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# Do You Have Internet Addiction?

Chauncey Inman  
*Brigham Young University*

*Intuition: The BYU Undergraduate Journal of Psychology*

## Abstract:

The Internet is a readily available tool that can quickly access a vast range of information, resources, and services. Despite the abundance of resources provided by the Internet, it can prove more detrimental than helpful if we do not wisely manage our personal time on and use of the Internet. This lack of personal time management for the Internet has developed a recently new mental disorder called Problematic Internet Use, but more commonly referred to as Internet addiction. Although this disorder is applicable for all ages, it is found to be a common addiction in adolescents. By examining Internet addiction studies from all over the world, this review provides an overview and basic understanding of Internet addiction. I explicitly focus on adolescents and this disorder as well as the comorbidity of Internet addiction and depression often found in adolescents. I first identify the psychological and physiological signs and symptoms of Internet addiction. Next, I discuss the correlation between depression and Internet addiction and the importance of this correlation. Finally, I address methods of recovery coupled with an appeal for further research to provide additional methods of treatment.

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The Internet is an easily accessible and infinitely extensible tool for finding information, connecting with others, and conducting global business and banking. Because the Internet's possibilities are basically limitless, it has become an essential, even mandatory, means of communication and finding information. In just a little over 10 years, the Internet grew from being available to 1% of the world's population to 97% (Hilbert & López, 2011). With its availability increasing, its usage has grown congruently. Statistics from around the world demonstrate this relationship: in the Middle East and Africa, the user rate increased by 1,300% between the years 2000–2009. In South Korea, 90% of the households have access to high-speed Internet. In the United Kingdom, people spend an average of 45 days per year on the Internet (Aboujaoude, 2010). It has been said that the computer and its Internet functions were designed as a tool for adults to use, and, true to its design, it is (Shapiro & Margolin, 2014). Interestingly however, the adolescent age group (ages ten to nineteen) that lives in a place that has access to the Internet is perhaps the group most influenced, spending an average time of 11 hours a day on the Internet. Contrastingly, adults report spending, on average, 30 minutes a day on social media sites (Shapiro & Margolin, 2014). Because of this

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large difference between adults and adolescents in regards to time spent on the Internet, it is commonly said that the adolescent is the technology expert within the family (Shapiro & Margolin, 2014).

Adolescents use the Internet in intriguing ways. They remarked that they use the Internet not just daily, but multiple times throughout the day (Bélanger, Akre, Berchtold, & Michaud, 2011). Shapiro and Margolin (2014) note that unlike an adult, an adolescent uses the Internet primarily for social purposes. Adolescents are maturing during a time when the Internet has become a commonplace commodity, and they are shaped by the Internet (Shapiro & Margolin, 2014). Because of high adolescent Internet use, adolescents' purposes in using the Internet and the ingrained nature of the Internet into the adolescents' lives, the primary focus of this review will be that of adolescents and how Internet addiction affects them, although Internet addiction is a behavioral condition applicable to all ages. According to Shapiro and Margolin (2014), the biggest source of an adolescents' interest is social media sites such as Facebook, Twitter, and Instagram. In a recent report, it was found that 45% of adolescents use social media sites daily, a percentage which excludes other forms of media such as TV

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shows, videos, and music. Additionally, many youth report at least beginning and ending their day with checking or browsing these sites. (Wartella, Rideout, Montague, Beaudoin-Ryan & Lauricella, 2016). Because of their high exposure to the Internet, adolescents have a risk for developing what is called Problematic Internet Use, or more commonly, Internet addiction. Studies done in the United States, Netherlands, and Korea, have all indicated that Internet addiction is characterized by an exorbitant amount of time spent accessing and perusing all sorts of information, sites, social networking, and activities found on the Internet. With these studies as a foundation, I will define Internet addiction as the following: one's inability to control personal Internet use, an inability which impairs daily functions and activities. Because of this substantial amount of time engaging with a screen rather than face-to-face, Internet addiction has its own distinct byproducts and symptoms.

In an attempt to provide information regarding Internet addiction and its particular impact on adolescents, a review of the current studies around the world regarding this topic will be discussed. First, I will describe the early developmental status of this disorder and the psychological and physiological signs and symptoms of Internet addiction. Second, I will examine

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the proposed link between depressive symptoms in adolescents and Internet addiction. Finally, I will offer suggestions for the treatment of Internet addiction. Throughout each area of interest, I will evaluate the extent of Internet addiction to the degree in which the Internet is used; namely, how international this problematic mental illness relationship is.

### **Signs and Symptoms of Internet Addiction**

Just as there are indicators for the common cold, Internet addiction can be identified through common signs and symptoms associated with this addiction. The signs and symptoms mentioned below are consistent throughout the literature reviewed. Studies mention indicators in both physiological and psychological areas for adolescents specifically. With this overuse of the Internet, adolescents are prone to irregularities in daily routines and habits as well as mental distress. Understanding these signs and symptoms for the mind and the body can help one recognize and begin to self-diagnose the possibility of Internet addiction.

### **Physiological Signs and Symptoms**

Physiological symptoms can occur that impact the growth

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and well-being of adolescents. A major symptom is the lack of or limited amount of sleep. It was found that with increased Internet use, adolescents in the United States reported a decrease in sleep quality, average sleeping time, and a decrease in overall health (Shapiro and Margolin, 2014). In a study conducted in China, adolescents who tested positive to having Internet addiction behaviors were sleeping less than six hours a night. Comparatively, adolescents who responded negative to having Internet addiction averaged more than eight hours of sleep a night (Lam, Zi-wen, Peng, Jin-cheng, Mai, & Jin, 2009; Kawabe, Horiuchi, Ochi, Oka, & Ueno, 2016) In the same study, researchers found that adolescents with Internet addiction also indicated a scarcity of physical activity, and, when asked directly, responded that they did no exercising.

Another physiological sign is the irregularity of eating patterns or skipping of meals altogether (Kim, Park, Kim, Jung, Lim, & Kim, 2010). Shapira et al. (2013) has found a correlation between eating disorders and Internet addiction. Not sleeping, exercising, eating, or any combination of these three suggests a preoccupation, and in these cases, a preoccupation with the Internet. Information regarding physiological symptoms associated with Internet addiction is very limited and categorized

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in broad, basic terms that could apply to a multiplicity of other behavioral and psychological disorders. However, these physiological signs and symptoms are consistently present with those with Internet addiction. Further research regarding additional physiological signs and symptoms as well as consistency throughout the research is needed.

### **Psychological Signs and Symptoms**

The principle psychological symptom of Internet addiction is the failure of the individual to monitor and control her or his Internet usage (Bozoglan et al., 2014; Park et al., 2013; Shapira et al., 2013). Such failure is reflected in scrolling through Facebook or Twitter for a “quick minute” that evolves into hours of time spent on social media sites. Nor is it unusual for adolescents to reopen websites repeatedly, mostly to revisit the same content. In other words, Internet use may become a habit that spirals into an addiction. An addiction can be defined as a condition that results when a substance or behavior initially used to receive pleasure becomes a compulsive need to the degree that it causes distress and impairment in daily life and functioning. Neuroimaging research done in Italy found that those with Internet addiction and those with substance addiction displayed



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similar patterns of activity in the nucleus accumbens and the orbitofrontal cortex of the brain (Cerniglia, Zoratto, Cimino, Laviola, Ammaniti, & Adriani, 2016). These findings suggest that like those who have a substance addiction, those with Internet addiction have the same neurological responses to using the Internet as to those with substance abuse do (Cerniglia et al., 2016; Shapiro & Margolin, 2014). With an addiction, the Internet has become more of a craving to connect or be informed than a tool to use.

The extensive integration of the Internet into the adolescents' lives has dramatically reduced their in-person social interactions, with most social interactions occurring on the Internet instead of occurring face-to-face (Usta, Korkmaz, & Kurt, 2014). Bozoglan's et al. (2014) study in the Netherlands, found that socializing activities such as social media sites and online messaging websites increased Internet addiction. Usta's et al. (2014) study also done in the Netherlands affirmed that adolescents view social interaction in a virtual environment as no different than social interactions with others in a live, non-virtual environment. After all, conversation exists in both settings. However, these adolescents shy away from verbally interacting face-to-face with their peers and adults, and feel

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that it is normal to have relationships with someone via online (Cerniglia et al., 2016; Kawabe et al., 2016; Sanders, Field, Diego, & Kaplan, 2000). Adolescent Internet users are provided with a social scene in which they can quickly highlight what they believe are their good qualities versus a face-to-face interaction, which could yield rejection. It was found that participants were unwilling to share personal and private information about themselves with others in these virtual social scenes (Usta et al., 2014). This online scene becomes safe to be whomever they choose. However, not everything presented through this online social scene is realistic or correct. Additionally, studies done in the United Kingdom and Italy documented that these adolescents also report that they feel lonely despite engaging in what they define as social interactions (Aboujaoude, 2010; Cerniglia et al., 2016). Although there is some form of socializing happening through the Internet, the fundamental elements of social interaction are lost.

Adolescents' use of the Internet is not without a positive side. The Internet brings these adolescents the opportunity to connect with more people from different cultures, backgrounds, and perspectives. Furthermore, adolescents who are shy with in-person settings have the opportunity to create and

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maintain relationships within the comforts of an online social scene. Nevertheless social media relationships have a potential cost. Shapiro and Margolin (2014) and their study with adolescents from the United States found that adolescents do not accurately or fully portray themselves online. Instead bits and pieces are shared, featuring those they consider most important. In the same study it was found that these adolescents are inhibited from creating deeply rooted relationships because the relationships are established through online social scenes, thus encouraging superficial, short-term relationships. These in-person relationships are significant to an adolescent's life, as well as to their growth and development of their opinions, likes and dislikes, behavior, and self-esteem (Cerniglia et al., 2016). Although there is an increase in the amount and types of people one could connect with, the quality and legitimacy of that relationship is influenced and perhaps compromised. Furthermore, face-to-face and in-person relationships are a significant part to an adolescent's life, and those relationships are not developed online. Therefore, while there seems to be a social interaction occurring through some medium, an actual and substantial relationship is lost from a lack of interaction.

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### **Internet Addiction and the Link to Depression**

One of the main comorbid disorders of Internet addiction is clinical depression. According to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-V) depression is characterized by a presence of an empty, sad, or down mood that persists for an extended period of time. An addiction pre-occupies one's thoughts and actions and often has byproducts that influence your mental state. For Internet addiction, a comorbidity with depression is more common than not (Andreou & Svoli, 2013). It was found in studies done in Spain, China, Qatar, Korea, United States, and the Netherlands that there was a direct correlation between having Internet addiction and developing depression. Moreover, several cross-sectional studies done in Greece found that Internet Addition was more commonly associated with depression in adolescents than any other psychopathological issues (Andreou & Svoli, 2013). These studies found that as use of the Internet increased to an abnormal and excessive level, depressive feelings and an overall state of being depressed simultaneously increased thus developing a cyclical relationship. As an adolescent becomes more depressed, she or he may seek more seclusion and turn increasingly to the Internet for social interaction. This reliance on virtual engage-

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ment, in turn, may amplify the individual's depressive state (Gámez-Guadix, 2014).

The relationship between Internet addiction and depression was found through first identifying if the adolescent participants in each study had Internet addiction, followed by testing for depression. In Park's (2013) study in Korea as well as Bener's and Bhugra's (2013) study in Qatar include the use of Beck's Depression Inventory (BDI) as a self-test and self-report method to measure the severity of the individual's depression. They found that BDI scores were significantly higher for those who were diagnosed with Internet addiction than for those who were not. Lam's et al. (2009) found that, in China, respondents who reported an Internet addiction were almost four times more likely to report clinical depression than those who did not report an Internet addiction. Usta et al. (2014) speculated that the relationship between Internet addiction and depression reflects the withdrawal from traditional, real-world sociality in favor of dependence on online social sites.

### **Methods of Treatment**

According to Gámez-Guadix (2014) who studied adolescents in Spain and Shapiro and Margolin (2014) who studied

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them in the United States, adolescents are most likely to develop Internet addiction compared to other ages groups. Thus, exploring potential methods of recovery can help adolescents receive the assistance they need while still in the early stages of Internet addiction. Because of the lack of a clear and concise definition or method of diagnosis of Internet addiction, there are only a series of self-report questions that are used consistently to diagnose Internet addiction in addition to the signs and symptoms discussed previously (Cerniglia et al., 2016). In 1998, Kimberly Young, the first researcher to report of Internet Addiction Disorder, produced the first set of questions to diagnose Internet addiction. Table 1 displays these questions. Much has changed in the meantime, prompting Cerniglia et al. (2016) to call for new diagnostic methods that better capture the parameters of an Internet addiction.

Cognitive Behavioral Therapy (CBT) has been frequently adopted for the treatment of Internet addiction in the United States, the Netherlands, and China (Aboujaoude, 2010; Bozoglan et al., 2014; Du, Jiang & Vance, 2010). As one method, CBT uses a journal to keep track of the time one spends using the Internet, as well as one's thoughts about Internet use, and time management. Additionally, CBT helps identify when those

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addicted to the Internet rationalize the need to continue browsing. It was found that participants were able to control their impulses and desires to use the Internet for an extended period of time. Shapira's et al. (2013) suggested that Internet addiction be viewed as an impulse control disorder (a disorder associated with a buildup or craving towards an action with a feeling of satisfaction after the action is complete) and be treated accordingly. Treating Internet addiction in views of an impulse control disorder can help separate a thought and action fusion that seems to describe Internet addiction. Medicines such as anti-depressants and mood stabilizers may be effective. Another potential treatment is a form of peer-to-peer offline communication and activities that encourage face-to-face and inter-person interaction and the development of deeper relationships (Cerniglia et al., 2016). Motivational interviews, as well as multi-modal counseling, may also be effective components of this approach.

### **Conclusion**

Internet addiction is becoming a prevalent mental disorder among adolescents. In an attempt to collect and review information from several areas in the world, the literature refer-

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enced has been done in several countries across the globe. As stated before, Internet addiction is a recent development, and information regarding the etiology, prevalence, incidences, and prognosis is being researched but definitely not complete. A few signs and symptoms have been identified in an effort to help individuals recognize a possible Internet addiction. Also, Internet addiction was shown to be a contributor to depression, and is specifically mentioned to help individuals identify a possible source for their feelings or state of depression, namely the Internet. And finally, diagnostic avenues are given through the questionnaire as well as current treatments.

It should be acknowledged that there have been studies and research done on the benefits of Internet use in regards to academia and success in the classroom. However, these studies are done with the Internet being used moderately and as a tool. The studies and literature referenced in this review have focused on an overuse of Internet, self-reported by participants in these studies. Furthermore, it should be stressed that these studies not only focused on the exorbitant amount of time spent on the Internet but also the types of activities pursued by adolescents and the purposes of those Internet activities that fill that long period of time (Bélanger et al., 2011). Thus, these studies are



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aimed at a specific audience of adolescents and seek to observe a direct result between an overuse of the Internet and resulting mental distress.

These studies referenced throughout this review suggest this relationship between Internet use and human behavior: with an increase in Internet use, there is a decrease in psychological balance, a decrease in the fulfillment of basic physiological needs, and a susceptibility to developing depression or depressive thoughts and feelings. Further research, especially longitudinal research, is needed in order to continue to refine the diagnosis and thereby promote more effective forms of treatment.

On-going research is needed to continue to explore the growing problem of Internet addiction, particularly among the adolescent age group, in order to teach them how to properly use the Internet and to be aware of and monitor their time spent on it. Connecting and socializing with a larger, global group is an excellent practice and helps the adolescent group become more socially acceptable of many cultures and practices. However, an online chat room should not become a replacement for socializing face-to-face. The Internet is a great tool, but too much of a good thing can be detrimental. Moderation

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of both use and time is key to using the Internet safely.

Table 1

Young's Diagnostic Questionnaire for Internet addiction

1. Do you feel preoccupied with the Internet (think about previous online activity or anticipate next online session)?
2. Do you feel the need to use the Internet for 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)?

Note. The questions provided in Table 1 are directly taken from "Internet addiction: The emergence of a new clinical disorder" by Young, diagnosis is considered positive for having Internet addiction when five or more of these questions receive a "yes".

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