



Sexual Addiction & Compulsivity

The Journal of Treatment & Prevention

ISSN: 1072-0162 (Print) 1532-5318 (Online) Journal homepage: <http://www.tandfonline.com/loi/usac20>

Addiction Beyond Substances—What's Up with the DSM?

Raju Hajela & Todd Love

To cite this article: Raju Hajela & Todd Love (2017): Addiction Beyond Substances—What's Up with the DSM?, *Sexual Addiction & Compulsivity*, DOI: [10.1080/10720162.2017.1306468](https://doi.org/10.1080/10720162.2017.1306468)

To link to this article: <http://dx.doi.org/10.1080/10720162.2017.1306468>



Published online: 14 Apr 2017.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

Addiction Beyond Substances—What's Up with the *DSM*?

Raju Hajela^a and Todd Love^b

^aAmerican Society of Addiction Medicine, Diagnostic and Descriptive Terminology Action Group, Chevy Chase, Maryland; ^bSociety for the Advancement of Sexual Health, Ardmore, Pennsylvania

ABSTRACT

This commentary addresses major issues around the diagnosis of addiction with its myriad manifestations, with particular attention to addiction involving Internet use or Internet Addiction (IA). It highlights the inconsistencies and misguided logic used by the American Psychiatric Association (APA) in the *DSM-5*, particularly in regards to their handling of the phenomenon of addictive behaviors related to Internet use. The APA decision to discard the problem of IA in favor of a fabricated diagnosis based on one of its subtypes, Internet Gaming Disorder (IGD), is adding to the confusion rather than guiding proper assessment and treatment. It is essential that health care providers be more attentive to the needs of patients/clients who have addiction that may involve substances and/or other pathological behaviors, especially related to Internet use.

We continue to be concerned about the *Diagnostic & Statistical Manual of Mental Disorders*, Version 5 (*DSM-5*) remaining a standard in psychological or psychiatric assessments as it contains inconsistencies, contradictions, and perpetuation of focus on diagnostic nomenclature that is out of step with the current research and practice, especially in the field of Addiction Medicine. The Love, Laier, Brand, Hatch, and Hajela (2015) review does a solid job of illustrating the substantial research in support of Internet Addiction (IA), as well as its subtype Internet Pornography Addiction (IPA). We believe, however, that it is important to more fully articulate the illogic and inconsistencies demonstrated by the APA in the *DSM-5* (American Psychiatric Association [APA], 2013). As such, we herein offer some thoughts to guide health care providers in maintaining clarity related to addiction and its myriad manifestations involving substances and/or pathological behaviors, especially involving various aspects of Internet use, where gaming and pornography are significantly problematic subsets.

Although many attempt to claim otherwise, by taking advantage of the APA's (2013, p. 481) inconsistent language within the *DSM-5* ("Thus, groups of repetitive

behaviors, which some term behavioral addictions ... are not included because at this time...” the APA does in fact acknowledge the phenomenon of addictive behaviors. This can also be seen through multiple examples surrounding the DSM-5, such as the creation of a “Non-Substance-Related Disorders” subchapter within the “Substance Related and Addictive Disorders” chapter. In further support of the APA’s implicit acknowledgement of the existence of “behavioral addictions,” the APA (2013, p. 481) moved Gambling Disorder (GD), which was formerly named Pathological Gambling, to the newly formed subchapter, based on its “reflecting evidence that gambling behaviors activate reward systems similar to those activated by drugs of abuse and produce some behavioral symptoms that appear comparable to those produced by the substance use disorders.” We agree with this decision and statement, as the neuroscience research illustrated within the Love et al. (2015) review highlights the common pathological features among various behaviors that are part of addiction.

Additionally, in the introduction to the Internet Gaming Disorder (IGD) diagnosis within “Section III—Conditions for Further Study” of the DSM-5, the APA (2013, pp. 796–797) stated in the “Associated Features Supporting Diagnosis” section of IGD: “Individuals with compulsive Internet gaming have demonstrated brain activation in specific regions triggered by exposure to the Internet game but not limited to reward system structures.” We also agree with this statement, as it too is supported by large amounts of neuroscientific research illustrated within the Love et al. (2015) review. Nevertheless, the APA made the aforementioned categorical statement discounting the existence of Behavioral Addictions. Somewhat confusingly, that statement was made immediately after stating that some behaviors *are* addictive, gambling in particular, and then further adding IGD to DSM-5. Put together, this creates an illogic that raises the following question: Do “behavioral addictions” exist in the psychiatric world or do they not?

APA (2013, p. 481) stated that “...’insufficient peer-reviewed evidence to establish the diagnostic criteria and course descriptions’ was the reason for the disallowance of ‘behavioral addictions.’” Looking beyond the fact that this statement indicates a prioritized importance of a criteria based and phenomenologically oriented qualification process, this appears to be a perplexing requirement considering the diagnostic criteria for GD are the essentially the same as those proposed for other addictive behaviors (Goodman, 2001; Griffiths, 2005; Hagedorn, 2009; Potenza, 2006). The statement in its entirety is somewhat nonsensical given that the disorders the APA referenced (sex addiction, exercise addiction, and shopping addiction) are all diagnoses that were never actually proposed for consideration or inclusion in DSM-5. The use of this standard becomes particularly problematic when one considers the fact that the many of the criteria for IGD were taken verbatim from the established criteria for Internet Addiction (IA), with the addition of the word “gaming.” Otherwise, the use of these standards to exclude IA in favor of IGD appears uninformed at best and disingenuous at worst.

The justification of favoring a diagnosis of IGD over IA based on a “considerable literature” is equally problematic and illogical. The subjective phrase “considerable literature” is impossible to decipher, as there is no formal standard offered. While there is indeed a considerable literature of studies accrued IGD, the Love et al, (2015) review has illustrated that there is a similarly considerable literature for IA itself, as well as its other proposed subtypes. In support of their “considerable literature” statement, the APA (2013, p. 796) went on to state that the DSM-5 work group reviewed over 240 articles on the topic of IGD, finding “some behavioral similarities of Internet gaming to gambling disorder and to substance use disorders.” While it is true that hundreds of articles have been published, and that similarities among internet gaming, gambling, and addiction involving substances have been established, the overall accuracy of their claimed research is questionable. This is due to the widespread conflation of the problem of IA with its subtype of IGD. In addition to the overt statement to this effect (“Internet gaming disorder (also commonly referred to as Internet use disorder, Internet addiction, or gaming addiction) has merit as an independent disorder”) this problem can be seen in the choice of references presented to support the diagnosis. Of the 14 references listed in the IGD section, 13 were to peer-reviewed journals (Du et al., 2011; Fu, Chan, Wong, & Yip, 2010; Han, Hwang, & Renshaw, 2010; Kim et al., 2011; Ko, Yen, Chen, Chen, & Yen, 2005; Shek, Tang, & Lo, 2009; Tao et al., 2010; Tsitsika et al., 2011; Van Rooij, Schoenmakers, Vermulst, Van den Eijnden, & Van de Mheen, 2011; Weinstein & Lejoyeur, 2010; Widyanto, Griffiths, & Brunnsden, 2011; Yuan et al., 2011; Zhou et al., 2011), and one was a reference to a pop-culture magazine article *Wired*) about IA in China (Stewart, 2010). Among the peer-reviewed articles, only three articles are actually specifically focused on IG (Du et al., 2011; Han et al., 2010; Van Rooij et al., 2011). Of the 10 remaining articles, four studies refer to gaming as one of three subtypes of IA (Kim et al., 2011; Shek et al., 2009; Tao et al., 2010; Weinstein & Lejoyeux, 2010; Zhou et al., 2011), one references gaming as one of ten subtypes (Widyanto et al., 2011), three make use of the terms “game” and “gaming” interwoven with other internet related terms such as “gambling” and “pornography” (Fu et al., 2010; Tsitsika et al., 2011; Yuan et al., 2011), and two refer to “Internet use” generally with no subtypes (Fu, Chan, Wong, & Yip, 2010; Ko, Yen, Chen, Chen, et al., 2005).

In another statement further illustrating their disconnect with the reality of the problem, the APA referenced a social component as unique and essential to IGD, “The essential feature of Internet gaming disorder is persistent and recurrent participation in computer gaming, typically group games, ... activities that include a significant aspect of social interactions during play. Team aspects appear to be a key motivation” (APA, 2013a, p. 797). The acknowledgement of the importance of social interaction and variable reinforcement is in no way unique to internet gaming. Indeed, Young emphasized cybersex and cyber-relationships as two factors in her initial list of subtypes for IA (Young, 1998). Davis (2001) also listed cybersex as a manifestation of Specific Problematic Internet Use (SPIU). Tsitsika et al.

(2011) (whose study was cited by the APA as an IGD specific reference) found online social networks, gambling, role-play games, and pornography viewing all to be risk factors for IA. Further, Meerkerk, Eijnden, & Garretsen (2006) investigated 11 potential activities in which people engage on the internet. The authors found gaming and erotica (pornography) to be primary uses of the internet using a cross-sectional analysis. Employing a longitudinal analysis, however, erotica was the strongest predictor of IA. Kim et al. (2011) (another study cited by the APA as an IGD specific reference) stated “The IAD subjects used the Internet almost every day, and spend more than 8 hours ... every day in front of the monitor, mostly for chatting with cyber friends, playing online games, and watching online pornographies or adult movies.” Finally, the influence of social interaction is inherent in the concept of social networking/Facebook (Emre & İŞBULAN, 2012; Karaiskos, Tzavellas, Balta, & Paparrigopoulos, 2010; Kittinger, Correia, & Irons, 2012; Koc & Gulyagci, 2013; Kuss & Griffiths, 2011; Milošević-Orđević & Žeželj, 2014; Rosen, Whaling, Rab, Carrier, & Cheever, 2013; Salehan & Negahban, 2013; Turel, He, Xue, Xiao, & Bechara, 2014; Weiss & Samenow, 2010). It is thus unsound to use this concept as a delineating factor separating gaming addiction from the other abovementioned “behavioral addictions.”

Considering the fact that although the APA acknowledged the root of the IGD criteria as adapted from Tao et al.’s (2010) proposed diagnosis for IAD, which informally included three subtypes of IA and was itself based on Block’s (2008) proposal for IA, which formally included the same three subtypes (excessive gaming, sexual preoccupations, and e-mail/text messaging; later revised to Social Networking; Potenza, 2014). It is paradoxical and ironic that the APA embraced gaming but explicitly excluded the other two subtypes. It is further perplexing that the criteria presented for diagnosing IGD are based largely on reliable and validated criteria and assessment instruments initially designed for diagnosing IA.

On December 1, 2012, the Trustees of the APA voted on the final version of the DSM-5. IA was formally proposed as a new disorder, but was not included. Instead, behind closed doors, the APA created a diagnosis of IGD, originally intended to be a subtype of IA. This diagnosis was never formally proposed and the professional community was not afforded the opportunity to provide feedback and commentary on the new diagnosis. As to why IA itself was not included, the totality of factors points towards three possible rationales.

It can be logically speculated that a representative argument for the change in diagnosis may have been the “delivery mechanism argument” (Kim & Kim, 2010; King & Delfabbro, 2013; Starcevic, 2013). This argument holds that the Internet is only a delivery mechanism for other forms of media, and one cannot be addicted to a delivery mechanism. An analogy was made that alcoholics are not addicted to bottles. This speculation is supported by the fact that the larger diagnosis, Internet Use Disorder (IUD), was reworked into the more content specific diagnosis of IGD. This matches Davis’ (2001) original concept of SPIU, as well as Brand, Young, and Laier’s (2014) updated version of Specific Internet Addiction (SIA).

This also matches Griffiths proposed differentiation between “addictions *to* the Internet” and “addictions *on* the Internet” (Griffiths, King, & Demetrovics, 2014).

However, the “delivery mechanism argument” could be considered moot as it is well known with pathological use of substances that needle use in itself is reinforcing or “addicting” such that people feel relief through the stimulus of using a needle even when no drug is delivered; and different routes of ingestion become part of addiction as the disease progresses such that a person with addiction can be triggered by watching the ingestion behavior regardless of the substance being consumed. If the delivery mechanism argument was indeed the concern of the APA, however, a more straightforward and logical decision would have been to retain the proposed diagnosis of IA and simply *require* subtypes, such as gaming, pornography, social networking, shopping, etc. The exact same criteria, references, and most of the wording currently listed for IGD could have been kept, with only the word “behavior” used in lieu of the word “gaming.” The concern of becoming addicted to a delivery mechanism would be removed, and scientific progress could continue into the broad range of potentially problematic behaviors involving Internet use. This would also be analogous to the umbrella term Substance Use Disorder with subsequent delineation of specific substances such as Alcohol Use Disorder, Cocaine Use Disorder, and Cannabis Use Disorder.

In and about the DSM-5, the APA made decisions and statements that cannot be defended scientifically and instead suggest social politics may have been at the root of their decisions. For example, as Love et al. (2015) illustrated, the American Society of Addiction Medicine (ASAM) released a new highly scientific and very specific formal definition of addiction in 2011, which not only pronounced addiction as a medical disorder, but also explicitly referenced the concept of behaviors as addictive (ASAM, 2011). Prior even to this, Vice President Joe Biden and leading addiction neuroscientist Nora Volkow proposed the “Recognizing Addiction as a Disease Act of 2007” in an attempt to rename the National Institute on Drug Abuse to the National Institute on Diseases of Addiction in effort to represent the fact that the disease at hand is broader than just exogenous chemical issues. Despite this progress advanced by such organizations and top experts in the field, the APA explicitly disavowed both the word “addiction” and the category of “behavioral addictions” in the DSM-5. It can only be speculated as to whether the APA requires more stringent evidence for the acknowledgement of medical disorders than does a specialty group such as ASAM, or if there is another unspoken standard, reason, or issue at play.

Further support for the social politics conclusion emerges when looking through the lens of the decision to avoid the use of the term “addiction,” which is identified by ASAM as a brain disease. The DSM-5 acknowledges the role of neuroscience, yet insists on a classification system that identifies behavioral disorders, including some, yet denying others. Although proposed for inclusion in the DSM-5, addiction was voted out. Charles O’Brien, (DSM-5 Substance Use Disorders Work Group chair) published an article supporting the decision.

Some working-group members voted in favor of a return to the use of the word “addiction” because the word has become so commonplace in recent years and does not seem pejorative to them. The media has stories about “addiction to oil” and women wear tee-shirts emblazoned with “addiction to pink” or to shopping, etc. Of course, connotations of words change with time and culture; we acknowledge that there are no current studies that can be cited on whether the choice of labels might be pejorative. Because some scientists remain opposed to the use of the word “addiction,” we proposed a compromise. The proposed label in DSM-V is now called “substance use disorder.” (O’Brien, 2011, pp. 866–867)

In hindsight, this statement indicates peer and public pressure as the potential motivation for the DSM-5 Work Group’s backing away from the medical term addiction. Beyond the irony that this statement was published in the scholarly journal named *Addiction*, this decision and statement is inconsistent with O’Brien’s previous claim that the DSM-III-R’s Substance Abuse committee made a “serious mistake” with their decision to omit Addiction as a diagnostic category in the DSM-III-R (O’Brien, Volkow, & Li, 2006). In that article, the authors stated, “In the case of substance use disorders, the medical world drastically needs a change in labeling. Addiction is a perfectly acceptable word.”

Further examples of the influence of social politics on the book can be seen longitudinally, such as the addition and subsequent removal of homosexuality as a mental disorder in the 1970s, to newer scandals, such as child psychiatrist Joseph Biederman’s receipt of \$1.6 million from drug companies in the late 90s/early 2000s to promote the diagnosis of childhood bipolar disorder and encourage medications for its treatment. In his book documenting the development of the DSM-5, Greenburg (2013) highlighted the increasingly negative interactions between the DSM-5 Task Force leadership and Robert Spitzer, the DSM-III Task Force chair (who was denied access to DSM-5 committee meeting minutes despite their public claims of transparency).

Allen Frances, chair of the DSM-IV Task Force, has also been an outspoken critic of the DSM-5 (Frances, 2012a, 2012b, 2013), repeatedly accusing the APA of “diagnostic inflation,” “diagnostic imperialism,” and claims the APA holds an unfair monopolistic control over the development and formalization of the diagnostic nosology and criteria sets (Frances, 2012a). In support of his statements, Frances has referenced the formal concerns voiced by the American Counseling Association, British Psychological Society (BPS), and 16 divisions of the American Psychological Association (unified concern letter). Sadly, none of these formal concern letters resulted in changes to the DSM-5 development or outcome. Frances also referenced international calls for a DSM-5 boycott from Australia, England, France, Italy, and Spain.

One controversy of particular note is the public resignation of two members of the DSM-5 Personality Disorders Work Group, who articulated their reasons in an email sent to the chair of the DSM-IV Task Force (Frances, 2012b):

Personality Disorders Work Group ... demonstrated an inability to respond to constructive feedback both from within the Work Group and from the many experts in the field ... Early on in the DSM-5 process, we developed major concerns ... We did not resign earlier because we continued to cherish the hope that eventually science and common sense would prevail ... it became apparent that it was not going to happen.... the proposal displays a truly stunning disregard for evidence. Important aspects of the proposal lack any reasonable evidential support of reliability and validity. This creates the untenable situation of the Work Group advancing a taxonomic model that it has acknowledged in a published article to be inconsistent with the evidence.... For these and other reasons, we felt that the only honest course of action was to resign from the Work Group. (Verheul & Livesley, as quoted by Frances, 2012b)

Note that these authors are not specifically referring to dysfunction within the Substance Use Disorders Work Group, however, their statements may be taken as theoretical indicators of the overall dysfunction and potential lack of scientific integrity found throughout the DSM-5 development process.

A final possible explanation for the above issues may be as simple as poor research, logic, and editing. Some of the APA's logic is illogical. For example, they stated there was not enough research to include IA but there was enough research to include IGD. They then primarily cited research on IA to support this position. This is somewhat akin to rejecting A, claiming $A \neq B$ where B is a subset of A, and legitimizing B. Equally illogical and inconsistent is the fact that the APA simultaneously acknowledged and denied addiction as a medical concept, as well as "behavioral addictions" as a valid category within the spectrum of addictive disorders, and did so obliquely within their chapter on Substance-Related and *Addictive* Disorders. Further, they include IGD and GD.

Perhaps the most unexpected example is the statement made by the APA in the "Risk and Prognostic Factors" section of the IGD diagnosis in the DSM-5 "Genetic and physiological: Adolescent males seem to be at greatest risk of developing Internet gaming disorder, and it has been speculated that Asian environmental and/or genetic background is another risk factor, but this remains unclear." Somehow, the APA managed to explicitly state that Asians may be genetically predisposed to develop IGD! Of the hundreds of articles reviewed by the second author of this paper, such a claim has never been intimated, much less explicitly stated. Perhaps the APA intended to reference the Asian culture as an environmental risk factor rather than as a genetic risk factor. Unfortunately, the only environmental risk factor listed is: "Computer availability with Internet connection [sic] allows access to the types of games with which Internet gaming disorder is most often associated" (APA, 2013, p. 797). Put together, the APA formally postulated that adolescent Asian males with Internet connected computers are the most likely persons to develop this disorder. This is an embarrassment to the entire field of mental health, and one expects better editing from a publication that cost \$25 million to produce. This in itself serves as de facto evidence of poor research and/or editing.

The APA (2013, p. 783) formally outlined the benefits of a diagnosis being included in Section III of the DSM in the introduction to the "Conditions for

Further Study” chapter, in which they stated, “Proposed criteria sets are presented for conditions on which future research is encouraged... and are intended to provide a common language for researchers and clinicians who are interested in studying these disorders.” This common language acknowledged by the APA as necessary for IGD’s transition from Section III to Section II of the DSM is desperately needed for all variants of IA, specifically to capture the growing problems related to the use of the Internet for gambling, pornography, sexual acting out etc. Researchers investigating IGD should follow the model put forth by some Asian researchers of explicitly acknowledging IGD as a subtype of IA, rather than simply accepting the APA’s attempt to cherry-pick a subtype of the larger disorder (Potenza, 2014). It is essential to keep in mind the ASAM definition of addiction which posits that the disease of addiction is primary and chronic, as it involves brain reward, motivation, memory, and related circuitry. It may manifest in terms of pathological pursuit of reward and/or relief with the use of substances and other behaviors. Future research is particularly needed for IPA, as logic dictates that the compulsive over-use of pornography is an example of behavioral addiction. The same amount of research being conducted into IGD is called for in the case of IPA as well. More holistic assessment is needed in research and treatment that includes all aspects of addiction that are a reflection of problems in brain function, rather than over focus on specific behaviors at the expense of excluding issues that may continue to be a problem for the individuals affected.

While addiction involving the internet has been acknowledged outside the United States with language as severe as “public health crisis,” the APA appears to deny its existence overtly, while acknowledging a single subtype. For example, the APA acknowledgment of only video games on the internet as potentially addictive is contributing to the problem they purport to provide guidance to resolve. In other words, without acknowledgement in the DSM, the overall assessment and treatment of IA and its various subtypes will have limited access to the funds needed to provide sufficient research results to establish the validity and proper treatment of the addictive disorders that fall under the broad umbrella of the disease of addiction. As such, the APA has currently created an unnecessarily difficult circle to enter.

Ko et al. (2014) published a study wherein they validated the diagnostic accuracy of the DSM-5 criteria for IGD (although they suggested adding craving as an additional element). In their conclusion, these authors stated that it is impractical to further define each addictive activity (pornography, social networking, etc.) on the Internet as a distinct disorder, as opposed to subtypes of a larger disorder. This is unfortunately exactly what the APA has proposed:

Excessive use of the Internet not involving playing of online games (e.g., excessive use of social media, such as Facebook; viewing pornography online) is not considered analogous to Internet gaming disorder, and future research on other excessive uses of the Internet would need to follow similar guidelines as suggested herein.

ASAM clearly stated that all aspects of addiction are about common problems in the brain circuits, not the differences in substance(s) or content or behavior(s) (ASAM, 2011). Thus, based on expert opinion and the findings reviewed within the Love et al. (2015) paper, it is illogical that the APA explicitly disavowed some pathological Internet behaviors while allowing others. This decision and statement is neither logically sound, nor consistent with existing and emerging scientific evidence. By this logic, viewing IP excessively and playing Internet games excessively are substantively different, despite substantial overlap in activation of the reward system of the brain, and despite the potential for the exhibition of similar psychosocial behaviors and psychosocial consequences. This is, “biologically and behaviorally inconsistent” (Hilton, 2013).

The misunderstanding of addiction neuroscience can be further seen in the DSM-5’s Diagnostic Features section for IGD wherein they referenced group and team aspects as key features of the disorder. By this logic, abusing substances in a bar or at a party can constitute substance abuse, but abusing substances while alone does not. To make an Internet-related analogy, this logic dictates that someone playing World of Warcraft excessively is addicted, but someone playing Candy Crush excessively is not. The APA’s dismissal of established science in favor of opinions is what appears to have led the NIMH to move away from basing research on DSM categories, and instead to substitute their own more scientifically based research standards (Insel et al., 2013).

We urge the research and treatment communities to be more rigorous and consistent so the populations affected by addiction receive better, more holistic assessments that would guide better treatment and follow-up in the context of addiction as a chronic disease rather than the current focus on one or more behavioral disorders that may or may not be controlled, while other aspects of addiction remain unaddressed.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders, fifth edition (DSM-V)*. Arlington, VA: Author.
- American Society of Addiction Medicine. (2011). Public policy statement: Definition of addiction. Retrieved from www.asam.org/research-treatment/definition-of-addiction
- Block, J. J. (2008). Issues for DSM-V: Internet addiction. *American Journal of Psychiatry*, 165, 306–307. doi:10.1176/appi.ajp.2007.07101556
- Brand, M., Young, K. S., & Laier, C. (2014). Prefrontal control and Internet addiction: A theoretical model and review of neuropsychological and neuroimaging findings. *Frontiers in Human Neuroscience*, 8, 375. doi:10.3389/fnhum.2014.00375
- Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. *Computers in Human Behavior*, 17, 187–195.
- Du, W., Liu, J., Gao, X., Li, L., Li, W., Li, X., ... Zhou, S. (2011). [Functional magnetic resonance imaging of brain of college students with Internet addiction]. *Zhong Nan Da Xue Xue Bao Yi Xue Ban*, 36, 744–749. doi:10.3969/j.issn.1672-7347.2011.08.008
- Emre, Ç., & İşbulan, O. (2012). A new addiction for teacher candidates: Social networks. *TOJET*, 11(3), 14–19.

- Frances, A. (2012a). *DSM-5 is a guide, not a Bible—Simply ignore its 10 worst changes*. Retrieved from <http://www.psychiatrictimes.com/blogs/dsm-5/dsm-5-guide-not-bible—simply-ignore-its-10-worst-changes>
- Frances, A. (2012b). *Two who resigned from DSM-5 explain why*. Retrieved from <http://www.psychologytoday.com/blog/dsm5-in-distress/201207/two-who-resigned-dsm-5-explain-why>
- Frances, A. (2013). *Saving normal: An insider's revolt against out-of-control psychiatric diagnosis, DSM-5, big pharma and the medicalization of ordinary life*. New York, NY: HarperCollins.
- Fu, K. W., Chan, W. S., Wong, P. W., & Yip, P. S. (2010). Internet addiction: Prevalence, discriminant validity and correlates among adolescents in Hong Kong. *British Journal of Psychiatry*, 196, 6.
- Goodman, A. (2001). What's in a name? Terminology for designating a syndrome of driven sexual behavior. *Sexual Addiction & Compulsivity*, 8, 191–213. doi:10.1080/107201601753459919
- Greenberg, G. (2013). *The book of woe: The DSM and the unmaking of psychiatry*. New York, NY: Penguin.
- Griffiths, M. (2005). A “components” model of addiction within a biopsychosocial framework. *Journal of Substance Use*, 10, 191–197. doi:10.1080/14659890500114359
- Griffiths, M. D., King, D. L., & Demetrovics, Z. (2014). DSM-5 Internet gaming disorder needs a unified approach to assessment. *Neuropsychiatry*, 4, 1–4. doi:10.2217/NPY.13.82
- Hagedorn, W. B. (2009). The call for a new Diagnostic and Statistical Manual of Mental Disorders diagnosis: Addictive disorders. *Journal of Addictions & Offender Counseling*, 29, 110–127. doi:10.1002/j.2161-1874.2009.tb00049.x
- Han, D. H., Hwang, J. W., & Renshaw, P. F. (2010). Bupropion sustained release treatment decreases craving for video games and cue-induced brain activity in patients with Internet video game addiction. *Experimental and Clinical Psychopharmacology*, 18, 297–304. doi:10.1037/a0020023
- Hilton, D. L. (2013). Pornography addiction—A supranormal stimulus considered in the context of neuroplasticity. *Socioaffective Neuroscience & Psychology*, 3. doi:10.3402/snp.v3i0.20767
- Insel, T., Cuthbert, B., Garvey, M., Heinssen, R., Pine, D. S., Quinn, K., ... Wang, P. (2010). Research domain criteria (RDoC): Toward a new classification framework for research on mental disorders. *American Journal of Psychiatry*, 167, 748–751. doi:10.1176/appi.ajp.2010.09091379
- Karaikos, D., Tzavellas, E., Balta, G., & Paparrigopoulos, T. (2010). P02-232-Social network addiction: A new clinical disorder? *European Psychiatry*, 25, 855.
- Kim, M. G., & Kim, J. (2010). Cross-validation of reliability, convergent and discriminant validity for the problematic online game use scale. *Computers in Human Behavior*, 26, 389–398.
- Kim, S. H., Baik, S. H., Park, C. S., Kim, S. J., Choi, S. W., & Kim, S. E. (2011). Reduced striatal dopamine D2 receptors in people with Internet addiction. *Neuroreport*, 22, 407–411. doi:10.1097/WNR.0b013e328346e16e
- King, D. L., & Delfabbro, P. H. (2013). Issues for DSM-5: Video-gaming disorder? *Australian and New Zealand Journal of Psychiatry*, 47, 20–22.
- Kittinger, R., Correia, C. J., & Irons, J. G. (2012). Relationship between Facebook use and problematic Internet use among college students. *Cyberpsychology Behavior Social Network*, 15, 324–327. doi:10.1089/cyber.2010.0410
- Ko, C. H., Yen, J. Y., Chen, C. C., Chen, S. H., & Yen, C. F. (2005). Proposed diagnostic criteria of Internet addiction for adolescents. *Journal of Nervous and Mental Disorders*, 193, 728–733. doi:10.1097/01.nmd.0000185891.13719.54
- Ko, C.-H., Yen, J.-Y., Chen, S.-H., Wang, P.-W., Chen, C.-S., & Yen, C.-F. (2014). Evaluation of the diagnostic criteria of Internet gaming disorder in the DSM-5 among young adults in Taiwan. *Journal of Psychiatric Research*, 53, 103–110.

- Koc, M., & Gulyagci, S. (2013). Facebook addiction among Turkish college students: The role of psychological health, demographic, and usage characteristics. *Cyberpsychology, Behavior, and Social Networking*, 16, 279–284. doi:10.1089/cyber.2012.0249
- Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—A review of the psychological literature. *International Journal of Environmental Research and Public Health*, 8, 3528–3552. doi:10.3390/ijerph8093528
- Love, T., Laier, C., Brand, M., Hatch, L., & Hajela, R. (2015). Neuroscience of Internet pornography addiction: A review and update. *Behavioral Science (Basel)*, 5, 388–433. doi:10.3390/bs5030388
- Meerkerk, G.-J., Eijnden, R. J. V. D., & Garretsen, H. F. (2006). Predicting compulsive Internet use: It's all about sex! *CyberPsychology & Behavior*, 9, 95–103. doi:10.1089/cpb.2006.9.95
- Milošević, I., & Žeželj, I. L. (2014). Psychological predictors of addictive social networking sites use: The case of Serbia. *Computers in Human Behavior*, 32, 229–234.
- O'Brien, C. (2011). Addiction and dependence in DSM–V. *Addiction*, 106, 866–867. doi:10.1111/j.1360-0443.2010.03144.x
- O'Brien, C. P., Volkow, N., & Li, T. K. (2006). What's in a word? Addiction versus dependence in DSM-V. *American Journal of Psychiatry*, 163, 764–765. doi:10.1176/appi.ajp.163.5.764
- Potenza, M. N. (2006). Should addictive disorders include non–substance–related conditions? *Addiction*, 101, 142–151. doi:10.1111/j.1360-0443.2006.01591.x
- Potenza, M. N. (2014). Non-substance addictive behaviors in the context of DSM-5. *Addiction and Behavior*, 39, 1–2. doi:10.1016/j.addbeh.2013.09.004
- Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. A. (2013). Is Facebook creating “iDisorders”? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior*, 29, 1243–1254. doi:10.1016/j.chb.2012.11.012
- Salehan, M., & Negahban, A. (2013). Social networking on smartphones: When mobile phones become addictive. *Computers in Human Behavior*, 29, 2632–2639.
- Shek, D. T., Tang, V. M., & Lo, C. Y. (2009). Evaluation of an Internet addiction treatment program for Chinese adolescents in Hong Kong. *Adolescence*, 44, 359–373.
- Starcevic, V. (2013). Is Internet addiction a useful concept? *Australian and New Zealand Journal of Psychiatry*, 47, 16–19.
- Stewart, C. S. (2010). Obsessed with the Internet: A tale from China. *Wired*, 01/13/2010.
- Tao, R., Huang, X., Wang, J., Zhang, H., Zhang, Y., & Li, M. (2010). Proposed diagnostic criteria for Internet addiction. *Addiction*, 105, 556–564. doi:10.1111/j.1360-0443.2009.02828.x
- Tsitsika, A. E. C. A. L., Janikian, M., Freskou, A., Marangou, E., ... Kafetzis, D. (2011). Determinants of Internet addiction among adolescents: A case-control study. *Scientific World Journal*, 11, 8.
- Turel, O., He, Q., Xue, G., Xiao, L., & Bechara, A. (2014). Examination of neural systems subserving Facebook “addiction.” *Psychological Report*, 115, 675–695. doi:10.2466/18.PR0.115c31z8
- Van Rooij, A. J., Schoenmakers, T. M., Vermulst, A. A., Van den Eijnden, R. J., & Van de Mheen, D. (2011). Online video game addiction: Identification of addicted adolescent gamers. *Addiction*, 106, 205–212. doi:10.1111/j.1360-0443.2010.03104.x
- Weinstein, A., & Lejoyeux, M. (2010). Internet addiction or excessive Internet use. *American Journal of Drug and Alcohol Abuse*, 36, 6.
- Weiss, R., & Samenow, C. P. (2010). Smart phones, social networking, sexting and problematic sexual behaviors—a call for research. *Sexual Addiction & Compulsivity*, 17, 241–246.
- Widyanto, L., Griffiths, M. D., & Brunsden, V. (2011). A psychometric comparison of the Internet Addiction Test, the Internet-Related Problem Scale, and self-diagnosis. *Cyberpsychology, Behavior, and Social Networking*, 14, 141–149. doi:10.1089/cyber.2010.0151

- Young, K. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior*, 1, 237–244.
- Yuan, K., Qin, W., Wang, G., Zeng, F., Zhao, L., Yang, X., ... Tian, J. (2011). Microstructure abnormalities in adolescents with Internet addiction disorder. *PLoS One*, 6, e20708. doi:10.1371/journal.pone.0020708
- Zhou, Y., Lin, F. C., Du, Y. S., Qin, L. D., Zhao, Z. M., Xu, J. R., & Lei, H. (2011). Gray matter abnormalities in Internet addiction: A voxel-based morphometry study. *European Journal of Radiology*, 79, 92–95. doi:10.1016/j.ejrad.2009.10.025