The German Dunkelfeld Project: A Pilot Study to Prevent Child Sexual Abuse and the Use of Child Abusive Images

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Abstract

Introduction

Sexual interest towards prepubescents and pubescents (pedophilia and hebephilia) constitutes a major risk factor for child sexual abuse (CSA) and viewing of child abusive images, i.e. child pornography offenses (CPO). Most child sexual exploitation involving CSA and CPO are undetected and unprosecuted in the "Dunkelfeld" (German: 'dark field').

Aim

This study assesses a treatment program to enhance behavioral control and reduce associated dynamic risk factors (DRF) in self-motivated pedophiles/hebephiles in the Dunkelfeld.

Methods

Between 2005 and 2011, 319 undetected help-seeking pedophiles and hebephiles expressed interest in taking part in an anonymous and confidential one-year-treatment program using broad cognitive behavioral methodology in the Prevention Project Dunkelfeld. Therapy was assessed using non-randomized waiting list control design (n=53 treated group (TG); n=22 untreated controls (CG)).

Main Outcome Measures

Self-reported pre-/post treatment DRF changes were assessed and compared to untreated controls. Offending behavior characteristics were also assessed via self-reporting.

Results

No pre-/post-assessment changes occurred in the control group. Emotional deficits and offense-supportive cognitions decreased in the treated group; post-therapy sexual self-regulation increased. Treatment-related changes were distributed unequally across offender groups. None of the offending behavior reported for the treated group was identified as such by the legal authorities. However, five of 25 CSA offenders and 29 of 32 CPO offenders reported ongoing behaviors under therapy.

Conclusions

Therapy for pedophiles/hebephiles in the Dunkelfeld can alter child sexual offending DRF and reduce related behaviors. Unidentified, unlawful child sexual exploitative behaviors are more prevalent in this population than in officially-reported recidivism. Further research into factors predictive of problematic sexual behaviors in the Dunkelfeld is warranted.

Introduction

Child Sexual Exploitation and Pedophilia

Child sexual exploitation, child sexual abuse (CSA) and the production and use of child abusive images, i.e. child pornography offenses (CPO) may constitute acute and persistent harm for the victims [1]. Results of a representative survey within the general public in Germany suggest that 2.8% of men and 8.6% of women are sexually traumatized due to contact offences prior to the age of 16 years [2]. A review of 38 prevalence studies in 21 countries resulted in prevalence rates of recalled childhood sexual victimization of approximately 20% for women and 10% for men [3]. These high prevalence rates of child sexual exploitation go along with a growing understanding that the prevention of CSA and CPO is a critical public health issue [4]. It was concluded that for every reported case of CSA at least five remained unreported [5]. In a US study, 91% of victims of child sexual abuse had not reported their abuse [6]. According to the United States Department of Justice, over 56,000 cases of child sexual abuse were documented and substantiated in the USA in 2007, but only about 30% of cases were reported to authorities [7]. As a consequence, most known incidents involving sexual abuse of children are never reported to the police and are thus not registered by the judiciary and criminal prosecution authorities, and therefore do not emerge from the Dunkelfeld ("dark field" of undetected offenses).

There is strong evidence that deviant sexual interests are a major risk factor for child sexual exploitation [8,9]. Offenders committing CSA differ from other men (sex offenders with adult victims, non-sex offenders, and non-offending volunteers) in their sexual responses to visual stimuli depicting prepubescent or pubescent children in the laboratory [10,11]. In addition, indicators of sexual interest in children are strong predictors for sexual recidivism among identified sex offenders in clinical or correctional samples [12]. With respect to child pornography (CP), its use is regarded as a valid indicator of pedophilia [13].

The DSM-5 diagnostic criteria characterize pedophilia as 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 six months. Such fantasies or behaviors cause either clinically significant distress, interpersonal difficulties, or functional impairment [14]. The ICD-10 Classification specifically integrates

hebephilia as a sexual preference for pubescent minors into the concept of pedophilia [15]. In DSM-5, hebephilia is classified under the diagnosis "other specified paraphilic disorder."

Dynamic Risk Factors and Treatment

While the relation between general psychopathology and risk for sexual offending remains unclear, so called dynamic risk factors (DRF) have been described as being associated with the likelihood of reoffending, and potentially responsive to interventions [16,17]. A number of meta-analyses have shown the importance of addressing DRF in the treatment of sexual offenders [8,9,12]. Other factors such as denial, minimization, poor victim empathy, or low self-esteem were found to have no empirical relation to re-offense risk. As regards victim empathy deficits, no clear understanding of their relation to general empathic abilities exists [18]. Clinicians consider them to be core elements of sex offender treatment nevertheless [19]. These factors might enhance treatment responsivity by motivating the subject to seek treatment and encouraging a therapeutic alliance [20].

Dynamic risk factors are included in contemporary theories of sexual offending against children or pathological Internet use, and are considered important targets in the treatment of detected sex offenders [16,20–27]. A set of DRF has been identified in existing research concerning CSA offenders [4,28,29]. It has been suggested that sexual reoffending can be predicted on the basis of three major types of dynamic risk factors: (1) emotional or intimacy deficits; (2) offense-supportive cognitions such as the belief that children benefit from sex with adults; and (3) problems with sexual and general self-regulation (e.g. sexual preoccupation, poor cognitive problem-solving skills, impulsivity) [29]. However, the extent to which identified recidivism risk factors might apply to pedophiles prone to initially offend or to undetected pedophile offenders has not yet been established [30].

The Prevention Project Dunkelfeld

In 2005, the Prevention Project Dunkelfeld (PPD) was launched for the purpose of preventing sexual offenses against children by way of therapy. A media campaign was initiated to encourage self-identified, judicially unknown pedophiles and hebephiles to seek professional help with a view to avoiding CSA and CPO infractions [31]. A treatment

program was elaborated entitled the Berlin Dissexuality Therapy (BEDIT) [32]. According to the integrated theory of sexual offending, a group-based treatment program featuring a broad cognitive-behavioral approach was expanded into a multimodal program that utilizes pharmacological, psychological, and sexological intervention strategies to prevent child sexual offending behavior in pedophiles and hebephiles [24,33]. Cognitive-behavioral interventions include aspects of the relapse prevention, self-regulation, and Good Lives models [34–37]. Treatment targets include motivation for change, self-efficacy, self-monitoring (including sexual fantasies and interests), sexualized versus adequate coping strategies, emotional and sexual self-regulation, social functioning, attachment and sexuality, offense-supportive attitudes, developing empathy for children involved in CSA or CP, and relapse prevention strategies and goals. A written manual defined the strategies required to deal with threats of contact child sexual abuse during therapy. Consumption of child-abusive imagery was identified as problematic behavior. No systematic strategy of how to deal with such behavior was defined [32]. An analysis of the program's pharmacotherapeutic approach is specified elsewhere [38].

Aims

The present pilot study evaluates treatment-related changes in terms of DRF and sexual behaviors in participants of the PPD group treatment between 2005 and 2011. Treated and untreated participants were examined. It was hypothesized that, compared with untreated participants, after treatment the treated participants would report significantly fewer self-esteem deficits, loneliness, intimacy deficits, emotion-oriented coping, CSA-supportive attitudes, emotional and cognitive victim empathy deficits, and less sexualized coping. Further, it was hypothesized that, compared with untreated participants, after treatment the treated participants would report less frequent and less severe CSA and fewer CP offenses.

Methods

Procedure

Persons responding to a media campaign contacted the program anonymously. Respondents were eligible for inclusion if they self-identified as a pedophile or hebephile, and/or expressed motivation to

participate in the project because of distress related to sexual interests concerning minors. In a semi-structured clinical interview, inclusion and exclusion criteria of the therapy program were ascertained, legal information and data on sexual development and behaviors including prior sexual contact with children as well as the use of child-abusive images were collected, and participants were informed of the scope and content of the research project.

Inclusion criteria consisted of self-avowed sexual interest in prepubescent and/or pubescent children, a minimum of 18 years of age, and sufficient literacy in the German language. No restriction concerning gender was given, i.e. both male and female applicants were deemed eligible. Exclusion criteria included acute, untreated psychotic and mood disorders, substance abuse, developmental disability, or current legal supervision (e.g. pending criminal charges, offence report, criminal investigation procedure, sentencing for sexual offences involving children, probation).

The existence of pedophilia including the specification of exclusive or non-exclusive type and attraction to males, females or both was diagnosed according to DSM-IV-TR criteria. Cases where sexual behaviors involving children were not accompanied by sexual urges towards or fantasies involving prepubescent children were not deemed sufficient for the diagnosis. Hebephilia (paraphilia, not otherwise specified) was diagnosed accordingly if sexual urges and fantasies involved children already at early pubertal stages (Tanner stages II and III) [39]. Given the multitude of overlapping combinations, the youngest self-reported age of attraction was coded for statistical analyses.

The clinical interview was followed by questionnaire assessment. The questionnaires were handed out again before and after treatment. The final decision on the diagnosis and inclusion or exclusion from the study was made in a clinical case conference. Participants eligible for the program were included in closed groups of six to ten men. Therapy was delivered weekly for 45 to 50 three-hour sessions according to the BEDIT [32].

Participants in the treatment program gave a written declaration of informed consent. The study was approved by the local ethics committee.

Statistical Analyses

Preliminary analyses were conducted to compare and contrast the treatment group (TG) with the control group (CG) with respect to socio-demographic, diagnostic, behavioral and psychometric variables. Whenever normative data were available, t-tests were performed with two-sided p-values < 0.05.

For the presentation in this manuscript, sum scores for all scales were calculated in such way that higher scores reflect greater deficits. In this way, changes in the desired direction are represented by a reduction in the score. Intra-group analyses were conducted to establish change during treatment to facilitate DRF rating. Inter-group analyses were performed to ascertain treatment-specific change. Wilcoxon signed ranks tests were utilized to adjust for small sample size and differently scaled data. Exploratory and descriptive analyses were conducted in treated individuals to describe CSA and CP behaviors during the course of treatment.

Study subjects

Between 2005 and 2011, 596 men contacted the program and were interviewed in the context of the PPD. By the cutoff date defined for this study, 69 individuals had completed the therapy. For details on sample composition refer to Figure 1. The exclusion criteria were: ongoing legal proceedings (n=122), sexual preference exclusively for adults (n=81), untreated psychiatric disorders (n=82) mental disability and untreated alcohol or drug abuse (n=17 in each case). Some interviewees presented more than one exclusion criterion. Applicants who were not included in the treatment program were provided appropriate therapy outside the context of the study.

Applicants eligible for treatment (n=319, see Figure 1) were 37 years of age on average (SD=11.46). Half of the subjects (n=165) reported having had more than ten years of school education. The majority were employed at the time of the inclusion assessment (n=223). More than half of them were single (n=197), and one third (n=108) had children. In terms of their sexual body age preference, one third of the included interviewees were diagnosed with pedophilia exclusive type (n=109), one third with pedophilia non-exclusive type (n=93), one quarter with hebephilia non-exclusive type (n=83) and 34 subjects with hebephilia exclusive type. Half of the included interviewees were attracted to

females (n=175), one third to males (n=112) and 32 to both sexes.

Child sexual offenses among eligible applicants with available data on lifetime offense histories (n=291; see Figure 1) were as follows: n=34 none reported, and n=106 reported CPO only. Fewer individuals had committed CSA offenses only (n=48), whereas n=103 reported having committed both CSA and CPO. Previously detected child sexual offenses were reported by 62 of the included subjects, with 33 detected for CPO, 32 for CSA, and four for both offenses.

Treatment refusers (n=142; see Figure 1) did not differ from beginners on sociodemografic or diagnostic variables. Beginners were more likely to come from adjacent federal states ($\chi2(1, N = 245) = 30.15, p < 0.000$), reported more loneliness ($t(243) = -1.98, p < 0.05$) but did not differ in terms of behavioral or psychological variables.

Subjects who dropped out of treatment (n=38, see Figure 1) were slightly more likely to be diagnosed with additional paraphilias ($\chi2(1, N = 96) = 4.57, p < 0.05$, Fishers exact test: $p = 0.04$), and were less likely to have had more than ten years of school education ($\chi2(1, N = 95) = 7.63, p < 0.01$) than treatment completers. No differences in other diagnostic, sociodemografic or psychometric variables were ascertained.

Group Classification

The originally randomized controlled design was abandoned due to ethical and practical considerations. Nationwide demand and limited personnel threatened to result in a high pre-treatment dropout rate; the potential risk to cause harm and the degree of suffering of the applicants were of concern in ethical terms.

Individuals were assigned to either the treatment group (TG) or the control group (CG) according to a non-randomized waiting-list control design. The TG (n=53) consisted of individuals who had completed the one-year group treatment program of the PPD and provided sufficient and complete data on DRF measures. The CG (n=22) was assembled ex post from individuals presenting complete data at two pre-treatment assessment points at an interval similar to treatment duration. The average waiting time for the CG was 12 months. The duration of the waiting period was determined personally by the participant (i.e. individuals having moved to the city where the treatment was offered had to arrange their time accordingly) and institutional factors (no access to ongoing closed treatment groups). While on the waiting list,

participants received no specific treatment for their pedophilia. By the end of the study, 13 subjects in the CG had completed the treatment program; their post-treatment data were not used in this assessment. A further six CG individuals dropped out and three refused therapy.

Main Outcome Measures
Target DRF were assessed using self-report measures. Assessed factors covered several risk dimensions.

Offense supportive cognitions
Offense supportive attitudes: Bumby Molest Scale; BMS [40]. The BMS is a 38 items instrument assessing cognitions in favor of child sexual abuse. Statements like "I believe that sex with children can make the child feel closer to adults," "I think child molesters often get longer sentences than they really should," and "Some children can act very seductively" are rated on a four-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). No subscales are reported. Overall score values can range between 38 and 152. Higher values represent more offense-supportive attitudes. Normative data with a mean of M = 51.8 (SD = 10.39) are available for a male community sample (N=30) [41]. A version in German is available [42].

Victim empathy deficits: Empathy for Children Scale; ECS [43]. The ECS is a modified German version of the Child Molester Empathy Measure (CMEM) [44]. Three scenarios are described in which a child is involved in a car accident, sexually victimized by an unknown person and sexually victimized by the respondent. In order to allow for valid answers in non-offending pedophiles, the last scenario may involve actual or fantasized sexual activities. The respondent is asked to rate his own emotional reaction (emotional empathy, "happy," "sad," "helpless," "excited") and the child's emotional reaction (cognitive empathy, "the child feels guilty," "the child is furious," "the child has nightmares," "the child has mental problems") to the scenarios on a five-point Likert scale from 1 (not at all) to 5 (very much). Normative data for this measure is not available. Subscales of emotional victim empathy (20 items, value range: 20–100; Cronbach's α = 0.96 for this study) and cognitive victim empathy (30 items, five-point Likert scale; value range 30–150; Cronbach's α=.98 for this study) have previously been shown to differentiate between groups of pedophilic child sexual offenders [45].

Emotional Deficits

Self-esteem deficits: Rosenberg Self-esteem Scale; RSE [46]. The RSE is a ten-item instrument assessing the respondent's feelings of worthiness. Five positively and five negatively formulated statements are rated on a four-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). Possible values range from 10–40 with higher values usually reflecting greater self-esteem. For the purpose of this study, values were reversed in order to represent deficits in self-esteem. Data for a normative opportunity sample (N=782) have been reported with M = 28.81 (SD = 6.19) [47]. A version in German has been published [48].

Loneliness: University of California, Los Angeles Loneliness Scale (UCLA-LS) [49]. The UCLA-LS is a 20-item questionnaire assessing feelings of belonging and loneliness. The respondent is asked to rate statements like "I feel lonely" or "There are people who I feel close to" on a four-point Likert scale from 1 (I never feel that way) to 4 (I often feel that way). Possible values range from 20–80. Data from a normative sample (N=102) yielded mean values of M = 37.06 (SD = 10.91) [49]. A version in German is available [50].

Hostility towards women: Hostility towards women scale; HTW [51]. The HTW is a questionnaire of 30 items in yes/no format. Values range from 30–60. Data from a non-clinical population (N = 2972) yielded a mean of M = 37.12 (SD = 4.79) [52]. The present study used an unpublished German version obtained through translation and re-translation in cooperation with native-speaker clinical psychologists.

Emotion-oriented coping: Coping Inventory for Stressful Situations; CISS, Emotion oriented coping subscale [53]. The CISS is a 32-item questionnaire assessing the respondent's typical reactions to stressful situations. Reactions are rated on a five-point Likert scale from 1 (very atypical of me) to 5 (very typical of me). Normative data for this measure is not available. A published version in German is available [54]. For this study, the Emotion Oriented Coping Subscale was used. It consists of eight items. Cronbach's alpha in this study was α = 0.73.

Child identification: Child identification scale—revised; CIS-R [55]. This 40-item scale assesses emotional identification with children. Statements like "I wish I could relive my childhood," "I feel closer to children than to adults" are rated in a yes/no format. Values range from 0–40. Higher scores indicate greater identification with children in terms

of cognitive and emotional connectedness. The present study used an unpublished version in German, obtained through translation and re-translation in cooperation with native speaking clinical psychologists. No non-clinical normative data is available.

Sexual Self-Regulation Deficits

Coping self-efficacy deficits: Self-Efficacy Scale related to Minors—Coping (SESM-C). The SESM-C is an unpublished inventory assessing the individual's sense of control over his or her own sexual urges involving children in the future according to the health action process approach [56]. Statements like "I am sure, I will be able to control sexual urges towards children/youths, even if… I feel a great sexual desire; …I am alone with a child/youth; …I have to ask others for help" are rated on a four-point Likert-type scale ranging from 1 (not at all true) to 4 (exactly true). Higher scores indicate greater deficits in the perceived ability to maintain sexual self-control (Cronbach's α=.95).

Sexualized coping: Coping Using Sex Inventory (CUSI) [57].   The CUSI measures sexualized coping with 16 items rated on a five-point Likert scale with overall scores ranging from 16–80. It is currently the only measure of sexual coping and demonstrated good internal consistency of (α=.82) in two independent samples [57]. Data from a convenience sample of men from the community (N = 30) yielded an overall mean of M = 27.2 (SD = 7.44) [41]. The present study used an unpublished version in German, obtained through translation and re-translation in cooperation with native-speaker clinical psychologists.

Sexual preoccupation: Sexual Behavior Involving Minors Scale (SBIMS)—Masturbation frequency. The SBIMS—Masturbation frequency is an unpublished four-item inventory assessing the frequency of masturbation to fantasies of specific sexual behaviors involving children within the previous six months. Occurrence of fantasized sexual interactions with children/youth are rated on a five-point Likert scale ranging from 1 (never) to 5 (daily).Values range from 4–20.Normative data is not available. Cronbach's alpha for this study was α = 0.69.

Impression Management: Balanced Inventory of Desirable Responding (BIDR)—Impression Management Subscale [58]. The BIDR consists of two 10-item subscales rated on a 7-point Likert scale, with the second subscale reflecting impression management as a measure of socially desirable responding (Cronbach's α = .65). Higher scores on this scale

indicate a higher tendency to present oneself in a more positive light to others. A normative student sample (N=345) yielded a mean of M = 33.1 (SD = 9.8) [59]. The scale was applied to control for possible differences between groups in their ways of conducting impression management. A version in German is available [59].

Child abusive behaviors
Recent CSA-related behaviors. Sexual Behavior Involving Minors Scale (SBIMS)—Child sexual abuse. The SBIMS—Child sexual abuse is a subscale of the unpublished SBIMS inventory (see above). The Child sexual abuse subscale assesses the frequency of CSA-related behaviors over the previous six months, including non-corporal sexual interactions, sexual activities in the presence of a child, and sexual contacts with a minor. Occurrence of these three forms of CSA are rated on a five-point Likert scale ranging from 1 (never) to 5 (daily). Single item responses on this scale were rated as indicating CSA behaviors. Cronbach's alpha in this study was $\alpha = 0.66$. For readability, mean over three items is presented.

Recent CPO. Questionnaire for Sexually Explicit and Non-explicit Images of Children and Adults (Q-SENICA)—Legally relevant imagery subset. The Q-SENICA is an unpublished inventory assessing the sexualized use of imagery. For this study, a subset of 24 items assessing the frequency of use of sexually explicit and non-explicit images of minors within the previous six months was applied. The frequency of use of different categories of images is rated on a five-point Likert scale ranging from "never" to "daily." Cronbach's alpha in this study was $\alpha = 0.93$.

Item responses on the SBIMS—Child sexual abuse scale and the QSENICA—Legally relevant imagery subset were utilized to classify individuals according to their behaviors during the observation period.

Results
Preliminary Analyses
Treated individuals were older (38.46 vs. 33.14 years) and more likely to be pedophiles than hebephiles (77% vs. 55%) than control group subjects, and reported higher self-esteem and a more emotion-oriented coping style than did the controls (Tables 1 and 2). No differences were ascertained in terms of lifetime offense history, or CSA and CP offending

within the last six months prior to pre-assessment. Both the treatment and control groups exhibited more offense-supportive attitudes, more hostility towards women, and greater loneliness than in the respective normative populations. Additionally, the control group was more hostile towards women, compared with the normal controls.

Effects of Treatment on DRF and Sexual Behaviors

At post-assessment, treated subjects revealed a variety of changes with respect to all three risk-dimensions (Table 2). After treatment, the subjects reported reductions in emotional loneliness, emotion-oriented coping, emotional victim empathy deficits, offense-supportive attitudes, coping self-efficacy deficits, and sexual preoccupation, thereby indicating an increase in sexual self-regulation. Contrary to the hypothesis, treated subjects exhibited more self-esteem deficits. A hypothetical statistical model assuming that dropouts had not changed showed that the effects remained stable as regards emotion-oriented coping ($W(75) = 30.5$, $Z = -2.36$, $p < 0.05$), offense-supportive attitudes ($W(75) = 25$, $Z = -4.32$, $p < 0.001$), coping self-efficacy deficits ($W(70) = 28$, $Z = -2.53$, $p < 0.05$), sexual preoccupation ($W(71) = 30$, $Z = -2.32$, $p < 0.05$), and self-esteem deficits ($W(59) = 20.5$, $Z = -3.19$, $p < 0.005$). Additionally, a reduction in hostility towards women was ascertained ($W(72) = 29.5$, $Z = -2.59$, $p < 0.01$). In the CG, no changes in DRF scores were identified during the waiting period. At post assessment, treated and untreated individuals differed with respect to cognitive victim empathy deficits, with CG individuals showing higher empathy deficits.
Change during treatment in the TG was unequally distributed among the offender groups (Table 3). No changes were ascertained in non-offenders. CP-only offenders exhibited fewer offense-supportive attitudes. The CSA-only group showed a reduction in offense-supportive attitudes and an increase in emotional victim empathy deficits. In mixed offenders, offense-supportive attitudes decreased during treatment, as did emotional victim empathy deficits. Mixed offenders exhibited less loneliness and hostility towards women, fewer coping self-efficacy deficits, and less sexual preoccupation.

Child Sexual Abuse and Child Pornography Use

Recidivism in terms of CSA and CPO documented by the legal authorities was 0% for both TG and CG (Table 4). However, for both

behaviors, self-reported lapses occurred during both the treatment and waiting periods. Differences as regards the distribution of lapse and resistance between TG and CG did not reach significance. No significant change was found in frequency of behaviors throughout the observation period. Analysis of the individual items in the questionnaire to assess child sexual abuse behaviors revealed a greater frequency of CSA offenses in the control group (Table 5).

With regard to persistent child sexual abuse, patients' statements revealed behaviors that involved two acts of voyeuristic activity, several opportunities to engage in sex-related discussions with children and showing them pornography, and one act of intimate body contact and genital fondling. In the five men exhibiting persistent CSA behavior, four had a lifetime history of mixed offending behavior, one only of child sexual abuse. Two had previously been known to the authorities.

Compared with the overall TG at pre-assessment, persisters exhibited greater cognitive empathy deficits (median persisters: 82, desisters: 63; $Z = -2.23$, $p < 0.05$), and higher rates of recent sexual body contact and sexual arousal in the presence of children. Apart from behavioral variables, values at post-assessment did not differ. Compared with lifetime CSA offenders, persisters showed a loss in self-esteem deficits whereas desisters showed an increase (RSE score change; median persisters: -3, desisters: 4; $Z = -2.02$, $p < 0.05$), but did not differ with respect to any other behavioral or psychological measure.

Of the five individuals initially using legally relevant child sexual imagery, three were non-offenders and two CSA-only offenders. Of the 29 individuals reporting ongoing post-therapy consumption of child abusive images, 14 reported prior CP offending only and 15 reported both offenses over their lifetime. Six subjects in this group were previously under legal supervision, but not at the time of the study.

Discussion

In this pilot study investigating a sample of self-identified help-seeking pedophiles and hebephiles from the community, who participated voluntarily in the PPD, the effects of a one-year group treatment program were examined. On the basis of a non-randomized waiting-list control design, the treatment and control groups were assessed before and after twelve months of treatment and twelve months of waiting respectively. Intra-group and inter-group comparisons were conducted

to evaluate any changes occurring during treatment.

Analyses of pre-treatment dropouts indicated no selection bias for the observed sample and distance to location of the program as a major obstacle to participation. With roughly 29.6% discontinuing treatment prematurely, treatment dropout was comparable with rates for cognitive and cognitive-behavioral therapy for other behavioral and personality disorders like borderline personality disorder, eating disorder, or obsessive compulsive disorder [60]. Similarly, the selection bias towards better-educated participants is known for psychotherapy in general [61]. Additionally, the characteristics of the treatment dropouts revealed difficulties in terms of retaining men with additional paraphilias. While the number of dropouts appears comparable to other treatment studies, it raises concern in this specific context. In an extensive revision of the treatment manual, efforts were made, to enhance treatment adherence. Future research will be needed to evaluate their efficiency. Treated individuals exhibited multiple changes and a positive trend in terms of their DRF scores. No statistically significant changes in CSA or CPO behavior were evident.

Post treatment, participants reported less loneliness, reduced emotion-oriented coping, fewer emotional victim empathy deficits, fewer CSA-supportive attitudes, fewer coping self-efficacy deficits and less sexual preoccupation, compared with their pre-treatment scores. Treatment-related changes were distributed differentially over lifetime offender groups. Lifetime mixed offenders appear to have benefited most. In contrast to the hypotheses, self-esteem deficits, cognitive victim empathy deficits, and sexualized coping did not improve significantly over treatment. Relapse occurred for both CSA and CPO behaviors with rates in the treated group amounting to 20% and 91% respectively. No initial offending occurred for CSA. However, 24% of men with no history of CPO reported first-time CPO during treatment. Single item analyses showed a trend towards a reduction of severity of persistent CSA behaviors in the treated individuals.

The study revealed that pedophilic and hebephilic men are amenable to undergoing treatment outside the justice system and are thus available to take part in prevention and research activities. As regards sample composition, the most outstanding feature was the absence of women willing to take part in the project. Given the focus on sexual preference disorders rather than sexual behavior, this finding may underscore the

presumed difference between male and female sexual offenders [62]. On the other hand, female pedophiles may not have felt compelled to respond to the media campaign depicting a man being aroused by children.

The psychometric results are in line with previous research results impacting dynamic risk factors by way of therapy in sexual offenders [63–66]. As regards lifetime mixed offenders, a high-risk group showed the greatest benefit from the program. This finding may indicate the different needs of pedophiles and hebephiles in the Dunkelfeld. Given that the treatment manual was based on manuals for convicted sex offenders, it would seem reasonable that this high risk group's needs were best addressed. The loss of self-esteem in the overall treatment group raises concerns. Though not empirically supported as a risk factor, self-esteem is seen as a moderating factor for treatment adherence and a successful client-therapist relationship [19,20]. In the context of treating unconvicted pedophilic offenders and non-offending pedophiles self-esteem may also play a different role. Men undergoing treatment were confronting aspects of their personality and their personal life that before were most often disregarded and refused. This confrontation might have resulted in a loss of self-esteem. Future research should investigate whether or not premature discontinuation of treatment is associated with self-esteem. The issue of whether or not the numbers represent a change for the better at the behavioral level remains unanswered. Strikingly, the only difference between persisters and non-persisters were cognitive empathy values before treatment. This phenomenon is not new. Barnett et al. found only weak relationships between psychological markers and recidivism and pre-treatment to be more helpful factors than post-treatment scores [67]. Given the study's small sample and short observation period, it would be premature to draw any firm conclusions. Future research efforts should attempt to include techniques to control self-representation bias [63].

As regards CP offending, about 90% of the sample reported further consumption of child abusive images and were therefore classified as persisters. Men who adopt CPO behavior are also of concern. This apparent lack of effect on the use of child abusive images may result from an iatrogenic effect, i.e. that non CP-offenders learned how to offend online when participating in group treatment with CP offenders.

This cannot be ruled out, as the original design did not provide for a differentiation of group participants according to their offense history. Also, the notion that child abusive image use is more acceptable than sexual assault of a child might have been inadvertently conveyed via the differing instructions provided by the manual. Both issues have found consideration in the current version of the treatment manual which now provides for offense-specific treatment groups and interventions aimed at the cessation of child abusive image use [68]. In contrast, the psychometric data show tendencies toward a decrease in justifications and minimizations of behavior during therapy. If this is found to be true for CPO behavior and the perception of child abusive images as well, an increase might reflect a more realistic appraisal of the participants' behaviors. Further research is needed to expand on this issue.

Regarding child sexual abuse behaviors, the lack of any statistically significant changes is not surprising given that numbers of recent CSA offending ranged at the low end of the scale for all assessment points. Of concern are the 20% of subjects who reported further offenses. This finding raises ethical concerns. One strength of the Dunkelfeld approach lies in the availability of the offenders for therapeutic intervention. Men reporting CSA behaviors during therapy were given an individual therapy plan to ensure future desistance, which included the optional use of drug therapy to reduce sexual urges and the initiation of sociotherapeutic measures to ensure the safety of the children concerned. Child protective measures and an integrated sociotherapeutic approach thus play a crucial role in establishing a continuous care scheme in the Dunkelfeld.

Overall, the numbers pertaining to child abusive behavior and child pornography behavior are difficult to interpret, given the lack of reference data. On the face of it, 20% and 90% recidivism rates appear rather high when compared with studies on convicted offenders. It seems unlikely that offenders "faked bad," i.e. exaggerated their behavior, inasmuch as the treatment offered was explicitly administered to men who were indeed attracted to children, but who wanted to prevent initial or repeated child sexual abuse. Faking bad behavior would not have been advantageous in any way for the participants. Given that convicted sex offenders have good reasons to "fake good", i.e. to minimize illegal sexual behavior, the relatively high numbers in this study possibly suggest a more realistic picture of sexual offending against children,

when compared with the reports involving men under legal supervision. The fact that participants reporting sexual offense behaviors were not liable to legal prosecution in the context of the study may have prevented them from actually improving. Given that instances of child sex abuse prior to participation in the program had been detected in only about one quarter of the offenders, and child pornography use in one fifth, it is likely that the offenders' primary experience had been one of impunity. However, the certainty of impunity in the therapeutic context made it possible for the subjects to report such behaviors and for therapists intervene at an early stage. Inasmuch as these efforts were not very successful in terms of child pornography use, the therapy program was modified and adapted specifically for these behaviors [68].

Limitations

The present treatment assessment is based on data obtained from a pilot project. Accordingly, the analyses were largely exploratory in nature and must be seen as preliminary. Methodological issues concerning the sample size, the post-hoc assembly of the control group and measures initiated limit any *extrapolability* and possible conclusions that might be drawn about the program's effectiveness.

With respect to the assessment of sexual experiences and behaviors, all diagnostic data—i.e. sexual body age and gender preference as well as offense history—relied solely on self-reports; no objective measures were applied in the context of the PPD. In the absence of mandatory reporting laws for therapists and beyond legal structures, an anonymous, confidential clinical setting in association with self-reporting in the form of questionnaires and clinical interviews was assumed to reliably detect sexual interests in terms of fantasies as well as related legal or illegal behaviors. Nevertheless, clinical interviews may have been biased in determining sexual experiences and behavior, e.g. differentiating between pubescent and prepubescent body age scheme, the exclusivity of the described sexual preference, or exploring child pornographic materials. To counterbalance this possible bias, only therapists with specific additional training and sexological training were allowed to conduct the clinical interviews.

The relatively small sample size of the groups weakened the statistical power of the analyses and made the detection of statistically significant changes less likely. The results are therefore difficult to interpret;

analyses of individuals exhibiting persistent CSA behaviors need to be interpreted with particular care. It is important to note that investigations regarding persisting sexual offending behaviors focused solely on a categorical decision with respect to offending behaviors that were based on single items in a questionnaire. The rather large dropout rate in the treated group adds to the uncertainty.

While the present study relied on a large assessment battery, the set of measures employed for the present evaluation is not exhaustive. Other dynamic, stable or even situational factors might be useful in differentiating between the groups or predicting ongoing child-exploitative behaviors that have not yet been explicitly targeted in treatment and were therefore not expected to change in the context of this study. For example, additional paraphilic interests, such as sexual sadism, psychopathology in general, sub-clinical or clinical psychopathy in particular, and specific potential offenses were not investigated systematically for the present evaluation.

Conclusions

The PPD represents a new preventive approach aimed at protecting children by reaching out to self-identified and help-seeking pedophilic/hebephilic men in the community and offering them assessment and treatment options. It was shown that these men are amenable and willing to participate in the project. This pilot study implies the feasibility of preventive treatment efforts. The significance of Dunkelfeld prevention and research activities with respect to sexual traumatization was again confirmed, despite the amount of persisting sexual offending as reflected in the official recidivism rates of 0%.

Further studies should aim to differentiate in terms of quantity (e.g. frequency) and quality (e.g. intensity or severity) of the CPO behaviors in this sample. A more detailed and specific description of CSA behavior patterns could shed light on the mechanisms of persistence in the Dunkelfeld. Future studies should aim at identifying predictors of recidivism in the Dunkelfeld. Such research could also help reduce the number of variables to examine in order to establish treatment change. Further research will be necessary to validate these initial findings and to investigate the stability of the changes in larger samples and over longer observation periods.

We hope that results will help to promote the growing acceptance of this

approach within the public and scientific community. Thus far, they have prompted the establishment of a prevention network consisting of similar outpatient clinics throughout Germany. This network provides a solid basis for future research. Increasing international interest indicates that PPD methodology should be further pursued and broadened. For this purpose, it is necessary to strengthen efforts to integrate primary prevention therapy for pedophiles and hebephiles into the health care system, in order to ensure the financial basis for this approach vis-a-vis child protection.

The major impacts of the initial results of the Prevention Project Dunkelfeld on public health policy are as follows.

1. A significant number of pedophiles and hebephiles in the community remain unknown to the justice system and have no contact with preventive services. These pedophilic and hebephilic men are either afraid they will become active offenders or have already offended against children. However, they remain undetected in the Dunkelfeld.

2. Certain pedophiles and hebephiles who remain unknown to the authorities participate in a treatment program aiming to prevent child sexual abuse and the use of child abusive images. They are provided access to, can communicate with and gain the trust of experts specialized in assessment and therapy of their disorder, and all within appropriate confidentiality guidelines.

3. The correlation between self-reported behavior and recidivism in detected offenders is complex. As regards recidivism in terms of offenses known to the legal authorities, the recidivism rate in the PPD was 0% for CSA as well as for CP offenses, as none of the self-reported offenses during the course of treatment were detected or reported. Research on child abusive behaviors and sexual traumatization of children will benefit greatly from the Dunkelfeld approach.

4. Treatment helps to enhance sexual impulse control on the basis of cognitive-behavioral, sexological, and pharmaceutical interventions. This pilot study shows that it is possible to achieve a reduction in risk factors for child sexual abuse. Further research is needed to ascertain the effects, particularly at the behavioral level.

5. German legislation on the reporting of CSA and CPO is crucial for the success of this prevention program: According to German law, it is considered a breach of confidentiality for the treating therapist to report a committed CSA or CPO.

6. The use of child abusive images is an indicator for pedophilic inclinations. The current legal situation in many countries—even those with mandatory reporting laws—would at least allow for a clearer focus on potential or actual users of child abusive images in the Dunkelfeld, which would help to establish an important target for effective prevention measures.

Figure 1 Chart of inclusion process

```
┌─────────────────────┐
│     Applicants      │
│       N=596         │
└─────────────────────┘
        │              ┌──────────────────────────────────┐
        │              │    Meeting exclusion criteria    │
        ├──────────────│                          n=277   │
        │              └──────────────────────────────────┘
┌─────────────────────┐┌──────────────────────────────────┐
│ Eligible for treatment││ Lifetime offense history data available │
│       n=319         ││                          n=291   │
└─────────────────────┘└──────────────────────────────────┘
        │              ┌──────────────────────────────────┐
        │              │     Declining treatment offer    │
        ├──────────────│                          n=142   │
        │              └──────────────────────────────────┘
        │              ┌──────────────────────────────────┐
        │              │   Waiting for treatment to begin │
        ├──────────────│                          n=35    │
        │              └──────────────────────────────────┘
        │              ┌──────────────────────────────────┐
        │              │  Not yet informed of treatment offer │
        ├──────────────│                          n=14    │
        │              └──────────────────────────────────┘
┌─────────────────────┐
│  Starting treatment │
│       n=128         │
└─────────────────────┘
        │              ┌──────────────────────────────────┐
        │              │     Drop out over treatment      │
        ├──────────────│                          n=38    │
        │              └──────────────────────────────────┘
        │              ┌──────────────────────────────────┐
        │              │      In ongoing treatment        │
        ├──────────────│                          n=21    │
        │              └──────────────────────────────────┘
┌─────────────────────┐
│ Treatment completed │
│        n=69         │
└─────────────────────┘
```
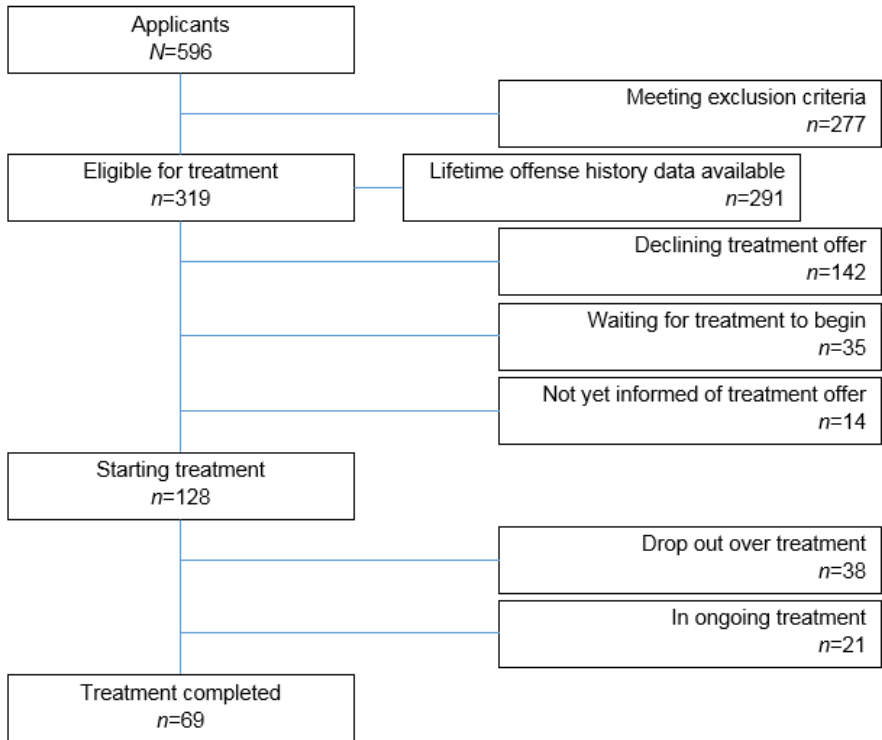
Table 1 Socio-demographic, sexological and offense history variables in TG and CG at intake assessment

Demographic data	Treatment group (n=53)	Control Group (n = 22)	df	χ^2	p
Socio-demographic data (%)					
Age[a] (SD)	38.46 (9.99)	33.14 (11.12)	1	4.05*	.048
Years of education > 10	27 (54.0)	13 (59.1)	1	0.16	.689
Employed	38 (76.0)	18 (81.8)	1	0.29	.584
Single status	31 (62.0)	14 (63.6)	1	0.02	.895
Parental status	17 (34.0)	8 (36.4)	1	0.04	.846
Sexual body age preference (%)[b]			1	3.90*	.048
Pedophilia	41 (77.4)	12 (54.5)			
Hebephilia	12 (22.6)	10 (45.5)			
Sexual gender preference (%)			2	3.05	.218
Attracted to males	27 (50.9)	8 (36.4)			
Attracted to females	24 (45.3)	11 (50.0)			
Attracted to both sexes	2 (3.8)	3 (13.6)			
Prior lifetime sexual offenses (%)			3	2.66	.391
Non-offending	12 (22.6)	4 (18.2)			
Child sexual abuse only	9 (17)	1 (4.5)			
Child pornography use only	14 (26.4)	7 (31.8)			
Mixed offenses	18 (34.0)	10 (45.5)			
Previously known to justice (%)					
Child pornography offenses	4 (7.5)	1 (4.5)	1	0.23	.635
Child sexual abuse offenses	7 (13.2)	-	1	3.21	.073

Notes: F-statistic: F-value and χ^2-statistics yielded significance at *p < .05.

Table 2 Within- and between-group comparison on DRF and sexual behaviors involving minors in TG and CG at pre- and post-assessments

Dynamic Risk Factors	Treatment Group (n=53)			Control Group (n=22)			Pre	Post
	pre M (SD)	post M (SD)	Z^a	pre M (SD)	post M (SD)	Z^a	Z^b	Z^b
Emotional Deficits								
Self-esteem deficits	26.02 (6.26)	28.81 (6.19)	-2.72**	30.13 (6.46)	31.42 (6.39)	-1.21	-2.14*	-1.43
Loneliness	50.87 (11.27)	47.00 (12.79)	-2.62**	45.36 (11.79)	46.09 (11.40)	-0.66	-1.93	-0.21
Hostility towards women	41.17 (5.25)	40.21 (4.55)	-1.92	40.27 (5.97)	40.27 (6.03)	0.00	-0.69	-0.18
Emotion-oriented coping	27.58 (5.50)	26.15 (5.75)	-2.27*	23.00 (5.36)	23.68 (4.66)	-0.64	-3.22**	-1.79
Emotional congruence	17.98 (6.48)	17.92 (6.90)	-0.61	18.46 (5.58)	18.33 (8.68)	-0.65	-0.28	-0.29
Offense-supportive Cognitions								
Emotional victim empathy deficits	48.16 (18.36)	42.64 (16.99)	-2.16*	52.45 (18.97)	50.48 (22.17)	-0.77	-0.96	-1.30
Cognitive victim empathy deficits	68.80 (29.07)	63.34 (25.37)	-1.32	77.91 (28.52)	84.70 (33.76)	-1.43	-1.37	-2.62**
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
Sexual Self-Regulation Deficits								
Coping self-efficacy deficits	40.89 (13.26)	37.28 (13.89)	-2.49*	38.36 (9.58)	40.41 (16.76)	-0.28	-0.69	-0.71
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
Impression management	33.10 (10.76)	32.23 (8.76)	-0.28	33.10 (10.76)	37.33 (7.12)	-0.14	-1.22	-1.57
Overall recent CSA related behaviors	1.14 (.45)	1.02 (.10)	-1.84	1.11 (.27)	1.11 (0.30)	0.00	-0.33	-1.63
Overall recent CPO	1.32 (.55)	1.43 (.63)	-1.61	1.48 (.67)	1.60 (0.63)	-0.92	-0.89	-1.27

Notes: TG = Treatment group, CG = Control group; higher scores reflect greater deficits, desired changes are towards lower values.

a. Within-group comparison: Wilcoxon Signed Ranks 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 3 Change in treatment group on DRF by prior lifetime offenses.

	No offenses (n=12)			only CP offenses (n=16)			only CSA offenses (n=9)			Both offenses (n=16)		
	pre	post	Z	pre	post	Z	pre	post	Z	pre	post	Z
Emotional Deficits												
Self-esteem deficits	26.50 (6.90)	28.90 (6.62)	-1.10	25.18 (7.14)	28.78 (7.31)	-1.06	30.22 (4.58)	31.33 (4.24)	-1,02	27.63 (6.97)	29.75 (6.29)	-1,93
Loneliness	50.43 (10.76)	48.13 (11.17)	-1.56	48.78 (12.94)	48.04 (12.75)	-0.70	46.56 (9.11)	46.40 (9.50)	-,56	50.00 (11.10)	47.08 (11.45)	-2,16*
Hostility towards women	39.64 (4.89)	40.63 (4.21)	-0.05	39.61 (5.16)	38.52 (4.55)	-0.99	42.11 (6.35)	42.80 (5.87)	-,24	42.35 (5.65)	40.33 (5.33)	-2,37*
Emotion-oriented coping	25.43 (6.69)	25.75 (5.93)	-1.07	25.48 (5.72)	25.75 (5.77)	-0.21	26.78 (6.98)	24.30 (6.17)	-1,54	27.40 (5.78)	25.29 (5.17)	-1,87
Emotional congruence	58.14 (6.72)	59.10 (4.63)	-0.98	58.47 (4.81)	58.67 (6.50)	-1.22	56.78 (8.07)	55.56 (6.91)	-,28	59.12 (6.50)	58.00 (8.96)	-,56
Offense-supportive Cognitions												
Emotional victim empathy deficits	47.79 (19.09)	41.44 (16.99)	-0.53	49.73 (17.12)	45.71 (18.97)	-0.04	37.44 (10.30)	44.80 (12.77)	-1,96*	52.40 (22.28)	45.00 (21.81)	-3,68***
Cognitive victim empathy deficits	60.93 (26.65)	59.56 (27.66)	-0.89	66.36 (27.71)	65.52 (31.08)	-0.43	71.78 (30.15)	63.40 (19.33)	-,98	84.20 (31.01)	79.35 (27.98)	-1,27
CSA supportive attitudes	66.79 (12.94)	64.38 (19.92)	-1.89	70.96 (15.54)	64.96 (14.75)	-2,55*	73.56 (23.32)	61.30 (20.77)	-2,38*	77.15 (20.65)	68.58 (17.67)	-2,12*
Sexual Self-Regulation Deficits												
Coping self-efficacy deficits	41.69 (13.52)	36.06 (15.65)	-1.68	39.70 (9.42)	35.58 (11.48)	-1,26	38.00 (15.85)	43.20 (17.48)	-,70	40.45 (12.57)	37.09 (10.42)	-2,51*
Sexualized coping	27.21 (11.41)	27.38 (7.92)	-0.83	28.48 (7.37)	26.33 (7.11)	-1,33	23.67 (6.30)	23.50 (6.84)	-,77	25.40 (8.77)	25.75 (9.09)	-,13
Sexual preoccupation	2.36 (1.20)	2.25 (0.91)	-1.53	2.72 (0.87)	2.49 (0.98)	-,49	2.47 (1.11)	2.25 (1.20)	-,10	2.74 (1.33)	2.43 (1.06)	-2,11*

Notes: TG = Treatment group, CG = Control group; higher scores reflect greater deficits, desired changes are towards lower values.
Wilcoxon Signed Ranks 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.

Table 4 Relapse, lapse and beginning of CSA and CPO by lifetime CSA and CP offenses in the course of treatment (TG n=53) and over the waiting period (CG n=22).

	Lifetime CSA		No CSA		Lifetime CPO		No CPO	
	TG (*n*=25)	CG (*n*=10)	TG (*n*=28)	CG (*n*=12)	TG (*n*=32)	CG (*n*=17)	TG (*n*=21)	CG (*n*=5)
Relapse	5 (20%)	3 (30%)	-	-	29 (91%)	13 (76%)	-	-
No lapse	20 (80%)	7 (70%)	28 (100%)	12 (100%)	3 (9%)	4 (24%)	16 (76%)	4 (80%)
Beginning	-	-	0 (0%)	0 (0%)	-	-	5 (24%)	1 (20%)
Legally known offenses	0 (0%)	0 (0%)	0 (0%)	0 (0%)	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.

Table 5 Frequency and severity of CSA behaviors in past six months at post assessment by group allocation

	Treatment group (n=52)		Control group (n=22)		χ^2 (df=1)	Fishers exact test
	Never	Few times	Never	Few times		
Sexual body contact	50 (96%)	2 (4%)	19 (90%)	2 (10%)	0.931	
Sexual activities before a child	52 (100%)	0 (0%)	19 (90%)	2 (10%)	5.092*	p = 0.08
Sexual arousal together with a child	51 (98%)	1 (2%)	18 (86%)	3 (14%)	4.416*	p = 0.07

Notes: χ^2-statistics yielded significant differences at * $p < 0.05$.

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