Psychiatric and Legal Features of 113 Men Convicted of Sexual Offenses

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Background: To increase understanding of the relationships among sexual violence, paraphilias, and mental illness, the authors assessed the legal and psychiatric features of 113 men convicted of sexual offenses.

Method: 113 consecutive male sex offenders referred from prison, jail, or probation to a residential treatment facility received structured clinical interviews for DSM-IV Axis I and II disorders, including sexual disorders. Participants' legal, sexual and physical abuse, and family psychiatric histories were also evaluated. We compared offenders with and without paraphilias.

Results: Participants displayed high rates of lifetime Axis I and Axis II disorders: 96 (85%) had a substance use disorder; 84 (74%), a paraphilia; 66 (58%), a mood disorder (40 [35%], a bipolar disorder and 27 [24%], a depressive disorder); 43 (38%), an impulse control disorder; 26 (23%), an anxiety disorder; 10 (9%), an eating disorder; and 63 (56%), antisocial personality disorder. Presence of a paraphilia correlated positively with the presence of any mood disorder ($p < .001$), major depression ($p = .007$), bipolar I disorder ($p = .034$), any anxiety disorder ($p=.034$), any impulse control disorder ($p = .006$), and avoidant personality disorder ($p =.013$). Although offenders without paraphilias spent more time in prison than those with paraphilias ($p =.019$), paraphilic offenders reported more victims ($p = .014$), started offending at a younger age ($p = .015$), and were more likely to perpetrate incest ($p = .005$). Paraphilic offenders were also more likely to be convicted of ($p = .001$) or admit to ($p < .001$) gross sexual imposition of a minor. Nonparaphilic offenders were more likely to have adult victims exclusively ($p = .002$), a prior conviction for theft ($p < .001$), and a history of juvenile offenses ($p = .058$).

Conclusions: Sex offenders in the study population displayed high rates of mental illness, substance abuse, paraphilias, personality disorders, and comorbidity among these conditions. Sex offenders with paraphilias had significantly higher rates of certain types of mental illness and avoidant personality disorder. Moreover, paraphilic offenders spent less time in prison but started offending at a younger age and reported more victims and more non-rape sexual offenses against minors than offenders without paraphilias. On the basis of our findings, we assert that sex offenders should be carefully evaluated for the presence of mental illness and that sex offender management programs should have a capacity for psychiatric treatment.

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Sexual violence remains a large public health problem that exacts a great societal toll in terms of trauma to victims, prosecution of offenders, and expenditure of correctional resources. In Ohio, about 1 of 7 male prison inmates is serving a sentence for a serious sexual offense.[1] Most sex offenders in Ohio, a state without sex offender commitment laws, will return to the community with only rudimentary and entirely nonmedical interventions to prevent recidivism.

Indeed, authors have long debated whether mental illness has a role in "sexual deviancy." Moral, scientific, and legal arguments over sex offenders have molded a common perception that sexual deviance bears little relation to mental illness.[2] Several lines of evidence are inconsistent with this. First, alterations in brain function can create changes in sexual arousal and behavior.[3–14] Second, mental illnesses like depression and bipolar disorder are associated with changes in sexual arousal and behavior. Third, growing research suggests that a substantial proportion of sex offenders may have psychiatric disorders,[15–36] such as paraphilias,[16,18,22,25,26,30–33,35,36] substance use disorders,[16,18,25,26,28,33,34,36] mood disorders,[17,27,29,35,36] psychotic disorders,[17,19,20] and personality and/or conduct disorders.[16,18,19,23,26,34–36] However, many groups' reports have had methodologic limitations including small sample sizes, variable diagnostic criteria, unstructured clinical diagnosis of participants, and limited diagnostic categories. Some investigators reported high rates of paraphilias,[18,22,25,26,31–33,35] while others reported relatively

low paraphilia rates but high rates of personality or conduct disorders.[19,23] Some studies reported high rates of mood disorders and/or psychotic disorders among sex offenders.[17,19,20,29,35] Others reported low rates of Axis I disorders.[16,18,23,33] Several authors have reported data that suggest paraphilias may be related to other psychiatric disorders, especially mood, obsessive-compulsive, impulse control, and substance abuse disorders.[37–50]

In 1991, the Correctional Service of Canada published one of the few reports[51] on the prevalence of mental illness in an inmate population in which a structured interview (Diagnostic Interview Schedule for DSM-III or "DIS") was used. The report used the DIS to examine 8 dimensions of mental disorder: "organic," "psychotic," "depressive," "anxiety," "psychosexual," "antisocial," "substance," and "alcohol." Researchers found that sex offenders had significantly higher rates of "depressive," "anxiety," and "psychosexual" disorders, but modest rates of antisocial disorders. Compared with other offenders, they had the second lowest incidence of antisocial personality (only slightly above federal drug offenders).[51]

In an earlier study, our group used structured interviews to evaluate Axis I and Axis II disorders and paraphilias in 36 sex offenders referred by the Ohio Department of Rehabilitation and Correction to a residential treatment program.[52] We found high rates of mood, substance use, anxiety, impulse control, eating, and personality disorders among the sex offenders. In addition, the incidence of mood disorders, anxiety disorders, and eating disorders was significantly higher in offenders who had a comorbid paraphilia.[52] Since our last report, our study group grew by 77 additional subjects, comprising a total of 113 convicted sex offenders. To our knowledge, ours is now the largest group of sex offenders evaluated using structured clinical interviews for psychiatric disorders, personality disorders, and paraphilias.

Although a broad array of professionals have proposed ways to decrease sex offenders' risk to the society once they leave prison, the early history of sex offender treatment programs was inconsistent. A meta-analysis by Furby et al.[53] reported in 1989 failed to demonstrate a consistent decrease recidivism with treatment. A more recent meta-analysis by Hanson and colleagues[54] reported that cognitively focused programs or programs implementing a structured relapse prevention approach have demonstrated better efficacy than older psychodynamically focused programs, and overall, more recent psychological treatments have shown a reduction in recidivism. Few programs have aggressively integrated psychiatric care directly into their assessment and therapy. Furthermore, little research has objectively described sex offender populations to elicit empirical rather than theoretical guidelines for management. We believe that the presence of psychiatric disorders including paraphilias might affect the course of a sex offender's treatment.

METHOD

All of the subjects participated in an 18-month residential sex offender treatment program that was funded by the Ohio Adult Parole Authority, Columbus. The admission criteria for the program that were similar for the first 36 participants were: (1) male, (2) aged 18 years or older, (3) convicted for at least 1 sexual offense, (4) admission by the individual that he had, in fact, committed the offense, (5) an intelligence quotient ≥ 70, and (6) a voluntary agreement to participate in an 18-month rehabilitation program. Additional admission criteria included the absence of active psychotic illness. Persons who admitted to sexually sadistic murder (murder in the course of sexual assault) before entering the program were not eligible for participation. However, other individuals with high levels of psychopathy were eligible. Before potential candidates were accepted into the program, several staff members explained to them that the program provided biopsychosocial treatment, which included a comprehensive psychiatric evaluation. Upon acceptance, the candidate voluntarily agreed to participate in the program by signing a written informed consent document. Of note, the participants received both verbal and written notification that the results of their psychiatric evaluations would be published anonymously in clinical research reports.

Upon admission to the program, all participants received the following psychiatric evaluation: (1) a review of their sexual and nonsexual legal histories; (2) the Structured Clinical Interview for DSM-IV[55] Axis I Disorders (SCID-I/P),[56] augmented with modules for DSM-IV impulse control disorders not elsewhere classified (available from the authors) and sexual disorders (SCID-SD available from the authors); (3) the Structured Clinical Interview for DSM-IV Axis II Disorders (SCID-II)[57]; (4) history of sexual and physical abuse; and (5) history of psychotic, mood, anxiety, eating, substance use, impulse control, and paraphilic disorders in first-degree relatives determined via the family history method.[58] We supplemented these assessments by reviewing medical and legal records and polygraph examinations. As in our evaluation of the first 36 participants, because of the high rate of symptom denial during the initial phase of treatment, we waited several weeks to several months before determining "consensus" DSM-IV diagnoses. Also, SCID assessments were revised as patients reported or displayed new signs or symptoms.

As a part of the program, all participants received intense psychotherapy based in a relapse prevention model. Participants attended 1-hour individual therapy sessions once weekly and participated in 5 hours of group therapy each day. Groups required participants to study a relapse cycle, present the cycle as it pertained to the participant's offense, discuss other victims, and give feedback to other

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participants in a critical, civil manner. All groups were conducted continuously with open enrollment. Substance abuse treatment was fully integrated into the program, and all participants who had substance abuse problems participated in these groups. An individual received psychiatric medications appropriate to psychiatric diagnoses if he had a psychiatric disorder. At their discretion, our psychiatrists used selective serotonin reuptake inhibitors, medroxyprogesterone acetate, flutamide (a testosterone receptor antagonist), or nafarelin (an intranasal GnRH agonist) to treat severe paraphilic symptoms (see Table 1 regarding medications prescribed to program participants).

All statistical analyses were performed with the SAS for the personal computer, version 8.1 (SAS Institute, Cary, N.C.). Categorical variables were compared by using the 2-tailed Fisher exact test, and continuous variables were compared by using the Cochran-Mantel-Haenszel test for ordinal association. One challenge to studying sex offender populations has been finding an adequate comparison group. Since our previous study found statistically significant differences between sex offenders with and without paraphilias,[52] we again compared the 2 groups with each other.

RESULTS

One hundred thirteen convicted sex offenders admitted to the program between November 1996 and March 2001 received SCID I/P evaluations and family and legal histories. One hundred nine subjects received SCID II assessments and 110 underwent a SCID-SD interview. General demographic information is summarized in Table 2. Individuals who did not have paraphilias were significantly older than those with paraphilias ($p = .007$). White men were significantly more likely than African American men to meet criteria for a paraphilia ($p < .001$). Significantly fewer men with paraphilias were still married to their spouses ($p = .029$).

The legal features of the 113 men are summarized in Table 3. Although men with paraphilias had spent less time in prison than those without paraphilias ($p = .019$) and were first convicted of a sexual crime at approximately the same age, they had a higher average number of victims ($p = .014$) and were younger when they actually committed their first sexual crime ($p = .015$).

In addition, paraphilic offenders were significantly more likely to be convicted of ($p < .001$) or admit to ($p = .001$) gross sexual imposition of a minor or a related offense. Nonparaphilic offenders were significantly more likely to offend adults exclusively ($p = .002$). Significantly more nonparaphilic offenders were convicted of rape or attempted rape of an adult ($p = .058$) and were significantly more likely to admit to gross sexual imposition of an adult or related offenses ($p = .04$).

Table 1. Medication Treatment of 113 Sex Offenders With (N = 84) and Without (N = 26) Paraphilias (3 patients unclassified)*

	Total		With Paraphilias		Without Paraphilias	
Medication	N	%	N	%	N	%
Any medication[a]	85	75.2	74	88.1	11	42.3
Antidepressant[b]	48	42.5	42	50.0	6	23.1
SSRI[c]	44	38.9	39	46.4	5	19.2
Tricyclic	6	5.3	4	4.8	2	7.7
Bupropion	5	4.4	5	6.0	0	0
Nefazodone	1	0.9	0	0	1	3.8
Trazodone	3	2.7	3	3.6	0	0
Mood stabilizer[d]	46	40.7	40	47.6	6	23.1
Lithium	11	9.7	10	11.9	1	3.8
Valproate[e]	38	33.6	36	42.9	2	7.7
Gabapentin	11	9.7	8	9.5	3	11.5
Topiramate	3	2.7	3	3.6	0	0
Antipsychotic						
Traditional	3	2.7	3	3.6	0	0
Novel/atypical	25	22.1	22	26.2	3	11.5
Risperidone	2	1.8	2	2.4	0	0
Olanzapine	23	20.4	20	23.8	3	11.5
Quetiapine	1	0.9	1	1.2	0	0
Buspirone	1	0.9	1	1.2	0	0
Hydroxyzine	5	4.4	5	6.0	0	0
Naltrexone	2	1.8	2	2.4	0	0
Other[f,g]	14	12.4	14	16.7	0	0
Antiandrogen[h]	19	16.8	18	21.4	1	3.8
MPA[i]	14	12.4	14	16.7	0	0
GnRH agonist	4	3.5	4	4.8	0	0
Flutamide	7	6.2	6	7.1	1	3.8

*Significance was calculated using a 2-tailed Fisher exact test.
[a]Individuals with paraphilias were significantly more likely to receive medications ($p < .001$).
[b]Individuals with paraphilias were significantly more likely to receive an antidepressant ($p = .02$).
[c]Individuals with paraphilias were significantly more likely to receive SSRIs ($p = .02$).
[d]Individuals with paraphilias were significantly more likely to receive mood stabilizers ($p = .04$).
[e]Individuals with paraphilias were significantly more likely to receive valproate ($p < .001$).
[f]Includes zolpidem, cimetidine, benztropine, diphenhydramine, and propranolol.
[g]Individuals with paraphilias were significantly more likely to receive zolpidem, cimetidine, benztropine, diphenhydramine, or propranolol.
[h]Individuals with paraphilias were significantly more likely to receive antiandrogen treatment ($p = .04$).
[i]Individuals with paraphilias were significantly more likely to receive MPA ($p = .04$).
Abbreviations: GnRH = gonadotropin-releasing hormone, MPA = medroxyprogesterone acetate, SSRI = selective serotonin reuptake inhibitor.

Most offenders (85%) reported nonsexual legal problems in addition to their sexual offenses. Nonparaphilic offenders were significantly more likely to be convicted of a theft-related offense ($p < .001$), or to report a history of juvenile violations ($p = .058$).

As shown in Table 4, participants displayed very high rates of lifetime DSM-IV Axis I disorders. Eighty-four men (74%) met DSM-IV criteria for 1 or more lifetime Axis I disorders, and 24 (21%) met criteria for 3 or more disorders. Regarding specific disorders in descending order of frequency, 96 subjects (85%) met DSM-IV criteria for a lifetime diagnosis of a psychoactive substance use

Table 2. Demographic Features of 113 Sex Offenders With (N = 84) and Without (N = 26) Paraphilias (3 patients unclassified)

Feature	Total	With Paraphilias	Without Paraphilias
Age, y, mean ± SD[a]	35.3 ± 10.4	34.3 ± 11.1	39.0 ± 6.1
Range, y	18–66	18–66	28–54
Race, N (%)[b]			
White	71 (62.8)	60 (71.4)	8 (30.8)
African American	41 (36.3)	24 (28.6)	17 (65.4)
Other	1 (0.9)	0 (0)	1 (3.8)
Education, N (%)			
Sixth grade or less	3 (2.7)	3 (3.6)	0 (0)
7th to 12th grade	48 (42.5)	37 (44.0)	8 (30.8)
High school graduate	46 (40.7)	33 (39.3)	13 (50.0)
Some college	5 (4.4)	3 (3.6)	2 (7.7)
College graduate (2-y program)	7 (6.2)	5 (6.0)	2 (7.7)
College graduate (4-y program)	2 (1.8)	1 (1.2)	1 (3.8)
Some graduate school	1 (0.9)	1 (1.2)	0 (0)
Graduate degree	1 (0.9)	1 (1.2)	0 (0)
Marital status, N (%)[c]			
Married	13 (11.5)	8 (9.5)	5 (19.2)
Widowed	1 (0.9)	0 (0)	1 (3.8)
Divorced	34 (30.1)	26 (31.0)	7 (26.9)
Separated	6 (5.3)	5 (6.0)	1 (3.8)
Never married	59 (52.2)	45 (53.6)	12 (46.2)
Sexual history, N (%)			
Victim of sexual abuse	59 (52.2)	46 (54.8)	10 (38.5)
Victim of incest	32 (28.3)	24 (28.6)	6 (23.1)
Incest perpetrator[d]	43 (38.0)	38 (45.2)	4 (15.4)
Family history, N (%)			
Mood disorders[e]	28 (24.8)	28 (33.3)	0 (0)
Substance abuse	70 (61.9)	52 (61.9)	18 (69.2)
Impulse control disorders	20 (17.7)	18 (21.4)	2 (7.7)
Paraphilias[f]	18 (15.9)	17 (20.2)	1 (3.8)

[a]Offenders with paraphilias were significantly younger than offenders without paraphilias on entry into the program (independent-samples t test with unequal variance, p = .007).
[b]White subjects were more likely to be diagnosed with a paraphilia than African American subjects (Cochran-Mantel-Haenszel test for ordinal association, p < .001).
[c]Nonparaphilic offenders were significantly more likely to be married than paraphilic offenders (Cochran-Mantel-Haenszel test for ordinal association, p = .029).
[d]Sex offenders with paraphilias were significantly more likely to be perpetrators of incest (p = .005).
[e]Sex offenders with paraphilias were significantly more likely to have a family history of mood disorders (p = .001).
[f]Sex offenders with paraphilias tended to be more likely to have family histories of paraphilias (p = .06).

disorder, 84 (74%) for a paraphilia, 66 (58%) for a mood disorder (with 40 [35%] meeting criteria for a bipolar disorder), 43 (38%) for an impulse control disorder, 26 (23%) for an anxiety disorder, and 10 (9%) for an eating disorder. Individuals with paraphilias were also more likely to receive psychotropic medications (88%), particularly selective serotonin reuptake inhibitors (46%), valproate (43%), and medroxyprogesterone acetate (17%) (see Table 1).

In the 84 subjects with paraphilias, the mean age at onset of paraphilias (defined as meeting DSM-IV criteria except for the age requirement) was 16.7 years (see Table 3). Thirty-nine subjects (46%) met criteria for 1 paraphilia, 23 (27%) for 2 paraphilias, and 22 (26%) for 3 or more paraphilias.

As shown in Table 5, subjects also displayed very high rates of Axis II disorders. Ninety-eight (87%) of the men met DSM-IV criteria for at least 1 Axis II disorder, and 32 (28%) met criteria for 3 or more. The most commonly displayed Axis II disorders were cluster B: 63 subjects (56%) met criteria for antisocial personality disorder, 32 (28%) for borderline personality disorder, and 28 (25%) for narcissistic personality disorder. Fifty-nine subjects (52%) reported experiencing sexual abuse during childhood. Thirty-two (28%) reported they had been victims of incest. Forty-three (38%) had perpetrated incest.

A history of psychiatric disorders was obtained for first-degree relatives aged 16 years or older in the 113 subjects (Table 2). Seventy subjects (62%) had at least 1 first-degree relative with a substance use disorder, 28 subjects (25%) had at least 1 first-degree relative with a mood disorder, 20 subjects (18%) had at least 1 first-degree relative with an impulse control disorder, and 18 subjects (16%) had at least 1 first-degree relative with a paraphilia. Notably, individuals with paraphilias were more likely to have a first-degree relative with a mood disorder (p = .001), and somewhat more likely to have a family history of paraphilias (p = .06).

As shown in Table 4, offenders with paraphilias were more likely to have comorbid mood (p < .001), anxiety (p = .034), and impulse control (p = .006) disorders than those without paraphilias. There tended to be more drug abuse without comorbid alcoholism in the nonparaphilic offenders (p = .064), and more psychoactive substance abuse overall (p = .020). As shown in Table 5, we found a significantly higher rate of avoidant personality disorder among offenders with paraphilias (p = .013). Offenders with and without paraphilias did not differ regarding rates of abuse.

Overall, three fourths of program participants received medications during the course of their treatment. Accordingly, offenders with paraphilias, who were more likely to carry a mental health diagnosis, were also more likely to receive prescribed psychotropic medications (see Table 1). Participants were most commonly prescribed antidepressants, particularly selective serotonin reuptake inhibitors, and only slightly less likely to receive mood stabilizers. Antiandrogens were prescribed to 17% of participants. Only 1 individual who received antiandrogen treatment was not diagnosed with a paraphilia.

DISCUSSION

Men convicted of sexual crimes in our program displayed very high rates of Axis I and Axis II disorders including substance use disorders, paraphilias, mood disorders, anxiety disorders, impulse control disorders, and antisocial personality disorder. Among subjects with

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Table 3. Legal Histories of 113 Sex Offenders With (N = 84) and Without (N = 26) Paraphilias (3 patients unclassified)

Feature	Total	With Paraphilias	Without Paraphilias
Total time in prison, y[a]			
Mean ± SD	9.5 ± 8.0	8.6 ± 8.2	9.7 ± 6.7
Range	0–36	0–36	0.75–28
Number of sexual victims per subject[b,c]			
Mean ± SD	12.3 ± 17.7	14.0 ± 19.8	6.9 ± 9.4
Range	1–110	1–110	1–31
Age at first sexual crime, y			
Mean ± SD[d]	18.3 ± 7.8	17.5 ± 8.0	21.5 ± 6.8
Range	5–46	5–46	8–34
Age at first sexual conviction, y			
Mean ± SD	23.7 ± 7.1	23.8 ± 7.5	24.3 ± 5.9
Range	10–46	10–46	15–39
Sexual crimes, N (%)			
Rape or attempted rape of adult			
Convicted of[e]	26 (23.2)	16 (19.1)	10 (38.5)
Admitted to	34 (30.1)	24 (28.6)	10 (38.5)
Rape or attempted rape of a minor			
Convicted of	28 (24.8)	19 (22.6)	7 (26.9)
Admitted to	43 (38.0)	35 (41.7)	6 (23.1)
Gross sexual imposition of an adult[f]			
Convicted of	13 (11.5)	8 (9.5)	5 (19.2)
Admitted to[g]	22 (19.6)	13 (15.5)	9 (34.6)
Gross sexual imposition of a minor[h]			
Convicted of[i]	51 (45.5)	47 (56.0)	2 (7.7)
Admitted to[i]	64 (57.1)	55 (65.5)	7 (26.9)
Voyeurism, public indecency, stalking, obscene phone calls	7 (6.2)	7 (8.3)	0 (0)
Kidnapping, abduction, coercion	11 (9.7)	8 (9.5)	3 (11.5)
Prostitution or related offense[j]	2 (1.8)	1 (1.2)	1 (3.8)
Abused adults only[k]	25 (22.1)	13 (15.5)	12 (46.2)
Abused children only	54 (47.8)	43 (51.2)	8 (30.8)
Abused children and adults	33 (29.2)	28 (33.3)	5 (19.2)
Nonsexual crimes, N (%)			
Theft, burglary, robbery, larceny[l,m]	58 (51.3)	36 (42.9)	22 (84.6)
Assault[n]	41 (36.3)	29 (34.5)	11 (42.3)
Destruction of property[o]	10 (8.9)	5 (6.0)	4 (15.4)
Drug, gambling, or arms violation[p]	34 (30.1)	29 (34.5)	4 (15.4)
Serious violation of rules[q]	27 (23.9)	17 (20.2)	9 (34.6)
Fraud	6 (5.3)	5 (6.0)	1 (3.8)
Juvenile violations[r,s]	25 (22.1)	14 (16.7)	9 (34.6)

[a]On average offenders without paraphilias spent more time in prison than offenders with paraphilias (Cochran-Mantel-Haenszel test, p = .019).
[b]Excluding 7 subjects including 1 subject with multiple paraphilias who reported 245 victims, 1 subject with paraphilia NOS who reported 250 victims, 1 subject with pedophilia who reported 400 victims, and 1 man with frotteurism and voyeurism who reported 2010 victims.
[c]Offenders with paraphilias had more sexual victims that offenders without paraphilias (p = .014).
[d]Offenders with paraphilias were younger than offenders without paraphilias when they committed their first sexual offense (by their own admission) (2-tailed Fisher exact test, p = .015).
[e]Offenders without paraphilias were significantly more likely to be convicted of rape or attempted rape of an adult (2-tailed Fisher exact test, p = .058).
[f]Includes sexual battery, felonious sexual penetration, and carnal knowledge.
[g]Offenders without paraphilias were significantly more likely to admit to gross sexual imposition of an adult than paraphilic offenders (2-tailed Fisher exact test, p = .04).
[h]Includes sexual battery, corruption of a minor, and felonious sexual penetration.
[i]Offenders with paraphilias were significantly more likely to be convicted of (2-tailed Fisher exact test, p = .001) or admit to (2-tailed Fisher exact test, p < .001) gross sexual imposition of a minor or related charges.
[j]Includes soliciting and promoting prostitution.
[k]Offenders without paraphilias were significantly more likely to offend adults exclusively (2-tailed Fisher exact test, p = .002).
[l]Includes receiving stolen property, breaking and entering, trespassing, bad checks, bad credit, and unauthorized use of property.
[m]Offenders without paraphilias were significantly more likely to have a history of theft-related charges (2-tailed Fisher exact test, p < .001).
[n]Includes assault, domestic violence, disorderly conduct, and menacing.
[o]Includes arson and criminal damaging.
[p]Includes carrying a concealed weapon, driving under the influence, possession of an illegal substance, and alcohol violations.
[q]Includes resisting arrest and delinquency.
[r]Includes truancy, curfew violations, and incorrigible, unruly, ungovernable behavior.
[s]Offenders without paraphilias were more likely to have histories of juvenile violations (2-tailed Fisher exact test, p = .058).

Table 4. Lifetime DSM-IV Axis I Diagnoses in 113 Convicted Sex Offenders With (N = 84) and Without (N = 26) Paraphilias (3 patients unclassified)

	Total		With Paraphilias		Without Paraphilias	
Diagnosis	N	%	N	%	N	%
Mood disorders						
Any[a]	66	58.4	61	72.6	5	19.2
Major depressive[b]	27	23.9	26	31.0	1	3.8
Any bipolar[c]	40	35.4	35	41.7	4	15.4
Bipolar I[d]	28	24.8	25	29.8	2	7.7
Bipolar II	6	5.3	5	6.0	1	3.8
Bipolar NOS	5	4.4	4	4.8	1	3.8
Cyclothymia	1	0.9	1	1.2	0	0
Substance abuse						
Any[e]	96	85.0	69	82.1	26	100.0
Alcohol alone	9	8.0	8	9.5	1	3.8
Drug alone[f]	17	15.0	10	11.9	7	26.9
Both	70	61.9	51	60.7	18	69.2
Anxiety disorders						
Any[g]	26	23.0	24	28.6	2	7.7
Generalized anxiety disorder	3	2.7	3	3.6	0	0
Panic disorder	6	5.3	5	6.0	1	3.8
Social phobia	11	9.7	11	13.1	0	0
Simple phobia	7	6.2	5	6.0	2	7.7
Obsessive-compulsive disorder	6	5.3	6	7.1	0	0
Posttraumatic stress disorder	10	8.8	10	11.9	0	0
Eating disorders						
Any	10	8.8	10	11.9	0	0
Bulimia nervosa	1	0.9	1	1.2	0	0
Binge-eating disorder	9	8.0	9	10.7	0	0
Impulse control disorders						
Any[h]	43	38.1	38	45.2	4	15.4
Kleptomania	3	2.7	3	3.6	0	0
Pathological gambling	7	6.2	7	8.3	0	0
Pyromania	2	1.8	2	2.4	0	0
Trichotillomania	3	2.7	3	3.6	0	0
Compulsive buying[i]	11	9.7	11	13.1	0	0
Compulsive skin picking	2	1.8	2	2.4	0	0
Intermittent explosive disorder	23	20.4	19	22.6	3	11.5
Impulse control disorder NOS	3	2.7	2	2.4	1	3.8
Paraphilias						
Any	84	74.3	84	100	0	0
Frotteurism	19	16.8	19	22.6	0	0
Voyeurism	16	14.2	16	19.0	0	0
Exhibitionism	6	5.3	6	7.1	0	0
Fetishism	4	3.5	4	4.8	0	0
Transvestic fetishism	3	2.7	3	3.6	0	0
Pedophilia	42	37.2	42	50.0	0	0
Sexual sadism	15	13.3	15	17.8	0	0
Masochism	2	1.8	2	2.4	0	0
NOS[j]	50	44.2	50	59.5	0	0
Sexual disorder NOS	40	35.4	36	42.9	4	15.4

[a]Mood disorders were significantly more prevalent among paraphilic sex offenders (2-tailed Fisher exact test, $p < .001$).
[b]Major depressive disorder was significantly more prevalent among paraphilic sex offenders (2-tailed Fisher exact test, $p = .007$).
[c]Any bipolar affective disorder was significantly more prevalent among paraphilic offenders (2-tailed Fisher exact test, $p = .018$).
[d]Bipolar affective disorder Type I was significantly more prevalent among paraphilic sex offenders (2-tailed Fisher exact test, $p = .034$).
[e]Individuals without paraphilias were significantly more likely than those with paraphilias to have a substance abuse disorder (Fisher exact test, $p = .020$).
[f]Nonparaphilic sex offenders were more likely to abuse drugs without concurrent alcohol abuse (2-tailed Fisher exact test, $p = .064$).
[g]Anxiety disorders were more prevalent among paraphilic sex offenders (2-tailed Fisher exact test, $p = .034$).
[h]Impulse control disorders were significantly more prevalent among paraphilic sex offenders (2-tailed Fisher exact test, $p = .006$).
[i]Compulsive buying was more prevalent among paraphilic sex offenders (2-tailed Fisher exact test, $p = .064$).
[j]Includes ephebophilia (primary attraction to sexually developed teenagers), biastophilia (paraphilic rape).
Abbreviation: NOS = not otherwise specified.

mood disorders, bipolar disorders occurred as commonly as depressive disorders. Subjects with paraphilias displayed significantly higher rates of mood, anxiety, and impulse control disorders than subjects without paraphilias. These findings are consistent with our report[52] of an association among paraphilias and mood and anxiety disorders in a group of men convicted of committing sexual crimes.

The present report had many methodological limitations. These included acquisition of study sample, the small sample size, evaluation of psychiatric diagnoses by unblinded investigators, and lack of a control group (including a non–sex offender forensic group). Since subjects were referred from prison, jail, or probation to enter a voluntary treatment program, we were unable to gauge how representative our study cohort was compared with sex offenders in the general population or other forensic populations. Our study group resembled other sex offender populations released from Ohio prisons. For example, in the Ohio Department of Rehabilitation and Correction's Ten-Year Recidivism Follow-Up of 1989 Sex Offender Releases,[59] the average age was 31.2 years, 33% were African American, 67% were white, the most common charge was gross sexual imposition, and about half offended children exclusively.[59] The sex offenders in our group had a mean age of 35.3 years, 62% were white, 36% were African American, 45.5% were convicted of gross sexual imposition of a minor, and 42% had offended children exclusively.

The study subjects' frequent denial and distortion of deviant sexual fantasies, sexual behavior, and criminal behavior also posed a limitation to our study.[27] We addressed this problem by performing serial clinical interviews supplemented with polygraph examinations and gathering collateral information from legal records, which included victims' statements and the participants' "autobiographies" and "victims' lists." Nonetheless, the degree of sexual psychopathology in this cohort may have been underestimated.

The pattern of Axis I and/or Axis II comorbidity described may differ from sex offenders in other forensic populations, as suggested by differences between our findings and those published by Raymond et al. who reported on pedophiles in residential and outpatient settings,[60] and from findings reported by Kafka and Hennen in a population that was mostly nonforensic.[61] Our population was drawn from felony convicts who had mixed paraphilias or no paraphilia at all. Most of our subjects had served extended prison sentences. The high rates of Axis I disorders found in our cohort could reflect recruitment bias or the residual effects of incarceration. The majority of

Table 5. Lifetime DSM-IV Axis II Diagnoses in 113 Convicted Sex Offenders with (N = 84) and Without (N = 26) Paraphilias (3 patients unclassified)

	Total		With Paraphilias		Without Paraphilias	
Diagnosis	N	%	N	%	N	%
Cluster A						
Paranoid	29	25.7	25	29.8	4	15.4
Schizoid	8	7.1	7	8.3	1	3.8
Schizotypal	1	0.9	1	1.2	0	0
Cluster B						
Antisocial	63	55.8	44	52.4	19	73.1
Borderline	32	28.3	27	32.1	4	15.4
Histrionic	4	3.5	4	4.8	0	0
Narcissistic	28	24.8	21	25.0	6	23.1
Cluster C						
Avoidant[a]	23	20.4	22	26.2	1	3.8
Dependent	5	4.4	5	6.0	0	0
Obsessive-compulsive	17	15.0	13	15.5	4	15.4
Personality disorder NOS	12	10.6	10	11.9	2	7.7

[a]Avoidant personality disorder was significantly more prevalent among paraphilic sex offenders (2-tailed Fisher exact test, p = .013).
Abbreviation: NOS = not otherwise specified.

our subjects, however, did not undergo psychiatric treatment in prison, and many did not have psychiatric diagnoses before they entered our program.

Coincidentally, the lifetime incidence of dysthymia was low in our population. Although participants were assessed for a lifetime incidence of dysthymia using the SCID I/P, few endorsed symptoms consistent with the diagnosis. High levels of psychopathy and antisocial personality in our population may have affected the reported rate of dysthymia due to their lower levels of remorse, guilt, or empathy, features that might significantly affect a dysthymic presentation.

Another limitation is that certain psychiatric disorders were not assessed, such as attention-deficit/hyperactivity disorder (ADHD). Although Kafka and Hennen's findings included high rates of ADHD,[61] some analogies might be drawn between their report and our findings of increased rates of impulse control disorders. These diagnoses could have presented with overlapping clusters of symptoms. Although many participants exhibited some level of psychopathy as specifically defined by Hare et al.,[62] an analysis of psychopathy as it related to the features of this population was considered separately and is not reported here.

Also as neurologic status beyond medical history and physical examination was not assessed in most patients, it is possible that some of the psychopathology found in this group would have been better accounted for by mental disorders due to general medical conditions (i.e., organic or secondary mental disorders) rather than to primary psychiatric disorders.

Despite these limitations, our findings are consistent with our previous observations[52] that persons who commit sexual crimes have high rates of psychiatric disorders. Furthermore, paraphilias may correlate with a higher incidence of certain types of mental illnesses and personality disorders. In particular, our findings, like others,[52,60,61] suggest that a subset of men who commit sexual crimes have one or more paraphilias in combination with a mood, anxiety, and/or impulse control disorder. This, in turn, suggests that men who have committed sexual crimes, especially those who have presented with affective, anxiety, or impulse control disorder symptoms, should be carefully evaluated for paraphilias even if they initially deny such symptoms. Conversely, sex offenders with paraphilias should be carefully assessed for mood, anxiety, and impulse control disorders. Greater appreciation of mental illness in persons who perform harmful sexual behaviors would help target more effective interventions, preventative strategies, and risk management in these individuals. Further studies of the prevalences of specific psychiatric disorders and of the relationships among those disorders in larger and broader populations of sex offenders appear warranted.

Drug names: benztropine (Cogentin and others), bupropion (Wellbutrin and others), buspirone (BuSpar and others), cimetidine (Tagamet and others), diphenhydramine (Benadryl and others), flutamide (Eulexin and others), gabapentin (Neurontin), hydroxyzine (Vistaril, Atarax, and others), lithium (Eskalith, Lithobid, and others), medroxyprogesterone acetate (Provera), nafarelin (Synarel), naltrexone (ReVia and others), nefazodone (Serzone), olanzapine (Zyprexa), propranolol (Inderal and others), quetiapine (Seroquel), risperidone (Risperdal), topiramate (Topamax), trazodone (Desyrel and others), zolpidem (Ambien).

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