

emotions because of the complex self-motivation for online gaming [3]. We usually query the emotional experience after 2 or 3 days of stopping gaming to evaluate withdrawal symptoms. However, the nature or concept of the emotional presentation with intense desire for gaming after stopping gaming for several hours or 1–2 days should be discussed or evaluated. Further, after stopping gaming for more than 2 weeks, sudden onset of the emotional response mentioned above should be considered to be a craving response, but not withdrawal symptoms.

Although the consensus in this study is one of the most practical ways in which to diagnose IGD, the presentation of IGD is varied at different stages or ages, or in different circumstances. For example, subjects who keep gaming all day without external restrictions might experience tolerance as 'excessive gaming without satisfaction'. The wording used for some criteria in this study should be limited to particular circumstances or a specific age. Further, the essential presentation in different stages, the excluding criteria and the nature of IGD should be determined in future study or consensus. These evaluations could contribute to the improved diagnosis of IGD.

#### Declaration of interests

None.

**Keywords** consensus, diagnostic criteria, DSM-5, internet gaming disorder, severity, wording.

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#### References

1. Petry N. M., Rehbein F., Gentile D. A., Lemmens J. S., Rumpf H. J., Mölle T. *et al.* An international consensus for assessing internet gaming disorder using the new DSM-5 approach. *Addiction* 2014; **109**: 1399–406.
2. Kuss D. J. Internet gaming addiction: current perspectives. *Psychol Res Behav Manag* 2013; **6**: 125–37.
3. Billieux J., Van der Linden M., Achab S., Khazaal Y., Paraskevopoulos L., Zullino D. Why do you play World of Warcraft? An in-depth exploration of self-reported motivations to play online and in-game behaviours in the virtual world of Azeroth. *Comput Human Behav* 2013; **29**: 103–9.

4. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. Arlington, VA: American Psychiatric Association; 2013.
5. Starcevic V. Is Internet addiction a useful concept? *Aust NZ J Psychiatry* 2013; **47**: 16–9.
6. Ko C. H., Yen J. Y., Chen S. H., Wang P. W., Chen C. S., Yen C. F. Evaluation of the diagnostic criteria of Internet gaming disorder in the DSM-5 among young adults in Taiwan. *J Psychiatr Res* 2014; **53**: 103–110.
7. Volkow N. D., Wang G. J., Fowler J. S., Tomasi D., Telang F., Baler R. Addiction: decreased reward sensitivity and increased expectation sensitivity conspire to overwhelm the brain's control circuit. *Bioessays* 2010; **32**: 748–55.

#### MOVING INTERNET GAMING DISORDER FORWARD: A REPLY

We thank Drs Dowling, Goudriaan, Subramaniam, Ko and Yen for their comments on our paper about internet gaming disorder [1]. We agree with the points raised, and we wish to clarify and respond to two themes that arose.

All commentators [2–5] concurred that conceptual confusion has hindered study of this condition. Unfortunately, the name 'internet gaming disorder' introduced into the DSM-5 [6] appears to hold potential for creating further misunderstandings. The word 'internet' was included in the title for two reasons. First, internet or online games are the types of video or electronic games with which individuals are most likely to develop difficulties. However, as specified in the text of the DSM-5 ([6], p. 796), the medium through which one accesses games is not important for the diagnosis. Thus, problems with offline games can be considered alongside those associated with online or internet-accessed games. Secondly, the term internet was added to the title to distinguish gaming more clearly from gambling disorder, a distinct behavioral addiction.

The use of the word 'internet' in the title increases the likelihood of misconstruing an array of activities in the assessment of gaming disorder. Types of activities engaged in over the internet with which individuals may develop problems include social media sites, pornography, online shopping, online gambling, etc. We agree with the commentators that these behavioral patterns also require additional study. They may—or may not—be similar to internet gaming disorder in etiology, presentation or treatment. To date, internet gaming has the most consistent and extensively developed evidence base. Thus, only gaming activities were considered for the condition included in the DSM-5. More systematic research is necessary to ascertain whether problematic gaming itself constitutes a mental disorder, and whether or not excessive engagement in other activities conducted online (or offline) are similar or different from gaming in terms of engendering clinically significant harms.

In terms of the second theme that arose across the responses, we concur that interpretation and diagnostic importance of the specific criteria themselves requires greater study. Drs Ko and Yen [5] provide thoughtful considerations regarding some of the DSM-5 criteria, each of which should be taken into account as research moves forward. They articulate nuances in interpretation of symptoms that make pragmatic and clinical sense, and they published an initial validation study of the DSM-5 criteria [7]. However, some wording suggestions may benefit from additional discussions, as balance must be achieved between simplicity and thoroughness, especially in the context of epidemiological surveys. For example, specifying 'excessive' when describing gaming that leads to adverse consequences may not be necessary when extreme use is implied, and 'excessive' is a somewhat complex word that increases the reading level substantially. We agree with Goudriaan [3] that assessing frequency and intensity of gaming is important, but similarly to the diagnosis of alcohol use disorders, frequency and quantity may be more useful in the context of brief screening tools than diagnosis, because time spent gaming is influenced by multiple factors (e.g. free time) that may not relate directly to problems that arise from gaming.

Although researchers and clinicians are eager to adapt the DSM-5 criteria, pause is required to ensure a concerted effort to establish consistency and increase the likelihood that all are studying a similar condition. Without greater uniformity, this field will never move forward. Our paper [1] provides an initial consensus. An even greater involvement of the international scientific community at the time of inception and design of future research is likely to improve upon methods to assess a condition of growing clinical and public health significance throughout the world.

#### Declaration of interests

none.

**Keywords** Behavioral addiction, diagnosis, DSM-5, gaming, internet, video games.

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#### References

1. Petry N. M., Rehbein F., Gentile D., Lemmens J., Rumpf H. J., Möble T. *et al.* An international consensus for assessing internet gaming disorder using the new DSM-5 approach. *Addiction*; 2014; **109**: 1399–406.
2. Dowling N. A. Issues raised by the DSM-5 internet gaming disorder classification and proposed diagnostic criteria. *Addiction*; 2014; **109**: 1408–9.
3. Goudriaan A. E. Stepping up the game. *Addiction*; 2014; **109**: 1409–11.
4. Subramaniam M. Re-thinking internet gaming: from recreation to addiction. *Addiction*; 2014; **109**: 1407–8.
5. Ko C.-H., Yen J.-Y. The criteria to diagnose internet gaming disorder from causal online gamer. *Addiction*; 2014; **109**: 1411–2.
6. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 5th edn. Washington, DC: American Psychiatric Association; 2013.
7. Ko C.-H., Yen J.-Y., Chen S. H., Wang P.-W., Chen C.-S., Yen C.-F. Evaluation of the diagnostic criteria of internet gaming disorder in the DSM-5 among young adults in Taiwan. *J Psychiatr Res* 2014; **53**: 103–10.