CLEARINGHOUSE
FOR MILITARY FAMILY READINESS

Internet Addiction:
Rapid Literature Review

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PennState

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Clearinghouse for Military Family Readiness at Penn State

Executive Summary

This rapid literature review was conducted in response to a request from the Army Family Advocacy Program. The findings address research related to internet addiction in children and adults, how internet addiction affects relationships, as well as other pertinent information for parents and families of those affected by internet addiction.

Internet addiction (IA) is the broad term that refers to both addiction to the internet as a singular entity, as well as addiction to activities that can be accessed via the internet (Van Rooij & Prause, 2014). IA is also referred to as *problematic internet use* or *pathological internet use*.

IA is associated with mental health conditions (Hernández, Rivera Ottenberger, Moessner, Crosby, & Ditzen, 2019). Signs and symptoms can parallel those of substance abuse or pathological gambling disorders (Li, O'Brien, Snyder, & Howard, 2015). Researchers have developed measures, such as Young's Diagnostic Questionnaire (Young, 1998) and the Compulsive Internet Use Scale (Meerkerk, Van Den Eijnden, Vermulst, & Garretsen, 2009) to determine the severity of an individual's addiction. Cognitive Behavioral Therapy is the most popular psychological treatment approach for internet addiction (Kuss & Lopez-Fernandez, 2016).

This report provides the following elements:
- a synthesis of the literature, including a definition of internet addiction, personality traits and behavioral health conditions, signs and symptoms, assessments, and treatment; and
- additional resources, such as websites, presentations, and online assessments for IA.

Please note that this rapid literature review provides a preliminary examination of the research. It is not intended to serve as a comprehensive review of the literature, nor are the resources provided endorsed by the Clearinghouse. Further, the material contained in this review is for informational purposes only. It is not intended, nor can it be used, to diagnose or treat internet addiction.

Introduction

The Technical Assistance (TA) team at the Clearinghouse for Military Family Readiness at Penn State (Clearinghouse) conducted a brief, rapid literature review on the topic of internet addiction. Research examining internet addiction was identified by searching peer-reviewed journal articles with an emphasis placed on research published between

2015 and 2020. Search queries included various combinations of the following terms: *internet addiction, problematic internet use, pathological internet use, compulsive internet use, treatment, face-to-face, relationships, and comorbidities.*

Internet Addiction

Internet addiction (IA) is a public health challenge and growing global concern (Ryding & Kaye, 2018; Zhang et al., 2017). IA is defined as "the inability to control one's use of the Internet which leads to negative consequences in daily life" (Li et al., 2015, p. 2). Children, youth, and young adults are most susceptible to IA (Alimoradi et al., 2019). Most researchers agree that IA warrants more research and attention as a lack of standardization in the field exists. For example, connecting the term *addiction* to internet use generates controversy among some researchers.

Many believe IA should be classified as a psychiatric disorder, while others do not (Ryding & Kaye, 2018). Researchers who do not support classifying IA as a psychiatric disorder prefer the terms *problematic internet use* or *pathological internet use*. They theorize that people have formed addictions to services accessed via the internet such as gambling or shopping rather than the internet itself. In other words, in the absence of the internet, a person could still engage in activities such as gambling or shopping in the "real world" (Yellowlees & Marks, 2007). These types of behaviors are described as problematic or pathological internet use rather than IA. For the purposes of this review, however, the terms internet addiction (IA), problematic internet use, and pathological internet use are used interchangeably.

Regardless of the terminology used, most researchers theorize at least three types of IA exist, although there is no consensus among researcher as to what those three types are (Hawi & Samaha, 2019). Young (1999), one of the first researchers to study IA, identified five subtypes that have been used to better conceptualize IA:

- **Cyber sexual**: Cybersex and Internet pornography;
- **Net compulsions**: Online gambling, shopping, or stock trading;
- **Cyber-relationships**: Social media, online dating, and other virtual communication;
- **Computer Addiction**: Online game playing or programming; and
- **Information Surfing or Overload**: Web surfing or database searches.

Recent advancement in the conceptualization of IA came in 2013 as internet gaming disorder was added to the appendix of the Diagnostic and Statistical Manual, Fifth Edition (DSM-5) with the caveat that more research was needed (Benarous et al., 2019). In 2018,

addiction to video games was included in the International Classification of Disease (ICD-11) diagnostic manual under "gaming disorder" (World Health Organization, 2019). Inclusion of these types of IA in the DSM-5 and ICD-11 provide additional support for classifying IA as problematic or pathological internet use in relation to specific online activities.

Risk Factors

IA has been associated with mental health conditions such as anxiety and depression, as well as high levels of perceived stress and stressful life events (Hernández et al., 2019). Attention deficit-hyperactivity disorder (ADHD), substance misuse disorders, self-injury, and suicidal ideation may also be connected to one's susceptibility for IA or problematic internet use (Li et al., 2015). Among university students, sadness, depression, stress, and boredom were found to be triggers for intensive internet use (Li et al., 2015).

The motivation behind problematic internet use has been delineated by researchers as: adaptive internet use and pathological behavior (Alimoradi et al., 2019). Adaptive internet users rely on the convenience of the internet to reduce loneliness and improve self-esteem and socialization. Those with pathological behaviors tend to use the internet as a coping strategy and engage in excessive gambling, gaming, and pornography (Alimoradi et al., 2019). Hardie and Tee (2007), found that neuroticism (i.e., emotional instability or high levels of worry, envy, stress, and nervousness) and high levels of perceived support from online communities were predictors of problematic internet use. Whereas, Hernandez et al. (2019) found agreeableness (i.e., friendliness or compassion), conscientiousness (i.e., efficiency or organization), openness to experiences (i.e., curiosity or inventiveness), and emotional stability were negative predictors of IA and social media addiction.

According to Yellowlees and Marks (2007), individuals who have a history of impulse control and addictive disorders are pre-disposed to becoming addicted to the internet. Some researchers have suggested that internet addiction be classified as an impulse control disorder (Yellowlees & Marks, 2007).

Signs and Symptoms

Signs and symptoms of IA can parallel those of substance abuse or pathological gambling disorders (Li et al., 2015). Potential signs of IA are listed below (Hardie & Tee, 2007; Li et al., 2015).

- Preoccupation with the internet (e.g., inability to concentrate on activities other than internet use).
- Increasing tolerance to the internet (e.g., increasing time spent on the internet to receive the same positive feeling).
- Psychological dependency and withdrawal symptoms (e.g., unpleasant emotions when a person cannot access the internet).
- Inability to reduce internet use.
- Using the internet to cope with negative mood or reduce stress.
- Replacing relationships with internet use despite awareness and negative consequences (e.g., repeatedly skipping team sports practices to use the internet, despite knowing he or she won't play in games and may get kicked off the team).

Effects of Internet Addiction and Misuse

Consequences of internet addiction or misuse may include sleep deprivation, failure to exercise leading to weight gain or obesity, and poor school performance (Li et al., 2015). Adult compulsory internet use may predict depression, stress, and loneliness; happiness, however, could be a protective factor (Muusses, Finkenauer, Kerkhof, & Billedo, 2014).

Relationships can also be negatively affected by internet addiction or misuse. The motivation behind and behavior associated with the type of IA may impact relationships differently. For example, a person addicted to online gambling may lie about money problems, borrow from a joint savings account with a spouse, or sell items to fuel his or her addiction. Whereas, someone addicted to social media may become withdrawn from the "real world" as he or she creates an online personality that is preferred over face-to-face interactions. While online gambling and social media addictions could both lead to relationship problems, the problematic behaviors driving each addiction may look very different.

When a person becomes addicted to the internet, he or she may begin to replace face-to-face interactions with online interactions (Li et al., 2015). Initially, a person may use the internet to avoid mundane tasks and chores, but as time progresses, he or she may begin to ignore important responsibilities, such as studying for exams. Once confronted about the excessive internet use, a person may become angry and resentful (Young, 1998), further reducing the quality of relationships outside the internet.

Assessing Internet Addiction

Researchers may utilize various tools to assess IA or problematic internet use. Two examples of commonly used tools to assess IA, Young's Diagnostic Questionnaire (YDQ)

and the Compulsive Internet Use Scale (CIUS), are described below. A brief summary and list of questions for each tool are provided. The TA team also identified four publicly available online screening resources, also described below. Please note that the included tools have not been validated by, nor are they endorsed by, the Clearinghouse.

Young's Diagnostic Questionnaire (YDQ)

Young's Diagnostic Questionnaire (YDQ) has been used for over 20 years, since 1998, to assess IA (Li et al., 2015). YDQ was adapted from the Diagnostic and Statistical Manual (DSM-IV) criteria for pathological gambling disorder and consists of eight questions to determine a person's level of IA (Li et al., 2015; Young, 1998). The eight questions from the YDQ are listed below (Young, 1998).

1. Do you feel preoccupied with the internet (think about previous on-line activity or anticipate next on-line session)?
2. Do you feel the need to use the internet with increasing amounts of time in order to achieve satisfaction?
3. Have you repeatedly made unsuccessful efforts to control, cut back, or stop internet use?
4. Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop internet use?
5. Do you stay online longer than originally intended?
6. Have you jeopardized or risked the loss of significant relationship, job, educational, or career opportunity because of the internet?
7. Have you lied to family members, therapist, or others to conceal the extent of involvement with the internet?
8. Do you use the internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)? (p. 238)

Compulsive Internet Use Scale (CIUS)

The Compulsive Internet Use Scale (CIUS) consists of 14 questions. It is used to assess the severity of compulsive (i.e., addictive) internet use behavior such as loss of control, preoccupation, salience, using the internet as a coping mechanism, conflict, and withdrawal symptoms (Li et al., 2015; Meerkerk et al., 2009). The 14 questions from the CIUS are listed below (Meerkerk et al., 2009).

1. Do you find it difficult to stop using the internet when you are online?
2. Do you continue to use the internet despite your intention to stop?

3. Do others (e.g., partner, children, parents) say you should use the internet less?
4. Do you prefer to use the internet instead of spending time with others (e.g., partner, children, parents)?
5. Are you short of sleep because of the internet?
6. Do you think about the internet, even when not online?
7. Do you look forward to your next internet session?
8. Do you think you should use the internet less often?
9. Have you unsuccessfully tried to spend less time on the internet?
10. Do you rush through your (home) work in order to go on the internet?
11. Do you neglect your daily obligations (work, school, or family life) because you prefer to go on the internet?
12. Do you go on the internet when you are feeling down?
13. Do you use the internet to escape from your sorrows or get relief from negative feelings?
14. Do you feel restless, frustrated, or irritated when you cannot use the internet? (p. 3)

Additional Online Assessments

- **Take a Mental Health Test**, Mental Health America
  - The webpage hosts a variety of online screening tests from depression, eating disorders, and PTSD to addictions.
  - https://screening.mhanational.org/screening-tools

- **Brief Internet and Gaming Screen (reSTART-BIGS),** reSTART professional group
  - The screening tool was designed to help people better understand their internet gaming use and make decisions about the way they engage in gaming activities.
  - https://www.netaddictionrecovery.com/bigs-internet-video-game-addiction-screening-tool/

- **Quizzes for Internet Addiction**, The Center for Internet Addiction
  - The webpage hosts quizzes on the various aspects of internet addiction, including online sex addiction, online gambling addiction, and video game addiction, as well as quizzes for parents and partners to determine if a child or spouse may be dealing with internet addiction.
  - http://netaddiction.com/self-tests/

- ***Addictions and Compulsive Behaviors: Internet and Technology Abuse and Addiction Tests**,* The Center for Internet and Technology Addiction
  - o The webpage hosts addiction screening tools on a variety of internet addiction topics, including smartphone compulsion, cyber sexual abuse, virtual addiction, digital distraction, online pornography, internet addiction, and video game addiction, as well as a tool for parents to assess their child's technology use.
  - o https://virtual-addiction.com/addiction-screening-tools/

Treatment of Internet Addiction

Not all online activities and addictions are the same. Due to the variances in internet use behavior, treatment plans need to account for the type of IA such as social media addiction, cybersex addiction, or online game playing addiction (Błachnio, Przepiórka, & Pantic, 2015), as well as co-occurring conditions to most effectively treat IA. For example, *the fear of missing out* or *FOMO* (e.g., missing a Facebook photo or status update) may develop into a social media addiction (Kuss & Griffiths, 2017). However, *FOMO* would not generally be a struggle faced by someone with an online gambling addiction. Addressing *FOMO* may be important in social media addiction treatment, but it would not be important to address in online gambling addiction treatment. Understanding the behavioral motivation behind an addiction is important in delivering the most effective treatment.

Additionally, individuals who are addicted to services accessed through the internet may benefit from the same treatment as those who are addicted to that behavior offline. For example, an individual addicted to online gambling may be better classified as a gambling addict rather than an internet addict (Griffiths, 1996, as cited in Ryding & Kaye, 2018). As such, this individual could potentially benefit from programs and interventions that address gambling addiction, such as Gamblers Anonymous, as much as a pathological gambler.

Many addiction treatments such as Gambler's Anonymous and others promote abstinence from the addictive substance or behavior; nevertheless, abstinence is not the recommended treatment for IA (Young, 1999). Because most online activities are beneficial and required for school or work, not using the internet is unrealistic. Instead, individuals diagnosed with IA are taught to control or moderate the type of behavior that is problematic (Young, 1999).

Cognitive Behavioral Therapy (CBT)

Studies suggest cognitive behavioral therapy (CBT) is the most popular psychological treatment approach for internet addiction (Kuss & Lopez-Fernandez, 2016).

CBT is effective in treating a range of problems including depression, anxiety, substance abuse, as well as addictions (Society of Clinical Psychology, n.d.). CBT is based on the core principles that psychological problems are, at least in part, due to learned behaviors and unhelpful ways of thinking. Patients undergo therapy to improve coping skills, which allows them to change thinking patterns, problematic emotions, and behaviors (Society of Clinical Psychology, n.d.).

Programs Placed on the Continuum of Evidence

The TA team conducted a search on the Continuum of Evidence (Continuum) for programs that address internet addiction, problematic internet use, and pathological internet use. The search did not identify any programs that specifically address internet addiction.

To read more about the Continuum or to conduct a search of programs reviewed by the Clearinghouse, please visit www.continuum.militaryfamilies.psu.edu.

Programs not Placed on the Continuum of Evidence

The TA team next conducted a rapid review of publicly available online sources to include IA programs not yet placed on the Continuum. One treatment program was identified (listed below). Please note that this program has not been evaluated by, nor is the program endorsed by, the Clearinghouse. Should you find this or another program that fits your needs not currently placed on the Continuum, the Clearinghouse is happy to assist you by offering a thorough review of the program's evidence base, free of cost to military affiliated partners.

- **reSTART**
  - The reSTART program is a residential and outpatient treatment program, as well as coaching service for youth and adults addicted to the internet, video games, and social media. The reSTART program uses a systems-based model of change. Participants go through a 7-step process: the first step is to recognize the addiction; next, participants learn how to limit their technology use; finally, participants learn how to maintain a technology limited lifestyle.
  - https://www.restartlife.com/

Additional Online Resources

Websites

- ***Risky Business: Internet Addiction***, Mental Health America
  - The website provides an overview of what internet addiction is, how people become addicted to the internet, how it is related to mental illness, and treatment resources.
  - https://www.mhanational.org/risky-business-internet-addiction

- ***Internet and me***, European Cooperation in Science and Technology (COST)
  - The website houses scientific journals, presentations, and upcoming trainings on problematic internet use.
  - https://www.internetandme.eu/

- ***Better Health Channel: Internet Addiction***, Victoria State Government
  - The website provides an overview of what internet addiction is, signs of internet addiction, as well as different types of internet addiction.
  - https://www.betterhealth.vic.gov.au/health/healthyliving/internet-addiction

- ***The Center for Internet Addiction***, Dr. Kimberly Young
  - The website houses scientific journals, addiction tests, as well as general information on internet addiction.
  - http://netaddiction.com/

- ***FindTreatment.gov***, Substance Abuse and Mental Health Services Administration (SAMHSA)
  - The website provides the ability to search thousands of state-licensed providers who specialize in treating substance abuse disorders, addiction, and mental illness.
  - https://findtreatment.gov/

Handouts and Guides

- Handout: ***What Parents Can do About Technology Addiction at Home***
  - This handout provides parenting guidelines on how much technology children should be exposed at different ages, from birth through age 18.
  - http://netaddiction.com/wp-content/uploads/2015/07/Screen-Smart-Guidelines.pdf

- Guide: ***A Parent's Guide to Healthy Video Game and Internet Use for Children with ADHD***
    - This brief guide provides information and guidelines on internet use for parents of children with ADHD.
    - https://chadd.org/wp-content/uploads/2018/06/ATTN_Winter_17_18_Sussman.pdf

Presentations and Webinars

- Presentation Slides: ***The Problematic Usage of Internet: An Overview***
    - This presentation provides information on internet addiction behavioral models, terminology, and frequently asked questions.
    - https://www.lisbonaddictions.eu/lisbon-addictions-2019/sites/lisbonaddictions.eu.lisbon-addictions-2019/files/24%20A2%201510%20Zsolt%20Demetrovics%C2%A0.pdf

- Recorded Presentation: ***Virtual Addiction: Digital Media, Internet & Technology Addictions, Clinical Issues & Explorations***
    - This recorded 6-hour presentation provides information on internet and digital technology addiction for mental health professionals.
    - https://virtual-addiction.com/virtual-addiction-clinical-issues/

- Webinar: ***Overcoming Denial, How to Help Your Gamer Accept that They Have a Problem***
    - This webinar provides information for parents on how to identify and help their child overcome an online gaming addiction.
    - https://gamequitters.com/webinar-overcoming-denial/

Conclusion

Internet addiction is a relatively new concept, and further research is required to better understand and treat IA. Researchers acknowledge the lack of standardization around key terms in the field and continue to refine the current definitions of *problematic internet use*, *pathological internet use, and IA*. Effective treatment of IA (e.g., online game playing addiction) should account for and address other co-occurring conditions (e.g., depression, substance abuse) to improve overall health and wellbeing. While cognitive behavioral therapy remains the most common treatment for IA, new prevention and treatment programs continue to be developed as the field synthesizes the latest research findings.

Additional Assistance

The TA specialists at the Clearinghouse are happy to assist you. We provide support to professionals as they examine and make informed decisions about which programs fit specific situations and are worth the investment. Whether it is connecting you with the resources and tools to conduct a needs assessment in your community, suggesting the best evidence-based program or practice for your situation, or developing an evaluation plan, our team of experts is a call or email away.

Please visit our website at www.militaryfamilies.psu.edu or call 1-877-382-9185 to speak with a TA specialist.

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