Axis I Psychiatric Disorders, Paraphilic Sexual Offending and Implications for Pharmacological Treatment

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ABSTRACT

Background: Axis I non-sexual psychopathology, especially if associated with other manifestations of impulsivity, could be important to consider during the assessment and pharmacological treatment of paraphilic sexual offenders.

Method: The author performed a Medline literature search using combinations of the following terms "sexual offender," "paraphilia," "Axis I," and "comorbid." In addition, individual paraphilic disorders including "exhibitionism," "voyeurism," "frotteurism," "sexual sadism" and "pedophilia" were searched with the terms "Axis I" and "comorbid." From the literature retrieved, 18 relevant specific articles and additional references were reviewed that utilized either a comprehensive prospective methodology to ascertain Axis I psychopathology or a specific diagnosis not typically included in structured diagnostic instruments was ascertained with validated rating instruments.

Results: Unipolar and bipolar mood disorders, social anxiety disorder, attention deficit hyperactivity disorder and other neurodevelopmental conditions (mental retardation, fetal alcohol spectrum disorder, Asperger's disorder) are Axis I psychopathologies reported as co-associated with paraphilic sexual offending. The aforementioned Axis I psychiatric disorders typically manifest during childhood or adolescence, the same age of onset as paraphilic disorders. Alcohol abuse is prevalent among paraphilic offenders as well and its presence serves as an additional disinhibitor. Research supporting the concurrent pharmacological treatment of Axis I comorbidities is modest but offers support that such treatment could mitigate paraphilic behavior.

Limitations: This review was organized to emphasize positive findings. Studies reviewed varied in both sample types and settings as well as ascertainment and diagnostic methodologies. The literature reviewed is modest in size and additionally limited by small samples.

Conclusions: A subset of males with Axis I diagnoses of mood disorders, social anxiety disorder, substance use disorders, and ADHD or other childhood neurodevelopmental disabilities may be co-associated with sexual disinhibition and aggression manifested as paraphilias. Pharmacological treatments addressing Axis I comorbidites and paraphilias have been reported to mitigate both sets of disorders but the treatment data should be regarded as preliminary.

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INTRODUCTION

In the Diagnostic and Statistical Manuals of the American Psychiatric Association (DSM-IV and proposed DSM-5), paraphilic disorders are generally structured into "A" and "B" criterion where the former provides an operational description for a specific paraphilic focus of sexual arousal (e.g., recurrent, persistent sexual arousal to pre-pubertal children for pedophilia) and the latter criterion describes the clinical necessity of significant personal distress or social role impairment resulting from criterion A arousal or behavior.

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There is, if you will, an unspoken clinical assumption that "A" could lead to "B" but the clinical conditions or circumstance associated with this assumption are not inherently evident. For example, there are men who may have had repetitive, intense and enduring sexual arousal associated with voyeurism, pedophilia, exhibitionism or rape fantasies but never acted against victims. As is being proposed for DSM-5, under these circumstances a paraphilia may be ascertained (Criterion A only) but a paraphilic disorder or formal diagnosis would require the additional clinical significance threshold (Criterion A plus Criterion B) (1). This observation leads to an interesting and important question: what risk factors or characteristics are more likely to intensify or disinhibit someone with a Criterion A paraphilia to progress to a paraphilic disorder?

At present, in addition to the presence of a persistent paraphilia (Criterion A) whose intrinsic intensity may vary over time, there are additional risk factors or characteristics that have been reported associated with repetitively enacted paraphilic sexual offending. These factors fall into five general domains:

1. Gender (male)
2. Age (inverse relationship)
3. Significant developmental adversity (especially in hands-on offenders)
4. Axis I psychopathology
5. Axis II psychopathology

Although the research literature on sexual offenders, especially sexually violent repeat offenders, has focused on Axis II psychopathology (2-4), salient non-sexual Axis I psychopathology has also been noted. There are several reasons to assume that "non-sexual" Axis I psychopathology, especially if known to be associated with other manifestations of behavioral disinhibition (i.e., impulsivity), could be important to consider during the assessment and treatment of paraphilic sexual offenders.

First, most Axis I neuropsychiatric disorders are associated with limbic, cingulate and prefrontal neural pathways in the brain, networks that are also associated with the regulation of sexual motivation and behavioral control (5). Second, the orbital-frontal area in particular, commonly affected by Axis I psychiatric disorders, is one of the major final pathways associated with "executive functions" such as cognitive planning, attention, working memory, anticipation, motivation, reward salience, synthesizing complex sensory information, social judgment and impulse control. In mammalian models of sexual disinhibition, the prefrontal cortex has been specifically associated with sexual disinhibition (6). Third, if it could be demonstrated that the predominant Axis I psychopathologies associated with sexual deviance and paraphilically motivated sexual offending had their onset during childhood or adolescence, then this would additionally strengthen the importance of a non-random co-association as paraphilic sexual arousal is predominantly reported to have a similar age of onset (7). Last, while there is considerable controversy as to the best multimodal treatment approaches to address and ameliorate recidivistic sexual offending, pharmacological treatments that ameliorate comorbid Axis I disorders associated with sexual impulsivity or appetitive drive dysregulation may help to mitigate such behaviors (8). On these bases, the identification and treatment of Axis I comorbidity is an important clinical consideration for paraphilic sexual offenders.

METHODS

The author performed a Medline literature search using combinations of the following terms "sexual offender," "paraphilia," "Axis I" and "comorbid." In addition, individual paraphilic disorders including "exhibitionism," "voyeurism," "frotteurism," "sexual sadism" and "pedophilia" were searched with the terms "Axis I" and "comorbid." From the literature retrieved, 18 relevant specific articles and additional references were reviewed that utilized either a comprehensive methodology to ascertain Axis I psychopathology or a specific diagnosis not typically included in such structured diagnostic instruments was ascertained with validated rating instruments.

In samples of adolescents, I tried to search for manuscripts or book chapters that described hands-on sexual offenses. According to DSM-IV-TR, paraphilic diagnoses cannot be applied to adolescents (9) but, rather than eliminate several samples, I have included them with the caveat that such individuals cannot be definitively characterized as "paraphilic."

In addition, I have included here previously unpublished data from a sample of consecutively evaluated outpatient males (n=180), that included paraphilic sexual offenders (n=73). This data was drawn from my clinical practice and collected from October 2000 – January 2004. Written informed consent was obtained from each subject and approved by the McLean Hospital

Institutional Review Board, affiliated with Harvard Medical School (10). The assessment of DSM-IV Axis I psychopathology in that sample was ascertained utilizing the same diagnostic instruments reported in a previous publication by this author (11). A comprehensive diagnostic checklist for DSM-IV was administered and reviewed by clinician and subject, that included the lifetime assessment of dysthymic disorder, major depression, bipolar disorder (Types I and II), psychotic disorders, social anxiety disorder, generalized anxiety disorder, panic disorder, post-traumatic stress disorder, obsessive compulsive disorder, alcohol abuse, cocaine abuse, marijuana abuse, attention deficit disorders and conduct disorder.

RESULTS

In the following tables, I have tried to organize the extant literature that I reviewed on this subject. I have emphasized "positive" or predominant disorder prevalence findings in this report. When specific lifetime prevalence of Axis I disorders in paraphilic sexual offenders

Table 1. *Lifetime Prevalence of Mood Disorders in Paraphilic Sexual Offenders*

Axis I diagnosis	Sample Size	Sample Description	Methodology	Lifetime Prevalence
Major depression				
Raymond (1999) (33)	45	adult pedophiles	SCID-DSM-IV	56%
Leue (2004) (34)	30	adult forensic offenders	Mini-DIPS (DSM-IV)	30%
Grant (2005) (35)	25	adult exhibitionists	SCID-DSM-IV	40%
Bipolar disorder				
Galli (1999) (36)	22	adolescent child molesters	SCID-DSM-III-R	52%
Dunseith (2004) (37)	84	adult paraphilic offenders	SCID-DSM-IV	42%
Dysthymic disorder				
Eher (2003) (38)	75	paraphilic rapists and pedophiles	SCID-DSM-IV	28%
Kafka (1994) (39)	34	adult paraphilic offenders	checklist for DSM-III-R disorders	67%
Kafka (1998) (40)	21	adult paraphilic offenders	checklist for DSM-III-R disorders	70%
Kafka (2002) (11)	60	adult paraphilic offenders	checklist for DSM-IV disorders	69%
Kafka (2010) (10)	73	adult paraphilic offenders	checklist for DSM-IV disorders	60%

Mini-DIPS: Diagnostic Interview for Psychiatric Disorders-short version (in German) (41)
SCID for DSM-III-R Psychiatric Disorders (42)
SCID for DSM IV Axis I Disorders (43)

Table2. *Lifetime Prevalence of Axis I Anxiety Disorders in Paraphilic Sexual Offenders*

Axis I diagnosis	Sample Size	Sample Description	Methodology	Lifetime Prevalence
Post-traumatic stress disorder				
Galli (1999) (36)	22	adolescent child molesters	SCID-DSM-III-R	32%
Social phobia				
Dunseith (2004) (37)	84	adult paraphilic offenders	SCID-DSM-IV	13%
Kafka (1994) (39)	34	adult paraphilic offenders	checklist for DSM-III-R disorders	20%
Kafka (1998) (40)	21	adult paraphilic offenders	checklist for DSM-III-R disorders	30%
Kafka (2002) (11)	60	adult paraphilic offenders	checklist for DSM-IV disorders	20%
Kafka (2010) (10)	73	adult paraphilic offenders	checklist for DSM-IV disoders	23%
Leue (2004) (34)	30	adult forensic offenders	Mini-DIPS (DSM-IV)	53%
Panic Disorder				
Raymond (1999) (33)	45	adult pedophiles	SCID-DSM-IV	24%
Generalized Anxiety Disorder				
Grant (2005) (35)	25	adult exhibitionists	SCID-DSM-IV	12%

Table 3. *Lifetime Prevalence of Axis I Alcohol Abuse in Paraphilic Sexual Offenders*

Axis I diagnosis	Sample Size	Sample Description	Methodology	Lifetime Prevalence
Alcohol abuse				
Dunseith (2004) (37)	84	adult paraphilic offenders	SCID-DSM-IV	10 %
Raymond (1999) (33)	45	adult pedophiles	SCID-DSM-IV	51%
Galli (1999) (36)	22	adolescent child molesters	SCID-DSM-III-R	36%
Harsch (2006) (44)	40	adult forensic sex offenders	SCID-DSM-IV	55%
Kafka (1994) (39)	34	adult paraphilic offenders	checklist for DSM-III-R disorders	41%
Kafka (1998) (40)	21	adult paraphilic offenders	checklist for DSM-III-R disorders	40%
Kafka (2002) (11)	60	adult paraphilic offenders	checklist for DSM-IV disorders	32%
Kafka (2010) (10)	73	adult paraphilic offenders	checklist for DSM-IV disorders	31%

Table 4. *Lifetime Prevalence of Axis I Attention Deficit Hyperactivity Disorder and Conduct Disorder in Paraphilic Sexual Offenders*

Axis I diagnosis	Sample Size	Sample Description	Methodology	Lifetime Prevalence
Attention deficit hyperactivity disorder				
Kafka (1998) (40)	21	adult paraphilic offenders	checklist for DSM-III-R disorders	53%
Kafka (2002) (11)	60	adult paraphilic offenders	ADHD Rating Scale, WURS	42%
Kafka (2010) (10)	73	adult paraphilic offenders	ADHD Rating Scale	42%
Galli (1999) (36)	22	adolescent child molesters	SCID-DSM-III-R	71%
Fago (1999) (45)	35	adolescent mixed offenders	Connors' ADHD rating scales	77%
Kavoussi (1988) (46)	58	adolescent mixed offenders	Kiddie SADS-E	7%
Conduct disorder				
Kavoussi (1988) (46)	58	adolescent mixed offenders	Kiddie SADS-E	67%
Galli (1999) (36)	22	adolescent child molesters	SCID-DSM-III-R	94%
Kafka (2002) (11)	60	adult paraphilic offenders	checklist for DSM-IV disorders	23%
Kafka (2010) (10)	73	adult paraphilic offenders	checklist for DSM-IV disorders	25%

ADHD Rating Scale (47,48)
Wender-Utah Retrospective Scale for ADHD (49)
Connors' Parent Rating Scale and Teacher's Rating Scale (50)
Children's Schedule for Affective Disorders and Schizophrenia (41) SCID for DSM IV Axis I Disorders (43)

Table 5. *Lifetime Prevalence of Additional Axis I Neurodevelopmental Disorders in Sexual Offenders*

Axis I Diagnosis	Sample Size	Sample Description	Methodology	Prevalence of Sex Offending
Fetal alcohol spectrum disorders				
Streissguth (2004) (32)	415	adolescent mixed offenders	comprehensive diagnostic assessment	49%
Autism-spectrum disorders, including Asperger's disorder				
't Hart-Kerkhoffs (2009) (51)	114	adolescents, mostly child molesters	CSBQ	20%
Mental retardation syndromes				
Cochrane (2001) (52)	1710	federal defendant offenders forensic clinicians, DSM-IIIR	criteria	11%
Blanchard (1999) (53)	678	pedophiles	IQ testing, phallometric testing	10%

Children's Social Behavior Questionnaire (54)

(as opposed to non-paraphilic sexual offenders) were determined in articles or could be approximately calculated from the data presented, they are listed in the Tables as well.

DISCUSSION

From this literature review, it is suggested that mood disorders are relatively prevalent Axis I psychopathologies co-associated with paraphilic sexual offending. In addition, social anxiety disorder, ADHD and conduct disorder can be associated with paraphilic sexual disinhibition. Alcohol abuse is prevalent among adult paraphilic offenders but its role is more likely associated with situational disinhibition

In adolescent sexual offenders, complex post-traumatic stress disorder, conduct disorder, ADHD and additional neurodevelopmental disorders (fetal alcohol spectrum, Asperger's Disorder) have been reported with a higher incidence than in adult paraphilic offenders as evidenced in the Tables. The latter neurodevelopmental disorders, however, are not systematically evaluated in adults or in "comprehensive" rating instruments such as the Structured Clinical Interview for DSM-IV (SCID).

It is noteworthy that mood disorder symptoms typically include appetitive drive dysregulation affecting sleep, eating and sexual behavior. Dysthymic disorder can be characterized by an early age of onset (e.g., before 21 years), a waxing and waning clinical course, and a comorbid association with some clinical syndromes associated with externalizing behaviors substance abuse, eating disorders and personality disorders (12-14). Successful antidepressant treatment of paraphilias with comorbid unipolar mood disorders has been reported in several consecutive case series (15-20) although there have been no definitive double-blind placebo controlled studies.

Bipolar-spectrum disorders (during which hypomanic phase symptoms may manifest for only one to two days or symptom counts are subthreshold) are more difficult to differentiate in patients than repetitive behavioral sexual impulsivity. Although the gold standard for hypomania in bipolar II disorder in DSM-IV and DSM-IV-TR is an episode duration lasting four or more days, recent research has shown that the mean duration of hypomanic episodes in community and outpatient samples is one to two days (21, 22) and that up to 40% of persons who have episodes of major depression have sub-threshold hypomanic symptoms (23). Increased or disinhibited sexual motivation, excessive involvement in pleasurable activities and risk-taking, including sexual indiscretions, are recognized among the polythetic cardinal manifestations of hypomania. A wider boundary for hypomania during diagnostic assessment should alert clinicians that sexually impulsive behavior, including paraphilic sexual offending, may be found in both polarities of mood disorders. There is only a small literature demonstrating efficacy of mood stabilizers for the amelioration of paraphilias in persons with concurrent bipolar disorders (24-27) and a retrospective case series of bipolar paraphiliacs prescribed valproate sodium suggested that valproate was not effective for mitigating paraphilias (28).

Childhood onset and the attenuated persistence as "adult" ADHD has received considerable research and clinical attention during the past decade. In incarcerated populations, however, where childhood-onset ADHD-combined subtype would be expected to have a higher prevalence because of its comorbidity with antisociality and conduct disorder, this diagnosis is frequently not assessed (29). In adult sexual offenders who are incarcerated, ADHD assessment is over-looked in preference to assessing Axis II psychopathology, most commonly antisocial personality disorder (30). While the former diagnosis is readily treatable with medication such as a psychostimulant, the latter diagnosis denotes both a poor prognosis and pharmacological non-responsivity. Psychostimulants, accompanied by SSRI antidepressants for paraphilics, including sexual offenders, have demonstrated some efficacy in a case series (31) but I could not find any other reports in the literature.

Fetal alcohol syndrome (FAS) and the more broadly defined fetal alcohol effects (FAE) are not designated as specific "psychiatric" diagnoses in DSM-IV-TR despite recent evidence that fetal alcohol exposure may be the leading preventable cause of mental retardation in the United States (32). In this clinician's experience, the sexual impulsivity of patients with FAE or FAS can meet criteria for a paraphilia (e.g., pedophilia, coprophilia) but their sexual behavior can also be less coherently organized or planned, as might be the case for persons with paraphilias. For example, an adolescent or adult with FAE might receive an incorrect diagnosis of frotteurism or exhibitionism but his sexually disinhibited behavior is indiscriminate: he would more likely repetitively target nearby peers or adults, not strangers as those with paraphilias would more deliberately victim-

ize. At present, in contrast to unipolar, bipolar disorder or ADHD, there is no uniform psychotherapeutic or psychopharmacological treatment algorithm for persons with a history of alcohol-related teratogenic effects. Persons afflicted by prenatal exposure to neurotoxic substances such as alcohol are frequently clustered in structured residential programs, including incarceration settings.

REVIEW LIMITATIONS

This literature review was organized to emphasize positive findings from the research literature. For example, if mood or anxiety disorders were systematically evaluated, the most prevalent lifetime diagnosis was reported. The studies included varied in both sample types and settings as well as ascertainment and diagnostic methodologies. As a result, not all studies reported exactly the same broad spectrum of Axis I disorders. For example, only a few studies ascertained attention deficit hyperactivity disorder or conduct disorder retrospectively in paraphilic adults. Some studies did not delineate specific paraphilic diagnoses but rather emphasized paraphilic disorders as a group of diverse behaviors. Many of the studies reported small samples which further limit any definitive findings or conclusions. The psychopharmacological treatment of paraphilic disorders based on the premise of treating concurrent Axis I comorbidity is limited as well. The evidence is strongest for the prescription of serotonergic antidepressants in non-biploar paraphilic offenders.

CONCLUSION

A subset of males with Axis I diagnoses of mood disorders, social anxiety disorder, ADHD, substance use disorders, and/or neurodevelopmental disabilities such as mental retardation and fetal alcohol effects may be particularly vulnerable to sexual disinhibition. These psychiatric disorders have a chronic or recurrent course and typically manifest during childhood or adolescence, the developmental period during which sexual arousal patterns and preferences are primarily established. These neuropsychiatric vulnerabilities, exacerbated by the complex familiar discord that may occur in response to their symptomatic expression, could have a malignant pathoplastic effect on developing sexuality and impulse control in vulnerable males. In some instances, psychoactive substance abuse, most notably alcohol, pours "salt on the wound" vulnerability of adolescents and men with a combination of such afflictions. Pharmacological treatment reports suggest that ameliorating comorbid Axis I can diminish sexual impulsivity (5,8) but the evidence should still be considered as preliminary: the current literature neither definitively proves or disproves the hypothesis that treating Axis I comorbidity effectively ameliorates paraphilic sexual offending behavior. Heightened clinical awareness and the correct identification of Axis I comorbidities could help to ameliorate the human suffering and victimization associated with paraphilias, but more definitive research and clinical reports of treatment are needed.

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