

## BIROn - Birkbeck Institutional Research Online

Rumpf, H.-J. and Achab, S. and Billieux, J. and Bowden-Jones, H. and Carragher, N. and Demetrovics, Z. and Higuchi, S. and King, D.L. and Mann, K. and Potenza, M. and Saunders, J.B. and Abbott, M. and Ambekar, A. and Aricak, O.T. and Assanangkornchai, S. and Bahar, N. and Borges, G. and Brand, M. and Chan, E.M.-L. and Chung, T. and Derevensky, J. and El Kashef, A. and Farrell, M. and Fineberg, N.A. and Gandin, C. and Gentile, D.A. and Griffiths, M.D. and Goudriaan, A.E. and Grall-Bronnec, M. and Hao, W. and Hodgins, D.C. and Ip, P. and Király, O. and Lee, H.K. and Kuss, D. and Lemmens, J.S. and Long, J. and Lopez-Fernandez, O. and Mihara, S. and Petry, N.M. and Pontes, Halley and Rahimi-Movaghar, A. and Rehbein, F. and Rehm, J. and Scafato, E. and Sharma, M. and Spritzer, D. and Stein, D.J. and Tam, P. and Weinstein, A. and Wittchen, H.-U. and Wölfling, K. and Zullino, D. and Poznyak, V. (2018) Including gaming disorder in the ICD-11: the need to do so from a clinical and public health perspective. *Journal of Behavioral Addictions* 7 (3), pp. 556-561. ISSN 2063-5303.

Downloaded from: <https://eprints.bbk.ac.uk/id/eprint/43453/>

*Usage Guidelines:*

Please refer to usage guidelines at <https://eprints.bbk.ac.uk/policies.html>  
contact [lib-eprints@bbk.ac.uk](mailto:lib-eprints@bbk.ac.uk).

or alternatively

## Including gaming disorder in the ICD-11: The need to do so from a clinical and public health perspective

*Commentary on: A weak scientific basis for gaming disorder: Let us err on the side of caution (van Rooij et al., 2018)*

HANS-JÜRGEN RUMPF<sup>1\*</sup>, SOPHIA ACHAB<sup>2,3</sup>, JOËL BILLIEUX<sup>4</sup>, HENRIETTA BOWDEN-JONES<sup>5</sup>, NATACHA CARRAGHER<sup>6</sup>, ZSOLT DEMETROVICS<sup>7</sup>, SUSUMU HIGUCHI<sup>8</sup>, DANIEL L. KING<sup>9</sup>, KARL MANN<sup>10</sup>, MARC POTENZA<sup>11</sup>, JOHN B. SAUNDERS<sup>12</sup>, MAX ABBOTT<sup>13</sup>, ATUL AMBEKAR<sup>14</sup>, OSMAN TOLGA ARICAK<sup>15</sup>, SAWITRI ASSANANGKORNCHAI<sup>16</sup>, NORHARLINA BAHAR<sup>17</sup>, GUILHERME BORGES<sup>18</sup>, MATTHIAS BRAND<sup>19,20</sup>, ELDA MEI-LO CHAN<sup>21</sup>, THOMAS CHUNG<sup>22</sup>, JEFF DEREVENSKY<sup>23</sup>, AHMAD EL KASHEF<sup>24</sup>, MICHAEL FARRELL<sup>25</sup>, NAOMI A. FINEBERG<sup>26,27</sup>, CLAUDIA GANDIN<sup>28</sup>, DOUGLAS A. GENTILE<sup>29</sup>, MARK D. GRIFFITHS<sup>30</sup>, ANNA E. GOUDRIAAN<sup>31</sup>, MARIE GRALL-BRONNEC<sup>32</sup>, WEI HAO<sup>33</sup>, DAVID C. HODGINS<sup>34</sup>, PATRICK IP<sup>35</sup>, ORSOLYA KIRÁLY<sup>7</sup>, HAE KOOK LEE<sup>36</sup>, DARIA KUSS<sup>30</sup>, JEROEN S. LEMMENS<sup>37</sup>, JIANG LONG<sup>33</sup>, OLATZ LOPEZ-FERNANDEZ<sup>30</sup>, SATOKO MIHARA<sup>8</sup>, NANCY M. PETRY<sup>38</sup>, HALLEY M. PONTES<sup>30</sup>, AFARIN RAHIMI-MOVAGHAR<sup>39</sup>, FLORIAN REHBEIN<sup>40</sup>, JÜRGEN REHM<sup>41,42,43</sup>, EMANUELE SCAFATO<sup>44</sup>, MANOI SHARMA<sup>45</sup>, DANIEL SPRITZER<sup>46</sup>, DAN J. STEIN<sup>47</sup>, PHILIP TAM<sup>48</sup>, AVIV WEINSTEIN<sup>49</sup>, HANS-ULRICH WITTCHEN<sup>43</sup>, KLAUS WÖFLING<sup>50</sup>, DANIELE ZULLINO<sup>2</sup> and VLADIMIR POZNYAK<sup>6</sup>

<sup>1</sup>Department of Psychiatry and Psychotherapy, University of Lübeck, Lübeck, Germany

<sup>2</sup>Department of Mental Health and Psychiatry, Service of Addictology, Geneva University Hospitals, Geneva, Switzerland

<sup>3</sup>Geneva WHO Collaborating Center for Training and Research, University of Geneva, Geneva, Switzerland

<sup>4</sup>Addictive and Compulsive Behaviours Lab, Institute for Health and Behaviour, University of Luxembourg, Esch-sur-Alzette, Luxembourg

<sup>5</sup>Central North West London NHS Trust, Division of Brain Science, Imperial College London, London, UK

<sup>6</sup>Department of Mental Health and Substance Abuse, WHO Headquarters, Geneva, Switzerland

<sup>7</sup>Institute of Psychology, Eötvös Loránd University (ELTE), Budapest, Hungary

<sup>8</sup>National Hospital Organization Kurihama Medical and Addiction Center, Yokosuka, Kanagawa, Japan

<sup>9</sup>School of Psychology, The University of Adelaide, Adelaide, SA, Australia

<sup>10</sup>Central Institute of Mental Health, University of Heidelberg, Mannheim, Germany

<sup>11</sup>Department of Psychiatry and Neuroscience, Child Study Center, The National Center on Addiction and Substance Abuse, Connecticut Mental Health Center, Yale University School of Medicine, New Haven, CT, USA

<sup>12</sup>Centre for Youth Substance Abuse Research, The University of Queensland, Brisbane, QLD, Australia

<sup>13</sup>Faculty of Health and Environmental Sciences, Auckland University of Technology, Auckland, New Zealand

<sup>14</sup>Department of Psychiatry, National Drug Dependence Treatment Centre, All India Institute of Medical Sciences, New Delhi, India

<sup>15</sup>Department of Psychology, Hasan Kalyoncu University, Gaziantep, Turkey

<sup>16</sup>Epidemiology Unit and Centre for Alcohol Studies, Faculty of Medicine, Prince of Songkla University, Hat Yai, Songkhla, Thailand

<sup>17</sup>Department of Psychiatry and Mental Health, Hospital Selayang, Selangor, Malaysia

<sup>18</sup>National Institute of Psychiatry, Mexico City, Mexico

<sup>19</sup>General Psychology: Cognition Center for Behavioral Addiction Research, University Duisburg-Essen, Duisburg, Germany

<sup>20</sup>Erwin L. Hahn Institute for Magnetic Resonance Imaging, Essen, Germany

<sup>21</sup>Integrated Centre on Addiction Prevention and Treatment, Tung Wah Group of Hospitals, Hong Kong SAR, China

<sup>22</sup>Department of Health, Hong Kong SAR, China

<sup>23</sup>Applied Child Psychology and Department of Psychiatry, McGill University, Montreal, Canada

<sup>24</sup>National Rehabilitation Center, Abu Dhabi, United Arab Emirates

<sup>25</sup>National Drug and Alcohol Research Centre, University of New South Wales, Randwick, NSW, Australia

<sup>26</sup>Hertfordshire Partnership University NHS Foundation Trust, Hertfordshire, UK

<sup>27</sup>Department of Postgraduate Medicine, University of Hertfordshire, Hertfordshire, UK

<sup>28</sup>National Centre on Addiction and Doping, National Observatory on Alcohol, Italian National Institute of Health, Rome, Italy

<sup>29</sup>Department of Psychology, Iowa State University, Ames, IA, USA

<sup>30</sup>International Gaming Research Unit, Psychology Department, Nottingham Trent University, Nottingham, UK

<sup>31</sup>Department of Psychiatry, Academic Medical Center, Mental Health Care, University of Amsterdam, Amsterdam, The Netherlands

<sup>32</sup>Addictology and Psychiatry Department, CHU Nantes, Nantes, France

<sup>33</sup>Mental Health Institute of the Second Xiangya Hospital, Central South University, Changsha, Hunan, China

<sup>34</sup>Department of Psychology, The University of Calgary, Calgary, Alberta, Canada

<sup>35</sup>Li Ka Shing Faculty of Medicine, Department of Paediatrics & Adolescent Medicine, The University of Hong Kong, Hong Kong SAR, China

\* Corresponding author: PD Dr. Hans-Jürgen Rumpf; Department of Psychiatry and Psychotherapy, University of Lübeck, Ratzeburger Allee 160, 23538 Lübeck, Germany; Phone: +49 451 5009 8751; Fax: +49 451 5009 8754; E-mail: [hans-juergen.rumpf@uksh.de](mailto:hans-juergen.rumpf@uksh.de)

This is an open-access article distributed under the terms of the [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/), which permits unrestricted use, distribution, and reproduction in any medium for non-commercial purposes, provided the original author and source are credited, a link to the CC License is provided, and changes – if any – are indicated.

<sup>36</sup>Department of Psychiatry, College of Medicine, The Catholic University of Korea, Seoul, South Korea

<sup>37</sup>Center for Research on Children, Adolescents, and the Media, Amsterdam School of Communication Research, University of Amsterdam, Amsterdam, The Netherlands

<sup>38</sup>Department of Psychiatry, University of Connecticut School of Medicine, Farmington, CT, USA

<sup>39</sup>Iranian National Center for Addiction Studies, Tehran University of Medical Sciences, Tehran, Iran

<sup>40</sup>Criminological Research Institute Lower Saxony, Hannover, Germany

<sup>41</sup>Institute for Mental Health Policy Research, Centre for Addictions and Mental Health, Toronto, Canada

<sup>42</sup>Department of Psychiatry, Faculty of Medicine, Institute of Medical Science, Dalla Lana School of Public Health, University of Toronto, Toronto, Canada

<sup>43</sup>Epidemiological Research Unit, Institute of Clinical Psychology and Psychotherapy, Technical University Dresden, Dresden, Germany

<sup>44</sup>National Observatory on Alcohol, National Institute of Health, Rome, Italy

<sup>45</sup>National Institute of Mental Health and Neurosciences, Bengaluru, India

<sup>46</sup>Study Group on Technological Addictions, Porto Alegre, Brazil

<sup>47</sup>Department of Psychiatry and Mental Health, SA MRC Unit on Risk & Resilience in Mental Disorders, University of Cape Town, Cape Town, South Africa

<sup>48</sup>Network for Internet Investigation and Research in Australia, The Delta Clinic, Sydney, NSW, Australia

<sup>49</sup>Department of Behavioral Science, University of Ariel, Ariel, Israel

<sup>50</sup>Outpatient Clinic for Behavioral Addiction, Department of Psychosomatic Medicine and Psychotherapy, University Medical Center, Johannes Gutenberg University, Mainz, Germany

(Received: May 24, 2018; accepted: May 28, 2018)

---

The proposed introduction of gaming disorder (GD) in the 11th revision of the International Classification of Diseases (ICD-11) developed by the World Health Organization (WHO) has led to a lively debate over the past year. Besides the broad support for the decision in the academic press, a recent publication by van Rooij et al. (2018) repeated the criticism raised against the inclusion of GD in ICD-11 by Aarseth et al. (2017). We argue that this group of researchers fails to recognize the clinical and public health considerations, which support the WHO perspective. It is important to recognize a range of biases that may influence this debate; in particular, the gaming industry may wish to diminish its responsibility by claiming that GD is not a public health problem, a position which maybe supported by arguments from scholars based in media psychology, computer games research, communication science, and related disciplines. However, just as with any other disease or disorder in the ICD-11, the decision whether or not to include GD is based on clinical evidence and public health needs. Therefore, we reiterate our conclusion that including GD reflects the essence of the ICD and will facilitate treatment and prevention for those who need it.

**Keywords:** gaming disorder, ICD-11, clinical perspective, public health

---

## INTRODUCTION

Over the past year, there has been a lively debate concerning the inclusion of gaming disorder (GD) in the draft of the 11th revision of the International Classification of Diseases (ICD-11) by the World Health Organization (WHO). A series of annual WHO expert meetings – in Tokyo (Japan), Seoul (South Korea), Hong Kong (China), and Istanbul (Turkey) – held since 2014 provided the rationale and justification for the recommendation to include GD in the section of disorders due to addictive behaviors in the ICD-11 Beta-Draft (WHO, 2018a). The decision was based on reviewing the available evidence in the scientific literature and on case series as well as experiences from clinical practice provided by international experts from psychiatry, clinical psychology, internal medicine, family practice, epidemiology, neurobiology, and public health. Overall, 66 experts from 25 countries participated in these meetings. Any potential conflict of interest at the WHO meetings was managed according to WHO rules and regulations (WHO, 2015).

The consensus decision to include GD in ICD-11 was recently challenged by a group of researchers

(Aarseth et al., 2017). Their arguments led to a series of commentaries (Billieux et al., 2017; Griffiths, Kuss, Lopez-Fernandez, & Pontes, 2017; Higuchi et al., 2017; James & Tunney, 2017; Kiraly & Demetrovics, 2017; Lee, Choo, & Lee, 2017; Müller & Wölfling, 2017; Saunders et al., 2017; Shadloo et al., 2017; van den Brink, 2017), most of which were in favor of including the new diagnosis of GD in the ICD-11. A response from the initial group, albeit with some changes in authorship, was recently published reiterating that the scientific basis for GD is currently too weak to warrant inclusion in ICD-11 (van Rooij et al., 2018). For example, these authors suggest that functional impairment as a result of gaming is not sufficiently proven, gaming is better conceptualized as a coping mechanism rather than as a unique disorder, non-problematic gamers could be stigmatized by the inclusion of GD in ICD-11, and GD as a diagnostic category is a result of a moral panic. Most of the commentary papers cited above presented empirical evidence from multiple perspectives to refute these points. Notably, research evidence demonstrating the negative consequences in the cases of GD in multiple domains and over different time periods was highlighted (Saunders et al., 2017). Unfortunately, these evidence-based points as well as data that

treatment services internationally face a growing challenge in responding effectively to referrals for gaming-related problems have not been acknowledged by van Rooij et al. (2018). Other criticisms (e.g., “GD as a diagnosis represents moral panic”) are based on assumptions that cannot be empirically proven and no evidence was provided to demonstrate such a panic. However, the purpose of this paper is not to repeat all these arguments but rather focus on the importance of clinical and public health aspects of GD.

### WHY DO RESEARCHERS HAVE DIFFERENT INTERPRETATIONS OF THE SAME DATA?

Research studies can sometimes be flawed due to methodological problems, but the interpretation of research data may also be impacted by biases. Interpretation bias is related to one’s own preconceptions and may include discounting data by finding selective faults (rescue bias), evaluating evidence that supports one’s own preconceptions more positively compared to the evidence that challenges these preconceptions (confirmation bias), or the “time will tell” bias that refers to the tendency for different scientists to have different requirements in relation to confirmatory evidence (Kaptchuk, 2003). Based on these and other biases, scientists can often have conflicting interpretations and conclusions about the same data.

Conflicting interpretations and conclusions of research findings can arise for multiple reasons. An examination of the professional backgrounds of those who criticize the inclusion of GD in ICD-11 reveals that many – albeit not all – authors come from areas other than clinical sciences or public health; these include media psychology, computer games research, experimental and social psychology, sociology, educational psychology, game design, and communication science (van Rooij et al., 2018). By contrast, researchers in favor of the inclusion of GD originate predominantly from clinical and public health disciplines, such as psychiatry, child psychiatry, mental health, internal medicine, family practice, clinical psychology, clinical neuroscience, and addiction treatment and prevention (see Saunders et al., 2017). Being aware of the different disciplines involved on both sides of the debate may explain much of the discord. While different views are understandable and may be useful for stimulating debate, it must be asked what kind of expertise is needed when decisions to include or exclude disorders in ICD-11 are to be made.

For instance, it is reasonable to consider stigmatization as an unwanted effect of a newly introduced diagnosis (Stein et al., 2010). However, from a clinical perspective, this argument fails when it comes to assessing the clinical and public health needs. For example, binge eating disorder could be excluded from ICD-11 due to arguments that it might stigmatize people who eat a lot or individuals who have a high body mass index. However, given the elevated mortality and other health risks associated with eating disorders, this would have a significant adverse impact, particularly on young women (Smink, van Hoeken, & Hoek, 2012). The argument of potential stigmatization is not specific to GD but relates to many other well-established

mental disorders. The harm related to including a specific diagnosis, i.e., a health condition that can be shown to be associated with burden of disease, is less than the harm generated from its exclusion, a point further examined below. This view is in line with the precautionary principle that guides public health organizations’ recommendations and actions, which demand that “. . . scientific uncertainty should not be used as a reason to postpone preventive measures” (WHO, 2018c). As one response in the debate succinctly noted, Aarseth et al. (2017) adopted “an academic perspective that is far away from clinical reality” (Müller & Wölfling, 2017, p. 118). It is our concern that a lack of clinical expertise may lead to inaccurate conclusions; we provided two key examples below.

### WHY ARE ARGUMENTS BASED ON CLINICAL AND PUBLIC HEALTH CONSIDERATIONS SO IMPORTANT?

Individuals in many countries around the world seek treatment, because they are suffering from functional impairment related to GD symptoms. In many countries, there are either no health services for people with problematic gaming or services that are scarce and disjointed, whereas in those countries that have established services, demand is evidently growing, testifying to an unmet need. In several countries, the numbers of treatment settings and treated individuals have increased substantially. For example, the number of specialized services for Internet-related disorders including GD increased fourfold from 2008 to 2015 in Germany (Petersen, Hanke, Bieber, Mühleck, & Batra, 2017). In Switzerland, facilities specialized in addictive disorders have had increasing demands for counseling and treatment for GD. It has become a major field of activity for nearly half of these services and a need for training in this area was identified by 87% of surveyed institutions (Knocks, Sager, & Perissinotto, 2018). In Switzerland, Geneva University Hospital recorded that demands on health issues related to gaming have doubled in the past 5 years (unpublished data from University Hospitals of Geneva). In Hong Kong, help-seeking cases related to excessive gaming increased over 60% in 2016 compared with 2015 (unpublished data from Tung Wah Group of Hospitals Integrated Centre on Addiction Prevention and Treatment). Many of the GD cases demonstrated symptoms of impairments in emotional control, self-care, social communication, concentration, and school attendance and performance.

The introduction of a diagnosis of GD can be expected to respond to this unmet need and to lead to the establishment of new clinical services that delivers coherent treatment for people suffering from problematic gaming in many countries of the world. The inclusion of GD in ICD-11, as with all other disorders and diseases, enables proper training of health professionals and communication among them, facilitates prevention and early intervention activities, promotes research and monitoring, and supports the development and financing of treatment. These important points have largely been neglected by van Rooij et al. (2018) and others who

oppose the concept of GD. Rather, these researchers argue that a diagnosis is not necessary and help could be provided in specialized clinics and services "...analogous to services for other mental health problems, which are not tied to a particular diagnosis, such as services for sexual assault victims or bereavement" (van Rooij et al., 2018, p. 3). This viewpoint is not based on clinical reality; the services described above are provided because of sudden threatening life-events and the need for timely intervention in a safe and supportive environment, and not because diagnosis is unnecessary or unavailable.

Another important consideration is that of interventions. The treatment and prevention literature on GD is still developing. Although systematic reviews (King et al., 2017; Zajac, Ginley, Chang, & Petry, 2017) highlight the paucity of intervention studies and limitations in the existing ones, many treatment clinics exist around the world, with thousands of patients seeking services. Opposing GD inclusion in the ICD-11 is effectively obstructing individuals' access to treatment and potentially contributing to the delay in the development of efficacious interventions for the condition.

The claim that gaming is simply a means of coping with other mental disorders [e.g., attention-deficit hyperactivity disorder (ADHD), depression, or anxiety] and that it is not a disorder in its own right is another opposing argument that belies the lack of clinical expertise. It is widely established in this debate (e.g., Müller & Wölfling, 2017), and in the wider mental health disciplines, that comorbidity is more often the rule than the exception. Clinically, in some patients, gaming excessively can be a way of coping with a comorbid condition and may progress to a GD (Griffiths, 2017). This is comparable to substance-related disorders, and historically, similar arguments have been made prior to the times when substance-use disorders were considered as independent psychiatric conditions. Of note, it was only in 1980 in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) that substance-use disorders were considered in the DSM as independent rather than secondary conditions due to other disorders (Robinson & Adinoff, 2016). From a clinical perspective, excessive drinking may mitigate symptoms of depression or post-traumatic stress disorder (PTSD), and such drinking may progress to alcohol dependence (Cooper, Russell, Skinner, Frone, & Mudar, 1992). Of course, treating the depression or PTSD should be a therapeutic goal for such patients. However, treating the alcohol-use disorder is also crucial, because this disorder can be the underlying driver of the patient's functional impairment and its treatment might be a prerequisite for effective treatment of the comorbid conditions. Moreover, it has been shown that the resolution of alcohol dependence had reduced the depressive symptoms (Brennan, SooHoo, Lemke, & Schutte, 2016).

The treatment considerations within these examples also apply to gaming-related problems. As shown in a very recent study, young adults who were stressed and used games as a coping strategy had increased GD symptoms compared with those using other negative coping strategies (Plante, Gentile, Groves, Modlin, & Blanco-Herrera, in press). Considering interventions, an overriding need is often found to treat GD primarily. An individual with GD may be unable to undertake necessary and everyday life

activities. This is often related to detrimental health consequences and significant impairment in school or job performance. Moreover, studies show that excessive gaming is related to changes in brain structure associated with reductions in the volume of gray matter and white matter in the brain (Weinstein, 2017). Furthermore, it is associated with dopaminergic deficiency which makes such individuals vulnerable to relapse (Weinstein, Livny, & Weizman, 2017) and in particular in adolescents (Weinstein, 2017). Taking all these arguments into account, the GD must be treated as a priority. This does not imply that co-occurring mental disorders like ADHD or depression should not be addressed and included at later time points.

### WHY ARE NON-CLINICAL ARGUMENTS POTENTIALLY HARMFUL IN THE WIDER CONTEXT OF THIS DEBATE?

Aarseth et al.'s (2017) commentary has prompted many counterarguments, but these have been largely neglected in subsequent discussion by van Rooij et al. (2018). It seems that an agreement cannot be reached in this debate and it might not be necessary. However, it is important to note that there are likely to be a range of negative consequences of not including GD in ICD-11. As already mentioned, it may have implications not only for the preparedness of health professionals to prevent, identify, and manage these conditions, but also for access to treatment. Health insurance companies and other financers of treatment may adopt the arguments raised by non-clinical researchers (e.g., "gaming is a normal lifestyle activity"); so that, those in need of treatment and with limited funds are unable to get professional help. Additionally, the lack of coverage by health insurance companies may lead to clinicians not developing expertise in helping people with gaming problems, but choosing to pursue other areas of health care provision that are more readily reimbursed.

Of concern, the recent statement opposed to GD by a vocal minority affiliated with the Society for Media Psychology and Technology, Division 46 of the American Psychological Association (2018) may serve as a template for the gaming industry to argue against the inclusion of GD in ICD-11. This statement and the arguments raised by van Rooij et al. (2018) could fuel the lobbying activities of the gaming industry, which may seek to diminish clinical and public health needs. Retrospectively, the tobacco industry (as revealed by litigation processes in the USA) serves as an example of the extent to which such viewpoints can counteract the position of those arguing for the needs of afflicted patients.

### CONCLUSIONS

Just as with any other disease or disorder in medicine and psychology, the decision of whether or not to include GD in ICD-11 needs to be justified on grounds of clinical evidence and public health needs. Indeed, this careful examination of the evidence is the responsibility of public health organizations, such as the WHO. While other perspectives based on

non-clinical arguments are useful for stimulating debate, it is ultimately important to consider what kind of expertise is most helpful and relevant to this issue. Other commentaries cited in this paper have addressed some of the criticisms on scientific grounds; in this commentary, we have emphasized the arguments that relate to clinical and public health issues, which reflect the essence of the ICD. These arguments support the need for a nomenclature for clinical and public health purposes, including clear diagnoses that can facilitate appropriate and affordable treatment and prevention. The ICD is “. . . the foundation for the identification of health trends and statistics globally. It is the international standard for defining and reporting diseases and health conditions. It allows the world to compare and share health information using a common language. The ICD defines the universe of diseases, disorders, injuries and other related health conditions. These entities are listed in a comprehensive way so that everything is covered” (WHO, 2018b). Worldwide demand for treatment and the significant distress, functional impairment, and suffering encountered by those experiencing GD underlie the urgent and timely need for GD inclusion in ICD-11. We call on clinicians, public health specialists, and scientists to consider these arguments in this important debate and to weigh the respective consequences and the significant ramifications for the well-being of afflicted individuals.

*Funding sources:* No financial support was received for the preparation of this paper.

*Authors' contribution:* The initial draft of this paper was prepared by H-JR in cooperation with a core group of authors (SA, JB, HB-J, NC, ZD, SH, DLK, KM, MP, JBS, and VP). All authors have contributed materials, provided comments, or intellectually supported the content. All have approved the final version of this paper.

*Conflict of interest:* The authors of this paper are engaged in scientific research, policy and prevention, clinical practice, or service management in the field of gaming and GD. They declare that they have received no funding for research, lectures, or other activities from the gaming industry. The authors H-JR, SA, JB, HB-J, NC, ZD, SH, DLK, KM, MP, JBS, MA, AA, OTA, SA, NB, EM-LC, TC, JD, AEK, MF, CG, MDG, WH, DCH, PI, HKL, DK, JL, SM, AR-M, JR, ES, MS, DS, DZ, and VP are members of a WHO Advisory Group on Gaming Disorder, and GB, NMP, and PT have been members of the DSM-5 work group on Internet Gaming Disorder. GB, AR-M, and JR are members of the WHO Technical Advisory Group on Alcohol and Drug Epidemiology, and GB participated in the cultural dimensions of Disorders Due to Substance Use for the ICD-11 Clinical Descriptions and Diagnostic Guidelines. AR-M was member of the WHO International Advisory Group for the Revision of ICD-10 Mental and Behavioral Disorders. VP and NC are staff members of the WHO. NMP is on the Board of Advisors for Children and Screens, Institute of Digital Medical and Child Development. NAF chairs the EU COST Action for problematic usage of the

Internet. The authors alone are responsible for the views expressed in this publication and they do not necessarily represent the official position, policies, views, or decisions of the WHO, the American Psychiatric Association, or the other organizations listed above. All authors declare to have no conflict of interest regarding this publication. However, for the principle of completeness, the following shall be stated: some of the authors are involved in the treatment of gaming disorder or other addictive behaviors (AA, SA, JB, HBJ, NB, EM-LC, JD, DCH, WH, SH, DLK, HKL, SM, AR-M, NMP, MP, JBS, MS, DS, DJS, PT, KW, and DZ). In addition, some of the authors (NAF, SH, MP, JR, JBS, DJS, and DZ) have received financial support or honoraria from pharmaceutical companies.

## REFERENCES

- Aarseth, E., Bean, A. M., Boonen, H., Colder Carras, M., Coulson, M., Das, D., Deleuze, J., Dunkels, E., Edman, J., Ferguson, C. J., Haagsma, M. C., Helmersson Bergmark, K., Hussain, Z., Jansz, J., Kardefelt-Winther, D., Kutner, L., Markey, P., Nielsen, R. K. L., Prause, N., Przybylski, A., Quandt, T., Schimmenti, A., Starcevic, V., Stutman, G., Van Looy, J., & Van Rooij, A. J. (2017). Scholars' open debate paper on the World Health Organization ICD-11 Gaming Disorder proposal. *Journal of Behavioral Addiction, 6*(3), 267–270. doi:10.1556/2006.5.2016.088
- Billieux, J., King, D. L., Higuchi, S., Achab, S., Bowden-Jones, H., Hao, W., Long, J., Lee, H. K., Potenza, M. N., Saunders, J. B., & Poznyak, V. (2017). Functional impairment matters in the screening and diagnosis of gaming disorder. *Journal of Behavioral Addiction, 6*(3), 285–289. doi:10.1556/2006.6.2017.036
- Brennan, P. L., SooHoo, S., Lemke, S., & Schutte, K. K. (2016). Alcohol use predicts 10-year depressive symptom trajectories in the health and retirement study. *Journal of Aging and Health, 28*(5), 911–932. doi:10.1177/0898264315615837
- Cooper, M. L., Russell, M., Skinner, J. B., Frone, M. R., & Mudar, P. (1992). Stress and alcohol use: Moderating effects of gender, coping, and alcohol expectancies. *Journal of Abnormal Psychology, 101*(1), 139–152. doi:10.1037/0021-843X.101.1.139
- Griffiths, M. D. (2017). Behavioural addiction and substance addiction should be defined by their similarities not their dissimilarities. *Addiction, 112*(10), 1718–1720. doi:10.1111/add.13828
- Griffiths, M. D., Kuss, D. J., Lopez-Fernandez, O., & Pontes, H. M. (2017). Problematic gaming exists and is an example of disordered gaming. *Journal of Behavioral Addiction, 6*(3), 296–301. doi:10.1556/2006.6.2017.037
- Higuchi, S., Nakayama, H., Mihara, S., Maezono, M., Kitayuguchi, T., & Hashimoto, T. (2017). Inclusion of gaming disorder criteria in ICD-11: A clinical perspective in favor. *Journal of Behavioral Addiction, 6*(3), 293–295. doi:10.1556/2006.6.2017.049
- James, R. J. E., & Tunney, R. J. (2017). The relationship between gaming disorder and addiction requires a behavioral analysis. *Journal of Behavioral Addiction, 6*(3), 306–309. doi:10.1556/2006.6.2017.045

- Kapchuk, T. J. (2003). Effect of interpretive bias on research evidence. *BMJ*, 326(7404), 1453–1455. doi:10.1136/bmj.326.7404.1453
- King, D. L., Delfabbro, P. H., Wu, A. M. S., Doh, Y. Y., Kuss, D. J., Pallesen, S., Mentzoni, R., Carragher, N., & Sakuma, H. (2017). Treatment of Internet gaming disorder: An international systematic review and CONSORT evaluation. *Clinical Psychology Review*, 54, 123–133. doi:10.1016/j.cpr.2017.04.002
- Kiraly, O., & Demetrovics, Z. (2017). Inclusion of gaming disorder in ICD has more advantages than disadvantages. *Journal of Behavioral Addiction*, 6(3), 280–284. doi:10.1556/2006.6.2017.046
- Knocks, S., Sager, P., & Perissinotto, C. (2018). “Onlinesucht” in der Schweiz [“Online-addiction” in Switzerland]. Retrieved June 27, 2018, from [https://fachverbandsucht.ch/download/597/180419\\_Bericht\\_Expertengruppe\\_Onlinesucht\\_de\\_\\_def\\_ohneAnhang.pdf](https://fachverbandsucht.ch/download/597/180419_Bericht_Expertengruppe_Onlinesucht_de__def_ohneAnhang.pdf)
- Lee, S. Y., Choo, H., & Lee, H. K. (2017). Balancing between prejudice and fact for gaming disorder: Does the existence of alcohol use disorder stigmatize healthy drinkers or impede scientific research? *Journal of Behavioral Addiction*, 6(3), 302–305. doi:10.1556/2006.6.2017.047
- Müller, K. W., & Wölfling, K. (2017). Both sides of the story: Addiction is not a pastime activity. *Journal of Behavioral Addiction*, 6(2), 118–120. doi:10.1556/2006.6.2017.038
- Petersen, K. U., Hanke, H., Bieber, L., Mühleck, A., & Batra, A. (2017). *Angebote bei internetbasiertem Suchtverhalten (AbiS)* [Services for Internet-based addictive behavior]. Lengerich, Germany: Pabst.
- Plante, C. N., Gentile, D. A., Groves, C. L., Modlin, A., & Blanco-Herrera, J. (in press). Video games as coping mechanisms in the etiology of video game addiction. *Psychology of Popular Media Culture*.
- Robinson, S. M., & Adinoff, B. (2016). The classification of substance use disorders: Historical, contextual, and conceptual considerations. *Behavioral Sciences (Basel)*, 6(3), 18. doi:10.3390/bs6030018
- Saunders, J. B., Hao, W., Long, J., King, D. L., Mann, K., Fauth-Bühler, M., Rumpf, HJ, Bowden-Jones, H., Rahimi-Movaghar, A., Chung, T., Chan, E., Bahar, N., Achab, S., Lee, H. K., Potenza, M., Petry, N., Spritzer, D., Ambekar, A., Derevensky, J., Griffiths, M. D., Pontes, H. M., Kuss, D., Higuchi, S., Mihara, S., Assangangkornchai, S., Sharma, M., Kashef, A. E., Ip, P., Farrell, M., Scafato, E., Carragher, N., & Poznyak, V. (2017). Gaming disorder: Its delineation as an important condition for diagnosis, management and prevention. *Journal of Behavioral Addictions*, 6(3), 271–279. doi:10.1556/2006.6.2017.039
- Shadloo, B., Farnam, R., Amin-Esmaeili, M., Hamzehzadeh, M., Rafiemanesh, H., Jobehdar, M. M., Ghani, K., Charkhgard, N., & Rahimi-Movaghar, A. (2017). Inclusion of gaming disorder in the diagnostic classifications and promotion of public health response. *Journal of Behavioral Addiction*, 6(3), 310–312. doi:10.1556/2006.6.2017.048
- Smink, F. R., van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Report*, 14(4), 406–414. doi:10.1007/s11920-012-0282-y
- Stein, D. J., Phillips, K. A., Bolton, D., Fulford, K. W., Sadler, J. Z., & Kendler, K. S. (2010). What is a mental/psychiatric disorder? From DSM-IV to DSM-V. *Psychological Medicine*, 40(11), 1759–1765. doi:10.1017/S0033291709992261
- The Society for Media Psychology and Technology; Division 46 of the American Psychological Association. (2018). *APA Media Psychology and Technology Division (Div 46) policy statement expressing concern regarding the plan to include “Gaming Disorder” in the ICD-11*. Retrieved April 7, 2018, from <https://de.scribd.com/document/374879861/APA-Media-Psychology-and-Technology-Division-Div-46-Policy-Statement-Expressing-Concern-Regarding-the-Plan-to-Include-Gaming-Disorder-in-the-ICD-11>
- van den Brink, W. (2017). ICD-11 gaming disorder: Needed and just in time or dangerous and much too early? *Journal of Behavioral Addiction*, 6(3), 290–292. doi:10.1556/2006.6.2017.040
- van Rooij, A. J., Ferguson, C. J., Colder Carras, M., Kardefelt-Winther, D., Shi, J., Aarseth, E., Bean, A. M., Bergmark, K. H., Brus, A., Coulson, M., Deleuze, J., Dullur, P., Dunkels, E., Edman, J., Elson, M., Etchells, P. J., Fiskaali, A., Granic, I., Jansz, J., Karlsen, F., Kaye, L. K., Kirsh, B., Lieberoth, A., Markey, P., Mills, K. L., Nielsen, R. K. L., Orben, A., Poulsen, A., Prause, N., Prax, P., Quandt, T., Schimmenti, A., Starcevic, V., Stutman, G., Turner, N. E., van Looy, J., & Przybylski, A. K. (2018). A weak scientific basis for gaming disorder: Let us err on the side of caution. *Journal of Behavioral Addiction*, 7(1), 1–9. doi:10.1556/2006.7.2018.19
- Weinstein, A. (2017). An update overview on brain imaging studies of Internet gaming disorder. *Front Psychiatry*, 8, 185. doi:10.3389/fpsy.2017.00185
- Weinstein, A., Livny, A., & Weizman, A. (2017). New developments in brain research of Internet and gaming disorder. *Neuroscience and Biobehavioral Reviews*, 75, 314–330. doi:10.1016/j.neubiorev.2017.01.040
- World Health Organization [WHO]. (2015). *Public health implications of excessive use of the Internet, computers, smart-phones and similar electronic devices*. Meeting Report. Main Meeting Hall, Foundation for Promotion of Cancer Research, National Cancer Research Center, Tokyo, Japan. Geneva, Switzerland: WHO.
- World Health Organization [WHO]. (2018a). *ICD-11 beta draft – Mortality and morbidity statistics. Mental, behavioural or neurodevelopmental disorders*. Retrieved April 7, 2018, from <https://icd.who.int/dev11/l-m/en#/http%3a%2f%2fid.who.int%2fid%2fentity%2f334423054>
- World Health Organization [WHO]. (2018b). *International Classification of Diseases (ICD) information sheet. ICD purpose and uses*. Retrieved April 7, 2018, from <http://www.who.int/classifications/icd/factsheet/en/>
- World Health Organization [WHO]. (2018c). *The precautionary principle: Public health, protection of children and sustainability*. Retrieved April 15, 2018, from <http://www.who.int/hia/examples/overview/whohia076/en/>
- Zajac, K., Ginley, M. K., Chang, R., & Petry, N. M. (2017). Treatments for Internet gaming disorder and Internet addiction: A systematic review. *Psychology of Addictive Behaviors*, 31(8), 979–994. doi:10.1037/adb0000315