COMMENTARY

Check for
updates

What the grey literature can contribute to addictive behaviour disorder classification
Commentary to the debate: "Behavioral addictions in the ICD-11"

DARIA J. KUSS[1]* and OLATZ LOPEZ-FERNANDEZ[2,3]**

[1] Nottingham Trent University, UK

[2] Foundation Health Research Institute-Fundación Jiménez Díaz University Hospital, Madrid, Spain

[3] Complutense University of Madrid, Madrid, Spain

ABSTRACT

This commentary examines the proposal made by Brand et al. (2022) regarding a framework outlining relevant criteria for considering possible behavioural addictions within the current World Health Organisation's International Classification of Diseases (ICD-11) category of 'other specified disorders due to addictive behaviours'. We agree with the framework as it highlights the clinical perspective requiring agreed-upon classifications and criteria to produce effective diagnostic procedures and efficacious treatments. Additionally, we propose to add the need of recognising potential addictive behaviour through the inclusion of a fourth meta-level criterion: 'grey literature evidence'. Utilising non-academic evidence can provide validity in the social context where the behaviour takes place, and it can support authorities in taking action to prevent and treat the resultant behavioural problems. The inclusion of the proposed fourth criterion will aid comprehensibility of the current proposal and provide clarity, as indicated in the present commentary, which includes the fourth criterion analysis for problematic pornography use, shopping/buying and social networking site use.

In their article "Which conditions should be considered as disorders in the International Classification of Diseases (ICD-11) designation of 'other specified disorders due to addictive behaviours'", Brand et al. (2022) provide three relevant criteria for considering possible behavioural addictions within the World Health Organisation's (WHO) ICD-11 category of 'other specified disorders due to addictive behaviours', namely (i) clinical relevance, (ii) theoretical embedding and (iii) existing empirical evidence. They present a useful and concise framework of their proposed meta-level criteria which may prove effective in research and clinical contexts. At the same time, the authors argue against overpathologising 'normal' behaviours, whilst not disregarding problematic behaviours of clinical relevance.

We are in full agreement with the statement that international consensus is required to regard specific conditions from a research perspective. In addition to the research perspective, we postulate the clinical perspective requires agreed-upon classifications and criteria in order to produce effective diagnostic procedures and efficacious treatment approaches to the benefit of those individuals who require professional help, to support funding treatment from a socio-political perspective (Costa & Kuss, 2019), and to develop prevention approaches which target particular conditions successfully (King et al., 2017).

Additionally, we also assert that as an external validation procedure, this global consensus based on the alignment of clinical and scientific evidence also requires recognition from international bodies which advocate recognising and studying other addictive behaviours.

*Corresponding author.
E-mail: daria.kuss@ntu.ac.uk

**Corresponding author.
E-mail: olatz.lopez@quironsalud.es,
lopez.olatz@gmail.com

Therefore, we recommend the addition of a fourth meta-level criterion, namely 'grey literature evidence', referring to current official documents (i.e., published in non-commercial/non-academic form) belonging to the fields of clinical, social, public health, and research evidence-based practices on addictive behaviours describing and explaining their characteristics, benefits, risks, and prevention.

Various organisations (such as Governments, Parliaments, Associations, and Foundations) produce and disseminate informational documents to publicly promote and highlight addictive behaviours which can be considered possible future disorders. The documents these organisations produce usually cover a national or international scope, and are presented in different formats, such as government reports, policy statements, white papers, manifestos, fact sheets, among other contemporary public documents to promote knowledge to the general public (Freeman & Maybin, 2011). For instance, the recent UK Online Harms White Paper (OHWP; Nash, 2019) proposes a governance framework as a set of regulatory proposals that target the technological manifestation of social ills rather than the ills themselves. It furthermore highlights that harmful but legal content can be associated with the development of behavioural problems in users, including social factors underpinning the production, sharing of and engagement in screen time and 'designed addiction' (i.e., including designed features that can facilitate habit formation, such as infinite scrolling on social media). Grey literature evidence can support the classification endeavours by providing additional information which may not be present within the academic literature yet, increasing timeliness, and it may provide a more balanced and unbiased view of the relevant evidence (Paez, 2017).

In what follows, we will discuss the respective criteria and conditions put forward by Brand et al. (2022), adding our proposed fourth criterion 'grey literature evidence' to produce a more holistic proposal which is exhaustive in its conception.

In terms of clinical relevance, functional impairment is highlighted. Functional impairment is the sine qua non of clinical relevance. Without functional impairment, no condition can be considered diagnosable. According to the American Psychiatric Association (2000), a mental disorder is "a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and that is associated with present distress (e.g., a painful symptom) or disability (i.e., impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain, disability, or an important loss of freedom" (p. xxxi), highlighting the considerable impact a condition needs to have in order to be deemed classifiable.

With regards to theoretical embedding, various theories exist which can frame the proposed behavioural addictions within recognised addiction theory frameworks, as described by Brand et al. (2022). When considering research in the field of addictive behaviours, a theoretical embedding is useful as it allows to explore and test particular research questions and refine these as well as relevant research methods and analyses accordingly (Cash, 2018). Ultimately, this allows to

build and verify scientific knowledge obtained through empirical evidence. In the field of behavioural addictions, it can be claimed that this is of particular relevance given this research and clinical domain is in its infancy as the first officially recognised behavioural addiction, Gambling Disorder, was only included in the diagnostic manual (DSM IV-TR; American Psychiatric Association, 2000) 20 years ago as pathological gambling, followed by the inclusion of Gaming Disorder in the most recent edition of the World Health Organisation's diagnostic manual (ICD-11) in 2019.

As regards empirical evidence, the question needs to be considered where good evidence comes from, with calls having been made for mixed methods research (Gorard & Cook, 2007) as well as clinical investigations and multi-stakeholder approaches, involving scientists together with mental health practitioners, media regulators, governments, local organisations, and the relevant industries (Kuss & Gainsbury, 2021).

The specific behaviours discussed include problematic pornography use, shopping/buying and social networking site use. With regards to pornography use, some authors (Brand et al., 2019) have previously showed that the ICD-11 Gaming Disorder criteria can be modified to suit problematic pornography use. Brand et al. (2022) provide some evidence with regards to the extent to which pornography use disorder can be considered akin to Gaming Disorder with regards to its core features. The presented scientific evidence suggests there are parallels between problematic pornography use and problematic gaming. For instance, research (Fernandez, Kuss, & Griffiths, 2021) suggests that problematic pornography users benefit from complete abstinence, which, despite being experienced as very challenging, allows them to experience reward. Research found withdrawal symptoms in problematic gamers impacted abstinence success (King, Adair, Saunders, & Delfabbro, 2018), indicating that a precise understanding of possible covariates is necessary when considering the addictive potential and possible strategies to alleviate the negative symptoms experienced in Gaming Disorder, with possible parallels in pornography use disorder. Overall, abstinence and withdrawal in behavioural addictions is still poorly understood specifically with regards to its negative consequences including rebound and compensatory actions (Fernandez, Kuss, & Griffiths, 2020), highlighting relevant areas for future research across multiple behavioural addictions, including pornography use.

Regarding grey literature evidence, the regulation of internet pornography and associated risk of addiction has been addressed in the context of 'other addictive behaviours'. In 2017, the UK Parliament produced the Digital Economy Act requiring legal pornographic websites to implement an age verification check in line with a 2015 manifesto commitment from the Children's Media Foundation (2020), which was never enacted as it did not cover social media. For this reason, the OHWP (Nash, 2019) has now targeted these platforms to reduce pornography consumption and related harms, such as internet pornography addiction. Even the manifesto for a European research network into problematic usage of the Internet (Fineberg et al., 2018) initially

included pornography viewing, but later did not address this addictive behaviour in-depth as it did other behaviours. This has been criticised as approaches exist in Europe to assist the individuals and target groups affected by problematic pornography use which cover the needs of professionals and consumer communities affected by other addictive behaviours (Mead & Sharpe, 2020). Some of these approaches include recovery communities in the form of self-help groups that support individuals to manage their pornography consumption (e.g., NoFap.com, RebootNation.org); professional communities which treat problematic usage of pornography clients, such as therapists, medical practitioners, counsellors, coaches, and sex educators. Problematic usage of online pornography has been targeted as one of the main emerging addictive behaviours in a recent review (Lopez-Fernandez, 2021).

Research on shopping/buying addiction has produced sufficient evidence to be classified as a disorder based on the first and third criteria according to Müller et al. (2019). Recent papers have also indicated the relevance of shopping/buying addiction, especially related to the third criterion – empirical evidence (Lopez-Fernandez, 2021). There are a few sources highlighting the third meta-level criterion in the context of the COVID-19 pandemic, empirical evidence (Entertainment Software Association [ESA], 2021; Interactive Software Federation of Europe [ISFE], 2021; Lopez-Fernandez & Kuss, in press). The lockdowns and current pandemic safety measures (such as social distancing) have promoted online shopping, together with high perceived distress, social isolation and increased internet use throughout the pandemic. This combination of factors has facilitated a shift towards pathological shopping behaviour, increasing the prevalence of buying/shopping disorder, often accompanied by comorbidity (i.e., anxiety, impulsive behaviours, and substance use disorders).

In relation to grey literature evidence, in the UK, a combination of boredom, heightened anxieties and social isolation has been found to increase rates of buying/shopping disorder during the pandemic (Griffiths, Maccarrone-Eaglen, Cameron, & Baker, 2021). Thus, according to the UK charity Action on Addiction, the UK Government has taken steps to address addictive behaviours particularly regarding online harms during lockdowns (e.g., the NHS has recently opened a specialist clinic to target recognised addictive behaviours, i.e., problematic gaming). However, so far, shopping addiction has gone unnoticed amidst 'traditional' addictions (e.g., drug and gambling addictions), but compulsive buying has the potential to leave individuals with financial devastation, as can pathological gambling (Griffiths et al., 2021). There is almost no tailored support available, and providing greater awareness and treatment options for buying/shopping disorder is required. According to Müller et al. (2021), for the first time, a group of international experts have built a framework to diagnose buying/shopping disorder with a Delphi consensus study. In comparison to the above stated other behavioural addictions, shopping/buying disorder has generated less grey literature evidence before the Covid-19 pandemic.

The third possible behavioural addiction Brand et al. (2022) consider for inclusion in the ICD-11 classification of other specified disorders due to addictive behaviours is social network use disorder. Social network use disorder is a newly researched condition and studies suggest there is considerable overlap with other conditions, including problematic smartphone use, and experiences, such as nomophobia, and fear of missing out (Kuss & Griffiths, 2017), complicating its demarcation as stand-alone condition.

Research has highlighted that using online social platforms is the status quo and technology use has become a way of being by way of extending our physical bodies as well as the capabilities of our minds (Kuss, 2017), further supporting the importance of recognising the place of technology use, and particularly that of social networking sites, in our everyday lives. Accordingly, whilst the empirical evidence and theoretical underpinnings presented by Brand et al. (2022) and others indicate there may be clinically relevant problems associated with excessive use of social networking sites, caution is advised in terms of considering the extent to which disordered use can be demarcated from high engagement use akin to the differentiation proposed by Charlton and Danforth (2007) in the context of online gaming, and its possible classification as behavioural addiction.

With respect to the grey literature, social media addiction has been discussed in the UK Parliament (Griffiths, Lopez Fernandez, Throuvala, Pontes, & Kuss, 2018) as one of the online activities of choice in late childhood and early adolescence incurring significant psychosocial benefits, but also negative impacts. There is a call for a public health agenda for social media research that has included another UK Act regarding Social Media Addiction Reduction Technology (SMART, 2019) to ban social media platform features that promote compulsive use (e.g., infinite scrolling and autopay, while implementing time limits), but limited research has been conducted on these features (Pagoto, Waring, & Xu, 2019). Nevertheless, social media addiction has been indicated as addictive behaviour more common outside of Europe relative to European countries in a recent review (Kuss, Kristensen, & Lopez-Fernandez, 2020). International policy and prevention approaches including those based on the relevant grey literature have been covered by King et al. (2017).

CONCLUSION

In this commentary, we have reviewed the conditions that should be considered in the ICD-11 designation of "other specified disorders due to addictive behaviours" according to Brand et al. (2022). The three meta-level criteria are an excellent contribution given they highlight the requirement of agreed-upon classifications and criteria to produce effective diagnostic procedures and efficacious treatments from the clinical perspective. However, the framework proposed by Brand et al. (2022) currently lacks the recognition of technology-related behavioural problems indicated by other relevant bodies. Consequently, we propose to add a fourth meta-level-criterion, i.e., 'grey literature evidence', in

addition to clinical relevance, theoretical embedding, and empirical evidence. This new criterion provides validity to consider the emergent addictive behaviour through documentation usually addressed to the general public and a specific social context, where the behaviour has taken place and achieved sufficient attention to generate action. The inclusion of the proposed fourth criterion will aid comprehensibility of the current proposal and provide clarity, as indicated in the present commentary. The fourth criterion analysis for problematic pornography use, problematic shopping/buying and problematic social networking site use has shown these behavioural problems may be recognised as other specified disorders due to addictive behaviours in the future given the currently available grey literature evidence.

Authors' contribution: DJK wrote the first draft. DJK and OLF wrote and approved the final draft.

Conflicts of interests: DJK has been a member of the WHO advisory group on addictive behaviours and has received grants/funding/support from legal and other relevant (business) entities, including consulting. OLF has no conflict of interest to report.

Disclosures: The authors have no disclosures to report.

REFERENCES

American Psychiatric Association. (2000). *Diagnostic and statistical manual for mental disorders IV, text-revision.* American Psychiatric Association.

Brand, M., Wegmann, E., Stark, R., Müller, A., Wölfling, K., Robbins, T. W., & Potenza, M. N. (2019). The Interaction of Person-Affect-Cognition-Execution (I-PACE) model for addictive behaviors: Update, generalization to addictive behaviors beyond internet-use disorders, and specification of the process character of addictive behaviors. *Neuroscience & Biobehavioral Reviews*, *104*, 1–10. https://doi.org/https://doi.org/10.1016/j.neubiorev.2019.06.032.

Brand, M., Rumpf, H., Demetrovics, Z., Müller, A., Stark, R., King, D. L., & Potenza, M. N. (2022). Which conditions should be considered as disorders in the International Classification of Diseases (ICD-11) designation of "other specified disorders due to addictive behaviors"? *Journal of Behavioral Addictions*, *11*(2), 150–159. https://akjournals.com/view/journals/2006/aop/article-10.1556-2006.2020.00035/article-10.1556-2006.2020.00035.xml.

Cash, P. J. (2018). Developing theory-driven design research. *Design Studies*, *56*, 84–119. https://doi.org/10.1016/j.destud.2018.03.002.

Charlton, J. P., & Danforth, I. D. W. (2007). Distinguishing addiction and high engagement in the context of online game playing. *Computers in Human Behavior*, *23*(3), 1531–1548. https://doi.org/10.1016/j.chb.2005.07.002.

Children's Media Foundation. (2020, April 10). APPG report on online harms. https://www.thechildrensmediafoundation.org/archives/8468/8468.

Costa, S., & Kuss, D. J. (2019). Current diagnostic procedures and interventions for gaming disorders: A systematic review. *Frontiers in Psychology*, *10*(578). https://doi.org/10.3389/fpsyg.2019.00578.

Entertainment Software Association [ESA] (2021). 2021 Essential facts about the video game industry. Available at: https://www.theesa.com/resource/2021-essential-facts-about-the-video-game-industry/ [Accessed 20 Sep 2021].

Fernandez, D. P., Kuss, D. J., & Griffiths, M. D. (2020). Short-term abstinence effects across potential behavioral addictions: A systematic review. *Clinical Psychology Review*, *76*. https://doi.org/10.1016/j.cpr.2020.101828.

Fernandez, D., Kuss, D. J., & Griffiths, M. D. (2021) (In press). The pornography 'rebooting' experience: A qualitative analysis of abstinence journals on an online pornography abstinence forum. *Archives of Sexual Behavior*, *50*, 711–728. https://doi.org/10.1007/s10508-020-01858-w.

Fineberg, N. A., Demetrovics, Z., Stein, D. J., Ioannidis, K., Potenza, M. N., Grünblatt, E., … Chamberlain, S. R. (2018). Manifesto for a European research network into problematic usage of the internet. *European Neuropsychopharmacology*, *28*(11), 1232–1246. https://doi.org/10.1016/j.euroneuro.2018.08.004.

Freeman, R., & Maybin, J. (2011). Documents, practices and policy. *Evidence & Policy: A Journal of Research, Debate and Practice*, *7*(2), 155–170. https://doi.org/10.1332/174426411X579207.

Gorard, S., & Cook, T. (2007). Where does good evidence come from? *International Journal of Research and Method in Education*, *30*(3), 307–323. https://doi.org/10.1080/17437270701614790.

Griffiths, M. D., Lopez Fernandez, O., Throuvala, M., Pontes, H. M., & Kuss, D. J. (2018, April). Excessive and problematic use of social media in adolescence: A brief overview. http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee/social-media-and-mental-health/written/81105.pdf.

Griffiths, M., Maccarrone Eaglen, A., Cameron M. P. L., & Baker, S. (2021). Shopping addiction: Recognising the threat of a neglected addiction and creating strategies to deal with compulsive buying disorders. *Symposium at the Public Policy exchange*. https://publicpolicyexchange.co.uk/event.php?eventUID=LE04-PPE.

Interactive Software Federation of Europe [ISFE] (2021). Key facts 2020. The year we played together. Retrieved from: https://www.isfe.eu/wp-content/uploads/2021/08/2021-ISFE-EGDF-Key-Facts-European-video-games-sector-FINAL.pdf [Accessed 20 Sep 2021].

King, D. L., Adair, C., Saunders, J. B., & Delfabbro, P. H. (2018). Clinical predictors of gaming abstinence in help-seeking adult problematic gamers. *Psychiatry Research*, *261*, 581–588. https://doi.org/10.1016/j.psychres.2018.01.008.

King, D. L., Delfabbro, P. H., Doh, Y. Y., Wu, A. M. S., Kuss, D. J., Pallesen, S., & Sakuma, H. (2017). Policy and prevention approaches for disordered and hazardous gaming and Internet use: An international perspective. *Prevention Science*, *19*(2), 233–249. https://doi.org/10.1007/s11121-017-0813-1.

Kuss, D. J. (2017). Mobile technologies and social media: The extensions of man. *Human Development*, *60*(4), 141–143. https://doi.org/10.1159/000479842.

Kuss, D. J., & Gainsbury, S. (2021). Debate: Behavioural addictions and technology use – risk and policy recommendations for problematic online gambling and gaming. *Child and Adolescent Mental Health*, *26*(1), 76–77. https://doi.org/10.1111/camh.12449.

Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. *International Journal of Environmental Research and Public Health*, *14*(3), E311. https://doi.org/10.3390/ijerph14030311.

Kuss, D. J., Kristensen, A. M., & Lopez-Fernandez, O. (2020). Internet addictions outside of Europe: A systematic literature review. *Computers in Human Behavior*, 106621. https://doi.org/10.1016/j.chb.2020.106621.

Lopez-Fernandez, O. (2021). Emerging health and education issues related to internet technologies and addictive problems. *International Journal of Environmental Research and Public Health*, *18*(1), 321. https://doi.org/10.3390/ijerph18010321.

Lopez-Fernandez, O., & Kuss, D. J. (in press). Female gamers: Psychosocial and clinical perspectives. *Behavioural Addiction in Women* (Taylor & Francis).

Mead, D., & Sharpe, M. (2020). Aligning the "Manifesto for a European Research Network into Problematic Usage of the Internet" with the diverse needs of the professional and consumer communities affected by problematic usage of pornography. *International Journal of Environmental Research and Public Health*, *17*(10), 3462. https://doi.org/10.3390/ijerph17103462.

Müller, A., Brand, M., Claes, L., Demetrovics, Z., De Zwaan, M., Fernández-Aranda, F., … Kyrios, M. (2019). Buying-shopping disorder—is there enough evidence to support its inclusion in ICD-11? *CNS Spectrums*, *24*(4), 374–379. https://doi.org/10.1017/S1092852918001323.

Müller, A., Laskowski, N. M., Trotzke, P., Ali, K., Fassnacht, D. B., de Zwaan, M., … Kyrios, M. (2021). Proposed diagnostic criteria for compulsive buying-shopping disorder: A Delphi expert consensus study, *Journal of Behavioral Addictions*, *10*(2), 208–222. https://doi.org/10.1556/2006.2021.00013.

Nash, V. (2019). Revise and resubmit? Reviewing the 2019 online harms white paper, *Journal of Media Law*, *11*(1), 18–27. https://doi.org/10.1080/17577632.2019.1666475.

Paez A. (2017). Grey literature: An important resource in systematic reviews. *Journal of Evidence-Based Medicine*, *10*(3), 233–240. https://doi.org/10.1111/jebm.12265.

Pagoto, S., Waring, M. E., & Xu, R. (2019). A call for a public health agenda for social media research. *Journal of Medical Internet Research*, *21*(12), e16661. https://doi.org/10.2196/16661.

Social Media Addiction Reduction Technology [SMART] Act. 2019. [2019-11-25]. https://www.hawley.senate.gov/sites/default/files/2019-07/Social-Media-Addiction-Reduction-Technology-Act.pdf.