

Hypersexual Disorder: A Proposed Diagnosis for DSM-V

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Abstract Hypersexual Disorder is proposed as a new psychiatric disorder for consideration in the Sexual Disorders section for DSM-V. Historical precedents describing hypersexual behaviors as well as the antecedent representations and proposals for inclusion of such a condition in the previous DSM manuals are reviewed. Epidemiological as well as clinical evidence is presented suggesting that non-paraphilic “excesses” of sexual behavior (i.e., hypersexual behaviors and disorders) can be accompanied by both clinically significant personal distress and social and medical morbidity. The research literature describing comorbid Axis I and Axis II psychiatric disorders and a purported relationship between Axis I disorders and Hypersexual Disorder is discussed. Based on an extensive review of the literature, Hypersexual Disorder is conceptualized as primarily a nonparaphilic sexual desire disorder with an impulsivity component. Specific polythetic diagnostic criteria, as well as behavioral specifiers, are proposed, intended to integrate empirically based contributions from various putative pathophysiological perspectives, including dysregulation of sexual arousal and desire, sexual impulsivity, sexual addiction, and sexual compulsivity.

Keywords Hypersexuality · Sexual desire · Sexual addiction · Sexual compulsivity · Paraphilia-related disorder · DSM-V

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Introduction

Since the publication of the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) (American Psychiatric Association, 1980), psychiatric diagnosis has been criterion-based and atheoretical in defining psychiatric disorders. At this juncture, we simply do not have the empirical science to establish causality or pathogenesis for psychiatric disorders (Caine, 2003), including sexual behavior disorders. Despite this limitation, there is well over 100 years of clinical history consistently describing excesses of enacted sexual behavior, both paraphilic and normophilic, i.e., sexual activities that conform to the dictates of custom, religion, and law.

I will review the empirical basis for an atheoretical and criterion-based diagnostic categorization for a clinically evident group of sexual behaviors that include: (1) normophilic sexual fantasies, arousal, urges, and behaviors; (2) the duration, frequency, and intensity of these sexual fantasies, urges, and behaviors have become associated with clinically significant personal distress and volitional and social role impairment.

Literature Search Methodology

I performed an Internet-based literature search primarily utilizing Medline and PsychInfo databases. Search terms included: “hypersexual,” “hypersexuality,” “sexual addiction,” “sex addict,” “sexual impulsivity,” “compulsive sexual,” “compulsive sex,” “sexual compulsion,” “paraphilia-related disorder,” and “excessive sexual.” I sought articles that included data on samples greater than 20, whenever possible. In reviewing these articles, I also sought secondary references, textbooks, and textbook chapters. This literature search was completed in October 2008 but selective additional references that have been subsequently published have been updated as of April 2009. The

diagnostic criteria proposed for Hypersexual Disorder are derived from the literature search and review as well as input from the Paraphilias Working Group and Advisors to the Working Group. The diagnostic criteria for Hypersexual Disorder proposed in this article were finalized in August 2009.

Historical Overview of “Excessive” Sexual Behaviors

In Western medicine, excessive sexual behaviors were clinically documented by diverse clinicians such as Benjamin Rush (1745–1813), a physician and Founding Father of the United States (Rush, 1979), as well as the 19th century Western European pioneer sexologists Richard von Krafft-Ebing (1940–1902) (Krafft-Ebing, 1965), Havelock Ellis (1859–1939) (Ellis, 1905) and Magnus Hirschfeld (1868–1935) (Hirschfeld, 1948). These clinicians and investigators each described a panoply of persistent socially deviant sexual behaviors as well as clinical examples of males and females whose nonparaphilic (i.e., normophilic) sexual appetite was excessive and maladaptive. The clinical examples of such appetitive behaviors described by these investigators were precursors to the 20th century characterization of protracted promiscuity as Don Juanism (Stoller, 1975) or satyriasis (Allen, 1969) in males and nymphomania (Ellis & Sagarin, 1965) in females. The aforementioned European investigators also described compulsive masturbation as a common behavior in their clinical samples.

The Diagnostic and Statistical Manuals and Excessive Normophilic Sexual Behavior Disorders

In organized North American-based psychiatry, the DSM-II (American Psychiatric Association, 1968) recognized sexual deviations as personality disorders but there was no mention of excessive or maladaptive nonparaphilic sexual behavior disorders. By 1980, the DSM-III (American Psychiatric Association, 1980) classified paraphilic disorders as distinct pathologies (Psychosexual Disorders) and a residual diagnostic category, Psychosexual Disorder Not Otherwise Specified (diagnostic code 302.89) included “distress about a pattern of repeated sexual conquests with a succession of individuals who exist only as things to be used (Don Juanism and nymphomania)” (p. 283).

In DSM-III-R (American Psychiatric Association, 1987), the Sexual Disorders Not Otherwise Specified category (diagnostic code 302.90) added the concept of nonparaphilic sexual addiction for the first time by stating: distress about a pattern of repeated sexual conquests or other forms of nonparaphilic sexual addiction, involving a succession of people who exist only as things to be used (p. 296).

The nonparaphilic sexual addiction terminology was discontinued in more recent American Psychiatric Association diag-

nostic manuals primarily because of a lack of empirical research and consensus validating sexual behavior as a bona fide behavioral addiction (Wise & Schmidt, 1997).

In the DSM-IV (American Psychiatric Association, 1994) and its text revision, DSM-IV-TR (American Psychiatric Association, 2000), the original DSM-III characterization of these behaviors was reestablished. Sexual Disorders Not Otherwise Specified (302.9) included a condition characterized by: “distress about a pattern of repeated sexual relationships involving a succession of lovers who are experienced by the individual only as things to be used” (p. 582).

The *International Classification of Diseases* (ICD), a compendium of medical diagnoses published by the World Health Organization (2007), also provides a taxonomy of sexual disorders that has been specifically coordinated with the DSM-IV (Frances, Widiger, & Pincus, 1989). The ICD has a provision for “excessive sexual drive” (Diagnostic Code F52.7), further subdivided into nymphomania (for females) and satyriasis (for males). No further description is included.

DSM-V and Hypersexual Disorder

I have chosen to establish a proposal for DSM-V diagnostic criteria that captures the aforementioned Sexual Disorder NOS designations and concurrently is consistent with established medical and psychiatric terminology such as current diagnostic descriptors and criteria for other Sexual Disorders. In addition, I am selecting a scientifically based terminology specifically associated with increased or excessive expression of biologically mediated human behaviors or pathological conditions.

When human (and animal) behaviors or biological functions are “less than” normal, the Greek language-derived prefix “hypo-” is commonly attached as a descriptor of a pathological condition (e.g., hypoactivity, hypothermia, hypothyroidism). In contrast “hyper-” is the prefix consistent with the notion of “increased” or “excessive” behavior associated with discrete pathologies or dysfunctional behavioral outcomes (e.g., hypersomnia, hyperthyroidism, hyperphagia, hyperactivity). There is a long history of characterizing behaviorally enacted excesses of sexual behaviors as “hypersexual” (Krafft-Ebing, 1965). Thus, the diagnostic appellation Hypersexual Disorder (Kafka & Hennen, 1999; Kingston & Firestone, 2008; Krueger & Kaplan, 2001; Orford, 1978; Reid, Carpenter, Spackman, & Willes, 2008; Stein, Black, Shapira, & Spitzer, 2001) would be consistent with the aforementioned clinical characteristics specifically attributed to an increase in intensity and frequency of normophilic sexual behaviors that are associated with significant adverse consequences.

I choose to introduce this proposed diagnosis and its associated criteria and terminology at the beginning of this review to afford a uniform narrative for the reader. In addition, in a

Table 1 Proposed diagnostic criteria for Hypersexual Disorder

A. Over a period of at least 6 months, recurrent and intense sexual fantasies, sexual urges, or sexual behaviors in association with 3 or more of the following 5 criteria:

A1. Time consumed by sexual fantasies, urges or behaviors repetitively interferes with other important (non-sexual) goals, activities and obligations.

A2. Repetitively engaging in sexual fantasies, urges or behaviors in response to dysphoric mood states (e.g., anxiety, depression, boredom, irritability).

A3. Repetitively engaging in sexual fantasies, urges or behaviors in response to stressful life events.

A4. Repetitive but unsuccessful efforts to control or significantly reduce these sexual fantasies, urges or behaviors.

A5. Repetitively engaging in sexual behaviors while disregarding the risk for physical or emotional harm to self or others.

B. There is clinically significant personal distress or impairment in social, occupational or other important areas of functioning associated with the frequency and intensity of these sexual fantasies, urges or behaviors.

C. These sexual fantasies, urges or behaviors are not due to the direct physiological effect of an exogenous substance (e.g., a drug of abuse or a medication)

Specify if:

Masturbation

Pornography

Sexual Behavior with Consenting Adults

Cybersex

Telephone Sex

Strip Clubs

Other:

diverse literature that describes these conditions from varying putative pathophysiological perspectives, establishing a neutral, broad, and inclusive scientific and medically based nosology and diagnostic classification is particularly salient (Table 1).

The operational criterion-based definition for Hypersexual Disorder was specifically derived to include elements of two well-established DSM-IV-TR sexual disorders: Hypoactive Sexual Desire Disorder and the Paraphilias. Hypersexual Disorder, however, is defined as a clearly distinct diagnostic category.

In DSM-IV-TR, Criterion A for Hypoactive Sexual Desire Disorder (HSDD; American Psychiatric Association, 2000) as applied to both men and women, was defined by “persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity.” In distinct contrast, Criterion A and B for Hypersexual Disorder are both characterized by an increased frequency and intensity of sexual fantasies, urges, and overt behaviors.

Paraphilias are also characterized by “recurrent, intense sexually arousing sexual urges or behaviors...that occur over a period of at least 6 months”; however, the nature of sexual interest and arousal in paraphilic disorders is not normophilic.

Hypoactive Sexual Desire Disorder, Hypersexual Disorder, and Paraphilias, as defined by their respective criteria either infer (Paraphilias: Kafka, 1997b; Kafka & Hennen, 2003) or denote (Hypoactive Sexual Desire Disorder and Hypersexual Disorder) disturbances in human sexual desire, motivation, and behavior. The elaborated rationale for considering Hypersexual Disorder as primarily as a sexual desire disorder and the derivation of its specific operational criteria will be presented in depth later in this review.

Epidemiological Evidence for Hypersexuality Ascertained in Non-Clinical Samples

Any operational definition for hypersexuality should first be derived from large non-clinical community samples where a normative range of sexual behaviors can also be ascertained for comparison. Demographic variables, such as age, educational attainment, gender, marital/relationship status, religious affiliation, and cultural context, must also be taken into account as relevant variables to consider for assessing sexual behavior (Laumann, Gagnon, Michael, & Michaels, 1994; Marmor, 1971; Smith, 2006).

Kinsey, Pomeroy, and Martin (1948) reported on a large convenience sample of American males ($n = 5300$). To measure the frequency of sexual behavior, Kinsey et al. assessed a measure called total sexual outlet/week (TSO), the cumulative total number of orgasms achieved by any single or combination of sexual behaviors (e.g., masturbation, sexual intercourse, oral sex). TSO was graphically represented by a continuous distribution curve skewed to the right (the high frequency end). Only 7.6% of American males (adolescence to age 30) had a mean TSO of 7 or more for at least 5 consecutive years duration (Kinsey et al., 1948, p. 197). Notably, in that sub-sample of males, masturbation was the primary sexual outlet in preference to sexual intercourse. Kinsey et al. included a small ($n = 81$) male “underworld” sample in their American male survey and, in that subgroup, 49% self-reported a persistent TSO/week of 7/week for a minimum duration of 5 consecutive years.

Atwood and Gagnon (1987) reported that 5% of high school and 3% of college age white males ($n = 1077$) masturbated on a daily basis, i.e., had a TSO of at least 7 per week. In contrast, Pinkerton, Bogart, Cecil, and Abramson (2002) reported that the average male undergraduate student reported masturbating an average of 12 times per month ($3 \times / \text{week}$). Laumann et al. (1994), in the most recent comprehensive sexuality survey of American males and females, reported that only 7.6% of American males ($n = 1320$; ages 18–59) engaged in partnered sex four or more times/week for at least one year. They also reported that only 14.5% masturbated 2–6 times/week for the current year, 1.9% masturbated daily, and an additional 1.2% masturbated more than once/day during the past year (S. Michaels, personal communication, October 18, 1995).

Inasmuch as these investigators were looking at non-clinical samples, they were not able to provide data linking time-consuming sexual fantasies and urges (i.e., sexual preoccupation, if present) or social role impairments with orgasm-associated sexual behaviors (TSO/week).

Långström and Hanson (2006), in a population-based epidemiological study, defined high rates of enacted sexual behavior in a large Swedish community sample ($n = 2450$ men and women). They provided an operational definition for “impersonal sex” that included six specific enacted behaviors (frequency of masturbation/month, frequency of pornography use/year, number of sexual partners in past year and per active year, having extra-partnered sex while in a stable partnered relationship, and ever participating in group sex) and one attitudinal factor (preferring a casual sexual lifestyle). They utilized a composite of these measures to identify “hypersexuality” as an indicator for the most sexually active 5–10% of their sample. In the group of both men and women who were rated as “high” on indicators of hypersexuality, correlations among such sexual behaviors were statistically significant.

Males classified in the “high” group in their composite measure of hypersexuality ($n = 151$ of 1244 men, ages 18–60; 12.1% of the sample) were more likely to be younger, have experienced separation from parents, and live in major urban areas. They were more likely to have started sexual behavior at an earlier age and, in addition to increased frequency of sexual behavior, reported a greater diversity of sexual experiences, including same-sex behavior (but not necessarily being homosexual), paying for sex, exhibitionism, voyeurism, and masochism/sadism. Their mean TSO/past month was 17.4 ± 11.3 (median = 17, approximately 4×/week), significantly higher than the low and medium hypersexual groups (N. Långström, personal communication, November 21, 2008). Despite acknowledging a higher frequency of sexual behavior, they were less likely to feel satisfied with their sexual life, had more relationship-associated problems, more STDs, and were more likely to have consulted professional help for sexuality-related issues.

In the female sample ($n = 1171$, age range, 18–60), 6.8% ($n = 80$) of the sample met criteria for “high hypersexuality.” It is of interest that women defined as hypersexual were quite similar to males in the aforementioned variables but, in addition, women were more likely to report a history of sexual abuse and had sought psychiatric care in the last year. Women in the high hypersexual group had a significantly higher mean TSO/past month (13.0 ± 9.1 /month or 3×/week; median = 11) in comparison with the low and medium hypersexual groups (N. Långström, personal communication, November 21, 2008).

Both males and females in the “high hypersexuality” group engaged in other risk-taking behaviors, such as smoking cigarettes, heavy drinking, the use of illegal drugs, and, in males, gambling. In a separate report with the same sample,

Långström and Zucker (2005) reported similar statistically significant associations in males who acknowledged sexual arousal from transvestic fetishism with indicators of impersonal sex/hypersexuality.

The Långström and Hanson (2006) report did not define a hypersexual “disorder” but certainly affords epidemiological support for the prevalence of hypersexual behaviors and their correlation with a variety of indicators of social and personal dysfunction.

Although one dimension for determining a definition for a hypersexual “disorder” as a psychiatric diagnosis could be based on the statistical frequency of enacted sexual behavior, a frequency-based measure alone is merely a “line in the sand” in the continuous frequency distribution curve of sexual appetitive behavior. Excessive, repetitive or hypersexual behaviors without significant personal distress, possible volitional impairment or significant adverse consequences itself do not designate a clinical or pathological condition. In addition, persistent and increased total sexual outlet alone, without concomitant increased sexual fantasies or other expressions of sexual arousal and motivation, might not necessarily be indicative of a sexually motivated disorder.

Summary

Although there is no distinct bimodal distribution or taxon that effectively defines “excessive” sexual behavior or hypersexuality into a discrete category, there is significant evidence from population-based surveys that persistent and increased frequency rates of enacted sexual behavior can be ascertained and may be prodromal to and/or associated with both Paraphilias and Hypersexual Disorder. Adverse consequences accrue in a subgroup of these affected individuals and such consequences can be associated with help-seeking behavior and clinical assessment.

Contemporary Pathophysiological Models for Hypersexual Disorder

A lack of consensus regarding the pathophysiology of these sexual behavior disorders as well as a modest volume of empirical data in peer-reviewed journals has continued to hamper the specific characterization of maladaptive nonparaphilic sexual behaviors as a distinct diagnostic class of disorders (Bancroft & Vukadinovic, 2004; Rinehart & McCabe, 1997) and to delineate the intra-class relationships between the putative disordered sexual behaviors that are affected. While some theoreticians have doubted the validity of establishing any diagnostic category for normophilic sexual behavior disorders (Giles, 2006; Rinehart & McCabe, 1997), a research and clinical literature of differing theoretical perspectives has posited whether such disorders are primarily

sexually motivated (analogous to paraphilias) (Kafka, 2007; Krueger & Kaplan, 2001; Stein, Black, & Pienaar, 2000), behavioral addictions (Carnes, 1983; Goodman, 1997), obsessive–compulsive spectrum disorders (Black, 1998; Coleman, 1987, 1990), impulsivity-spectrum disorders (Hollander & Rosen, 2000; McElroy et al., 1996; Mick & Hollander, 2006) or “out of control” excessive sexual behaviors (Bancroft & Vukadinovic, 2004). These theoretical models and their empirical foundations will be next reviewed.

Sexual Desire Dysregulation

In the human sexuality literature, sexual desire refers to the presence of sexual fantasies, urges or activities, and the subjective conscious motivational determination to engage in sexual behavior in response to relevant internal or external cues (American Psychiatric Association, 2000; Bancroft, 2009; Kaplan, 1995; Leiblum & Rosen, 1988; Levin, 1994; Levine, 2002; Singer & Toates, 1987). This definition is analogous to the appetitive or incentive-motivational phase of sexual behavior described in other male mammalian species. Sexual desire, in association with sexual arousal, may be expressed with a partner or through solitary masturbation (Spector, Carey, & Steinberg, 1996).

Evolutionary theory proponents have argued that men and women differ in mating strategies and that such differences are evident cross-culturally (Buss & Schmitt, 1993). Many studies have reported that human males, in comparison to females, are distinguished by increased sexual fantasy (Leitenberg & Henning, 1995), increased frequency of masturbation (Laumann et al., 1994; Leitenberg, Detzer, & Srebnik, 1993), increased propensity for externally generated visual sexual arousal (Jones & Barlow, 1990), more permissive attitudes toward casual sex (Oliver & Hyde, 1993) and more intrinsic sexual motivation and ease of arousal (Bancroft, Graham, Janssen, & Sanders, 2009; Okami & Shackelford, 2001). Consistent with these data, it has been hypothesized that women’s sexual motivation, sexual arousal, and sexual behavior are shaped by evolutionary factors, such as women’s greater biological, emotional, and temporal investment in reproduction and child rearing (Buss & Schmitt, 1993; Trivers, 1972). Women’s sexual desire may be more context responsive in comparison to the spontaneous sexual desire reported by males (Basson, 2001; Brotto, 2009). In comparison to males, female sexuality is better adapted to foster affiliative relationships and longer term partner commitment (Anderson, Cyranowski, & Aarestad, 2000). From these data, it would certainly follow that males are more vulnerable to hypersexual behaviors (Dodge, Reece, Cole, & Sandfort, 2004; Långström & Hanson, 2006), Hypersexual Disorder (Black, Kehrberg, Flumerfelt, & Schlosser, 1997; Briken, Habermann, Berner, & Hill, 2007; Raymond, Coleman, & Miner, 2003), paraphilias (American

Psychiatric Association, 2000), and sexual aggression (Knight & Sims-Knight, 2003, 2004).

Kafka (1993, 1994, 1995a, b, 1997b, 2000, 2001, 2003a, 2007; Kafka & Hennen, 1999, 2003; Kafka & Prentky, 1992) has reported on clinical samples of males with paraphilias (PAs) and paraphilia-related disorders (PRDs). Paraphilia-related disorders were defined as a specific class of normophilic sexual behavior disorders distinct from, but also co-associated with, PAs. PRDs were characterized as markedly increased expressions of culturally normative sexual desire (fantasies, urges, and behaviors) persisting for a minimum duration of 6 months and associated with clinically significant personal distress, impairment in reciprocal romantic relationships or other adverse psychosocial consequences.

An operational definition for “hypersexual desire” based on a lifetime assessment of the frequency of sexual behavior as well as current measurements of time spent in PA and PRD-associated sexual fantasies, urges, and behavior was derived from 220 consecutively evaluated males with PAs and PRDs (Kafka, 1997b, 2003a; Kafka & Hennen, 2003). From these clinically derived data, hypersexual desire in adult males was defined as a persistent TSO of 7 or more orgasms/week for at least 6 consecutive months after the age of 15 years.

Kafka’s proposed operational definition for hypersexual desire was formulated to reflect Kinsey et al. (1948), Atwood and Gagnon (1987), Janus and Janus (1993), and Laumann et al.’s (1994) normative data on the range of sexual behavior in American males as well as their data characterizing the most sexually active 5–10% of their samples.

A longitudinal history of hypersexual desire, as operationally defined above, was identified in 72–80% of males seeking treatment for paraphilias and paraphilia-related disorders (Kafka, 1997b, 2003a; Kafka & Hennen, 2003). If the TSO/week threshold for hypersexual desire were reduced to 5×/week for a minimum duration of 6 months, this would have included 90% of the sample.

The most commonly enacted lifetime sexual behavior in these clinically derived samples was masturbation, not partnered sex, as was similarly reported by Kinsey et al. (1948, p. 197) and Långström and Hanson (2006) in men who were the most sexually active in their samples. The mean age of onset of persistent hypersexual behavior was 18.7 ± 7.2 years, the age range of onset of hypersexual behavior was age 7–46, and the mean duration of this highest consistently maintained frequency of sexual appetitive behavior was 12.3 ± 10.1 years. In contrast, the mean age of this group when they sought treatment was 37 ± 9 years. Periods of persistent hypersexual behavior were continuous or episodic.

There were no statistically significant differences between men with paraphilias and paraphilia-related disorders in indices of lifetime hypersexual behavior frequency, duration of hypersexual behavior, and current indices of sexual activity, sexual fantasies, urges, and behaviors (1–2 h time spent/

day/week associated exclusively with PA and/or PRD-associated sexual fantasies, urges, and behaviors). Males with the highest cumulative lifetime number of paraphilias and paraphilia-related disorders (5 or more), however, self-reported a higher current TSO/week (mean 10 orgasms/week) and increased time consumed by PA and/or PRD-associated sexual fantasies, urges, and behaviors (mean 2–4 h/day). Other investigators have also reported a positive correlation between the frequency of sexual fantasy, masturbation, number of lifetime sexual partners, and self-rated sexual drive (Giambra & Martin, 1977; Laumann et al., 1994; Wilson & Lang, 1981).

Researchers affiliated with the Kinsey Institute have developed a “dual control model” of sexual arousal that hypothesizes centrally mediated (i.e., neurobiological) sexual excitatory and inhibitory processes (Bancroft, 1999; Bancroft & Janssen, 2000; Janssen, Vorst, Finn, & Bancroft, 2002a). In addition, their research has tested a hypothesis that subgroups of gay and heterosexual males respond to anxious or depressive affect with increased sexual behavior.

To assess these putative mechanisms, they have developed validated scales, the Mood and Sexuality Questionnaire (MSQ), to assess the relationship between anxious and depressive affect and sexual behavior, and the Sexual Inhibition Scales (SIS1 and SIS2) and Sexual Excitation Scale (SES), to assess sexual arousal in males and females. These scales were administered to examine how excitation and inhibition differ in different social contexts as well as in different clinical groups (Carpenter, Janssen, Graham, Vorst, & Wicherts, 2008; Janssen, Goodrich, Petrocelli, & Bancroft, 2009; Janssen, Vorst, Finn, & Bancroft, 2002b; Janssen et al., 2002a).

In this model, persons with combinations of either low inhibition (SIS2; i.e., not inhibited by the threat of performance consequences) and/or high on measures of sexual excitation and arousal (SES), accompanied by anxious or depressive affect, could be “sexual risk-takers” prone to promiscuous behavior and/or increased masturbation (Bancroft & Vukadinovic, 2004; Bancroft et al., 2003a, 2004; Janssen et al., 2009). In contrast, low SES scores were associated with “asexuals,” persons with disinterest or low motivation in sex (Prause & Graham, 2007). The extensive development and continued empirical testing of this model is best summarized by Bancroft et al. (2009). This model to assess sexual arousal, sexual appetitive behavior, and sexual risk-taking is the most methodologically rigorous, empirically grounded, and informative to date.

While the dual control model was formulated to examine sexual “arousal” and sexual response, sexual arousal is a component of sexual desire (Bancroft, 2009) and increased sexual excitation, as measured by the SES, is associated with both increased sexual arousal and appetitive behavior in men and women (Bancroft et al., 2009; Prause, Janssen, & Hetrick, 2008; Sanders, Graham, & Milhausen, 2008; Winters, Christoff, & Gorzalka, 2009; Winters, Christoff, Lipovsky, & Gorzalka, 2007).

The “dual control” model was utilized to study non-paraphilic “out of control” sexual behaviors (Bancroft & Vukadinovic, 2004). Self-identified predominantly male “sexual addicts” ($n = 31$) scored higher on the MSQ and SES but not SIS1 or SIS2 in comparison to an age matched control group. Consistent with others investigators describing these conditions (Carnes, 1989; Coleman, 1990; Kafka, 1991), “negative” mood states, particularly anxious and depressive mood, can be associated with both sexual promiscuity and increased masturbation in gay as well as heterosexual men (Bancroft, Janssen, Strong, & Vukadinovic, 2003c; Bancroft et al., 2003b).

Winters et al. (2007) have reported on a large convenience sample derived from an Internet-based survey of sexual behavior. They initially reported a sample of 7841 males and females (Winters et al., 2007) that was more recently expanded to include 14,396 subjects (6458 males and 7938 females; Winters et al., 2009). In the latter expanded sample, the participants were predominantly white, North American college graduates whose mean age was 29 years. In their larger sample, 107 (1.6%) men and 69 (0.8%) women acknowledged having sought treatment for “sexual compulsivity.” Their assessment methodology included administering a series of well-validated rating scales, including the Sexual Compulsivity Scale (SCS) (Kalichman & Rompa, 1995, 2001) as a dimensional measure of dysregulated sexual behavior, and the Sexual Inhibition and Sexual Excitation Scales (SIS/SES) (Carpenter et al., 2008; Janssen et al., 2002a, b), the Sexual Desire Inventory-2 (Spector et al., 1996), and the Derogatis Sexual Functioning Inventory (Derogatis & Melisaratos, 1979) to assess sexual desire and associated behaviors. They reported that the relationship between dysregulated sexual behavior and sexual desire was best accounted for by a single latent variable. That is, sexual compulsivity or “dysregulated” sexual behavior was primarily a marker of increased sexual desire and the distress associated with managing the frequency and intensity associated with increased partner-associated as well as solitary sexual behavior (i.e., masturbation) (Winters et al., 2009).

A complementary neurobiological formulation for a sexual desire dysregulation model has been presented as a “monoamine hypothesis” for paraphilic disorders (Kafka, 1997a, 2003b; Kafka & Coleman, 1991). This formulation can also be applied to Hypersexual Disorder as well inasmuch as both PAs and Hypersexual Disorder are associated with intense and frequent sexual fantasies, urges, and activities and adverse consequences. This model was derived from laboratory-based evidence demonstrating that brain monoaminergic receptors (serotonin, dopamine, and norepinephrine) interacting with sex hormone receptors, especially testosterone and other neuro-modulators, provide a biological substrate for sexual appetitive and copulatory response behaviors in mammals (Everitt, 1995; Everitt & Bancroft, 1991; Gorzalka, Mendelson, & Watson, 1990; Mas, 1995; Mas, Fumero, Fernandez-Vera, &

Gonzalez-Mora, 1995; Meston & Frolich, 2000; Pfaus, 1996). In these aforementioned reports assessing mammalian sexual behavior, enhanced dopaminergic neurotransmission is associated with sexual excitation while enhanced serotonergic neurotransmission is associated with sexual inhibition. Laboratory-induced perturbations of these monoamine neurotransmitters, especially serotonin (Ferguson et al., 1970; Sheard, 1969; Tagliamonte, Tagliamonte, Gessa, & Brodie, 1969) and dopamine (Baum & Starr, 1980; Everitt, 1990), can profoundly affect sexually motivated behaviors and provoke sexual disinhibition or hypersexual behavior in non-human primates.

In studies of human males, Axis I comorbid conditions (see discussion later in this review) associated with both PAs and Hypersexual Disorder, including unipolar (Risch & Nemeroff, 1992) and bipolar (Lasky-Su, Faraone, Glatt, & Tsuang, 2005) mood disorders, anxiety disorders (Kahn, Westenberg, & Verhoevan, 1987), and impulsivity disorders (Kavoussi, Armstead, & Coccaro, 1997; Soubrie, 1986) as well as attention deficit hyperactivity disorders (Levy, 1991) are associated with perturbations of central monoaminergic neurotransmission as well, thereby providing a possible neurobiological bridge between Axis I psychiatric disorders, testosterone, monoaminergic neurotransmitters, and disinhibited sexual behaviors.

Sexual Addiction and Sexual Dependence

Orford (1978, 1985) suggested that excessive appetitive and consummatory behaviors, including promiscuous hypersexuality, could become an addiction-like behavioral syndrome despite the absence of an exogenous substance of abuse. Since the publication of Carnes' (1983) descriptive and conceptual book *Out of the Shadows: Understanding Sexual Addiction*, the clinical concept of sexual addiction has become widely popularized (Carnes, 1989, 1990, 1991a; Carnes & Adams, 2002). This clinical term has been especially embraced in the popular press and has resonated to persons suffering from either repetitive paraphilic and/or nonparaphilic sexual behaviors associated with progressive risk-taking sexual behaviors, "loss of control," and significant adverse psychosocial consequences.

Central to Carnes' (1983, 1989) formulation and the addiction model is the repetitive misuse of sexual behavior to manage dysphoric affects (i.e., self-medication), an escalation or progression of sexual behaviors (tolerance and risk-taking), a "loss of control," adverse psychosocial consequences, and a withdrawal state. Carnes' formulation of sexual addiction has been elaborated by Goodman (1997), who provided a multifactorial model of the addictive process and proposed that psychoactive substances of abuse, bulimia, pathological gambling, and sexual addiction share a common substrate of biological, psychological, and developmental factors. More recently, Goodman (2008) has posited three behavioral

domains affected by all of the aforementioned addictive processes: motivation-reward, affect regulation, and behavioral inhibition.

DSM-based nosology has not, however, previously explicitly endorsed "addiction" as a diagnostic category; instead, it differentiates substance abuse (a pattern of pathological use and associated impairment) from substance dependence (abuse pattern, adverse consequences, drug tolerance and withdrawal) (American Psychiatric Association, 2000). From this perspective, and paraphrasing the DSM-IV-TR definition of substance dependence, Goodman (2001) proposed that sexual addiction could be analogously operationally defined by considering excessive sexual behavior as a dependency syndrome where such behavior substitutes for a psychoactive substance in 3 of the 7 operational criteria required for the substance dependence diagnosis (American Psychiatric Association, 2000).

In the peer-reviewed literature, there is some empirical support for sex as a behavioral addiction or dependency syndrome. Wines (1997) distributed 183 questionnaires to a sample of self-identified sex addicts. In the 53 respondents (males; $n = 47$; females; $n = 6$), he found substantial support for sexual dependence. In respondents, 98% reported three or more withdrawal symptoms, 94% had made unsuccessful attempts to control or reduce addictive sexual behaviors, 94% spent significant time preparing for or recovering from addictive sexual behaviors, and 92% reported that they engaged in longer or greater amounts of sexual behavior than they intended. This study, however, was limited by ascertainment bias—a self-identified group of sexual addicts attending a 12-step recovery program.

Carnes (1989, 1991b) has published the Sexual Addiction Screening Test (SAST), a 25-item dichotomously answered self-administered questionnaire that is also available (version 3.1) modified for homosexual men and women (www.sexhelp.com). The SAST has demonstrated a single factor with high internal consistency in a sample of 191 sexually addicted in comparison with 67 non-addicted males. A cutoff score of 13 (out of 25) is likely indicating the presence of a sexual addiction in heterosexual males (Carnes, 1989).

Nelson and Oehlert (2008) administered the SAST to two groups of male veterans in a psychoactive substance abuse treatment program ($n = 313$; $n = 316$). In their report, the SAST also measured a single construct with excellent reliability and acceptable convergent validity. A more comprehensive diagnostic instrument, the Sexual Dependency Inventory-Revised, has also been described (Delmonico, Bubenzer, & West, 1998).

The neurobiology associated with psychoactive substance dependency has been elucidated in animal models. The negative emotional state that drives "compulsive" drug use is hypothesized to derive from dysregulation of key neurotransmitters involved in distinct reward and stress-associated neural circuits within the basal forebrain structures, particularly

the ventral striatum (including the nucleus accumbens) and extended amygdala. Specific neurochemical elements in these structures associated with psychoactive substance dependence can include decreases in dopamine, serotonin, and opioid peptides in the ventral striatum, but also recruitment of brain stress neurohormones, such as corticotrophin-releasing factor in the extended amygdala (Koob, 2008).

In humans, the orbital prefrontal cortex and ventral anterior cingulate cortex are functionally associated with motivation, reward appraisal, and mediation/inhibition of impulsive aggression (Best, Williams, & Coccaro, 2002; Horn, Dolan, Elliott, Deakin, & Woodruff, 2003; New et al., 2002). The dysregulation in these brain circuits in their relationship with limbic structures, particularly the amygdala, have been detected by fMRI and neuroimaging procedures as well as sophisticated neuropsychological testing in impulsivity disorders, including substance abuse disorders and behavioral addictions (Bechara, 2005; Cavedini, Riboldi, Keller, D'Annuncci, & Bellodi, 2002; London, Ernst, Grant, Bonson, & Weinstein, 2000; Volkow & Fowler, 2000). The application of neurobiological studies to putative human sexual addiction would be helpful to clarify whether a similar neurobiology and neural pathways are applicable.

Sexual Compulsivity

Quadland (1983, 1985) suggested the term “sexual compulsivity” to describe volitional impairment and risk-taking behaviors associated with hypersexual behavior, particularly promiscuous homosexual behavior. “Sexual compulsivity” as a descriptive appellation has continued to be consistently applied to men who are sexual sensation seekers/risk-takers (Kalichman & Rompa, 1995; Zuckerman, 1983), have multiple sexual partners (i.e., are promiscuous), and are at higher risk for HIV infection and other sexually transmitted diseases (STDs) (Kalichman & Cain, 2004; Kalichman, Greenberg, & Abel, 1997; Kalichman, Kelly, & Rompa, 1997; Parsons, Kelly, & Bimbi, 2008).

Since 1986, “sexual compulsivity” has been a descriptive term applied to a substantially broader range of both paraphilic and nonparaphilic sexual behavior disorders by Coleman (1986, 1987, 1992) and the term has been adopted by others clinical investigators (Anthony & Hollander, 1993; Black, 1998; Black et al., 1997; Hollander, 1993; Travin, 1995). In Coleman's (1987, 1990) original formulation, compulsive sexual behavior disorders were repetitive behaviors mediated by the behavioral attempts to reduce anxiety and other dysphoric affects (e.g., shame, depression) and was symptomatic of an “underlying obsessive compulsive disorder.” “Sexual obsession” described the increased, time consuming sexual fantasy associated with compulsive sexual behavior.

Kalichman developed the Sexual Compulsivity Scale (SCS), a validated 10 item scale to assess sexual compulsivity

and the Sexual Sensation Seeking Scale (SSSS), an 11 item scale to evaluate risk taking associated with repetitive promiscuous behavior (Kalichman & Rompa, 1995, 2001; Kalichman, Kelly et al., 1997). The SCS scale was derived from self-descriptions of persons primarily self-identified as having sexual addiction. The 10 items have alpha coefficients ranging from 0.85 to 0.91. The SCS has been extensively employed to identify “sexual risk-takers.” Sexual risk takers included men who have frequent sex with different men in community settings, participate in “risky sexual behaviors,” including increased frequencies of unprotected sexual intercourse, unprotected anal intercourse, and greater numbers of sexual partners or have acquired sexually transmitted diseases (Dodge et al., 2008; Kalichman & Cain, 2004), including HIV infection (Kalichman, Cherry, Cain, Pope, & Kalichman, 2005). In a sample of 296 homosexual males as well as 158 low-income inner-city men and women, the SCS captured dimensions of sexual behavior characterized as hypersexuality (maladaptive behaviors, intensified sexual appetite, volitional impairment, adverse consequences) and sexual preoccupation (Kalichman & Rompa, 1995). The SCS has also been reported to have reliability and validity to identify sexual compulsivity in two college samples of males and females (Dodge et al., 2004; $n = 876$; McBride, Reece, & Sanders, 2008; $n = 390$). Higher scores on the SCS correlated with increased number of sexual partners, risky sexual behaviors, and increased solo sexual behaviors (masturbation).

The psychometric properties of the Compulsive Sexual Behavior Inventory (CSBI) have also been examined (Coleman, Miner, Ohlerking, & Raymond, 2001; Miner, Coleman, Center, Ross, & Rosser, 2007). The CSBI taps into two factors associated with sexual compulsivity: inability to control sexual fantasies, urges, and behaviors and interpersonal violence/harm associated with sexual behavior. In Miner et al. (2007), a sample of 1026 Latino males were recruited and assessed utilizing Internet-based technology. Participants with scale scores above the median had more sexual partners and engaged in more unprotected sexual intercourse than those with CSBI scores below the median,

Impulsivity Disorders: Sexual Impulsivity and Impulsive–Compulsive Sexual Behavior

At the same time that the competing models of sexual addiction and sexual compulsivity were first being described, Barth and Kinder (1987) suggested that the best fit model for excessive sexual behaviors was as an atypical impulse control disorder. In the Diagnostic and Statistical Manuals (American Psychiatric Association, 1980, 1987, 1994, 2000), impulse control disorders have been characterized by:

the failure to resist an impulse, drive or temptation to perform an act that is harmful to the person or others....

A person may feel an increased sense of tension or arousal before committing the act and then experiences pleasure, gratification, or relief at the time the act is committed. Following the act, there may or may not be regret, self-reproach or guilt. (American Psychiatric Association, 2000, p. 663)

In the Impulsivity Not Otherwise Specified section of the DSM manuals, it is noted that several other DSM-defined Axis I and Axis II disorders, including Paraphilias, “may have features that involve problems of impulse control.”

Sexual “risk taking” (Bancroft et al., 2003a, 2004; Kalichman & Rompa, 1995, 2001) and sexual “sensation seeking” (Kalichman & Rompa, 1995; Zuckerman, 1979, 1983) are developed constructs that overlap considerably with each other and with sexual “impulsivity” (Hoyle, Fefjar, & Miller, 2000). These dimensional measures have been applied particularly to sexual behaviors associated with the transmission of sexually transmitted diseases, such as sexual relations with multiple partners, unprotected sex, and unplanned pregnancies. Sexual risk-taking and impulsivity are also associated with multiple forms of psychoactive substance abuse (Hayaki, Anderson, & Stein, 2006; Justus, Finn, & Steinmetz, 2000; Lejuez, Simmons, Aklin, Daughters, & Dvir, 2004). Impulsivity as a personality trait is associated with individual differences in the propensity to engage in high-risk sexual behaviors (Seal & Agostinelli, 1994; Teese & Bradley, 2008). Pathological gambling, an Impulsivity NOS Disorder, can also be associated with sexual risk-taking behaviors in men (Martins, Tavares, da Silva Lobo, Galetti, & Gentil, 2004).

Impulsivity and compulsivity have been conceptualized as dimensional measures and both impulsivity-spectrum and compulsivity-spectrum disorders have been proposed to overlap and include sexual impulses, compulsions, addictions, and paraphilias (Hollander & Rosen, 2000; McElroy, Phillips, & Keck, 1994). To account for this overlap and the amalgamation of impulsive and compulsive features, a still broader group of impulsive–compulsive disorders, the non-substance abuse behavioral addictions, have been proposed to include sexual addiction, some eating disorders (obesity and binge-eating disorder), compulsive shopping, and internet gaming (N. Petry, personal communication, October 31, 2008; E. Hollander, personal communication, December 7, 2008). Indeed, the overlap among concepts such as addiction, compulsivity, and impulsivity as applied to excessive sexual behaviors leads to an increasingly confusing review of the recent research and clinical literature as these conceptual framework were initially distinctive and competitive (Coleman, 1986) and supposedly independent constructs associated with the putative pathophysiology of repetitive maladaptive sexual behavior disorders. In addition, the psychoactive substance dependence literature describes “impulsivity” as associated with the early stage and “compulsivity” associated with the late stages

of substance dependence syndromes (Koob, 2008), perhaps providing a parallel for Hypersexual Disorder when it is associated with an escalating course, volitional impairment, and progression of adverse consequences.

Some of the coalescence of differing terminologies is demonstrated by the following examples. Raviv (1993) compared male and female sex addicts ($n = 32$) to pathological gamblers ($n = 32$) and non-addicts ($n = 38$) by administering the Symptom Checklist-90 (SCL-90) (Derogatis, 1977) and Zuckerman’s (1979) Sexual Sensation Seeking Scale. Both the sexual addicts and gamblers self-reported significantly more neuroticism-depressive and anxious affect, obsessive–compulsive characteristics, and interpersonal sensitivity than the control group.

Grant, Levine, Kim, and Potenza (2005) studied the prevalence of impulsivity disorders, including sexual compulsivity, in an inpatient psychiatric sample of 204 consecutively admitted patients ($n = 112$ females; $n = 92$ males) by administering the Minnesota Impulsivity Disorders Interview. In their sample, 31% were diagnosed with at least one lifetime impulsivity disorder. Ten subjects (4.9%, gender, unspecified) met lifetime criteria for sexually compulsive behavior. Nine of these ten also reported a current sexually compulsive behavior. Raymond et al. (2003) reported on 23 males and 2 females with compulsive sexual behaviors and found that their sample reported more traits of impulsivity than compulsivity using a semi-structured interview that they developed.

Summary

The data reviewed from these varying theoretical perspectives is compatible with the formulation that Hypersexual Disorder is a sexual desire disorders characterized by an increased frequency and intensity of sexually motivated fantasies, arousal, urges, and enacted behavior in association with an impulsivity component—a maladaptive behavioral response with adverse consequences. Hypersexual Disorder can be associated with vulnerability to dysphoric affects and the use of sexual behavior in response to dysphoric affects and/or life stressors associated with such affects. It is well documented that the sexual behaviors associated with Hypersexual Disorder, particularly sexual behavior with consenting adults, are associated with risk-taking or sensation seeking as well. It is possible as well that a risk taking dimension is associated with the progression of other Hypersexual Disorder subtypes, such as pornography or cybersex (see section on Hypersexual Disorder specifiers).

Hypersexual Disorder is associated with increased time engaging in sexual fantasies and behaviors (sexual preoccupation/sexual “obsession”) and a significant degree of volitional impairment or “loss of control” characterized as disinhibition, impulsivity, compulsivity, or behavioral addiction.

Although distinct putative pathophysiological models have been hypothesized to characterize the increased frequency and intensity of urges of nonparaphilic sexual behaviors and their impulsivity-associated component, many of these models overlap and converge. As aptly stated in the DSM manuals, Paraphilias are Sexual Disorders with “features that include problems associated with impulse control” (American Psychiatric Association, 2000, p. 663). Based on the data reviewed, this same description applies to Hypersexual Disorder.

What Behaviors (DSM Specifiers) Are Affected in Hypersexual Disorder?

The sexual addiction literature, while rich in description of individual sex addicts and possible treatments, has lacked a coherent codification for the specific hypersexual behaviors that are reliably or consistently reported in clinical or research reports. For example, initial classifications included 11 broadly defined behaviors, such as fantasy sex, seductive role sex, intrusive sex, voyeuristic sex, and paying for sex (Carnes, 1991a; Delmonico et al., 1998) that would be difficult to operationally define across studies. Wines (1997) studied 53 participants in a survey on sexual addiction and reported that the most common lifetime representations of such behaviors were fantasy sex (77%), compulsive masturbation (75%), voyeuristic sex (71%), anonymous sex (47.2%), and multiple sexual partners (45.3%). Inasmuch as sexual addiction is conceptualized as a pathophysiological mechanism that can include both paraphilic and nonparaphilic behaviors, in a more recent publication, sexually addictive behaviors have included compulsive masturbation, affairs, use of prostitutes, pornography, cybersex, prostitution, voyeurism, exhibitionism, sexual harassment, and sexual offending (Carnes & Wilson, 2002).

Compulsive sexual disorders have included compulsive cruising and multiple partners, compulsive fixation on an unattainable partner, compulsive autoeroticism, compulsive use of erotica, compulsive use of the internet, compulsive multiple love relationships, and compulsive sexuality in a relationship (Coleman, Raymond, & McBean, 2003). In a sample of 25 subjects (including 2 females), Raymond et al. (2003) reported that compulsive cruising and multiple relationships ($n = 19$) and compulsive masturbation, i.e., autoeroticism ($n = 12$), were the most common compulsive sexual behaviors. Less frequently, phone sex, compulsive use of sexual sites on the internet, and compulsive sexuality within a relationship were also reported in association with compulsive masturbation and multiple relationships.

Although other investigators utilize different terminology (Carnes & Wilson, 2002; Coleman et al., 2003), these following specific behaviors are generally consistent across the aforementioned models for Hypersexual Disorder.

Compulsive masturbation had a 70% sample prevalence in a clinical sample of 206 consecutively evaluated males with paraphilias and paraphilia-related disorders (Kafka & Hennen, 1999). It was significantly associated with all other paraphilia-related disorders except protracted promiscuity, and was significantly associated with all paraphilic disorders, especially telephone scatologia. Indeed, in males with PAs or PRDs, masturbation was the most common sexual outlet over the course of a lifetime, regardless of marital status (Kafka, 1997b).

Pornography dependence was reported by 50% of the sample (Kafka & Hennen, 1999) and was significantly associated with compulsive masturbation and telephone sex dependence. Pornography included, but was not specifically limited to, visual as well as explicitly sexually arousing text materials, including magazines, internet images, and videos. In the published literature describing paraphilia-related disorders, pornography dependence was applied to men whose problems associated with pornography dependence included both child and adolescent as well as adult pornographies. The recent advent of internet-related pornography has greatly increased the accessibility and affordability of both legal and illegal pornography while maintaining anonymity for its use (Cooper, 1998). In addition, the use of internet pornography in the workplace setting has provoked a variety of industry-based responses to this problematic behavior (Cooper, Golden, & Kent-Ferraro, 2002). While the collection and viewing of pornography is inherently a normophilic sexual activity, the content of pornography associated with Hypersexual Disorder may reflect either/both normophilic and paraphilic sexual arousal.

Telephone sex dependence had a 25% sample prevalence (Kafka & Hennen, 1999) and was associated with significant financial debt and the use of phone blocks. Telephone sex dependence was significantly associated with compulsive masturbation, pornography dependence, and protracted promiscuity. Interestingly, it was also significantly associated with telephone scatologia (obscene telephone calls).

Cybersex would include the use of the internet to meet potential sexual partners or engage in “virtual sex” while in chat rooms or with web-cams. Cybersex may include a “virtual” partner in real-time but is still a masturbation-associated Hypersexual Disorder (Cooper, Delmonico, Griffin-Shelly, & Mathy, 2004; Daneback, Cooper, & Månsson, 2005).

Cybersex has been most extensively studied by Cooper (Cooper, 1998; see also Cooper, Delmonico, & Burg, 2000; Cooper, Scherer, Boies, & Gordon, 1999; Cooper et al., 2004). In those studies, however, internet pornography users (predominately males) and chat-room participants (predominantly women) were combined in the cybersex samples. Newsgroup (listserv) participants tend to be males seeking specialized pornography forums. It is likely then that each

of these internet-related domains could represent different populations of male and female users (Cooper et al., 2000). Both males and females who self-identified as sexually compulsive regarding computer-associated sex and relationships were engaging in such behavior at least 1–2 h/day (7–14 or more h/week) (Cooper et al., 1999; Daneback et al., 2005; Delmonico & Miller, 2003), the same amount of time consumed by problematic sexual behaviors for males seeking outpatient treatment for other PA and PRDs (Kafka, 1997b, 2003a; Kafka & Hennen, 2003). Frequent users of cybersex whose goal is to meet partners are more likely to acquire sexually transmitted diseases (McFarlane, Sheana, & Rietmeijer, 2000) and should be assessed for protracted sexual promiscuity (Sexual Behavior with Consenting Adults) as well. Some predatory cybersex users may use this medium to communicate with and try to meet children and adolescents as well.

In a large sample derived from the internet site www.Sexhelp.com (males = 5005; females = 1083), sexually compulsive subjects were initially distinguished from non-compulsives on the basis of their scores on the Sexual Addiction Screening Test (Carnes, 1989, 1991a). The Internet Sex Screening Test, which has seven empirically derived scales, showed some promise to specifically discriminate excessive and problematic use of the Internet as a sexual outlet in both males ($n = 2013$) and females ($n = 553$) in comparison to the non-compulsive group ($n = 2566$). Subjects rated as sexually compulsive regarding their Internet use reported more time spent viewing or reading sexual content, more money spent, non-home use of computers to access sexual content and accessing illegal sexual materials.

Protracted promiscuity, a Hypersexual Disorder designated as Sexual Behavior with Consenting Adults, can be subdivided into heterosexual, bisexual, and homosexual subtypes. This subtyping is based on the choice of partners associated with promiscuous behavior and may not be consistent with the professed or historically apparent sexual orientation of the person affected by a Hypersexual Disorder. As typical examples, this class of behaviors included “one night stands,” repetitive hiring of prostitutes or escort services, serial sexual affairs, repetitive casual sexual encounters in massage parlors, gay cruising areas, and pick-up bars. Sexual behaviors associated with the Hypersexual Disorder (Sexual Behavior with Consenting Adults) typically included vaginal or anal sexual intercourse, oral sex or mutual masturbation. This common Hypersexual Disorder was identified in 50% of males seeking treatment for PAs and PRDs (Kafka & Hennen, 1999). Heterosexual promiscuity was significantly associated with telephone sex dependence.

Severe sexual desire incompatibility had a 12% sample prevalence (Kafka & Hennen, 1999) and, by definition, was associated with pair-bond dysfunction or disruption. Severe sexual desire incompatibility was specifically defined such that the partner who was affected by their spouse’s hyper-

sexual behaviors did not suffer from a precedent or concurrent sexual dysfunction (Kafka, 2000; Kafka & Hennen, 1999). Severe sexual desire incompatibility was significantly associated with compulsive masturbation and sexual sadism. It is important to emphasize that this disorder is not merely describing a couple characterized, for example, by a married man who desires partnered sex 2 or 3 times/week with a reluctant partner. Most men and women who reported this PRD have periods of wanting or demanding near daily sex (or more), including, for example, repetitively waking up their partner for sexual intercourse. Their affected partner feels sexually exploited, demeaned or angry. In some instances, severe sexual desire incompatibility may be associated with sexual coercion and partner rape. In the consideration of severe sexual desire incompatibility as a possible specifier for Hypersexual Disorder, the issue was raised that such a desire incompatibility was or would be defined in the context of a relational partnership rather than as a disorder within a specific individual. For this reason, it was decided at this time not to designate severe sexual desire incompatibility as a specifier for Hypersexual Disorder.

The frequenting of “strip clubs” with clinically significant adverse consequences (typically financial) should be considered as a distinct Hypersexual Disorder specifier. For many men who just go to watch the show (and typically imbibe alcoholic beverages), this is a modified form of “live” visual pornography. Masturbation may take place at the club or shortly thereafter. For others, strip club attendance is associated with repetitive adult partnered-associated sex, typically for a significant fee. Thus, although repetitive attendance to strip clubs could be codified as either Hypersexual Disorder: Pornography or Hypersexual Disorder: Sexual Behavior with Consenting Adults, I would recommend that the strip-club venues are a distinct and prevalent behavioral outlet for adult entertainment as well as a distinct clinical manifestation of hypersexual behavior.

Several of the aforementioned subtypes and their relative prevalence have been reported by other clinicians working with presumptive Hypersexual Disorder. In a clinical sample derived from a survey of 43 clinician members of the German Society of Sex Research (Briken et al., 2007), 97 persons (males = 78; females = 19) seeking help for hypersexual behaviors (identified as paraphilia-related disorders) were described. In the predominantly male sample, the three most prevalent paraphilia-related disorders were pornography dependence (48.7%), compulsive masturbation (34.6%), and protracted promiscuity (20.5%).

Reid, Carpenter, and Lloyd (2009) reported on 59 males seeking specialized clinical treatment for hypersexual behaviors. Self-reported problematic sexual behaviors included compulsive masturbation (56%), pornography dependence (51%), and 39% for various combined subtypes of sexual behavior with consenting adults: habitual solicitation of commercial sex

workers (7%), extra-marital affairs (21%), and excessive unprotected sex with multiple anonymous partners (12%).

Females and Hypersexual Disorder

The frequency distribution of specific Hypersexual Disorder in females has been inadequately studied. In both clinically derived as well as population-based studies, males substantially outnumber females with these conditions. In Black et al.'s (1997) sample of 36 self-identified sexually compulsive men and women, 8 were female (22%). Carnes and Delmonico (1996), drawing from a self-selected sample of 290 sex addicts, reported that 20% ($n = 58$) were females. In the small female sample ($n = 19$; 19.5% of their sample of 97 patients) reported by German sexological clinicians, protracted promiscuity, compulsive masturbation, and cybersex have been documented in women seeking treatment for Hypersexual Disorder (Briken et al., 2007). Winters et al. (2009) reported on 69 women (0.8% of their sample) who sought treatment for sexual compulsivity but the specific behaviors that were disordered were not reported. Långström and Hansen's (2006) epidemiological data verified that multiple hypersexual behaviors were reported by a substantial minority (6.8%) of females. Although a history of sexual abuse is more commonly associated with adult sexual dysfunction, sexual abuse may be associated with hypersexual behaviors in a subgroup of affected adult females (Långström & Hanson, 2006; Rellini, 2008).

Ross (1996) reported on a self-selected sample of 18 female sex addicts. The most common sexual addictions, co-equally affecting about 90% of the sample, included fantasy sex, seductive role sex, voyeuristic sex, and anonymous sex. The lack of empirical research and systematic clinical data on females with Hypersexual Disorder is a major limitation of the current state of scientific knowledge of how these conditions afflict women.

Summary

There is adequate empirical evidence for several specifiers (non-exclusive subtypes) for Hypersexual Disorder. Masturbation, pornography, sexual behavior with consenting adults (protracted promiscuity), and cybersex can become persistent disordered behaviors with significant adverse consequences that have been reported by multiple investigators. There is less confirmatory evidence, however, for telephone sex, strip clubs, and severe sexual desire incompatibility. While there is no doubt that severe sexual desire incompatibility exists as a clinical entity, it is a "relationship"-dependent disorder. Establishing a clear boundary differentiating between a partner with a low sexual interest or a partner who may develop a sexual dysfunction in response to their hypersexual partner's persistent sexual proclivity make this a

complex diagnosis to establish. Last, data on women with Hypersexual Disorder are lacking although protracted promiscuous behavior has been reported by contemporary investigators and noted historically as nymphomania.

The clear behavioral distinctions between the specifiers involved in Hypersexual Disorder gives these differing specifiers face validity although it would not be uncommon for specifiers to co-occur together (e.g., pornography and masturbation) or to accrue over a longer period of time (e.g., cybersex, masturbation, sexual behavior with consenting adults). Inasmuch as there has not yet been established a uniform methodology to diagnostically assess Hypersexual Disorder, the inter-rater reliability of various investigators asserting such specifiers has not yet been adequately tested.

Hypersexual Disorder: Clinically Significant Distress or Impairment in Social, Occupational or Other Important Areas of Functioning

Many investigators have noted that Hypersexual Disorder is associated with or in response to dysphoric affects (Black et al., 1997; Raymond et al., 2003; Reid, 2007; Reid et al., 2008, 2009) or stressful life events (Miner et al., 2007; Nelson & Oehlert, 2008). Volitional impairment has also been noted by Coleman (1987), Carnes (1989), Bancroft and Vukadinovic (2004), and Miner et al. (2007). Sexual preoccupation has been assessed and noted as a significant concomitant by Kalichman and Rompa (1995), Kafka (1997b; 2003a), Kalichman and Cain (2004), and McBride et al. (2008).

McBride et al. (2008) have reported adequate psychometric properties of the Cognitive and Behavioral Outcomes of Sexual Behavior (CBOSB) scale as a means to assess legal, occupational, psychological/spiritual, social, physical, and financial consequences associated with sexual compulsivity (as assessed by the Sexual Compulsivity Scale). They tested their scale in a college sample of 390 young adults (women; $n = 274$; men = 116) and co-administered the SCS to assess sexual risk-taking behaviors. Although the CBOSB was primarily used to assess consequences associated with engaging in frequent risk-taking partnered sex (unprotected sexual intercourse, anal intercourse), this instrument in conjunction with the SCS demonstrated promise as a means to systematically assess the adverse consequences associated with Hypersexual Disorder.

Muench et al. (2007) reported the reliability and validity of a 21-item Compulsive Sexual Behavior Consequences Scale in a group of 34 homosexual and bisexual males enrolled in a medication trial testing the efficacy of a serotonin reuptake inhibitor (citalopram) in reducing hypersexual behaviors (primarily promiscuity). Although their sample population was small, their scale ascertained significant intrapersonal consequences (e.g., depressed, anxious, guilt shame, loss of

interest in other activities), interpersonal consequences (e.g., harm to intimate relationships, failure to meet commitments, risk-taking impulsivity, sex outside of a relationship), and medical consequences (e.g., harm to physical health) associated with their studied population.

The most serious medical morbidity and mortality associated with protracted sexual promiscuity (specifier: sexual relations with consenting adults) is the transmission of sexual transmitted diseases, including HIV infection (Kalichman & Cain, 2004; Kalichman, Kelly et al., 1997) and unintended pregnancy (Henshaw, 1998). Higher scores on the SCS predicted engaging in sex with more partners and greater risk taking behavior associated with sexual behavior (e.g., less condom use, anal sex, acquisition of sexually transmitted diseases) (Dodge et al., 2004, 2008; Kalichman & Cain, 2004; Kalichman & Rompa, 1995, 2001). Protracted promiscuity was associated with continued high-risk sexual behavior in HIV positive men and women (Benotsch, Kalichman, & Pinkerton, 2001). Individuals with higher SCS scores also reported a higher incidence of unprotected vaginal and anal intercourse, more sexual partners, higher rates of drug use, and more psychopathology.

Summary

There is ample evidence reported from multiple investigators that Hypersexual Disorder is associated with clinically significant personal distress and serious adverse consequences, including increased risk of sexually transmitted diseases, unwanted pregnancies, severe pair-bond impairments, excessive financial expenses, work or educational role impairment and other associated morbidities. In addition, there are several rating instruments that may help to assess the behavioral and psychosocial consequences associated with these disorders.

Hypersexual Disorder and Associated Features: Axis I Comorbidity

Rinehart and McCabe (1998) administered a series of validated rating scales assessing anxiety, depression, obsessive-compulsive symptoms, and impulsivity to a non-clinical group of male ($n = 69$) and female ($n = 93$) university students. The students were divided into two groups based on their self-reported frequency of 12 different sexual behavior variables, including both paraphilic and nonparaphilic behaviors. The nonparaphilic hypersexual group did not differ in the aforementioned traits in comparison with the low frequency sexual behavior group.

In contrast to Rinehart and McCabe, Reid et al. (2009) administered the SCL-90 to 59 males seeking psychological help for nonparaphilic hypersexual behaviors and compared

their clinical sample to a control group of 54 college age men. The hypersexual sample reported more interpersonal sensitivity/depressive (neuroticism) symptoms, obsessive characteristics, social alienation, and preoccupation than the sample norms of the scale.

Briken et al. (2007) ascertained ICD-10 defined Axis I psychiatric diagnoses from a sample of 97 patients (males; $n = 78$; females; $n = 19$) reported by survey from clinician members of the German Society of Sex Research. The most common group of conditions was “neurotic disorders” reported in 73.7% of females and 26.9% of males. Thirty-six percent of the females also reported an eating disorder and 19.6% of the males reported a lifetime sexual dysfunction.

In studies that systematically evaluated Axis I psychiatric diagnoses in “sexually compulsive” males and females (Black et al., 1997; Raymond et al., 2003) or males with paraphilia-related disorders (Kafka & Hennen, 2002; Kafka & Prentky, 1994, 1998), one of the consistent findings was that the great majority of subjects with these disorders have multiple lifetime comorbid mood, anxiety, psychoactive substance abuse, and/or other impulse disorder diagnoses.

In 36 male ($n = 28$) and female ($n = 8$) participants to an advertisement for “compulsive sexual behavior,” Black et al. (1997) administered the Diagnostic Interview Schedule for DSM-III-R disorders (Axis I) and the Structured Interview for DSM-III-R Personality Disorders, Revised (Axis II). The Axis I disorders reported included a lifetime prevalence of any psychoactive substance abuse (64%, primarily alcohol abuse), any anxiety disorder (50%, especially phobic disorders), any mood disorder (39%, major depression and dysthymia), and an unspecified but significant total incidence of impulse control disorders, including compulsive buying. Lifetime OCD was reported by 14% of that sample. Eighty-three percent of the sample had at least one lifetime Axis I comorbid diagnosis.

Raymond et al. (2003) assessed current and lifetime Axis I comorbidity utilizing the Structured Clinical Interview for DSM-III-R-patient version in a sample of 25 participants (23 males, 2 females) to a newspaper advertisement soliciting persons with compulsive/addictive sexual behaviors. They administered the Compulsive Sexual Behavior Inventory to assess the severity of sexually compulsive behaviors. Axis I lifetime comorbidity was 100%. The most common class of disorders was any anxiety disorder (96%), especially social phobia (21%) and generalized anxiety disorder (17%). Any substance abuse disorder (71%), especially alcohol (63%) and cannabis (38%), and any mood disorder (71%) especially major depression (58%), dysthymia (8%), and bipolar disorder (8%), were the second most prevalent classes of Axis I psychiatric disorders. Lifetime sexual dysfunctions were surprisingly common (46%), especially male erectile dysfunction (23%). Last, any impulse control disorder (38%), especially kleptomania (13%) and intermittent explosive disorder

(13%), were diagnosed. Their sample endorsed both impulsive and compulsive traits but the sample prevalence of lifetime OCD was modest (8%).

Kafka and Hennen (2002) and Kafka and Prentky (1994, 1998), in three outpatient males samples (total $n = 240$), reported that the typical male with PRDs without PAs had multiple lifetime Axis I disorders, including any mood disorder (61–65%, especially dysthymic disorder), any psychoactive substance abuse (39–47%, especially alcohol abuse), any anxiety disorder (43–46%, especially social phobia), attention deficit hyperactivity disorder (17–19%), and any impulse control disorder (7–17%), especially the atypical impulse control disorder reckless driving. Lifetime comorbidity with obsessive–compulsive disorder was low (0–11%) in all three reports. It is of clinical interest that males with PRDs did not statistically significantly differ from males with PAs in the lifetime prevalence of mood, anxiety, psychoactive substance abuse, or impulse control disorders. Between 85 and 90 percent of the samples met lifetime diagnostic criteria for at least one non-sexual comorbid Axis I disorder. In the second and third reports (Kafka & Hennen, 2002; Kafka & Prentky, 1998), however, the addition of the retrospective assessment of attention deficit hyperactivity disorder (ADHD) did statistically distinguish the PA (prevalence of ADHD was 36–50%) from the PRD group (17–19%). It was also reported that the inattentive subtype of ADHD was predominant in PRD males while ADHD-combined subtype was more prevalent in paraphilic men.

Although I could not find a systematic study of Axis I disorders in the sexual addiction literature, ADHD-inattentive subtype was identified as a comorbid psychiatric in sexual addicts (Blankenship & Laaser, 2004) as well as 67 males seeking help for hypersexual behavior disorders (Reid, 2007). Several articles have reported depression (Blanchard, 1990; Turner, 1990; Weiss, 2004) in recovering sex addicts.

Hypersexual Disorder and Associated Features: Axis II Comorbidity

Two studies with adequate methodology solicited males and females with “compulsive sexual behaviors” from newspaper advertisements and administered the Structured Interview for DSM-III-R Personality Disorders, Revised. In assessing current Axis II diagnoses, Raymond et al. (2003) reported that 46% of the sample ($n = 24$, 22 males, 2 females) met criteria for at least one personality disorder, the most common being cluster C disorders (39%) followed by cluster B (23%) personality disorders. The current prevalence of five most common personality disorders was as follows: paranoid (20%), passive aggressive (20%), narcissistic (18%), avoidant (15%), and obsessive–compulsive (15%). Black et al.

(1997) solicited 36 participants (28 males, 8 females) and reported that 44% of their sample had an Axis II diagnosis, the most common being cluster B (29%) and cluster C (24%). The prevalence of specific Axis II disorders was histrionic (21%), paranoid and obsessive compulsive (both 15%), and passive aggressive (12%). In both of the aforementioned studies, antisocial personality disorder and borderline personality disorder, personality disorders specifically associated with impulsivity, had a low prevalence.

Summary

Axis I psychiatric diagnoses, especially mood disorders, anxiety disorders, psychoactive substance abuse disorders, and attention deficit hyperactivity disorders have been reported to be prevalent among males with Hypersexual Disorder. The various putative pathophysiological models previously reviewed describing normophilic hypersexual behaviors all include the observation that hypersexual behaviors are typically associated with dysphoric affects, such as anxious or depressive mood, irritability, and boredom. Risk-taking and sensation seeking can be associated with unipolar and bipolar mood disorders as well as ADHD. These observations are consistent with the data reviewed that Axis I psychiatric disorders, especially mood disorders, anxiety disorders, and ADHD have been identified in persons afflicted with these disorders. On the other hand, clearly not all persons affected by the aforementioned Axis I co-morbidities developed hypersexual behaviors or Hypersexual Disorder.

Mood disorders, in particular, are associated with dysregulation (either an increase or a decrease) of sleep and appetite. Although a decrease in sexual interest and enacted sexual behavior can be associated with major depression (Williams & Reynolds, 2006), increased sexual behavior has been noted in association with depressive disorders as well (Mathew, Largent, & Claghorn, 1979; Mathew & Weinman, 1982). In DSM-IV-TR, hypomanic episodes can be associated with “sexual indiscretions,” including promiscuous behavior and “increased sex drive, fantasies and behavior.” Recent data from community samples reporting that the mean duration of hypomanic episodes may be significantly less than 4 or more days (Benazzi, 2001; Judd & Akiskal, 2003), the current DSM-based duration criteria for Bipolar II further complicates establishing a clear boundary between an illness “episode” and a recurrent sexual behavior that could be associated with risk-taking and adverse consequences.

Hypersexual Disorder: Placement in the Nomenclature

As is evident from this review, there are differing perspectives on the putative pathophysiological substrates for Hyper-

sexual Disorder. There are data to support conceptualizing Hypersexual Disorder as a sexual desire disorder, a disorder with an admixture of both compulsive and impulsive features, or a behavioral addiction. Inasmuch as we do not have the neurobiological/neuropsychological data to more definitively assess the etiology for this set of sexual behavior disorders, controversy will likely continue as to what DSM-based “category” is the best fit for Hypersexual Disorder. At this point, the empirical evidence suggests that persons afflicted with Hypersexual Disorder are heterogeneous and the clinical course associated with these conditions may have differing presentations and characteristics precedent to adverse consequences and help-seeking behavior. For these reasons, an operational definition for Hypersexual Disorder that can incorporate dimensions that are most common across differing clinical samples would be most beneficial to further improve the identification of this significant sexual disorder. Such a definition that combines empirically validated criteria from the aforementioned putative models is incorporated into the operational definition for Hypersexual Disorder presented in the review.

Sexual Compulsivity and the OCD-Spectrum

The theoretical construct of “compulsive sexual behavior” as associated with an OCD-spectrum is not empirically supported by the Axis I or Axis II comorbidity reports reviewed in this report. The comorbid occurrence of OCD in males with Hypersexual Disorder is modest at best (0–12%) based on the aforementioned reports. In addition, Jaisoorya, Reddy, and Srinath (2003) reported that the incidence of sexual compulsivity in 168 males with DSM-IV-defined OCD in comparison with 148 males controls was not statistically significant. In DSM-III through DSM-IV-TR, it has been specifically noted in discussing the differential diagnosis of Obsessive–Compulsive Disorders:

Some activities, such as eating, sexual behavior (e.g., paraphilias), gambling, or drinking, when engaged in excessively may be referred to as “compulsive.” However, these activities are not true compulsions, because the individual derives pleasure from the particular activity and may wish to resist it only because of its secondary deleterious consequences. (American Psychiatric Association, 2000, pp. 461–462)

Based on all of these data, describing a class of sexual behavior disorders as “compulsive” has some historical and clinical utility but this designation is not consistent with DSM-derived nomenclature to identify a new diagnostic category for a sexual disorder.

Sexual Addiction or Impulsive–Compulsive Sexual Behavior

The designation of nonparaphilic sexual behavior disorders as a behavioral addiction or admixture of compulsive/impulsive behavior merits further study. Several criteria proposed for Hypersexual Disorder are consistent with a behavioral addiction model as applied to the impulsivity-associated component of Hypersexual Disorder. Examining a larger and community-based sample of men and women who could be solicited by advertisement or survey methodology, identified as having problematic sexual behaviors, and then applying the full criteria for psychoactive substance abuse modified to diagnose behavioral excesses of sexual behaviors would be very helpful in clarifying the comparative prevalence of sexual addiction/dependence among men and women reporting both paraphilic and nonparaphilic hypersexual behaviors. In addition, neuropsychological studies and neuroimaging studies of males and females with Hypersexual Disorder are needed to delineate whether there are common pathways that are associated with these disorders and other behavioral addictions or impulsivity disorders. At present, the published literature is lacking to firmly support a specific “withdrawal” state associated with the abrupt cessation of Hypersexual Behavior. I also did not find sufficient empirical evidence of “tolerance” although progressive risk-taking in association with hypersexual behaviors could be analogous to drug tolerance. This is not to state that withdrawal and tolerance do not exist in hypersexual conditions but, rather, that further studies are necessary to support their clinical presence and relevance.

Normal sexual behavior in humans is characterized by sexual fantasies, urges, and activities. Similar endogenously derived and motivated “drive” behaviors include eating, thirst, and sleep. These biologically based appetites are necessary for survival of the species. The placement of Hypersexual Disorder as Impulsivity Disorders in DSM-V would beg the question of whether a behavioral addiction/impulsivity model should also be applied to other excesses of human appetitive behaviors that have a biological substrate and are necessary for species survival. The most obvious examples are the eating disorders (Goodman, 2008). If hypersexual behavior (or overeating) is a behavioral addiction or dependency syndrome, do some persons with Hypersomnia have a sleep addiction or sleep “dependence” syndrome when they sleep excessively, miss important social or personal responsibilities, and view their sleep as a pleasurable means of escape from psychological stress or depression? As currently formulated, none of the DSM-IV-TR Impulsivity Not Otherwise Specified Disorders specifically include sleep, thirst, eating or sexual behaviors.

Sexual Disorders and Sexual Desire Disorders

Sexual preference, sexual fantasy, sexual arousal, sexual motivation and overt sexual behaviors are each important components of normal human sexuality as well as Paraphilic Disorders, Hypersexual Disorder and Hypoactive Sexual Desire Disorder. Persons with normophilic sexual preferences and hypersexual behaviors may have long periods (e.g., decades) of waxing and waning or persistent increased sexual appetitive behaviors preceding help-seeking behavior (Kafka, 1997b; Långström & Hanson, 2006).

It is certainly possible that during the clinical course associated with a particular sexual behavior evolving into a Hypersexual Disorder, the internal state of motivation associated with such behavior may shift from primarily sexual arousal associated with youthfulness to an admixture of sexual arousal, sexual motivation and a maladaptive behavioral response associated with a dimensional measure of volitional impairment: impulsivity, compulsivity or behavioral addiction (Bancroft & Vukadinovic, 2004; Bancroft et al., 2003b, c; Carnes, 1983; Coleman, 1987). To label the problematic presentation of such behaviors as primarily an impulse control disorder, impulsive–compulsive spectrum disorder or behavioral addiction may help to account for an important feature of the morbidity-associated end product of Hypersexual Disorder. The specific characterization of the impulsivity associated with Hypersexual Disorder however, does not address the normophilic sexual preferences and lengthy prodromal increase in fantasies sexual urges and behaviors that precede the accumulation of adverse consequences. These components of Hypersexual Disorder are more consistent with a Sexual Desire Disorder. I am suggesting that conceptually, Hypoactive Sexual Desire Disorder and Hypersexual Disorder represent the opposite polarities in the frequency distribution of sexual appetitive behavior, including sexual arousal and sexual motivation.

Differential Diagnosis of Hypersexual Disorder: Hypersexual Disorder and Paraphilias

Paraphilias are characterized by socially anomalous or “deviant” forms of sexual preference and sexual arousal (e.g., pedophilia, fetishism, exhibitionism) while Hypersexual Disorder is a disinhibited or excessive appetitive expressions of culturally adapted normophilic sexual behaviors. Both sets of conditions, however, are associated with intense and repetitive, sexually arousing fantasies, sexual urges, and behaviors (Criterion A), a minimum duration of 6 months (Criterion A), and marked personal distress or indications of significant psychosocial impairment (Criterion B) related to sexual behavior.

Hypersexual Disorder shares many other common clinical characteristics of paraphilic disorders. First, although the spec-

ulated male:female prevalence ratio of Hypersexual Disorder, estimated at 5:1 (Black et al., 1997; Carnes & Delmonico, 1996; Schneider & Schneider, 1996) is not as high as the estimated ratio for paraphilias (20:1) (American Psychiatric Association, 1987, 1994), Hypersexual Disorder is nonetheless predominantly a male disorder. Second, clinical populations of PAs and Hypersexual Disorder both report the onset of intensified or unconventional sexual arousal during adolescence (Abel, Becker, Cunningham-Rathner, Mittelman, & Rouleau, 1988; Abel, Mittelman, & Becker, 1985; Black et al., 1997; Kafka, 1997b). Third, several empirical studies have reported that persons presenting for clinical treatment for PAs (Abel et al., 1988; Buhrich & Beaumont, 1981; Freund, Sher, & Hucker, 1983) or Hypersexual Disorder (Carnes, 1983, 1989, 1991a; Kafka & Hennen, 1999) commonly self-report the presence of multiple rather than a single paraphilic or hypersexual behavior over the course of a lifetime. These studies suggest that there is a general diathesis or vulnerability for both PAs and/or Hypersexual Disorder. Fourth, in both sets of Sexual Disorders, sexually arousing fantasies, urges, and behaviors can be time consuming or associated with sexual preoccupation (Black et al., 1997; Carnes, 1983; Kafka, 1997b). Fifth, analogous to paraphilias (American Psychiatric Association, 2000), Hypersexual Disorder may wax and wane, be either ego-syntonic or ego-dystonic, and are more likely to occur or intensify during periods of “stress” (Black et al., 1997). Sixth, males with PAs as well as Hypersexual Disorder are equally likely to self-report periods of persistently heightened sexual behaviors leading to orgasm in comparison to population norms (Kafka, 1997b; Kafka & Hennen, 2003). Last, as is the case for PA disorders, many persons with Hypersexual Disorder may withdraw from sexual encounters with a partner in preference to engage in unconventional sexual activities that become more sexually arousing than “ordinary” sex. This may promote extramarital encounters, reliance on masturbation-associated sexual outlets, and/or pair-bond dysfunction.

It is the proposal of this author and the Paraphilias subworkgroup that Hypersexual Disorder be considered in DSM-V as distinct from paraphilias although these two sets of disorders can be comorbidly associated and a paraphilic interest can be expressed in association with specific hypersexual behaviors. Many studies of paraphilic sex offenders do not systematically assess Hypersexual Disorder; nevertheless, Hypersexual Disorder may be common among PA males (Anthony & Hollander, 1993; Black et al., 1997; Breitner, 1973; Briken, Habermann, Kafka, Berner, & Hill, 2006; Gagné, 1981; Kafka, 2003a; Kafka & Hennen, 1999, 2002; Kafka & Prentky, 1998; Langevin et al., 1985; Levine, Risen, & Althof, 1990; Longo & Groth, 1983; Prentky et al., 1989; Travin, 1995). For example, extensive and persistent pornography use, along with other empirically based risk factors, is associated with sexual aggression against adult females (Knight & Cerce, 1999; Malamuth, Addison, & Koss, 2000) as well as children

(Kingston, Fedoroff, Firestone, Curry, & Bradford, 2008). In some instances, the predominant content of pornography may reflect a paraphilic disorder (e.g., diagnosed as pedophilia or sexual sadism) but the extensive or “heavy” persistent and problematic use pornography associated with compulsive masturbation would presumably be most consistent with a Hypersexual Disorder (pornography and masturbation) as intended for DSM-V. In some instances, it could be possible that a male apprehended for possession of child pornography could have a primary Hypersexual Disorder (pornography) without concomitant pedophilia if it could be demonstrated that his pornography viewing, collecting or laboratory assessed sexual arousal preference was for adults or that child pornography, while illegal, was not predominant or enduring in his collection.

Cybersex chat rooms have been venues for some pedophiles or hebephiles to meet and groom possible victims through this medium (Nordland & Bartholet, 2001). Such a male, if apprehended by legal authorities, would be diagnosed with pedophilia (or pedohebephilia as is proposed for DSM-V; see Blanchard, 2009) if durational criteria are met for the former diagnosis and Hypersexual Disorder (cybersex) as well. On the other hand, a man or woman who sought professional help for time consuming cybersex activity associated with compulsive masturbation and repetitive promiscuous behavior with peers could be diagnosed with Hypersexual Disorder (cybersex, sexual behavior with consenting adults or masturbation).

Hypersexual Disorder Associated with Neuropsychiatric Illness, Neurodegenerative Conditions, and Drug-Induced Conditions

The term “hypersexuality” has also been utilized to describe acute changes in sexual behavior, usually induced by a neuropsychiatric illness (Blumer, 1970; Huws, Shubsachs, & Taylor, 1991; Jensen, 1989; Krueger & Kaplan, 2000; Tosto, Talarico, Lenzi, & Bruno, 2008; Van Reeth, Dierkins, & Luminet, 1958), brain injury (Epstein, 1973; Miller, Cummings, & McIntyre, 1986; Monga, Monga, Raina, & Hardjasudarma, 1986; Zencius, Wesolowski, Burke, & Hough, 1990), or a medication effect typically induced by dopaminergic agonists (Bilgiç, Gürkan, & Türkoğlu, 2007; Boffum, Moser, & Smith, 1988; Uitti, Tanner, & Rajput, 1989; Vogel & Schiffter, 1983). In these circumstances, it is not unusual for disinhibited hypersexual behaviors to be an admixture of normophilic and paraphilic-like sexual behaviors (e.g., inappropriate touching and exposing one’s genitals but not to strangers).

Persistent hypersexual behaviors secondary to neuropsychiatric, medical illness or brain injury could be codified as Hypersexual Disorder as long as it fulfills the diagnostic A and B criteria. Hypersexual Behavior Due to a General

Medical Condition (American Psychiatric Association, 2000; Stein, Hugo, Oosthuizen, Hawkrige, & van Heerden, 2000) would be coded if such behaviors did not meet the full Hypersexual Disorder diagnostic criteria. The general medical or neurological condition would then be noted on both Axis I and Axis III (American Psychiatric Association, 2000). The only codified “medical” exclusion for Hypersexual Disorder (Criterion C) would be when a sexual behavioral condition was clearly and exclusively associated with a specific medication or drug effect. In that instance, Substance-Induced Hypersexual Disorder or Hypersexual Behavior should be coded (Stein, Hugo et al., 2000).

Summary

Hypersexual Disorder has been primarily characterized as compulsive, impulsive, a behavioral addiction or a sexual desire disorder. Regarding the possible categorical placement in DSM-V, this author suggests that the term “compulsive,” while apt in describing features of these conditions, is not consistent with prior DSM-based conceptualization of an obsessive–compulsive spectrum disorder. The categorization of Hypersexual Disorder as an impulsive–compulsive disorder or behavioral addiction in DSM-V could be feasible but more data are needed to justify such a designation. In addition, the designation of Hypersexual Disorder as primary an Impulsivity Disorder could contradict the current placement of other putatively analogous, biologically mediated appetitive behaviors disorders such as Bulimia Nervosa (Eating Disorders) or Hypersomnia (Sleep Disorders). As previously stated, it is my opinion, based on the literature reviewed, that Hypersexual Disorder be considered as a Sexual Disorder associated with increased or disinhibited expressions of sexual arousal and desire in association with a dimension of impulsivity as well.

Paraphilias, characterized by socially unconventional or social “deviant” sexual arousal, are distinct from Hypersexual Disorder although both of these sexual disorders can occur. As noted above, in some instances paraphilic interests and arousal can be incorporated in hypersexual behaviors and, in those circumstances, both conditions could be diagnosed. Hypersexual behaviors, as well as paraphilic behaviors, can be associated with medical and neurological conditions. To maintain diagnostic clarity, it is recommended that Hypersexual Disorder be diagnosed if durational and diagnostic criteria are met in such circumstances. Hypersexual Behavior Due to a General Medical Condition would be diagnosed if the full Hypersexual Disorder criteria are not met or able to be ascertained. Substance-Induced Hypersexual Disorder would be considered as appropriate diagnostic designation when it is evident that there is a direct and specific causal effect between medications or substances of abuse and disinhibited sexual behavior. If full diagnostic

criteria for Hypersexual Disorder were not achieved, a diagnosis of Substance-Induced Hypersexual Behavior would be recommended.

Conclusion

In past proposals to include disinhibited or excessive non-paraphilic sexual behaviors as a distinct diagnostic category of sexual addiction for the DSM, it has been argued that there were “insufficient data” (Gold & Heffner, 1998; Wise & Schmidt, 1997) and these conditions have been relegated to Sexual Disorders Not Otherwise Specified.

It must be noted, on the basis of this current review, that the number of “cases” of Hypersexual Disorder reported in peer-reviewed journals greatly exceeds the number of cases of some of the codified paraphilic disorders such as Fetishism and Frotteurism. Hypersexual Disorder, as operationally defined in this review, is not synonymous with sexual addiction, sexual compulsivity or paraphilia-related disorder but all of these aforementioned designations describe increased and intensified sexual fantasies, urges, and behaviors with significant adverse personal and social consequences. Hypersexual Disorder is a serious and common clinical condition that can be associated with specific morbidities, such as unplanned pregnancy, pair-bond dysfunction, marital separation and divorce, and the morbidity/mortality risk associated with sexually transmitted diseases including HIV.

There will always be controversy when any class of behaviors, including sexual behaviors, that are intrinsically “normal” are medically “pathologized” (Money, 1994). Indeed, there have been calls for the Paraphilic Disorders to be removed from diagnostic codification as well based on insufficient data and diagnosis-associated social stigmatization (Moser & Kleinplatz, 2005). Human appetitive behaviors, such as sleep, appetite, thirst, and sex, can become dysregulated or disinhibited, however, and in the DSM-IV-TR, psychiatric diagnoses such as Primary Hypersomnia or Binge Eating Disorder have been described or proposed for behavioral excesses of sleep and eating. A psychiatric diagnosis associated with disinhibition of sexual behaviors would be congruent with the aforementioned codified diagnoses.

In the past two decades, several rating instruments have been tested for reliability and validity to assess the presence of a Hypersexual Disorder in males (the Sexual Addiction Screen Test: Carnes, 1991b; Nelson & Oehlert, 2008), the dimension of severity of Hypersexual Disorder (e.g., the CSBI: Coleman et al., 2001; Miner et al., 2007; the SCS: Kalichman & Rompa, 1995, 2001; and the Hypersexual Behavior Inventory: Reid & Garos, 2007) and the adverse consequences associated with such conditions (e.g., the CBOB scale: McBride et al., 2008, and the CSBCS: Muench et al., 2007). In addition, the SES (Bancroft, 1999; Bancroft &

Janssen, 2000; Bancroft et al., 2003a) was able to discriminate a small sample of hypersexual men and women from a control group (Bancroft & Vukadinovic, 2004). Such dimensional measures can help to assess the severity or morbidity associated with diagnostic categories have been emphasized for DSM-V (Kraemer, 2007). Of the available rating scales that I reviewed, the SCS, the SIS-II and SES, and the CSBI have the strongest empirical reliability and validity. It is noteworthy, however, that none of these aforementioned scales embody the specific diagnostic criteria proposed for Hypersexual Disorder. Nevertheless, it would be most helpful if any proposed diagnostic criteria or dimensional measure for Hypersexual Disorder could be compared with these scales as a dimensional measures of severity.

There are significant gaps in the current scientific knowledge base regarding the clinical course, developmental risk factors, family history, neurobiology, and neuropsychology of Hypersexual Disorder. Empirically based knowledge of Hypersexual Disorder in females is lacking in particular. As is true of so many psychiatric disorders, the comment that “more research is needed” is certainly applicable to these conditions. Although these are significant shortcomings in the state of our current empirical knowledge, there is little doubt that such conditions commonly present to clinicians as well as specialized treatment programs.

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