk to offend, a fact that has also been suggested by previous research comparing CSAI only and mixed offenders[20]. However, CSAI only differ from non-offenders in their levels of sexual preoccupation only on a more acute level, meaning that they are only more sexually preoccupied when offending behavior occurred in proximity of time (i.e. recent CSAI only offending). Overall, analyses indicate a greater temporal connection between CSAI only offending and sexual preoccupation that reflects the dynamic character of this risk factor. Another important finding is that the relationship of sexual preoccupation with CSAI offending appears to be rather unaffected by aspects of sexual preference and other DRFs. Therefore, therapeutic interventions to prevent CSAI offenses should focus predominantly on the successful regulation of masturbation to sexual fantasies involving children with the help of psychological interventions as well as medical treatment options to reduce sexual impulses.

Findings on emotional congruence with children suggest that higher scores on its main facet “attachment to children” are associated with CSAI only and mixed offending in hebephiles, but are not linked to CSAI offending in pedophiles. When adjusted to other risk factors, CSA-supportive attitudes and sexualized coping seem to have no additional value to predict the recent and lifetime CSAI only and mixed offender status. However, it is unsure whether CSA-supportive attitudes and sexualized coping are unsupported as DRF for CSAI offending, or if they are just surpassed in their importance as DRFs when high levels of sexual preoccupation are present.

Treatment of CSAI offenders needs to be improved

It was found that the preventive treatment of undetected pedohebephiles that aims to enhance behavioral control by modifying DRFs successfully decreased CSA-supportive attitudes and

sexual preoccupation. Changes can be attributed to treatment given that no changes were found in the control group that did not receive therapy. Treatment-related changes were unequally distributed among lifetime offender groups. When it comes to the reduction of sexual preoccupation, only mixed offenders benefited from treatment, whereas CSA-supportive attitudes decreased in both CSAI only and mixed offenders. Nonetheless, results did not allow to interpret a direct association between reduced DRFs and a reduction of CSAI offending. However, sexualized coping and emotional congruence with children did not improve over treatment. This might not be surprising for emotional congruence with children as present results also suggested this DRF to rather be a facet of the sexual preference for children per se[38].

Overall, no statistically significant changes in CSAI behaviors were evident and CSAI relapses occurred during treatment. Although difficult to compare, rates of persistent undetected use of CSAI clearly outnumber the official sexual recidivism data in detected offender samples[12]. Moreover, one fourth of men with no history of CSAI offending before treatment uptake reported first-time CSAI offending during treatment. The high rates of ongoing persistent CSAI behavior as well as apparently iatrogenic treatment effects that can be seen in the initial use of CSAI offending in participants, emphasize the need for a revision of the treatment manual to focus on the specific needs of CSAI offenders and not only child sexual offending in general. CSAI offenders need pronounced therapeutic support to enhance strategies for sexual self-regulation and problem-oriented coping skills. Also, emphasis should be put on the decrease of CSAI-supportive attitudes as well as on competencies to differentiate image content to better discriminate nude depictions from legally relevant CSAI and increase problem awareness[61].

Limitations

Several limitations constrain the interpretability of the results. In general, data on sexual preference, sexual offense history, and DRFs are based on self-reports only and could not be supplemented with objective measures of sexual preference, official records of offending behavior or clinical expert ratings of DRFs. Thereby the comparability to previous research predominantly deploying external assessments is limited. The present study was based on a sample of help-seeking pedohebephiles striving to change their sexual behaviors. Because these characteristics presumably do not apply to all pedohebephiles from the community and/or undetected CSAI offenders, the drawn implications primarily account for participants of the PPD. Besides, group allocation might lack specificity as offender groups cover a wide range of past behaviors with differing frequency and severity of offenses. The cross-sectional and exploratory nature of studies 1 and 2 limits assumptions about causal relations, especially as assessed DRFs are correlated with sexual offenses committed in the past and not with future offending behavior.

According to the preliminary character and ethical aspects of the treatment evaluation, interpretation of the results of study 3 are limited by the small sample sizes, the post-hoc assembly of the waiting-list control group and the relatively high rate of treatment dropouts. Moreover, the comparability and generalizability of results is affected, because no comparison groups of teleiophilic men in a non-clinical sample and samples of detected CSAI offenders were included.

Future directions

The present study aimed at evaluating the applicability of DRFs for sexual offending in detected offenders with a sexual deviance to CSAI offending in undetected and help-seeking pedohebephiles. Questions regarding risk assessment of CSAI offending and risk reduction via treatment of sexual preference disorders were investigated in order to adjust current procedures. The present study highlights the utmost importance of sexual preoccupation as a DRF for undetected CSAI offending. Furthermore, results underline the relevance of a differentiated clinical diagnostics of the sexual preference of children and the relevance of the (non-)exclusive sexual preference for both the pre- and early pubescent children (i.e. pedo-hebephilia) for risk assessment and management. Data on persisting CSAI offending during an observation period with treatment reveal undetected CSAI offending to be a relevant public health and legal issue. Data also bring close the necessity of a specialized treatment program that is adjusted to the needs of CSAI offenders.

Future studies on the risk for undetected CSAI offending should rely on longitudinal study designs involving multiple assessments of the study variables but also on a wider range of potential (dynamic) risk factors, especially as regards the analysis of future offending behavior. Also, different operationalizations of sexual preoccupation (e.g. total sexual outlet, hypersexuality, impact of sexual preoccupation on psychological functioning, etc.) should be analyzed for their risk potential. When it comes to CSA-supportive attitudes future analysis should incorporate assessments of offense-supportive attitudes specific to CSAI offending and revolving around the justification of the use of CSAI. Future research on risk assessment and treatment efficacy should differentiate CSAI offending behavior according to the quantity and quality of reoffenses (i.e., frequency and content of images) and include longer follow-up periods.

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INDEX OF ABBREVIATIONS

χ^2	Chi-squared
ω^2	Omega-squared
BEDIT	Berlin Dissexuality Therapy Program
BMS	Bumby Molest Scale
CG	Control Group
CI	Confidence Interval
CIS-R	Child Identification Scale – revised version
CSA	Child Sexual Abuse
CSAI	Child Sexual Abuse Images
CUSI	Coping Sex Inventory
DRF	Dynamic Risk Factors
DSM	Diagnostic and Statistical Manual of Mental Disorders
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders - 4th edition - text revision
EK-Vorg. Nr.	Ethikkommission-Vorgangsnummer
fLT-Model	Full Model of Lifetime Offending
fRC-Model	Full Model of Recent Sexual Offending
IBM SPPS V 22	International Business Machines Corporation - Statistical Package for the Social Sciences – Version 22
ICD-10	Internationale statistische Klassifikation der Krankheiten und verwandter Gesundheitsprobleme, 10. Revision
i-SOTP	Internet Sex Offender Treatment Programme
M	Mean
N	Total Sample Size
n	Subsample Size
nnet	Neural Network
PPD	Prevention Project Dunkelfeld
Q-SEB	Questionnaire on Sexual Experience and Behavior
Q-SENICA	Questionnaire for Sexually Explicit and Non-Explicit Images of Children and Adults

R V 3.2.2	Statistikprogramm R – Version 3.2.2.
SD	Standard Deviation
SBIMS-CSA	Sexual Behavior Involving Minors Scale – Child Sexual Abuse
SBIMS-MF	Sexual Behavior Involving Minors Scale – Masturbation Frequency
sLT-Model	Selected Model of Lifetime Offending
sRC-Model	Selected Model of Recent Sexual Offending
TG	Treatment Group
VGAM	Vector Generalized Additive Model
Z	Standardized Score

EIDESSTATTLICHE VERSICHERUNG

„Ich, Laura Franziska Kuhle, versichere an Eides statt durch meine eigenhändige Unterschrift, dass ich die vorgelegte Dissertation mit dem Thema: „Risk of child sexual abuse image offending in undetected pedophiles and hebephiles“ selbstständig und ohne nicht offengelegte Hilfe Dritter verfasst und keine anderen als die angegebenen Quellen und Hilfsmittel genutzt habe.

Alle Stellen, die wörtlich oder dem Sinne nach auf Publikationen oder Vorträgen anderer Autoren beruhen, sind als solche in korrekter Zitierung (siehe „Uniform Requirements for Manuscripts (URM)“ des ICMJE - *www.icmje.org*) kenntlich gemacht. Die Abschnitte zu Methodik (insbesondere praktische Arbeiten, Laborbestimmungen, statistische Aufarbeitung) und Resultaten (insbesondere Abbildungen, Graphiken und Tabellen) entsprechen den URM (s.o) und werden von mir verantwortet.

Meine Anteile an den ausgewählten Publikationen entsprechen denen, die in der untenstehenden gemeinsamen Erklärung mit dem Betreuer, angegeben sind. Sämtliche Publikationen, die aus dieser Dissertation hervorgegangen sind und bei denen ich Autor bin, entsprechen den URM (s.o.) und werden von mir verantwortet.

Die Bedeutung dieser eidesstattlichen Versicherung und die strafrechtlichen Folgen einer unwahren eidesstattlichen Versicherung (§156,161 des Strafgesetzbuches) sind mir bekannt und bewusst.“

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Datum und Unterschrift

AUSFÜHRLICHE ANTEILSERKLÄRUNG

Kuhle, Laura Franziska hatte folgenden Anteil an den folgenden Publikationen:

Publikation 1: Konrad A, Kuhle, LF, Amelung, T, Beier KM. Is emotional congruence with children associated with sexual offending in pedophiles and hebephiles from the community?. *Sexual Abuse: A Journal of Research and Treatment.* 2015; DOI: 1079063215620397.

Beitrag im Einzelnen: L. F. Kuhle war in enger Absprache mit der Erstautorin für die Datenerhebung und Durchführung sämtlicher Analysen, sowie die Interpretation der Ergebnisse mitverantwortlich. Sie war neben den Co-Autoren gleichermaßen an der inhaltlichen Ausgestaltung, dem Verfassen und der Revision der Publikation beteiligt.

Publikation 2: Kuhle LF, Schlinzig E, Kaiser G, Amelung T, Konrad A, Röhle R. Beier KM. The association of sexual preference and dynamic risk factors with undetected child pornography offending. *Journal of Sexual Aggression.* 2016;23(1):3-18.

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LEBENSLAUF von LAURA FRANZISKA KUHLE

Mein Lebenslauf wird aus datenschutzrechtlichen Gründen in der elektronischen Version meiner Arbeit nicht veröffentlicht.

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