FULL-LENGTH REPORT

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On the current psychotherapeutic situation for persons with pornography use disorder in Germany

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ABSTRACT

Background and aims: For the first time, the ICD-11 provides the diagnosis compulsive sexual behavior disorder (CSBD) that can be assigned for pornography use disorder (PUD). This study aimed to estimate the prevalence of PUD and associated consequences in Germany, to identify the psychotherapy demand among likely PUD (lPUD) cases and the treatment supply in different psychotherapeutic settings, to survey psychotherapists' level of expertise regarding PUD, and to identify predictors for psychotherapy demand. *Methods:* Four studies were conducted: 1. Online study in the general population ($n = 2070$; $m = 48.9\%$, $f = 50.8\%$, $d = 0.2\%$), 2. Survey among practicing psychotherapists ($n = 983$), 3. Survey of psychotherapists in psychotherapeutic outpatient clinics ($n = 185$), 4. Interviews with psychotherapeutic inpatient clinics ($n = 28$). *Results:* The estimated prevalence of lPUD in the online study was 4.7% and men were 6.3 times more often affected than women. Compared to

individuals without PUD, individuals with lPUD more often indicated negative consequences in performance-related areas. Among lPUD cases, 51.2% of men and 64.3% of women were interested in a specialized PUD treatment. Psychotherapists reported 1.2%–2.9% of lPUD cases among their patients. 43.2%–61.5% of psychotherapists stated to be poorly informed about PUD. Only 7% of psychotherapeutic inpatient clinics provided specific treatments to patients with PUD. While, among other factors, negative consequences attributed to lPUD were predictive for psychotherapy demand, weekly pornography consumption, subjective well-being, and religious attachment were not. *Discussion and conclusions:* Although PUD occurs quite often in Germany, availability of mental health care services for PUD is poor. Specific PUD treatments are urgently needed.

INTRODUCTION

Distress associated with pornography consumption was for the first time recognized as a disorder by the World Health Organization (WHO) with the introduction of the new ICD-11 (World Health Organization, 2019). Compulsive sexual behavior disorder (CSBD; 6C72) was added as a new diagnosis in the section of impulse control disorders. Individuals with CSBD are unable to control their sexual impulses, causing sexual behavior to become a central focus in their lives and neglecting other areas of life, interests or responsibilities. Individuals with CSBD have made repeated unsuccessful attempts to reduce the sexual behavior, so they continue to engage in the behavior even though it has adverse consequences. The sexual behavior continues despite lack or absence of satisfaction and has persisted for at least six months. It must not be exclusively due to moral judgments or disapproval (World Health Organization, 2019).

Several scientific articles suggest pornography use disorder (PUD) as the clinically dominant variant of CSBD (Gola, Lewczuk, & Skorko, 2016; Kafka, 2010; Reid, Carpenter, et al., 2012). However, several researchers advocate categorizing uncontrolled sexual behavior, and in particular PUD, as a behavioral addiction (Brand et al., 2020; Gola & Potenza, 2018). In research studies, PUD is often labeled as problematic pornography use (PPU; e.g. Bőthe, Tóth-Király, Potenza, Orosz, & Demetrovics, 2020; Fernandez & Griffiths, 2021; Vaillancourt-Morel & Bergeron, 2019). However, in this paper we prefer the term PUD instead of PPU because we apply the CSBD criteria, which are criteria of a disorder not of a problematic use.

In today's world, pornography is available constantly, anonymously, and to a large extent free of charge (Cooper, 1998) due to the proliferation of the internet. Accordingly, the vast majority of adults have at least some experiences with pornography. In a Canadian study, 90% of men and 51% of women reported having used

pornography in the past six months (Blais-Lecours, Vaillancourt-Morel, Sabourin, & Godbout, 2016). A German study showed that 96% of men and 79% of women had used pornography at some point during their lives (Martyniuk & Dekker, 2018). In international representative studies, prevalence rates for lifetime pornography use seem to be somewhat lower, at 54–57% of women and 70–85% of men (Grubbs, Kraus, & Perry, 2019; Lewczuk, Glica, Nowakowska, Gola, & Grubbs, 2020; Rissel et al., 2017). Only a small proportion of pornography users lose control over consumption, so that they experience themselves as addicted to pornography. Men's prevalence data vary between 3 and 5% and exceed women's prevalence data varying between 1 and 2% (Grubbs et al., 2019; Rissel et al., 2017; Ross, Månsson, & Daneback, 2012). Persons with CSBD report severe consequences (e.g. employment difficulties, relationship problems, family problems, sexual difficulties, emotional distress, depressiveness, or suicidality) of their sexual behaviors (Bőthe et al., 2018; Bőthe, Tóth-Király, Griffiths et al., 2021; Kuzma & Black, 2008; Reid, Garos, & Fong, 2012; Wéry et al., 2016), and for a proportion of those affected, these consequences are associated with problematic or even pathological pornographic use. As a limitation, it must be mentioned that past studies have captured the criteria for CSBD differently due to the lack of official criteria, and few studies solely addressed PUD. Therefore, reported prevalence rates may be over- or underestimated.

In addition to the distress caused by the loss of control over pornography use with its subsequent negative social and health consequences, people affected with PUD report frequent psychological comorbidities. In patients with CSBD, particularly common reported comorbidities were affective disorders and anxiety disorders (Kafka, 2015; Kor, Fogel, Reid, & Potenza, 2013; Wéry et al., 2016), substance-related addictions (Ballester-Arnal, Castro-Calvo, Giménez-García, Gil-Juliá, & Gil-Llario, 2020; Kor et al., 2013; Reid & Meyer, 2016) and (symptoms of) attention-deficit/hyperactivity disorder (Bőthe, Koós, Tóth-Király, Orosz, & Demetrovics, 2019; Engel et al., 2019; Karaca, Saleh, Canan, & Potenza, 2017). Studies suggest that the psychotherapeutic treatment needs of individuals with PUD arise from the distress and impairment associated with the disorder (e.g., loss of control, relationship problems, preoccupation) rather than a high frequency of pornography use, which is not considered harmful per se (Gola et al., 2016; Lewczuk, Szmyd, Skorko, & Gola, 2017).

The high need for therapy in these individuals is contrasted by a scarcity of empirical therapy research. The majority of studies published to date on the treatment of CSBD correspond to feasibility or pilot studies, and only a few studies included a randomized waiting group design. In their systematic review, Antons et al. (2022) found general evidence in favor of treatments for CSBD/PUD involving various cognitive behavioral, acceptance, mindfulness or other techniques, however, studies varied regarding the sampling of individuals with PUD only or a broader

inclusion of individuals with all kinds of CSBD-related behaviors. For instance, there is preliminary evidence of the effectiveness of a cognitive-behavioral therapy program for individuals with CSBD (Hallberg et al., 2019), a 12-h acceptance and commitment therapy for individuals with PUD (Crosby & Twohig, 2016), and an online self-help program for individuals with self-identified PUD (Bőthe, Baumgartner, Schaub, Demetrovics, & Orosz, 2021). The lack of randomized therapy studies and the novelty of the diagnostic criteria are accompanied by the fact that there are very few therapy manuals and advanced training courses on PUD to date. In addition, psychotherapists might be hesitant to discuss sexual topics in therapy due to possible discomfort on the patients' as well as the therapist's side (Miller & Byers, 2012; Reissing & Di Giulio, 2010; Urry, Chur-Hansen, & Khaw, 2019), which might be exacerbated when pornography is involved (Walters & Spengler, 2016). Consequently, many psychotherapists seem to be unfamiliar with the disorder and its treatment. According to Dhuffar and Griffiths (2016) and Gola and Potenza (2018) patients with CSBD reported several problems when trying to find a psychotherapist (e.g. avoidance of the topic, trivialization of their problem as "high" sexual drive).

So far, the demand for treatment and socio-economic costs (e.g. inability to work, sick pay, loss of a job/an apprenticeship) specifically related to PUD in Germany remain unclear. As such, the aims of our studies were 1) to determine separate prevalence data of PUD in men and women as well as 2) associated negative health, social or professional consequences in the general population and predictors for therapy demand. We also wanted 3) to determine, on the one hand, the demand for therapy for PUD and, on the other hand, the supply of psychotherapy in various psychotherapeutic settings, and 4) to inquire about psychotherapists' knowledge and attitudes toward PUD.

We conducted four different studies: Study 1: Online study in the general population to estimate the prevalence of likely PUD (lPUD) in men and women and to assess negative consequences experienced by individuals with lPUD. In addition, the study served to determine treatment needs and predictors for therapy demand. Study 2: Survey of practicing psychotherapists as well as (study 3) survey of psychotherapists at eight outpatient clinics for psychotherapy regarding the frequency of lPUD cases among their patients, their knowledge of PUD and its treatment, and their attitudes toward PUD treatment. Study 4: Interview study with the management staff of psychotherapeutic inpatient clinics regarding the psychotherapeutic treatment offered to individuals with PUD.

STUDY 1 – PREVALENCE OF PUD IN A GENERAL PUBLIC SAMPLE

Study 1 aimed to investigate the estimated prevalence of PUD, its socio-economic consequences, and the demand for therapy in a German general public sample.

METHODS

Participants

We recruited our sample via a commercial Internet-based panel provider (bilendi & respondi, https://www.bilendi.de) in March/April 2022. We set out to recruit 2,200 participants with equal number of male and female individuals. Participants had to be at least 18 years old. Exclusion criteria were false responses on two careless response items: an instructed response item to assess attentiveness and a self-report item ("*In your honest opinion, did you fill out this survey conscientiously so that we should include your responses in our analysis?*"). We further excluded participants with an average item response time shorter than 2 s on closed-ended questions presented to all participants ("rusher").

Informed consent to participate was obtained from 3,058 individuals. Due to over-recruitment, the provider refused the participation of 83 persons. Participation was discontinued for 451 persons due to incorrect instructed response, and 319 persons discontinued the questionnaire at their own request. Further, 135 participants (6.1%) reported non-conscientious participation or were classified as rushers. Our final sample consisted of 2,070 participants (48.9% men, 50.8% women, 0.2% diverse). Only a very small number of gender diverse participants (N = 5) took part in our study and not a single gender diverse person reported being affected by a likely PUD. Consequently, group comparisons were only calculated for women and men. For further description of the sample see Table 1.

Table 1. Thresholding of CSBD-19 and PPCS-6 to identify subjects likely with pornography use disorder (lPUD)

Variable	Women N	Women %[a]	Women 95% CI[a]	Men N	Men %[a]	Men 95% CI[a]
CSBD-19						
Score <50	1,032	98.1	[97.0, 98.8]	922	91.0	[89.0, 92.7]
Score ≥50	20	1.9	[1.2, 3.0]	91	9.0	[7.3, 11.0]
PPCS-6						
Score <20	1,006	95.6	[94.2, 96.7]	803	79.3	[76.6, 81.7]
Score ≥20	46	4.4	[3.3, 5.8]	210	20.7	[18.3, 23.4]
Likely PUD						
No (at least one score below threshold)	1,038	98.7	[97.7, 99.2]	929	91.7	[89.8, 93.3]
Yes (both scores above threshold)	14	1.3	[0.8, 2.3]	84	8.3	[6.7, 10.2]

Note. CSBD-19 = Compulsive Sexual Behavior Disorder scale; PPCS-6 = Problematic Pornography Consumption Scale; PUD = pornography use disorder.
[a]Percentage of women and men respectively.
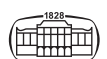
Measures

We asked participants to report their age in years, gender (*male/female/diverse*), relationship status (*single/in a steady partnership or married/other*), sexual orientation (*exclusively heterosexual/predominantly heterosexual, only occasionally homosexual/equally heterosexual and homosexual (bisexual)/predominantly homosexual, only occasionally heterosexual/exclusively homosexual/asexual*), highest education (*no degree/lower school leaving certificate [SLC]/intermediate SLC/upper SLC/university degree/PhD*), and religious attachment ('How would you describe the relationship with your religious denomination?', *close/loose/indifferent/rejective*).

Pornography related measures. First, pornography was defined for the participants: "Pornography is defined as any material (text, image, video, etc.) that (1) generates sexual feelings or thoughts, and (2) contains explicit depictions of sexual activity, including genitalia, such as vaginal or anal intercourse, oral sex, or masturbation." We assessed whether participants had consumed pornography at least once in their life and during the past year. We further asked participants 'How much time do you spend watching pornography per week on average?' (*hours and minutes per week*), and whether they would consider attending a specialized therapy for the treatment of pornography addiction (*yes/no*).

We asked participants if they had sought help because of their pornography use (answer options given by the authors: *yes/no, because I didn't have any problems with it/no, because I didn't feel like it was a serious problem/no, because I didn't know where to look for help/no, because I would have felt uncomfortable or ashamed/no, because I couldn't afford it*). We derived a variable "demand for therapy" from this item. If participants answered '*yes*' or refrained from therapy due to obstacles, we evaluated this as demand for therapy. No demand was only assumed if consumption was not perceived as a problem. Additionally, we derived a variable "actually sought therapy" if the participant answered '*yes*'.

The *Compulsive Sexual Behavior Scale* (CSBD-19; Bőthe, Potenza, et al., 2020) is an internationally developed instrument to assess the degree of symptoms of a CSBD according to the ICD-11 criteria. Each item is rated on a four-point Likert scale (1 = *totally disagree* to 4 = *totally agree*) in relation to the past six months. A total score (range 19–74) and five domain scores can be calculated with higher scores representing more severe CSBD symptoms. The instrument showed good internal consistencies across languages (English, Hungarian, and German; $\alpha \geq 0.90$ for the total scores). The construct validity was supported by its five-domain structure (control, salience, relapse, dissatisfaction, and negative consequences) representing the ICD-11 criteria and appropriate correlations with similar constructs across cultures and genders. Further, the CSBD-19 provides a validated cut-off score to identify individuals with high-risk of CSBD (total score ≥ 50). The internal consistencies in our sample were high for the total score ($\alpha = 0.95$) and good for the subscales (control: $\alpha = 0.85$; salience: $\alpha = 0.77$; relapse: $\alpha = 0.81$; dissatisfaction: $\alpha = 0.82$; negative consequences: $\alpha = 0.94$).

The short *Problematic Pornography Consumption Scale* (PPCS-6; Bőthe, Tóth-Király, Demetrovics, & Orosz, 2021) is an economic six-item scale employed to screen for PPU, derived from the PPCS-18 (Bőthe et al., 2018) and based on the six component model (salience, tolerance, mood modification, conflict, withdrawal, and relapse) by Griffiths (2005). For these studies, the items were translated from English to German and a different researcher fluent in English conducted a back-translation to check for consistency. The six items are rated on a 7-point scale from 1 (*never*) to 7 (*all the time*) in relation to the past six months, and aggregated to a total score (range 6–42). A higher score indicates stronger PPU. The instrument showed good internal consistency in general public samples ($\alpha = 0.84$), and acceptable internal consistency ($\alpha = 0.74$) in a PPU treatment-seeking sample (Bőthe, Tóth-Király, Demetrovics et al., 2021). It demonstrated appropriate construct and convergent validity in distinct samples. A cut-off score of 20 distinguishes between individuals seeking treatment for PPU (problematic use) and not-treatment seeking (non-problematic use) with an accuracy of 89%. The internal consistency was high ($\alpha = 0.94$) in our sample.

The *Assessment of Criteria for Specific Internet-use Disorders* (Müller et al., 2022; ACSID-11) screens for several behavioral addictions, such as (online) PUD, based on the ICD-11 criteria for gaming disorder. A pre-query was used to determine whether Internet activities ('gaming', 'online shopping', 'use of online pornography', 'use of social-networks', 'online gambling', and 'other') had been engaged in at least occasionally in the past 12 months (*yes/no*). For each activity used (except 'other'), 11 items describing negative consequences and signs of addictive behavior were presented, and respondents were asked to describe the frequency (0 = *never* to 3 = *often*) and the intensity (0 = *not intense at all* to 3 = *intense*) of the experience in the last 12 months for each item. The ACSID-11 has a four-factor structure (impaired control, increased priority, continuation/escalation, functional impairment). We calculated mean scores only for each of the online PUD frequency subscales, which showed moderate to high internal consistencies ($\alpha = 0.75–0.90$).

The *Hypersexual Behavior Consequences Scale* (HBCS; Reid, Garos, & Fong, 2012) was developed to assess emotional, social and financial consequences attributed to hypersexual behavior on 22 items on a 5-point Likert-scale (1 = *Hasn't happened and is unlikely to happen* to 5 = *Has happened several times*). We adapted the scale to pornography use by replacing the phrase "sexual activities" with "pornography use" (e.g. "I have lost a job because of my pornography use") and by removing items relating to sexual transmitted disease, legal problems, and arrest, since we deemed these outcomes as unlikely related to pornography use. Removal of these items was also supported by the results of Reid, Garos, and Fong (2012) as they loaded on a separate

factor in their principal component analysis. All items were translated to German, and back-translated to English by a fluent speaker facilitated cross-lingual consistency. A factor analysis was considered inappropriate as the extreme skewness of the items violates statistical assumptions. From a theoretical perspective, we considered a one factor structure as reported by Reid, Garos, and Fong (2012) most appropriate. Thus, we calculated a sum score which revealed a very high internal consistency ($\alpha = 0.97$).

The *short Trait Sexual Motivation Questionnaire* (s-TSMQ; Markert, Walter, & Stark, 2023) was constructed by shortening the TSMQ (Stark et al., 2015) to an economic set of 16 items. Item ratings were given on a 6-point Likert-scale ranging from zero (*not at all*) to 5 (*very much*). The internal consistencies of the four subscales in our sample were high (solitary sexuality: $\alpha = 0.85$; importance of sex: $\alpha = 0.87$; seeking sexual encounters: $\alpha = 0.92$; comparison with others: $\alpha = 0.91$).

Quality of life and subjective-well being. We assessed quality of life (QOL) using the 26 item long, internationally developed *World Health Organization Quality of Life Assessment-Bref* (WHOQOL-BREF; WHOQOL Group, 1994) consisting of four domains (physical, psychological, social relations, and environment) and two items for general QOL and general health. Items are rated on a five-point Likert-scale. Mean scores were calculated for each domain after inversion of negatively phrased items. Across international samples, all domains showed acceptable internal consistency ($\alpha \geq 0.80$) with the exception of three-item domain social relations ($\alpha = 0.68$). The domains can discriminate between sick and healthy individuals in most samples (best performance: physical domain) with given construct validity (Skevington, Lotfy, & O'Connell, 2004). In our sample, the internal consistency was acceptable on all domains ($\alpha = 0.76 - 0.85$).

The five-item *World Health Organization Well-Being Index* (WHO5; World Health Organization, 1998) was employed to assess subjective psychological well-being in this study. Participants were asked to rate five statements on a six-point scale from $0 = at\ no\ time$ to $5 = all\ of\ the\ time$ in relation to the past two weeks. The sum score is multiplied by 4 (range: 0 – 100) with higher values representing higher subjective well-being. The instrument shows good construct validity as well as discriminant validity in a wide range of applications, and serves as a screening tool for depression (Topp, Østergaard, Søndergaard, & Bech, 2015). In our sample, the internal consistency was high ($\alpha = 0.93$).

Socio-economic outcomes. To assess socio-economic outcomes, we asked if the participant (1) has been unable to work within the last six months, for whatever reason, (2) has received sickness benefits in the last six months or is currently receiving sickness benefits and (3) had a reduction in earning capacity (*yes/no* responses). Additionally, we asked participants if they had to repeat a grade in school, dropped out of an apprenticeship early, lost their job, or whether they had a semester without credit at the university due to pornography use (*yes/no* responses). As a summary, we additionally report the occurrence of at least one of these consequences.

Procedure

Participants filled out the survey on a computer. The survey was advertised as lasting 25 min (actual duration: $M = 19.1$ min, $SD = 8.01$, range $= 5$–60 min; after application of exclusion criteria), and participants received 1.25 € from the panel provider for completing the survey. Participants' responses were stored anonymously and separately from participants' personal data on a special server; German data protection regulations applied.

Statistical analysis

Our criterion to assess PUD was established by combining the cut-off scores of the CSBD-19 (total score ≥ 50) and the PPCS-6 (total score ≥ 20). If a person scored 50 or higher on the CSBD-19 and 20 or higher on the PPCS-6, they were classified as likely to have had a PUD (lPUD) in the past six months. We chose this rationale, as the CSBD-19 corresponds to the ICD-11 criteria, however, it is unspecific regarding the type of sexual behavior (e.g. PUD; Bőthe, Potenza, et al., 2020). The cut-off score of the PPCS-6 classifies individuals seeking treatment for PUD, but does not conform to the ICD-11 criteria (Bőthe, Tóth-Király, Demetrovics et al., 2021). The combination of the two instruments was intended to compensate for their respective weaknesses and, thus, identify individuals at high risk for CSBD with pathological pornography use. This classification is used to compare individuals with lPUD with lno-PUD individuals while conducting separate analyses for men and women. Finally, in men with lPUD, we examined which variables were associated with the demand for therapy. To this end, we calculated point-biserial correlations, Φ and Stuart-Kendall τ_c. Because of the very small number of women with lPUD, we limited these analyses to men.

We compared various characteristics of participants with and without lPUD separately for women and men using *t*-tests for heterogeneous variances (Welch-tests), Mann-Whitney-U tests, and χ^2-tests (see Table 2 for a list of variables). Because the very low expected frequencies in cross-tabulations preclude the use of the standard Pearson χ^2-test, we collapsed the tables into 2×2 tables and analyzed them with the $(N-1)$ χ^2-test, as recommended by Campbell (2007). Confidence intervals for proportions were obtained by the Wilson score interval with continuity correction as recommended by Wallis (2013), and for correlations by bootstrap with 5,000 samples (bias corrected and accelerated method). Depending on the statistical analysis, the Phi coefficient, Goodman's and Kruskal's τ, and Hedge's g were used as effect size measures.

Alpha was set at 0.05 with two-sided tests. The data were analyzed in SPSS 28 (IBM SPSS Statistics for Windows, Version 28.1.1, Armonk, NY: IBM Corp).
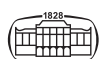
Table 2. Comparison of subjects likely to have pornography use disorder (lPUD) and subjects likely without pornography use disorder (lnoPUD) separately for women and men

	Women									Men								
	lPUD			lnoPUD						lPUD			lnoPUD					
Variable	N	%[a]	95% CI[a]	N	%[a]	95% CI[a]	χ^2 (df = 1)	p	ES	N	%[a]	95% CI[a]	N	%[a]	95% CI[a]	χ^2 (df = 1)	p	ES
Relationship status							2.5	0.113	0.05 [b]							0.0	0.940	0.00 [b]
Single	2	14.3	[2.5, 43.8]	358	34.5	[31.6, 37.5]				27	32.5	[22.9, 43.8]	306	32.9	[29.9, 36.1]			
With partner	12	85.7	[56.2, 97.5]	679	65.5	[62.5, 68.4]				56	67.5	[56.2, 77.1]	623	67.1	[63.9, 70.1]			
Sexual orientation									0.00[c]									0.01[c]
Heterosexual	13	92.9	[64.2, 99.6]	894	86.1	[83.8, 88.1]				63	75.0	[64.1, 83.5]	804	86.5	[84.1, 88.6]			
Bisexual	1	7.1	[0.4, 35.8]	113	10.9	[9.1, 13.0]				17	20.2	[12.6, 30.7]	76	8.2	[6.5, 10.2]			
Homosexual	0	0.0	[0.7, 26.8]	15	1.4	[0.8, 2.4]				4	4.8	[1.5, 12.4]	46	5.0	[3.7, 6.6]			
Asexual	0	0.0	[0.7, 26.8]	16	1.5	[0.9, 2.5]				0	0.0	[0.1, 5.4]	3	0.3	[0.1, 1.0]			
Demand for therapy due to PPU[d]	7	50.0	[24.0, 76.0]	12	1.2	[0.6, 2.1]	185.7	<0.001	0.42 [b]	32	38.1	[27.9, 49.4]	36	3.9	[2.8, 5.4]	143.9	<0.001	0.38 [b]
Actually sought therapy due to PPU[d]	3	21.4	[5.7, 51.2]	3	0.3	[0.1, 0.3]	108.8	<0.001	0.32 [b]	11	13.1	[7.0, 22.6]	8	0.9	[0.4, 1.8]	62.6	<0.001	0.25 [b]
Interest in a special PUD treatment[d]	9	64.3	[35.6, 86.0]	28	2.7	[1.8, 3.9]	154.3	<0.001	0.38 [b]	43	51.2	[40.1, 62.2]	89	9.6	[7.8, 11.7]	117.6	<0.001	0.34 [b]
Attributed to pornography use																		
Had to repeat a grade[d]	3	21.4	[5.7, 51.2]	10	1.0	[0.5, 1.8]	47.4	<0.001	0.21 [b]	14	16.7	[9.7, 26.7]	4	0.4	[0.1, 1.2]	116.2	<0.001	0.34 [b]
Quit an apprenticeship[d]	2	14.3	[2.5, 43.8]	8	0.8	[0.4, 1.6]	26.8	<0.001	0.16 [b]	8	9.5	[4.5, 18.4]	5	0.5	[0.2, 1.3]	49.0	<0.001	0.22 [b]
Semester without credits[d]	2	14.3	[2.5, 43.8]	8	0.8	[0.4, 1.6]	26.8	<0.001	0.16 [b]	11	13.1	[7.0, 22.3]	7	0.8	[0.3, 1.6]	67.2	<0.001	0.26 [b]
Lost a job[d]	1	7.1	[0.4, 35.8]	8	0.8	[0.4, 1.6]	6.6	0.010	0.08 [b]	11	13.1	[7.0, 22.6]	4	0.4	[0.1, 1.2]	84.6	<0.001	0.29 [b]
Inability to work[d,e]	4	28.6	[9.6, 58.0]	252	24.3	[21.7, 27.0]	0.1	0.710	0.01 [b]	18	21.4	[13.5, 32.0]	223	24.0	[21.3, 26.9]	0.3	0.596	0.02 [b]
Sick pay[d,e]	2	14.3	[2.5, 43.8]	45	4.3	[3.2, 5.8]	3.2	0.074	0.06 [b]	8	9.5	[4.5, 18.4]	35	3.8	[2.7, 5.3]	6.3	0.012	0.08 [b]
Reduction in earning capacity[d,e]	1	7.1	[0.4, 35.8]	99	9.5	[7.9, 11.5]	0.1	0.762	0.01 [b]	10	11.9	[6.2, 21.2]	101	10.9	[9.0, 13.1]	0.1	0.772	0.01 [b]
	N	%	95% CI[a]	N	%	95% CI[a]	U	p		N	%	95% CI[a]	N	%	95% CI[a]	U	p	
Highest education							5,263	0.073								35179.5	0.143	
No degree	0	0.0	[0.7, 26.8]	1	0.1	[0.0, 0.6]				1	1.2	[0.1, 7.4]	0	0.0	[0.0, 0.5]			
Lower SLC	1	7.1	[0.4, 35.8]	91	8.9	[7.2, 10.8]				9	10.7	[5.3, 19.8]	98	10.6	[8.7, 0.12.8]			
Intermediate SLC	2	14.3	[2.5, 43.8]	381	37.2	[34.2, 40.2]				18	21.4	[13.5, 32.0]	281	30.4	[27.5, 33.5]			
Upper SLC[f]	4	28.6	[9.6, 58.0]	252	24.6	[22.0, 27.4]				17	20.2	[12.6, 30.7]	214	23.2	[20.5, 26.1]			
University degree	7	50.0	[24.0, 76.0]	287	28.0	[25.3, 30.9]				38	45.2	[34.5, 56.4]	311	33.7	[30.7, 36.9]			
PhD	0	0.0	[0.7, 26.8]	13	1.3	[0.7, 2.2]				1	1.2	[0.1, 7.4]	19	2.1	[1.3, 3.3]			

(continued)

Table 2. Continued

	M	SD	95% CI	M	SD	95% CI	t (df)	p	g	M	SD	95% CI	M	SD	95% CI	t (df)	p	g
Age in years	35.5	10.5	[29.5, 41.5]	47.8	14.8	[46.9, 48.7]	4.33 (13.7)	<0.001	0.83	37.2	12.5	[34.5, 39.9]	49.1	15.1	[48.2, 50.1]	8.20 (106.0)	<0.001	0.80
Age at first contact with porn	15.9	4.6	[13.3, 18.6]	19.7	7.3	[19.2, 20.2]	3.00 (14.1)	0.009	0.52	15.7	4.3	[14.7, 16.6]	17.3	6.7	[16.9, 17.8]	3.16 (118.6)	0.002	0.26
Porn use in h week	12.0	17.5	[1.9, 22.1]	0.4	3.4	[0.2, 0.6]	2.49 (13.01)	0.027	2.97	5.1	8.6	[3.2, 6.9]	1.3	3.0	[1.1, 1.5]	4.06 (84.9)	<0.001	1.00
WHOQOL-BREF																		
Physical	3.42	0.69	[3.02, 3.82]	3.78	0.76	[3.73, 3.82]	1.92 (13.4)	0.077	0.47	3.61	0.58	[3.49, 3.74]	3.86	0.74	[3.81, 3.91]	3.66 (109.4)	<0.001	0.34
Psychological	3.45	0.77	[3.01, 3.89]	3.59	0.72	[3.54, 3.63]	0.65 (13.3)	0.526	0.19	3.59	0.69	[3.44, 3.74]	3.74	0.70	[3.70, 3.79]	1.99 (99.1)	0.049	0.22
Social Relationships	3.60	1.04	[3.00, 4.19]	3.53	0.85	[3.48, 3.58]	0.23 (13.2)	0.824	0.07	3.52	0.88	[3.32, 3.71]	3.50	0.85	[3.44, 3.55]	0.20 (97.4)	0.845	0.02
Environment	3.53	0.70	[3.12, 3.93]	3.88	0.58	[3.85, 3.92]	1.88 (13.2)	0.082	0.61	3.84	0.67	[3.69, 3.98]	3.92	0.60	[3.88, 3.96]	1.16 (95.0)	0.200	0.15
Overall Quality of Life	3.43	0.94	[2.89, 3.97]	3.63	0.77	[3.58, 3.68]	0.81 (13.2)	0.433	0.26	3.70	0.83	[3.52, 388]	3.67	0.81	[3.62, 3.73]	0.29 (97.8)	0.772	0.03
Satisfaction with Overall Health	3.43	1.02	[2.84, 4.02]	3.37	0.98	[3.31, 3.43]	0.23 (13.3)	0.825	0.06	3.45	0.99	[3.49, 3.92]	3.45	1.00	[3.38, 3.51]	2.27 (98.8)	0.025	0.26
WHO5	46.0	23.5	[32.4, 59.6]	53.5	24.1	[52.1, 55.0]	1.19 (13.4)	0.255	0.31	49.5	26.2	[43.8, 55.2]	57.5	22.8	[56.0, 59.0]	2.70 (94.7)	0.008	0.35

Note. lPUD = likely pornography use disorder; lnoPUD = likely no pornography use disorder; SLC = school-leaving certificate; WHO5 = World Health Organization Well-Being Index; WHOQOL-BREF = World Health Organization Quality of Life Assessment-Bref; PPU = problematic pornography use; WHOQOL-BREF = World Health Organization Quality of Life Assessment-Bref; WHO5 = World Health Organization Well-Being Index. [a]Percentage of women and men respectively. [b]Φ. [c]Goodman's and Kruskal's τ. [d]Reflects the number and percentage of participants answering "yes" to this question. [e]During the past six months. [f]Qualification for university.

Ethics

Study 1: The study was approved by the Local Ethics Committee of the Department of Psychology at the Justus-Liebig University of Giessen, and conducted in accordance with the declaration of Helsinki and its later amendments. Informed consent was obtained after informing the participant about the study. Studies 2–4: Considering that professionals were asked, participation was voluntary, and no personal data were collected, no ethical approval was requested for this study. A cover letter ensured that the participants were informed in detail about the aims and procedures of the studies.

RESULTS

Prevalence of lPUD

Eighty-four men (8.3%) and 14 women (1.3%) were classified as likely having PUD, with an overall prevalence of 4.7%. As such, men are 6.3 times more likely to be affected by lPUD than women, $\chi^2 (1) = 55.30$, $p < 0.001$, $\Phi = 0.16$. Among the gender diverse persons, no one was classified as likely having PUD. Details and further results are given in Tables 1 and 2.

Men and women with lPUD were on average younger than those without. Indeed, 69.1% of men and 64.3% of women with lPUD were younger than 40 years, and one in five men under the age of 30 was classified as lPUD case. For both genders, the majority of the lPUD group and the lno-PUD were in relationships, had a similar education level and showed no significant differences in sexual orientation. The average pornography consumption per week was greater in the lPUD group than the lnoPUD group for both genders.

Negative consequences associated with lPUD

Every fifth man (22.6%) and every third woman (35.7%) likely to have PUD experienced at least one serious consequence attributed to pornography use, in contrast to both 1.1% men and women likely not to have PUD. More specifically, those with lPUD had a higher risk of repeating a grade, quitting an apprenticeship, failing to achieve any credit in university in at least one semester and of losing a job attributed to problems related to pornography. However, the effect sizes for the comparisons of serious consequences attributed to pornography use were rather weak. Furthermore, we compared individuals with lPUD regarding work-related variables. lPUD was not associated with inability to work in the past six months, reduction in earning capacity, number of sick days or number of sick pay days. However, men but not women with lPUD were more likely to have received sick pay in the past six months, but the effect size for this comparison was extremely weak.

Regarding quality of life, men likely to have PUD showed decreased physical and psychological quality of life compared to men likely not to have PUD, but not on the social relations and environment domains. In addition, subjective well-being was decreased in men with lPUD. However, men with lPUD

reported a slightly higher satisfaction with overall health. However, all these comparisons were only small effects. Women did not differ in quality of life and subjective well-being outcomes as a function of lPUD classification.

Demand for therapy

Among participants with lPUD, 50.0% of women and 38.1% of men reported a demand for therapy, but only 21.4% of women and 13.1% of men actually sought therapy. Of those with lPUD, 64.3% of the women and 51.2% of the men were interested in a specialized PUD treatment. Overall, this indicates that 4.2% of men and 0.9% of women were classified as lPUD cases and considered attending a specialized therapy for PUD.

Psychotherapy motivation

To understand the characteristics of men with a demand for lPUD psychotherapy in more detail, we correlated demand for therapy with pornography use, sexual motivation, well-being, and sociodemographic variables (Table 3). The Loss of Control and Relapse subscales of the CSBD-19, as well as consequences of pornography use (measured by the HBCS$_{porn}$) and serious consequences attributed to PPU (lost a job, prematurely left an apprenticeship, semester without credits, or repeated a grade attributed to PPU) were predictive for therapy demand. Weekly pornography consumption, life-satisfaction, subjective well-being, education level, and religious attachment were not significantly associated with therapy demand in men.

STUDY 2 – SURVEY OF PRIVATE PSYCHOTHERAPY PRACTICES

Study 2 aimed to explore the demand for PUD treatment in private psychotherapy practices. Further, we wanted to examine how psychotherapists evaluated their knowledge about PUD and its treatment, and how psychotherapists proceeded with diagnosis and treatment.

METHODS

Participants

We contacted all 4,542 psychotherapists registered with statutory health insurance (SHI) in the federal states Hesse, Rhineland-Palatinate, and Saarland. A fifth of contacted psychotherapists ($n = 983$; 77.7% females, 21.3% males; 0.2% diverse) returned their responses via mail. They were 28–79 years old ($M = 49.6$, $SD = 11.5$), had held their licensure for $M = 12.5$ years ($SD = 8.3$), and had been operating their practice for $M = 10.7$ years ($SD = 9.8$). Behavioral therapy was the most common therapeutic orientation (74.5%), followed by psychodynamic therapy (26.4%), psychoanalysis (6.9%), and systemic therapy

Table 3. Associations with demand for therapy in men with likely pornography use disorder

	r_{pb}	95% CI	p	n
ACSID-11: PUD frequency scale				
Impaired Control	0.16	[−0.08, 0.39]	0.180	77
Increased Priority	0.03	[−0.19, 0.25]	0.768	77
Continuation/Escalation	−0.04	[−0.26, 0.18]	0.739	77
Impaired Functioning	0.16	[−0.07, 0.36]	0.165	77
CSBD19				
Control	**0.27**	[0.06, 0.45]	0.015	84
Salience	0.11	[−0.11, 0.33]	0.300	84
Relapse	**0.23**	[0.02, 0.43]	0.032	84
Dissatisfaction	0.18	[−0.03, 0.36]	0.109	84
Negative Consequences	0.19	[−0.04, 0.41]	0.082	84
Weekly porn consumption in hours	0.17	[−0.07, 0.43]	0.119	84
WHOQOL-BREF				
Physical	−0.11	[−0.32, 0.10]	0.307	84
Psychological	−0.03	[−0.25, 0.21]	0.814	84
Social Relationships	0.04	[−0.18, 0.26]	0.707	84
Environment	−0.04	[−0.26, 0.16]	0.719	84
WHO5	−0.14	[−0.35, 0.09]	0.217	84
HBCS$_{porn}$	**0.28**	[0.06, 0.48]	0.010	84
s-TSMQ				
Solitary Sexuality	0.07	[−0.17, 0.32]	0.535	84
Importance of Sex	−0.04	[−0.26, 0.16]	0.733	84
Seeking Sexual Encounters	0.02	[−0.22, 0.27]	0.825	84
Comparison with Others	0.02	[−0.21, 0.26]	0.849	84
Age	−0.13	[−0.32, 0.07]	0.225	84
	Φ		p	n
Serious consequences attributed to PPU[a]	**0.34**	[0.12, 0.54]	0.002	84
In relationship/married	0.13	[−0.09, 0.33]	0.251	83
	τ_c		p	n
Religious attachment[b]	−0.10	[−0.38, 0.18]	0.475	56
Highest education[c]	−0.02	[−0.27, 0.23]	0.859	84

Note. Correlations with $p < 0.05$ are shown in bold.
PUD = pornography use disorder; ACSID-11 = Assessment of Criteria for Specific Internet-use Disorders; CSBD-19 = Compulsive Sexual Behavior Disorder scale; WHOQOL-BREF = World Health Organization Quality of Life Assessment-Bref; WHO5 = World Health Organization Well-Being Index; HBCS$_{porn}$ = Hypersexual Behavior Consequences Scale for pornography; s-TSMQ = short Trait Sexual Motivation Questionnaire; PPU = problematic pornography use.
[a]Lost a job or prematurely left an apprenticeship or semester without credits or repeated a grade due to PPU. [b]Negative = 0, indifferent = 1, loose = 2, close = 3. [c]Drop-out = 1, lower secondary education = 2, middle school = 3, high school diploma = 4, university degree = 5, PhD = 6.

(2.2%). Eleven percent of psychotherapists were licensed to treat children and adolescents exclusively.

Measures

At the beginning of the survey, the ICD-11 criteria for CSBD were presented and the psychotherapists were informed that the survey focused on PUD as a subtype of CSBD. The survey consisted of questions regarding the knowledge about

CSBD ('How well informed did you feel about compulsive sexual behavior disorder before you received this letter?'; 1 = *very poor to* 5 = *very good*) and its treatment ('How well would you rate your current knowledge of treating compulsive sexual behavior disorder?'; 1 = *very poor to* 5 = *very good*), and previous trainings/workshops about CSBD ('Have you had any training on the topic of compulsive sexual behavior disorder?'; *no/yes*).

Participants estimated the total number of patients and the number of patients with PUD in the past year (*free text entry*). In addition, therapists were asked to estimate the number of patients with PUD during their professional life and how many of these patients were female. If the number of patients was given as an interval, the midpoint was used as an estimate. We further inquired the intention to treat CSBD in the future (*no/undecided/yes*). In addition, psychotherapists with CSBD treatment experience were asked if they had refused to treat patients with PUD in the past (*no, I have taken them in/no one has come with this symptomatology/yes, because …*).

At the end, we asked for sociodemographic characteristics: Gender (*male/female/diverse*), age in years, year of licensure, year of establishment in own practice, therapeutic orientation for which they hold their licensure (*behavioral therapy/psychoanalysis/psychodynamic therapy/ systemic therapy*) and licenses (*psychological psychotherapy/ child and adolescent psychotherapy*). The time needed to answer the questionnaire was estimated at a maximum of 10 min.

Procedure

A pen-and-paper survey was sent via mail with self-addressed stamped envelopes enclosed in February and March 2022. Data from the returned questionnaires were entered into a spread sheet twice by two separate groups of research assisting students, and a third researcher resolved inconsistencies. Qualitative coding only occurred for the reasons why therapists refused to take a patient in. Two researchers reviewed the responses to this question and developed following categories: no capacity or long waitlist, lacked knowledge or experience in the treatment of PUD, psychotherapist's perceived emotional overburdening or gender incompatibility, crime-related therapy motivation. A third researcher coded the responses, which was checked by the first two authors.

Statistical analysis

The frequency of PUD was operationalized by dividing the total number of patients with PUD in the past year (i.e., in 2021) by the total number of patients in the past year. Psychotherapists who did not report sufficient data were excluded, leading to a sample of $n = 795$ for this analysis. Similarly, the proportion of female patients was derived from the estimates of the total number of patients with PUD and the number of female patients with PUD during their professional life. Confidence intervals for proportions were obtained by the Wilson score interval with continuity correction as recommended by Wallis (2013).

RESULTS

Frequency of PUD

According to the answers of the psychotherapists, 1.2% (95% CI [1.1%, 1.2%]) of patients presented symptoms that corresponded to a PUD in the past year. Based on the overall number of patients with PUD in their professional lifetime, psychotherapists reported that 4.4% (CI [3.5%, 5.5%]) of patients with PUD were female. About half of psychotherapists (47.0%; 95% CI [43.8%, 50.2%]) reported having treated at least one patient with PUD.

Psychotherapists' knowledge and attitudes toward PUD

The majority of psychotherapists (58.7%; 95% CI [55.6%, 61.8%]) felt that they were (very) ill-informed about CSBD and only 8.3% (CI [6.7%, 10.3%]) reported being (very) well informed about CSBD. Regarding treatment of CSBD, 65.1% (CI [62.0%, 68.1%]) of psychotherapists were (very) ill-informed, and 5.9% (CI [4.5%, 7.6%]) were (very) well informed, respectively. Only 10.5% (CI [8.7%, 12.6%]) of psychotherapists had received a specific training for CSBD. We found that 10.7% (CI [8.8%, 12.9%]) of psychotherapists had refused to offer therapy to a patient with PUD with the main reasons being: no capacity or long waitlist (48.4%), lacked knowledge or experience in the treatment of PUD (32.3%) and psychotherapist's perceived emotional overburdening or gender incompatibility (23.7%). Regarding future treatment of patients with PUD, 61.4% (CI [58.2%, 64.5%]) of psychotherapists reported that they would treat patients in the future, 27.5% (CI [24.7%, 30.5%]) were undecided, and 11.1% (CI [9.2%, 13.1%]) would not treat patients with PUD.

STUDY 3 – SURVEY OF THERAPISTS IN UNIVERSITY-BASED OUTPATIENT PSYCHOTHERAPY CLINICS

Similar to study 2, Study 3 aimed to explore the demand for PUD treatment in outpatient psychotherapy clinics.

METHODS

Participants

Psychotherapists working in one of eight outpatient clinics (six university-associated training clinics, one independent training clinic, and a university-associated regular outpatient clinic) in three federal states (Hesse, Rhineland-Palatinate, Saarland) were contacted by e-mail or via an information sheet distributed via their internal mailboxes. The curriculum of all training clinics was behavior therapy oriented. Our inquiry was answered by 185 psychotherapists or psychotherapists in training, who were predominantly female (80.0%), between 24 and 61 years old ($M = 32.2$, SD = 6.4), and had been practicing psychotherapy for an average of 3.4
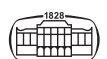
years (SD = 3.9). Therapeutic orientation was mainly cognitive-behavioral (98.4%), and most psychotherapists held or were working towards a licensure for the treatment of adults (92.6%).

Measures

We used an almost identical questionnaire to the one from study 2. Differences concerned demographic information (e.g. time they had been practicing psychotherapy instead of having a private practice) and an additional question addressing whether the topic of CSBD was included in their training program (yes/no). No rejection of patients with PUD was recorded in this study.

Procedure

The questionnaire was distributed as a pen-and-paper or online version depending on site or preference of the psychotherapist in March and April 2022.

Statistical analysis

The frequency of PUD was operationalized by the total number of patients and the number of patients with PUD in the past year (2021). Psychotherapists who did not report sufficient data were excluded, leading to a sample of $n = 166$ for this analysis. Similarly, the proportion of female patients was derived from the estimates of the total number of patients with PUD and the number of female patients with PUD during their professional life. Confidence intervals for proportions were obtained by the Wilson score interval with continuity correction as recommended by Wallis (2013).

RESULTS

Frequency of PUD

According to the psychotherapists, 2.9% (95% CI [2.3%, 3.6%]) of patients presented symptoms that corresponded to a PUD in the past year. Based on the number of patients with PUD in the psychotherapist's professional lifetime, only 4.4% (CI [1.8%, 9.5%]) of patients with PUD were female. About a quarter of psychotherapists (24.3%; CI [18.5%, 31.3%]) reported having treated at least one patient with PUD.

Psychotherapists' knowledge and attitudes toward PUD

Half of psychotherapists (48.1%; 95% CI [40.8%, 55.5%]) felt that they were (very) ill-informed about CSBD, and only 13.5% (CI [9.1%, 19.5%]) reported being (very) well informed about CSBD. Regarding treatment of CSBD, 65.9% (CI [58.6%, 72.6%]) of psychotherapists were (very) ill-informed, and only 9.2% (CI [5.6%, 14.5%]) were (very) well informed. CSBD was included in the curriculum for 23.8% (CI [18.0%, 30.7%]) of psychotherapists. Only 8.7% (CI [5.2%, 14.0%]) had received a specific training for CSBD outside their curriculum.

Regarding future treatment of patients with PUD, 82.2% (95% CI [75.7%, 87.2%]) of psychotherapists reported that they would treat patients in the future, and 17.3% (CI [12.3%, 23.7%]) were undecided. Only one psychotherapist (0.5%) would not treat patients with PUD.

STUDY 4 – SURVEY OF PSYCHOTHERAPEUTIC INPATIENT CLINICS

In study 4, we investigated the resources of psychiatric and psychosomatic inpatient clinics to provide treatment for individuals with CSBD and specifically PUD.

METHODS

Participants

An internet search (klinikradar.de and Google.de) with the words "psychosomatic", "addiction", "dependence", "day clinic" resulted in 101 psychotherapeutic inpatient clinics in the three aforementioned German federal states. We conducted interviews with assistant medical or psychotherapeutic directors at 28 clinics (28%); the other inpatient clinics did not respond or declined the interview. Mostly psychosomatic rehabilitation clinics (39%) and rehabilitation clinics for addiction/substance use (32%) participated.

Measures

The interview consisted of questions regarding the psychotherapists' ability to treat CSBD ('How well do you rate the current knowledge of the clinic's psychotherapists on the treatment of compulsive sexual behavior disorder?'; 1 = *very poor*, 5 = *very good*), whether the inpatient clinic offered specialized treatment ('Does the clinic offer psychotherapy services to treat compulsive sexual behavior disorder?'; *no/yes*), and whether the inpatient clinic would treat individuals with PUD in the future ('Would you consider treating individuals with porn use disorder in the future?'; *yes/no/undecided*).

Procedure

Data were collected in a short interview by telephone or by email if requested in March and April 2022.

Statistical analysis

Confidence intervals for proportions were obtained by the Wilson score interval with continuity correction as recommended by Wallis (2013).

RESULTS

Two thirds of psychotherapeutic inpatient clinics (64.3%; 95% CI [44.1%, 80.7%]) reported that their psychotherapists were

(very) ill-informed about the treatment of CSBD, and only in two inpatient clinics (7.1%; CI [1.2%, 25.0%]) they were well informed, and in none of the inpatient clinics they were very well informed. Only two clinics (7.1%; CI [1.2%, 25.0%]) offered a specialized treatment program for CSBD. Half of the psychotherapeutic inpatient clinics (50%; CI [31.1%, 68.9%]) would treat patients with PUD in the future, one third was undecided (32.1%; CI [16.6%, 52.4%]), and 17.9% (CI [6.8%, 37.6%]) of clinics would not treat patients with this disorder.

DISCUSSION

The ICD-11 diagnosis CSBD may be appropriate for individuals with pathological pornography use, however, the ICD-10 is still used in the German health care system. Consequently, there is a lack of data to adequately assess the treatment demand of individuals with CSBD. Therefore, the study aims were to determine self-reported prevalence data for PUD in men and women in the general population in Germany, to identify associated negative health, social or professional consequences, to specify the demand for psychotherapy as well as predictors for treatment demand, and to examine the psychotherapeutic treatment supply in different psychotherapeutic settings as well as psychotherapists' knowledge and attitude towards PUD.

Prevalence and frequency of PUD for men and women

The self-reported prevalence of lPUD using validated measurement tools was 4.7% in our online sample. The psychotherapists from the outpatient clinics reported an estimated frequency of 2.9% PUD patients, and the psychotherapists in private practice reported an estimated frequency of 1.2% PUD patients. The result from the online study is consistent with self-report data from representative studies in other countries that found prevalences of 3–5% for men and 1–2% for women (Grubbs et al., 2019; Rissel et al., 2017; Ross et al., 2012). In our online sample, men were 6.3 times more often affected by lPUD than women, although this effect was weak. Only 4% of patients with a lPUD were female according to estimates of psychotherapists in private practices and outpatient clinics, which is further evidence of male preponderance regarding this disorder.

Negative consequences attributed to lPUD

When comparing individuals with lPUD to individuals without lPUD, it is notable that individuals with lPUD reported more impairments related to achievement (repeating a grade, quitting an education, semesters at the university without credits, job loss). Men additionally reported lower well-being, lower physical health, and a higher likelihood of sick pay. Overall, a higher impairment is evident, underpinning the need for therapy for people with lPUD. When interpreting these results, however, it must be taken into account that the lPUD group studied was small and that the effect sizes also indicated only weak effects.

Predictors for demand for psychotherapy

The percentages for therapy demand (women: 50%, men 38%) and interest in a specialized therapy for PUD (women 64%, men 51%) are more than twice the number of those who actually sought therapy (women: 21%, men 13%). This difference could indicate inhibitions and barriers regarding seeking therapy.

Predictors for demand for therapy in men with lPUD included loss of control and relapse, and significant consequences in daily life. The finding that demand for therapy is predicted by loss of control and significant consequences in daily life agrees with the results of previous studies (Gola et al., 2016; Kraus, Martino, & Potenza, 2016). These results suggest that demand for therapy is more likely to occur among individuals who have already experienced severe impairment attributed to their symptomatology. Religiosity, education level, relationship status, well-being or duration of pornography use did not predict demand for therapy.

Psychotherapists' knowledge and attitude towards PUD

Surveys of psychotherapists in outpatient clinics, psychotherapy practices and psychotherapeutic inpatient clinics revealed that the majority felt poorly informed about symptomatology and its treatment. The result fits well with the statements that CSBD occurs in less than a quarter of the cases in the training curriculum for psychotherapists and that there are hardly any specialized treatment services for PUD in psychotherapeutic inpatient clinics. So far, the majority of psychotherapists have to rely on other sources of information such as further training, their previous studies or literature sources. Probably, CSBD will receive more attention in the training curricula when the use of the ICD-11 becomes mandatory in the German health care system.

Regarding openness to treat persons with PUD in the future, the vast majority of the psychotherapists in the outpatient clinics were open-minded. Only one female psychotherapist indicated that she would not be willing to treat individuals with PUD in the future. Overall however, the results indicate a great willingness to treat patients with PUD among the psychotherapists working in the outpatient clinics, and further training and supervision could foster confidence to treat PUD (Bloom, Gutierrez, Lambie, & Ali, 2016; Harris & Hays, 2008). Because these results represent the attitudes of future psychotherapists, they can be understood as hope that the treatment situation for people with PUD will improve.

About 11% of practicing psychotherapists had rejected patients with PUD in the past for various reasons. From the patient's perspective, this not only reveals that there is a lack of knowledge among psychotherapists about the treatment of PUD, but also that barriers to treatment exist from the therapeutic side.

Other studies also indicate that patients with CSBD may encounter problems in finding a psychotherapist (e.g., avoidance of the topic, denial, or trivialization of the problem; Dhuffar & Griffiths, 2016; Gola & Potenza, 2018). It is

expected that the introduction of the official ICD-11 criteria in combination with the development of adequate diagnostic tools and treatment manuals will lead to an improvement of the treatment situation.

Limitations

Our studies show for the first time the occurrence, demand for treatment and current treatment situation of PUD in three German states. There are some limitations that need to be mentioned.

First of all, no official disorder criteria have been defined for PUD by WHO so far. Accordingly, there is no uniform definition of PUD to date, so studies can only capture an estimate of prevalence. In our studies, we understood PUD as the most common subtype of CSBD operationalized via the CSBD-19 (Bőthe, Potenza, et al., 2020) in the online study. The combined use of the CSBD-19 with the PPCS-6 (Bőthe, Tóth-Király, Demetrovics et al., 2021) ensured that problematic sexual behavior (also) included problematic pornography use; other sexual behaviors were not excluded.

One of the aims of Study 1 was to estimate the prevalence of PUD in a sample of the German general population. Prevalence estimation in such a large sample is only possible by using established questionnaires. However, a careful clinical differential diagnosis can only be performed in a face-to-face interview. Therefore, as in previous studies of Rissel et al. (2017), Ross et al. (2012) and Grubbs et al. (2019), the results must be understood as prevalence estimates rather than clinically established diagnoses. The ICD-11 criteria exclude individuals who suffer from their pornography use solely because of moral disapproval. This criterion is not covered by the PPCS-6 and CSBD-19 questionnaires used, so individuals who morally disapprove their pornography use potentially fall under "likely PUD" in our online study. Future studies could avoid this limitation of the CSBD-19 by adding an item to capture moral disapproval.

In addition, predictors of demand for therapy could only be identified in the male sample because the sample of women with a lPUD was too small.

In studies 2 (survey of psychotherapists in private practices) and 3 (survey of psychotherapists in outpatient clinics), psychotherapists made estimates regarding the treatment demand of possible PUD patients in the last year or regarding their entire professional life. In these surveys, possible biases cannot be ruled out (e.g., selective recall of certain patients, omission of the topic from psychotherapy, or perhaps gender-specific addressing of the topic in male patients). Psychotherapists did not use specific assessment criteria for these claims, so the results are only estimates for these psychotherapeutic contexts in Germany.

Only selected regions were surveyed with regard to the treatment perspective, so that the results may not be generalizable to the entire country or to other countries. Because of our cross-sectional study designs, we cannot draw causal conclusions from the results. In addition, the results from all four studies are self-reported and are subject to selection bias. Finally, we did not focus on the study of specific minorities, for example, specific ethnicities, nationalities, or sexual preferences, so no conclusions can be drawn about these groups.

Clinical implications and conclusion

The results of our studies may provide important implications for clinical practice. First, the estimation of PUD prevalence in the online study showed that lPUD is common among men. Therefore, it might be important for practicing psychotherapists to integrate the PUD symptomatology into their differential diagnostic approach. The major difficulty is that PUD has not been a defined diagnosis to date and, accordingly, no uniform criteria exist. If PUD is understood as the most common subtype of CSBD, it may be useful to combine the CSBD-19 and PPCS-6 questionnaires with a clinical interview to determine the diagnosis. A specific diagnosis according to ICD-10 criteria is not possible so far.

A part of the persons with lPUD experiences serious psychosocial effects of symptomatology on their performance at school, university, or work, which seems to be related to considering psychotherapy. Psychotherapy can help learn to manage the psychosocial consequences in a functional way (e.g., by helping to establish a daily structure, helping to overcome procrastination, and by helping to learn stimulus control techniques). Our online survey was able to show that the majority of individuals who have a lPUD report an interest in receiving psychotherapy specifically for PUD. However, the level of knowledge among psychotherapists regarding PUD and its treatment is low, and there are few specialized treatments available in the inpatient context. Thus, there is a need for training for PUD treatment. Some of the psychotherapists reported feeling inhibited about treating patients with PUD. The underlying concerns and perhaps misconceptions about PUD should be addressed in training to improve PUD care.

Overall, our studies indicate that PUD care needs to be improved by providing psychotherapists with continuing education about the disorder and its treatment. Prerequisites for an improvement of the therapy situation are manualized therapy programs, qualified trainings for psychotherapists as well as indication criteria for inpatient admissions.

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