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Severe Sexual Sadism—An Underdiagnosed Disorder? Evidence from a Sample of Forensic Inpatients

ABSTRACT: Severe sexual sadism is a disorder of sexual preference that focuses on humiliation and subjugation of the victim, sometimes causing grievous injury or death. Sexual sadists pose a particular risk. However, the diagnosis as such is unreliable and prevalence estimates vary. In a sample of male high-security forensic inpatients who had committed sexual offenses, we found two-thirds of sexual sadists had not been identified as such prior to commitment. Possible reasons for missing the diagnosis are many fold. Present data support the notion that unrecognized sexual sadists more closely resembled non-sadistic sex offenders than accurately diagnosed sadists. In particular, initially unrecognized sexual sadists had less severe previous convictions, less vocational training, and experienced a less supportive upbringing than their correctly identified sadistic counterparts. The latter, in contrast, more often reached media coverage through their offense(s). We conclude that severe sexual sadism is likely an underdiagnosed, yet forensically highly relevant disorder.

KEYWORDS: forensic science, sexual sadism, paraphilia, diagnostic criteria, prevalence rate, misdiagnosis

The term sexual sadism denotes forms of sexual conduct that derive pleasure from inflicting pain, humiliation, or suffering on another human being. The primary aim of the sexual sadist is to obtain sexual lust through experiencing power over another individual as several authors have argued (1,2). Others have posited that in sexual sadists, aggression and sexual arousal would have been fused through a process of conditioning (3). Within sexual sadism, deviant fantasizing plays a major role in ultimately bringing about compulsive and intrusive sexual rumination (4). According to Holmes and Holmes (5), the pathway to sexual offending leads through the stages of symbolism (i.e., focusing on inanimate objects or parts of the body as fetishes) and ritualism (i.e., developing refined mental screenplays).

Although phenomenologically similar, there is a clear discrepancy between consensual sadomasochistic (SM) roleplay and forensically relevant severe sexual sadism (6). The former represents a mutual agreement between sadomasochistically inclined individuals, nearly one-third (29%) of whom change between dominant and submissive behavior according to a German survey by Spengler (7). The latter, in contrast, focuses on the notion of coercion; the victim is subjugated against his or her own will which clearly indicates the relevance of severe sexual sadism for sexual offending and violence.

By definition, psychiatric classification standard DSM-IV-TR (8) regards sexual sadism as a disorder of sexual preference (paraphilia) that ought to be diagnosed if the individual in question is repeatedly experiencing strong sexual urges, fantasies, or acts that circle around the infliction of psychological or physical suffering on others. Furthermore, these urges, fantasies, or acts need to be present for at least half a year and need to have impaired that individual's functioning to a significant degree.

In contrast to ICD-10 (9), where the two domains of sadism and masochism are merged into one category of sadomasochism, DSM-IV-TR (8) specifies separate categories for each. This distinction seems plausible in particular with regard to forensically relevant sexual sadism. As Abel et al. (10) have shown, the rate of concomitant masochistic tendencies among sexual offenders is considerably lower than in the nonoffender sample that Spengler (7) has studied. Abel et al. (10) report that 18% of sadistic sexual offenders were also masochists. Moreover, 46% had committed sexual assault or rape offenses, 21% had engaged in exhibitionism, 25% in frotteurism, 25% in voyeurism, and about one-third in pedophilia (cf. 11). Similarly, Marshall et al. (12) found comorbid paraphilias in 13 of 41 sexual sadists studied by them (i.e., 32%).

Conceptually, forensically relevant forms of sexual sadism show considerable overlap with the construct of psychopathy (13) and with the DSM-III-R diagnosis of sadistic personality disorder (14). As Kirsch and Becker (15) point out, both sexual sadism and psychopathy epitomize emotional deficits on behalf of the individual. Not surprisingly, Porter et al. (16) found higher proneness to exert gratuitous and excessive violence as well as sadistic violence among 18 psychopathic sexual murderers than among their 20 non-psychopathic counterparts. Sadistic personality disorder according to DSM-III-R (eliminated in the subsequent edition) represents an extraordinary increase in the characteristic trait of taking pleasure in controlling or subjugating other people. The prototypical example would be the drill sergeant who takes pleasure in humiliating or degrading his subordinates without deriving sexual gratification from this experience. In a study of 41 inmates from a maximum security prison, Holt et al. (17) found significant correlations between the traits of sadism and psychopathy, but neither of these two correlated significantly with the DSM-IV diagnosis of sexual

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sadism. The trait of sadism was measured through the Millon Clinical Multiaxial Inventory-II, Scale 6B (18) and the Personality Disorder Examination (19). Psychopathy was assessed through the Psychopathy Checklist-Revised (20). Hence, psychopathy and sadism appear to be more closely related both conceptually and clinically, while sexual sadism as a paraphilia tends to be rather distinct. Nevertheless, Kirsch and Becker's (15) suggestion ought to be followed. The links between these constructs should be addressed more clearly in future empirical research.

Taking Brittain's (1) description of the sadistic murderer as a basis, several authors have highlighted the particular relevance of sexual sadism for grievous offenses, such as sexual assault, rape, and homicide. Dietz et al. (21) have put forward a description of the typical offense behavior based on a sample of 30 sexually sadistic criminals. Apart from the expected aspects of crime scene behavior such as torturing or injuring the victim, the offenses indicated a remarkably higher degree of planning, including the choice of strangers as victims. Similarly, Ressler et al. have described the crime scene actions typically associated with sexual homicide in a series of articles and also noted close associations with sexual sadism (22–24). Langevin (25) also noted a higher proportion of sexual sadism in a sample of 33 sexual murderers as compared with 714 general sex offenders. A case example of sexually sadistic homicide is given by Simonsen (26). In order to distinguish the forensically relevant form of sexual sadism from consensual SM roleplay, various authors have used terms like "dangerous" or "predatory" sadism (11) or "severe" sexual sadism (27)—the term we adopt for the present paper.

The relevance of severe sexual sadism for diagnostic, therapeutic, and prognostic issues follows from studies indicating that sexual deviance is among the most predictive criteria for offense relapse among sexual offenders (28–30). As far as therapeutic interventions are concerned, the picture remains rather bleak given there are only few case studies that assess behavior-therapeutic (31) or pharmacological treatment of sexual sadists (32). To our knowledge, both specific treatment protocols and controlled outcome studies are currently lacking. With regard to sexual reoffending, the study by Berner et al. (28) indicates, for instance, that the relapse rate was higher among sexual sadists (38% recidivism rate) than among the nonsadistic sexual offenders (30% recidivism rate) across an average time-at-risk of 6 years.

The prevalence estimates on severe sexual sadism vary greatly. While Kafka and Hennen (33) noted a proportion of about 8% in a sample of 60 sexual offenders in outpatient care diagnosed with paraphilia, Berger et al. (34) noted a rate of 40% in a sample of prison inmates with mental disorders. Clearly, the prevalence depends on the clusters chosen to sample the participants from. There are likely to be more sexual sadists on a prison ward than in standard psychiatric outpatient care. This has led some authors to speculate whether the prevalence of severe sexual sadism might not be overestimated altogether (35).

What is even more important in this regard is the issue of insufficient reliability concerning the diagnosis of severe sexual sadism. It is due to this lack of sensitivity and specificity in the diagnosis that the prevalence estimates vary so widely according to Marshall and Kennedy (36). In fact, as a study by Marshall et al. (37) reveals, even experienced clinicians and experts are unlikely to agree on a diagnosis of severe sexual sadism based on DSM-IV-TR criteria. The average inter-rater reliability between 15 experts concerning 12 case descriptions (six of whom refer to sexual sadists) was low, with a completely unsatisfactory Cohen's κ value of 0.14. As Marshall and Hucker (27) note, one would wish for higher agreement among diagnosticians, given the ramifications of a diagnosis of sexual sadism for the individual concerned: release from custody or prolonged incarceration, possibly meeting the criteria for Sexually Violent Predator status.

In our hospital, a state high-security forensic psychiatric hospital, we noted that a significant number of patients who turned out to be sexual sadists after prolonged treatment and observation periods had initially been sentenced to mandatory psychiatric treatment because of other, often less severe diagnoses. Hence, we decided to assess the following in a systematic manner:

(a) How many actual sexual sadists had not been diagnosed as such upon sentencing?
(b) To identify which features would distinguish those who had correctly been diagnosed as sexual sadists prior to the mandatory psychiatric treatment from those who had only been identified as sexual sadists afterwards.
(c) More specifically, we assumed that initially undiagnosed sexual sadists would have a certain profile which led to their actual diagnosis being missed. In particular, we assumed that in comparison with those who had been diagnosed as sexual sadists on admission, the undiagnosed sexual sadists would be
   - younger,
   - less educated,
   - and would have obtained less media coverage of their offenses prior to the trial.

Furthermore, the rate of comorbid paraphilias would be lower in undiagnosed sexual sadists. We assumed these differences would be present because we posited that clinicians acting as expert witnesses during the trial may have been biased through stereotypical portraits of sexual sadistic criminals as being middle-aged, socially apt, and rather well adjusted.

Method

The method employed in this study was to review all patients of the district hospital of Straubing, a German forensic-psychiatric high-security hospital, who had been treated there from July 1990 to December 2006 and who had been labeled as sexual offenders or had committed murder, manslaughter, or assault as an index offense. These were 535 patients altogether.

Straubing District Hospital is the only high-security forensic hospital in Bavaria, a federal state in the southeast of Germany, with a reach of 12.5 million residents. Straubing District Hospital is responsible for treating and securing individuals with severe mental illness, personality disorder, or paraphilia who have committed grievous offenses and are deemed dangerous to society. In particular, Straubing District Hospital caters for those patients under mandatory treatment order who are regarded as especially problematic and dangerous.

The charts of those patients consisted of a full psychiatric history, criminal history, forensic court reports, forensic referral reports, and treatment reports. All files were carefully reviewed by experienced consultant forensic psychiatrists to determine if the patients met the ICD 10 and DSM IV criteria for sexual sadism.

Afterwards, we divided the patients into three groups as follows:

- Subgroup of accurately diagnosed sexual sadists,
- Subgroup of undiagnosed sexual sadists, and
- Subgroup of non-sadistic sex offenders.

In order to find out the level of inter-rater reliability, the subgroups of accurately and undiagnosed sexual sadists (n = 52) and a random sample of 52 patients of the subgroup of non-sadistic sex offenders were reassessed by different consultant forensic psychiatrists.

Undiagnosed sexual sadists were defined as clearly fulfilling both the ICD-10 and DSM-IV-TR criteria of sexual sadism even though the diagnosis of sexual sadism had not been mentioned in forensic psychiatric court or referral reports.

Variables to be collected were on the one hand sociodemographic data, upbringing, socialization, and criminal history. On the other hand, we looked for clinical variables like medication, duration of their stay, number of admittances, and outcome.

Furthermore, we performed an internet search of all sexual sadists if their names had ever been linked with their offenses or with key words like manslaughter, murder, assault, rape, sexual abuse, or sexual harassment in the newspapers or yellow press. Afterwards, we compared the groups regarding significant differences.

Data Analysis

For count data, comparisons between diagnostic groups were facilitated through Pearson's chi-squared tests with small-sample correction (38). For continuous data, differences between diagnostic groups were analyzed through nonparametric tests (Mann–Whitney and Kruskal–Wallis tests for comparisons of two or three unrelated samples, respectively). All tests are two-sided. Given the total number of 29 statistical comparisons, both *p*-values and significance level after Bonferroni adjustment (39) are reported. The overall Type I error rate (general *p*-value) is 0.05, the stricter threshold after Bonferroni adjustment (i.e., the critical *p*-value) is 0.00177.

Results

Out of a total of 535 patients, 240 patients could be identified as sexual offenders. In terms of diagnostic criteria for sexual sadism according to DSM-IV-TR and ICD-10, these 240 sex offenders could further be divided into 52 sexual sadists and 188 nonsadistic sexual offenders.

The group of sadists could be subdivided into a group of 16 accurately diagnosed and a group of 36 undiagnosed sadists which led to the following subgroups:

- Subgroup 1: 188 nonsadistic sex offenders
- Subgroup 2: 16 accurately diagnosed sadists
- Subgroup 3: 36 undiagnosed sadists

Cohen's κ value indicating the level of inter-rater reliability was high ($\kappa = 0.86$). Tables 1 and 2 list the relative frequencies and differences in relevant sociodemographic and clinical features pertaining to the three groups.

There were no significant differences regarding their sociodemographic data (age, citizenship, marital status) and no significant differences regarding IQ or Global Assessment of Functioning (GAF) (8) upon admission or discharge between the three subgroups of nonsadistic sex offenders, accurately and initially undiagnosed sexual sadists.

Criminal Record and Index Offenses

The subgroups showed significant differences regarding their index offenses (see Table 1). Both subgroups of sexual sadists committed a higher proportion of homicide/manslaughter offenses as compared to the group of nonsadistic sex offenders. The latter, in contrast, had committed more offenses involving sexual child abuse. Furthermore, the rate of homicide/manslaughter was twice as high among accurately diagnosed than among initially undiagnosed sexual sadists.

Similarly, sexual sadists in general had shown a significantly higher rate of homicidal violence prior to their index offense, as revealed by their criminal records. Other than that, their rates of previous convictions for illegal confinement and sexual assault were about twice as high, yet statistically not significant.

Treatment Features

As far as successive treatments in the Straubing District Hospital are concerned, the sexual sadists were on average committed more often to this high-security facility than the nonsadistic sex offenders. While all groups showed an average increase in GAF scores from admission to discharge, the differences among them were not significant. The mean duration of treatment within the Straubing high-security hospital differed significantly between groups, with initially undiagnosed sexual sadists having the longest average treatment terms.

Comorbidity

Comparing the diagnoses given by referring psychiatrists according to ICD-10 criteria prior to admission, the group of undiagnosed sexual sadists showed the highest rate of antisocial personality disorder. Concerning the rates for emotionally unstable personality disorder, alcoholism, and drug addiction the three groups were roughly comparable. Both accurately and initially undiagnosed sexual sadists showed an equally high comorbidity regarding the trait of sadism (i.e., sadistic personality disorder according to DSM-III-R). Although not significant, the rate of combined personality disorder was almost twice as high among accurately diagnosed sexual sadists than among initially undiagnosed ones.

Upbringing and Education

There were no significant differences between the subgroups of accurately and undiagnosed sexual sadists regarding traumatization, sexual abuse experiences during childhood, poor socialization or neglect on behalf of primary caregivers. While the rate of victimization through sexual child abuse is low (only one individual per subgroup of sexual sadists), experiences of poor socialization appear to be rather common (cf. Table 1). Although not significant, initially undiagnosed sexual sadists seem to have had a particularly problematic upbringing. Compared to the group of accurately diagnosed sexual sadists, they showed a significantly higher rate of poor socialization (80.6% vs. 43.8%) and neglect through caregivers (41.7% vs. 12.5%). Similarly, initially undiagnosed sexual sadists failed to achieve vocational training more often than accurately diagnosed ones (72.2% vs. 43.8%), although the rates for graduating from high school are nearly the same (66.9% vs. 68.8%).

Multiple Paraphilias

The groups of correctly versus undiagnosed sexual sadists showed a marked difference regarding the diagnosis of sexual masochism (25.0% vs. 2.8%). Concerning other paraphilias (voyeurism, fetishism, and exhibitionism) the respective rates are about the same, ranging between roughly 12% and 20% for fetishism and exhibitionism and between about 33% and 44% for voyeurism.

Media Coverage

Finally, an internet search indicated that 31.3% of the accurately diagnosed sexual sadists had received some form of media

TABLE 1—*Comparison of nonsadistic sex offenders, accurately and undiagnosed sexual sadists: frequencies of categorical data.*

	Nonsadistic Sex Offenders (n = 188)	Sexual Sadists	
		Accurately Diagnosed (n = 16)	Undiagnosed (n = 36)
	n (%)	n (%)	n (%)
Index offense (most serious charge)			
$\chi^2_{(10)} = 41.69$ ($p = 0.0000$)*			
Homicide/Manslaughter	11 (5.9)	8 (50.0)	10 (27.8)
Rape	35 (18.6)	4 (25.0)	11 (30.6)
Assault	24 (12.8)	1 (6.3)	8 (22.2)
Sexual assault	28 (14.9)	1 (6.3)	2 (5.6)
Child molestation	76 (40.4)	2 (12.5)	4 (11.1)
Other offenses	14 (7.4)	0	1 (2.8)
Criminal record			
Threat of life/health	36 (19.1)	10 (62.5)	15 (41.7)
$\chi^2_{(2)} = 17.50$ ($p = 0.0002$)*			
Illegal confinement	19 (10.1)	3 (18.6)	9 (25.0)
$\chi^2_{(2)} = 4.85$ ($p = 0.0886$)			
Sexual assault	66 (35.1)	11 (68.8)	22 (61.1)
$\chi^2_{(2)} = 11.67$ ($p = 0.0029$)			
German citizenship	170 (90.4)	15 (93.8)	35 (97.2)
$\chi^2_{(2)} = 1.07$ ($p = 0.5842$)			
Marital status: Single	160 (85.1)	15 (93.8)	33 (91.7)
$\chi^2_{(2)} = 0.90$ ($p = 0.6390$)			
Comorbidity			
Antisocial personality disorder	26 (13.8)	3 (18.8)	13 (36.1)
$\chi^2_{(2)} = 8.94$ ($p = 0.0114$)			
Emotionally unstable personality disorder	18 (9.6)	0	4 (11.1)
$\chi^2_{(2)} = 0.72$ ($p = 0.6979$)			
Sadistic personality disorder	na	14 (87.5)	25 (69.4)
$\chi^2_{(2)} = 1.08$ ($p = 0.2980$)			
Combined personality disorder	na	4 (25.0)	5 (13.9)
$\chi^2_{(2)} = 0.34$ ($p = 0.5617$)			
Alcoholism	26 (13.8)	1 (6.3)	4 (11.1)
$\chi^2_{(2)} = 0.25$ ($p = 0.8807$)			
Drug addiction	14 (7.4)	1 (6.3)	2 (5.6)
$\chi^2_{(2)} = 0.13$ ($p = 0.9364$)			
Multiple paraphilias			
Masochism	na	4 (25.0)	1 (2.8)
$\chi^2_{(1)} = 4.00$ ($p = 0.0456$)			
Voyeurism	na	7 (43.8)	12 (33.4)
$\chi^2_{(1)} = 0.17$ ($p = 0.6833$)			
Fetishism	na	2 (12.5)	7 (19.4)
$\chi^2_{(1)} = 0.05$ ($p = 0.8307$)			
Exhibitionism	na	2 (12.5)	6 (16.7)
$\chi^2_{(1)} = 0.00$ ($p = 0.9744$)			
Childhood			
Traumatization	na	2 (12.5)	9 (25.0)
$\chi^2_{(1)} = 0.42$ ($p = 0.5152$)			
Victim of sexual abuse	na	1 (6.3)	1 (2.8)
$\chi^2_{(1)} = 0.03$ ($p = 0.8569$)			
Poor socialization	na	7 (43.8)	29 (80.6)
$\chi^2_{(1)} = 5.42$ ($p = 0.0199$)			
Neglected by parents/caregivers	na	2 (12.5)	15 (41.7)
$\chi^2_{(1)} = 3.06$ ($p = 0.0803$)			
High-school graduation	153 (81.4)	11 (68.8)	23 (66.9)
$\chi^2_{(2)} = 4.80$ ($p = 0.0907$)			
Vocational training	119 (63.3)	9 (56.3)	10 (27.8)
$\chi^2_{(2)} = 14.20$ ($p = 0.0008$)*			
Media coverage of index offense (via internet research)	na	5 (31.3)	1 (2.8)
$\chi^2_{(1)} = 6.23$ ($p = 0.0126$)			

na, data not available; GAF, Global Assessment of Functioning.

Chi-squared values were obtained using small-sample correction (Yates [38]). Subscripts in brackets denote degrees of freedom.

*$p < 0.05$, based on Bonferroni adjustment to control for multiple testing. Given the total number of statistical comparisons (29), the Type I error level (p) was lowered to $[1 - (1 - p)^{1/29}] = 0.00177$ (cf., Lehmann [39]). Hence, comparisons with a p-value smaller than 0.00177 are considered significant at the overall Type I error level of 0.05 and printed in bold.

coverage for their offense or offenses, while this was the case for only 2.8% of their initially undiagnosed sadistic counterparts, i.e., the individuals' names had been linked with their offenses or with key words like manslaughter, murder, assault, rape, sexual abuse, or sexual harassment in the newspapers or in the tabloid press.

TABLE 2—*Comparison of nonsadistic sex offenders, accurately and undiagnosed sexual sadists: continuous data.*

	Nonsadistic Sex Offenders (n = 188)		Sexual Sadists: Accurately Diagnosed (n = 16)		Sexual Sadists: Undiagnosed (n = 36)			
	Mean	SD (range)	Mean	SD (range)	Mean	SD (range)	Test Statistic[†]	p-value
Age upon admission (in years)	35.8	11.0 (15–71)	34.6	9.4 (19–52)	35.0	11.0 (16–61)	0.21[†]	0.899
IQ	na	na	90.7	15.8 (63–108)	95.4	10.7 (75–114)	58.00[‡]	0.653
GAF upon admission	54.7	15.9 (5–90)	50.6	14.4 (30–70)	59.8	16.6 (35–90)	1.02[†]	0.599
GAF upon discharge	64.0	14.1 (25–90)	63.0	26.1 (35–90)	71.1	17.7 (35–90)	2.24[†]	0.327
No. of admissions to high-secure hospital	1.28	0.62 (1–5)	1.38	0.89 (1–4)	1.56	0.77 (1–4)	6.72[†]	0.035
Duration of treatment (in months)	50.37	52.7 (4–197)	70.5	60.3 (3–185)	80.6	54.4 (3–197)	13.26[†]	0.001*

GAF, Global Assessment of Functioning (American Psychiatric Association [8]); SD, standard deviation; na, data not available.
[†]Kruskal–Wallis H test.
[‡]Mann–Whitney U-test. Statistically significant difference printed in bold.
*$p < 0.05$, based on Bonferroni adjustment (see Table 1 for details).

Discussion

According to our study, sexual sadism appears to be a clearly underdiagnosed disorder, at least for the reach of the Straubing District Hospital (i.e., the German federal state of Bavaria with roughly 12.5 million inhabitants). Only one-third of the patients that we have identified as sexual sadists (n = 52) had been diagnosed correctly beforehand (n = 16). More than two-thirds (n = 36) of these patients had been referred to the Straubing District Hospital with other diagnoses although clearly suffering from sexual sadism. Across the entire sample of sex offenders (i.e., sadistic and nonsadistic), the inter-rater reliability among consultant forensic psychiatrists on the diagnosis of sexual sadism was high (Cohen's κ = 0.86), a fact which corroborates the relevance of our findings.

According to our study, sexual sadists had to be committed to the high-security forensic hospital from less secured facilities more frequently and the duration of their treatment at the high-security hospital was significantly longer. The higher number of readmissions to a high-security hospital may indicate that sexual sadists seem to have more difficulties adjusting either after being referred to medium-security hospitals or upon probationary discharge. In combination with previous convictions of a more serious nature, this outcome of difficulties in adjustment supports studies that indicate higher recidivism rates for paraphiliacs in general (29,30) and sexual sadists in particular (28).

Furthermore, the fact that readmission rate and duration of treatment were even higher among initially undiagnosed than among correctly diagnosed sexual sadists, raises the question whether this was a consequence of missing their true diagnosis. To our knowledge, specific research-based treatment programs for sexual sadists have not yet been developed. Therefore, all patients participated in a similar sex offender treatment program consisting of regular psychotherapy both within a group setting and in single sessions. Further analyses should be performed regarding the frequency of psychotherapeutic sessions to find out whether it was actually the fact of missing the diagnosis that may have prolonged the treatment of the initially undiagnosed sexual sadists.

Comparing the groups of sexual sadists with the group of nonsadistic sex offenders, we could find a couple of significant differences, such as a higher rate of homicide/manslaughter as index offense and an increased proportion of serious life-endangering violence in their prior criminal histories.

The high rates of multiple paraphilias that we found among sexual sadists, with combined percentages of 9.6% (masochism), 36.5% (voyeurism), 17.3% (fetishism), and 15.4% (exhibitionism), is in agreement with other studies that have examined concomitant disorders of sexual preference among sexual sadists (40,41). In contrast to our expectation, initially undiagnosed sexual sadists did not show a less paraphilic pattern than their correctly diagnosed counterparts, except for masochism, which was more prevalent among the latter. Probably, their diagnosis was not missed because they were less peculiar in sexual terms. Rather the psychiatrists referring these patients to our hospital may have been misled because of the lack of masochistic urges. This, in turn, is probably due to the unfortunate merging of sexual sadism and masochism into one category in ICD-10 (9).

Regarding antisocial personality disorder, the combined percentage for the sexual sadists in the present sample (30.7%) comes close to the figure reported by Hill et al. (41) of 37.7%.

Apart from that, initially undiagnosed sexual sadists may have slipped through the scrutiny of our colleagues because they appear less successful in their careers (as indicated through lack of vocational training) and tend to originate from problematic families (i.e., higher rates of insufficient socialization and neglect through primary caregivers). This finding supports our expectation of lower educational status for the undiagnosed sexual sadists to a certain degree while there was no difference with regard to graduating from high school. We assume that the combination of a problematic family background with an unsuccessful career may be too different from the prototypical portrait of a sadistic sex offender. This circumstance could have caused our colleagues to overlook the diagnosis of sexual sadism.

It must be noted, however, that both subgroups of sexual sadists (i.e., accurately and undiagnosed ones alike) were of low-to-average intellectual capability only and clearly fell below the high intelligence ascribed to prototypical sadists by some authors (e.g., [1]). In terms of actual IQ values, the present sample scores below the figures close to the population average reported by Langevin (25).

Contrary to our hypothesis, the undiagnosed sexual sadists had not been significantly younger than the accurately diagnosed ones upon commitment to the high-security hospital. In fact, individuals in both groups on average were middle-aged, even though ranging from adolescence to their fifties or sixties.

Finally, as hypothesized, media coverage was more extensive for accurately diagnosed sadists than for those individuals whose diagnosis of sexual sadism was initially missed. Thus, sexual sadists whose crimes receive a lot of public attention are more likely to be identified as such (even though the difference between groups failed to be statistically significant in a multiple-testing framework).

All in all, the present study highlights that undiagnosed sexual sadists share some traits with non-sadistic sex offenders on the one hand and with accurately identified sexual sadists on the other hand. The undiagnosed sexual sadists are likely to take an intermediate position between two extremes. Hence, we agree with the current re-framing of sexual sadism along a dimensional view (27,42)—a theoretical shift that is in line with general recommendations for diagnosing personality disorder, for instance (43,44).

More decisively, changing the focus of diagnostic assessment towards a structured dimensional view may help to increase agreement among diagnosticians. As in previous studies (12,37), the inter-rater agreement would be very low if the final diagnosis arrived at after prolonged periods of treatment and observation were compared with the initial diagnoses of the referring psychiatrists. Therefore, another study is underway that assesses the scale and diagnostic properties of the criterion set put forward by Marshall et al. (37) based on the present sample.

Finally, the theoretical and empirical overlap between the concepts of sexual sadism and psychopathy represents an intriguing topic for future research since Kirsch and Becker (15) note that lack of empathy was the common ground for both disorders. However, only few empirical studies have addressed this issue directly (16,17). As a consequence, we are intending to collect assessments of the sexual sadists within the present sample with regard to psychopathic personality disorder, thus opening up the possibility for correlative analysis.

The fact that the present data are derived from a cluster sample limit the generalizability of the findings. We feel that the findings may convey close estimates to the true empirical circumstances. Straubing District Hospital has an extensive reach (i.e., the whole German federal state of Bavaria) and should get an almost exhaustive share of the dangerous sex offenders under mandatory treatment order. Nevertheless, replications on other clusters should be performed. This would also help to increase sample size. Because of the large number of statistical comparisons in the present study, a lot of them did not reach statistical significance, although the effect sizes were strong. This is due to the fact that the sample size was not very high, particularly concerning the subgroup of sexual sadists ($n = 52$).

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