

How can we measure problematic videogame use among adolescents?

Playing video games is currently one of the most frequent leisure activities in young people and adolescents, but it generates a social alarm because it is associated with negative consequences such as family or scholar problems, reduction of social interactions, loss of self-control, addiction or disturbance of well-being. But playing video games is in most of the cases a normal leisure activity, which only becomes a health problem that requires professional help in a small percentage of gamers.

In this regard it is necessary on one hand to have scientific criteria to distinguish normal versus abnormal videogame playing. On the other hand, to have assessment instruments to identify when playing video game is safe, excessive or problematic.

The inclusion of Internet Gaming Disorder (IGD) in the DSM-5, although it has generated controversy over its diagnosis, is a significant step in establishing unified scientific criteria to delimit this problem. Following this proposal, we have carried out a systematic review of the developed instruments that exist so far, to evaluate IGD in adolescents and young people.

We identified 13 studies which included validations of seven assessment instruments for IGD in adolescents and young people. Each instrument, and its validations in different languages, is described.

The assessment instruments we found, unlike the previous ones (which in many cases evaluated Internet addiction in general) tend to focus on the problematic use of the video-games following the DSM-5 criteria. They are usually brief self-report measures, between 9 and 27 items that adolescents and young people answer on a 5-point Likert-type scale (probably due to its greater sensitivity), with scores of 4 and 5 used to establish the presence of the IGD DSM-5 diagnostic criteria. However, although they maintain high internal consistency and good criterion validity (usually taking as a reference: hours of gaming per week), they have problems related to sample selection, lack of sensitivity and specificity studies, and the establishment of cut-off points and player profiles.

For detection of the IGD in large populations, it would be advisable to use a brief, highly sensitive self-report measure. The IGDS9-SF, developed by Pontes y Griffiths In the United Kingdom, is the most widely used, with the greatest number of translations to different languages and validations (Chinese, Czech, English, German, Italian, Korean, Malay, Persian, Polish, Portuguese, Slovenian, Spanish, and Turkish). It consists of 9 items which account for the nine diagnostic criteria of the DSM-5. Its goal is to assess the severity of IGD and its harmful effects, evaluating the activities of gaming carried out either in or out Internet, during the last 12 months. However, different gamer types (i.e.: normal, problematic, pathological...) are not identified in most of its validations, and it is

necessary to empirically establish cut-off points different to the proposal of reach 5 of the 9 criteria recommended by the DSM-5, to analyze their specificity, sensitivity and diagnostic accuracy.

For the future development of IGD assessment instruments, a complete study of the psychometric qualities of the instruments should be considered, including their sensitivity, specificity, diagnostic accuracy and cut-off points, in order to establish different gamer profiles and their risk levels. In order to detect the problem in large populations and the application of prevention programs in schools, it would be advisable to use a brief, highly sensitive self-report instrument and, after its detection, a test with high specificity, capable to reduce false positives and confirm a diagnosis involving clinical judgment. To improve communication and collaboration between international researchers and/or clinicians, making the instruments and their authors accessible through web pages seems an appropriate strategy.

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