Journal of Psychiatric Research 55 (2014) 117–125

Contents lists available at ScienceDirect

Journal of Psychiatric Research

journal homepage: www.elsevier.com/locate/psychires

Gender-related differences in the associations between sexual impulsivity and psychiatric disorders

Galit Erez [a,b], Corey E. Pilver [c], Marc N. Potenza [a,d,e,*]

[a] Department of Psychiatry, Yale University School of Medicine, New Haven, CT, USA
[b] Shalvata Mental Health Center, Hod Hasharon, Israel, Affiliated to the Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel
[c] Department of Biostatistics, Yale School of Public Health, New Haven, CT, USA
[d] Department of Neurobiology, Yale University School of Medicine, New Haven, CT, USA
[e] Child Study Center, Yale University School of Medicine, New Haven, CT, USA

ARTICLE INFO

Article history:
Received 12 September 2013
Received in revised form
12 March 2014
Accepted 10 April 2014

Keywords:
Sexual impulsivity
Gender
Psychiatric disorders
Co-occurrence

ABSTRACT

Objective: Sexual impulsivity (SI) has been associated with conditions that have substantial public health costs, such as sexually transmitted infections and unintended pregnancies. However, SI has not been examined systematically with respect to its relationships to psychopathology. We aimed to investigate associations between SI and psychopathology, including gender-related differences.
Method: We performed a secondary data analysis of Wave-2 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), a national sample of 34,653 adults in the United States. DSM-IV-based diagnoses of mood, anxiety, drug and personality disorders were assessed using the Alcohol Use Disorder and Associated Disabilities Interview Scheduled DSM-IV Version.
Results: The prevalence of SI was considerable (14.7%), with greater acknowledgment by men than women (18.9% versus 10.9%; $p < 0.0001$). For both women and men, SI was positively associated with most Axis-I and Axis-II psychiatric disorders (OR range: Women, Axis-I:1.89–6.14, Axis-II:2.10–10.02; Men, Axis-I:1.92–6.21, Axis-II:1.63–6.05). Significant gender-related differences were observed. Among women as compared to men, SI was more strongly associated with social phobia, alcohol abuse/dependence, and paranoid, schizotypal, antisocial, borderline, narcissistic, avoidant and obsessive-compulsive personality disorders.
Conclusion: The robust associations between SI and psychopathology across genders suggest the need for screening and interventions related to SI for individuals with psychiatric concerns. The stronger associations between SI and psychopathology among women as compared to men emphasize the importance of a gender-oriented perspective in targeting SI. Longitudinal studies are needed to determine the extent to SI predates, postdates or co-occurs with specific psychiatric conditions.

1. Background

Impulsivity has been defined as 'a predisposition toward rapid, unplanned reactions to internal or external stimuli with diminished regard to the negative consequences of these reactions to the impulsive individual or to others' (Moeller et al., 2001; Potenza and de Wit, 2010). Given that general impulsivity has been associated with multiple adverse consequences, it has been proposed and investigated as an important intermediate phenotype (Fineberg et al., 2014). Impulsivity has been associated with domestic violence (Shorey et al., 2011), addictive behaviors (Leeman and Potenza, 2012), self-injurious behaviors including suicide attempts (Oquendo et al., 2004) and high-risk sexual behaviors (Black et al., 2009). Domain-relevant impulsivity may also represent an important consideration. Sexual impulsivity (SI) may be defined as a tendency to engage in sexual behaviors quickly or without fully thinking through the consequences. While general impulsivity has been assessed and found to be elevated in groups of individuals with a broad range of psychiatric disorders (Moeller et al., 2001) including hypersexual disorder or compulsive sexual behaviors (Miner et al., 2009; Raymond et al., 2003; Reid et al., 2011, 2012a, 2012b), the extent to which SI relates to psychiatric disorders

* Corresponding author. Department of Psychiatry, Yale University School of Medicine, 34 Park Street, New Haven, CT 06519, USA. Tel.: +1 203 628 6776; fax: +1 203 974 7366.
E-mail address: galit.erez1@gmail.com (G. Erez).

http://dx.doi.org/10.1016/j.jpsychires.2014.04.009
0022-3956/

broadly or other conditions characterized by problematic sexual behaviors (e.g., hypersexual disorder, compulsive sexual behaviors, or sex addiction) has not been examined directly (Kingston and Firestone, 2008; Stein, 2008; Krueger and Kaplan, 2001; Schwartz and Abramowitz, 2003; Barth and Kinder, 1987; Goodman, 2001; Kor et al., 2013). However, as high-risk sexual behaviors are associated with human-immunodeficiency-virus (HIV) infection (Bornovalova et al., 2008) and unintended pregnancies (Kovacs et al., 1994), SI (whether or not related to hypersexuality disorder or other diagnostic conditions characterized by compulsive/excessive sexual behaviors) may contribute importantly to multiple public-health concerns.

1.1. Gender-related differences in SI

Neurobiological (Klinteberg et al., 1987; Manuck et al., 1999), endocrinological (Wood, 2004), and cognitive, behavioral and social (Calvete and Cardeñoso, 2005) findings suggest that men are typically more impulsive than women. Meta-analytic data suggest that men score higher than women on specific aspects of impulsivity and related measures (Cross et al., 2011). Men tend more frequently to constitute clinical groups characterized by impaired impulse control including substance-use, gambling and hypersexual disorders (Wilsnack, 2009; Seedat et al., 2009; Brezing et al., 2010; Black et al., 1997; Miner et al., 2009; Raymond et al., 2003).

Gender may moderate associations between impulsivity and some risk behaviors (e.g., alcohol consumption), with stronger associations observed in men versus women (Stoltenberg et al., 2008). Specific biological (e.g., genetic) factors may contribute to these gender-related differences (Stoltenberg et al., 2011). Gender-related differences also exist with respect to casual sexual behaviors, observed more frequently amongst men than women (Garcia et al., 2012). In one study, 29% of men versus 14% of women reported their last sexual partner as casual (Eisenberg et al., 2009; although see (Owen et al., 2010; Garcia and Reiber, 2008) for studies not observing gender-related differences).

Multiple factors might underlie gender-related differences in casual sex and SI. First, a "sexual double standard" implies "that male and female sexual behaviors should be judged by different standards, such as the belief that casual sex is acceptable for men but not for women" (Peterson and Hyde, 2010, p. 26). As a consequence, having many sexual partners may raise men's status but stigmatize women (Jonason, 2007; Jonason and Fisher, 2009) and make women feel guilty or anxious (Herold and Mewhinney, 1993; Lottes, 1993). Second, men typically have more sexual fantasies than women; on average, they become aroused more easily and have more causal attitudes toward sex (Kafka, 2010). Third, women typically feel more upset than men about "hooking up" (Owen et al., 2010). Despite these explanations and mixed findings across samples (Gaub and Carlson, 1997; Rinne et al., 2000), the prevalence and correlates of SI across genders have not been systematically investigated.

1.2. SI and psychopathology

SI may relate importantly to specific Axis-I and Axis-II disorders. Depressed youth may have sex to regulate their affect (Shrier et al., 2012). Bipolar disorder, characterized by disturbances in impulse control and mood regulation, may also link to SI (Meade et al., 2011). Patients with social anxiety disorder (SAD) may present with aggression, SI and substance-use problems (Kashdan et al., 2009). Among Axis-II disorders, borderline personality disorder (BLPD) has been associated with sexual preoccupation, early sexual exposure, engagement in casual sexual relationships and involvement with multiple sexual partners (Sansone et al., 2011). In one study, 46% of BLPD patients engaged in casual sexual relationships (Hull et al., 1993). In another study, BLPD symptoms were associated with high-risk sexual behaviors (Lavan and Johnson, 2002). It has been suggested that most, if not all, frequent behaviors in BLPD relate to impulsivity and/or victimization (Sansone and Sansone, 2011). Generally, impulsivity appears reflected in greater sexual preoccupation, earlier sexual exposure, more casual sexual relationships, more sexual partners and homosexual experiences. Victimization appears reflected in more high-risk sexual behaviors, a greater likelihood of being coerced to have sex, and more sexually transmitted diseases.

Risky sexual behavior (casual sex or "hooking up") has been linked to psychiatric conditions. College students who had recently engaged in casual sex reported higher levels of general anxiety, social anxiety, and depression compared to college students who had not had recent casual sex (Bersamin et al., 2014). Sexual behaviors have been associated with depression in adolescents (Welsh et al., 2003). Compulsive sexual behavior (CSB) frequently co-occurs with Axis-I psychopathology and personality disorders (PDs) in research populations (Raymond et al., 2003; Black et al., 1997; Kafka and Prentky, 1994; Rinehart and McCabe, 1998; Kafka and Hennen, 2002; Carpenter et al., 2013). Although risky sexual behaviors may be more frequently acknowledged by men, they may associate more strongly with psychopathology in women. For example, the relationship between depression and sexual behaviors in adolescents appears stronger in females as compared with males (Welsh et al., 2003). Similarly, women reporting casual sex acknowledged more depressive symptoms compared to men (Grello et al., 2006).

1.3. Current study

Although studies have independently investigated gender-related differences in impulsivity and sexual behaviors, none have examined gender-related differences in the prevalence of SI and its relationships to psychopathology in women and men. To investigate, data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) were interrogated (Grant et al., 2001). Based on data described above and elsewhere (Black et al., 1997; Carnes, 1991; Raymond et al., 2003; Desai and Potenza, 2008; Opitz et al., 2009), we hypothesized that: 1) SI would be more frequently acknowledged by men than by women; 2) SI would be positively associated with Axis-I and Axis-II disorders in men and women; and 3) gender would moderate the associations between SI and Axis-I and Axis-II disorders such that a stronger relationship between SI and psychopathology would be observed in women as compared with men.

2. Method

2.1. NESARC sample

The NESARC, sponsored by the National Institute on Alcohol Abuse and Alcoholism (Grant et al., 2001), is a nationally representative survey of US adults that was conducted in two waves. The study surveyed individuals aged $\geq$18 years (at Wave 1, conducted in 2001–2002) in the civilian non-institutionalized population living in households and group quarters. Black and Hispanic households were over-sampled as well as surveyees aged 18–24 years. Face-to-face personal interviews were conducted with 43,093 surveyees. In NESARC Wave-2 (Grant et al., 2007) participants from Wave-1 were re-interviewed face-to-face. Excluding surveyees ineligible for Wave-2 interview (e.g., deceased), the Wave-2 response rate was 86.7%, representing 34,653 completed interviews. The cumulative response rate at Wave-2 (70.2%) signifies the product of the Wave-2