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## COMMENTARY



# Applying fairness in labeling various types of internet use disorders

## Commentary on How to overcome taxonomical problems in the study of internet use disorders and what to do with “smartphone addiction”?

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### ABSTRACT

We comment on arguments about internet and smartphone use disorders by Montag, Wegmann, Sariyska, Demetrovics, and Brand (2020). Although not currently official diagnoses, we emphasize that for some individuals, excessive internet/smartphone use can have dangerous consequences. We discuss the challenges with ICD-11 codifying only internet gaming as an internet use-related disorder, neglecting other types of excessive internet users. Montag et al.'s approach to classifying a broader range of internet use disorders seems more fair than the current system in aiding individuals needing treatment resources for excessive internet use.

### KEYWORDS

internet addiction, smartphone addiction, internet gaming disorder

Is excessive use of the internet or a smartphone a clinically diagnosable disorder? The answer is an unequivocal “No” – at the present time. Neither the ICD-11 nor DSM-5 currently includes diagnoses specifically for Internet Use Disorder or Smartphone Use Disorder. It is important not to overpathologize everyday life activities, such as using a smartphone or the internet (Panova & Carbonell, 2018) – in which the vast majority of people in the world engage frequently (Poushter, Bishop, & Chwe, 2018). We reserve diagnosing pathological behavior for truly atypical behaviors that are not common in society.

However, for some people (not the majority), excessive use or overuse of the internet or their smartphones is a significant concern that adversely affects their lives. For this minority of people, the combination of high use frequency and the specific dangerous or maladaptive consequences of their use is a real, observable significant issue.

As pointed out by Montag, Wegmann, Sariyska, Demetrovics, and Brand (in press), excessive internet or smartphone use can result in being inattentive in traffic which can lead to dangerous motor vehicle and pedestrian accidents (Cazzulino, Burke, Muller, Arbogast, & Upperman, 2014; Kita & Luria, 2018). In fact, increased internet technology use among adolescents in the early to mid-2010s has been linked with subsequent higher rates of depression, self-harm, and suicide attempts (Twenge, 2019). Such overuse also has health consequences such as skipping meals due to overuse, poor physical activity, sleep problems, neck, and hand pain (Lepp, Barkley, Sanders, Rebold, & Gates, 2013; Liu et al., 2017; Xie, Szeto, Dai, & Madeleine, 2016). Internet overuse can result in lost productivity at work (Duke & Montag, 2017) leading to loss of livelihood if fired, and poor academic outcomes in school

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(Rozgonjuk, Saal, & Täht, 2018; Samaha & Hawi, 2016) which can adversely impact future career success. Such overuse can also result in social interaction impairments and reduced interpersonal intimacy (Dwyer, Kushlev, & Dunn, 2018; Lachmann et al., 2018), as well as neglecting essential daily life activities (Elhai, Rozgonjuk, Alghraibeen, & Yang, *in press*). In fact, interference with work, school or social functioning are by definition functional impairments that are part of nearly every mental disorder's definitional requirements (Uestuen & Kennedy, 2009).

Therefore, although at present neither internet nor smartphone overuse are clinically diagnosable disorders, they are significantly concerning for the minority of individuals engaging in excessive use. As such, excessive internet use is a modern societal problem. The key here is that internet overuse is probably not occurring for most people, but rather only for a small proportion of the population. Just as most people experience sadness at some point in their lives, the majority are not diagnosable with a depressive disorder. However, a minority of people have excessive, clinically significant depressive symptoms, and consequences such as functional impairment, and so this minority of individuals would be diagnosed with a depressive disorder (Ferrari et al., 2013). Similarly, most people use the internet and smartphones daily, but only a minority will experience excessive overuse that adversely affects their functioning. As pointed out by Montag et al. (*in press*), an important line of scientific inquiry is to investigate not only the predisposing trait variables influencing internet overuse, but also specific mechanisms explaining why some at-risk individuals (e.g., depressed persons) will ultimately engage in excessive internet use (Elhai, Yang, & Montag, 2019).

How do we resolve the problem that some people will be adversely affected by internet overuse, when there is no such clinical disorder for which to appropriately seek treatment or health insurance funding? Many researchers investigating excessive internet and smartphone use have been in a quandary, feeling reluctant to refer to the construct as an "addiction" because of no available diagnosis to support such excessive use as an addiction similar to drug or alcohol addictions (Billieux, Maurage, Lopez-Fernandez, Kuss, & Griffiths, 2015; Panova & Carbonell, 2018). In our work, we have been more comfortable referring to excessive smartphone use, for example, as "problematic smartphone use" rather than "smartphone addiction" (Elhai, Levine, & Hall, 2019; Elhai, Yang, et al., 2019). However, we wonder how modifying such terminology has helped this field, or the people suffering from consequences of such excessive use for that matter, in any substantial way other than representing a minor linguistic modification.

This problem of excessive internet and smartphone use being dangerous but not considered a "disorder" is compounded by the fact that Internet Gaming is a disorder in ICD-11 (World Health Organization, 2019, April), and a proposed disorder for future study in DSM-5 (American Psychiatric Association, 2013). Yet, several questions arise. First, why is internet gaming overuse a disorder, but internet or smartphone overuse are not classified as disorders? Is it

sensible that an individual overusing one feature of the internet (gaming) may qualify for a diagnosis, but overusing a different feature such as social networking or online shopping does not? Is it reasonable that the ICD-11/DSM-5 authors believed that excessive gaming can be so severe as to be a full/proposed disorder, but excessive online shopping or pornography cannot be? After all, excessive online shopping, for example, can be financially ruin-some for a minority of individuals, leading to criminal legal problems and long-term financial difficulties (Maraz, Griffiths, & Demetrovics, 2016). Are such legal and financial consequences somehow not as bad as those from internet gaming? Finally, is there really a difference between excessive gaming and excessive online shopping, for example, if the frequency of use and levels of associated functional impairment are the same? DSM-5's authors provided the explanation that aside from internet gaming, other types of internet use do not have an adequate scientific research base, and have limited data on their adverse consequences or functional impairment (discussed in Petry et al., 2014). Yet now based on accumulated data on adverse consequences from other types of internet use (e.g., traffic accidents, physical health problems, work and school impairments, discussed above), and 7 years after DSM-5's publication, we do not find this explanation convincing any longer.

Montag et al. (*in press*) have attempted to resolve these issues through a new classification system. Specifically, they propose a revised taxonomy with an overarching Internet Use Disorders category. And the authors clarify in their taxonomy that the precise type of internet use disorder is important to specify – such as buying/shopping disorder, pornography use disorder, etc. We believe that in light of the diagnostic problems we discussed in the previous paragraph, this taxonomy represents a more fair system. The authors' proposal would prevent unfairly assigning a diagnosis (for example) to an excessive gamer, but not to a similarly distressed excessive shopper. Thus, this taxonomy would level the playing field such that treatment resources and health insurance funding could equally be obtained for excessive gaming as for other types of excessive internet use. We realize that this is not currently the diagnostic structure or definition inherent in ICD-11 or DSM-5, but the authors' proposal is reasonable and fair, and should be considered in the future.

Montag et al. (*in press*) also raise the point that the specific device, such as the smartphone, is not one of these types of internet use disorders because a smartphone is not a behavior – rather, it is a physical product. After all, we do not conceptualize that someone with alcohol use disorder has a problem with bottles and flasks; we conceptualize that their problem is with the drinking of alcohol and its effects on the individual. Similarly, as pointed out by Montag et al. (*in press*), the problem with internet overuse is with the behavior itself, rather than the electronic device. The authors rightly distinguish for each of these behaviors whether the behavior is done in a primarily mobile or non-mobile manner. This is a helpful level of granularity that is missing from diagnosis and conceptualization currently.

Is the level of granularity suggested by the authors important? Why not just use “internet use disorder” to describe someone’s diagnosis? The authors present a compelling case that such specificity is important – as a contextual issue. Knowing that a person not only engages in excessive gaming but also on mobile devices suggests that they may risk using in-app purchases available on phones to unlock content which may further fuel their overuse, and can result in excessive spending of money on such purchases. We further add that knowing if one’s use pattern is mobile or not (including which type of mobile device, as suggested by the authors, such as a smartphone or smartwatch) may provide an indication about whether they are leaving their home (if mobile use) and possibly getting into trouble with distracted driving or pedestrian walking; or (if not mobile) solely staying at home on their desktop computer without socializing in person or engaging in other important daily activity. We agree with this level of specificity because it may be clinically useful and relevant to treatment recommendations and planning. Though we also argue that such granularity should be within reason – we may not need to have a diagnosis such as “internet use disorder, social networks use disorders type, predominantly mobile, Facebook variety, with games and reading political news.”

We appreciate how the authors have used a fair amount of granularity in order to provide adequate detail and context for the target condition. We believe that the authors have retained parsimony, without excessive detail. As the authors claimed, “. . .the way and the context of technology use matter.”

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Outside the scope of the present paper, Dr. Elhai notes that he receives royalties for several books published on posttraumatic stress disorder (PTSD); is a paid, full-time faculty member at University of Toledo; is a paid, visiting scientist at Tianjin Normal University; occasionally serves as a paid, expert witness on PTSD legal cases; and receives grant research funding from the U.S. National Institutes of Health and Department of Defense.

## REFERENCES

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Billieux, J., Maurage, P., Lopez-Fernandez, O., Kuss, D. J., & Griffiths, M. D. (2015). Can disordered mobile phone use be

considered a behavioral addiction? An update on current evidence and a comprehensive model for future research. *Current Addiction Reports*, 2(2), 156–162. <https://doi.org/10.1007/s40429-015-0054-y>.

Cazzulino, F., Burke, R. V., Muller, V., Arbogast, H., & Upperman, J. S. (2014). Cell phones and young drivers: A systematic review regarding the association between psychological factors and prevention. *Traffic Injury Prevention*, 15(3), 234–242. <https://doi.org/10.1080/15389588.2013.822075>.

Duke, E., & Montag, C. (2017). Smartphone addiction, daily interruptions and self-reported productivity. *Addictive Behaviors Reports*, 6, 90–95. <https://doi.org/10.1016/j.abrep.2017.07.002>.

Dwyer, R. J., Kushlev, K., & Dunn, E. W. (2018). Smartphone use undermines enjoyment of face-to-face social interactions. *Journal of Experimental Social Psychology*, 78, 233–239. <https://doi.org/10.1016/j.jesp.2017.10.007>.

Elhai, J. D., Levine, J. C., & Hall, B. J. (2019). The relationship between anxiety symptom severity and problematic smartphone use: A review of the literature and conceptual frameworks. *Journal of Anxiety Disorders*, 62, 45–52. <https://doi.org/10.1016/j.janxdis.2018.11.005>.

Elhai, J. D., Rozgonjuk, D., Alghraibeh, A. M., & Yang, H. (2020). Disrupted daily activities from interruptive smartphone notifications: Relations with depression and anxiety severity and the mediating role of boredom proneness. *Social Science Computer Review*. <https://doi.org/10.1177/0894439319858008> (in press).

Elhai, J. D., Yang, H., & Montag, C. (2019). Cognitive- and emotion-related dysfunctional coping processes: Transdiagnostic mechanisms explaining depression and anxiety’s relations with problematic smartphone use. *Current Addiction Reports*, 6, 410–417. <https://doi.org/10.1007/s40429-019-00260-4>.

Ferrari, A. J., Somerville, A. J., Baxter, A. J., Norman, R., Patten, S. B., Vos, T., et al. (2013). Global variation in the prevalence and incidence of major depressive disorder: A systematic review of the epidemiological literature. *Psychological Medicine*, 43(3), 471–481. <https://doi.org/10.1017/S0033291712001511>.

Kita, E., & Luria, G. (2018). The mediating role of smartphone addiction on the relationship between personality and young drivers’ smartphone use while driving. *Transportation Research Part F: Traffic Psychology and Behaviour*, 59, 203–211. <https://doi.org/10.1016/j.trf.2018.09.001>.

Lachmann, B., Sindermann, C., Sariyska, R. Y., Luo, R., Melchers, M. C., Becker, B., et al. (2018). The role of empathy and life satisfaction in Internet and smartphone use disorder. *Frontiers in Psychology*, 9, 398. <https://doi.org/10.3389/fpsyg.2018.00398>.

Lepp, A., Barkley, J. E., Sanders, G. J., Rebold, M., & Gates, P. (2013). The relationship between cell phone use, physical and sedentary activity, and cardiorespiratory fitness in a sample of U.S. college students. *International Journal of Behavioral Nutrition and Physical Activity*, 10, 79. <https://doi.org/10.1186/1479-5868-10-79>.

Liu, Q.-Q., Zhou, Z.-K., Yang, X.-J., Kong, F.-C., Niu, G.-F., & Fan, C.-Y. (2017). Mobile phone addiction and sleep quality among Chinese adolescents: A moderated mediation model. *Computers in Human Behavior*, 72, 108–114. <https://doi.org/10.1016/j.chb.2017.02.042>.



- Maraz, A., Griffiths, M. D., & Demetrovics, Z. (2016). The prevalence of compulsive buying: A meta-analysis. *Addiction*, 111(3), 408–419. <https://doi.org/10.1111/add.13223>.
- Montag, C., Wegmann, E., Sariyska, R., Demetrovics, Z., & Brand, M. (2020). How to overcome taxonomical problems in the study of Internet Use Disorders and what to do with “smartphone addiction”? *Journal of Behavioral Addictions*. <https://doi.org/10.1556/2006.8.2019.59> (in press).
- Panova, T., & Carbonell, X. (2018). Is smartphone addiction really an addiction? *Journal of Behavioral Addictions*, 7(2), 252–259. <https://doi.org/10.1556/2006.7.2018.49>.
- Petry, N. M., Rehbein, F., Gentile, D. A., Lemmens, J. S., Rumpf, H. J., Mossle, T., et al. (2014). An international consensus for assessing internet gaming disorder using the new DSM-5 approach. *Addiction*, 109(9), 1399–1406. <https://doi.org/10.1111/add.12457>.
- Poushter, J., Bishop, C., & Chwe, H. (2018). *Social media use continues to rise in developing countries but plateaus across developed ones*. PewResearch Internet Project. Retrieved from <http://www.pewglobal.org/2018/06/19/social-media-use-continues-to-rise-in-developing-countries-but-plateaus-across-developed-ones/>.
- Rozgonjuk, D., Saal, K., & Täht, K. (2018). Problematic smartphone use, deep and surface approaches to learning, and social media use in lectures. *International Journal of Environmental Research and Public Health*, 15(1), 92. <https://doi.org/10.3390/ijerph15010092>.
- Samaha, M., & Hawi, N. S. (2016). Relationships among smartphone addiction, stress, academic performance, and satisfaction with life. *Computers in Human Behavior*, 57, 321–325. <https://doi.org/10.1016/j.chb.2015.12.045>.
- Twenge, J. M. (2019). Why increases in adolescent depression may be linked to the technological environment. *Current Opinon in Psychology*, 32, 89–94. <https://doi.org/10.1016/j.copsyc.2019.06.036>.
- Uestuen, B., & Kennedy, C. (2009). What is “functional impairment”? Disentangling disability from clinical significance. *World Psychiatry*, 8(2), 82–85. <https://doi.org/10.1002/j.2051-5545.2009.tb00219.x>.
- World Health Organization. (2019, April). *Gaming disorder*. ICD-11. Retrieved from <https://icd.who.int/browse11/l-m/en#/http://id.who.int/icd/entity/338347362>.
- Xie, Y., Szeto, G. P., Dai, J., & Madeleine, P. (2016). A comparison of muscle activity in using touchscreen smartphone among young people with and without chronic neck-shoulder pain. *Ergonomics*, 59(1), 61–72. <https://doi.org/10.1080/00140139.2015.1056237>.