Encyclopedia of Mobile Phone Behavior

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Internet and Mobile Phone Addiction

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INTRODUCTION

The Internet is a largely social, interactive and information-driven medium that makes it easy for us to engage in social and academic activities, including business and entertainment. Over the last decade, mobile phones have actually turned into so-called “smartphones,” and they now support a wide variety of services related to the Internet, multimedia, business, gaming, photography, etc.

These networks have had a great impact on young people. On the one hand, the Internet has provided many benefits to users (Echeburúa & de Corral, 2010). On the other, some people have become obsessed with it and are unable to control their use. In some cases, people have lost control of their Internet and Mobile Phone usage to the degree that their behavior has jeopardized their jobs and relationships.

This problematic Internet and Mobile Phone use (PIU) can affect users’ physical, mental and psychological health (Bener & Bhugra, 2013). Some researchers have confirmed that excessive Internet use, which is considered a behavioral addiction, can generate symptoms associated with dependence in a similar way as substance abuse. According to Beranuy, Carbonell, and Griffiths (2013), problematic Internet and Mobile phone users can suffer mood modification, loss of control, relapse, craving, tolerance, withdrawal, conflict, among others (Kuss, Griffiths, & Binder, 2013).

As a consequence, particular kinds of behavior may arise in relation with overuse (Puerta-Cortés, Carbonell, & Chamarro, 2014).

In general the problematic use of the Internet and mobile phones can be defined as an inability to regulate one’s use which eventually involves negative consequences in daily life (Billieux, 2012) including on health and on social and financial aspects of life.

OVERVIEW

The field of knowledge related to Internet and Mobile Phone addiction began to emerge when in 1995 Goldberg criticized the Diagnostic and Statistical Manual of Mental Disorders (DSM) with reference to Internet addiction. One year later, Young (1996) expressed her worries about the emergence of a new disorder related to the maladaptive usage of information and communication technologies.

Over the following years interest in this topic has grown and gained the attention of many researchers worldwide. Despite the fact that Internet and Mobile Phone addiction is a concern in all countries, the issue has been a more major consideration in certain places. This is true in some Asian countries, especially China, Korea, Taiwan and...
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Japan, which seem to have a significantly higher proportion of sufferers from this maladaptive Internet and Mobile Phone use. This large number of people with problems arising from what is now considered a behavioral disorder has prompted these countries to seek out treatments and create specific rehabilitation programs.

What we do know is that the appearance of new technologies that allow the user to be connected at all times has made one of the most significant impacts on modern society in recent years, affecting the daily life of many people around the world. The regular use of these tools can lead to a lack of control in users, or in other words to abuse, and ultimately to addictive behavior. Although not all studies have focused on the problems related to new technologies, and have also dealt with their benefits, the major scientific interest, especially in the psychological field, is concerned with their possible negative effects.

As we have stated, modern technology allows users to have access to the Internet through the Mobile Phone. The blend of the two technologies suggests that we cannot conceive Internet addiction as a separate entity from that of mobile phone addiction, but rather should study them together. Another issue to be considered is that many researchers claim that the cause of maladaptive behavior and addiction is not the technology itself, but the content and applications than can be accessed via the Internet.

CURRENT SCIENTIFIC KNOWLEDGE IN INTERNET AND MOBILE PHONE ADDICTION

Nowadays, Internet and Mobile Phone addiction is an issue with increasing significance for the scientific community. In this section we will present an overview of current research on Internet and mobile phone addiction. The number of studies concerning this topic has grown significantly.

In Europe, Griffiths and his International Gaming Research Unit have taken a place among the world’s leading scholars on gaming addiction and gambling and become a reference all over the world for those who study Internet related issues, having published numerous books and articles. In Spain, Echeburúa was one of the earliest scholars to be concerned with the psychological aspects related to Internet use. Now, several research groups focused on maladaptive behaviors exist in Spain with the aim of understanding the psychological dimension of addictions. For instance, Carbonell and his group have carried out several important studies on addictions to substances and new technologies like the Internet and Massive Multiplayer Online Role Playing Games (MMORPGs).

In America, Young (e.g. Young, 1998) is one of the most influential global experts on Internet addiction disorder and online behavior. The founder of the Center for Internet Addiction in 1995, she is considered a pioneer on this subject.

Leo Sang-Min Whang and Geunyoung Chang (see Whang, Lee, & Chang, 2003), represent some of the most important researchers in the prolific Asian sector. Their interests remain in human behavior changes through socio-cultural circumstances. With the arrival of these new technologies, these Korean researchers started studying cyber psychology and youth culture.

Relationship between Internet and Mobile Phone Addiction

Information and communication technologies (ICT) have become an essential part of our lives. The increase in new technologies and virtual communication involving personal computers, tablets and mobile phones is causing changes in individuals’ daily habits and behavior (King et al., 2013). Consequently, profound changes have been and continue to be produced in our society.

The most recent revolutionary change in the field of information and communication technology has been the advent of multipurpose mobile phones (Chóliz, 2010), so-called smartphones, which allow users to access the Internet, Internet applications and social networking sites (SNSs)
whenever and wherever they want. Therefore, we affirm that behaviors related to the Internet and to the mobile phone cannot be considered separately because they represent a single technology that is employed together.

Although addictions always result from the interaction and interplay of many factors, it could be argued that technology and technological advances can themselves be an important contributing factor. It can be assumed that availability and accessibility may increase the individual’s vulnerability to an addiction (Wu, Cheung, Ku, & Hung, 2013). Thus, technology itself facilitates and increases the risks of problematic usage, providing different and varied new ways to participate in potentially addictive online activities such as gambling via the Internet or smartphones and interactive television (Bonnaire, 2012; Phillips, Ogeil, & Blaszczynski, 2012).

Following Billieux (2012), we can consider dysfunctional uses of both technologies as a part of a broader spectrum of “cyber-addictions” that includes a variety of dysfunctional behaviors and involves specific online activities.

**Risk Factors and Vulnerability to Internet and Mobile Phone Addiction**

Although the Internet and the mobile phone are used by all age groups, teenagers and young adults have been the most extensively studied group because they are considered to be the most vulnerable (Kuss, Griffiths, & Binder, 2013), this risk factor owing to the stage of their emotional development. As Samarein et al. (2013) pointed out, for those belonging to this group, the line between online and real-world interaction can practically be perceived as non-existent.

Several empirical studies have been conducted in order to identify the characteristics that make the Internet and mobile phone technologies addictive. The personal variables present in individuals that may reinforce such pathological use have been also taken into consideration. In this sense, researchers have identified a number of activities, personality traits, and disorders associated with Internet addiction (Kuss, Griffiths, & Binder, 2013).

The list of motivations for the use of the Internet and Mobile Phones is a long one. As we mentioned above, there are a great deal of varying factors that make online activities like Internet gambling potentially seductive and/or addictive due to the properties of the technology itself. Among these factors, anonymity, convenience, escape, dissociation/immersion, accessibility, even frequency, interactivity, disinhibition, simulation and associability seem to be the most important. Virtual environments also provide short-term comfort, excitement and/or distraction (Bonnaire, 2012). In the case of MMORPGs, the principal motivations for participation are the search for entertainment, virtual friendship and escapism, some of them leading to psychological dependence and serious life conflicts (Beranuy, Carbonell, & Griffiths, 2013).

As mentioned above, the use of the two technologies is more problematic during adolescence and as the individual becomes more mature tends to normalize and move from a more playful or leisure time use toward a more professional use with fewer negative consequences (Beranuy, Chamarro, Graner, & Carbonell, 2009).

Gender has also been one the most studied variables. It seems that females have less risk to develop Internet and gambling addiction. Males score significantly higher for IAD (Internet Addiction Disorder) than females (Samarein et al., 2013). Being female seems to be a protective factor from problematic Internet use (Puerta-Cortés, Carbonell, & Chamarro, 2014) but not for the problematic use of cell phones (Carbonell et al., 2012).

Frequency of use is generally related with addictive tendencies, and the passage time reveals users’ degree of involvement with these technologies, setting the individuals with a pathological use apart from those who show more healthy usage.
The more time an individual spends on the activity, the higher the risk he or she has of developing problematic behavior related to the Internet and Mobile Phones (Wang et al., 2013). For example, Wu, Cheung, Ku, & Hung. (2013) observed that those who spent more time on SNSs also reported greater addictive tendencies. Ozdamli & Beyatli (2013) reported that as students’ Internet usage hours increase, the risk of addiction also increases.

Empirical evidence of the relationship between personality and problematic Internet use has been shown in multiple studies, with neuroticism the factor most often cited as related to Internet addiction (Samarein et al., 2013; Andreassen et al., 2013), while extraversion, openness, agreeableness and conscientiousness are not (Puerta-Cortés, Carbonell, & Chamarro, 2014), although the results on these latter factors are not conclusive. For instance, Andreassen et al. (2013) found a positive relation between extroversion and Facebook and mobile phone addiction, while in Kuss, Griffiths, and Binder (2013), extraversion and conscientiousness appeared as protective factors for high frequency online gamers. High neuroticism and low agreeableness significantly increased the chances of being addicted to the Internet.

In addition to personality, psychological problems and disorders have also been the focus of many studies. Thus, individuals with social phobia or social anxiety can develop a dependency on communication through virtual environments and use a personal computer as a form of relating to the outside world to reduce stress and a way to avoid direct social relations (King et al., 2013; Yen et al., 2012). Mood disorders such as depression have been identified as risk factors for problematic Internet use, as to a lesser degree have low self-esteem and decreased satisfaction with life (Koronzcai et al., 2013; Widyanto & Griffiths, 2011). Surprisingly, anxiety seems to be less associated to PIU than is depression (Lu et al., 2011).

Impulsivity is another variable that showed a positive relationship with an addictive tendency (Liberatore, Rosario, Colón-de Martí, & Martinez, 2011; Wu et al., 2013), especially when accompanied by poorer self-control (Yau, Potenza, & White, 2013). However, in users diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), inattention was the symptom most associated with Internet addiction, followed by impulsivity (Yen, J.Y., Yen, C.F., Chen, Tang, & Ko, 2009). Hostility was also associated with Internet addiction, but only in males (Yen, Ko, Yen, Wu, & Yang, 2007).

Other associated individual variables are greater intolerance of frustration of entitlement and emotional discomfort (Ko, Yen, J.Y., Yen, C.F., Chen, & Wang, 2008) or of psychological distress in general (Beranuy, Oberst, Carbonell, & Chamarro, 2009).

Finally, environmental and family conditions and relationships must be taken into consideration. Family status like parental divorce and the relationship among family members, as well as parental rejection or over-protection have been identified as risk factors (Peng & Zhou, 2009). However, the perception of social support and parents’ emotional warmth seem to be protective factors. It has been concluded that a poor family atmosphere and lack of love from parents are predictors of PIU among college students (Huang et al., 2009; Wang et al., 2013).

AN OVERVIEW OF EMERGING PROBLEMATIC INTERNET AND MOBILE PHONE USE IN VARIOUS COUNTRIES

Historically, beginning in the mid-‘90s of the last century, the focus of scientific interest was on “Internet addiction” in general. Later, studies on addiction to new technologies began to focus more and more on specific applications or online-supported uses. One of the reasons for this is that mobile devices (smartphones, tablets) now offer access to functions traditionally supported by the computer (games, social media, music, movies, etc.).
Another aspect to be considered is that studies on problematic Internet and Mobile Phone use are not evolving in the same way in Eastern as in Western countries.

When considering how Western countries are experiencing this issue, the first thing we should bear in mind is that for the time being, Internet and Mobile Phone addiction is not officially considered a mental disorder. The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) does not consider addiction without substance or behavioral addictions a disorder. Nevertheless, it is considered a very addictive behavior because it offers a wide range of reinforcements. On the other hand, some look at the good side of the Internet and Mobile Phone usage (Cassidy, 2006).

In Western countries there’s also an interest in several dimensions of Internet and Mobile Phone addiction such as: cyberbullying, sensory isolation while using mobile phones, etc. Despite the fact that it has not been deemed a mental disorder in itself, researchers are aware that it is a problematic we must keep an eye on. In 2004 the USA started to take this problematic Internet and Mobile Phone usage more seriously. Nowadays there are treatment programs for Internet and Mobile Phone addiction all over the world that use methodologies based on alcohol and drug addiction therapy.

We can also see that investigation in USA and Europe does not only focus on maladaptive behavior. There are also studies on cyber-dependence, cyberbullying, MMORPG addiction and Fear of Missing Out (FOMO), a phenomenon characterized by the desire to stay continually connected with what others are doing and a pervasive apprehension that others might be having rewarding experiences from which one is absent (Przybylski, Murayama, DeHaan, & Gladwell, 2013).

According to our research, Asian countries focus their studies on the diagnosis of the problem and the correct treatment. This makes sense if we consider the large amount of people suffering from these problems. In Eastern countries researchers are more concerned with gaining a deeper and more precise understanding of the way the Internet and Mobile Phone addiction works. Meanwhile, in western countries there is no special focus on any dimension of this issue. Researchers show interest in several aspects of Internet and Mobile Phone addiction.

On the topic of Eastern countries, there has been much controversial news coming to light lately about Internet addiction in Asian countries such as China, Taiwan and Korea. The People’s Republic of China became the first country to label the compulsive use of the Internet a mental disorder. Internet and Cell Phone usage has made such a strong impact on Chinese society that experts refer to them as “electronic heroin” (as we can see in the documentary film China’s Web Junkies: Internet Addiction).

Another controversial issue relates to the measures the Chinese government has taken to tackle the problem. In order to fight Internet addiction and reduce dependency on these technologies, the Beijing government has developed shock therapies that are being applied in prison-like centers. China blames parents for teenagers’ maladaptive use and disorder, and, in several cases, has forced them to undergo this treatment. The Chinese authorities also believe that environmental and family conditions and relationships can make a difference as to whether one develops this kind of problematic (Peng & Zhou, 2009). Family support can to a very significant degree contribute to the success of a therapy program.

The apparent reason that Asian countries have moved forward much faster is the great prevalence Internet and Mobile Phone addiction has in this cultures. At first sight it may seem that Eastern countries have more people developing problematic Internet and Mobile Phone use, but a major advance might also mean a higher number of studies or more importance given to the issue in the media. The disorder is less prevalent in Western countries such as the United States and Europe, but the number of Internet and Mobile Phone users is rising each day.
As we stated earlier, individuals with problematic internet and mobile phone use have significantly higher scores for neuroticism, psychoticism, emotional symptoms, conduct problems and hyperactivity. Those categorized as “internet addicts” also have lower scores on sense of control over time, sense of the value of time, sense of time efficacy and prosocial behaviors than people without the disorder. It has also been found (Cao & Su, 2007) that people with problematic Internet use have a greater tendency to lie. A fully-fledged Internet and Mobile Phone addiction is frequently related to depression and suicidal ideation, with adolescents being especially sensitive to this disorder (Ryu, Choi, Seo, & Nam, 2004).

One of the most popular psychometric tests used to assess problems with the Internet is the Internet Addiction Test, created by Kimberly Young (Young, 1998) and later translated, validated and improved upon by many researchers (Widyanto & McMurran, 2004) in several languages. This self-report questionnaire has good psychometric proprieties and can also be used to measure Mobile Phone Addiction. Other interesting tools for the measurement of maladaptive Internet use include the Compulsive Internet Use Scale (CIUS) developed by Meerkerk, Van Den Eijnden, Vermulst and Garretsen (2009), useful because it is short, easily administered and valid in just 14 items and is ratable on a 5-point Likert scale, as well as the Problematic Internet Use Questionnaire (PIUQ), proposed by Demetrovics, Széredi and Rózsa (2008). Furthermore, other researchers have created their own instruments rather than simply using versions of the classical ones such as the Spanish CERI or CERM questionnaires (Berenuy, Chamarro, Graner, & Carbonell, 2009), instruments that measure experiences related with the Internet and Mobile Phones. These instruments are generally focused on measuring the degree of obsession, loss of control and interference with daily life and on evaluating the emotional and cognitive consequences deriving from overuse.

In general there are several factors that are predictive of problematic Internet use. As mentioned previously, similar symptomatology to that associated with drug abuse can be experienced by people with internet addiction, as they may suffer from tolerance, craving and other issues. Personality traits, parenting and familial factors and social anxiety (Weinstein & Lejoyeux, 2010) can increase the vulnerability to suffer from the addiction. More depressive symptoms, higher Internet usage time, higher impulsivity, lower satisfaction with academic performance, being male, and insecure attachment style were positively correlated with Internet addiction. Low self-esteem, low family function, and online game playing predicted the emergence of Internet addiction (Ko, Yen, J.Y., Yen, C. F., Chen, & Wang, 2008).

These characteristics compose the clinical symptomatology and are the ones that are taken most into consideration when researchers try to diagnose the compulsive use of the Internet and Mobile Phones.

High comorbidity of Internet addiction with psychiatric disorders, especially affective disorders (including depression), anxiety disorders (generalized anxiety disorder, social anxiety disorder), and attention deficit hyperactivity disorder (ADHD) is reported.

FUTURE RESEARCH DIRECTIONS

Following the statements of the leading researchers, future studies may focus on the diagnostic features in order to provide a response to the social needs derived from this issue. This type of investigations might significantly enhance the way we confront and treat this problematic. For example, the functional consequences of Internet and Mobile Phone disorders, risk factors, comorbidity and differential diagnosis could be studied.

Research concerning the subtypes of Internet and Mobile Phone addiction has not as yet reached...
an advanced stage in its development. Thus, it may be necessary to conduct some specific research on Internet gaming, FOMO and Social Networks, among other topics.

There are many therapies focused on the treatment of the Internet and Mobile Phone addiction, and it would also be of interest to determine their efficiency. Specific therapy programs must be developed in order to apply a suitable solution to this problematic. This would allow therapists all over the world to know how to treat patients suffering from this type of addiction.

If research is carried out with the objective of promoting the understanding, diagnosis and treatment of this problem, it might help us to significantly improve both our approach Internet and Mobile Phone addiction and its prognosis.

REFERENCES


**ADDITIONAL READING**


Internet and Mobile Phone Addiction


**KEY TERMS AND DEFINITIONS**

**Addictive Disorders**: Group of addictions which includes substance and behavioral addictions.

**Behavioral Addiction**: Addiction related with and specific act or behavior characterized by the loose of control, psychological dependence, decreasing interest or loose of motivation for other pleasurable activities and severe interferences on the addicts life.
**Information and Communication Technologies:** Group of technologies that allow access to the information through telecommunications. Those include Internet, Cell Phones and other communication mediums.

**Internet Addiction:** behavioral addiction related to the Internet usage.

**Maladaptive Usage:** Non normal use that causes negative social, familiar and professional interferences on the individual’s everyday life.

**Mobile Phone Addiction:** Behavioral addiction related to the Mobile Phone usage.

**Overuse:** Excessive and uncontrolled use.