



An overview of Assessment Approach towards Problematic use of Internet

Pawan Kumar Gupta^{1*}, Debolina Roy², Amit Singh³, Sauraj Kapoor⁴, Ankita Saroj⁴

¹MD (Psychiatry), Additional Professor, Department of Psychiatry, King George's Medical University, U.P., Lucknow.

²Assistent Professor

³DM,MD, Assistant Professor, Department of Psychiatry, King George's Medical University, U.P.,

⁴Junior Resident (Psychiatry), Department of Psychiatry, King George's Medical University, U.P., Lucknow

Abstract

The concept of internet addiction is now widely discussed and being studied in various ways. There are works of literature that pioneer in defining the concept and deciding the future path of research. Among entities defined, video gaming has found a place in the DSM-5 as internet gaming disorder and in ICD-11 as gaming disorder and hazardous gaming. However, the concept of problematic internet use or internet addiction still needs sufficient evidence to be placed in diagnostic systems. Research is mainly focused on self-report assessment methods, and there is a lack of literature about basic clinical interviewing, establishing symptom criteria, severity and frequency thresholds, and assessing the impairments caused due to the clinical condition. This paper attempts to formulate an approach for detail clinical interviewing based on variables used in different studies.

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*Correspondence:

Dr. Pawan Kumar
Gupta

gpawan2008@
gmail.com

MD (Psychiatry),
Additional Professor,
Department of
Psychiatry, King
George's Medical
University, U.P.,
Lucknow.

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INTRODUCTION

The term addiction has traditionally been associated with psychoactive substances such as alcohol and tobacco, but behaviors such as excessive internet use have more recently been identified as addictive.¹ It is associated with dysfunction and harm in multiple domains of life, including physical health, mental health, and socio-occupational functioning. Internet addiction was initially conceptualized as an impulse control disorder that later included compulsivity and addiction.² There have been controversies over its conceptualization and diagnostic criteria.^{3,4} There are also taxonomical disagreements about using general terms like "Problematic Internet use" to Internet use disorders (IUD) or Smartphone Addiction to Smartphone Use Disorders or specific application or feature-based terminologies like social media addiction, gaming disorders, or pornography use disorders.⁵ Internet use has dramatically increased over the past two decades, contributed largely by expanding telecom networks and the advent of smartphones. Problematic internet use (PIU) has become a public health concern and has been linked to addiction symptoms.⁵ Though

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common in the current era, internet addiction has not been included in DSM-5 or ICD-11 as a separate entity owing to lack of consensus regarding defining features, inadequate supporting research, and controversies regarding the validity of this diagnostic entity. On the other hand, Internet Gaming Disorder has been included in DSM-5 as a category for Section III, as a condition requiring further study for better evidence.

Research on Assessment of Problematic Internet Use

Diagnosing mental and behavioral disorders has been difficult, and formulating the diagnostic criteria is time-consuming and based on evidence. Several researchers have proposed diagnostic criteria for internet addiction (Table 1). Griffiths (1996) suggested six components that identified behavioural addiction - salience, mood modification, tolerance, withdrawal symptoms, conflicts, and relapse.⁶ Young (1998) developed an eight-item questionnaire and modified the criteria for pathological gambling to provide a screening instrument for addictive internet use.⁷ Shapira *et al.* (2003) proposed diagnostic criteria for problematic internet use, based on the criteria for impulse control disorders. They suggested that Criteria A should include preoccupation with internet use or the excessive use of the internet for more extended periods than planned. Besides, functional impairments should define Criteria B, and exclusionary diagnoses should define Criteria C.⁸ Ko *et al.* (2009) and Tao *et al.* (2010) proposed more detailed diagnostic criteria, including the symptom criteria, exclusion criteria, clinically significant impairment criteria, and course criteria.^{5,9} Musetti *et al.* (2016) asserted that the criteria for

internet addiction disorder (IAD) proposed by Young (1996) had limitations, and the framework is too broad and general to make a definite diagnosis.^{10,11}

The criteria for internet gaming disorder also broadly mirror the concepts proposed for Internet addiction or Problematic use by Young (1996), Griffiths (1996), and others.^{6,11} DSM-5 indicates that the research using IGD criteria in internet addiction is needed to advance and understand these conditions. The proposed criteria for IGD in DSM-5 and the previous ones do not set any severity and frequency threshold. In their study of validity, functional impairment, and complications related to IGD in the DSM-5 and GD in ICD-11.^{12,13} Ko *et al.* (2019) used a severity and frequency threshold for each criterion for internet gaming disorder. The thresholds set and the selection criteria were based on their previous research and clinical experiences in their interview. This study suggested the need for more refined criteria with definite cut-offs to improve research applicability.¹⁴

Challenges in Diagnosing the Entity

The diagnosis of internet addiction can be challenging in clinical setup due to the following reasons:

- Lack of clear distinction, when internet use can be considered pathological,
- Lack of attribution to internet addiction and technology use,
- Presenting with symptoms of depression, concentration difficulties, obsessive-compulsive symptoms, or other ambiguous manifestations often confused with known psychiatric comorbidities,¹⁵

Table 1: Assessment points for establishing the diagnosis of problematic internet use or internet addiction

<i>Symptom Criteria</i>	<i>Points for evaluation during the clinical interview</i>
Preoccupation: Preoccupation with the internet (thinks about a previous online activity or anticipates next online session)	<ul style="list-style-type: none"> ■ The account of duration and frequency of thinking about or anticipating accessing the internet ■ A parental account of their child talking about internet activity. ■ The duration of non-essential internet activity; how many hours per day, and; how many days per week? ■ Is there any change in the overall involvement or preoccupation over time? ■ How do the child and parents feel about the preoccupation? Both child's and parental accounts must be taken and corroborated. ■ How do they deal with it? Record recent examples of significant events.

Symptom Criteria	Points for evaluation during the clinical interview
<p>Withdrawal: Withdrawal, as manifested by a dysphoric mood, anxiety, irritability, and boredom after several days without internet activity.</p>	<ul style="list-style-type: none"> ■ Experience any emotional reaction like irritability, anxiety, dysphoric mood, boredom, or any other emotional reactions when asked or forced to stop an online activity or remove the device. ■ Duration before experiencing such withdrawal symptoms should be recorded. ■ An account that is of symptoms being transient or persistent. ■ Is there any change in the severity of these symptoms over time? ■ How does the child or parents deal with these withdrawal symptoms? Record recent examples of significant events.
<p>Tolerance: A marked increase in internet use required to achieve satisfaction</p>	<ul style="list-style-type: none"> ■ Based on previous suggestions () tolerance can be recorded as below: ■ Need to spend more time on internet activity. ■ Need to increase the intensity of internet activity, for example, using more exciting features of social media, upgrading free to a paid subscription, more exciting gameplay, etc. ■ The intensity of internet use may vary depending upon the content, feature, and purpose. (online chatting, dating, pornography, entertainment, hobbies, etc.) ■ History of internet behavior coming from virtual life to real life (for example, online chatting to frequent meetings or dating.)
<p>Loss of control: Persistent desire or unsuccessful attempts to control, cut back or discontinue internet use</p>	<ul style="list-style-type: none"> ■ The number of failed attempts to control problematic activity on internet or use of internet per se. ■ Difficulty in controlling when required (e.g., Before and examination or important work) ■ Details must be taken about how significantly does the child makes an attempt. ■ Is there only planning of attempt, mental decision, or actual effort? What effort has been made by others to cut down or decrease?
<p>Negative consequences: Continued excessive use of the internet despite knowledge of having a persistent or recurrent physical or psychological problem likely to have been caused or exacerbated by internet use.</p>	<ul style="list-style-type: none"> ■ A descriptive and careful account of impairment should be done, followed by its quantification. <p>Knowledge of harm should be assessed (physical and psychosocial)</p>
<p>Loss of interests: Loss of interests, previous hobbies, entertainment as a direct result of, and except, internet use.</p>	<ul style="list-style-type: none"> ■ Details should be recorded about the hobbies and interests before the Internet use period and after the internet use period for apparent changes over time due to internet activity. <p>A personal and parental record should be corroborated.</p>
<p>Escape: Uses the internet to escape or relieve a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety)</p>	<ul style="list-style-type: none"> ■ Detail account, as mentioned in the criteria, should be explored and recorded. <p>It should be noted if there is an extended period of problematic use required to relieve stressful situations.</p>
<p>Deception: Had deceived a family member or partner about the time spent online</p>	<p>Same as the definition but it includes child deceiving other significant like teachers or school authority.</p>
<p>Functional impairment: Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of online activity</p>	<ul style="list-style-type: none"> ■ Physical harm: History about pain in thumbs, palm, wrist, neck and back, eye strain, headache, decrease in sleep or daytime sleepiness due to excess night use ■ Social, academic, interpersonal, and social impairment: History about objective loss, for example, decrease in academic performance, work performance. Conflict with family members or significant others ■ Psychological: Level of personal distress or dissatisfactions, boredom, etc. should be recorded.

- Most of the structured assessment tools are self-report questionnaires that may require language and technical adaptation to various populations,
- Lack of descriptive guidelines about what all clinical variables need to be looked for identifying problems associated with the internet. Simply



asking questions mentioned in rating scales may be indicative of the problem.

The diagnosis and use of tools to determine internet use needs careful screening, as the confounders and variables are often difficult to distinguish. Hence, there is a risk for misdiagnosis. Another patient-related issue that can be a serious confounder is their tremendously varied usage of the internet, and clinicians need to use screening tools comprehensively in addition to the public awareness measures regarding this clinical entity. Thus any visit to the care provider can be turned into an opportunity to screen for potential and actual problems. Along with self-report, information from key relatives, parents, or other settings should also be considered, especially in impairment in family functioning, academic functioning, or another social scenario.

An Approach towards Detail Clinical Assessment

The assessment must be multifaceted and wholesome. A biopsychosocial approach is recommended for evaluating the clients in detail. The clinician should assess all the relevant domains and dimensions of functioning. Studies have reported the use of various measures to diagnose internet addiction, but the detailed interview is definitely a better method for holistic assessment.^{3,15}

A detailed evaluation may need to interview both the patient and his/her concerned others. Information gathered from the school or workplace, or other places where the client spends time will help in formulating the case. In children and adolescents, interviews conducted in the presence of parent(s) may be more productive. However, it should be followed by individual interactions with both. Besides, Parents or guardians help validate the related symptoms as children and adolescents may be less expressive of their thoughts and may find it difficult to verbalize their emotions. The clients may not see their use of the internet as problematic, so establishing rapport with them is crucial for effective evaluation. It involves gradually engaging the clients in the interview process, collecting information, and observing their actions. This may take two to four or more sessions.

Concerning the internet use purpose, previous studies have shown the males to outnumber females in engagement with video gaming, cyber pornography, and online gambling, whereas females are more likely to develop an addiction to social media, texting, and online shopping.¹⁶

To establish suggested core symptoms criteria of internet addiction following approach can be considered (Table 1).

For ease of understanding, the details assessment can be grouped as follows:

Assessment related to the Individual

The basic sociodemographic details (name, age, gender, education, family type, etc.) of the individual should be recorded.^{2,17,18} A basic record should also include the patient's body measurements such as BMI, which may indicate obesity and a long-standing sedentary lifestyle due to excessive use of screen or internet activity.¹⁹ Often the problematic internet use in adults is associated with comorbid mental illnesses, including depression, anxiety disorders, substance use disorders, and personality disorders. Even children and adolescents with Internet addiction tend to suffer from a variety of psychological and social issues. PIU is linked to attention deficit hyperactivity disorder (ADHD), depression, social phobia, and aggression.¹⁶ Besides, those at high risk for internet addiction are more likely to indulge in addictive behaviors. So, comorbidities, including drug misuse, should be assessed for and documented.²⁰ It has been found that Internet addiction, high levels of internet usage, and websites with self-harm or suicide content were all linked,²¹ therefore, self-harm attempts and suicidal attempts in children and adolescents must be explored as well. Stressors from interpersonal and school-related problems, as well as anxiety symptoms, are found to be substantially linked to Internet addiction.²²

Assessment related to the Family and Social Environment

In family history, one should explore the parental use of technology (in the same way as mentioned in the Table 2). The details should be recorded for each parent and siblings. History of parent's mediation or monitoring on technology use should be taken, and

Table 2: Details of the device used to access the internet

Serial Number	Type of device ^a	Ownership and accessibility of device ^b	Purpose of use ^c	Duration (hours per day) ^d	The remark or comment ^e
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how it is done be explored.^{2,11,17} An overall assessment of the family's attitude towards the child's condition needs to be done highlighting the a) Parental interaction and interpersonal communication patterns in the family b) family patterns and activity, conflict management, perceived level of understanding, disturbing dynamics will require exploration. c) the associated exploration about the emotional state and feelings of the child can occupy a major ground.¹¹

Assessment related to the Work/School Environment

While assessing the child/adolescent for problematic internet use, a clinician must consider the school environment for the regulations with gadgets, online groups, and communities and issues like bullying and availability of support in the school. (11) In situations where no detailed information is available, liaisons should be established with the teacher or school authority, or counselor to explore additional information.

Assessment related to Peer Relationships

History of peer group use of technology (type/purpose/duration), any bullying or victimization, and history of peer support and bonding.¹¹ Perceived impact of peers on the technology used by the child as well as parents should be recorded.

Technology Specific Assessment

This can be considered as a new domain in psychiatric assessment. It is highly relevant that assessment of problematic internet use must include what the person is using and the understanding of generalized and specific, mobile and non-mobile PIU.²³ History should be tailored based on use, which features or applications are used predominantly. One's perception about "What is interesting in the feature or applications" can be an important factor in understanding the child's motivation towards excessive use. The history of the profile being blocked or restricted because

of violation can be indicative of problematic use. The type of devices used, the reasons, duration, frequency, and types of websites visited should all be detailed in the history.²⁴

- Smart television/ television with internet box/ gaming consoles/ personal computer/ laptops/ tablets or I-Pad/ smartphones
- Owned by the child or adolescent/mother's/ father's/sibling's/other family members/ friend's/ neighbor's/cyber café's/school or college lab's/ others.
- Blogging/social media watching movies/ listening to music/browsing/chatting/dating/ gaming/shopping/auction/pornography (reading, pictures or video)/using something that is secret or cannot be told/no purpose.
- Duration in hours per day.
- Predominant hours like late night use/ using during weekends or holidays/using when on vacation or when out of home or work or city due to privacy and secrecy, or any other significant reasons.

CONCLUSION

The phenomenon of excessive internet use is, in fact, a dynamic concept in this technology-dependent world. What remains excessive internet use and is considered problematic at one point in time may become acceptable with the changing times. Because of dramatically changing human-technology interaction with changing technology features, progressive linkage and merging of activities with each other, and newer human activities migrating to virtual spaces, the overall human internet interface duration has increased. Thus, it has become harder for clinicians to identify and diagnose problematic internet use (PIU). Quite a lot of things have moved online, including workspaces, shops, libraries. Online gaming and other virtual activities have also gained momentum. This makes it critical to accurately identify the individual-related factors in psychological, social,

physical, and other domains of life to delineate the Problematic Internet use (PUI) disorder. Hence, a detailed assessment will help elaborate on proposed symptom criteria and also helps with the identification of key areas requiring intervention. Development of universally acceptable diagnostic criteria and comprehensive evaluation tools is also needed for the identification and care of patients with internet gaming disorder.

REFERENCES

1. Sim T, Gentile DA, Bricolo F, Serpelloni G, Gulamoydeen F. A conceptual review of research on the pathological use of computers, video games, and the Internet. *International Journal of Mental Health and Addiction*. 2012;10(5):748–69.
2. J Kuss D, D Griffiths M, Karila L, Billieux J. Internet addiction: A systematic review of epidemiological research for the last decade. *Current pharmaceutical design*. 2014;20(25):4026–52.
3. Beard KW, Wolf EM. Modification in the proposed diagnostic criteria for Internet addiction. *Cyberpsychology & behavior*. 2001 Jun 1;4(3):377–83.
4. Kardefelt-Winther D. A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in human behavior*. 2014 Feb 1;31:351–4.
5. Ko C-H, Yen J-Y, Chen S-H, Yang M-J, Lin H-C, Yen C-F. Proposed diagnostic criteria and the screening and diagnosing tool of Internet addiction in college students. *Comprehensive psychiatry*. 2009;50(4):378–84.
6. Griffiths M. Nicotine, tobacco and addiction. *Nature*. 1996 Nov;384(6604):18–18.
7. Young KS. Internet Addiction: The Emergence of a New Clinical Disorder. *CyberPsychology & Behavior*. 1998 Jan 1;1(3):237–44.
8. Shapira NA, Lessig MC, Goldsmith TD, Szabo ST, Lazoritz M, Gold MS, *et al*. Problematic internet use: proposed classification and diagnostic criteria. *Depress Anxiety*. 2003;17(4):207–16.
9. Tao R, Huang X, Wang J, Zhang H, Zhang Y, Li M. Proposed diagnostic criteria for internet addiction. *Addiction*. 2010;105(3):556–64.
10. Musetti A, Cattivelli R, Giacobbi M, Zuglian P, Ceccarini M, Capelli F, *et al*. Challenges in Internet Addiction Disorder: Is a Diagnosis Feasible or Not? *Front Psychol* [Internet]. 2016 Jun 6 [cited 2021 May 26];7. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4894006/>
11. Young K. Internet addiction test (IAT). Stoelting; 2016.
12. Association AP. Diagnostic and Statistical Manual of Mental Disorders (DSM-5®) [Internet]. American Psychiatric Publishing; 2013. Available from: <https://books.google.co.in/books?id=-JivBAAQBAJ>
13. ICD-11 - ICD-11 for Mortality and Morbidity Statistics [Internet]. [cited 2021 May 26]. Available from: <https://icd.who.int/browse11/l-m/en#/http%3a%2f%2fid.who.int%2fid%2fentity%2f1602669465>
14. Ko C-H, Lin H-C, Lin P-C, Yen J-Y. Validity, functional impairment and complications related to Internet gaming disorder in the DSM-5 and gaming disorder in the ICD-11. *Aust N Z J Psychiatry*. 2020 Jul 1;54(7):707–18.
15. Montag C, Wegmann E, Sariyska R, Demetrovics Z, Brand M. How to overcome taxonomical problems in the study of Internet use disorders and what to do with “smartphone addiction”? *Journal of Behavioral Addictions*. 2021 Jan 15;9(4):908–14.
16. Wu YL, Lin SH, Lin YH. Two-dimensional taxonomy of internet addiction and assessment of smartphone addiction with diagnostic criteria and mobile apps. *Journal of behavioral addictions*. 2021 Jan;9(4):928–33.
17. Poli R. Internet addiction update: Diagnostic criteria, assessment and prevalence. *Neuropsychiatry*. 2017;7(1):04–8.
18. Chia DX, Ng CW, Kandasami G, Seow MY, Choo CC, Chew PK, *et al*. Prevalence of internet addiction and gaming disorders in Southeast Asia: a meta-analysis. *International journal of environmental research and public health*. 2020;17(7):2582.
19. Ko C-H, Lin H-C, Lin P-C, Yen J-Y. Validity, functional impairment and complications related to Internet gaming disorder in the DSM-5 and gaming disorder in the ICD-11. *Aust N Z J Psychiatry*. 2020;54(7):707–718.
20. Lee YS, Han DH, Kim SM, Renshaw PF. Substance abuse precedes Internet addiction. *Addict Behav*. 2013 Apr;38(4):2022–5. doi: 10.1016/j.addbeh.2012.12.024. Epub 2013 Jan 16. PMID: 23384457; PMCID: PMC4651446.
21. Marchant A, Hawton K, Stewart A, Montgomery P, Singaravelu V, Lloyd K, Purdy N, Daine K, John A. A systematic review of the relationship between internet use, self-harm and suicidal behaviour in young people: The good, the bad and the unknown. *PLoS one*. 2017 Aug 16;12(8):e0181722.
22. Tang J, Yu Y, Du Y, Ma Y, Zhang D, Wang J. Prevalence of internet addiction and its association with stressful life events and psychological symptoms among adolescent internet users. *Addictive behaviors*. 2014 Mar 1;39(3):744–7.
23. Young KS. Internet addiction: The emergence of a new clinical disorder. *Cyberpsychol Behav*. 1998;1(3):237–244.
24. Grover S, Shouan A. Cyberpsychiatric disorders: An overview of assessment and management. *Journal of Mental Health and Human Behaviour*. 2020 Jul 1;25(2):76.