Assessment Methods and Management of Hypersexuality and Paraphilic Disorders
Daniel Turner, Daniel Schöttle, John Bradford, Peer Briken

Abstract and Introduction

Abstract

Purpose of review The recent implementation of the Diagnostic and Statistical Manual of Mental Disorders, fifth edition introduced some important changes in the conceptualization of hypersexuality and paraphilic disorders. The destigmatization of nonnormative sexual behaviors could be viewed as positive, however, other changes are more controversial. In order to stimulate new research approaches and provide mental healthcare providers with appropriate treatment regimes, validated assessment and treatment methods are needed. The purpose of this article is to review the studies published between January 2013 and July 2014 that aimed at assessing the psychometric properties of the currently applied assessment instruments and treatment approaches for hypersexuality and hypersexual disorders or paraphilias and paraphilic disorder.

Recent findings Currently existing instruments can validly assess hypersexual behaviors in different populations (e.g. college students, gay and bisexual men, and patients with neurodegenerative disorders) and cultural backgrounds (e.g. Germany, Spain, and USA). Concerning the assessment of paraphilias, it was shown that combining different assessment methods show a better performance in distinguishing between patients with paraphilias and control groups. In addition to psychotherapeutic treatment, pharmacological agents aiming at a reduction of serum testosterone levels are used for hypersexual behaviors as well as paraphilic disorders.

Summary Although the currently applied assessment and treatment methods seem to perform quite well, more research about the assessment and evidence-based treatment is needed. This would help to overcome the existing unresolved issues concerning the conceptualization of hypersexual and paraphilic disorders.

Introduction

After nearly 20 years, the new Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) was published by the American Psychiatric Association in May 2013. With the debate about it and the actual construction process, some important changes and new developments to the conceptualization of hypersexuality and paraphilic disorders were introduced.[1]

Hypersexuality and Hypersexual Disorders

So far, different terms such as sexual addiction, sexual compulsivity, sexual preoccupation, and hypersexuality have been used to describe hypersexual behaviors in an individual, clarifying that the cause of hypersexual behaviors was and still is controversial. Within the present article, we will consistently refer to the terms 'hypersexual behavior' or 'hypersexuality' describing any above average sexual activity (fantasies, urges, and behaviors). In cases in which hypersexual behaviors became pathological, clinicians according to the previous DSM versions were supposed to diagnose a Sexual Disorder Not Otherwise Specified. However, because of the growing clinical experience and the state of scientific knowledge, it was suggested that hypersexual disorder should be included as a distinct entity within the Appendix of DSM-5 (Emerging Measures and Models). Kafka[2] in 2010 proposed the diagnostic criteria for a hypersexual disorder diagnosis. After revisions, hypersexual disorder was defined as recurrent and intense sexual fantasies, urges, or sexual behaviors over a period of at least 6 months, including four of five behavioral criteria (A criterion), causing clinically significant distress (B criterion), not being due to other...
substances or medical conditions (C criterion), and being at least 18 years of age (D criterion).\[3\] Especially, criterion A was criticized as not being able to distinguish between normal and pathological levels of sexual desire, thereby creating a high probability of false-positive diagnoses.\[4\] Others feared a pathologization of 'immoral' sexual behaviors, a misuse in forensic settings, or viewed hypersexual behaviors as a symptom of other psychiatric disorders.\[5–7\] Although some critics could be disproved, hypersexual disorder was not included in the DSM-5 because of the (in the Board of Trustees point of view) still insufficient state of research.\[8,9\] However, it should be noted that it was less questioned that there are individuals seeking help because of hypersexual behaviors and thus it becomes obvious that psychometrically sound assessment measures and treatment methods are needed not only to increase the current state of research, but also to provide clinicians with appropriate tools when seeing such patients. Within the current article, hypersexual disorder is defined based on the proposed DSM-5 criteria.\[3\]

Paraphilias and Paraphilic Disorders

The DSM-5 now distinguishes between paraphilias and paraphilic disorders, thereby aiming to destigmatize nonnormative sexual interests and behaviors, and demarcating them from pathological sexual interests and behaviors.\[1\] Whereas paraphilias are defined as 'any intense and persistent sexual interest other than sexual interest in genital stimulation or preparatory fondling with phenotypically normal, physically mature, consenting human partners' (DSM-5, p. 685), paraphilic disorders are paraphilias that cause distress or impairment to the individual or harm to others.\[1\] Although these changes are viewed rather positive by most authors, some criticism also arose during the DSM-5 publication process.\[10–12\] For example, it was stated that the diagnostic criteria do not reliably differentiate between paraphilic and non-paraphilic sexual behaviors as the current definition is more influenced by political and sociocultural factors, and especially sexual minorities could be discriminated by the narrow wording.\[11,13–15\] In the same sense, the terms 'intense' and 'persistent' sexual interests shall still be used, although they lack a formal operationalization.\[11\] Furthermore, the DSM-5 pedophilic disorder diagnosis as the only paraphilic disorder (except for other specified paraphilic disorder and unspecified paraphilic disorder) does not specifically ask for the disorder occurring in a controlled environment or for the disorder being in full remission.\[10,16\] Thereby, the DSM-5 criteria imply that a pedophilic sexual interest cannot be changed, although the current state of research does not support this view.\[10,16\]

In order to stimulate new and more research as requested by the American Psychiatric Association and to increase comparability and generalizability between studies, well validated assessment methods are needed. Furthermore, mental healthcare providers need effective treatments that can be used in the clinical practice independently of the ongoing debate about the correct conceptualization of the diagnostic criteria.

Methodology

The databases PubMed and PsycINFO were searched for empirical studies that were published between January 2013 and July 2014. The following terms were used for the literature search: 'Hypersexual', 'Hypersexuality', 'Sexual addiction', 'Sexual compulsivity', 'Sexual preoccupation', 'Paraphilic', 'Paraphilia', 'Exhibitionism', 'Pedophilia', 'Sexual Sadism', and 'Frotteurism'. The focus of the review was set on studies evaluating the psychometric properties of the existing assessment methods or the development of new assessment instruments for hypersexual behaviors and hypersexual disorder or paraphilias and paraphilic disorders. Further, any studies concerning psychotherapeutic or pharmacological treatment methods were included. Although studies assessing the correlates of hypersexuality and paraphilias\[17–19\] their taxonomic basis,\[20,21\] or the assessment of related constructs\[22,23\] are without a doubt important for an appropriate assessment and treatment, they were not in the scope of this review. However, cross-references to literature that was not published within the according time period or manuscripts not presenting the findings of empirical research were also included if relevant for the purpose of the present review.

Our search revealed 15 studies (5 studies on the assessment of hypersexuality and hypersexual disorder, 1 study on the management of hypersexuality and hypersexual disorder, 6 studies on the assessment of paraphilias and paraphilic disorder, and 3 studies on the management of paraphilias and paraphilic disorders) that met the inclusion criteria. provides an overview of the included studies.
<table>
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<tr>
<th>Author</th>
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<tr>
<td><strong>Assessment of hypersexuality</strong></td>
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<tr>
<td>Ballester-Arnal et al. [24]</td>
<td>2013</td>
<td>1196 Spanish college students (891 women, 305 men); $M_{age} = 20.2$ years</td>
<td>Paper and pencil version of SCS, SSSS, BDI, and CPS for all participants; $n = 100$ participants second test time 1 week later</td>
<td>SCS internal consistency $\alpha = 0.84$; test–retest reliability $= 0.73$. The SCS showed a positive correlation with sexual sensation seeking ($P &lt; 0.001$), depression ($P = 0.007$), and number of sexual partners ($P &lt; 0.001$).</td>
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<td>Klein et al. [25]</td>
<td>2014</td>
<td>1749 German community participants (750 men, 988 women); $M_{age} = 24.4$ years</td>
<td>Online versions of HBI, SSSS, SCS, and self-constructed questions concerning sexual behavior</td>
<td>Confirmatory factor analysis supported three-factor structure (control, coping, consequences). HBI total score internal consistency $\alpha = 0.90$. The HBI showed a positive correlation with SCS total score, masturbation frequency, number of sexual partners, and dissatisfaction with own sexual life.</td>
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<td>Parsons et al. [26]</td>
<td>2013</td>
<td>202 Self-identified highly sexually active (= having nine or more sexual partners in last 90 days) gay or bisexual men; $M_{age} = 37.0$ years</td>
<td>Online version of HDSI and self-constructed questions about demographics and HIV status</td>
<td>HDI internal consistency $\alpha = 0.90$. Factor analysis suggested that a one factor or three factor solution (additional factor ‘sex as coping mechanism’) would better fit the data than the initially proposed two factor solution.</td>
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<td>Pereira et al. [27]</td>
<td>2013</td>
<td>159 Patients diagnosed with Parkinson disease (107 men, 52 women); $M_{age} = 68.2$ years</td>
<td>Paper and pencil version of SAST, analysis of answers for acceptability, dimensionality, construct validity, and general correlation structure</td>
<td>On the basis of the analyses, a five-item screening version of the SAST was developed. Compared to clinical hypersexual disorder diagnosis the instrument revealed a specificity of 92.6% and a sensitivity of 100%.</td>
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<td>Yeagley et al. [28]</td>
<td>2013</td>
<td>366 Self-identified gay or bisexual men; $M_{age} = 21.5$ years</td>
<td>Online version of HBI and self-constructed questions concerning sexual behavior and HIV</td>
<td>Confirmatory factor analysis supported three-factor structure. HBI control subscale correlated positively with the risk for unreceptive anal intercourse, whereas HBI coping subscale correlated negatively with unreceptive anal intercourse.</td>
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<td><strong>Management of hypersexuality</strong></td>
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<td>Cross et al. [29]</td>
<td>2013</td>
<td>10 Male patients with dementia (8 Alzheimer, 1 vascular, and 1 mixed) and hypersexual behaviors</td>
<td>MPA 100–400 mg daily. All patients have received other medications prior to MPA treatment (7 SSRIs, 6 antipsychotics, and 3 low-dose MPA)</td>
<td>300 mg daily were the average dose leading to a notable reduction of inappropriate hypersexual behaviors. 70% of the men could return to their previous living arrangements.</td>
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<td><strong>Assessment of paraphilic disorder</strong></td>
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<td>Babchishin et al. [30]</td>
<td>2013</td>
<td>35 CSAs with victim under 12 years of age vs. 21 nonsexual offenders</td>
<td>Assessment of pedophilic sexual interests using IAT, viewing time, and</td>
<td>No differences between the groups were found concerning the IAT measure, however, viewing time and explicit rating could</td>
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explicit rating
differentiate between the groups. Combined measure (IAT +
viewing time + explicit rating) showed higher predictive validity
(AUC = 0.88) than IAT (AUC = 0.60) or explicit rating (AUC = 
0.73) alone but not higher than viewing time (AUC = 0.82) alone.

<table>
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<tr>
<th>Study</th>
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| Hempel et al. [31] | 2013 | 46 Contact CSAs ($M_{age} = 49.1$ years) vs. 19 noncontact CSAs ($M_{age} = 47.1$ years) vs. 13 sexual offenders against adult women ($M_{age} = 37.3$ years) vs. 40 nonoffenders ($M_{age} = 35.6$ years) | Assessment of child-sex associations vs. adult-sex associations using IAT and comparison between the four groups | Internal consistency: $\alpha = 0.67$
CSA had stronger child sex associations than nonoffenders. No differences were found between contact CSA and noncontact CSA.
The IAT could significantly distinguish between CSA and nonoffenders: AUC=0.65. |

| Mokros et al. [32] | 2013 | 42 Pedophilic sexual offenders vs. 27 nonsexual offenders vs. 95 community controls | Assessment of pedophilic sexual interests using Affinity 2.5 (explicit sexual attractiveness rating of pictures combined with viewing time task) | Internal consistency explicit rating $\alpha = 0.90$–0.98; viewing time $\alpha = 0.79$–0.89. Pedophilic sexual offenders had higher attractiveness ratings concerning pictures showing small children and prejuveniles in explicit ratings as well as in the viewing time measure. |

| Perillo et al. [33] | 2014 | 128 Mental health professionals (91 men, 37 women) | Assessment of diagnostic interrater reliability about 375 sexual offender files | PPV = probability that both clinicians agree on the presence of a given diagnosis. Pedophilia PPV = 78%, paraphilia NOS PPV = 52%, sexual sadism PPV = 33%. |

| Schmidt et al. [34] | 2014 | 19 Intrafamilial CSAs vs. 35 extrafamilial CSAs vs. 18 child pornography offenders | Assessment of pedophilic sexual interests using EISIP (IAT + viewing time + explicit attractiveness rating) | The EISIP could differentiate between the different CSA subgroups with intrafamilial CSAs showing lower sexual deviance scores than extrafamilial CSAs and child pornography offenders ($P < 0.01$). |

| Van Leeuwen et al. [35] | 2013 | 20 Self-reported pedophilic men vs. 20 self-reported heterosexual community men | Assessment of pedophilic sexual interests using two implicit tasks: IAT and PAT | The combined implicit measures (AUC = 0.97) showed higher predictive validity in distinguishing pedophilic men from nonpedophilic men than any of the single measures alone (IAT AUC = 0.89; PAT AUC = 0.84). |

**Management of paraphilic disorders**

| Koo et al. [36] | 2013 | 38 Sexual offenders ($M_{age} = 33.4$) | Leuprolide acetate (3.75 mg) subcutaneous depot injection given monthly for 3 months | Testosterone levels decreased significantly. Ten months after therapy was ended testosterone levels had returned to their baseline level. More than 70% men had a reduction of the frequency and |

Sexual fantasies were measured with |
Assessment of Hypersexuality and Hypersexual Disorders

All instruments currently in use for the assessment of hypersexual behaviors or hypersexual disorders were developed in the North American or European countries. For an overview of scales in use, we want to recommend the recently conducted reviews by Hook et al. and Womack et al.; however, there is no overlap concerning the included studies between our and their reviews.\[39,40\]

During the time period considered, cross-validation studies of the following questionnaires were conducted: 'Sexual Compulsivity Scale' (SCS), the 'Hypersexual Behavior Inventory' (HBI), and the 'Hypersexual Disorder Screening Inventory' (HDSI).\[41–43\] Reliability of measures is usually reported as Cronbach's alpha (internal consistency). An alpha value of at least 0.7 is considered as appropriate if that instrument is used for research purposes, however, an alpha value of 0.9 should be achieved if the instrument should be used in clinical contexts.\[44,45\]

The Sexual Compulsivity Scale
The SCS consists of 10 items and has shown acceptable validity in various populations, for example, heterosexual and homosexual community men and women, HIV positive men, and college students concerning the assessment of hypersexuality.[41,46] In a sample of 1196 Spanish college students (74.5% women, $M_{age} = 20.2$ years, 96% heterosexual), the SCS revealed an internal consistency of $\alpha = 0.84$, a test–retest reliability of 0.73, and a replication of the scale’s two-factor structure (factor 1: interference of sexual behavior and factor 2: failure to control sexual impulses).[24] Furthermore, the SCS positively correlated with sexual sensation seeking, number of sexual partners, and participation in risky sexual behaviors.[24]

### The Hypersexual Behavior Inventory

The HBI consists of 19 items and measures hypersexual behaviors on three factors: control, coping, and consequences, showing good psychometric properties in treatment-seeking hypersexual men.[42] The HBI total score ($\alpha = 0.90$) and the three subscales ($\alpha = 0.78$ control, $\alpha = 0.86$ coping, and $\alpha = 0.78$ consequences) yielded good-to-excellent internal consistency in a large German online community sample ($n = 1749$, 57% women, $M_{age} = 24.4$ years, 90.3% heterosexual).[25] The HBI total score correlated positively with the SCS total score, masturbation frequency, frequency of pornography consumption, number of sexual partners, number of one night stands, and dissatisfaction with the own sexual life.[25]

In another study with young gay and bisexual men, the three-factor structure of the HBI could be replicated.[28] Furthermore, a higher score in the sexual control subscale increased the risk for unprotected receptive anal intercourse, whereas a higher score in the coping subscale decreased the risk.[28]

### The Hypersexual Disorder Screening Inventory

The HDSI was developed by the DSM-5 Workgroup committee and includes seven items divided in two sections (section A: recurrent and intense sexual fantasies, urges and behaviors; factor B: distress and impairment as a result of these fantasies, urges, and behaviors). The items were developed based on the proposed DSM-5 diagnostic criteria for hypersexual disorder.[26] Parsons et al.[26] evaluated the factor structure of the HDSI in a sample of 202 highly sexually active gay and bisexual men using item response theory analysis and found that either a one-factor or a three-factor solution with the additional factor 'sex as a coping mechanism' would present a better fit to the data than the initially proposed two-factor structure. Further, internal consistency was found to be $\alpha = 0.88$.

### Assessment of Hypersexual Behaviors in Patients With Neurodegenerative Disorders

Family members as well as clinicians are sometimes confronted with hypersexual behaviors of patients suffering from neurodegenerative disorders like Parkinson disease or dementia, which can pose a challenge for those confronted with it.[47,48] Pereira et al. created a five-item screening version of hypersexual behaviors based on the sexual addiction screening test (SAST) for people with neurodegenerative disorders with scores possibly ranging from 0 to 5 and a cutoff score of 2.[27,49] Compared with clinical hypersexual disorder diagnoses (consensus diagnosis of neurologist and psychiatrist), the instrument revealed a specificity of 92.6% and a sensitivity of 100% in a sample of 159 outpatients diagnosed with Parkinson disease (52 women, $M_{age} = 68.2$ years).[27] However, more research about this scale from independent research groups including large samples of patients has to be conducted before the scale can be applied in everyday practice.

### Management of Hypersexuality

Research about treatment interventions and treatment outcomes is scarce, and often lacks generalizability because of deficient methodological study designs, for example, no randomization, missing control groups, and small intervention groups.

For an overview of the treatment methods for hypersexual disorders, one should consider the review conducted by Hook et al.[50] Only one study in the according time period...
could be identified evaluating the usefulness of high-dose oral medroxyprogesterone acetate (MPA, 100–400 mg daily) for the treatment of inappropriate hypersexual behaviors in 10 men diagnosed with dementia (M\(_{\text{age}}\) = 79.5 years).[29] MPA is usually referred to as the third-line agent in the treatment of hypersexual behaviors in individuals with neurodegenerative disorders. Thus, prior to MPA treatment, all men had already received other pharmacological agents [seven men selective serotonin reuptake inhibitors (SSRIs), six men atypical antipsychotics, and one man low-dose MPA]. In seven of the ten patients, healthcare professionals reported significant behavioral improvements leading to the patient's return to his previous living arrangements.[29] Although MPA treatment seems to be an effective alternative for hypersexual patients suffering from dementia or other neurodegenerative disorders, it should however be limited to those resistant to other medications with less side-effects. Severe side-effects accompanied by MPA are, for example, hypertension, hyperglycemia, feminization, weight gain, and especially osteoporosis.[51]

### Assessment of Paraphilic Disorders

All but one study investigating the psychometric properties of assessment instruments for paraphilias or paraphilic disorders were conducted with sexual offender populations. Concerning sexual offender evaluations, it can be assumed that the vast majority of clinicians primarily rely on their clinical experience and judgment when diagnosing a paraphilic disorder.

Perillo et al.[33] evaluated the interrater reliability of mental disorder diagnoses (DSM-IV) in 375 sexual offenders who were evaluated under the Sexually Violent Predator (SVP) Act 2004 in the USA. Data from 128 mental health professionals were analyzed (PhD-level clinicians, psychologists, M.D., and Master's-level clinicians) and it was found that clinicians had the highest agreement concerning a pedophilia diagnosis, with a probability of 78% that two or more clinicians would agree on the presence of that diagnosis.[33] Concerning paraphilias not otherwise specified, there was a probability of 52% that clinicians would agree upon the diagnosis and a probability of 33% concerning a sexual sadism diagnosis.[33]

However, it was suggested that clinical assessments are susceptible to socially desirable answering and impression management limiting the diagnostic validity of clinical judgments.[34,52,53] In contrast, assessment instruments measuring implicit cognitions and implicit attentional processes were described as more objective, less vulnerable to deception, and could thus be considered as one useful addition to support clinical diagnostics.[54] During the last 18 months, studies assessing the psychometric properties of implicit association tasks (IATs) or viewing time measures concerning the assessment of pedophilic sexual interests (not pedophilia diagnosis) were published. Reliability of implicit measure is usually reported as Cronbach's alpha. Classification validity of implicit measures is usually assessed as the area under the curve of the receiver operating characteristics curve (AUC of the ROC curve).[55] Thereby, an AUC of 1 would represent a perfect distinction between individuals with and individuals without a paraphilia, whereas an AUC of 0.5 would refer to a prediction at chance level. According to the commonly used classification, AUCs below 0.63 are considered as small, AUCs between 0.64 and 0.71 as moderate, and AUCs greater than 0.72 as large effect sizes.[56]

Hempel et al.[31] found a reliability of \(\alpha = 0.67\) for their IAT in a sample of 118 men [65 child sexual abusers (CSAs), 13 rapists, and 40 nonoffenders]. Furthermore, the IAT could significantly distinguish between CSAs and nonoffenders (AUC = 0.65), meaning that CSAs had stronger associations concerning child stimuli.[31]

Mokros et al.[32] evaluated the psychometric properties of a viewing time measure and an explicit attractiveness rating of pictures showing children or adults using a sample of 42 pedophilic CSAs, 27 nonsexual offenders, and 95 men from the community. Both measures produced highly acceptable reliability scores (viewing time \(\alpha = 0.79–0.89\); explicit rating: \(\alpha = 0.90–0.98\)). Classification accuracy between CSAs and community men produced significant AUCs of 0.62 for viewing time, 0.64 for the explicit ratings, and 0.80 for a combined measure (viewing time and explicit rating). However, a sensitivity of 90.5% in the combined measure would go along with a rather low specificity of 50.5%.[32] Comparably, Babchishin et al.[30] assessed the classification accuracy of an IAT, a viewing time measure, and an explicit rating in 35 CSAs in comparison to 21 nonsexual offenders. They found that a combined measure consisting of viewing time, IAT, and the explicit rating had a higher predictive accuracy (AUC = 0.88) in distinguishing CSAs from nonsexual offenders concerning their intensity of pedophilic sexual interests compared with the IAT (AUC = 0.60) and the explicit rating (AUC = 0.73) alone but not compared to...
the viewing time measure \((AUC = 0.82)\).[30] Furthermore, a combined IAT, viewing time, and explicit rating could also distinguish between different CSA subgroups, with intrafamilial CSAs \((n = 19)\) having lower sexual deviance scores than extrafamilial CSAs \((n = 35)\) and child pornography offenders \((n = 18)\).[34]

Also in men not previously convicted because of a sexual offence, the combination of two implicit tasks [IAT and picture association task (PAT)] revealed a higher classification accuracy \((AUC = 0.97)\) than the IAT \((AUC = 0.89)\) or the PAT \((AUC = 0.84)\) alone.[35] Both tasks intended to assess pedophilic sexual interests in 20 self-reported pedophilic men (only 1 man was previously convicted for a sexual offence against a child) and 20 self-reported heterosexual men from the community.[39]

Although implicit measures can be used as a valid addition in clinical diagnostics in men who have committed a sexual offence, such a multimethod approach also requires greater institutional resources, greater assessment time, and more personal expertise. Furthermore, a clinical diagnosis should not be solely based on the results of these implicit measures and always requires information from the patient. It should also be noted that if these so-called objective measurements are used to detect information about sexual interests that the patient wants to hold back, they may also cause negative consequences in the therapeutic processes.[57]

Management of Paraphilic Disorders

Concerning the psychotherapeutic treatment of paraphilic disorders, no studies were published; however, three studies could be identified evaluating pharmacological treatment approaches.[36,37,38] However, we want to recommend a just recently published review and a meta-analysis about medical and psychological interventions for CSAs.[58,59] Different pharmacological agents have been introduced for the treatment of paraphilic disorders. Although these agents [e.g. SSRIs, cyproterone acetate (CPA), and gonadotropin-releasing hormone (GnRH) agonists] show different pharmacodynamic profiles, they all aim at a reduction of the sexual drive, sexual preoccupation or sexual impulsivity.

In a study evaluating the pharmacological treatment methods applied in German forensic–psychiatric institutions in sexual offenders \((n = 611)\), it was found that SSRIs were used most frequently \((12\%)\), followed by GnRH agonists \((11\%)\), antipsychotics \((10\%)\), and CPA \((5\%)\).[38] Furthermore, in 75% of patients treated with GnRH agonists, a reduction in the frequency of sexual thoughts was reported.[38]

In two consecutive studies, Koo et al.[36,37] evaluated the effectiveness of GnRH agonist treatment \((leuprolide acetate 3.75 mg subcutaneous depot injections every 3 months)\) of paraphilic-disordered sexual offenders in a South-Korean forensic–psychiatric hospital. Most patients were diagnosed with a pedophilia \((45\%)\), followed by a paraphilia not otherwise specified \((23\%)\), whereas the remaining offenders were diagnosed with voyeurism, fetishism, or exhibitionism. After 3 months of GnRH agonist treatment, 76% of the 38 included patients reported a reduction of sexual thoughts, 71% reported a reduction in the intensity of sexual thoughts, and 74% a reduction in masturbation frequency measured with Wilson’s Sexual Fantasy Questionnaire (SFQ).[36] Most prevalent adverse effects were hot flushes \((45\%)\), weight gain \((29\%)\), testis size reduction \((24\%)\), and depressive symptoms \((21\%)\).[36]

In the second study, Koo et al.[37] compared the patients being treated with GnRH agonists for 3 months \((n = 38, \text{ group } A)\) with those being treated for 6 months \((n = 18, \text{ group } B)\). They found that 1 year after GnRH agonist treatment was stopped, sexual fantasies measured with Wilson’s SFQ returned to the baseline levels in group A, whereas sexual fantasies remained at a lower level in group B. Furthermore, serum testosterone concentrations in group A showed a strong upsurge above the baseline level within the first 2 months after the therapy was ended, followed by a slow decrease until baseline levels were reached after about 10 months. In contrast, in group B, a stable increase of testosterone concentrations could be observed until baseline levels were reached after about 12 months.[37]

Conclusion

Although the DSM-5 has introduced some important innovations, many unresolved issues persist, especially concerning the noninclusion of hypersexual disorder into the DSM as
well as the inconsistent conceptualization of paraphilic disorders. Nevertheless, currently applied assessment instruments seem to validly evaluate constructs of hypersexual behavior (SCS and HBI). However, concerning the conceptualization and assessment of hypersexual disorders (HDSI) based on the DSM-5 criteria, more research is needed for clarifying the importance of the raised concerns. Concerning the assessment of paraphilic disorders and especially pedophilic disorder, mental healthcare providers could additionally consider applying the described implicit measures. Although the studies included in the present review suggested that GnRH agonists could be a useful addition to psychotherapeutic treatment in paraphilic sexual offenders, the recently published meta-analyses found no or only very small treatment effects for psychotherapy as well as pharmacotherapy. This should, however, not lead to pessimism. Even in high-risk paraphilic and hypersexual offenders, multimodal approaches may lead to a decrease in the propensity to reoffend over time.

Sidebar

Key Points

- The DSM-5 has introduced some important, maybe destigmatizing changes to the conceptualization of paraphilic disorders, however, some of them are discussed controversial. Hypersexual disorder was not included in the DSM-5.
- The Hypersexual Behavior Inventory (HBI) as well as the Sexual Compulsivity Scale (SCS) can validly assess different constructs of hypersexuality, and a new scale was proposed for the assessment of hypersexuality in patients with neurodegenerative disorders.
- Although first studies have indicated that the Hypersexual Disorder Screening Inventory (HDSI) can be used to assess a hypersexual disorder following the proposed DSM-5 criteria, its proposed factor structure could not be replicated in gay and bisexual men.
- The combination of different implicit and explicit measures for the assessment of pedophilic sexual interests can serve as a useful addition to the clinical diagnostic process.
- Medications aiming at a suppression of the serum testosterone concentrations are a useful addition to the psychotherapeutic treatment methods for hypersexual and paraphilic disorders.

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*This is the first study that translated and assessed the psychometric properties of the Sexual Compulsivity Scale in the Spanish population.

   * This is the first study that translated and assessed the psychometric properties of the Hypersexual Behavior Inventory in the German population.


   ** This is the first psychometric investigation of the Hypersexual Disorder Screening Inventory (HDSI). The HDSI is the only assessment instrument of a hypersexual disorder based on the proposed DSM-5 criteria.


   ** This is the first study that provided a new screening scale for the assessment of hypersexual behaviors in patients with Parkinson's disease. Such a scale is of extraordinary importance as hypersexual behaviors in patients with neurodegenerative disorders pose many challenges for relatives and clinicians.


   * This study evaluated the psychometric properties of a new assessment battery for pedophilic sexual interests combining the implicit and explicit measures. Compared with the previous studies including sexual offenders, this study has a large sample size and is based on an especially sound implementation, thereby increasing its generalizability.


** This is the first study assessing the performance of implicit measures in men with pedophilic sexual interests who have not committed a sexual offence before. This study has shown that implicit measures can be used to assess pedophilic sexual interests in nonsexual offenders.


** This is the first study that compared the testosterone levels in sexual offenders after 3 or 6 months of GnRH agonist treatment. It was found that a treatment duration of 6 months leads to a decrease in sexual fantasies 1 year after the treatment has ended, whereas after 3 months of treatment, sexual fantasies returned to baseline 1 year after therapy.


* This study assessed the frequency of pharmacological treatments in sex offenders in Germany. This study includes half of all forensic–psychiatric institutions in Germany and is thus rather representative. Interestingly, many pharmacological agents are in use that are not officially approved for the treatment of sexual offenders.


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Conflicts of interest

There are no conflicts of interest.