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Is subclinical gambling really subclinical?

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ABSTRACT

Gambling disorder and substance use disorders (SUD) overlap in terms of etiology and diagnostic constructs (e.g., preoccupation, loss of control), yet diagnostic thresholds for the disorders are different. Currently, endorsing 2–3 gambling disorder criteria does not warrant a diagnosis while endorsing 2–3 SUD criteria does. The aim of this study was to examine whether subclinical gamblers (i.e., endorsing 2–3 gambling disorder criteria) experience psychosocial dysfunction equivalent to individuals who are diagnosed with mild severity SUD (i.e., 2–3 SUD criteria) and whether this level of dysfunction is significantly different from individuals with no psychopathology. Data are from the first wave of Quinte Longitudinal Study, a large epidemiological sample (N = 4121). Psychometrically supported measures assessed for psychosocial functioning and the presence of Axis-I psychiatric disorders. Cross-sectional analysis examined 7 domains of psychosocial functioning using ANCOVA, which allowed for the inclusion of covariates, to test for difference between subclinical gamblers and individuals with no psychopathology and individuals with mild severity SUD. Equivalency testing compared subclinical gamblers in relation to mild severity SUD. Subclinical gamblers reported significantly poorer psychosocial functioning in relation to individuals endorsing no current psychopathology. Subclinical gamblers were also equivalent to and not significantly different from individuals with mild severity SUD. Subclinical gamblers experience similar psychosocial impairment to those individuals who endorse mild severity SUD, and this significantly differed from healthy individuals. The threshold for diagnosis of gambling disorder therefore warrants re-examination.

1. Introduction

Nosology of mental disorders has changed dramatically over time. Currently, the *Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition* (DSM-5) identifies mental disorders as arising from dysfunction in the areas of cognition, emotion regulation, and behavior that are accompanied by significant harm and impairment (American Psychiatric Association, 2013). Moreover, DSM-5 recognizes dimensionality that occurs both within and across disorders. Within disorders dimensionality occurs in terms of severity (i.e., mild, moderate, severe). Across disorders dimensionality occurs with overlap in diagnostic symptoms and shared etiology. Substance use disorders (SUD) and gambling disorder share across disorder dimensionality on a number of facets, including etiology (e.g., share genetic diathesis; 2), comorbidity, and diagnostic criteria. However, a discrepancy exists between these disorders in DSM-5 in terms of within disorder dimensionality (i.e., severity). Despite significant overlap in diagnostic criteria, the threshold for a SUD diagnosis is endorsement of ≥ 2 symptoms; meanwhile, the threshold for a gambling disorder diagnosis is ≥ 4 symptoms. For example, an individual who endorses tolerance and loss of control in relation to substance use would warrant a DSM-5 SUD diagnosis whereas the same pattern of endorsement related to gambling behavior does not warrant a DSM-5 diagnosis. Therefore, the aim of this paper is to examine impairment and functioning in (a) subclinical gamblers (endorsement of 2–3 criteria) in relation to individuals with mild severity SUD (2–3 symptoms) and (b) subclinical gamblers in relation to individuals with no current psychopathology. Results may have implications regarding the diagnostic classification of gambling disorder.

Gambling disorder was first included in the psychiatric nosology in DSM-III (American Psychiatric Association, 1980) and the diagnostic criteria set were modeled largely after DSM-III substance dependence criteria (Lesieur & Rosenthal, 1991). An analogous disorder to substance abuse was not established for gambling. Currently, 5 of 9 gambling disorder symptoms overlap with 7 of 11 SUD symptoms: tolerance, withdrawal, loss of control, preoccupation, and negative

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consequences[1] (see Table 1). Studies examining the construct of gambling disorder using taxonometric analysis, item-response theory, and factor analysis suggest the latent construct is distinct and separate from healthy functioning, loss of control is a central feature of the disorder, and severity of the disorder lies along a continuum (James, O'Malley, & Tunney, 2014; Orford, Wardle, Griffiths, Sproston, & Erens, 2010; Strong & Kahler, 2007). This pattern of results is similar to studies that examine the construct of SUD (Gillespie, Neale, Prescott, Aggen, & Kendler, 2007; Hagman & Cohn, 2013; Haslam, Holland, & Kuppens, 2012; Shmulewitz, Greene, & Hasin, 2015). Thus, the criteria used to assess these disorders appear to be very similar in content and structure; yet, a disparity exists in the diagnostic thresholds between the two disorders.

For DSM-5, the DSM-5 Substance-Related Work Group combined the substance abuse and substance dependence criteria into one diagnostic set and selected two as the diagnostic threshold for SUD. That threshold was selected to maintain consistency in terms of prevalence with DSM-IV (Hasin et al., 2013). The selection of the gambling disorder threshold of 4 was likewise set to maintain consistency with DSM-IV in terms of prevalence for that disorder (Petry, 2010). The Work Group also cited studies that found the threshold of 4 accurately predicted treatment seeking as another reason for selecting this cutoff (Petry et al., 2014). Unfortunately, few individuals with gambling disorder exhibit problem awareness and/or present for treatment (Leavens, Marotta, & Weinstock, 2014; Slutske, 2006). The Work Group did not examine any evidence regarding dysfunction and impairment at various diagnostic thresholds of gambling disorder.

Meanwhile researchers, clinicians, and public health officials have long recognized subclinical gambling as problematic (Shaffer, Hall, & Vander, 1999). Subclinical gambling refers to individuals who endorse some markers of and negative consequences related to the disorder but not at a threshold sufficient for diagnosis. While different diagnostic thresholds have been used to define subclinical gambling (i.e., thresholds of 1–3 DSM-IV criteria; 18, 19, 20), for this study we selected a threshold of 2–3 criteria for purposes of comparison with SUD. No matter the threshold used, subclinical gamblers from across the lifespan report increased engagement in risky behaviors such as smoking, substance use, and reckless driving (Blanco, Hasin, Petry, Stinson, & Grant, 2006; Moghaddam, Yoon, Campos, & Fong, 2015a; Yip et al., 2011), decrements in health-related quality of life, poor mental and physical health, increased rates of psychiatric comorbidity (Kong et al., 2013; Martin, Usdan, Cremeens, & Vail-Smith, 2014; Morasco, Vom Eigen, & Petry, 2006; Pietrzak, Morasco, Blanco, Grant, & Petry, 2007; Scherrer et al., 2005; Yip et al., 2011), and impairment in social, educational, and occupational functioning (van der Maas, 2016; Yip et al., 2011). For example, Scherrer et al. (2005) found subclinical gamblers had significantly poorer ratings of mental health compared to non-problem gamblers, even after adjusting for demographic and psychiatric covariates. Subclinical gamblers also tend to experience negative consequences and social problems such as poor academic performance (in adolescents and college students), homelessness, depression/dysphoria, and aggression compared to non-gamblers (Moghaddam et al., 2015a; Neighbors, Lostutter, Larimer, & Takushi, 2002; Pietrzak et al., 2007; Yip et al., 2011). Furthermore, Moghaddam et al. (2015a,b) found that compared to recreational and non-gamblers, those who endorsed subclinical gambling had increased odds of suicidal ideation and suicide attempts. Thus, subclinical gamblers appear to meet the DSM-5 definition of a mental disorder (i.e., dysfunction, significant harm/impairment).

The present study aims to build upon these findings regarding subclinical gamblers. Psychosocial functioning and quality of life of individuals with subclinical gambling disorder will be compared to individuals with mild severity SUD (i.e., 2–3 symptoms) and hypothesized to be commensurate with each other. In addition, the psychosocial functioning and quality of life of individuals with subclinical gambling disorder will be compared to individuals endorsing no current psychopathology (i.e., healthy adults). It is hypothesized that individuals with subclinical gambling disorder will endorse significantly worse psychosocial functioning and quality of life than healthy controls.

2. Methods and materials

2.1. Participants

Data were from the first wave of the Quinte Longitudinal Study (QLS) consisting of a cohort of 4121 adults living in the Quinte region of southwestern Ontario, Canada (Williams et al., 2015). The cohort consisted of a general population sample (n = 3065) and an at-risk gambling sample (n = 1056) that were recruited via random digit dialing. Individuals were eligible for the general population sample if they lived within 70 km of Belleville, ON, were age 18–90 years old, and matched an unfilled age by gender recruitment cell. The at-risk sample was eligible if they lived within 70 km of Belleville, ON, were age 18–90 years old, and reported any of the following: (a) spending > $10/month gambling, (b) playing slots or wagering on horses in the past year, or (American Psychiatric Association, 1980) an intention to gamble at a new gambling facility to be developed in Belleville, ON. See Williams et al. (Moghaddam, Yoon, Dickerson, Kim, & Westermeyer, 2015b) for additional information regarding recruitment and study enrollment. Use of de-identified data for this study was reviewed and approved by the lead author's university Institutional Review Board.

The sample is 54.7% female, with an average of 46.1 years (SD = 14.1), 87.1% identifying as Caucasian, 71.5% married or residing in a common-law relationship, 46.3% reported an annual income between $30,000 and $69,999 (CAN), 62.4% were employed part- or full-time, and 63.8% reporting post-secondary education.

2.2. Measures

2.2.1. Demographics

It assessed age, gender, race, ethnicity, marital status, and education.

2.2.2. National Opinion Research Center DSM-IV Screen for gambling problems (NODS)

The NODS assesses past-year pathological gambling status using DSM-IV criteria, and has excellent test-retest reliability (r = 0.99), good sensitivity and specificity, and identified 95% of treatment-seeking gamblers as pathological (Gerstein, Volberg, Toce, et al., 1999; Hodgins, 2004; Williams & Volberg, 2014). For this study, the NODS was scored based upon DSM-5 criteria with the illegal acts question not being scored. Scores ranged from 0 to 9 and scores of 2 and 3 were identified as subclinical gamblers. The NODS was selected over other gambling screening instruments available in the dataset due to its comparable psychometric properties to other screening instruments and its straightforward ability to match up with DSM-5 gambling disorder criteria (Williams & Volberg, 2014). A separate item assess past-year gambling frequency.

2.2.3. Composite International Diagnostic Interview – Short Form (CIDI-SF)

The CIDI-SF is a reliable and valid measure that assessed past year DSM-IV diagnoses of post-traumatic stress disorder, major depression, generalized anxiety disorder, panic disorder, obsessive compulsive disorder, bulimia, and schizophrenia (Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998).

[1] Four symptoms associated with negative consequences are embedded within SUD criteria while gambling disorder has one criterion.