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# Men with Sexual Interest in Children:

## Clinical Management in an Outpatient Setting

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*To Uno and Inga*

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# Abstract

**Background:** Sexual interest in children (SIC) is a significant risk factor for committing sexual offences against children, including child sexual abuse material (CSAM) offences. In addition to the risk of offending, individuals with SIC often experience significant psychological distress and interpersonal difficulties. From a sexual violence prevention perspective, effective and accessible community-based treatment options for individuals with identified risk factors for sexual offending are crucial. Furthermore, family members of sexual offenders face substantial emotional, psychological and social strains. Nonetheless, the healthcare needs of close relatives of CSAM offenders remain poorly explored.

**Aims:** The overall aim of this PhD project is to enhance clinical knowledge of SIC among men seeking outpatient care by comprehensively assessing their clinical profiles, investigating potential neurodevelopmental factors, outlining a methodology for evaluating treatment options, and advancing the understanding of healthcare needs among their close relatives.

Specific aims include: (1) to describe the clinical profiles of individuals who contact the national Swedish telephone helpline PrevenTell, with a special focus on those reporting a sexual interest in children; (2) to assess psychiatric comorbidity, cognitive ability, and brain structure in men with a DSM-5 diagnosis of pedophilic disorder (PeD) in comparison with healthy controls (HCs); (3) to design and conduct an initial evaluation of a randomized controlled trial (RCT) to investigate the effectiveness of treatment with fluoxetine and internet-delivered cognitive behavioral therapy (iCBT) for the reduction of problematic sexual behaviors in men with SIC; and (4) to explore the impact on female partners of the discovery that their significant other is suspected of CSAM offences.

**Method:** In Study I, individuals who called PrevenTell ($n$ = 1,573) were interviewed about sociodemographic characteristics, problematic sexual behavior(s), and mental health. In Study II, men with a DSM-5 diagnosis of PeD ($n$ = 55) were compared to age- and sex-matched HCs ($n$ = 57) on psychiatric measures, cognitive testing, and structural brain imaging measures. In Study III, the methodology of an ongoing RCT was outlined together with initial feasibility data. In Study IV, semi-structured interviews were conducted with eight women partnered with men participating in Study III.

**Results**: In Study I, 346 respondents (24%) reported a sexual interest in children; the majority of respondents were men (*n* = 332; 96%), with a median age of 33 years (range 16–76). Most reported a preference for girls (*n* = 260; 80%), with the most common age preference being 11–14 years (*n* = 123; 43%). The use of CSAM was reported by 215 (63%) respondents and 51 individuals (15%) disclosed a history of committing child sexual abuse (CSA).

In Study II, men with PeD exhibited higher rates of comorbid psychiatric conditions compared to HCs, including clinically significant symptoms of attention-deficit/hyperactivity disorder (ADHD; $d = 0.65$; $p = 0.009$) and autism spectrum disorder (ASD; $d = 1.57$; $p < 0.001$). Cognitive testing indicated lower full-scale IQ (FSIQ) among the PeD group, although average scores remained within the normative range. Neuroimaging analyses revealed widespread structural brain differences, primarily in regions associated with the default mode network. These patterns remained largely consistent after adjusting for potential confounding variables. Observed neurodevelopmental traits and structural brain differences, together with correlations with lower FSIQ and the 2nd to 4th digit ratio (2D:4D), suggest that neurodevelopmental factors may contribute to the etiology of PeD.

In Study III, interactions with the target population and data collection are proceeding as planned. Data are also being collected to assess potential selection bias. It is anticipated that approximately one in five men undergoing screening will meet eligibility criteria and be enrolled in the RCT. The most common reasons for exclusion to date are current treatment with selective serotonin reuptake inhibitors (SSRIs) (*n* = 24; 22%) and an elevated risk of committing hands-on child sexual abuse (*n* = 14; 13%). Participant enrollment began in March 2022 and is ongoing; findings related to the study's primary aim are therefore not yet available and are not included in this thesis.

In Study IV, female partners of suspected CSAM offenders were found to experience a significant adverse impact on their mental health, including suicidal ideation. There was a subsequent need for crisis support, medical evaluation, and counseling in response to disclosure of their partner's crime and sexual interest. The results further showed that the women experienced barriers that obstructed their access to healthcare services.

**Conclusion:** This thesis demonstrates that men with SIC can be reached outside correctional contexts and engaged in non-anonymous outpatient assessment, treatment, and research. Participants frequently presented with complex psychiatric and criminogenic characteristics, including high rates of CSAM use, prior sexual offence convictions, and significant comorbidities such as depression, anxiety, suicidality, and elevated symptoms of neurodevelopmental disorders. Findings highlight both the need for and the feasibility of specialized outpatient services that integrate psychiatric and clinical forensic expertise, alongside comprehensive psychiatric evaluations and tailored treatment strategies. The feasibility of conducting RCTs in this population was demonstrated, providing a foundation for future treatment development. Finally, the results highlight significant psychological distress among partners, emphasizing the need for improved clinical support and targeted interventions for affected close relatives.

# Abbreviations

| | |
|---|---|
| 2D:4D | The 2nd to 4th digit ratio |
| ADHD | Attention-deficit/hyperactivity disorder |
| APA | American Psychiatric Association |
| ASEBA-ASR | The Achenbach System of Empirically Based Assessment, The Adult Self-Report |
| ASRS | Adult ADHD Self-Report Scale |
| AUDIT | Alcohol Use Disorders Identification Test |
| BBQ | Brunnsviken Brief Quality of Life Inventory |
| BIS | Barratt Impulsiveness Scale |
| BMS | Bumby Molest Scale |
| CBT | Cognitive behavioral therapy |
| C-ECWC | Cognitive and Emotional Congruence with Children Scale |
| CSA | Child sexual abuse |
| CSAM | Child sexual abuse material |
| CSB | Compulsive sexual behavior |
| CSBD | Compulsive sexual behavior disorder |
| CSBD-19 | Compulsive Sexual Behavior Disorder Scale |
| C-SSRS | Columbia Suicide Severity Rating Scale |
| CSQ-8 | Client Satisfaction Questionnaire |
| CTQ-SF | Childhood Trauma Questionnaire – Short Form |
| DERS-16 | Difficulties in Emotional Regulation Scale |
| DSM-5 | Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition |
| DUDIT | Drug Use Disorders Identification Test |
| FSIQ | Full-scale intelligence quotient |
| GnRH | Gonadotrophin releasing hormone |
| HADS | Hospital Anxiety and Depression Scale |
| HBI | Hypersexual Behavior Inventory |
| HC | Healthy control |
| HD: CAS | Hypersexual Disorder: Current Assessment Scale |

| | |
|---|---|
| iCBT | Internet-delivered CBT |
| ICD-11 | International Classification of Diseases, 11th Revision |
| iPP | Internet-delivered psychoeducational program |
| LASSIE | Långström Self-rating Sexual Interests |
| MADRS-S | Montgomery-Åsberg Depression Rating Scale – Self rating |
| M.I.N.I. | Mini International Neuropsychiatric Interview |
| MRI | Magnetic resonance imaging |
| NEQ | The Negative Effects Questionnaire |
| PeD | Pedophilic disorder |
| PID-5 | Personality Inventory for DSM-5 |
| PLS | Partial least squares regression |
| PRIOTAB | Pedophilia at Risk – Investigations of Treatment and Biomarkers |
| PSS | Perceived Social Support |
| RAADS-14 | Ritvo Autism and Asperger Diagnostic Scale |
| RCT | Randomized controlled trial |
| RNR | Risk–Need–Responsivity |
| R-UCLA | Revised UCLA Loneliness Scale |
| SChiMRA | Sexual Child Molestation Risk Assessment |
| SCS | Sexual Compulsivity Scale |
| SIC | Sexual interest in children |
| SIC: CAS | The Sexual Interest in Children: Current Assessment Scale |
| SSIC | Specific self-efficacy for modifying Sexual Interest in Children |
| SSRI | Selective serotonin reuptake inhibitor |
| UKU | Udvalg for Kliniske Undersogelser side effect rating scale |
| VBM | Voxel-based morphometry |
| WAIS-IV | Wechsler Adult Intelligence Scale – Fourth Edition |
| WFSBP | The World Federation of Societies of Biological Psychiatry |
| WHO | World Health Organization |

# Sammanfattning på svenska

**Bakgrund:** Sexuellt intresse för barn (*sexual interest in children, SIC*) är en betydande riskfaktor för att begå sexualbrott mot barn, inklusive brott relaterade till övergreppsmaterial (*child sexual abuse material, CSAM*). Förutom risken att begå brott upplever personer med SIC ofta ett uttalat psykiskt lidande och interpersonella svårigheter. Ur ett sexualbrottsförebyggande perspektiv är det av central betydelse att tillhandahålla tillgängliga och effektiva behandlingsinsatser för individer i samhället med riskfaktorer för att begå sexualbrott mot barn. Närstående till personer som begått sexualbrott drabbas ofta av svåra känslomässiga, psykologiska och sociala påfrestningar. Trots detta är vårdbehoven hos närstående till personer misstänkta för brott relaterade till övergreppsmaterial fortfarande otillräckligt kartlagda.

**Syfte:** Avhandlingens övergripande syfte är att öka den kliniska kunskapen om män med SIC som söker hjälp inom öppenvården. Detta görs genom att kartlägga deras kliniska profiler, undersöka möjliga utvecklingsneurologiska faktorer samt utveckla en metod för att utvärdera behandlingsinsatser och belysa vårdbehoven hos deras närstående.

De specifika delsyftena är att (1) beskriva de kliniska profilerna hos individer som kontaktar den nationella hjälplinjen PrevenTell, med särskilt fokus på dem som uppger ett sexuellt intresse för barn; (2) undersöka psykiatrisk samsjuklighet, begåvning och hjärnstruktur hos män med diagnosen pedofil störning (*pedophilic disorder, PeD*) enligt DSM-5, jämfört med friska kontrollpersoner (*healthy control, HC*); (3) utveckla och genomföra en initial utvärdering av en randomiserad kontrollerad studie (*randomized controlled trial, RCT*) som undersöker effekten av behandling med fluoxetin och internetbaserad kognitiv beteendeterapi (*internet-delivered cognitive behavioral therapy, iCBT*) för att minska problematiska sexuella beteenden hos män med SIC; samt (4) utforska hur kvinnliga partners påverkas av att upptäcka att deras partner är misstänkt för brott relaterade till övergreppsmaterial.

**Metod:** I studie I intervjuades personer som kontaktade PrevenTell ($n$ = 1 573) om sociodemografiska faktorer, problematiska sexuella beteenden och psykisk hälsa. I studie II jämfördes män med diagnosen PeD ($n$ = 55) med ålders- och könsmatchade HC ($n$ = 57) avseende psykiatriska variabler, generell begåvning och strukturell hjärnavbildning. I studie

III presenteras metodiken för en pågående RCT samt initiala data kring genomförbarhet. I studie IV genomfördes semistrukturerade intervjuer med åtta kvinnliga partners till män som deltog i studie III.

**Resultat:** I studie I rapporterade 346 deltagare (24 %) ett sexuellt intresse för barn; majoriteten var män ($n$ = 332; 96 %) med en medianålder på 33 år (spann 16–76 år). De flesta uppgav en dragning till flickor ($n$ = 260; 80 %), vanligast i åldersspannet 11–14 år ($n$ = 123; 43 %). Användning av övergreppsmaterial rapporterades av 215 personer (63 %), och 51 personer (15 %) uppgav att de tidigare hade begått sexuella övergrepp mot barn.

I studie II hade PeD-gruppen en högre grad av psykiatrisk samsjuklighet än kontrollgruppen, inklusive kliniskt signifikanta symtom på aktivitets- och uppmärksamhetsstörning (*attention-deficit/hyperactivity disorder, ADHD*) ($d$ = 0.65; $p$ = < 0.001) och autismspektrumtillstånd (AST) ($d$ = 1.57; $p$ < 0.001). Kognitiva tester visade lägre fullskale-IQ (FSIQ) i PeD-gruppen, även om genomsnittsresultatet låg inom normalintervallet. Hjärnavbildningen visade strukturella skillnader, främst i regioner kopplade till hjärnans standardnätverk (*default mode network)*. Dessa mönster kvarstod efter justering för potentiella störfaktorer. Kombinationen av drag relaterade till utvecklingsavvikelser, strukturella skillnader i hjärnan samt samband med lägre FSIQ och 2D:4D-förhållandet tyder på att utvecklingsneurologiska faktorer kan bidra till uppkomsten av PeD.

I studie III fortskrider rekrytering och datainsamling enligt plan. Det förväntas att cirka en av fem män som screenas kan inkluderas i RCT:n. De vanligaste orsakerna till exklusion hittills är pågående behandling med selektiva serotoninåterupptagshämmare (*selective serotonin reuptake inhibitors, SSRIs*) ($n$ = 24; 22 %) och förhöjd risk för att begå fysiska övergrepp mot barn ($n$ = 14; 13 %). Deltagare har inkluderats i studien sedan mars 2022 och rekrytering pågår fortfarande, varför resultat relaterade till studiens primära utfall inte ingår i denna avhandling.

I studie IV framkom att kvinnliga partners till män misstänkta för brott relaterade till övergreppsmaterial upplevde betydande psykisk belastning och i vissa fall suicidtankar. Behov av krisstöd, medicinsk bedömning och samtalsstöd var vanligt efter avslöjandet av partnerns brott och sexuella intresse. Vidare identifierades hinder som försvårade tillgången till vård.

**Slutsats:** Avhandlingen visar att män med SIC kan nås utanför kriminalvården och rättspsykiatrin, och engageras i icke-anonym bedömning, behandling och forskning inom öppenvården. Deltagarna uppvisade en komplex psykiatrisk problematik och flera kriminogena faktorer, såsom användning av övergreppsmaterial, tidigare sexualbrott, depression, ångest, suicidtankar och tecken på utvecklingsrelaterade funktionsnedsättningar. Resultaten belyser behovet av och möjligheten till specialiserad öppenvård som integrerar psykiatrisk och klinisk forensisk kompetens samt vikten av noggranna psykiatriska bedömningar och individualiserade behandlingsstrategier. Avhandlingen visar även att randomiserade behandlingsstudier i denna population är genomförbara, vilket lägger grunden för framtida behandlingsutveckling. Slutligen belyser resultaten det stora psykiska lidandet bland partners och understryker behovet av riktade stödinsatser för närstående till män med SIC.

# Original papers

I. Adebahr, R., Söderström, E. Z., Arver, S., Jokinen, J., & Öberg, K. G. (2021). Reaching Men and Women at Risk of Committing Sexual Offences – Findings From the National Swedish Telephone Helpline PrevenTell. The Journal of Sexual Medicine, 18(9), 1571-1581. https://doi.org/10.1016/j.jsxm.2021.06.008, with permission from Oxford University Press.

II. Abé, C., Adebahr, R., Liberg, B., Mannfolk, C., Lebedev, A., Eriksson, J., Långström, N., & Rahm, C. (2021). Brain structure and clinical profile point to neurodevelopmental factors involved in pedophilic disorder. Acta Psychiatrica Scandinavica, 143(4), 363-374. https://doi.org/10.1111/acps.13273.

III. Adebahr, R., Görts Öberg, K., Rahm, C., Byström, M., Sparre, C., Desai Boström, A. E., Bottai, M., Jokinen, J., & Savard, J. (2024). A randomized controlled add-on trial of fluoxetine and cognitive behavioral therapy for help-seeking men with a sexual interest in children: presentation of the PARACHUTES trial protocol and initial feasibility data. Frontiers in Psychiatry, 15, 1448196. https://doi.org/10.3389/fpsyt.2024.1448196.

IV. Adebahr, R., Savard, J., Åkerstedt, U., Byström, M., Sparre, C., Hadding, C., Görts Öberg, K., & Jokinen J. (2025). Healthcare needs and barriers to care among female partners of male suspects of child sexual abuse material offences in Sweden: a qualitative interview study. Frontiers in Psychiatry 16, 1618162. https://doi.org/10.3389/fpsyt.2025.1618162.

# 1. Introduction

## 1.1 Context and overview of the research project

Sexual violence against children is a serious global public health concern. Prevalence varies by region, country, and offence type, but pooled estimates suggest that approximately 9% of individuals under the age of 19 years have experienced contact sexual abuse (1). In addition, the internet facilitates new forms of child sexual exploitation, including online-grooming, sexual extortion, and live-streamed abuse (2). The global incidence of child sexual abuse material (CSAM) offences is also rising; offences often involve extreme content depicting young children (3). Whether abuse occurs offline or online, it is well established that sexually abused children frequently suffer significant and long-term psychological, emotional, and developmental harm (4-6).

The Council of Europe Convention on the Protection of Children against Sexual Exploitation and Sexual Abuse (the Lanzarote Convention) came into force in 2010. The Convention obliges each signatory state to ensure that individuals at risk of committing sexual offences against children have access to effective intervention programs or measures designed to assess and prevent the risk of such offences (7).

In this thesis, sexual interest in children (SIC) is defined as a sexual interest in prepubertal children (i.e., pedophilic disorder, PeD) or children who are entering puberty (i.e., hebephilia) (8). SIC is a known risk factor for both the onset of offending and for recidivism, and is also associated with subjective distress and interpersonal difficulties for the individual experiencing the atypical sexual interest (9-13). From a public health perspective, offering treatment to individuals with SIC serves a dual purpose: to protect children from harm and to alleviate suffering in those experiencing this atypical sexual interest without compromising child safety. Historically, the emphasis on prevention has involved providing treatment for individuals already convicted of sexual offences against children in order to mitigate the risk of recidivism (14). However, the majority of men who commit sexual offences remain undetected by legal authorities, meaning they are never identified, prosecuted, or offered intervention or treatment; research further suggests that rates of sexual recidivism are relatively low among those who are convicted (15-17). This underscores the importance of expanding preventive strategies to include individuals living in the community who may be at risk of offending. Despite this need, the existing body of research on clinical characteristics and treatment responses among men with SIC has been conducted predominantly in correctional settings (18). Consequently, there is a significant knowledge gap regarding individuals with SIC who are willing and eligible to engage in non-correctional clinical outpatient treatment.

The overall aim of this PhD project is to advance clinical knowledge of SIC among men seeking outpatient care by characterizing their clinical profiles, investigating potential neurodevelopmental factors, outlining a methodology for evaluating treatment options, and furthering the understanding of healthcare needs among their close relatives.

The project includes (1) a descriptive study presenting the findings from the Swedish telephone helpline PrevenTell, designed to be accessible to individuals with sexuality-related risk factors for committing sexual offences and motivate them to undergo treatment, with a special focus on those reporting a sexual interest in children; (2) a comprehensive psychiatric characterization of men with PeD including structural brain imaging in a case-control study design; (3) a presentation of the design and an initial feasibility evaluation of a randomized controlled trial (RCT) to investigate the effectiveness of treatment with fluoxetine and internet-delivered cognitive behavioral therapy (iCBT) in the reduction of problematic sexual behaviors in men with SIC; and (4) a qualitative interview study focusing on the healthcare needs of female partners subsequent to the discovery that their significant other is suspected of CSAM offences.

## 1.2 Diagnostic features

### 1.2.1 Pedophilic disorder

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) and the 11th Revision of the International Classification of Diseases (ICD-11) define PeD as (A) a persistent sexual interest (e.g., fantasies, urges) in prepubertal children, which (B) is either acted upon or causes significant distress or psychosocial impairment to the individual (13, 19). In both diagnostic classification systems there is a clause stating that the diagnostic criteria do not apply to sexual attraction or sexual behaviors that occur between pre- or post-pubertal children who are close in age. The diagnosis can apply to individuals who freely disclose sexual attraction to children, as well as to those who deny such attraction if there is objective evidence to the contrary, for example multiple victims of sexual abuse. In addition, the DSM-5 lists the following specifiers for PeD: (1) exclusivity, distinguishing between those whose sexual arousal is solely focused on prepubertal children (exclusive type) and those attracted to both prepubertal children and physically mature individuals (non-exclusive type); (2) attraction to males, females, or to both; and (3) whether sexual arousal or behavior is limited to incest.

DSM-5 makes a distinction between a paraphilia and a paraphilic disorder; a paraphilia denotes the sexual interest per se (Criterion A), whereas a paraphilic disorder is characterized as a paraphilia that is causing distress or impairment to the individual, or causing harm to others (Criteria A+B) (20). This distinction is consistent across all the paraphilic disorders defined in DSM-5. For example, an individual who discloses an intense sexual interest in prepubescent children, reports the absence of distress, and has not committed any criminal acts would accordingly be characterized as having a pedophilic sexual interest but would not meet the criteria for PeD.

Whereas other paraphilic disorders in the DSM-5 include a specifier for individuals "in remission," PeD does not. The absence of this specifier indicates that an individual who has previously been diagnosed with PeD, but who has not met Criterion B for an extended period of time, retains the diagnosis permanently. Although the DSM-5 acknowledges that pedophilic attraction and the associated distress may fluctuate over time, the decision to omit a remission specifier has been criticized for suggesting that PeD is a static and unchangeable condition (21). In contrast, the ICD-11 acknowledges that while PeD tends to be relatively stable over time, an individual's sexual thoughts and behaviors may change to the extent that the diagnostic criteria are no longer met.

There is an age indication for PeD Criterion A in DSM-5 that specifies "generally 13 years of age or younger." This refers to a general upper age limit for which the term "prepubescent" is relevant. The age indication should not be interpreted as meaning that the criterion is met if there is evidence of sexual attraction towards children ≤ 13 years old, regardless of the degree of pubertal development (22). Since the relation between age and pubertal development is variable, Tanner scales are commonly used to assist clinical evaluation of the pattern of sexual arousal. With visible characteristics of puberty development (development of pubic hair in males and females, female breast development, and male external genital development), the scales illustrate the development from prepubertal (Tanner 1) to fully mature (Tanner 5). Tanner 1 corresponds to ages < 10 years, Tanner 2–3 corresponds approximately to ages 11–14 years, Tanner 4 corresponds approximately to ages 15–17 years, and Tanner 5 corresponds to fully mature adults (23, 24).

The intuitive assumption that the use of CSAM is indicative of SIC has been supported by phallometric studies, a method for assessing sexual arousal patterns that involves measuring changes in penile circumference or blood volume in response to visual stimuli (25). During the DSM-5 revision process, it was proposed that the repeated use of "pornography" depicting prepubescent or pubescent children be included as part of Criterion B. However, the proposal was criticized for blurring the conceptual boundary between Criterion A (the presence of a specific sexual interest) and Criterion B (clinically significant distress or harmful behavior). Critics argued that not all sexual material involving children is necessarily illegal, with exceptions such as non-visual or fictional depictions, and its use does not inherently lead to negative consequences or psychological distress (26). The suggestion was ultimately rejected by The Board of Trustees of the American Psychiatric Association (APA). In DSM-5 TR (2022), further clarification was added: the use of CSAM "in the absence of the individual's sexual interactions with children (i.e., acting on those sexual interests in person) is insufficient to conclude that Criterion B is met" (27). The ICD-11 also recognizes that a preference for particular categories of sexual material may serve as supporting evidence for the presence of a pedophilic arousal pattern.

### 1.2.2 Hebephilia

Most researchers agree that a sexual interest in prepubertal children constitutes an appropriate basis for a psychiatric diagnosis (for a critical discussion of the psychiatric status of pedophilic interest, see for example Green (2002) and Malon (2012) (28, 29)). However, whether sexual arousal toward children at the onset of puberty should also warrant a psychiatric diagnosis remains a topic of ongoing debate.

A proposal, put forward by Blanchard et al. (2009), suggested the inclusion of a sexual preference for pubescent children, referred to as *hebephilia* (corresponding to Tanner Stages 2–3), as a diagnostic category in DSM-5. Blanchard argued that hebephilia is a "discriminable erotic age-preference" and therefore should be included in the DSM-5 (30). The arguments in favor of recognizing hebephilia as a distinct clinical phenomenon are based on several lines of evidence. Laboratory results suggest that men with hebephilia rank intermediate between men with PeD and those sexually attracted to adults in terms of intelligence (31), left-handedness (32), and stature (33). There is also a correlation between self-reported hebephilic interest and physiologically assessed erotic responses to hebephilic stimuli (30). The proposal sparked considerable controversy and was ultimately rejected by the APA Board of Trustees in 2013 (34). The main counterargument raised by critics was that, although acting on hebephilic interest is often criminalized, the interest itself may fall within the broad spectrum of normative sexual development, and thus should not, in itself, constitute a mental disorder (35).

Although hebephilia was not included in either DSM-5 or ICD-11, the concept continues to be employed by prominent research groups, including those at The Royal's Institute of Mental Health Research in Ottawa, Canada (e.g., Martijn et al., 2020), the Institute of Sexology and Sexual Medicine, Charité – Universitätsmedizin in Berlin, Germany (e.g., Schuler et al., 2021), and the Institute for Sex Research, Sexual Medicine and Forensic Psychiatry in Hamburg, Germany (e.g., Tozdan & Briken, 2019 (36-38)). These and other researchers argue that hebephilic attraction should not be equated with a sexual interest in older adolescents, but rather represents a distinct preference for children entering puberty. As such, it meets the general definition of a paraphilic disorder, insofar as the attraction is directed toward individuals who are not physically mature and not legally capable of providing consent (8, 13).

Crucially, research suggests that men's sexual interests tend to overlap, in line with the sexual response gradient model (39, 40). According to this model, sexual stimuli that are closer to an individual's preferred stimuli are more likely to elicit a physiological sexual response and be perceived as sexually attractive, compared to stimuli that are less similar. For example, a man primarily attracted to prepubertal boys may also report attraction to pubertal boys. This pattern contributes to the substantial overlap observed between pedophilic and hebephilic sexual interests, indicating that exclusive attraction to one of these age groups alone is relatively uncommon (37).

### 1.2.3 Diagnostic assessment of SIC

Accurate measurement of paraphilic sexual interests is important both in non-correctional and correctional settings (41). In non-correctional settings, SIC is typically assessed using standardized psychiatric evaluations alongside self-report measures and clinical interviews regarding sexual interests. These are often complemented by detailed mapping of sexual behavior history, including potential use of CSAM (42).

Assessment tools aimed at identifying risk factors for sexual reoffending are commonly used in correctional settings. The Screening Scale for Pedophilic Interests (SSPI), and its revised version SSPI-2, is a brief tool used to screen for SIC among men convicted of child sexual abuse (CSA). The scale includes five binary (Yes/No) items related to victim characteristics: male victims, multiple child victims, very young victims, extra-familial victims, and use of CSAM. Scoring is based on information from official case files and/or credible self-report. The SSPI-2 has demonstrated good validity in identifying PeD and predicting sexual recidivism (43-45). Phallometry, or penile plethysmography (PPG), is an evaluation of sexual interest that involves the laboratory measurement of change in penile circumference or blood volume in reaction to visual or auditory sexual stimuli (46-48). PPG is valid for assessment of SIC and routinely used in North America however it is considered controversial in Europe due to ethical and methodological considerations (49). Viewing time (VT) measures are used to assess SIC by presenting images of children, adolescents, and adults while participants rate their sexual attraction to each image. Their response time, i.e., how long they view each image, is recorded (48). The theoretical basis for this method is that sexually salient stimuli require more cognitive processing, as making a positive attraction judgment takes longer than a negative one (50, 51). In a meta-analysis by Schmidt et al. (2016), VT was shown to be a valid and objective measure of SIC (52). Compared to other indirect cognitive measures, VT demonstrated the strongest evidence of convergent validity (53).

In conclusion, in non-correctional clinical settings, where access to official criminal records is unavailable and assessments rely primarily on help-seeking individuals' self-reported acknowledgment of a sexual interest in children, both the utility and the clinical relevance of assessment tools originally developed to identify risk factors for sexual recidivism within correctional populations is limited.

## 1.3 Prevalence, age of onset, and progression

### 1.3.1 Prevalence

Estimates of the prevalence of SIC in the general population vary considerably across studies, primarily due to differences in sample characteristics, study design, and definition of SIC. Moreover, many existing studies have been assessed as having a high risk of bias (54).

The most informative studies to date, based on sample size and methodological quality, include those by Santtila et al. (2015), Dombert et al. (2016), and Bártová et al. (2021). In a population-based cohort study involving male twins ($n$ = 1,310), Santtila et al. estimated the one-year incidence of SIC to range between 2.4% and 4.3%. The occurrence of pedophilic sexual interest was substantially lower, with an upper estimate of 0.5% (55). In an anonymous online survey of 8,718 men, Dombert et al. reported that 4% had experienced sexual fantasies involving children < 12 years old, and 3.2% admitted to having committed sexual offences against children. The most commonly reported offences were CSAM-related, reported by 1.7% of respondents (56). Similarly, Bártová et al. (2021), in a study involving 5,023 men, found that 4.4% reported an intense and persistent sexual interest in pubescent children, and 1% in prepubescent children (57). As noted, the use of CSAM is considered a potential behavioral indicator of SIC. In a Swedish school-based survey of young men ($n$ = 1,978) aged 17–20 years, 4.2% reported having ever viewed CSAM, defined in the study as "pornography with depictions of adult–child sex." Most prevalence studies to date have focused exclusively on male participants. Exceptions include studies by Joyal et al. (2015) and Bártová et al. (2021), both of which found substantially lower rates of SIC among women. In Joyal et al., 1.8% of male respondents and 0.8% of female respondents endorsed the item: "I have fantasized about having sex with a child under the age of 12 years" (58). In Bártová et al., 0.1% of women reported a persistent hebephilic interest, and none reported a persistent pedophilic interest (57).

Taken together, estimates from population-based studies indicate an incidence of SIC, as defined in this thesis, of approximately 4% among men. When focusing specifically on interest in prepubertal children, the estimated prevalence is substantially lower. Among women, the prevalence of SIC is significantly lower overall.

### 1.3.2 Age of onset and course

Studying the age of onset (AOO) of SIC depends on individuals' ability to accurately recall when they first experienced such attraction. It is also important to differentiate between the initial emergence of the interest and the later recognition that the attraction is atypical (59). Empirical findings suggest that SIC often emerges around puberty. For example, in a clinical non-correctional sample of men with SIC ($n$ = 494) the majority reported a pubertal onset of their sexual interest (60). Similarly, an online survey of 1,189 men recruited from websites for adults with SIC reported a mean AOO of 14.24 years ($SD$ = 5.36) (59). These findings have informed both theoretical and clinical perspectives. Seto (2012), for instance, argues that a pubertal onset of pedophilic interest, particularly when it is accompanied by sexual and romantic feelings that remain stable over time, supports the conceptualization of pedophilia as a sexual age orientation (61). In contrast, Tozdan et al. (2015) caution that AOO varies considerably among individuals with SIC, potentially reflecting the existence of distinct subgroups. They argue that interpreting AOO as evidence of a fixed sexual orientation is premature and emphasize that such a conclusion could carry unintended negative consequences for treatment outcomes (21, 62).

## 1.4 SIC as a risk factor for sexual offending

SIC is a significant risk factor for committing sexual offences against children. It is an empirically supported risk factor for reoffending and is proposed as a motivator for the onset of offending, as well as being particularly relevant in cases involving CSAM offences (9, 10, 12, 63). However, a preferential sexual attraction to children is not always present in convicted child sexual offenders. Other dynamic risk factors (i.e., changeable traits, such as attitudes or self-regulation deficits) may play a more prominent role in the offending behavior (9, 64).

### 1.4.1 Self-reported offending in clinical samples

To date, few empirical studies have investigated the prevalence of self-reported CSA and CSAM offences, whether detected (i.e., identified by law enforcement, with subsequent charges or convictions) or undetected, among help-seeking men with SIC in non-correctional settings. Even less is known about their rates of recidivism.

Within the Pedophilia at Risk – Investigations of Treatment and Biomarkers (PRIOTAB) research framework, a study investigating risk factors for sexual offending in this population (partially overlapping with participants from Study II of the present thesis) found that 22% ($n$ = 12) of men diagnosed with PeD reported prior convictions for sexual offences. Of these, 9% ($n$ = 5) had committed contact offences against children under the age of 15 years, and 15% ($n$ = 8) had committed non-contact offences, such as those involving CSAM. Moreover, when dynamic risk factors were aggregated into a composite score, individuals with PeD scored significantly higher than a healthy control group (65).

The prevalence of self-reported prior offences was assessed in two separate German studies conducted in non-correctional samples of help-seeking men with SIC. Across both samples (Study A: $n$ = 291; Study B: $n$ = 165), approximately 10% of participants reported no history of offending. CSAM-only offences were the most commonly reported in both studies (36.4% in Study A; 54.5% in Study B), followed by combined CSA and CSAM offences (35.4% and 25.5%, respectively). CSA-only offences were least common (16.5% and 9.7%, respectively) (66, 67). The first published data from a related Swiss prevention initiative show a similarly high prevalence: among 46 self-referred men with SIC, 67.4% reported prior sexual offending, including both detected and undetected CSAM and CSA offences (68). The subgroup of mixed offenders is of particular interest from a preventive perspective. Research shows that CSAM-only offenders differ from contact and mixed offenders in antisocial traits, opportunity, and disinclination to carry out contact abuse, as well as appearing to be at low risk of escalation (69-71). However, about half of convicted CSAM-offenders confess to previous contact offences and this subgroup of mixed offenders has been identified as having a high risk of reoffending due to strong sexual interest in children and fewer protective factors (72, 73). In Study B, the introduction of a time-at-risk period following clinical assessment allowed for the evaluation of recidivism. Results indicated a recidivism rate of 39% among individuals with prior CSAM offences and 14% among those with a history of hands-on CSA. In a separate treatment follow-up study of 56 men (from an original sample of 110), 7.7% of those with a history of CSA reoffended, while 89% of former CSAM users reported continued use at follow-up after 1 to 11 years (74).

### 1.4.2 Self-reported offending in online communities

Clinical samples may be affected by selection bias, as individuals who seek treatment have often experienced greater distress related to their sexual interest in children and may exhibit higher offending rates compared to those who do not pursue treatment. In recent years, research has increasingly included individuals with SIC outside both correctional and clinical settings, particularly those active in anonymous online communities. These studies have provided valuable insights into a previously inaccessible population. For a critical discussion of recruitment challenges in online community research, see Roche et al. (2025) (75). One of the largest studies of this kind (Bailey et al., 2016; $n$

= 1,102) found that nearly 85% of participants reported never having been arrested or convicted for any child sexual offences, including CSAM-related offences (40). Like Bailey, most studies in this area collect self-reported data on convictions and report a similar prevalence (76-78). However, this approach accounts for neither undetected nor unreported offending. An exception is the study by Cohen et al. (2018), which surveyed men with SIC ($n$ = 539) and found that 37% self-reported either a previous conviction or behavior involving sexual contact with a child. Notably, the study did not include data on CSAM-related behaviors, whether detected or undetected (79).

In summary, SIC is associated with an increased risk of sexual (re)offending across forensic, clinical, and online community-based samples; however, this association is less well understood outside correctional contexts, underscoring the need for further research in help-seeking and community populations.

### 1.4.3 Risk assessment

To assess the risk of recidivism in individuals convicted of sexual offences against children, the use of structured tools that measure both static (unchangeable) and dynamic (potentially changeable) risk factors is recommended (80, 81). The Static-99 is a widely used instrument for the estimation of long-term risk of sexual reoffending. It covers 10 static risk factors and is designed for men aged over 18 years who have been convicted of at least one sexual offence. It has demonstrated good predictive accuracy (AUC = 0.72) in child sexual offenders (82). The Static-99 is often used alongside the Stable-2007 and Acute-2007 tools, which assess stable (e.g., poor problem-solving skills) and acute (e.g., substance abuse, emotional instability) dynamic risk factors, respectively (83).

More recently, risk assessment tools have been developed specifically for individuals convicted of CSAM offences. One such tool, the Child Pornography Offender Risk Tool (CPORT), showed significant predictive validity for non-contact sexual recidivism over a five-year follow-up (AUC = 0.74) (84).

The STATIC-99 and CPORT show low predictive validity for future offending in clinical samples of men with SIC and are not recommended for risk assessment in non-correctional contexts. However, a modified version of CPORT shows more promising predictive value, particularly for individuals with a history of CSAM use, though further research is needed (67).

## 1.5 Neurodevelopmental correlates

### 1.5.1 Psychiatric comorbidity

SIC is associated with significant psychiatric comorbidity. Early research by Raymond et al. (1999), involved a total sample of 45 sexual offenders with PeD of whom 93% met the diagnosis criteria for at least one lifetime Axis I disorder, and 60% for an Axis II disorder. Alcohol and substance use disorders were also common, reported in 53% and 44% of participants, respectively (85). Expanding on this, Gerwinn et al. (2018) found that elevated rates of psychiatric comorbidities among men with PeD could not be attributed solely to offender status. In a clinical comparison involving men with PeD (with and without a history of contact offences), child sexual offenders without PeD, and healthy controls, both clinical and forensic groups showed significantly greater psychiatric symptom burden, including elevated childhood ADHD symptoms, relative to controls (86).

Similar patterns emerge in samples involved in technology-facilitated sexual offences against children. Krueger et al. (2009) examined Axis I disorders in 60 men arrested for CSAM distribution or online grooming. Seventy percent screened positive for an Axis I psychiatric diagnosis, with symptoms deemed to have contributed to the offending behavior rather than being consequences of arrest (87). Complementing these findings, Seiser et al. (2023) investigated a cohort of 66 incarcerated individuals convicted of CSAM offences in Austria. The results revealed that 80% were diagnosed with at least one psychiatric disorder. Notably, 41% had an Axis I disorder, and 71% had an Axis II disorder – most frequently Cluster B personality disorders. Furthermore, 42% exhibited symptoms of hypersexuality (88). Importantly, psychiatric comorbidity is also found outside correctional samples of CSAM offenders. Recently, Lätth et al. (2025) reported elevated rates of depression, anxiety disorders, hypersexuality, and neurodevelopmental traits, including autism spectrum and ADHD symptoms, among anonymous CSAM users ($n$ = 160) recruited on darknet platforms. Approximately 30% of these participants also reported suicidal ideation (3). These findings are consistent with previous reports documenting high levels of emotional distress and suicidal ideation in community samples of men with SIC, irrespective of offending status (89).

The consistently high levels of psychiatric comorbidity observed in men with SIC across various correctional, clinical non-correctional, and community samples highlight the substantial psychiatric burden associated with this population, underscoring the necessity of addressing these factors in both clinical assessment and intervention strategies (90, 91).

### 1.5.2 Intelligence, ADHD and ASD

Studies conducted at the Kurt Freund Laboratory in Canada, involving men referred for illegal or concerning sexual behavior, have reported an association between SIC and lower full-scale intelligence quotient (FSIQ) scores (31, 92). However, studies from the German NeMUP research initiative (Neural mechanisms underlying pedophilia and sexual offending against children: origins, assessment, and therapies) suggest a more nuanced relationship. This research differentiates between men with PeD who have committed hands-on sexual abuse and those with PeD but no history of hands-on abuse (although some may currently use or have previously used CSAM). The results indicate that lower intelligence is more strongly associated with contact sexual offending, as distinct from pedophilic sexual interest alone (86, 93). Research examining the association between SIC and neurodevelopmental disorders such as ADHD and ASD remains limited.

### 1.5.3 Anthropometric markers of aberrant neurodevelopment

Research on biomarkers of atypical neurodevelopment in men with SIC has examined a range of anthropometric markers, including minor physical anomalies (MPAs), leg length, handedness, and the second-to-fourth digit ratio (2D:4D). Dyshniku et al. (2015) investigated MPAs, such as malformations of the ears or toes, in a sample of men with PeD ($n$ = 24) using the Waldrop Physical Anomaly Scale. They reported a higher incidence of MPAs in men with PeD ($M$ = 3.9, $SD$ = 1.4) compared to previously reported rates in psychiatric populations ($M$ = 1.81, $SD$ = 1.63) and non-clinical controls ($M$ = 0.74, $SD$ = 0.82) (94). Similarly, Fazio et al. (2017) found that men with PeD had significantly shorter leg length than men who were sexually attracted to adults ($p < 0.05$, $d$ = 0.42) (95). In addition, several studies have documented elevated rates of non-right-handedness among men with PeD; however, a recent meta-analysis found no evidence supporting higher rates of atypical handedness in this group (32, 92, 96, 97). Further, a higher 2D:4D ratio, used as a proxy indicator for prenatal androgenization and linked to sexual orientation in humans, is associated with paraphilic interest but not specifically pedophilia (98).

Notably, these studies were primarily conducted at the Kurt Freund Laboratory and involved samples consisting mainly of men convicted of CSA or CSAM offences. For a critical discussion of the generalizability of findings to broader populations of men with SIC, see Jahnke et al. (2022). In this community-based study, men with SIC, both with and without a history of sexual offending, were compared to healthy controls; the authors were unable to replicate previous findings that linked height, intelligence, and non-right-handedness to sexual interest in children. Instead, they observed correlations between tested markers of aberrant neurodevelopment and self-reported criminal behavior (99).

### 1.5.4 Structural brain aberrations

A limited number of studies have examined structural brain differences in men convicted of CSA. Two German studies, conducted by Schiltz et al. (2007) and Schiffer et al. (2007), compared magnetic resonance imaging (MRI) data from pedophilic CSA offenders and HCs using voxel-based morphometry (VBM) (100, 101). Both studies reported gray matter reductions within their respective regions of interest: Schiltz et al. ($n$ = 15 PeD, $n$ = 15 controls) identified reductions in areas implicated in the regulation of sexual behavior, while Schiffer et al. ($n$ = 18 PeD, $n$ = 24 controls) found decreases in regions associated with the neurobiological mechanisms underlying obsessive–compulsive spectrum disorders (100, 101). In a follow-up study, Poeppl et al. (2013) ($n$ = 9 pedophilic offenders, $n$ = 11 non-sexual offenders) found reduced right amygdala volume in a group of pedophilic sexual offenders compared to non-sexual offenders, replicating the findings of Schiltz et al. (2007) (102). Mohnke et al. (2014) reported consistent amygdala volume reductions across Schiltz et al. (2007), Poeppl et al. (2013), and, based on unpublished post hoc analyses, Schiffer et al. (2007) (103).

Cantor et al. (2008) compared MRI data from men with PeD convicted of CSA or CSAM offences and released on parole ($n$ = 65) to a control group of men convicted of non-sexual offences ($n$ = 62). The groups were matched to control for general criminological factors and the effects of incarceration. Contrary to the German studies, no significant gray matter differences were found; however, widespread reductions in white matter volume were observed in the PeD group (104). Cantor and Blanchard (2012) reanalyzed the dataset, subdividing participants by age preference into pedophilic ($n$ = 19), hebephilic ($n$ = 49), and adult-attracted controls ($n$ = 47). They found no differences between the two SIC groups, but both showed significant temporal white matter reductions compared to adult-attracted controls, replicating the original findings. However, parietal lobe differences were not confirmed. The authors hypothesize that SIC arises from disrupted connectivity within a broader cortical network responsible for processing sexually relevant cues (104).

Two key methodological issues in the pioneer studies that may have led to inaccurate conclusions are small sample sizes and the failure to distinguish sexual interest from offending behavior (103, 105). Schiffer, et al (2017) and Lett, et al (2018) addressed this by comparing the following 3 groups: (1) men with PeD with a history of committing contact child sexual offences (P+CSO); (2) men with PeD without a history of CSO (P–CSO); and (3) non-offending men sexually attracted to adults (HCs). The results showed no significant differences between the P–CSO and HC groups in gray matter volume (93, 106). However, the P+CSO group exhibited significant gray matter volume reduction in the temporal pole (101, 106) and reduced white matter fractal anisotropy (93), suggesting that previously reported brain abnormalities may be linked to offending behavior rather than pedophilic interest alone.

### 1.5.5. Etiology

The etiology of SIC remains a subject of ongoing debate. Findings related to intelligence, anthropometric markers, handedness, and structural brain differences have been proposed as evidence supporting a neurodevelopmental theory of pedophilia. However, a key criticism is that such findings appear to be more closely associated with offender status than with sexual interest per se (105, 107, 108). This distinction limits the current clinical applicability of these biomarkers, which are not yet considered reliable indicators of SIC (109). Support for a hereditary component remains limited. A twin study estimated that about 15% of the variance could be attributed to genetic factors, while a genetic association study found weak, non-significant links to variants involved in hormonal regulation (110, 111). Environmental theories, such as the "abused–abuser" hypothesis, posit a direct causal link between childhood sexual abuse and the later development of pedophilic fantasies or behaviors. Although childhood sexual victimization has been associated with elevated risk of sexually offending against children, its role in the development of pedophilic interest itself has been questioned and remains inconclusive (112, 113).

# 1.6 Outreach, preventive intervention, and treatment

## 1.6.1 Help-seeking behavior

Findings on barriers to help-seeking among individuals with SIC vary depending on sample characteristics as well as the legal and cultural context in which the research is conducted. Studies based on online community samples often report strong interest in support services, with common barriers to access including concerns about confidentiality, fear of social rejection, and potential legal repercussions (114-116). Retrospective studies of individuals convicted of sexual offences indicate that few had actively sought help prior to offending. Commonly reported barriers include insufficient insight into problematic behavior, fear of the consequences of disclosure, and a perception that appropriate support services were either unavailable or inaccessible (117-119). Similarly, studies examining therapists' willingness to accept individuals with SIC as clients yield mixed results, depending on the forensic status of the help-seeker and the broader context. Therapists appear more reluctant to treat individuals with a known history of offending compared to those without such a background (115, 120). Research highlights the need to improve access to support services for individuals with SIC, including ensuring that interventions are confidential, nonjudgmental, and easily accessible.

## 1.6.2 Overview of preventive interventions

To facilitate access to healthcare for individuals with SIC, a range of low-threshold initiatives have been introduced in recent decades – a trend that has notably accelerated over the past ten years (121, 122).

Founded in 1992 in the United States, Stop It Now! provides free, confidential helplines and self-help resources for individuals concerned about their sexual thoughts, feelings, or behaviors toward children. It operates in the US, UK, Ireland, the Netherlands, and Australia, supporting CSA victims as well as at-risk individuals and their loved ones. Descriptive data show that nearly half of contacts made in the UK and Netherlands were from individuals concerned about their own behavior, compared to only 12% in the US; this discrepancy is possibly linked to stricter US confidentiality laws that may hinder access for at-risk individuals (123, 124).

Established in 2005, The German Preventive Project Dunkelfeld is one of the first projects providing specialized psychological and pharmacological treatment to help-seeking individuals with SIC in an outpatient clinical setting (125). The project was subsequently developed under the name Kein Täter Werden (KTW), with clinics established across Germany and, more recently, in Switzerland (68). The target group includes self-identified pedophilic or hebephilic individuals who (1) have not committed CSA or CSAM offences but consider themselves to be at risk of offending; (2) have committed CSA or used CSAM but remained unknown to public authorities; or (3) have previously been convicted of CSA or CSAM and are worried about relapse, thus excluding individuals who are subject to current legal proceedings (67, 68, 126). The treatment program is based on cognitive-behavioral principles with the addition of concepts from the Risk-Need-Responsivity model, the Relapse Prevention model, the Good Lives model, and pharmacological approaches, and is available in adapted versions for adults and adolescents (91, 127).

KTW introduced the web-based program Troubled Desire in 2017. The program is available in several languages and targets individuals with SIC. Schuler et al. (2021) published descriptive data from 4,161 users who completed the Troubled Desire assessment within 30 months of its inception. Most users were men (91%), under 40 years old (80%), and reported a sexual interest in children (79%). Among this subgroup ($n$ = 3,281), 73% reported lifetime CSAM use and 42% acknowledged a contact sexual offence, yet only 16% had been charged or convicted for CSAM crimes and 9% for contact offences against children. The authors conclude that Troubled Desire appears effective in establishing contact with individuals with sexual interest in children, though its impact on the prevention of offences has yet to be established (37).

The PrevenTell helpline was launched in 2012 by ANOVA at Karolinska University Hospital in Sweden. It was established to provide support for individuals struggling with problematic sexual thoughts and behaviors as well as to motivate them to undergo treatment. Study I of this thesis presents data on the characteristics of individuals who contacted the service during the first eight years of operation.

Since 2019, the Czech Republic has offered a low-threshold, anonymous treatment program for individuals with paraphilic disorders and compulsive sexual behavior disorder (CSBD), characterized by a persistent inability to control repetitive sexual impulses or behaviors. Published data from the program's first year include 24 participants, 8 of whom reported a sexual interest in children (19, 128). In line with these developments, the French telephone helpline Stop, launched in 2021, has shown promising results in engaging individuals with SIC and referring them to appropriate care services (129).

Prevent It, an anonymous, therapist-supported, iCBT program developed at Karolinska Institutet in Stockholm, was evaluated in a single-blind, RCT conducted between 2019 and 2021. Adult participants were primarily recruited from darknet forums. The results from this study are presented in detail below (130).

The Help Wanted Prevention Project is an online course introduced in 2020 to specifically target adolescents and young adults with a sexual interest in children. It was developed at the Moore Center for the Prevention of Child Sexual Abuse at Johns Hopkins Bloomberg School of Public Health. Although no formal evaluation data have been published to date, telephone interviews with individuals from the target group revealed significant mental health challenges, such as depression and suicidal ideation, linked to their awareness of their SIC (131).

### 1.6.3 Psychological treatment for help-seeking individuals

The number of preventive programs that have undergone scientific evaluation of treatment efficacy remains limited. This is likely due to a combination of practical and ethical challenges in conducting such research, as well as the relatively recent development of many of these initiatives.

KTW in Germany is one of the few in-person preventive treatment programs available to individuals with SIC. An early evaluation employed a non-randomized waitlist control design, comparing treated participants ($n$ = 56) with a control group ($n$ = 22) using pre- and post-treatment self-report measures. The findings suggested improvements in several dynamic risk factors, including sexual self-regulation, offence-supportive attitudes, and emotional functioning (66). A subsequent evaluation was conducted at another KTW site using an exploratory design, comparing treatment participants ($n$ = 35), treatment refusers ($n$ = 51), and dropouts ($n$ = 14). While baseline characteristics were largely similar across groups, treatment completers showed reductions in key dynamic risk factors (132). These findings must nevertheless be interpreted with caution. Due to ethical and practical constraints, neither evaluation study employed randomization, and only one included a control group. The robustness of the initial study has been questioned, particularly due to the exclusion of dropouts and the absence of a significant group-by-time interaction effect. A reanalysis by Mokros and

Banse (2019) concluded that the original statistical approach did not support firm conclusions about treatment efficacy (133). Furthermore, both studies were likely underpowered, limiting their ability to detect meaningful effects and raising concerns about generalizability.

To date, Prevent It is the only randomized controlled CBT trial targeting individuals with SIC conducted outside a correctional setting. The study found a significantly greater reduction in self-reported CSAM viewing time in the intervention group ($n$ = 80) compared to the placebo group ($n$ = 80) ($d$ = 0.18). While attrition was relatively high, particularly in the early sessions, the findings provide promising initial evidence for the feasibility, safety, and potential efficacy of an anonymous, internet-based intervention program for motivated users (130).

### 1.6.4 Psychological treatment for convicted sex-offenders

The broader field of psychological treatment for sexual offenders has been the subject of extensive meta-analytic research. Schmucker and Lösel (2017), noted for their methodological rigor, reported a small but statistically significant treatment effect with an odds ratio (OR) of 1.41, corresponding to a 26.4% reduction in sexual recidivism (10.1% in treatment vs. 13.7% in control groups) (134). Holper et al. (2024) provided a recent update, strengthening these findings by reporting a slightly larger effect (OR = 1.54), which corresponded with a 31.8% reduction in recidivism (9.3% vs. 13.6%) (135). Gannon et al. (2019) performed the largest meta-analysis to date, synthesizing 70 studies and over 40,000 participants; an even higher effect size was found, with a 32.6% reduction in sexual recidivism in treated individuals (136).

The effectiveness of treatment for individuals who have sexually offended against children has been specifically addressed in one meta-analysis and three systematic reviews (14, 137-139). The most recent, Sousa et al. (2022), reviewed both quantitative and qualitative studies published over the previous two decades. They concluded that no robust evidence has emerged to support the effectiveness of psychological treatment for this subgroup. Sousa's findings reinforce the conclusions of earlier, more narrowly scoped reviews. For instance, Långström et al. (2013) reviewed both psychological and pharmacological interventions, including three RCTs and five prospective observational studies. The authors found no convincing evidence that treatment reduced recidivism among adult men convicted of sexual offences against children (14). Both Walton & Chou (2015) and Grønnerød et al. (2015) focused specifically on psychological treatment. Grønnerød and colleagues conducted the only meta-analysis and found a very small overall treatment effect ($d$ = 0.16) (137, 139). One key reason for these weak findings is that sexual recidivism rates among child sexual offenders are generally low, which limits statistical power (70, 140). Combined with ethical and practical challenges in conducting randomized trials, this contributes to a persistent lack of high-quality evidence.

While several meta-analyses support the overall effectiveness of treatment, they differ somewhat in their findings regarding moderators of treatment success. Gannon et al. highlighted program-level factors such as adherence to the Risk–Need–Responsivity (RNR) model and treatment staff qualifications as significant predictors of treatment effectiveness (135, 136). The RNR model holds that higher-risk individuals should receive more intensive treatment (risk), interventions should target dynamic risk factors (need), and delivery should be tailored to individual characteristics such as learning style and impulsivity (responsivity) (137). Holper et al. emphasized participant risk level, program specialization, and author confounding as key moderators, with stronger effects observed for medium- and high-risk offenders and specialized programs.

However, these findings from correctional settings are unlikely to generalize directly to clinical non-correctional populations of individuals voluntarily seeking help for SIC, as motivation for treatment, risk profiles, and therapeutic contexts differ. Additionally, the absence of validated risk assessment tools for non-offending individuals and the fact that forensic models such as the RNR framework have not been evaluated in voluntary treatment settings limit their applicability. In the absence of specific treatment guidelines, some evidence suggests that broader clinical frameworks may offer a more appropriate foundation for interventions in this population (141, 142).

### 1.6.5 Pharmacological treatment

According to the World Federation of Societies of Biological Psychiatry (WFSBP) guidelines, testosterone-lowering agents, primarily gonadotrophin releasing hormone agonists (GnRH agonists), are considered the most effective pharmacological option for severe paraphilic disorders, particularly when other treatments fail. Their efficacy in reducing testosterone levels and sexual drive is well established. Due to potential side effects, their use is recommended mainly for cases with moderate- to high-risk and under specialized medical supervision (80). However, the WFSBP guidelines also emphasize the lack of controlled studies in this field and the challenges of conducting such trials. Addressing this gap, one of the most methodologically rigorous pharmacological trials to date targeting men with SIC is the double-blind, placebo-controlled study by Landgren et al. (2020), conducted within the framework of PRIOTAB at ANOVA, Karolinska University Hospital. The trial evaluated the efficacy of degarelix, a GnRH antagonist, in reducing dynamic risk factors for committing CSA. Fifty-two help-seeking men diagnosed with PeD were randomized to receive either degarelix ($n$ = 26) or placebo ($n$ = 26). Results showed a statistically significant reduction in the composite risk score for CSA two weeks after treatment initiation. Side effects were common in the degarelix group, including injection site reactions (88%) and elevated liver enzymes (44%). Two participants were hospitalized due to increased suicidal ideation, underscoring the need for close clinical monitoring. Still, 77% reported perceived positive changes in sexual attitudes or behavior (143). Despite limitations such as brief follow-up, this study represents a milestone in preventive pharmacological research (144).

However, one criticism of the study is that most participants were not classified as high-risk for sexual offending, and in routine clinical practice, less invasive treatment options would likely be preferred for such individuals (145). According to current clinical guidelines, psychological interventions remain first-line, but if these are insufficient, selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine (40–60 mg/day) or sertraline (up to 200 mg/day) may be added (90). SSRIs are widely used in the treatment of psychiatric disorders, including depression, obsessive-compulsive disorder, and anxiety. In the context of CSBD and paraphilic disorders, their use is primarily based on their potential to reduce libido and alleviate associated symptoms such as anxiety, compulsivity, and impaired impulse control (90, 146).

Evidence regarding SSRIs in sexual offenders comes from case series and retrospective studies. A systematic review by Adi et al. analyzed nine case series (total $n$ = 225) evaluating SSRIs in sexual offenders, reporting reductions in self-reported sexual behaviors (147). Studies by Kafka and colleagues also demonstrated reductions in sexual behaviors in men with paraphilic disorders or CSBD, although individuals with SIC were generally not included (148-150). More specific evidence pertaining to individuals who have been convicted of child sexual offences includes retrospective studies and case reports indicating a reduced frequency and severity of paraphilic fantasies and sexual preoccupation associated with fluoxetine, sertraline, or fluvoxamine treatment (151-156). For example, Greenberg et al. reported reduced sexual fantasies in 43 men treated with SSRIs, while Coleman et al. found improvements in anxiety, obsessive-compulsive symptoms, depression, and deviant sexual fantasies in 13 men receiving fluoxetine combined with psychotherapy (153, 157). Winder et al. observed significant reductions in sexual compulsivity and preoccupation in 36 men convicted of sexual offences against children treated with fluoxetine (154).

To date, no RCTs have specifically evaluated SSRIs in individuals with SIC. While uncontrolled studies and case reports suggest SSRIs may help reduce sexual preoccupation and comorbid psychiatric symptoms in individuals with a history of sexual offending, the evidence remains limited and methodologically weak.

## 1.7 Impact on the mental health of family members

Qualitative research on family members of individuals convicted of sexual offences indicates that they experience significant adverse social, psychological, and economic consequences solely due to their association with the offender (158-160). These negative outcomes have been linked to factors such as public sex offender registries in the United States, media exposure of offenders' identities, and widespread negative public perceptions of sexual offenders. These perceptions are often extended to, and internalized by, innocent non-offending family members, contributing to isolation and emotional and social distress (161-164). Until recently, the experiences of family members of men convicted of CSAM offences have received minimal research attention. However, since the early 2020s, studies from Ireland (Kavanagh et al., 2023, 2024), Australia (Jones et al., 2022; Salter et al., 2022), the United Kingdom (Armitage et al., 2023; Duncan et al., 2022), and the United States (Evans et al., 2023) have begun addressing the experiences of this population. Although these studies do not specifically examine the healthcare needs of affected family members, they provide important insights that are relevant to healthcare providers. Findings indicate that discovering that a close relative is under investigation for CSAM offences is a distressing event (160, 165-170). Studies report suicidal thoughts and suicide attempts among partners, as well as the need to initiate or adjust antidepressant medication following the disclosure (165, 168). A consistent theme across the abovementioned studies is the lack of available mental health support. There is a need for crisis support in the period following a police raid, as well as longer-term access to psychotherapy or counseling to address feelings of shame, guilt, grief, and their detrimental impact on self-worth and self-esteem. The current situation and healthcare needs of family members of CSAM offenders in Nordic countries remains unexamined. Cultural and legal contexts in the Nordic region differ from those in countries where most previous research has been conducted, which may influence psychosocial outcomes for partners of CSAM offenders. In contrast to settings with, for example, public sex offender registries or extensive media exposure of offenders, Sweden has no public registry, and media are generally restrictive in publishing identifiable information (160, 162). These contextual factors underscore the relevance of studying partners' experiences in a Nordic setting.

## 1.8 Knowledge gap

Although SIC is recognized as a significant risk factor for CSA and CSAM offending, substantial gaps remain in the current literature. Despite increased focus on the importance of reaching individuals at risk and providing appropriate healthcare, most empirical research on men with SIC has been conducted in correctional contexts, where findings may not be generalizable to help-seeking individuals in the community. While knowledge of this population has grown in recent years, there is still limited understanding of help-seeking behavior, clinical characteristics, and psychiatric comorbidities in men with SIC in non-correctional settings. Findings related to neurodevelopmental factors remain inconsistent, and comprehensive assessments that integrate psychiatric, cognitive, and neuroimaging data are rare. Furthermore, although preventive interventions for individuals with SIC are being developed, evidence from rigorous evaluations remains limited. Pharmacological and psychological treatments, while recommended, have only rarely been assessed through RCTs in this population, with a few notable exceptions (119, 130, 143). Finally, the healthcare needs of family members of men suspected of CSAM offences remain poorly understood, despite evidence of significant psychosocial strain and barriers to accessing appropriate support. Addressing these gaps is essential to improve preventive strategies, develop treatment options, and strengthen healthcare support for both individuals with SIC and their close relatives.

# 2. Aims

## 2.1 Overall aim

The overall aim of this PhD project is to enhance clinical knowledge of sexual interest in children (SIC) among men seeking outpatient care by comprehensively assessing their clinical profiles, investigating potential neurodevelopmental factors, outlining a methodology for evaluating treatment options, and advancing the understanding of healthcare needs among their close relatives.

## 2.2 Specific aims of the individual studies

Study I: To describe clinical characteristics, including risk factors for sexual violence, in men and women contacting the national Swedish telephone helpline PrevenTell during the period from the launch in March 2012 to October 2019, with a special focus on individuals reporting a sexual interest in children.

Study II: To assess differences in brain structure, psychiatric morbidity, and general cognitive ability in men with pedophilic disorder (PeD) compared to healthy controls, and to investigate associations between pedophilia-related brain abnormalities, IQ, and 2D:4D ratios as a marker of prenatal androgen exposure.

Study III: To design and conduct an initial evaluation of a randomized controlled add-on trial, evaluating the effectiveness of treatment with fluoxetine and internet-delivered cognitive behavioral therapy (iCBT) in reducing problematic sexual behaviors in men with SIC.

Study IV: To explore the impact on female partners of the discovery that their significant other is suspected of child sexual abuse material (CSAM) offences.

## 2.3 Specific research questions in Studies I–IV

1. What is the frequency and co-occurrence of sexuality-related risk factors for sexual violence in men and women contacting PrevenTell? (Study I).

2. Are there differences between help-seeking men and women contacting PrevenTell regarding sexual, socioeconomic, and mental health variables? (Study I).
3. What is the age and gender preference in the subgroup of individuals sexually attracted to children? (Study I).
4. Is it possible to identify biomarkers and clinical factors associated with PeD using magnetic resonance imaging (MRI), psychiatric assessment, and cognitive testing? (Study II).
5. Are brain measures related to markers for aberrant neurodevelopment including IQ and the 2D:4D ratio? (Study II).
6. Can the recruitment process for the clinical trial be completed within the projected timeframe? (Study III)
7. Research questions addressing the specific aim of the clinical trial (Study III)[1].
   Is add-on therapy with fluoxetine or iCBT more effective than a standalone psychoeducational program in achieving:

a) reduced problematic sexual behaviors in men with SIC?
b) reduced symptoms of psychiatric comorbidity?
c) reduced perceived loneliness?
d) reduced cognitive distortions and emotional congruence with children?
e) improved quality of life?

8. What are the healthcare needs of the female partners of men under investigation for CSAM offences? (Study IV).
9. What advice can be given to healthcare providers regarding the support and treatment of partners of CSAM offenders? (Study IV).

[1] All secondary objectives of Study III are presented in Table 1, Paper III.

# 3. Methods

The four studies included in this thesis applied different study designs, populations, data, and analytic methods as summarized in Table 1.

**Table 1.**
*Overview of aims and methods in Studies I–IV.*

| Study | Aim | Design | Population | Data | Main analytic methods |
|---|---|---|---|---|---|
| I | To describe clinical and risk characteristics of PrevenTell callers. | Descriptive study. | Help-seeking adults ($n$ = 1,573) with problematic sexual behaviors. | Structured interviews on demographics, sexual behaviors, and mental health. | Descriptive statistics; $t$/Mann–Whitney U and $\chi^2$ tests for group comparisons (men vs. women); effect size: Cohen's $d$. |
| II | To assess brain structure and psychiatric morbidity in men with PeD and explore associations with IQ and 2D:4D. | Case-control study. | Men with DSM-5 PeD ($n$ = 55) compared to HCs ($n$ = 57). | MRI, psychiatric assessments, anthropometric measures, and cognitive tests. | Descriptive statistics; $t$/Mann–Whitney U and $\chi^2$ tests for group comparisons (PeD vs. HC); effect size: Cohen's $d$.<br><br>Vertex-wise cortical analyses (age-adjusted); ANCOVA for volumes; sensitivity and PLS analyses. |
| III | To evaluate fluoxetine and iCBT as add-on treatments for problematic sexual behaviors in men with SIC. | Open randomized controlled add-on study. | Men with SIC ($n$ = 111). | Primary outcome: SIC: CAS.<br><br>Secondary outcomes: Self-reports of dynamic risk factors for sexual offending. | Linear mixed-effects models (intention-to-treat, random intercepts/slopes); covariates added for imbalance; blinded analysis. |
| IV | To explore the impact on female partners of the discovery that their significant other is suspected of CSAM offences. | Qualitative interview study. | Female partners ($n$ = 8) of suspected CSAM offenders. | Transcribed semi -structured interviews. | Reflexive thematic analysis. |

Abbreviations: PeD = pedophilic disorder; 2D:4D = The 2nd to 4th digit ratio; HC = Healthy control; PLS = partial least squares regression; iCBT = internet-delivered cognitive behavioral therapy; SIC = sexual interest in children; SIC: CAS = The Sexual Interest in Children: Current Assessment Scale; CSAM = child sexual abuse material.

## 3.1 Study setting and recruitment

The studies included in this thesis were conducted at ANOVA, a multidisciplinary clinical and research center in the field of sexual medicine, andrology, and transgender medicine and home to the PrevenTell helpline at Karolinska University Hospital in Stockholm, Sweden. The primary focus of the sexual medicine unit is the assessment and treatment of individuals at risk of committing sexual offences, although support is also frequently extended to their close relatives. Men with SIC will be recruited through PrevenTell (Study I–III). Participants in Study IV were recruited via their partners, who participated in Study III.

## 3.2 Clinical evaluation and measures

### 3.2.1 Diagnostic assessment (Studies I–III)

In Study I, a semi-structured telephone screening interview was conducted by medically trained personnel (e.g., licensed psychologist or nurse), with expertise in sexual medicine and experience in treating the target group. The interview included questions on sexual history and current problematic sexual behavior.

In Study II, PeD was assessed on site by a board-certified psychiatrist using a structured interview based on the DSM-5 criteria.

In Study III, SIC is independently evaluated by a board-certified psychiatrist and a licensed psychologist. The psychiatrist conducts a structured interview based on DSM-5 criteria for PeD and hebephilia, and uses the Mini International Neuropsychiatric Interview (M.I.N.I., version 7.0.1) to facilitate a differential diagnosis between SIC and other psychiatric disorders. The M.I.N.I. is a structured diagnostic interview assessing both current and lifetime episodes of common psychiatric disorders, including antisocial personality disorder (107). The Columbia Suicide Severity Rating Scale (C-SSRS) is used to support the clinical assessment of suicidal ideation and behavior (171). The psychologist conducts a semi-structured interview focusing on behaviors associated SIC, such as sexual fantasies involving children and the use of CSAM. Sexual age preference is assessed using Tanner-scales (23, 24).

### 3.2.2 Anthropometric measures and intelligence (Study II)

Participants' height, weight, and 2D:4D was measured by a research nurse. Digit lengths were measured from the basal crease to the fingertip using a vernier caliper. Handedness was assessed using a Swedish version of the Edinburgh Handedness Inventory (EHI) (172). Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV) was used to assess intellectual function. The WAIS-IV includes 10 core subtests that yield composite scores across four cognitive domains: Verbal Comprehension Index (VCI), Perceptual Reasoning Index (PRI), Working Memory Index (WMI), and Processing Speed Index (PSI). The full-scale intelligence quotient (FSIQ), representing overall intellectual ability, is derived from these four indices (173).

### 3.2.3 Structural MRI image acquisition (Study II)

The MRI was performed at Karolinska University Hospital in Huddinge, Sweden, using a 3T medical scanner (Siemens Prisma). Structural T1-weighted images were acquired to obtain measures of cortical volume, thickness, and surface area for each participant. Image processing was conducted using the semi-automated cortical surface reconstruction and parcellation methods implemented in FreeSurfer version 6.0 (174, 175). FreeSurfer also provided segmentation of subcortical structures, cortical parcellations based on the Desikan–Killiany atlas, and white matter (WM) volumes underlying these cortical regions. These neuroimaging metrics were extracted for secondary analyses, including multivariate classification analyses (described below). A board-certified neuroradiologist examined MRI images to rule out signs of neuropathology.

### 3.2.4 Self-report measures (Studies II–III)

Self-report scales were used in Study II and are currently being used in Study III for both screening purposes and as primary and secondary outcome measures. An overview of the measures and their respective roles in Studies II and III is presented in Table 2. A description of all self-report measures regarding sexuality, psychiatric symptoms, quality of life, treatment satisfaction, and side effects can be found in Study III, Supplementary Table 1.

**Table 2.**
*Self-report measures used in Studies II and III and their function in each study*

| **Sexuality-related measures** | Study II | Study III | **Measures of psychiatric symptoms** | Study II | Study III |
|---|---|---|---|---|---|
| BMS | | SO | ASEBA-ASR | | SE |
| C-ECWC | | SO | ASRS | SO | SE |
| HBI | SO | SO | AUDIT | SO | SE |
| LASSIE | | SE | BIS | | SE |
| SChiMRA | | SO | CTQ-SF | | SE |
| SCS | | SO | DERS-16 | | SO |
| SSIC | | SE | DUDIT | SO | SE |
| SIC: CAS | | PO | HADS | | SO |
| | | | MADRS-S | | SO |
| | | | PID-5 | | SE |
| | | | RAADS-14 | SO | SE |
| **Measures of life satisfaction** | | | **Measures of treatment satisfaction and side effects** | | |
| BBQ | | SO | CSQ-8 | | SO |
| PSS | | SO | NEQ | | SO |
| R-UCLA | | SO | UKU | | SM |

Abbreviations: Primary outcome (PO); Screening/eligibility (SE); Secondary Outcome (SO); Safety Measure (SM).

### 3.2.5 The Sexual Interest in Children: Current Assessment Scale (SIC: CAS)

There was previously no gold-standard questionnaire or assessment method for measuring changes in problematic sexual behaviors in men with SIC. To address this gap, the SIC: CAS was developed by the ANOVA research team in collaboration with Umeå University. This self-report scale is a modified version of the Hypersexual Disorder: Current Assessment Scale (HD:CAS) (176). The HD: CAS has previously been used in research at ANOVA to evaluate both pharmacological and non-pharmacological interventions in men diagnosed with CSBD, with or without paraphilic interests (177-179). The SIC: CAS was designed to assess changes in sexual behavior, as well as perceived distress, functional impairment, and loss of control related to SIC over the preceding two weeks. The scale consists of two parts. Part 1 covers specific behaviors associated with SIC (e.g., masturbation and viewing animated material depicting children). Part 2 asks participants to rate their level of preoccupation with the behaviors listed in Part 1, as well as the degree to which these behaviors affect daily functioning and cause distress. Items in Part 2 (items 1–8) are rated on a Likert scale ranging from 0 to 4, yielding a total score between 0 and 32. The full set of items is presented in Figure 3, Paper III.

## 3.3 Statistics

### 3.3.1 Demographics and clinical variables in Studies I and II

Group differences in demographic, anthropometric, and clinical variables in Study I and Study II were assessed with IBM SPSS Statistics version 25. A two-tailed p-value of $< 0.05$ was considered statistically significant. Independent sample t-tests were used for normally distributed data (assessed by skewness), while the Mann-Whitney U-test was applied for non-normally distributed data. Dichotomous variables were compared using the chi-square ($\chi^2$) test. Cohen's d was used as a standardized measure of effect size across group comparisons, regardless of the statistical test applied. For parametric data, Cohen's d was calculated as the standardized mean difference. For non-parametric data, it was estimated using biserial rank correlations. For categorical data, Cohen's d was calculated from frequency tables using the Practical Meta-Analysis Effect Size Calculator (180) developed by the Campbell Collaboration and based on the methodology of Lipsey and Wilson (2001) (181). In Study I, Cramér's V was used to report effect sizes for contingency tables larger than 2×2.

### 3.3.2 Brain imaging measures

Group differences in cortical brain structure between individuals with PeD and HCs were examined at the vertex level. In the main analysis, the effect of group (PeD vs. HC) was tested on cortical thickness and white matter (WM) surface area as primary outcomes (age included as a covariate). Cortical volume comparisons were included as a supplementary analysis. Subcortical volumes and regional WM segmentations were compared using ANCOVAs in SPSS (v25). To test the sensitivity of the results to potential confounders, sensitivity analyses were conducted by extracting mean values from significant clusters and re-testing group differences while adding potential confounders (e.g., comorbidities, medication) as covariates or excluding individuals where relevant. Associations between brain morphology and 2D:4D ratios were examined at the vertex level, along with subcortical and white matter volumes. Finally, multivariate partial least squares (PLS) classification was used to differentiate PeD from HCs based on global morphometric patterns, yielding a "PeD abnormality expression score" for each participant (182). This score was then correlated with 2D:4D, FSIQ, and other clinical variables identified in sensitivity analyses.

### 3.3.3 Statistical analysis plan Study III

*3.3.3.1 Sample size calculations*

The RCT includes three arms: a control group receiving an internet-delivered psychoeducational program (iPP) and two active treatment groups receiving either iPP combined with fluoxetine or iPP combined with iCBT. When analyzing the results, each of the two active treatment groups will be compared with the control group using two separate comparisons (iPP vs. iPP+fluoxetine, and iPP vs. iPP+iCBT). Variance component estimates necessary for the power analysis were obtained from data using HD: CAS in a previous CBT study involving men with hypersexual disorder (177). The primary outcome measure SIC: CAS was assumed to be psychometrically equivalent to HD: CAS. Based on these parameters, a total sample size of 110 participants was estimated to provide 80% power to detect a 0.29-point difference in the biweekly change of SIC: CAS between groups, using a linear mixed-effects model with random intercepts and slopes, at a two-sided significance level of 0.05 (183).

*3.3.3.2 Analysis of final data*

Data will be analyzed according to the intention-to-treat principle using mixed-effects models, as outlined in the sample size section. If significant group imbalances are detected, relevant covariates will be included in the models. Subgroup effects will be explored via interaction terms. Mixed models account for participant attrition under the assumption of data missing at random, which will be assessed by examining reasons for dropout. The statistician will remain blinded to group allocation throughout the analysis.

## 3.4 Procedures

### 3.4.1 Study I

This non-interventional study presents descriptive data from structured telephone interviews with men and women who contacted the PrevenTell helpline due to self-identified problematic sexual behaviors. The aim was to describe clinical characteristics of the callers, including risk factors for sexual violence, with a special focus on individuals reporting a sexual interest in children. The study was approved by the Regional Ethical Review Board in Stockholm (2015/1391-31/5).

#### *3.4.1.1 Inclusion and exclusion criteria*

Inclusion criteria were: (1) first-time caller to the helpline; (2) age 16 years or older; (3) reported problematic sexual behavior(s); and (4) provided informed consent after the study procedure was explained.

Individuals were excluded if they (1) were notably under the influence of alcohol or drugs at the time of the call; (2) provided irrelevant or inconsistent responses; or (3) contacted the helpline for issues unrelated to problematic sexual behavior, such as relationship problems or sexual dysfunction. The latter were categorized as “non-target” and excluded from analysis.

#### *3.4.1.2 Procedure*

Data were collected between March 2012 and October 2019 through a structured telephone screening interview lasting approximately 45 minutes. The interview guide included questions on sociodemographic background, sexual history, mental health (including suicide risk assessment), and potential sexuality-related risk factors for committing sexual violence. The interview concluded with an intervention that included (1) offering an appointment at ANOVA; (2) facilitating contact with other appropriate healthcare services; or (3) encouraging ambivalent callers to reconnect in the future, thereby increasing the likelihood of treatment engagement. Four DSM-5 paraphilic interests were assessed in the interview: pedophilia, voyeurism, frotteurism, and exhibitionism. Additionally, sexual preference for coercion, defined as a persistent sexual interest in forcing a non-consenting person into sexual activity, was also included (184, 185). A sexual interest in children was explored regarding age and gender preference, and whether the subject had ever used CSAM and/or committed CSA. Age preferences were categorized as pedophilia (< 11 years old), hebephilia (11–14 years old), or ephebophilia (15–17 years old) (8).

### 3.4.2 Study II

This case-control study was conducted within the clinical trial and research project PRIOTAB (143). The aim was to compare brain structure, psychiatric morbidity, and psychological functioning between men with DSM-5 diagnosed PeD and matched HCs, and to explore associations between pedophilia-related brain abnormalities, cognitive functioning, and 2D:4D ratios as a proxy indicator for prenatal androgen exposure. Fifty-five adult men with PeD and 57 age- and sex-matched

HCs completed baseline clinical assessments; MRI data were obtained from 54 participants with PeD and 50 HCs. All provided written informed consent. The study was approved by the Swedish Central Ethical Review Board (Ö 26-2014).

### *3.4.2.1 Inclusion and exclusion criteria*

Inclusion criteria were: (1) provided written informed consent; (2) aged 18 to 66 years; (3) male; (4) referred or self-referred for assessment; and (5) diagnosed with DSM-5 PeD.

**Table 3.**
*Inclusion and exclusion criteria for clinical cohorts in Studies II and III*

| | **Study II** | **Study III** |
|---|---|---|
| Inclusion criteria | | |
| Written informed consent. | X | X |
| 18 to 65 years. | X[a] | X |
| Referred or self-referred for assessment | X | |
| Male. | X | X |
| Able to read and communicate in Swedish | | X |
| Have access to computer and internet. | | X |
| Diagnosed with PeD or hebephilia | X[b] | X |
| Agree to participate in all study visits including providing blood and urine samples. | | X |
| Exclusion criteria | | |
| Severe psychiatric [c] or physical illness [d]. | X | X [e] |
| Moderate to high risk for committing child sexual abuse: Contact-driven, loss of control over such impulses, and access to children. | | X |
| Recreational drug use in the past month. | X [f] | X |
| Risk consumption of alcohol in the past month. | | X |
| Change of concurrent medication in the past three month. | | X [g] |
| Treatment in the past month with opioids or benzodiazepines. Intermittent treatment is tolerated. | | X |
| Ongoing psychotherapy. | | X |
| Mental condition that could negatively influence either the participant's health or the scientific aspects of the study. | X | X |
| Any contraindications to the trial drug [h]. | X | X |
| Participation in other studies outside ANOVA. | X | X |
| Physical or psychological factors contraindicating magnetic resonance imaging. | X | |

*Notes*: [a] 18 to 66 years in Study II; [b] Only men with pedophilic disorder according to DSM-5; [c] For example, ongoing psychosis and severe depression; [d] For example, signs of liver disease or kidney disease; [e] Additional exclusion criteria include any known heart disease, epilepsy, or diabetes mellitus; [f] Only severe ongoing substance-related disorders; [g] Antidepressants, ADHD medication, mood stabilizers, antipsychotics, cortisone, testosterone, or dopamine precursors; [h] According to the SmPC.

### *3.4.2.2 Procedure*

Men aged 18–66 who contacted the PrevenTell helpline and reported a sexual interest in prepubescent children were re-contacted by a board-certified psychiatrist, who provided detailed study information and assessed eligibility. Eligible participants were invited to the ANOVA clinic where they provided written informed consent and underwent baseline assessments including structured diagnostic interviews, self-report questionnaires, anthropometric measurements, neuropsychological testing, blood sampling, and brain MRI. Diagnosis of PeD was confirmed through a structured DSM-5-based interview conducted by a board-certified psychiatrist. HCs, screened and confirmed negative for PeD, were recruited via the Karolinska Trial Alliance using the same exclusion criteria.

### 3.4.3 Study III

This ongoing open randomized controlled add-on trial includes three parallel arms: (1) an internet-delivered psychoeducational program (iPP; control intervention); (2) iPP combined with fluoxetine (20–40 mg/day); and (3) iPP in combination with internet-delivered cognitive behavioral therapy (iCBT). The aim of the study is to evaluate whether add-on therapy with fluoxetine or iCBT is more effective than a standalone psychoeducational program for the reduction of problematic sexual behaviors in men with SIC. One hundred and eleven men will be recruited via PrevenTell. The primary endpoint is assessed at week 14. Post-trial, all participants are encouraged to continue treatment at ANOVA, and those in the control arm may access iCBT and/or pharmacological treatment if clinically indicated. The first participant was enrolled in March 2022 and recruitment is projected to be concluded in the first quarter of 2028.

#### *3.4.3.1 Inclusion and exclusion criteria*

Inclusion criteria are: (1) provision of written informed consent; (2) aged 18–65 years; (3) male;(4) able to read and communicate in Swedish; (5) access to a computer and internet; (6) diagnosed with PeD according to DSM-5 criteria or hebephilia; and (7) agree to participate in all trial visits including providing blood and urine samples.

#### *3.4.3.2 Screening procedures*

Male PrevenTell callers reporting sexual interest in children are invited to consent to a follow-up call for study information and eligibility screening. Eligible individuals attend two psychiatrist and two psychologist visits at the ANOVA clinic. Psychiatrist visits include informed consent, urine and blood sampling, and DSM-5-based diagnostic interviews. Psychologist visits involve completion of self-report measures and structured interviews. To minimize observation bias, a psychiatrist and a psychologist independently assess and confirm diagnosis and eligibility. For detailed screening procedures, interventions, and assessments, see the SPIRIT schedule (Figure 2, Paper III).

*3.4.3.3 Randomization*

Eligible individuals will be randomized consecutively in a 1:1:1 ratio. Randomization will be performed by the research nurse using opaque sealed envelopes supplied by the external Karolinska Trial Alliance. The allocation sequence will be concealed from participants and the research team.

*3.4.3.4 Follow-up procedure*

All participants receive follow-up via phone (days 3–5), video call (week 4), and an on-site visit (week 14). Those in the iPP or iPP+fluoxetine group also have an additional video call follow-up at week 8. An overview of all study visits is presented in Figure 1. In a separate long-term follow-up, participants will be assessed at 6 months, 12 months, and 5 years after study initiation, with the possibility of obtaining criminal records data for up to 15 years after study start.

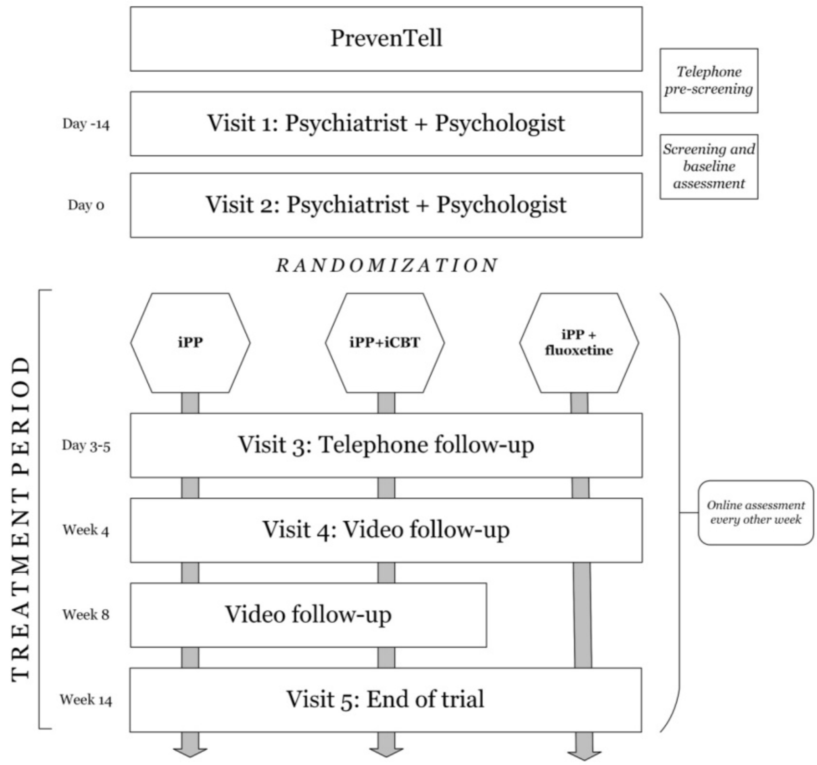


*Figure 1, Overview of study visits in Study III*

### *3.4.3.5 Data collection*

The study utilizes the BASS web platform from eHealth Core Facility, Karolinska Institutet, for data collection, including screening and outcome self-report measures. Participants in the iPP+fluoxetine group report medication adherence and adverse events via the platform. Suicidal ideation is monitored using item 9 of the MADRS-S. The platform also provides access to iPP and iCBT, and enables secure written communication between participants and the psychologist. It is monitored daily by the research team.

### *3.4.3.6 Interventions*

For an overview of the internet-delivered psychoeducational and CBT programs, see Table 3 in Paper III. The iPP includes four text-based modules covering paraphilic disorders, CSBD, common comorbidities (e.g., depression, anxiety), consequences of child sexual abuse, and relevant Swedish laws. The program does not include behavioral interventions. Participants submit written reflections after each module for which they receive feedback from a designated psychologist.

The iCBT program consists of 10 modules delivered in a fixed sequence and incorporates core components of CBT targeting behavioral change, including value-based goal setting, identification of behavioral surpluses and deficits, functional analysis, and behavioral experiments. It addresses key risk factors for sexual recidivism, including sexual preoccupation, sexualized coping, offence-supportive attitudes, self-regulation difficulties, and social isolation (12). Participants complete weekly homework assignments for each module and receive individual feedback from a designated psychologist before proceeding.

Participants in the iPP in combination with fluoxetine group start with 20 mg fluoxetine/day, with the option to increase to 40 mg/day after four weeks based on clinical evaluation. Fluoxetine was chosen due to clinical familiarity and its suitability for dose adjustment. The drug is provided by the hospital pharmacy at Karolinska University Hospital. Non-adherence for more than five consecutive days is considered a dropout case. Compliance is monitored via pill count and plasma fluoxetine levels (see Figure 2, Paper III). Adverse reactions are assessed using the UKU Side Effect Rating Scale, and serious adverse reactions are reported in accordance with Swedish regulatory guidelines. Participants may continue fluoxetine treatment after the trial ends.

### 3.4.4 Study IV

#### *3.4.4.1 Study design*

This qualitative interview study explored the impact on female partners of the discovery that their significant other is under investigation for CSAM offences, with a particular focus on their healthcare needs. Data were analyzed using reflexive thematic analysis (reflexive TA), as described by Braun and Clarke (186, 187). Reflexive TA is well-suited for exploratory research where prior knowledge of the research questions is limited. The approach enables detailed analysis of the study participants' experiences and needs at the semantic level while acknowledging the researcher's active role in developing and interpreting patterns in the data (186-189) . The choice of this approach was further guided by the knowledge and experience of the research team, and the practical methodological guidance provided by Braun and Clarke (190). The study was guided by the principle of equitable, health-promoting healthcare in Sweden, which emphasizes accessibility, non-discrimination, prevention, and support regardless of an individual's social or legal status. This framework informed the development of the interview guide, the interview approach, and the analytical process.

### *3.4.4.2 Eligibility*

Inclusion criteria include: (1) partner to participant in Study III; (2) signed informed consent; and (3) able to understand oral and written Swedish.

### *3.4.4.3 Participant characteristics*

Eight women participated in the study. Their ages ranged from 30 to 63 years ($M$ = 46.25, $SD$ = 10.53). It should be noted that a police investigation involving the partner was not an inclusion criterion. However, in all cases where a partner existed and the participant in Study III provided consent for contact, the circumstances were such that a police investigation had been initiated.

The time between the police raid and the participants' enrollment in the study ranged from 2 to 7 months ($M$ = 3.5, $SD$ = 1.66). None of the male partners had been sentenced at the time of the interviews. Five of the participants had minor children living at home. At the time of the raid, four women were married, three were cohabiting, and one was in a living-apart-together relationship. At the time of the interview, some participants had ended their relationship, while others had chosen to remain, though all expressed uncertainty about the future of the relationship. For consistency, the term partner is used throughout to describe the relationship.

### *3.4.4.4 Procedure*

Female participants in Study IV were recruited via the male participants enrolled in Study III. If a trial participant in Study III consented to their female partner being contacted, and the partner agreed to be approached, the principal investigator or study psychologist initiated contact by telephone to provide further information about the qualitative study. Women who expressed interest were subsequently invited to ANOVA, where they received written information about the study procedures and were asked to provide their informed consent. Data were collected via semi-structured interviews that followed an interview guide to explore three main areas: (1) how participants became aware of their partner's sexual interest in children; (2) the personal, emotional, relational, and social impact of this discovery; and (3) perceived needs and experiences of professional support. Questions were intentionally phrased broadly (e.g., impact rather than symptoms, professional rather than healthcare support) to avoid steering participants toward clinical framings. All interviews were recorded, and the subsequent transcription of the interviews was outsourced to a professional transcription service. The interviews ranged from 53 to 71 minutes in length, with a mean duration of approximately 64 minutes.

#### *3.4.4.5 Analysis*

The present study used Braun and Clarke's suggestions for a six-phase analytic process. These phases are as follows: (1) Familiarizing yourself with your data; (2) Generating initial codes; (3) Searching for themes; (4) Reviewing themes; (5) Defining and naming themes; and (6) Producing the report (186, 187). To ensure transcription accuracy, the first author of the study reviewed all interview recordings against their transcripts. The entire research team then read the transcripts (all of them or a subset) to ensure familiarity with the data. In Phase 2, the first author generated initial codes using NVivo 14 (191); in Phase 3, preliminary themes and sub-themes were developed through abstraction and interpretation of the coded data. During Phase 4, the themes and sub-themes were reviewed by the research team to evaluate their internal homogeneity and external heterogeneity in relation to the dataset. This process emphasized reflexivity rather than consensus among team members. Team members from different professional backgrounds acted as "critical friends," offering expert input and challenging interpretations (192). The discussions resulted in refinement, merging, or redefinition of themes and sub-themes. The first author subsequently reread and applied all codes to the entire dataset. In Phase 5, the first author drafted the results section, proposed names for each theme, and selected representative data extracts. The research team collaboratively reviewed and refined the theme structure to ensure clarity and comprehensiveness. In the final phase, the first author prepared the manuscript draft, which was reviewed and approved by all authors.

#### *3.4.4.6 Information power*

The concept of saturation in qualitative research implies a point at which additional data collection no longer yields new or relevant information from the dataset (193). At the outset of Study IV, the aim was to interview ten participants. This was based on previous research suggesting that studies involving relatively homogeneous samples and focused research questions often reach saturation with this number (194). However, as the research team developed a deeper understanding of reflexive TA, the goal of achieving saturation was reconsidered. Saturation, as defined above, can be seen to conflict with the principles of reflexive TA, which emphasize that knowledge production is an ongoing process shaped by the researchers' reflexive engagement with the data (189). Braun and Clarke warn that the concept often is used as a "shorthand simply to rationalize and validate the sample size" (195). Instead, the study adopted the concept of *information power* to guide sample size decisions. According to this approach, the more relevant and rich the information provided by participants, the fewer interviews are needed to adequately address the research question (196). After the first four interviews were transcribed, the research team reviewed them and held a seminar to discuss the need for further data collection. The interviews were found to contain exhaustive and complex accounts of experiences, indicating that fewer than 10 interviews would be sufficient. Recruitment was therefore concluded after eight interviews.

# 4. Main results

The main results from the four studies are presented below, each corresponding to the specific research questions of this thesis.

## 4.1 Study I

### 4.1.1 Sexuality-related risk factors in men and women contacting PrevenTell

A total of 1,573 individuals (1,454 men, 119 women) were included after providing informed consent. Compulsive sexual behavior was reported by 69% ($n$ = 988), and 56% ($n$ = 827) endorsed at least one paraphilic interest. Acting on these interests toward non-consenting persons was most common among those with exhibitionistic interests (60%), followed by voyeuristic (46%), frotteuristic (42%), and coercive interests (20%). Co-occurrence with compulsive sexual behavior was high across all groups: 81% among those with voyeuristic interests, 82% with frotteuristic, 83% with exhibitionistic, and 77% with coercive interests. Missing data remained below 10% for all variables.

### 4.1.2 Differences between men and women

There was no significant difference between men and women in reported prevalence of compulsive sexual behavior (Cohen's $d$ = 0.23, $p$ = 0.056). However, men were more likely to report at least one paraphilic interest ($d$ = 0.29, $p$ = 0.012). Specifically, pedophilic ($d$ = 0.36, $p$ = 0.024) and voyeuristic ($d$ = 0.50, $p$ < 0.001) interests were more common among men. The purchase of sexual services was more prevalent among men ($d$ = 1.61, $p$ < 0.001). Men and women also differed significantly on the composite variable "Any problematic sexual behavior" (defined as: compulsive sexual behavior, any paraphilic interest, purchase of sexual services, hands-on sexual offence, or use of CSAM) ($d$ = 0.38, $p$ = 0.022). Men were older ($d$ = 0.33, $p$ < 0.001), more likely to be employed ($d$ = 0.66, $p$ < 0.001), and more often in a current relationship ($d$ = 0.41, $p$ < 0.001). They were also less likely to report a history of mental health problems ($d$ = –0.87, $p$ < 0.001) or to have been victims of sexual abuse ($d$ = –1.33, $p$ < 0.001).

### 4.1.3 Clinical characteristics of of individuals with SIC

A pedophilic interest was reported by 346 individuals (24%), of whom 332 (96%) were men. Most ($n$ = 260; 80%) reported a preference for girls, with the most common age preference being 11–14 years ($n$ = 123; 43%). Self-reported use of CSAM was noted in 215 (63%) cases, and 51 (15%) disclosed a history of hands-on child sexual abuse. Mental health problems were commonly reported ($n$ = 203; 62%), and 107 (33%) revealed current suicidal ideation or plans.

### 4.1.4 Concluding intervention

A total of 55% of all participants ($n$ = 739) disclosed their identity and were referred to ANOVA for further clinical intervention. Among individuals reporting a pedophilic interest, 57% ($n$ = 172) disclosed their identity and were likewise referred to ANOVA.

## 4.2 Study II

### 4.2.1 Psychiatric characteristics

According to the MINI interview, participants with PeD were significantly more likely than HCs to meet diagnostic criteria for current major depressive episodes (Cohen's $d$ = 1.64; $p < 0.001$), dysthymia ($d$ = 1.40; $p < 0.001$), social anxiety disorder ($d$ = 1.74; $p < 0.001$), obsessive-compulsive disorder ($d$ = 1.40; $p < 0.001$), and antisocial personality disorder ($d$ = 1.32; $p$ = 0.008). Ongoing treatment with antidepressants was significantly more common among participants with PeD ($d$ = 1.05; $p$ = 0.002), as was the use of other psychoactive medications, including mood stabilizers and sedative-hypnotics ($d$ = 0.90; $p$ = 0.009). Participants with PeD also reported significantly higher levels of hypersexual symptoms on the HBI scale ($d$ = 2.50; $p < 0.001$). In addition, clinically significant symptoms of ADHD (as measured by the ASRS-v1.1; $d$ = 0.65; $p$ = 0.009) and ASD (RAADS-14; $d$ = 1.57; $p <$ 0.001) were more frequently found in the PeD group. No statistically or clinically meaningful differences were observed between groups in terms of self-reported alcohol use disorder ($d$ = −0.21; $p$ = 0.495) or drug use disorder ($d$ = 0.45; $p$ = 0.426).

### 4.2.2 Cognitive testing

According to WAIS-IV cognitive testing, men with PeD had significantly lower FSIQ compared to HCs ($d$ = −0.82; $p < 0.001$), primarily driven by differences in the Verbal Comprehension Index. However, the average scores among participants with PeD remained within the normative population range (93–107).

## 4.2.3 Magnetic resonance imaging

### *4.2.3.1 Main analyses: differences in structural brain imaging measures*

Compared to HCs, individuals with PeD demonstrated significantly reduced cortical surface area across multiple regions, including the bilateral ventromedial prefrontal cortex (vmPFC), caudal and posterior cingulate cortex, precuneus and paracentral cortex, supramarginal and superior/inferior parietal cortex, left fusiform/inferior temporal and lingual cortex, middle and superior temporal cortex, insula, and lateral prefrontal cortex, extending into the pre- and postcentral cortex. These reductions were accompanied by lower cortical volume in largely overlapping areas, though to a lesser degree. No differences in cortical thickness were observed between groups. Effect sizes ranged from medium ($d$ = 0.59) to large ($d$ = 1.12).

### *4.2.3.2 Secondary analyses: differences in subcortical and WM volume*

Individuals with PeD showed significantly reduced bilateral hippocampal and right nucleus accumbens volumes compared to HCs. In addition, lower white matter (WM) volume was observed in regions that largely overlapped with areas where cortical surface area reductions were found. No brain regions showed significantly greater volume in the PeD group compared to HCs.

### *4.2.3.3 Sensitivity analyses*

Group differences remained largely robust after adjusting for demographic and clinical variables. However, several white matter and subcortical volume differences lost significance when controlling for intracranial volume (ICV) or FSIQ; these factors are potentially linked to the PeD phenotype. Thus, such adjustments may obscure meaningful effects and should be interpreted cautiously. Controlling for sexual offending also attenuated group differences in white matter volume beneath the right caudal anterior cingulate, right paracentral, and left posterior cingulate cortex.

### *4.2.3.4 Analyses of correlation with 2D:4D*

Both positive and negative correlations were observed in the PeD group between 2D:4D ratios and cortical surface area, thickness, and volume.

These correlations largely overlapped with brain regions showing PeD-related structural abnormalities.

*4.2.3.5 Correlations between brain morphometric characteristics and FSIQ*

The global brain morphometric abnormality pattern associated with PeD is distinguished by reduced parietal, temporal, and prefrontal volumes, and was significantly associated with lower FSIQ. This correlation was observed not only across the full study population but also within the PeD and HC groups separately, suggesting that the relationship between brain structure and FSIQ is not solely driven by group differences, but may reflect a more general neurocognitive pattern.

# 4.3 Study III

## 4.3.1 Evaluation of the recruitment process

Following a 20-month recruitment period, the collected data was analyzed to estimate the minimum required number of individuals to be screened and the anticipated length of the data collection phase. This evaluation showed that 146 men contacted the PrevenTell helpline and reported a sexual interest in children. After the initial telephone pre-screening, $n$ = 110 (78%) were excluded from trial participation (see Figure 1, Paper III, CONSORT diagram of the trial procedures). The main reasons for exclusion were (1) current SSRI treatment ($n$ = 24; 22%); (2) denial of sexual interest in children in Tanner stage 1–3 ($n$ = 16; 15%); and (3) an elevated risk of committing contact sexual offences ($n$ = 14; 13%). Additionally, 18 men (16%) declined participation; the main reason for declining to participate was the distance from their residence to the clinic ($n$ = 9; 8%). Of the 31 men screened on site, 26 men were randomized to receive either iPP, iPP+fluoxetine, or iPP+iCBT.

## 4.3.2 Research questions addressing the specific aim of the clinical trial

Study enrollment began in March 2022 and remains ongoing; consequently, the findings related to the aim and specific research questions of the clinical trial are not presented in this thesis.

## 4.4 Study IV

### 4.4.1 Healthcare needs of female partners of men under investigation for CSAM offences

Two themes and five sub-themes were generated in the analytic process. Theme one Healthcare needs encompasses the adverse effects on the participants' mental health and their various healthcare needs on discovering that their significant other is under investigation for CSAM offences and has a sexual interest in children. The theme has the following sub-themes: (1) Need for crisis support; (2) Need for medical evaluation; and (3) Need for counseling.

The second theme Barriers to care encompasses participants' descriptions of perceived barriers to seeking and receiving support. This theme has two sub-themes: (1) Barriers to seeking support from family and friends; and (2) Barriers to accessing healthcare. A summary of the findings is presented below, organized according to these sub-themes.

### 4.4.2 Need for crisis support

The first sub-theme highlights the participants' need for crisis support. The police raid and subsequent disclosure of the partners' CSAM offences and SIC were described as profoundly distressing by the participants. The initial response was described as "shock", especially given that the partner had previously been perceived as capable and law-abiding. The participants reported one or more of the following crisis symptoms: anxiety, sadness, impaired concentration, sleep disturbances, profound fatigue, lack of appetite, and mood swings. Further, they struggled with intense and difficult thoughts and emotions related to the partners' offences. They described concern about the safety of their own children, children of family and friends, as well as the children depicted in the illegal material. The participants described a need for immediate crisis interventions following the raid – though several noted that it might be difficult to actively seek support due to the overwhelming shock.

### 4.4.3 Need for medical evaluation

The second sub-theme describes the participants' need for medical evaluation. Most participants were in contact with healthcare or social services during the acute crisis or its aftermath, primarily to obtain prescriptions for anxiety or sleep medication, medical leave, or psychosocial support. A few participants reported suicidal ideation during the crisis, with some requiring inpatient care. Several participants continued to experience ongoing mental health challenges, including persistent suicidal thoughts, months after the police raid.

### 4.4.4 Need for counselling

The third sub-theme provides a more detailed description of participants' need for psychosocial support. The participants described a tendency to prioritize the emotional needs of others (i.e., their children, partner, and extended family) over their own need for support. In the interviews, they expressed the need for a safe and nonjudgmental environment to process emotions, especially feelings of shame and guilt related to their partner's criminal behavior and its negative impact on their self-perception and self-worth. The participants expressed ambivalence about continuing their relationship and used the interview situation to explore this uncertainty. Understanding their partner's risk of reoffending was viewed as vital to making informed decisions. Family reactions also strongly influenced participants' decisions, sometimes leading to loyalty conflicts and strained relationships.

### 4.4.5 Barriers to seeking support from family and friends

The first sub-theme of the *Barriers to care* theme highlights how the participants balanced the perceived social risks of disclosing their situation against their need for emotional support. Most participants chose to confide in someone and described receiving support. However, all described that the taboo nature of the offence was a significant barrier to seeking support from trusted individuals that they would typically rely on under other circumstances. Concerns about rumors, social rejection, and judgement were common, particularly from participants who chose to stay in the relationship. Participants with children described the added challenge of guiding their children on how open to be about the family situation.

### 4.4.6 Barriers to accessing healthcare

The second sub-theme encompasses the participants' perceived barriers to accessing healthcare services. Participants commonly articulated reluctance to seek medical care or dissatisfaction with the care they received. Negative interactions included unprofessional responses from healthcare providers such as the expression of shock or dismay, or the downplaying of described symptoms. Additional barriers included concerns over the requirement to maintain medical records and the mandatory reporting of suspected child abuse to social services. Participants also described expectations of inadequate provider knowledge of SIC and CSAM offences, which were in some cases confirmed through direct experience with uninformed healthcare professionals.

# 5. Discussion of main findings in Studies I–IV

## 5.1 Study I

Previous research suggests a high co-occurrence of compulsive sexual behavior (CSB) in clinical, forensic, and community samples of individuals with paraphilic interests (87, 197-199). These findings were replicated in this study. The co-occurrence of CSB and paraphilic interests is not yet fully understood, but observed similarities suggest shared underlying mechanisms such as impulse control deficits, as well as overlapping treatment needs (200).

Importantly, the co-occurrence of CSB with paraphilic disorders may elevate the risk of sexual offending or reoffending, making recognition of CSB features essential for effective treatment planning and prevention (201). These findings support a broad-spectrum approach to problematic sexual behaviors rather than focus on a specific paraphilia (e.g., pedophilia); this broad-spectrum approach was adopted in the development of PrevenTell.

The most pronounced gender difference observed in this study was the overrepresentation of men among individuals who contacted PrevenTell and were subsequently included in the analysis. This is consistent with prior research indicating that paraphilic interests and CSB are generally more prevalent and severe among men than women (57, 202, 203). Among the interviewed participants, gender differences were evident in the reported prevalence of paraphilic interests, but not significant in the proportion of individuals reporting CSB. Research indicates that while CSB may be less common in women, the level of distress and impairment experienced by affected individuals appears to be comparable across genders (192). Moreover, consistent with earlier studies, women in the current sample exhibited higher rates of psychiatric comorbidities, histories of sexual victimization, and lower levels of psychosocial stability compared to men (191, 193, 194). Together, these findings emphasize the need for gender-sensitive diagnostic frameworks and the development of tailored interventions that address the specific clinical and psychosocial needs of women with CSB.

Age preferences among PrevenTell callers reporting sexual interest in children differ from findings in the KTW prevention project in Germany (204). At PrevenTell, 35% of callers reported sexual interest in prepubescent children, compared to 60% of individuals who underwent clinical assessment after initial contact with KTW. This discrepancy may be attributable to differences in the framing of the respective outreach campaigns: KTW specifically targeted individuals with pedophilic interests, whereas PrevenTell adopted a broader strategy aimed at individuals experiencing distress related to sexual thoughts or behaviors. A proportion of individuals reporting sexual interest in children in the PrevenTell group may constitute a subgroup of men with CSB, in whom novelty-seeking behavior leads to escalating use of CSAM and prompts contact with PrevenTell (200, 205). Moreover, sexual interest in prepubescent and postpubescent children frequently overlap rather than presenting as distinct categories (36). It is plausible that individuals may find it more manageable to disclose arousal toward younger adolescents at the time of initial contact, with prepubescent interests being acknowledged only in later stages of assessment. Gender preferences among men with sexual interest in children appear to vary depending on the population studied. Data from PrevenTell, which indicate a higher prevalence of interest in girls, differ from findings in anonymous online community samples, where a greater proportion of individuals report sexual interest in boys (36). Data from forensic populations are more likely to show a predominance of interest in girls (206), a pattern that aligns with broader epidemiological research and global prevalence data, which consistently report that girls are more commonly identified as victims in cases of child sexual abuse (1).

The frequency of self-reported contact sexual offences was lower among PrevenTell callers (15%) compared to the KTW, where about 50% admitted previous sexual contact with children (125). This discrepancy may reflect differences in anonymity, as KTW participants were fully anonymous. While 63% of PrevenTell callers reported CSAM use, some classified as CSAM-only offenders may also have engaged in contact offences that remained undisclosed due to fear of legal or social repercussions, suggesting that mixed offending may be underestimated in this sample.

### 5.1.1 Strengths and limitations

This study is the first to present descriptive data from a national telephone helpline targeting men and women with self-identified problematic sexual behaviors and assessed by medical professionals.

Several limitations should be noted: (1) the absence of formal diagnostic evaluation; (2) high levels of missing data for certain variables; and (3) the lack of follow-up with callers in a face-to-face clinical setting, which limited the opportunity to validate initial assessments.

## 5.2 Study II

The findings replicate previous research indicating that PeD is associated with substantial psychiatric morbidity, including depressive and anxiety disorders, as well as clinical symptoms of ADHD (86). Pronounced ASD symptoms were also observed among participants with PeD; however, sensitivity analyses suggested that ASD traits did not account for the PeD-related structural brain abnormalities. Men with PeD showed widespread reductions in cortical surface area, whereas cortical thickness remained unaffected. These alterations were most pronounced in regions adjacent to white matter, which also displayed reduced volume. As cortical surface area and thickness are influenced by distinct developmental mechanisms, the selective involvement of surface area points toward early neurodevelopmental processes, possibly emerging during pre- or perinatal brain development (207-209). The 2D:4D ratio, a proxy indicator for prenatal androgen exposure and a marker linked to increased risk of neurodevelopmental disorders, correlated with both cortical surface area and white matter volume in affected regions, suggesting a potential role of prenatal androgen exposure in shaping these neural features, possibly through androgen-related effects on myelination. (210, 211). PeD was also associated with lower IQ, particularly in relation to verbal comprehension; the observed brain abnormalities correlated negatively with IQ, further supporting a developmental interpretation.

Structural brain alterations in individuals with PeD were primarily located within the default mode network (DMN), including the ventromedial prefrontal and posterior cingulate cortices, precuneus, and inferior parietal regions. The DMN is implicated in moral reasoning, social cognition, self-reflection, and anticipation of future consequences (212-214). These alterations were independent of offender status and other clinical or demographic variables. Given that deficits in these functions have been reported among individuals with PeD in forensic samples (99, 108), the observed DMN abnormalities may be functionally relevant to behavioral and cognitive characteristics associated with PeD (105, 113). However, it remains unclear how these structural differences relate to the core symptom of PeD, that is, sexual attraction to prepubescent children.

Taken together, the psychiatric symptom profile and presence of elevated neurodevelopmental traits, as well as associations between structural brain abnormalities, FSIQ, and prenatal androgen exposure provide evidence supporting the hypothesis that neurodevelopmental factors may contribute to the development of PeD (105, 107, 215).

### 5.2.1 Strengths and limitations

Strengths include comprehensive characterization of self-referred individuals with PeD in a clinical, non-correctional setting. However, there are several limitations to this study. Firstly, structural neuroimaging cannot test for the functional involvement of brain regions. Secondly, the cross-sectional study design does not allow for conclusions regarding causality. Thirdly, it is possible that at least part of the prominent overrepresentation of neuropsychiatric comorbidity, particularly ASD symptoms, resulted from ASD-related help-seeking behavior.

## 5.3 Study III

Although the screen failure rate was high, with approximately 80% of screened individuals excluded, the evaluation of the recruitment process suggests that the project can be completed within the set timeframe. This is particularly important given the recruitment challenges associated with this population and the limited number of previous RCTs (144).

A large proportion of screened individuals were already receiving SSRI treatment (22%) at the time of study contact, reflecting the high prevalence of comorbid psychiatric symptoms in this population. The exclusion of participants with ongoing SSRI treatment means that the final sample may represent a somewhat healthier subgroup, with lower levels of depression, anxiety, and other psychiatric comorbidities compared to the broader clinical population. This pattern aligns with evidence that clinical trial participants are typically healthier and have fewer comorbidities than real-world patients, limiting generalizability (216).

### *5.3.1* Strengths and limitations

Study III will be the first RCT to evaluate SSRI treatment and iCBT for men with SIC in a non-correctional clinical setting. The results will offer important insights into the effectiveness of these interventions in the reduction of problematic sexual behaviors and risk factors for sexual offending. However, several limitations must be noted: (1) the lack of placebo control makes it difficult to rule out the influence of confounding factors; (2) the sample consists of help-seeking individuals, which limits generalizability; (3) the primary outcome measure (SIC: CAS) lacks validation; and (4) the 14-week protocol only assessment of short-term effects.

## 5.4 Study IV

Although the Swedish cultural and legal context differs from that of countries in which most prior research has been carried out, the findings from Study IV align with previous research demonstrating significant mental health impacts on partners of CSAM offenders following disclosure, and further contribute to the literature by identifying healthcare needs and barriers to accessing care (13–19). Prior studies have emphasized the importance of providing crisis support to family members subsequent to the police raids related to CSAM offences (36). This was supported by the current study, where participants described a need for – but lack of access to – such support.

Participants reported symptoms such as anxiety, sleep disturbances, and suicidal ideation, which in some cases required inpatient care. Physicians should therefore assess suicide risk, maladaptive coping strategies, the need for pharmacological treatment (e.g., anxiolytics, antidepressants), and the potential need for medical leave. Follow-up care is essential to monitor whether an acute crisis has progressed into a diagnosable condition such as depression or an anxiety disorder.

Previous research has identified a range of risk factors for developing stress-related disorders after traumatic events, including sociodemographic characteristics, personality traits, prior psychiatric conditions, and genetic or neurobiological vulnerabilities (38, 39). Partners with such risk factors are likely at higher risk. While not all partners will develop a psychiatric disorder, the high prevalence of severe symptoms observed in this study highlights the need for further research into the mental health impact on family members of sexual offenders.

Shame, guilt, and self-blame were recurring emotional responses across interviews. These reactions are known to exacerbate psychological distress and increase suicide risk, and should therefore be actively addressed in counseling (42, 43).

Significant barriers to healthcare access were identified. A perceived, and sometimes experienced, lack of provider knowledge about CSAM offences and its impact on families discouraged help-seeking. Healthcare professionals, particularly those in primary care, require training in these areas in order to address this issue. Concerns about medical record confidentiality further hindered help-seeking. While Sweden's electronic health record (EHR) system facilitates transparency and continuity of care, it also raises privacy concerns for individuals dealing with highly stigmatized issues. Restricted-access systems, such as those used at ANOVA, may alleviate these concerns. Additionally, fear of mandatory reporting to social services was a significant barrier for women with underage children, especially for participants who chose to remain in their relationship. Providing clear information about the reporting process, legal obligations, and the types of support available through social services may help reduce reluctance to seek care.

### 5.4.1 Advice to healthcare providers

While the study's methodology does not permit firm conclusions regarding clinical practice, the findings allow for some preliminary recommendations for healthcare providers supporting partners of individuals who are suspected of CSAM offences.

Preliminary recommendations for healthcare providers:

- **Offer crisis support**
  Partners who seek help should be offered crisis support and not be dismissed or turned away.
- **Adopt a nonjudgmental approach**
  Acknowledge the shock and shame often experienced by partners. Understand that many were unaware of the offending behavior and feel betrayed which contributes to emotional distress.
- **Assess mental health risks and ensure follow-up care**
  Physicians should screen for suicidality, anxiety, and depressive symptoms. Assess the need for pharmacological treatment, medical leave, and counseling, and provide appropriate follow-up.
- **Address shame, guilt, and self-blame in counseling**
  Incorporate therapeutic strategies that address these responses.

- **Recognize and respond to social isolation**
  Understand that social withdrawal due to shame and fear of rejection might increase the need for professional support.
- **Maintain balanced and nuanced views regarding relationship decisions**
  An overemphasis by healthcare practitioners on the necessity of ending their relationship risks alienating those seeking care. Instead, it is important to create a safe, nonjudgmental space where patients can explore their ambivalence and make informed, autonomous decisions.
- **Clarify confidentiality and mandatory reporting obligations**
  Provide transparent information on the handling of medical records and mandatory reporting laws to reduce fear and support informed help-seeking.

### 5.4.2 Strengths and limitations

This is the first study in a Nordic context to examine healthcare needs and barriers to care among family members of CSAM offenders. Conducted in a specialized sexual medicine clinic, the setting likely contributed to participants feeling safe and willing to share their experiences. The study is strengthened by the research team's multidisciplinary expertise and thorough analysis. However, the sample was limited to female long-term partners of male offenders who had confessed and engaged with treatment. The needs of individuals in other types of relationships or whose partners denied the offence may differ.

# 6. General discussion

The overall aim of this PhD project is to enhance clinical knowledge of SIC among men seeking outpatient care by comprehensively assessing their clinical profiles, investigating potential neurodevelopmental factors, outlining a methodology for evaluating treatment options, and advancing the understanding of healthcare needs among their close relatives. Across four studies using diverse methodologies, this thesis provides novel insights into a help-seeking population outside a correctional context and highlights the broader impact of CSAM offending on affected family members.

## 6.1 Reaching men with SIC for non-anonymous clinical care and research

A key finding from Studies I–III is that men with SIC can be successfully recruited into non-anonymous clinical care and research. While most prior studies relied on anonymous participation, these results demonstrate that individuals are willing to disclose their identity when offered treatment in a confidential, specialized, and supportive clinical setting. This finding is clinically significant, as access to comprehensive care, including pharmacological interventions recommended in current clinical guidelines, generally requires formal registration within the healthcare system (one exception is Germany, where the legal framework allows for fully anonymous treatment) (90, 142). This thesis primarily focuses on men with a sexual interest in children. Only a few women have contacted PrevenTell with similar concerns, making gender-based comparisons unreliable. Previous research suggests that women who sexually offend against children differ in clinical profile and treatment needs; however, some report sexual arousal as the main driver behind their behavior (217-220). Reaching this group is important from a prevention perspective, and while PrevenTell welcomes individuals of all genders, further efforts may be needed to engage women in research and treatment (221). The observed gender imbalance, however, likely reflects genuine prevalence differences.

## 6.2 Recruitment and outreach challenges

Despite these positive results, findings from this thesis and previous research suggest that preventive services reach only a small fraction of individuals with SIC (122). Barriers to potential help-seekers may include limited insight into problematic behaviors, confidentiality concerns, and doubts about treatment effectiveness (77, 222). Additionally, maintaining engagement requires ongoing outreach and increased public awareness efforts (129).

A specific challenge is the relatively high average age of callers. Among men with SIC contacting PrevenTell, the average age is 33 years, suggesting that many delay seeking help despite an early onset of their sexual interest. Reaching individuals closer to the onset of SIC may help reduce long-term distress and prevent offending, particularly given evidence that the risk of sexual offending increases with age in community samples of men with SIC (40, 223). Although targeted interventions exist, these remain largely unevaluated (131). Internet-based approaches, however, show promise in improving access among younger individuals (37, 130).

## 6.3 Clinical profiles and psychiatric comorbidity

Studies I and II confirm that men with SIC often present complex clinical profiles characterized by high rates of psychiatric comorbidity, including suicidal ideation, depression, and anxiety. These findings are consistent with prior research and highlight the importance of a comprehensive psychiatric assessment in outpatient settings (68). Study II also explored potential neurodevelopmental correlates of SIC, identifying structural brain differences and associations with general cognitive ability and 2D:4D ratios. While preliminary and requiring replication, these findings suggest that neurodevelopmental factors may contribute to the development of SIC. A notable finding from Study II was the high prevalence of autism spectrum traits among participants, representing the first empirical demonstration of such an association at the time. This result has since been replicated in a study involving anonymous CSAM users enrolled in an online treatment program (3). Although evidence remains limited, these findings underscore the importance of considering neurodevelopmental characteristics when tailoring clinical interventions.

## 6.4 Offending behavior and risk management

This thesis demonstrates a high prevalence of self-reported offences, particularly those related to CSAM, among help-seeking men with SIC in clinical non-correctional contexts. Expert perspectives highlight the need to balance two primary goals: preventing (re)offending, and supporting overall mental health and well-being. While there is not yet a consensus on which goal should be prioritized, there is broad agreement that effective care must incorporate both aims (141). In several studied samples similar to those in this thesis, the risk of (re)offending, especially related to CSAM use, appears to be a central concern for many help-seeking individuals (66-68). Findings from the few existing follow-up studies indicate that persistent or relapsing CSAM use is common, which is concerning from both a clinical and preventive perspective (67, 74). The combination of easy access to CSAM, stable sexual interests, and limited evidence-based treatment options underscores the importance of developing and evaluating early interventions tailored to this population, with a particular focus on reducing offending risk.

## 6.5 Treatment evaluation and the evidence gap

High-quality clinical trials that include individuals with SIC remain limited. Study III addresses this shortage by presenting the design and feasibility evaluation of an RCT to investigate the effectiveness of fluoxetine and iCBT. For a long time, conducting RCTs in this population was considered extremely challenging, or even impossible, due to ethical, practical, and recruitment-related barriers (144). This changed with the landmark Landgren et al. (2020) trial conducted within the PRIOTAB framework, which demonstrated the feasibility of conducting pharmacological research in this field (143). Building on this development, Study III adds important knowledge about the evaluation of the different intervention strategies that may be needed in a clinical setting, including pharmacological treatment with SSRIs and internet-delivered CBT. Furthermore, longitudinal data on recidivism and offending trajectories remain scarce, Study III offers a unique opportunity to address this critical gap and enhance understanding of offending patterns over time.

## 6.6 Healthcare needs among family members of sexual offenders

While Studies I–III in this thesis focuses on individuals with SIC, Study IV expands the perspective by examining the impact on close relatives, specifically female partners of men under investigation for CSAM offences. The findings reveal considerable psychological distress including suicidal ideation, yet many participants reported barriers to accessing appropriate healthcare and support. The sample population in

Study IV is limited to individuals with a partner whose sexual interests have resulted in legal consequences, and very little is known about the experiences of relatives of men with SIC who are not involved in legal proceedings. However, the results suggest that both the nature of the crime and the sexual interest itself contribute to the challenges described by participants. Broader psychiatric research indicates that providing targeted healthcare support to close relatives can reduce caregiver burden, alleviate psychological distress, and improve overall well-being, insights likely relevant for the population studied here (224). These findings highlight the need for developing tailored interventions, including access to appropriate healthcare services for this population.

## 6.7 Methodological consideration

### 6.7.1 Recruitment considerations

In Studies I–III, participants were primarily recruited through PrevenTell. While all participants contacted the service voluntarily, the specific motivations for help-seeking, such as psychological distress, partner influence, or legal involvement, were not systematically examined in Studies I and II. Study III addressed this gap by collecting relevant forensic information, thereby providing important contextual insights. A potential sampling bias arises from the fact that some participants contacted PrevenTell while already under police investigation for suspected sexual offences. These individuals, having been detected and subjected to legal proceedings, may differ from those seeking help prior to any legal involvement, for example in terms of motivation, psychological distress, and treatment needs. This factor may contribute to the relatively high rates of psychiatric comorbidity and self-reported illegal behavior observed across the studies.

From a clinical perspective, however, this potential bias is less problematic. Since the aim of this thesis is to deepen understanding of SIC among men seeking outpatient support, the findings remain highly relevant for characterizing this help-seeking population and informing clinical practice.

### *6.7.2* Considerations regarding risk assessment tools

There are currently no validated risk assessment instruments specifically designed for help-seeking men with SIC in non-correctional outpatient settings (67, 142). Available tools were developed and validated in forensic or correctional populations, using data from convicted offenders. These instruments often rely on static factors, such as age, prior convictions, and victim characteristics, which renders them less informative in help-seeking outpatient contexts where many individuals have no confirmed history of offences (225). As a result, applying these tools may not accurately reflect the actual offending risk, since demographic and behavioral markers do not hold the same predictive value as in correctional samples, potentially leading to an overestimation of risk. Frameworks that incorporate dynamic risk factors, such as treatment engagement, emotional regulation, and coping strategies, have also been validated on detected offender populations and cannot be directly applied in non-correctional settings without further adaptation and evaluation. In the absence of suitable validated instruments, a structured clinical evaluation was carried out in Study III. Risk assessments were based on self-reported detected or undetected prior contact offences, contact-seeking behaviors, substance use, and psychiatric comorbidity. Decisions regarding inclusion were made based on joint evaluation by a psychiatrist and a psychologist.

### 6.7.3 Considerations regarding diagnostic assessment and consistency

In Studies II and III, diagnoses were based on structured clinical interviews and assessments conducted by psychiatrists, rather than on indirect physiological or cognitive measures. As participants actively sought help and self-reported their sexual interests, structured interviews were considered both sufficient and ethically appropriate for diagnostic purposes. Since individuals may report sexual interest in children for reasons related to other psychiatric conditions, such as obsessive-compulsive disorder (OCD), careful differential diagnostic evaluations were conducted to enhance diagnostic accuracy (226). In Study III, these assessments included a joint evaluation by a psychiatrist and a psychologist, providing an additional layer of reliability. One methodological consideration concerns the variation in diagnostic criteria across studies. Study II applied a narrower definition, including only individuals who met the DSM-5 criteria for PeD, whereas Study III used a broader definition that also included individuals who experienced sexual arousal toward pubescent children. These differences reflect the distinct aims of the studies: Study II investigated potential neurobiological correlates of PeD, requiring strict adherence to diagnostic thresholds, while Study III evaluated treatment options for a broader help-seeking population, including those with sexual interest in pubertal as well as prepubertal children.

### 6.7.4 Ethical considerations

The Swedish Ethical Review Authority and the Swedish Medical Products Agency have approved the studies included in this PhD project, ref. nos.: 2015-1391-31/5 (Study I), Ö 26-2014 (Study II), and 2021-02820 (Studies III and IV). The registration information for the ongoing clinical trial (Study III) is accessible at http://www.clinicaltrialsregister.eu (EudraCT number: 2021-001249-11).

Preventing sexual offences against children requires a multifaceted approach that involves public health initiatives, early clinical interventions, and treatment of individuals who have committed offences (227). The studies in this thesis focus on help-seeking men with SIC, representing one component within this broader prevention framework.

Conducting RCTs in this population presents significant ethical challenges. In Study III, the interventions (fluoxetine and iCBT) were selected in line with current clinical recommendations for individuals with paraphilic disorders who were assessed as being at short-term low risk of committing contact sexual offences (80). The use of an active control group was chosen to minimize the risk of deterioration among control participants, while ensuring that some clinical improvement could still be expected. As motivation to change may fluctuate over time, participants were closely monitored for problematic sexual behaviors and psychiatric symptoms to ensure safety and treatment adherence.

If there is any indication of the harm of a minor, a report is made to social services as specified in the Swedish Social Services Act. Criminal activity could be reported to the police. The participants in Study III will be informed about these exceptions from the rules of patient confidentiality.

Participant safety remained a central priority. Comprehensive psychiatric evaluations, physical examinations, blood tests, drug screenings, and strict inclusion/exclusion criteria were applied to minimize risks, including those related to medication safety. Highly sensitive data were collected and managed using a secure web platform developed by Karolinska Institutet.

Given the sensitivity surrounding research on SIC, findings need to be communicated with great care. There is both an empirical association between SIC and sexual offending and a strong public perception of risk. Overstating this association may reinforce negative perceptions and discourage help-seeking, whereas minimizing it may reduce awareness of the need for preventive measures. Similarly, when reporting observed associations between SIC and conditions such as ASD or ADHD, it is essential to emphasize that findings from help-seeking samples should not be generalized to the broader population. Using balanced and precise language is crucial to maintaining both scientific integrity and public trust.

## 6.8 Suggestions for future research

### 6.8.1 Low-threshold services and outreach

Data from existing low-threshold services for individuals with SIC are largely cross-sectional and descriptive, providing limited insight into long-term outcomes or treatment effectiveness. To better evaluate the effectiveness and cost-efficiency of such initiatives, longitudinal studies that follow individuals from initial contact through treatment and follow-up are needed. These studies would also allow for assessment of the quality of initial evaluations. Further, current evidence suggests that the overall reach of these services remains limited, meaning that many individuals with SIC may never come into contact with outpatient clinical care. The identification and evaluation of targeted outreach approaches that can increase both overall recruitment and earlier engagement should therefore be considered a priority for future research.

Suggested directions for future research:

- Design longitudinal studies to explore treatment trajectories and behavioral outcomes.
- Develop and evaluate alternative outreach strategies to increase recruitment and engage individuals at a younger age.

### 6.8.2 Neuropsychiatric comorbidity

Findings from Study II suggest that PeD may be linked to neurodevelopmental factors. A clinically important observation was the strong association between PeD and symptoms of neurodevelopmental conditions, particularly ADHD and ASD, a correlation that has also been supported by previous studies (3, 65). However, the mechanisms underlying this relationship remain unclear. Further research is needed to better understand how neurodevelopmental characteristics interact with SIC and how these factors may influence clinical presentation, treatment needs, and risk profiles.

Suggested future research:

- Examine the relationship between ADHD/ASD and SIC in larger and more diverse samples.
- Conduct qualitative studies with individuals who have both SIC and neurodevelopmental conditions to gain deeper insights into their experiences, challenges, and treatment needs.
- Develop and evaluate treatment models and psychosocial interventions tailored for individuals with SIC and co-occurring neuropsychiatric symptoms/conditions.

### 6.8.3 Standardized assessment and outcome measurement

To enable meaningful comparison and synthesis of findings across settings, it is essential to establish consensus on standardized data collection among research groups and clinics that evaluate and treat help-seeking individuals with SIC. This includes reaching agreement on which forensic information should be recorded and adopting common standards for risk assessment and treatment outcome evaluation.

Suggested directions for future research:

- Develop and validate a risk assessment tool specifically tailored for non-correctional outpatient populations.
- Develop and validate treatment outcome measures to accurately capture changes in sexual interest in children; the SIC: CAS developed in Study III may represent a promising candidate.

### 6.8.4 Support for family members of sexual offenders

Study IV highlighted significant gaps in crisis support and barriers to healthcare access for partners of men under investigation for CSAM offences. These findings indicate a need for research focused on developing and evaluating effective interventions and support structures for affected family members within the Swedish context.

Suggestions for future research:

- Develop and evaluate procedures for providing family members of CSAM offenders in Sweden with information, guidance, and support following the police raid.

- Develop and evaluate a healthcare professional-led psychoeducational group intervention tailored to the needs of partners of CSAM offenders in a Swedish context.
- Conduct studies examining the impact on, and specific needs of, underaged children whose fathers have committed CSAM offences, to inform child-focused support.

# 7. Conclusion and clinical implications

This thesis demonstrates that it is feasible to reach men with sexual interest in children (SIC) outside correctional contexts and to involve them in non-anonymous outpatient assessment, treatment, and research. Clinically, this represents an important finding, as it challenges previous assumptions that effective care for this population requires anonymity. Although anonymous services are available in some contexts, this is not a viable alternative in most healthcare systems, where formal patient registration is typically required.

Across the studies, participants presented with complex psychiatric and criminogenic characteristics, including high rates of self-reported child sexual abuse material (CSAM) use, previous sexual offence convictions, and significant psychiatric comorbidities such as depression, anxiety, and suicidal ideation. Findings from Study II further suggest a potential neurodevelopmental contribution to PeD, and participants reported elevated symptoms of neurodevelopmental conditions such as autism spectrum disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD).

These findings highlight the importance of conducting comprehensive psychiatric evaluations and adapting treatment strategies to address both psychiatric comorbidities and the needs of individuals with co-occurring neurodevelopmental traits. They also underscore the need for specialized outpatient services that integrate psychiatric and clinical forensic expertise to more effectively manage mental health concerns and reduce associated risks in help-seeking individuals with SIC.

Study III demonstrated the feasibility of conducting a randomized controlled trial (RCT) involving help-seeking men with SIC to evaluate internet-delivered cognitive behavior therapy (iCBT) and fluoxetine. The successful implementation of this design in a population previously considered difficult to study provides an important foundation for future treatment development. As outcome data are still being collected, the effectiveness of these interventions in the reduction of problematic sexual behaviors has not yet been evaluated.

Study IV highlights the considerable psychological burden experienced by family members, particularly female partners of men under investigation for CSAM offences. Many reported high levels of emotional distress, including symptoms of depression and anxiety, yet had limited access to healthcare and support services. These findings emphasize the need to develop clinical practice standards and improve the availability of targeted interventions to better support affected family members. Addressing the needs of close relatives should be regarded as an integral component of comprehensive clinical management in this field.

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# References


1. Piolanti A, Schmid IE, Fiderer FJ, Ward CL, Stöckl H, Foran HM. Global Prevalence of Sexual Violence Against Children: A Systematic Review and Meta-Analysis. JAMA Pediatr. 2025;179(3):264–272. doi: 10.1001/jamapediatrics.2024.5326.
2. Finkelhor D, Turner H, Colburn D. Prevalence of Online Sexual Offenses Against Children in the US. JAMA Netw Open. 2022;5(10):e2234471. doi:10.1001/jamanetworkopen.2022.34471.
3. Lätth J, Joleby M, McMahan A, Luke TJ, Rahm C. Child Sexual Abuse Material Users on the Darknet: Psychiatric Morbidities Related to Offence Behavior. Sexual Abuse. 2025:10790632251347562. doi: 10.1177/10790632251347562.
4. Hailes HP, Yu R, Danese A, Fazel S. Long-term outcomes of childhood sexual abuse: an umbrella review. Lancet Psychiatry. 2019;6(10):830–839. doi: 10.1016/S2215-0366(19)30286-X.
5. Joleby M, Landström S, Lunde C, Jonsson LS. Experiences and psychological health among children exposed to online child sexual abuse – a mixed methods study of court verdicts. Psychology, Crime & Law. 2020;27(2):159–181. doi: 10.1080/1068316X.2020.1781120
6. Schmidt F, Varese F, Bucci S. Understanding the prolonged impact of online sexual abuse occurring in childhood. Frontiers in psychology. 2023;14:1281996. doi: 10.3389/fpsyg.2023.1281996.
7. Council of Europe. Council of Europe Convention on the Protection of Children against Sexual Exploitation and Sexual Abuse (Lanzarote Convention). CETS No. 201. Oct 25, 2007.
8. Seto MC. The Puzzle of Male Chronophilias. Arch Sex Behav. 2017;46(1):3–22. doi: 10.1007/s10508-017-1039-9.
9. Seto MC. The Motivation-Facilitation Model of Sexual Offending. Sex Abuse. 2019;31(1):3–24. doi: 10.1177/1079063217720919.
10. Mann RE, Hanson RK, Thornton D. Assessing risk for sexual recidivism: some proposals on the nature of psychologically meaningful risk factors. Sex Abuse. 2010;22(2):191–217. doi: 10.1177/1079063210366039.

11. Hanson RK, Morton-Bourgon KE. The characteristics of persistent sexual offenders: a meta-analysis of recidivism studies. J Consult Clin Psychol. 2005;73(6):1154–1163. doi: 10.1037/0022-006X.73.6.1154.

12. Seto MC, Augustyn C, Roche KM, Hilkes G. Empirically-based dynamic risk and protective factors for sexual offending. Clinical Psychology Review. 2023;106:102355. doi: 10.1016/j.cpr.2023.102355.

13. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders 2013. 5th ed. Arlington, VA: American Psychiatric Association (2013).

14. Långström N, Enebrink P, Lauren EM, Lindblom J, Werko S, Hanson RK. Preventing sexual abusers of children from reoffending: systematic review of medical and psychological interventions. BMJ. 2013;347:f4630. doi: 10.1136/bmj.f4630.

15. Stephens S, Klein LK, Seto MC. Differences in Sexual Interest in Children Between Men Who Commit Undetected Versus Detected Sexual Offenses. Sexual Abuse. 2021;33(3):255-73. doi: 10.1177/1079063219889056.

16. Drury AJ, Elbert MJ, DeLisi M. The dark figure of sexual offending: A replication and extension. Behav Sci Law. 2020;38(6):559-70. doi: 10.1002/bsl.2488.

17. Rettenberger M, Briken P, Turner D, Eher R. Sexual offender recidivism among a population-based prison sample. Int J Offender Ther Comp Criminol. 2015;59(4):424-44. doi: 10.1177/0306624X13516732.

18. Roche K, Stephens S, Moss S, Seto MC. Online forum use in child attracted persons. The Canadian journal of human sexuality. 2022;31(3):409-21. https://doi.org/10.3138/cjhs.2022-0007.

19. World Health Organization. (2019). International statistical classification of diseases and related health problems (11th ed.). [Cited 2025 Aug 10]. Available from: https://icd.who.int/.

20. Beech AR, Miner MH, Thornton D. Paraphilias in the DSM-5. Annu Rev Clin Psychol. 2016;12:383-406. doi: 10.1146/annurev-clinpsy-021815-093330.

21. Briken P, Fedoroff JP, Bradford JW. Why can't pedophilic disorder remit? Arch Sex Behav. 2014;43(7):1237-9. doi: 10.1007/s10508-014-0323-1.

22. Frances A, First MB. Hebephilia is not a mental disorder in DSM-IV-TR and should not become one in DSM-5. Journal of the American Academy of Psychiatry and the Law. 2011;39.

23. Marshall WA, Tanner JM. Variations in pattern of pubertal changes in girls. Arch Dis Child. 1969;44(235):291–303. doi: 10.1136/adc.44.235.291.

24. Marshall WA, Tanner JM. Variations in the pattern of pubertal changes in boys. Arch Dis Child. 1970;45(239):13–23. doi: 10.1136/adc.45.239.13.

25. Seto MC, Cantor JM, Blanchard R. Child pornography offenses are a valid diagnostic indicator of pedophilia. Journal of Abnormal Psychology. 2006;115. doi: 10.1037/0021-843X.115.3.610.

26. First MB. The inclusion of child pornography in the DSM-5 diagnostic criteria for pedophilia: conceptual and practical problems. J Am Acad Psychiatry Law. 2011;39(2):250–254.

27. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders 2013. Text Revision (DSM-5-TR™). Arlington, VA: American Psychiatric Association (2022).

28. Green R. Is pedophilia a mental disorder? Arch Sex Behav. 2002;31(6):467–471. doi: 10.1023/a:1020699013309.

29. Malón A. Pedophilia: a diagnosis in search of a disorder. Arch Sex Behav. 2012;41(5):1083–1097. doi: 10.1007/s10508-012-9919-5.

30. Blanchard R, Lykins AD, Wherrett D, Kuban ME, Cantor JM, Blak T, et al. Pedophilia, hebephilia, and the DSM-V. Arch Sex Behav. 2009;38(3):335–350. doi: 10.1007/s10508-008-9399-9.

31. Blanchard R, Kolla NJ, Cantor JM, Klassen PE, Dickey R, Kuban ME, et al. IQ, handedness, and pedophilia in adult male patients stratified by referral source. Sexual Abuse. 2007;19. doi: 10.1177/107906320701900307.

32. Cantor JM, Klassen PE, Dickey R, Christensen BK, Kuban ME, Blak T, et al. Handedness in pedophilia and hebephilia. Arch Sex Behav. 2005;34(4):447–459. doi: 10.1007/s10508-005-4344-7.

33. Cantor JM, Kuban ME, Blak T, Klassen PE, Dickey R, Blanchard R. Physical height in pedophilic and hebephilic sexual offenders. Sex Abuse. 2007;19(4):395–407. doi: 10.1177/107906320701900405.

34. Blanchard R. A dissenting opinion on DSM-5 pedophilic disorder. Arch Sex Behav. 2013;42(5):675–678. doi: 10.1007/s10508-013-0117-x.

35. Frances A. Hebephilia is a crime--not a mental disorder. Psychiatric Times. 2012;29(1):1–1.

36. Martijn FM, Babchishin KM, Pullman LE, Seto MC. Sexual Attraction and Falling in Love in Persons with Pedohebephilia. Arch Sex Behav. 2020;49(4):1305–1318. doi: 10.1007/s10508-019-01579-9.

37. Schuler M, Gieseler H, Schweder KW, von Heyden M, Beier KM. Characteristics of the Users of Troubled Desire, a Web-Based Self-management App for Individuals With Sexual Interest in Children: Descriptive Analysis of Self-assessment Data. JMIR Ment Health. 2021;8(2):e22277. doi: 10.2196/22277.

38. Tozdan S, Briken P. Age of Onset and Its Correlates in Men with Sexual Interest in Children. Sex Med. 2019;7(1):61–71. doi: 10.1016/j.esxm.2018.10.004.

39. Blanchard R, Kuban ME, Blak T, Klassen PE, Dickey R, Cantor JM. Sexual attraction to others: a comparison of two models of alloerotic responding in men. Arch Sex Behav. 2012;41(1):13–29. doi: 10.1007/s10508-010-9675-3.

40. Bailey JM, Bernhard PA, Hsu KJ. An Internet Study of Men Sexually Attracted to Children: Correlates of Sexual Offending Against Children. Journal of abnormal psychology (1965). 2016;125(7):989–1000. doi: 10.1037/abn0000213.

41. Carvalho J, Bradford J, Murphy L, Briken P, Fedoroff P. Measuring Pedophilic Sexual Interest. J Sex Med. 2020;17(3):378–392. doi: 10.1016/j.jsxm.2019.12.008.

42. Seto MC. Pedophilia. Annu Rev Clin Psychol. 2009;5:391–407. doi: 10.1146/annurev.clinpsy.032408.153618.

43. Seto MC, Lalumière ML. A brief screening scale to identify pedophilic interests among child molesters. Sexual Abuse: A Journal of Research and Treatment. 2001;13(1):15–25. doi: 10.1023/A:1009510328588.

44. Seto MC, Stephens S, Lalumière ML, Cantor JM. The revised screening scale for pedophilic interests (SSPI–2): Development and criterion-related validation. Sexual Abuse. 2017;29(7):619–635. doi: 10.1177/1079063215612444.

45. Stephens S, Seto MC, Cantor JM, Lalumière ML. The Revised Screening Scale for Pedophilic Interests (SSPI-2) May Be a Measure of Pedohebephilia. J Sex Med. 2019;16(10):1655–1663. doi: 10.1016/j.jsxm.2019.07.015.

46. McPhail IV, Hermann CA, Fernane S, Fernandez YM, Nunes KL, Cantor JM. Validity in Phallometric Testing for Sexual Interests in Children: A Meta-Analytic Review. Assessment. 2019;26(3):535–551. doi: 10.1177/1073191117706139.

47. Cantor JM, McPhail IV. Sensitivity and Specificity of the Phallometric Test for Hebephilia. J Sex Med. 2015;12(9):1940–1950. doi: 10.1111/jsm.12970.

48. Seto MC, Kingston DA, Bourget D. Assessment of the paraphilias. Psychiatr Clin North Am. 2014;37(2):149–161. doi: 10.1016/j.psc.2014.03.001.

49. Thibaut F, De La Barra F, Gordon H, Cosyns P, Bradford JM. The World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for the biological treatment of paraphilias. World J Biol Psychiatry. 2010;11(4):604–655. doi: 10.3109/15622971003671628.

50. Pohl A, Wolters A, Ponseti J. Investigating the Task Dependency of Viewing Time Effects. J Sex Res. 2016;53(8):1027–1035. doi: 10.1080/00224499.2015.1089429.

51. Imhoff R, Schmidt AF, Nordsiek U, Luzar C, Young AW, Banse R. Viewing time effects revisited: prolonged response latencies for sexually attractive targets under restricted task conditions. Arch Sex Behav. 2010;39(6):1275–1288. doi: 10.1007/s10508-009-9595-2.

52. Schmidt AF, Babchishin KM, Lehmann RJB. A Meta-Analysis of Viewing Time Measures of Sexual Interest in Children. Arch Sex Behav. 2017;46(1):287–300. doi: 10.1007/s10508-016-0806-3.

53. Pedneault CI, Hilgard J, Pettersen C, Hermann CA, White K, Nunes KL. How well do indirect measures assess sexual interest in children? A meta-analysis. J Consult Clin Psychol. 2021;89(4):350–363. doi: 10.1037/ccp0000627.

54. Savoie V, Quayle E, Flynn E. Prevalence and correlates of individuals with sexual interest in children: A systematic review. Child Abuse Negl. 2021;115:105005. doi: 10.1016/j.chiabu.2021.105005.

55. Santtila P, Antfolk J, Rafsa A, Hartwig M, Sariola H, Sandnabba NK, et al. Men's sexual interest in children: one-year incidence and correlates in a population-based sample of Finnish male twins. J Child Sex Abus. 2015;24(2):115–134. doi: 10.1080/10538712.2015.997410.

56. Dombert B, Schmidt AF, Banse R, Briken P, Hoyer J, Neutze J, et al. How Common is Men's Self-Reported Sexual Interest in Prepubescent Children? J Sex Res. 2016;53(2):214–223. doi: 10.1080/00224499.2015.1020108.

57. Bartova K, Androvicova R, Krejcova L, Weiss P, Klapilova K. The Prevalence of Paraphilic Interests in the Czech Population: Preference, Arousal, the Use of Pornography, Fantasy, and Behavior. J Sex Res. 2021;58(1):86–96. doi: 10.1080/00224499.2019.1707468.

58. Joyal CC, Cossette A, Lapierre V. What exactly is an unusual sexual fantasy? J Sex Med. 2015;12(2):328–340. doi: 10.1111/jsm.12734.

59. Bailey JM, Hsu KJ, Bernhard PA. An Internet study of men sexually attracted to children: Sexual attraction patterns. J Abnorm Psychol. 2016;125(7):976–988.

60. Grundmann D, Krupp J, Scherner G, Amelung T, Beier KM. Stability of Self-Reported Arousal to Sexual Fantasies Involving Children in a Clinical Sample of Pedophiles and Hebephiles. Arch Sex Behav. 2016;45(5):1153–1162. doi: 10.1007/s10508-016-0729-z.

61. Seto MC. Is pedophilia a sexual orientation? Arch Sex Behav. 2012;41(1):231–236. doi: 10.1007/s10508-011-9882-6.

62. Tozdan S, Briken P. The Earlier, the Worse? Age of Onset of Sexual Interest in Children. J Sex Med. 2015;12(7):1602–1608. doi: 10.1111/jsm.12927.

63. Babchishin KM, Merdian HL, Bartels RM, Perkins D. Child Sexual Exploitation Materials Offenders. European Psychologist. 2018;23(2):130–143. doi: 10.1027/1016-9040/a000326.

64. Darjee R, Russell K. What clinicians need to know before assessing risk in sexual offenders. Advances in Psychiatric Treatment. 2012;18(6):467–478. doi: 10.1192/apt.bp.110.008094.

65. Wittström F, Långström N, Landgren V, Rahm C. Risk Factors for Sexual Offending in Self-Referred Men With Pedophilic Disorder:

A Swedish Case-Control Study. Front Psychol. 2020;11:571775. doi: 10.3389/fpsyg.2020.571775.

66. Beier KM, Grundmann D, Kuhle LF, Scherner G, Konrad A, Amelung T. The German Dunkelfeld project: a pilot study to prevent child sexual abuse and the use of child abusive images. J Sex Med. 2015;12(2):529–542. doi: 10.1111/jsm.12785.

67. von Franqué F, Bergner-Koether R, Schmidt S, Pellowski JS, Peters JH, Hajak G, et al. Individuals under voluntary treatment with sexual interest in minors: what risk do they pose? Front Psychiatry. 2023;14:1277225. doi: 10.3389/fpsyt.2023.1277225.

68. de Tribolet-Hardy F, Veitz S, Dittli L, Habermeyer E. Perspective: Clinical care of pedophilic individuals in Zurich, Switzerland. International Journal of Impotence Research. 2024:1–5. doi: 10.1038/s41443-024-00968-6.

69. Babchishin KM, Hanson RK, VanZuylen H. Online child pornography offenders are different: a meta-analysis of the characteristics of online and offline sex offenders against children. Arch Sex Behav. 2015;44(1):45–66. doi: 10.1007/s10508-014-0270-x.

70. Hörnle T, Tetal C, Wössner G. Reoffending after convictions related to child sexual exploitation material: Data from the German Federal Central Criminal Register. Child Abuse Negl. 2024;153:106806. doi: 10.1016/j.chiabu.2024.106806.

71. Ahmad N, Kelty SF, Kavanagh PS, Tran T. Crossing the Line: A Critical Systematic Review of Escalation Crossover Offending in Online Child Sexual Exploitation. Trauma Violence Abuse. 2025:15248380251361065. doi: 10.1177/15248380251361065.

72. Seto MC, Karl Hanson R, Babchishin KM. Contact Sexual Offending by Men With Online Sexual Offenses. Sexual Abuse. 2011;23(1):124–145. doi: 10.1177/107906321036901.

73. Babchishin KM, Hanson RK, VanZuylen H. Online child pornography offenders are different: A meta-analysis of the characteristics of online and offline sex offenders against children. Archives of Sexual Behavior. 2015;44. doi: 10.1007/s10508-014-0270-x.

74. Beier KM, Nentzl J, von Heyden M, Fishere M, Amelung T. Preventing Child Sexual Abuse and the Use of Child Sexual Abuse Materials: Following up on the German Prevention Project

Dunkelfeld. J Prev (2022). 2024;45(6):881–900. doi: 10.1007/s10935-024-00792-0.

75. Roche K, Pagacz J, Lalumière ML, Seto MC. Recruitment Issues in Research with People Who are Attracted to Children: A Systematic Review. J Sex Res. 2025:1–13. doi: 10.1080/00224499.2025.2484197.

76. Jahnke S, Blagden N, Hill L. Pedophile, Child Lover, or Minor-Attracted Person? Attitudes Toward Labels Among People Who are Sexually Attracted to Children. Arch Sex Behav. 2022;51(8):4125–4139. doi: 10.1007/s10508-022-02331-6.

77. Jahnke S, Schmidt AF, Geradt M, Hoyer J. Stigma-Related Stress and Its Correlates Among Men with Pedophilic Sexual Interests. Arch Sex Behav. 2015;44(8):2173–2187. doi: 10.1007/s10508-015-0503-7.

78. Garant E, Proulx J. What do you fantasize about? An exploratory factor analysis of adults reporting sexual attraction to minors. Child Abuse & Neglect. 2024:107018. doi: 10.1016/j.chiabu.2024.107018.

79. Cohen LJ, Wilman-Depena S, Barzilay S, Hawes M, Yaseen Z, Galynker I. Correlates of Chronic Suicidal Ideation Among Community-Based Minor-Attracted Persons. Sexual abuse. 2020;32(3):273–300. doi: 10.1177/1079063219825868.

80. Thibaut F, Cosyns P, Fedoroff JP, Briken P, Goethals K, Bradford JMW. The World Federation of Societies of Biological Psychiatry (WFSBP) 2020 guidelines for the pharmacological treatment of paraphilic disorders. World J Biol Psychiatry. 2020;21(6):412–490. doi: 10.1080/15622975.2020.1744723.

81. Hanson RK, Morton-Bourgon KE. The accuracy of recidivism risk assessments for sexual offenders: a meta-analysis of 118 prediction studies. Psychol Assess. 2009;21(1):1–21. doi: 10.1037/a0014421.

82. Hanson RK, Thornton D. Improving risk assessments for sex offenders: a comparison of three actuarial scales. Law Hum Behav. 2000;24(1):119–36. doi: 10.1023/A:1005482921333.

83. Hanson RK, Harris AJ, Scott T-L, Helmus L. Assessing the risk of sexual offenders on community supervision: The Dynamic Supervision Project: Public Safety Canada Ottawa, Ontario; 2007.

84. Eke AW, Helmus LM, Seto MC. A Validation Study of the Child Pornography Offender Risk Tool (CPORT). Sex Abuse. 2019;31(4):456–476. doi: 10.1177/10790632187624.

85. Raymond NC, Coleman E, Ohlerking F, Christenson GA, Miner M. Psychiatric comorbidity in pedophilic sex offenders. Am J Psychiatry. 1999;156(5):786–8. doi: 10.1176/ajp.156.5.78.

86. Gerwinn H, Weiss S, Tenbergen G, Amelung T, Fodisch C, Pohl A, et al. Clinical characteristics associated with paedophilia and child sex offending - Differentiating sexual preference from offence status. Eur Psychiatry. 2018;51:74–85. doi:10.1016/j.eurpsy.2018.02.002.

87. Krueger RB, Kaplan MS, First MB. Sexual and other axis I diagnoses of 60 males arrested for crimes against children involving the Internet. CNS Spectr. 2009;14(11):623–631. doi:10.1017/S1092852900023865.

88. Seiser A, Eher R, Turner D, Rettenberger M. The prevalence of mental disorders among incarcerated adult men convicted of child sexual exploitation material offences. CNS Spectr. 2023;28(6):719–725. doi:10.1017/S1092852923002262.

89. Cohen LJ, Ndukwe N, Siegfried R, Kopeykina I, Yaseen ZS, Galynker I. Attraction Versus Action in Pedophilic Desire: The Role of Personality Traits and Childhood Experience. Journal of psychiatric practice. 2018;24(6):374–387. doi: 10.1097/PRA.0000000000000348.

90. Thibaut F, Cosyns P, Fedoroff JP, Briken P, Goethals K, Bradford JMW, et al. The World Federation of Societies of Biological Psychiatry (WFSBP) 2020 guidelines for the pharmacological treatment of paraphilic disorders. World J Biol Psychiatry. 2020;21(6):412–490. doi: 10.1080/15622975.2020.1744723.

91. Konrad A SE, Siegel S, Kossow S, Beier KM. Therapeutic options. In: Beier KM, editor. Pedophilia, hebephilia and sexual offending against children. Springer Cham; 2021. doi: 10.1007/978-3-030-61262-7.

92. Cantor JM, Blanchard R, Christensen BK, Dickey R, Klassen PE, Beckstead AL, et al. Intelligence, memory, and handedness in pedophilia. Neuropsychology. 2004;18(1):3–14. doi: 10.1037/0894-4105.18.1.3.

93. Lett TA, Mohnke S, Amelung T, Brandl EJ, Schiltz K, Pohl A, et al. Multimodal neuroimaging measures and intelligence influence

pedophile child sexual offense behavior. Eur Neuropsychopharmacol. 2018;28(7):818–827. doi: 10.1016/j.euroneuro.2018.05.002.

94. Dyshniku F, Murray ME, Fazio RL, Lykins AD, Cantor JM. Minor Physical Anomalies as a Window into the Prenatal Origins of Pedophilia. Arch Sex Behav. 2015;44(8):2151–2159. doi: 10.1007/s10508-015-0564-7.

95. Fazio RL, Dyshniku F, Lykins AD, Cantor JM. Leg Length Versus Torso Length in Pedophilia: Further Evidence of Atypical Physical Development Early in Life. Sex Abuse. 2017;29(5):500–514. doi: 10.1177/1079063215609.

96. Fazio RL, Lykins AD, Cantor JM. Elevated rates of atypical handedness in paedophilia: theory and implications. Laterality. 2014;19(6):690–704. doi: 10.1080/1357650X.2014.898648.

97. Stein CC, Schiffer B, Papadatou-Pastou M, Packheiser J. Pedophilia and hand preference: A meta-analysis. Laterality. 2025:1–26. doi: 10.1080/1357650X.2025.2535353.

98. Rahman Q, Symeonides DJ. Neurodevelopmental correlates of paraphilic sexual interests in men. Arch Sex Behav. 2008;37(1):166–172. doi: 10.1007/s10508-007-9255-3.

99. Jahnke S, Schmidt AF, Klöckner A, Hoyer J. Neurodevelopmental Differences, Pedohebephilia, and Sexual Offending: Findings from Two Online Surveys. Archives of Sexual Behavior. 2022;51(2):849–866. doi: 10.1007/s10508-021-02228-w.

100. Schiltz K, Witzel J, Northoff G, Zierhut K, Gubka U, Fellmann H, et al. Brain pathology in pedophilic offenders: evidence of volume reduction in the right amygdala and related diencephalic structures. Arch Gen Psychiatry. 2007;64(6):737–746. doi:10.1001/archpsyc.64.6.737.

101. Schiffer B, Peschel T, Paul T, Gizewski E, Forsting M, Leygraf N, et al. Structural brain abnormalities in the frontostriatal system and cerebellum in pedophilia. J Psychiatr Res. 2007;41(9):753–762. doi: 10.1016/j.jpsychires.2006.06.003.

102. Poeppl TB, Nitschke J, Santtila P, Schecklmann M, Langguth B, Greenlee MW, et al. Association between brain structure and phenotypic characteristics in pedophilia. J Psychiatr Res. 2013;47(5):678–685. doi: 10.1016/j.jpsychires.2013.01.003.

103. Mohnke S, Muller S, Amelung T, Kruger TH, Ponseti J, Schiffer B, et al. Brain alterations in paedophilia: a critical review. Prog Neurobiol. 2014;122:1–23. doi: 10.1016/j.pneurobio.2014.07.005.

104. Cantor JM, Kabani N, Christensen BK, Zipursky RB, Barbaree HE, Dickey R, et al. Cerebral white matter deficiencies in pedophilic men. J Psychiatr Res. 2008;42(3):167–183.

105. Tenbergen G, Wittfoth M, Frieling H, Ponseti J, Walter M, Walter H, et al. The Neurobiology and Psychology of Pedophilia: Recent Advances and Challenges. Front Hum Neurosci. 2015;9:344. doi:10.3389/fnhum.2015.00344.

106. Schiffer B, Amelung T, Pohl A, Kaergel C, Tenbergen G, Gerwinn H, et al. Gray matter anomalies in pedophiles with and without a history of child sexual offending. Transl Psychiatry. 2017;7(5):e1129. doi: 10.1038/tp.2017.96.

107. Fazio RL. Toward a Neurodevelopmental Understanding of Pedophilia. J Sex Med. 2018;15(9):1205–1207. doi: 10.1016/j.jsxm.2018.04.631.

108. Joyal CC, Kärgel C, Kneer J, Amelung T, Mohnke S, Tenbergen G, et al. The neurobiological origins of pedophilia: Not that simple. The Journal of Sexual Medicine. 2019;16(1):153–154. doi: 10.1016/j.jsxm.2018.10.015.

109. Jordan K, Wild TSN, Fromberger P, Müller I, Müller JL. Are there any biomarkers for pedophilia and sexual child abuse? A review. Frontiers in psychiatry. 2020;10:940. doi: 10.3389/fpsyt.2019.00940.

110. Alanko K, Salo B, Mokros A, Santtila P. Evidence for heritability of adult men's sexual interest in youth under age 16 from a population-based extended twin design. J Sex Med. 2013;10(4):1090–1099. doi: 10.1111/jsm.12067.

111. Alanko K, Gunst A, Mokros A, Santtila P. Genetic variants associated with male pedophilic sexual interest. The journal of sexual medicine. 2016;13(5):835–842. doi: 10.1016/j.jsxm.2016.02.170.

112. Jespersen AF, Lalumière ML, Seto MC. Sexual abuse history among adult sex offenders and non-sex offenders: a meta-analysis. Child Abuse Negl. 2009;33(3):179–192. doi: 10.1016/j.chiabu.2008.07.004.

113. Cohen LJ, Galynker, II. Clinical features of pedophilia and implications for treatment. J Psychiatr Pract. 2002;8(5):276–289. doi: 10.1097/00131746-200209000-00004.

114. Grady MD, Levenson JS, Mesias G, Kavanagh S, Charles J. "I can't talk about that": Stigma and fear as barriers to preventive services for minor-attracted persons. Stigma and Health. 2019;4(4):400. doi: 10.1037/sah0000154.

115. Jahnke S. The stigma of pedophilia. European Psychologist. 2018. doi: 10.1027/1016-9040/a000325.

116. Levenson JS, Grady MD. Preventing sexual abuse: Perspectives of minor-attracted persons about seeking help. Sexual Abuse. 2019;31(8):991–1013. doi: 10.1177/1079063218797713.

117. Levenson JS, Willis GM, Vicencio CP. Obstacles to help-seeking for sexual offenders: Implications for prevention of sexual abuse. Journal of child sexual abuse. 2017;26(2):99–120. doi: 10.1080/10538712.2016.1276116.

118. Piche L, Mathesius J, Lussier P, Schweighofer A. Preventative Services for Sexual Offenders. Sex Abuse. 2018;30(1):63–81. doi: 10.1177/1079063216630749.

119. Lindegren S. Support and Treatment for Men Convicted of Sexual Offending: Readiness, Change, and Previous Help-Seeking: Acta Universitatis Upsaliensis; 2024. Available from: https://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-525255.

120. Roche K, Stephens S. Clinician stigma and willingness to treat those with sexual interest in children. Sexual Offending: Theory, Research, and Prevention. 2022;17:e5463. doi: 10.5964/sotrap.5463.

121. Hillert J, Haubrock LS, Dekker A, Briken P. Web-based initiatives to prevent sexual offense perpetration: a systematic review. Current psychiatry reports. 2024;26(4):121–133. doi: 10.1007/s11920-024-01489-1.

122. Seto MC, Roche K, Rodrigues NC, Curry S, Letourneau E. Evaluating child sexual abuse perpetration prevention efforts: A systematic review. Journal of child sexual abuse. 2024;33(7):847–868. doi: 10.1080/10538712.2024.2356194.

123. Brown A, Jago N, Kerr J, McNaughton Nicholls C, Paskell C, Webster S. Call to keep children safe from sexual abuse: A study of

the use and effects of the Stop it Now! UK and Ireland Helpline. NatCen Social Research. 2014:1–90.

124. Van Horn J, Eisenberg M, Nicholls CM, Mulder J, Webster S, Paskell C, et al. Stop It Now! A Pilot Study Into the Limits and Benefits of a Free Helpline Preventing Child Sexual Abuse. J Child Sex Abus. 2015;24(8):853–872. doi: 10.1080/10538712.2015.1088914.

125. Beier KM, Ahlers CJ, Goecker D, Neutze J, Mundt IA, Hupp E, et al. Can pedophiles be reached for primary prevention of child sexual abuse? First results of the Berlin Prevention Project Dunkelfeld (PPD). Journal of Forensic Psychiatry & Psychology. 2009;20(6):851–867. doi: 10.1080/14789940903174188.

126. Beier KM, Gieseler H, Ulrich H, Scherner G, Schlinzig E. The Berlin Prevention Project Dunkelfeld (PPD). In: Beier KM, editor. Pedophilia, Hebephilia and Sexual Offending against Children: The Berlin Dissexuality Therapy (BEDIT). Cham: Springer International Publishing; 2021. p. 43–56.

127. Beier KM, Oezdemir UC, Schlinzig E, Groll A, Hupp E, Hellenschmidt T. "Just dreaming of them": The Berlin Project for Primary Prevention of Child Sexual Abuse by Juveniles (PPJ). Child Abuse Negl. 2016;52:1–10. doi: 10.1016/j.chiabu.2015.12.009.

128. Krejčová L, Klapilová K. The paraphile project: primary prevention program for people with paraphilia and their important others. The Journal of Sexual Medicine. 2022;19(11, Supplement 4):S111–S112. doi: 10.1016/j.jsxm.2022.10.097.

129. Bellis A, Pinède D, Moulier V, Martin-Bertsch I, Januel D. French national helpline "stop" for minor-attracted persons: First findings. Encephale. 2025;51(4):349–354. doi: 10.1016/j.encep.2024.06.002.

130. Lätth J, Landgren V, McMahan A, Sparre C, Eriksson J, Malki K, et al. Effects of internet-delivered cognitive behavioral therapy on use of child sexual abuse material: A randomized placebo-controlled trial on the Darknet. Internet Interv. 2022;30:100590. doi: 10.1016/j.invent.2022.100590.

131. Shields RT, Murray SM, Ruzicka AE, Buckman C, Kahn G, Benelmouffok A, et al. Help wanted: Lessons on prevention from young adults with a sexual interest in prepubescent children. Child Abuse Negl. 2020;105:104416. doi: 10.1016/j.chiabu.2020.104416.

132. Engel J, Körner M, Schuhmann P, Krüger TH, Hartmann U. Reduction of risk factors for pedophilic sexual offending. The journal of sexual medicine. 2018;15(11):1629–1637. doi: 10.1016/j.jsxm.2018.09.001.

133. Mokros A, Banse R. The "Dunkelfeld" Project for Self-Identified Pedophiles: A Reappraisal of its Effectiveness. J Sex Med. 2019;16(5):609–613. doi: 10.1016/j.jsxm.2019.02.009.

134. Schmucker M, Lösel F. Sexual offender treatment for reducing recidivism among convicted sex offenders: a systematic review and meta-analysis. Campbell Systematic Reviews. 2017;13(1):1–75. doi: 10.4073/csr.2017.8.

135. Holper L, Mokros A, Habermeyer E. Moderators of Sexual Recidivism as Indicator of Treatment Effectiveness in Persons With Sexual Offense Histories: An Updated Meta-analysis. Sex Abuse. 2023:10790632231159071. doi: 10.1177/10790632231159.

136. Gannon TA, Olver ME, Mallion JS, James M. Does specialized psychological treatment for offending reduce recidivism? A meta-analysis examining staff and program variables as predictors of treatment effectiveness. Clin Psychol Rev. 2019;73:101752. doi: 10.1016/j.cpr.2019.101752.

137. Gronnerod C, Gronnerod JS, Grondahl P. Psychological Treatment of Sexual Offenders Against Children: A Meta-Analytic Review of Treatment Outcome Studies. Trauma Violence Abuse. 2015;16(3):280–290. doi: 10.1177/152483801452604.

138. Sousa M, Andrade J, de Castro-Rodrigues A, Gonçalves RA. The Effctiveness of Psychological Treatment in Adult Male Convicted for Sexual Offenses Against Children: A Systematic Review. Trauma Violence Abuse. 2023;24(3):1867–1881. doi: 10.1177/1524838022108208.

139. Walton JS, Chou S. The Effectiveness of Psychological Treatment for Reducing Recidivism in Child Molesters: A Systematic Review of Randomized and Nonrandomized Studies. Trauma Violence Abuse. 2015;16(4):401–417. doi: 10.1177/1524838014537905.

140. Laajasalo T, Ellonen N, Korkman J, Pakkanen T, Aaltonen O-P. Low recidivism rates of child sex offenders in a Finnish 7-year follow-up. Nordic Journal of Criminology. 2020;21(1):103–111. doi: 10.1080/2578983X.2020.1730069.

141. Stephens S, Jahnke S, Davidson M. Delphi recommendations for diagnosis and treatment of sexual interest in children in non-

mandated community settings. The Journal of Sex Research. 2024:1–14. doi: 10.1080/00224499.2024.2403024.

142. Beier K, von Heyden M, Nentzl J, Amelung T. Preventing Child Sexual Abuse in the 'Dunkelfeld': A Public Health Imperative Requiring Context-Appropriate Science–A Response to König (2025). Journal of Prevention. 2025:1–8. doi: 10.1007/s10935-025-00859-6.

143. Landgren V, Malki K, Bottai M, Arver S, Rahm C. Effect of Gonadotropin-Releasing Hormone Antagonist on Risk of Committing Child Sexual Abuse in Men With Pedophilic Disorder: A Randomized Clinical Trial. JAMA Psychiatry. 2020;77(9):897–905. doi:10.1001/jamapsychiatry.2020.0440.

144. Briken P. A Randomized Clinical Trial in Patients With a Pedophilic Disorder: A Milestone. JAMA Psychiatry. 2020;77(9):893–894. doi:10.1001/jamapsychiatry.2020.0430.

145. ElSayed M, Gupta R. Does Degarelix Hold Potential for the Treatment of Pedophilic Disorder? JAMA Psychiatry. 2020;77(10):1084–1085. doi:10.1001/jamapsychiatry.2020.2594

146. Lochmann, D., Richardson, T. (2018). Selective Serotonin Reuptake Inhibitors. In: Macaluso, M., Preskorn, S. (eds) Antidepressants. Handbook of Experimental Pharmacology, vol 250. Springer, Cham. doi.org/10.1007/164_2018_172.

147. Adi Y, Ashcroft D, Browne K, Beech A, Fry-Smith A, Hyde C. Clinical effectiveness and cost-consequences of selective serotonin reuptake inhibitors in the treatment of sex offenders. Health Technol Assess. 2002;6(28):1–66.

148. Kafka MP, Prentky R. A comparative study of nonparaphilic sexual addictions and paraphilias in men. J Clin Psychiatry. 1992;53(10):345–350.

149. Kafka MP. Sertraline pharmacotherapy for paraphilias and paraphilia-related disorders: an open trial. Ann Clin Psychiatry. 1994;6(3):189–195. doi: 10.3109/10401239409149003.

150. Kafka MP, Hennen J. Psychostimulant augmentation during treatment with selective serotonin reuptake inhibitors in men with paraphilias and paraphilia-related disorders: a case series. J Clin Psychiatry. 2000;61(9):664–670. doi: 10.4088/jcp.v61n0912.

151. Bradford JM, Gratzer TG. A treatment for impulse control disorders and paraphilia: a case report. Can J Psychiatry. 1995;40(1):4–5. doi: 10.1177/070674379504000.

152. Bourgeois JA, Klein M. Risperidone and fluoxetine in the treatment of pedophilia with comorbid dysthymia. J Clin Psychopharmacol. 1996;16(3):257–258. doi: 10.1097/00004714-199606000-00015.

153. Coleman E, Cesnik J, Moore A-M, Dwyer SM. An Exploratory Study of the Role of Psychotropic Medications in the Treatment of Sex Offenders. Journal of Offender Rehabilitation. 1992;18(3-4):75–88. doi: 10.1300/J076v18n03_08.

154. Winder B, Lievesley R, Kaul A, Elliott HJ, Thorne K, Hocken K. Preliminary evaluation of the use of pharmacological treatment with convicted sexual offenders experiencing high levels of sexual preoccupation, hypersexuality and/or sexual compulsivity. The Journal of Forensic Psychiatry & Psychology. 2014;25(2):176–194. doi: 10.1080/14789949.2014.903504.

155. Perilstein RD, Lipper S, Friedman LJ. Three cases of paraphilias responsive to fluoxetine treatment. J Clin Psychiatry. 1991;52(4):169–170.

156. Stein DJ, Hollander E, Anthony DT, Schneier FR, Fallon BA, Liebowitz MR, et al. Serotonergic medications for sexual obsessions, sexual addictions, and paraphilias. J Clin Psychiatry. 1992;53(8):267–271.

157. Greenberg DM, Bradford JM, Curry S, O'Rourke A. A comparison of treatment of paraphilias with three serotonin reuptake inhibitors: a retrospective study. Bull Am Acad Psychiatry Law. 1996;24(4):525–532.

158. Farkas MA, Miller G. Reentry and reintegration: Challenges faced by the families of convicted sex offenders. Federal Sentencing Reporter. 2007;20(1):88-92. doi: 10.1525/fsr.2007.20.2.88.

159. Levenson J, Tewksbury R. Collateral damage: Family members of registered sex offenders. American Journal of Criminal Justice. 2009;34(1):54–68. doi: 10.1007/s12103-008-9055-x.

160. Evans D, Trahan A, Laird K. Shame and blame: Secondary stigma among families of convicted sex offenders. Criminology & Criminal Justice. 2023;23(1):78–97. doi: 10.1177/17488958211017.

161. Tewksbury R, Levenson J. Stress experiences of family members of registered sex offenders. Behav Sci Law. 2009;27(4):611–26. doi: 10.1002/bsl.878.

162. Kavanagh S, Levenson J. Supporting those who love the loathed: Trauma-informed support groups for family members of registered sex offenders. Families in Society. 2022;103(2):208–220. doi: 10.1177/10443894211008846.

163. Olver ME, Barlow AA. Public attitudes toward sex offenders and their relationship to personality traits and demographic characteristics. Behav Sci Law. 2010;28(6):832–849. doi.org/10.1002/bsl.959.

164. Rogers DL, Ferguson CJ. Punishment and rehabilitation attitudes toward sex offenders versus nonsexual offenders. Journal of Aggression, Maltreatment & Trauma. 2011;20(4):395–414. doi: 10.1080/10926771.2011.570287.

165. Kavanagh E, Kinsella E, Ryan P. The Lived Experiences of Female Relatives of Child Sexual Abuse Material (CSAM) Offenders in Ireland and the United Kingdom. J Child Sex Abus. 2023;32(8):940–962. doi: 10.1080/10538712.2023.2274888.

166. Kavanagh E, Kinsella E, Ryan P. "Your world, everything just implodes, it really is a life-changing experience": how do relatives of Child Sexual Abuse Material (CSAM) offenders navigate life following discovery of the offence? Journal of Sexual Aggression.1–17. doi: 10.1080/13552600.2024.2332933.

167. Jones C, Salter M, Woodlock D. "Someone Who Has Been in My Shoes": The Effectiveness of a Peer Support Model for Providing Support to Partners, Family and Friends of Child Sexual Abuse Material Offenders. Victims & Offenders. 2022:1–17. doi: 10.1080/15564886.2022.2051108.

168. Salter M, Woodlock D, Jones C. "You Feel Like You Did Something So Wrong": Women's Experiences of a Loved One's Child Sexual Abuse Material Offending. Violence Against Women. 2024;30(3-4):890–910. doi: 10.1177/10778012231208974.

169. Armitage R, Wager N, Wibberley D, Hudspith LF, Gall V. "We're Not Allowed to Have Experienced Trauma. We're Not Allowed to Go through the Grieving Process" –Exploring the Indirect Harms Associated with Child Sexual Abuse Material (CSAM) Offending and Its Impacts on non-offending Family Members. Victims &

Offenders. 2024;19(5):915–941. doi: 10.1080/15564886.2023.2172504.

170. Duncan K, Wakeham A, Winder B, Blagden N, Armitage R. "Grieving someone who's still alive, that's hard": the experiences of non-offending partners of individuals who have sexually offended – an IPA study. Journal of Sexual Aggression. 2022:1–15. doi: 10.1080/13552600.2021.2024611.

171. Posner K, Brown GK, Stanley B, Brent DA, Yershova KV, Oquendo MA, et al. The Columbia-Suicide Severity Rating Scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. Am J Psychiatry. 2011;168(12):1266–1277. doi: 10.1176/appi.ajp.2011.10111704.

172. Oldfield RC. The assessment and analysis of handedness: the Edinburgh inventory. Neuropsychologia. 1971;9(1):97–113. doi: 10.1016/0028-3932(71)90067-4.

173. Wechsler D. WAIS IV: Wechsler Adult Intelligence Scale – Fourth Edition. Stockholm: Swedish version. NCS Pearson Inc.; 2010.

174. Fischl B, Dale AM. Measuring the thickness of the human cerebral cortex from magnetic resonance images. Proceedings of the National Academy of Sciences of the United States of America. 2000;97(20):11050–11055. doi: 10.1073/pnas.200033797.

175. Fischl B, van der Kouwe A, Destrieux C, Halgren E, Segonne F, Salat DH, et al. Automatically parcellating the human cerebral cortex. Cerebral. 2004;14(1):11–22. doi: 10.1093/cercor/bhg087.

176. Kafka MP. Proposed Dimensional Measures for Hypersexual Disorder - The Hypersexual Disorder Screening Inventory (HDSI) and the Hypersexual Disorder Current Assessment Scale (HD:CAS). Prepared by the Paraphilias Subworkgroup of the Work Group on Sexual and Gender Identity Disorders for DSM-V, July 15, 2009 Modified for December 2009 by Martin P Kafka MD. 2009.

177. Hallberg J, Kaldo V, Arver S, Dhejne C, Piwowar M, Jokinen J, et al. Internet-Administered Cognitive Behavioral Therapy for Hypersexual Disorder, With or Without Paraphilia(s) or Paraphilic Disorder(s) in Men: A Pilot Study. J Sex Med. 2020;17(10):2039–2054. doi: 10.1016/j.jsxm.2020.07.018.

178. Savard J, Öberg KG, Chatzittofis A, Dhejne C, Arver S, Jokinen J. Naltrexone in Compulsive Sexual Behavior Disorder: A Feasibility

Study of Twenty Men. J Sex Med. 2020;17(8):1544–1552. doi: 10.1016/j.jsxm.2020.04.318.

179. Hallberg J, Kaldo V, Arver S, Dhejne C, Jokinen J, Öberg KG. A Randomized Controlled Study of Group-Administered Cognitive Behavioral Therapy for Hypersexual Disorder in Men. J Sex Med. 2019;16(5):733–745. doi: 10.1016/j.jsxm.2019.03.005.

180. Wilson, D. B. (2023). Practical meta-analysis effect size calculator (Version 2023.11.27).

181. Lipsey MW, Wilson DB. Applied social research methods series; Vol. 49. Practical meta-analysis. New York: SAGE Publications; 2011.

182. Wold S, Ruhe A, Wold H, W. J. Dunn I. The Collinearity Problem in Linear Regression. The Partial Least Squares (PLS) Approach to Generalized Inverses. SIAM Journal on Scientific and Statistical Computing. 1984;5(3):735–743. doi: 10.1137/0905052.

183. Yi Q, Panzarella T. Estimating sample size for tests on trends across repeated measurements with missing data based on the interaction term in a mixed model. Control Clin Trials. 2002;23(5):481–496. doi: 10.1016/S0197-2456(02)00223-4.

184. Thornton D. Evidence regarding the need for a diagnostic category for a coercive paraphilia. Arch Sex Behav. 2010;39(2):411–418. doi: 10.1007/s10508-009-9583-6.

185. Agalaryan A, Rouleau JL. Paraphilic coercive disorder: an unresolved issue. Arch Sex Behav. 2014;43(7):1253–1256. doi: 10.1007/s10508-014-0372-5.

186. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative research in psychology. 2006;3(2):77–101. doi: 10.1191/1478088706qp063oa.

187. Braun V, Clarke V. Thematic analysis: A practical guide. London: SAGE Publications; 2021.

188. Braun V, Clarke V. A critical review of the reporting of reflexive thematic analysis in Health Promotion International. Health Promotion International. 2024;39(3):daae049. doi: 10.1093/heapro/daae049.

189. Braun V, Clarke V. Reflecting on reflexive thematic analysis. Qualitative research in sport, exercise and health. 2019;11(4):589–597. doi: 10.1080/2159676X.2019.1628806.

190. Braun V, Clarke V. Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. Counselling and Psychotherapy Research. 2021;21(1):37–47. doi: 10.1002/capr.12360.

191. Lumivero (2023). Nvivo (Version 14) [Computer software]. Lumivero. https://lumivero.com.

192. Smith B, McGannon KR. Developing rigor in qualitative research: Problems and opportunities within sport and exercise psychology. International review of sport and exercise psychology. 2018;11(1):101–121. doi: 10.1080/1750984X.2017.1317357.

193. Guest G, Bunce A, Johnson L. How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. Field Methods. 2006;18(1):59–82. doi: 10.1177/1525822X05279903.

194. Hennink M, Kaiser BN. Sample sizes for saturation in qualitative research: A systematic review of empirical tests. Social Science & Medicine. 2022;292:114523. doi: 10.1016/j.socscimed.2021.114523.

195. Braun V, Clarke V. To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. Qualitative Research in Sport, Exercise and Health. 2021;13(2):201–216. doi: 10.1080/2159676X.2019.1704846.

196. Malterud K, Siersma VD, Guassora AD. Sample size in qualitative interview studies: guided by information power. Qualitative health research. 2016;26(13):1753–1760. doi: 10.1177/10497323156174.

197. Kafka MP, Hennen J. Hypersexual Desire in Males: Are Males with Paraphilias Different from Males with Paraphilia-Related Disorders? Sexual Abuse: A Journal of Research and Treatment. 2003;15(4):307–321. doi: 10.1023/A:1025000227956.

198. Castellini G, Rellini AH, Appignanesi C, Pinucci I, Fattorini M, Grano E, et al. Deviance or Normalcy? The Relationship Among Paraphilic Thoughts and Behaviors, Hypersexuality, and Psychopathology in a Sample of University Students. J Sex Med. 2018;15(9):1322–1335. doi: 10.1016/j.jsxm.2018.07.015.

199. Långstrom N, Seto MC. Exhibitionistic and voyeuristic behavior in a Swedish national population survey. Arch Sex Behav. 2006;35(4):427–435. doi: 10.1007/s10508-006-9042-6.

200. Turner D, Briken P, Grubbs J, Malandain L, Mestre-Bach G, Potenza MN, et al. The World Federation of Societies of Biological Psychiatry guidelines on the assessment and pharmacological treatment of compulsive sexual behaviour disorder. Dialogues Clin Neurosci. 2022;24(1):10–69. doi: 10.1080/19585969.2022.2134739.

201. Briken P, Böthe B, Carvalho J, Coleman E, Giraldi A, Kraus SW, et al. Assessment and treatment of compulsive sexual behavior disorder: a sexual medicine perspective. Sexual Medicine Reviews. 2024;12(3):355–370. doi: 10.1093/sxmrev/qeae014.

202. Erez G, Pilver CE, Potenza MN. Gender-related differences in the associations between sexual impulsivity and psychiatric disorders. J Psychiatr Res. 2014;55:117–125. doi: 10.1016/j.jpsychires.2014.04.009.

203. Kowalewska E, Szumska I, Lew-Starowicz M. Expanding the Lens: A Systematic Review of the Latest Research on Compulsive Sexual Behavior and Problematic Pornography Use among Women. Current Addiction Reports. 2025;12(1):62. doi: 10.1007/s40429-025-00674-3.

204. Beier KM, Neutze J, Mundt IA, Ahlers CJ, Goecker D, Konrad A, et al. Encouraging self-identified pedophiles and hebephiles to seek professional help: first results of the Prevention Project Dunkelfeld (PPD). Child Abuse Negl. 2009;33(8):545–549. doi: 10.1016/j.chiabu.2009.04.002.

205. Banca P, Morris LS, Mitchell S, Harrison NA, Potenza MN, Voon V. Novelty, conditioning and attentional bias to sexual rewards. J Psychiatr Res. 2016;72:91–101. doi: 10.1016/j.jpsychires.2015.10.017.

206. McCloskey KA, Raphael DN. Adult perpetrator gender asymmetries in child sexual assault victim selection: results from the 2000 National Incident-Based Report System. J Child Sex Abus. 2005;14(4):1–24. doi: 10.1300/J070v14n04_01.

207. Winkler AM, Kochunov P, Blangero J, Almasy L, Zilles K, Fox PT, et al. Cortical thickness or grey matter volume? The importance of selecting the phenotype for imaging genetics studies. Neuroimage. 2010;53(3):1135–1146. doi: 10.1016/j.neuroimage.2009.12.028.

208. Rakic P. Specification of cerebral cortical areas. Science. 1988;241(4862):170–176. doi: 10.1126/science.3291116.

209. Bhardwaj RD, Curtis MA, Spalding KL, Buchholz BA, Fink D, Björk-Eriksson T, et al. Neocortical neurogenesis in humans is restricted to development. Proceedings of the National Academy of Sciences. 2006;103(33):12564–12568. doi: 10.1073/pnas.0605177103.

210. de Sanctis V, Soliman AT, Elsedfy H, Soliman N, Elalaily R, Di Maio S. Is the Second to Fourth Digit Ratio (2D:4D) a Biomarker of Sex-Steroids Activity? Pediatr Endocrinol Rev. 2017;14(4):378–386. doi: 10.17458/per.vol14.2017.sse.sexsteroids.

211. Aydoğan Avşar P, Kara T, Kocaman O, Akkuş M. The relationship between digit ratio (2D:4D) and intelligence levels in specific learning disorders. Early Human Development. 2024;196:106085. doi: 10.1016/j.earlhumdev.2024.106085.

212. Raichle ME. The brain's default mode network. Annu Rev Neurosci. 2015;38:433-47. doi: 10.1146/annurev-neuro-071013-014030.

213. Mak LE, Minuzzi L, MacQueen G, Hall G, Kennedy SH, Milev R. The Default Mode Network in Healthy Individuals: A Systematic Review and Meta-Analysis. Brain Connect. 2017;7(1):25–33. doi: 10.1089/brain.2016.0438.

214. Andrews-Hanna JR, Smallwood J, Spreng RN. The default network and self-generated thought: component processes, dynamic control, and clinical relevance. Ann N Y Acad Sci. 2014;1316(1):29–52. doi: 10.1111/nyas.12360.

215. Becerra García JA. Etiology of pedophilia from a neurodevelopmental perspective: markers and brain alterations. Rev Psiquiatr Salud Ment. 2009;2(4):190–196. doi: 10.1016/S2173-5050(09)70051-2.

216. Kennedy-Martin T, Curtis S, Faries D, Robinson S, Johnston J. A literature review on the representativeness of randomized controlled trial samples and implications for the external validity of trial results. Trials. 2015;16(1):495. doi: 10.1186/s13063-015-1023-4.

217. Tozdan S, Dekker A, Neutze J, Santtila P, Briken P. Sexual Interest in Children Among Women in Two Nonclinical and Nonrepresentative Online Samples. Sex Med. 2020;8(2):251–264. doi: 10.1016/j.esxm.2020.01.007.

218. Lievesley R, Lapworth R. “We Do Exist”: The Experiences of Women Living with a Sexual Interest in Minors. Arch Sex Behav. 2022;51(2):879–896. doi: 10.1007/s10508-021-02160-z.

219. Christensen LS, Woods J. The Underexplored Topic of Females who Perpetrate Child Sexual Abuse Material Offenses: What do we know about this Offending Group? Sexuality & Culture. 2024;28(4):1482–1495. doi: 10.1007/s12119-023-10188-7.

220. Tozdan S, Briken P, Dekker A. Uncovering Female Child Sexual Offenders-Needs and Challenges for Practice and Research. J Clin Med. 2019;8(3). doi: 10.3390/jcm8030401.

221. Tozdan S, Hübener G, Briken P, Schröder J. What do women with sexual interest in children tell us about the assumed cause of their sexual interest in children, (non-)disclosure, and professional help?—Results of a qualitative content analysis. International Journal of Impotence Research. 2025;37(3):215–223. doi: 10.1038/s41443-023-00677-6.

222. Lindegren S. Help-seeking prior to offence and conviction: Experiences of individuals convicted of sexual offences. Nordic Journal of Criminology. 2025;26(2):1–18. doi: 10.18261/njc.26.2.8.

223. Cohen L, Ndukwe N, Yaseen Z, Galynker I. Comparison of Self-Identified Minor-Attracted Persons Who Have and Have Not Successfully Refrained From Sexual Activity With Children. J Sex Marital Ther. 2018;44(3):217–230. doi: 10.1080/0092623X.2017.1377129.

224. Saroca K, Sargent J. Understanding Families as Essential in Psychiatric Practice. Focus (Am Psychiatr Publ). 2022;20(2):204–209. doi: 10.1176/appi.focus.20210035.

225. Beech AR, Craig LA. The current status of static and dynamic factors in sexual offender risk assessment. Journal of Aggression, Conflict and Peace Research. 2012;4(4):169–185. doi: 10.1108/17596591211270671.

226. Bruce SL, Ching THW, Williams MT. Pedophilia-Themed Obsessive–Compulsive Disorder: Assessment, Differential Diagnosis, and Treatment with Exposure and Response Prevention. Archives of Sexual Behavior. 2018;47(2):389–402. doi: 10.1007/s10508-017-1031-4.

227. Knack N, Winder B, Murphy L, Fedoroff JP. Primary and secondary prevention of child sexual abuse. Int Rev Psychiatry. 2019;31(2):181–194. doi: 10.1080/09540261.2018.1541872.