Published in final edited form as:
J Gambl Stud. 2014 June ; 30(2): 493–502. doi:10.1007/s10899-013-9370-0.

An overview of and rationale for changes proposed for pathological gambling in DSM-5

Nancy M. Petry, **Carlos Blanco**, **Marc Auriacombe**, **Guilherme Borges**, **Kathleen Bucholz**, **Thomas J. Crowley**, **Bridget F. Grant**, **Deborah S. Hasin**, and **Charles O'Brien**

Abstract

The fifth revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) is scheduled for publication in 2013. It will include several changes to the diagnosis of pathological gambling: the name of the disorder will be altered, the threshold for diagnosis will decrease, and one criterion will be removed. This paper reviews the rationale for these changes and addresses how they may impact diagnosis and treatment of the disorder, as well as potential for future research in the field.

Keywords

DSM-5; gambling; pathological gambling; diagnosis

The Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association (APA), 1994) is the primary classification system for diagnosing psychiatric disorders in the United States. The fifth edition of the DSM (DSM-5), scheduled for publication in 2013, will include changes for the disorder of pathological gambling, including its criteria, threshold and placement within the DSM. This article briefly outlines the DSM-5 process, recommendations for changes to this disorder, and the rationale underlying the changes. It also describes the potential impact of these changes on diagnosis and treatment of gambling disorders and opportunities for future research.

The DSM-5 process

Workgroups for each major section of the DSM were convened in 2007, and charged with identifying strengths and weaknesses in the DSM-IV approach to classifying psychiatric disorders. The substance-related disorders workgroup members were 12 researchers assisted by about 20 advisers with diverse specialized expertise. Other diagnostic areas had similar groups so that overall there were several hundred experts working on the revision. They were instructed to review existing literature related to diagnoses, highlight gaps in knowledge, utilize existing datasets to investigate methods to improve diagnosis when possible, and formulate recommendations for changes. The workgroups have been meeting in-person twice annually and via regular conference calls since 2007 to discuss these issues. The substance-related disorders workgroup participated in 98 conference calls.

Address correspondence to: Nancy M. Petry, MC-3944, University of Connecticut School of Medicine, 263 Farmington Avenue, Farmington, CT 06030-3944 USA, Phone: 860-679-2593 Fax: 860-679-1312 npetry@uchc.edu.

The discussions of the Substance Use and Related Disorders Workgroup also focused upon pathological gambling. This workgroup examined the literature and conducted analyses related to the placement and diagnosis of gambling. The Workgroup proposed its initial recommendations and made them publicly available in 2009. A public commentary process elicited input on the proposed changes, and expert advisors were consulted. Input from these sources led to additional analyses and adjustments when appropriate, and a second draft of changes was made publicly available in 2012, followed by another period for public comment. The DSM-5 text was drafted in 2012, was reviewed by the scientific and community public health committees convened by the American Psychiatric Association, and approved by the Board of Trustees in the fall of 2012. Publication will occur in 2013. Below, we describe changes planned for pathological gambling based on these processes, as well as some changes considered but not implemented.

Changes to the name and placement of pathological gambling in DSM-5

Pathological gambling was first introduced as a mental disorder in the third edition of the DSM (APA 1980). Over the past three decades, the term “pathological” has become outdated and pejorative. Thus, the name of the disorder will be altered in DSM-5 to “gambling disorder.” Other possibilities considered included “problem gambling” and “compulsive gambling.” The former was not adopted because it has often been used to refer to a sub-diagnostic threshold condition and hence could lead to confusion regarding the severity of the disorder. The term “compulsive” overlaps with disorders in the DSM-5 anxiety disorders section. Thus, “gambling disorder” appears to be the most appropriate name. The Workgroup received numerous comments in support of changing the name of the disorder; “gambling disorder” was a suggestion proposed by the public during the initial public commentary period, and the Workgroup ultimately approved this name unanimously.

Gambling disorder will be placed in a different section of the DSM-5. In DSM-IV and earlier revisions, pathological gambling was included in the Impulse-Control Disorders Not Elsewhere Classified section. Essential features of this class of disorders include: not resisting impulses or temptations to engage in an act that is harmful to oneself or others; an increasing sense of tension before the act; and pleasure or liberation while performing the act, with guilt or regret later. Although these features have relevance to gambling disorder, the other disorders in this section include trichotillomania, intermittent explosive disorder, kleptomania, and pyromania. Relatively little evidence exists on the associations between these conditions and gambling disorder.

In contrast, substantial research has been conducted on the relationship between gambling and substance use disorders. Gambling and substance use disorders share similar presentations of some symptoms (Petry 2006; Toce-Gerstein et al. 2003), and the two disorders consistently demonstrate high rates of comorbidity in epidemiological as well as clinical samples (Kessler et al. 2008; Lorains et al. 2011; Nalpas et al. 2011; Petry et al. 2005b). Data are emerging that gambling and substance use disorders have common underlying genetic vulnerabilities (Black et al. 2006; Blanco et al. 2012; Slutske et al. 2000;), and both are associated with similar biological markers and cognitive deficits (Blanco et al. 2012; Potenza et al. 2003; Reuter et al. 2005). Effective treatments for

gambling have been based on those for substance use disorder (Grant et al. 2008; Hodgins et al. 2009; Petry et al. 2006, 2008). Gambling disorder also appears to align more closely to substance use disorders than to other psychiatric disorders (Blanco et al. in press). For these reasons, the Substance Use and Related Disorders Workgroup of the DSM-5 (O'Brien 2011; Petry 2010) suggested moving gambling disorder to the chapter related to alcohol and other drug use disorders. Although a few concerns were expressed about this move during the public commentary periods, most comments received were supportive of placing this disorder in the Substance Use section.

Changes to diagnostic criteria

On the basis of existing datasets, the DSM-5 Substance Use and Related Disorders Workgroup suggested removing "has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling" as a separate criterion for diagnosis. The Workgroup recommended this change because the criterion appears to add little to diagnostic accuracy. In nationally-based epidemiological surveys from the United States as well as other countries (McBride et al. 2010; Orford et al. 2003; Strong and Kahler 2007; Toce-Gerstein et al. 2003), committing illegal acts related to gambling was endorsed at lower rates than all other diagnostic criteria. More importantly, endorsement of this criterion virtually never occurred unless multiple other criteria were endorsed (Zimmerman et al. 2006), and therefore it did not add to diagnosis in a meaningful way. Researchers have found that the gambling disorder criteria form a single factor (Petry et al. in press; Stinchfield et al. 2005; Strong and Kahler 2007), and the illegal acts criterion is present only in individuals with the most severe form of the disorder (Strong and Kahler 2007). For these reasons and to reduce assessment burden, this criterion will be deleted in DSM-5.

This change has been met with skepticism. Some clinicians and researchers in the gambling field consider the illegal acts criterion to be essential to diagnosis (e.g., Mitzner et al. 2011). A number of pathological gamblers are involved in the legal system, and stealing reflects the desperation that can occur in the context of this disorder. Indeed, up to 40% of treatment-seeking pathological gamblers admit to committing illegal acts to support their gambling (Blaszczynski et al. 1989; Meyer and Fabian 1992; Petry et al. in press). Nevertheless, in the general population and most treatment populations this criterion is the least often endorsed of the 10 criteria in DSM-IV (Petry et al. in press). The next least often endorsed criterion is usually that related to receiving "bailouts," and it is typically endorsed by about 60% of treatment-seeking populations, while all other criteria are usually endorsed by more than 75% of treatment-seeking gamblers (Petry 2006). Importantly, examination of numerous datasets revealed that even among the 40% who endorse committing illegal acts, the vast majority report multiple other diagnostic criteria (Petry et al. in press), so very few individuals who are involved in illegal acts to support gambling will go undiagnosed if this criterion is no longer listed (Zimmerman et al. 2006).

Although committing illegal acts will no longer be a stand-alone criterion for diagnosis, the text will state that illegal acts are associated with the disorder. In particular, the criterion related to lying to others to cover up the extent of gambling will be described to include specific mention of illegal activities as one potential form of lying.

Some additional changes in wording of the criteria are also proposed for DSM-5. First, the text will explicitly state that the symptoms need to occur concurrently-- within a one-year time frame, a specification lacking in prior versions of the DSM. Although DSM-IV did not indicate a time frame for assessment, most research did apply time frames related to diagnoses (e.g., lifetime or past year or both; Gerstein et al. 1999; Petry et al. 2005b, 2006). Secondly, words such as “often” will be applied to some criteria to clarify that a symptom occurring only once would not constitute meeting particular criteria. Greater attention to the array of individuals who develop significant gambling problems will be described in the associated text as well. The descriptions in DSM-IV and earlier versions focused on male “narcissistic” gamblers, but recent data indicate that up to 40% of individuals with gambling disorder are women (Blanco et al. 2006; Petry et al. 2006). Additionally, severity specifiers will be included for this and other disorders in DSM-5.

Changes to the threshold for diagnosis

The threshold for the gambling disorder diagnosis will be reduced from five to four criteria. In developing a screening instrument for gambling disorder, a cutoff of four criteria yielded an improvement in classification accuracy relative to the DSM-IV cutoff of five criteria (Gerstein et al. 1999). Additional compelling rationale for this recommendation was derived from three independent studies from US and Spanish samples (Jimenez-Murcia et al. 2009; Stinchfield 2003; Stinchfield et al. 2005), each of which found that endorsement of four or more criteria improved diagnostic accuracy relative to a threshold of five when predicting gambling treatment seeking.

Denis et al. (2012) estimated the impact of simultaneously eliminating the illegal acts criterion and reducing the threshold for a diagnosis to four criteria. In a sample of individuals seeking treatment for addictive disorders in France, prevalence rate for gambling disorder using five of ten criteria as described in DSM-IV was 20.5%. If the threshold for diagnosis was reduced to four of nine criteria, the prevalence rate would be 25.5%. Using four of nine criteria as a cutpoint, correlations between the number of criteria endorsed and other indices of gambling severity (e.g., days and dollars gambled in past month, and years of regular gambling) were significant and explained as much as or more variance as the DSM-IV criteria, leading the authors to conclude that using four of nine criteria for diagnosis was appropriate.

To provide additional information about recommendations for DSM-5, Petry et al. (in press) analyzed data from five independent samples that comprised a total of 3710 individuals. The samples varied with respect to the severity of gambling problems. They included respondents in the Gambling Impact and Behavior Study (Gerstein et al., 1999), a national randomly selected community sample, which included a subgroup of patrons at gambling establishments. They also included individuals participating in a screening and brief intervention study (Petry et al. 2008), patients from community-based gambling treatment programs (Petry et al. 2005a), and participants involved in gambling treatment research studies (Petry et al. 2006). The same instrument, The National Opinion Research Center DSM-IV Screen for Gambling Problems (NODS), assessed DSM gambling criteria in each sample, and the study evaluated internal consistency and factor structure using both ten and

nine criteria. Using DSM-IV classification as the standard (i.e., meeting 5 of 10 criteria), prevalence rates, hit rates, sensitivity, specificity, and overall agreement were compared across permutations of classification systems.

Results from this study (Petry et al. in press) revealed that eliminating the illegal acts criterion only modestly impacted prevalence rates. For example, past year prevalence rates in the full sample were 16.2% when 5 of 10 criteria (DSM-IV) were used for diagnosis and 17.9% using 4 of 9 criteria (DSM-5). Internal consistency was 0.95 whether 10 or 9 criteria were considered. Principal components analyses revealed that the criteria yielded a unidimensional scale, which accounted for 68.7% of the variance when all 10 criteria were included, and 71.5% of the variance when the illegal acts criterion was removed. In comparing a classification system using four of ten criteria versus one using four of nine, the system applying four of nine criteria resulted in identical or slightly better classification accuracy in all comparisons and across all samples. These results provide further support for eliminating the illegal acts criterion, and they suggest that reducing the cutpoint to four criteria when the illegal acts is removed leads to more consistent diagnoses relative to the current DSM-IV classification system.

Other suggestions considered but not recommended

Some have suggested that the threshold for diagnosis should be reduced down to three, two, or even one criterion (Mitzner et al. 2011). The primary advantages of lowering the cutpoint would be to allow diagnosis, and ultimately treatment, of more individuals who may be experiencing some degree of gambling problems. A literature exists on sub-diagnostic threshold gamblers (e.g., Blanco et al. 2006; Morasco et al. 2006ab); they experience some substantial problems, and they can benefit from interventions (Petry et al. 2008, 2009).

The American Psychiatric Association requires strong empirical data in support of changes to DSM-5 that would substantially increase the base rate of a disorder. The Workgroup considered the available data regarding lower cutpoints and prevalence. In the Gambling Impact and Behavior Study (Gerstein et al. 1999), the past-year prevalence rate of gambling disorder in the general population using 5 or more criteria was 0.1%, and 0.2% using 4 or more criteria. However, the past-year prevalence rate jumped to 0.5% if 3 or more criteria were the cutpoint, 1.0% using 2 or more criteria, and 3.0% for 1 or more criteria, a substantial increase in prevalence. Because the clinical significance and stability of lower threshold conditions is not yet well established, the Workgroup concluded that a further reduction in threshold could not be justified at this time. However, clinicians should intervene with individuals who endorse fewer than four gambling disorder criteria, and further research is warranted to understand the etiology and consequences of sub-threshold gambling conditions, and whether this condition is truly distinct from cases of gambling disorder meeting full criteria.

How the changes may impact diagnosis and treatment

The changes for gambling disorder in DSM-5, by intention, are unlikely to substantially impact prevalence rates for reasons outlined above, but they are likely to improve diagnostic accuracy. The overwhelming majority of individuals who were classified as pathological

gamblers using the 5 of 10 criteria outlined in DSM-IV are likely to remain diagnosed using the new DSM-5 system (Petry et al. in press; Zimmerman et al. 2006). Further, some individuals who failed to meet 5 criteria using the DSM-IV classification system will reach the threshold for diagnosis under the new system with 4 criteria, and these individuals are likely to benefit from treatment.

Moreover, the movement of gambling disorder to the substance use section of the DSM-5 should enhance screening and intervention efforts in specialty settings such as substance abuse disorder treatment clinics. Given the high rates of comorbidity between gambling and substance use disorders (Kessler et al. 2008; Lorains et al. 2011; Nalpas et al. 2011; Petry et al. 2005b), greater screening for gambling problems in these settings should enhance diagnostic efforts and increase the likelihood that individuals with gambling disorder are offered treatment. Given that brief interventions can be efficacious in reducing gambling problems (Hodgins et al. 2001, 2009; Petry et al. 2008, 2009), greater screening and treatment may reduce the public health burden of gambling disorders.

Listing gambling alongside substance use disorders may also increase public health awareness about gambling disorder. Physicians regularly screen patients for alcohol use, smoking, and illicit drug use. Now that gambling disorder will be included in this section, it may have greater prominence in the eyes of medical providers, and gambling disorder is associated with some medical conditions and poor general health (Morasco et al. 2006ab). Hence, screenings for gambling problems and referrals for treatment may increase in medical settings, although widespread screenings for gambling disorder in this context are unlikely without national guidelines and recommendations.

Funding for gambling treatment typically remains distinct from that of substance use and other mental health disorders in the United States. Much gambling treatment occurs in the context of state supported gambling specific treatment programs. As gambling disorder achieves greater public health prominence, it will become imperative that clinicians across a range of specialties become familiar with diagnosing and treating gambling. With these changes, insurers will need to be encouraged, or perhaps even mandated, to reimburse these services appropriately.

Future research

As gambling disorder is gaining greater attention by medical and mental health professionals, a number of important areas remain to be addressed. First, additional psychometric testing of the diagnostic criteria themselves and establishment of a “gold standard” diagnostic instrument would be useful. Many instruments have been developed and used to assess gambling disorder, but none is widely accepted as the best method to ascertain diagnoses. In particular, comparisons between standardized instruments such as the NODS and other instruments could be conducted in samples ranging from the general population to high-risk and treatment samples. How wording impacts endorsement and interpretations of items is an important area for future research as well. For example, the NODS provides time frames and minimal frequencies for some diagnostic criteria, yet the impact of these specifiers has not been empirically evaluated.

Direct comparisons between the gambling disorder criteria and criteria that more closely parallel those for substance use disorders would also be of use. Denis et al. (2012) re-worded substance use disorders criteria to address gambling problems and compared sensitivity and specificity across diagnostic methods in treatment seeking patients in France. Studies in larger and more diverse samples are needed to determine whether this approach is justifiable. If the substance use disorder criteria accurately classify individuals with gambling disorder, efficiency in diagnoses may be improved by having a more parallel set of criteria.

Development of a reliable and valid brief gambling screen would also be of great practical use. As substance abuse treatment clinics are expressing greater interest in assessing gambling, the need for a brief screening instrument is paramount, and the shorter the screen, the greater the likelihood is that it will be used in practice. Some promising screens are available (Gebrauer et al. 2010; Toce-Gerstein et al. 2009; Volberg et al. 2011), but further psychometric testing is needed.

Patterns of criteria endorsement and interpretations of the criteria themselves may vary across genders and racial/ethnic groups, as well as cross-culturally (Alegría et al. 2009). Thus, attention to these issues is necessary in development or refinement of diagnostic and screening instruments. Similarly, a better understanding of the expression and course of gambling disorder in youth is needed (Derevensky et al. 2003; Petry 2005; Volberg et al. 2010), especially given the wide variations in prevalence rates of gambling problems in youth and young adults (Forrest and McHale 2011; Hayatbakhsh et al. 2012; Welte et al. 2008).

Research should also continue to be directed toward sub-threshold gambling disorder. Far more individuals endorse fewer than four criteria than those who qualify for diagnosis. Subthreshold gambling problems can result in personal and societal harm (Blanco et al. 2006; Morasco et al. 2006ab), and prospective studies of individuals at risk of developing gambling disorder are of interest. A better understanding of gambling problems across the range of criteria may ultimately inform secondary prevention and early intervention efforts.

With the movement of gambling disorder to the substance use and related disorders section of the DSM-5, the Workgroup also considered other conditions for inclusion in this section, and this is another area in which research is needed. The Workgroup conducted literature reviews for a number of other potential behavioral “addictions” such as internet gaming addiction, internet addiction more globally, shopping, work and exercise addictions. The group also held joint discussions with the Eating Disorders workgroup and the Sexual Disorders workgroup because some of the responses from the public contained questions about “food addiction” and “sex addiction.” Discussions of the literature involving these conditions as “behavioral addictions” concluded that sufficient evidence did not exist regarding the reliability and validity of diagnostic criteria for these conditions, and their associations with substance use and gambling disorders were not well established. Therefore, these conditions will not be included alongside substance use and gambling disorders in DSM-5. Internet gaming addiction, however, will be included in Section 3 of DSM-5, with the goal of fostering more research into this condition, which appears to share

some overlap with substance use and gambling disorders (Tao et al. 2010). The movement of gambling disorder to this section opens the doors for other "behavioral addictions," a highly controversial topic (Block 2008). Because inclusion of disorders that are not well established could lower the credibility of the classification system and potentially undermine psychiatric treatment overall, strong empirical data will be needed to include new psychiatric conditions in future versions of the DSM. Nevertheless, researchers should be encouraged to continue developing and refining diagnostic systems related to other putative "behavioral addictions" that have significant adverse effects on individuals and that may overlap with gambling disorder.

Conclusion

The DSM is, and should be, an evolving document, taking into account changes in society, the expression of psychiatric disorders, and new empirical data. Gambling, gambling disorder, and the research related to this mental illness have changed markedly in the 19 years since publication of the DSM-IV. The next decade is likely to yield additional important information related to this and other psychiatric disorders, their prevention and treatment. The diagnostic criteria in the DSM-6 should reflect the nature of the science as it continues to progress, and our hope is that the changes planned for the DSM-5 will lead us in this direction.

Acknowledgments

The views and opinions expressed in this paper are those of the authors and should not be construed to represent the views of any of the sponsoring organizations, agencies, or the U.S. government. We acknowledge other members of Substance Use and Related Disorders Workgroup: Alan Budney, Wilson Compton, Walter Ling, and Marc Schuckit, who participated in the discussions and decisions outlined in this report. Preparation of this article was supported in part by grant R01-DA021567.

References

Alegria AA, Petry NM, Hasin DS, Liu SM, Grant BF, Blanco C. Disordered gambling among racial and ethnic groups in the US: results from the national epidemiologic survey on alcohol and related conditions. CNS Spectrums. 2009; 3:132–142. [PubMed: 19407710]

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 3rd ed.. Washington, DC: Author; 1980.

American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th ed.. Washington, DC: Author; 1994.

Black DW, Monahan PO, Temkit M, Shaw M. A family study of pathological gambling. Psychiatry Research. 2006; 141:295–303. [PubMed: 16499975]

Blanco C, Hasin DS, Petry N, Stinson FS, Grant BF. Sex differences in subclinical and DSM-IV pathological gambling: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Psychological Medicine. 2006; 36:943–953. [PubMed: 16650342]

Blanco C, Krueger RF, Hasin DS, Liu SM, Wang S, Kerridge BT, Olfson M. Mapping common psychiatric disorders: Structure and predictive validity in the National Epidemiologic Survey on Alcohol and Related Conditions. Archives of General Psychiatry. (in press).

Blanco C, Myers J, Kendler KS. Gambling, disordered gambling and their association with major depression and substance use: a web-based cohort and twin-sibling study. Psychological Medicine. 2012; 42:497–508. [PubMed: 21835089]

Blaszczynski A, McConaghy N, Frankova A. Crime, antisocial personality and pathological gambling. Journal of Gambling Behavior. 1989; 5:35–42.

Block JJ. Issues for DSM-V: internet addiction. American Journal of Psychiatry. 2008; 165(3):306–307. [PubMed: 18316427]

Denis C, Fatséas M, Auriacombe M. Analyses related to the development of DSM-5 criteria for substance use related disorders: An assessment of pathological gambling criteria. Drug and Alcohol Dependence. 2012; 122:22–27. [PubMed: 21962725]

Derevensky JL, Gupta R, Winters K. Prevalence rates of youth gambling problems: are the current rates inflated? Journal of Gambling Studies. 2003; 19(4):405–425. [PubMed: 14634300]

Forrest D, McHale IG. Gambling and problem gambling among young adolescents in Great Britain. Journal of Gambling Studies. 2011

Gebauer L, LaBrie R, Shaffer HJ. Optimizing DSM-IV-TR classification accuracy: a brief biosocial screen for detecting current gambling disorders among gamblers in the general household population. Canadian Journal of Psychiatry. 2010; 55(2):82–90.

Gerstein, DR.; Volberg, RA.; Toce, MT.; Harwood, H.; Johnson, RA.; Buie, T.; Tucker, A. Gambling Impact and Behavior Study: Report to the National Gambling Impact Study Commission. Chicago IL: National Opinion Research Center; 1999.

Grant JE, Kim SW, Hartman BK. A double-blind, placebo-controlled study of the opiate antagonist naltrexone in the treatment of pathological gambling urges. Journal of Clinical Psychiatry. 2008; 69:783–789. [PubMed: 18384246]

Hayatbakhsh MR, Clavarino A, Williams GM, Bor W, Najman JM. Young adults' gambling and its association with mental health and substance use problems. Australia and New Zealand Journal of Public Health. 2012; 36(2):160–166.

Hodgins DC, Currie SR, Currie G, Fick GH. Randomized trial of brief motivational treatments for pathological gamblers: More is not necessarily better. Journal of Consulting and Clinical Psychology. 2009; 77(5):950–960. [PubMed: 19803574]

Hodgins DC, Currie SR, el-Guebaly N. Motivational enhancement and self-help treatments for problem gambling. Journal of Consulting and Clinical Psychology. 2001; 69:50–57. [PubMed: 11302277]

Jimélnez-Murcia S, Stinchfield R, Alvarez-Moya E, Jaurrieta N, Bueno B, Granero R, Vallejo J. Reliability, validity, and classification accuracy of a Spanish translation of a measure of DSM-IV diagnostic criteria for pathological gambling. Journal of Gambling Studies. 2009; 25:93–104. [PubMed: 18592357]

Kessler RC, Hwang I, LaBrie R, Petukhova M, Sampson NA, Winters KC, Shaffer HJ. DSM-IV pathological gambling in the National Comorbidity Survey Replication. Psychological Medicine. 2008; 38:1351–1360. [PubMed: 18257941]

Lorains FK, Cowlishaw S, Thomas SA. Prevalence of comorbid disorders in problem and pathological gambling: systematic review and meta-analysis of population surveys. Addiction. 2011; 106:490–498. [PubMed: 21210880]

McBride O, Adamson G, Shevlin M. A latent class analysis of DSM-IV pathological gambling criteria in a nationally representative British sample. Psychiatry Research. 2010; 178:401–407. [PubMed: 20488550]

Meyer G, Fabian T. Delinquency among pathological gamblers: A causal approach. Journal of Gambling Studies. 1992; 8:61–77. [PubMed: 24243282]

Mitzner GB, Whelan JP, Meyers AW. Comments from the trenches: Proposed changes to the DSM-V classification of pathological gambling. Journal of Gambling Studies. 2011; 27:517–521. [PubMed: 20972823]

Morasco BJ, Vom Eigen KA, Petry NM. Severity of gambling is associated with physical and emotional health in urban primary care patients. General Hospital Psychiatry. 2006a; 2:94–100. [PubMed: 16516058]

Morasco BJ, Pietrzak RH, Blanco C, Grant BF, Hasin D, Petry NM. Health problems and medical utilization associated with gambling disorders: results from the National Epidemiologic Survey on Alcohol and Related Conditions. Psychosomatic Medicine. 2006b; 68:976–984. [PubMed: 17132843]

Nalpas B, Yguel J, Fleury B, Martin S, Jarraud D, Craplet M. Pathological gambling in treatment-seeking alcoholics: a national survey in France. Alcohol and Alcoholism. 2011; 46:156–160. [PubMed: 21245061]

O'Brien C. Addiction and dependence in DSM-V. Addiction. 2011; 106:866–867. [PubMed: 21477226]

Orford J, Sposton K, Erens B. SOGS and DSMIV in the British Gambling Prevalence Survey: reliability and facture structure. International Gambling Studies. 2003; 3:53–65.

Petry, NM. Pathological gambling: Etiology, comorbidity and treatment. Washington, DC: American Psychological Association Press; 2005.

Petry NM. Should the scope of addictive behaviors be broadened to include pathological gambling? Addiction. 2006; 101:152–160. [PubMed: 16930172]

Petry NM. Pathological gambling and the DSM-5. International Gambling Studies. 2010; 10:113–115.

Petry NM, Ammerman Y, Bohl J, Doersch A, Gay H, Kadden R, Steinberg K. Cognitive-behavioral therapy for pathological gamblers. Journal of Consulting and Clinical Psychology. 2006; 74:555–567. [PubMed: 16822112]

Petry NM, Blanco C, Stinchfield R, Volberg R. An empirical evaluation of proposed changes for gambling diagnosis in the DSM-5. Addiction. (in press). in press.

Petry NM, Steinberg K. The Women's Problem Gambling Research Group. Childhood trauma and abuse histories in male and female pathological gamblers. Psychology of Addictive Behaviors. 2005a; 19:226–229. [PubMed: 16011396]

Petry NM, Stintson FS, Grant BF. Comorbidity of DSM-IV pathological gambling and psychiatric disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. The Journal of Clinical Psychiatry. 2005b; 66:564–574. [PubMed: 15889941]

Petry NM, Weinstock J, Ledgerwood D, Morasco B. A randomized trial of brief interventions for problem and pathological gamblers. Journal of Consulting and Clinical Psychology. 2008; 76:318–328. [PubMed: 18377127]

Petry NM, Weinstock J, Morasco BJ, Ledgerwood DM. Brief motivational interventions for college student problem gamblers. Addiction. 2009; 104:1569–1578. [PubMed: 19686527]

Potenza MN, Leung HC, Blumberg HP, Peterson BS, Fulbright RK, Lacadie CM, Gore JC. An fMRI Stroop task study of ventromedial prefrontal cortical function in pathological gamblers. American Journal of Psychiatry. 2003; 160:1990–1994. [PubMed: 14594746]

Reuter J, Raedler T, Rose M, Hand I, Gläscher J, Büchel C. Pathological gambling is linked to reduced activation of the mesolimbic reward system. Nature Neuroscience. 2005; 8:147–148.

Slutske WS, Eisen S, True WR, Lyons MJ, Goldberg J, Tsuang M. Common genetic vulnerability for pathological gambling and alcohol dependence in men. Archives of General Psychology. 2000; 57:666–673.

Stinchfield R. Reliability, validity, and classification accuracy of a measure of DSM-IV diagnostic criteria for pathological gambling. American Journal of Psychiatry. 2003; 160:180–182. [PubMed: 12505822]

Stinchfield R, Govoni R, Frisch GR. DSM-IV diagnostic criteria for pathological gambling: reliability, validity, and classification accuracy. American Journal of Addiction. 2005; 14:73–82.

Strong DR, Kahler CW. Evaluation of the continuum of gambling problems using the DSM-IV. Addiction. 2007; 102:713–721. [PubMed: 17493106]

Tao R, Huang X, Wang J, Zhang H, Zhang Y, Li M. Proposed diagnostic criteria for internet addiction. Addiction. 2010; 105:556–564. [PubMed: 20403001]

Toce-Gerstein M, Gerstein DR, Volberg RA. A hierarchy of gambling disorders in the community. Addiction. 2003; 98:1661–1672. [PubMed: 14651495]

Toce-Gerstein M, Gerstein DR, Volberg RA. The NODS-CLiP: a rapid screen for adult pathological and problem gambling. Journal of Gambling Studies. 2009; 25(4):541–555. [PubMed: 19603259]

Volberg RA, Gupta R, Griffiths MD, Olason DT, Delfabbro P. An international perspective on youth gambling prevalence studies. International Journal of Adolescence Medicine and Health. 2010; 22:3–38.

Volberg RA, Munck IM, Petry NM. A quick and simple screening method for pathological and problem gamblers in addiction programs and practices. American Journal of Addiction. 2011; 20:220–227.

Welte JW, Barnes GM, Tidwell MC, Hoffman JH. The prevalence of problem gambling among U.S. adolescents and young adults: results from a national survey. Journal of Gambling Studies. 2008; 24:119–133. [PubMed: 18097737]

Zimmerman M, Chelminski I, Young D. A psychometric evaluation of the DSM-IV pathological gambling diagnostic criteria. Journal of Gambling Studies. 2006; 22:329–337. [PubMed: 17009124]