

Clinical and Research Implications of Gambling Disorder in DSM-5

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Abstract The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* contains significant changes related to the diagnosis of gambling problems. These changes include the renaming of the disorder from pathological gambling to gambling disorder, reclassification of gambling disorder from an impulse control disorder to an addictive disorder, removal of the illegal acts criterion, lowering diagnostic threshold to endorsement of four criteria, and recognizing that the course of the disorder is no longer chronic for all diagnosed. This paper reviews the rationale and research support for these changes. Implications of the new revisions for both research and clinical practice are reviewed, including a discussion about future directions for research efforts.

Keywords Pathological gambling · Problem gambling · Addictive disorders · Behavioral addiction · DSM-5

Introduction

Problems arising from excessive gambling have long been recognized throughout the world. For example, the *Mahabharata*, an ancient Hindu epic poem that dates back to 800 or 900 B.C., includes a story about a prince who risks and loses everything during a game of dice. His losses include his kingdom, his own freedom, and his wife. However, it was not until 1980 with the introduction of pathological gambling

that that gambling problems were officially recognized as a psychiatric disorder in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) [1]. Today, approximately 1 % of the world's population meets criteria for the disorder [2–4], and its consequences upon the individual, loved ones, and society are considerable. An additional 1–4 % of the population meets clinically significant but sub-diagnostic levels of problem gambling [5–7, 4]. These sub-diagnostic gamblers experience substantial negative repercussions from their gambling behavior. The goal of this review is to examine (1) how the latest revision to the DSM (i.e., DSM-5) [8] furthers our conceptualization of pathological gambling and (2) what impact these revisions have upon clinical practice and future research efforts. Throughout the remainder of this review, pathological gambling will be referred to as gambling disorder, its name in DSM-5.

DSM-5 Changes

The DSM is designed as a diagnostic tool for clinicians to aid in the recognition and treatment of psychiatric disorders. While updates and revisions are based upon empirical evidence, decisions about changes were made by votes from a committee of experts in the field and by decree from the DSM-5 oversight committee [9]. Thus, it is a document that reflects our current social and political views and is a product of human interaction and compromise. Criticisms of the DSM about stemming from the tension of (1) creating a reliable and observable set of diagnostic criteria and (2) the need to create diagnostic categories that reflect underlying causes. Both are important goals as the first ensures clinicians agree on a diagnosis and the second ensures that the diagnosis is accurate, valid, and that the appropriate treatment is then offered; however, our current knowledge about psychopathology, especially underlying causes, remains incomplete. Thus,

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the DSM-5 remains an imperfect document that represents humanity's best effort to categorize psychopathology.

The major revisions from the fourth edition of the DSM (i.e., DSM-IV-TR) to DSM-5 include (1) reclassification of pathological gambling from impulse control disorders to a newly created category labeled “Substance-Related and Addictive Disorders” that also includes substance use disorders; (2) renaming of pathological gambling to gambling disorder; (3) removal of the illegal acts criterion; and (4) lowering the diagnostic threshold for diagnosis from five to four criteria. The text describing gambling disorder were also revised and updated. Aside from the renaming of the disorder, which was done for nomenclature consistency within the category and to reduce stigma associated with the diagnostic label (i.e., removing “pathological”), the changes were based upon empirical evidence that is summarized and discussed below.

Reclassification to Substance-Related and Addictive Disorders

Within DSM-5, disorders were reorganized and grouped together to “reflect common underlying vulnerabilities for a larger group of disorders” [8] [p. xli]. Moving gambling disorder to the addictive disorders category was implemented based upon findings that the disorder is very similar to substance use disorders in terms of etiology, symptoms, course, correlates, and treatment approaches [10], although skepticism remains [9]. Beginning with genetic factors, significant overlap exists between alcohol use disorder and gambling disorder [11–14]. Family cohort studies find that gambling disorder runs in families and that families with gambling disorder frequently have histories of substance use disorder [15]. Findings from neuroscience on brain functioning, activation, and differences in comparison with healthy controls are strikingly similar between substance use disorders and gambling disorder (for a review see Noël et al. [16••] and Potenza [17]). Moreover, etiological models of gambling and alcohol use disorder are also strikingly similar, with a developmental pathway that accounts for a strong genetic contribution in the onset of the disorder (e.g., Type B, antisocial-impulsivist) and a developmental pathway that describes problems that arise later in life, typically in response to other stressors [18, 19••]. Symptoms of substance use disorders and gambling disorder in DSM-5 have substantial overlap with the same five symptoms appearing in both diagnostic criteria sets (i.e., preoccupation, loss of control, psychosocial consequences in various contexts, tolerance, withdrawal) [20, 21]. Finally, treatments for gambling disorder are frequently the same ones used to treat alcohol and other substance use disorders. Common approaches with empirical support include 12-step modalities, cognitive-behavioral therapy, motivational interviewing, and opiate antagonists (although no

medications are currently approved in the USA by the Food and Drug Administration for gambling disorder) [22, 23••].

The benefits of gambling disorder being grouped within addictive disorders primarily center on increased awareness and attention on the comorbidity between disorders. Within individuals with gambling disorder, over 50 % have a lifetime substance use disorder [7], and conversely rates of gambling disorder are elevated in individuals with substance use disorders compared with the general population [4]. Prevalence rates are even higher in treatment-seeking samples (e.g., Cowlshaw et al. [24] and Ibáñez et al. [25]). The importance of comorbidity lies in its impact on the individual and treatment. Individuals with comorbid alcohol and gambling disorder tend to have more severe problems [26–28]. In terms of treatment, a history of a comorbid substance use disorder often hampers efforts to achieve gambling abstinence, and a current alcohol use disorder increases the risk of relapse after gambling treatment [29]. Conversely, gambling disorder is frequently comorbid with substance use disorders but is infrequently diagnosed and treated in outpatient and/or inpatient substance use disorder treatment settings [24]. Increased attention in these settings is particularly important as the presence of a comorbid gambling disorder negatively impacts substance use disorders' treatment retention and outcome [30]. With inclusion in the addictive disorders category, screening for and treating gambling disorder will hopefully become part of routine clinical practice within these clinics.

Finally, the DSM-5 explicitly recognizes that comorbidity and current scientific evidence is blurring the lines between diagnostic categories. This recognition furthers the idea that transdiagnostic processes frequently underlie the development of several related disorders (e.g., multifinality) [31, 32••]. The move of gambling disorder to the addictive disorders category recognizes that gambling disorder and substance use disorders are frequently comorbid and share many of the same underlying etiological and sustaining factors, such as the previously highlighted genetic overlap, traumatic experiences, coping via dissociation, impulsivity, and negative reinforcement [33, 34••, 35]. The blurring of lines between diagnostic categories has implications for treatment. Integrated treatments for comorbid conditions, such as post-traumatic stress disorder and gambling disorder, have been shown to be beneficial [36]. The same may hold true for integrated treatments for gambling and substance use disorders. Additionally, common transdiagnostic processes, such as impulsivity and anger, have been shown to be related to poor treatment adherence [37–39]. Integrated treatments focusing on these transdiagnostic processes can be beneficial (e.g., Korman et al. [40]) and provide opportunity for cost-efficient group treatments that are tailored to specific underlying issues that affect numerous individuals with a variety of disorders. Unfortunately, there is a dearth of evidence on integrated treatments targeting gambling disorder at this time to effectively guide clinicians. Other questions

remain about what other transdiagnostic processes lead to and maintain addictive disorders and what factors determine which disorder develops or develops first. Fortunately, interest in transdiagnostic processes has grown exponentially recently, primarily as an alternative means for understanding psychopathology [41, 42]. Gambling disorder has much to contribute to these efforts, particularly since it does not involve consumption of a substance that alters brain chemistry. Investigations incorporating gambling disorder may therefore allow for parceling out of effects that are due to the underlying addictive process and effects that are due to chronic administration of a psychoactive substance.

Removal of the Illegal Acts Criterion

The elimination of the illegal acts criterion was due to relatively low rates of endorsement, stability of gambling disorder's prevalence without this item, and limited diagnostic utility. While worded slightly different, the legal problems criterion was also removed from substance use disorders' diagnostic set. Within gambling disorder, numerous studies found that the illegal acts criterion was consistently the least common DSM-IV symptom endorsed and is only typically endorsed by the most severe gamblers [43–45]. For example, in a large community sample of individuals endorsing at least one diagnostic criterion, the illegal acts criterion was endorsed by over 60 % of individuals meeting eight to ten DSM-IV pathological gambling criteria; meanwhile only 0.4 % of those meeting one to two criteria endorsed this item [46]. Removal of the illegal acts criterion also has minimal impact on the diagnostic status of individuals, with less than 3 % of individuals diagnosed with gambling disorder under DSM-IV conceptualization losing their diagnosis with the elimination of this item prior to taking into account the newly lowered threshold in the DSM-5 criteria [47, 48]. Therefore, this criterion is better conceptualized as a marker of severity, rather than a necessary criterion for diagnosis. While the criterion was removed, the relationship to the disorder was not completely deleted from the text. Illegal acts remains in the section describing the diagnostic features [8, p. 585], but is now subsumed under lying to conceal the extent of gambling. Therefore, while it is no longer a separate diagnostic criterion of the disorder, it remains a vital part of gambling disorder's lexicon and a useful clinical tool for measuring severity and potential for involvement with the legal system.

Diagnostic Threshold Lowered

In DSM-5, the threshold for diagnosis was lowered from endorsement of five symptoms to four symptoms. Several studies supported this change as they found that meeting four

criteria had the best diagnostic accuracy when treatment seeking was used as the criterion [49–51]. Unfortunately, treatment seeking is a complex act that may not be the best indicator or “gold standard” for gambling disorder. Approaches that employ multiple sources (e.g., afflicted individual, clinician, collateral) to evaluate the criterion may be a better indicator.

The most striking aspect of the diagnostic threshold is the discrepancy of impairment/dysfunction that is required for diagnosis and differences in how severity is quantified between gambling disorder and substance use disorders. As shown in Table 1, within substance use disorders an individual must endorse at least two of 11 diagnostic criteria [8], while within gambling disorder an individual must endorse a higher threshold to enable a diagnosis (i.e., at least four of nine criteria). Table 1 also displays the discrepant symptom counts associated with severity ratings. For example, an individual who endorses loss of control, preoccupation, and psychosocial consequences in relation to substance use would be diagnosed with a mild substance use disorder; meanwhile, someone who endorses these same three symptoms in relation to gambling would not receive a diagnosis. Additionally, an individual receiving a mild severity rating for gambling disorder would receive a moderate severity rating for endorsing the same number of symptoms. As discussed below, this inconsistency may be an area for future research to establish whether negative impact of a mild gambling disorder reaches a level of clinical significance comparable with the negative effects of a mild substance disorder.

Evidence to date suggests that sub-diagnostic gamblers do experience negative consequences related to their gambling behavior, including large amounts of gambling-related debt, suicidal ideation, and comorbid psychopathology [46, 47, 52]. The most commonly endorsed diagnostic symptoms by sub-diagnostic gamblers are withdrawal, chasing losses, lying to others, and escape gambling, with lower endorsement rates for the more severe symptoms (e.g., jeopardizing relationships, illegal behavior, loss of control, financial bailouts) [45]. Moreover, a significant portion of sub-diagnostic gamblers acknowledge problems related to their gambling and present for treatment [47, 53, 54]. With these negative consequences in mind, strong consideration is warranted for lowering the diagnostic threshold of gambling disorder to be in line with other disorders in the category.

Lowering the diagnostic threshold such that it is equivalent with substance use disorders (i.e., endorsing two or more criteria) would be a significant departure from the prior DSM conceptualizations and is fraught with potential political complications. Forefront among these issues is that a lowered threshold would result in a large increase in prevalence rates. Some would argue that this change would be beneficial, especially in terms of prevention and the brief intervention that might reduce the risk of developing severe problems at a later date (e.g., Larimer et al. [55]). Others would argue that

Table 1 *Diagnostic and Statistical Manual of Mental Disorders*, fifth edition (DSM-5) diagnostic threshold and severity ratings

	Substance use disorder	Gambling disorder
Threshold for diagnosis	2 of 11 criteria	4 of 9 symptoms
Severity ratings		
Mild	2–3 criteria met	4–5 criteria met
Moderate	4–5 criteria met	6–7 criteria met
Severe	≥6 criteria met	≥8 criteria met

this change would overly pathologize normative human behavior. Another consideration is whether treatment is necessary for these mild cases or whether mild forms of the disorder largely resolve on their own, which may suggest that diagnosis of mild cases may be unnecessary. Studies that examine and directly compare the harm and lifetime course experienced by sub-threshold gamblers in relation to individuals with mild severity substance use disorders are needed to provide clarity regarding the validity of altering the diagnostic threshold. If findings demonstrate that currently defined sub-diagnostic gamblers are experiencing the criterion for establishing diagnostic thresholds in DSM-5, which is “clinically significant distress or impairment in social, occupational, or other important areas of functioning” [8, p. 21] related to their gambling behavior, and that this distress is similar in nature/severity to the harm experienced by individuals being diagnosed with a mild substance use disorder, then there may be sufficient evidence to lower the threshold. Andrews and colleagues [56] provide an exemplar for how to approach an investigation of this type.

The research community and treatment providers have already moved ahead of DSM-5 by examining and providing interventions for sub-diagnostic gamblers. Interventions typically offered include brief interventions such as motivational interviewing, brief versions of cognitive-behavioral therapy, and even pamphlets with suggestions on how to change gambling habits. These studies find that the brief interventions are well received, significantly reduce harm, and improve overall functioning (e.g., Larimer et al. [55] and Hodgins et al. [57]).

Text Revisions

The revisions of the text describing gambling disorder and its associated features are not to be ignored. The revisions contain important updates on our current scientific understanding of the disorder. Two revisions warrant attention: (1) gambling disorder is now recognized as a “behavioral addiction”; and (2) the disorder’s course is no longer considered chronic and unremitting.

DSM-5 is the first diagnostic system to recognize behavioral addictions. These disorders lack the ingestion of a psychoactive substance that is the core of traditional conceptualizations of addiction. Yet, individuals with behavioral addictions will manifest other patterns consistent with substance use disorders. These shared elements include the commandeering of the natural reward pathway, development of tolerance and withdrawal, and engaging in the behavior despite harm experienced by the individual and others [58, 59]. Further similarities are found when comparing gambling disorder and substance disorders with regards to life course, treatment outcome, diagnostic criteria (with some differences), and the content of existing treatment protocols. Petry [60] and Potenza [61] provide reviews of the similarities and differences between pathological gambling and substance disorders. Gambling disorder was the first and only non-substance use disorder to be classified into the new substance-related and addictive disorders chapter. However, internet gaming disorder was listed under topics for further consideration given that it is better researched relative to other potential behavioral addictions such as exercise, sex, or shopping (American Psychiatric Association [8, p. 795; Petry et al. [62]).

As a behavioral addiction, gambling disorder has several criteria that are unique to the behavior, such as “chasing losses.” In comparison, substance use disorders’ criteria are identical across all ten substances. Whether gambling criteria items and/or threshold will be or should be shaped toward consistency with the substance disorder is a matter for future research and discussion and also raises the question of how similar in construct gambling disorder is to traditionally viewed addictions [9]. This discussion may lead in the direction of tailoring the substance and gambling disorder criteria toward similarity or, conversely, moving the behavioral addictions into their own category.

Another change within the text is the recognition that gambling disorder is not a persistent chronic disorder and that individuals can fluctuate between problematic and non-problematic phases. It is a significant departure from prior conceptualizations of the disorder. However, the evidence is clear from prospective studies that gambling disorder can be episodic and transitory in nature [63]. Retrospective studies also find that one-third of individuals with lifetime gambling disorder no longer meet past-year criteria for the disorder, and these changes are not due to treatment as few sought professional help [64, 65]. This is not to say that the disorder is not chronic for some individuals, but that for many it is not a life-long persistent problem.

In terms of clinical practice, this conceptualization regarding the course of the disorder suggests a stepped-care or adaptive-care approach to treatment for gambling disorder is warranted. This approach begins by offering the least intensive dose of treatment with hopes of enacting change;

however, through ongoing monitoring if the individual continues to experience harm/negative consequences, the intensity of treatment is increased in hopes of making gains. Stepped-care is viewed as cost effective as individuals are initially offered minimal treatment and the more expensive and intensive treatments are only provided if the minimal treatments prove ineffective. Moreover, this approach implicitly accepts that for some recovery is simply a product of motivation to change and a brief intervention is all that is warranted, while for others the presence and severity of the disorder will fluctuate over time and ongoing monitoring is warranted with treatment offered when the disorder reoccurs [66].

Future Directions and Conclusion

Looking to the future, the field of neuroscience has much to contribute to advancing our knowledge about gambling disorder. In particular, it can confirm much of what we already see clinically in our clients and provides explanations for these phenomena. For example, recent findings suggest that the insula region of the brain is activated when cognitive distortions and distress occur [67, 68••]. The insula is responsible for integrating sensations throughout our body (i.e., interoceptive awareness) and directing subsequent action based upon these feelings. Clinically, we know that when individuals with gambling disorder experience distress they make harmful choices (i.e., gambling) despite knowledge of the adverse outcomes that are likely to happen. These choices to gamble are often puzzling to others (e.g., “Why can’t you just stop?!”); however, when viewed in the context that gambling relieves uncomfortable feelings, the choice becomes understandable. It also provides an explanation for why prevention and intervention efforts that teach probability have little effect [69], as cognitive distortions (e.g., “I feel lucky!”) may more accurately be interpreted as feelings rather than thoughts. Moreover, these findings regarding the role of the insula suggest that mindfulness-based treatments warrant investigation as a treatment for gambling disorder, as these interventions seek to train individuals how to respond or not respond to distressing feelings [70]. Going beyond neuroscience, significant work is still needed on developing and refining treatments for gambling disorder and the underlying causes, as many who seek professional help either discontinue treatment prior to making gains or do not successfully enter into a period of stable remission.

Overall, the fifth edition of the DSM has made important revisions to the description and criteria set of the disorder formerly known as pathological gambling. The changes from the DSM-IV-TR to DSM-5 are meaningful and improve our diagnostic and prognostic capabilities. Gambling disorder is now categorized as an addiction and housed together with substance use disorders. While differences remain between

the disorders, there is considerable overlap. The clinical benefits of being grouped in an addictions category center around optimism that gambling disorder will be increasingly recognized as an addiction that is worthy of screening for and treating in a variety of settings. For researchers, grouping gambling disorder with other addictions is beneficial as the disorder has much to offer in the pursuit of knowledge about addiction, and funding agencies may be more receptive to supporting gambling research as it is now clearly labeled an addictive disorder. In conclusion, we anticipate that our understanding regarding the etiology, diagnosis, maintenance factors, and treatment for gambling disorder will continue to improve, and such advances will yield significant improvements in patient care.

Compliance with Ethics Guidelines

Conflict of Interest Jeremiah Weinstock reports that he is a principal investigator on a grant funded by the National Center for Responsible Gaming.

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Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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