

INTRODUCTION

Addictions are defined as the consistent urge to engage in certain behaviour or utilize a substance, regardless of the harmful sequelae on the individual's physical, social, mental, and financial welfare. Clinically presented with both physical and psychological characteristics. Psychological dependence becomes evident when the addict suffers withdrawal symptoms involving depression, cravings, sleep disorders, and irritability. Addictive triggers can be either a substance or behavioral form of addiction. The substances that are taken into account to be addictive are displayed in DSM-5 as substance use disorders (**APA, 2015**). Behavioral addictions have been proposed as a new class in DSM-5, but the only category involved is gambling disorder. Internet gaming disorder is mentioned in the appendix as a condition for further research studies (**Kuss, 2013**).

The quick progress and upgrading of information and communication technologies (ICT) has transformed the conventional way of describing and identifying ourselves. The internet usage in daily life has become an integral part of daily behaviour.

For most of the people, the internet is a cornerstone information tool and an opportunity for social connectivity, self-education, economic enhancement, and lack of restrictions

from shyness and social avoidance. Therefore, the Internet usage augments their sense of well-being and self-perception of quality of life, while for others it is the opposite. (*Chou C. et al., 2000; Çikrikci, 2016; Odacı and Çikrikçi, 2014*)

Also it appears to have almost completely replaced other forms of spending time in various activities, previously performed by individuals e.g. interactive playing outdoors, in the neighbourhood or at home. So, the occurrence of negative outcomes of internet usage has been described as Internet addiction (IA) or problematic Internet use and classified as a category of behavioural addiction (*M. OR, 1996*).

Despite the fact that the Internet is a tool for rapid communication and very valuable information source, many research efforts are required to investigate its abuse among the adolescents (*Koovakkai, 2010*).

Regarding Internet addiction, it has been questioned whether people become addicted to the platform or to the content of the Internet (*Griffiths, 1999*).

Recently, because of the high prevalence of psychiatric symptoms, depressive disorders, suicidal ideation, interpersonal conflicts, and aggressive behavior, correlated with internet addiction chiefly among adolescents, it has been considered as an important social issue in various countries especially in adolescents since adults are less vulnerable to Internet addiction in comparison to adolescents (*Ko, 2009; Arısoy, 2009; Sanders, 2000*).

RATIONALE OF THE STUDY

Due to the increasing global widespread usage of internet and its accessibility particularly with the ease of use of smart phones in the coming years, it is crucial that healthcare professionals have the knowledge about this behavior and its associated problems; Problematic Internet Use (PIU) is a newly emergent disorder that has been found to be associated with subjective distress, functional impairment and Axis I psychiatric disorders especially in adolescents as they are clinically assessed as a potential risk group for developing internet addiction due to incomplete psychological maturity.

AIM OF THE STUDY

- 1- Assessing the prevalence of Problematic Internet Use (PIU), Internet Gaming Disorder (IGD), Social media use among adolescents, and the pattern of usage of internet.
- 2- Assessing the prevalence of psychiatric comorbidities among adolescents (Depression, Suicidality, and Anxiety).
- 3- Assessing the relationship between Problematic Internet Use/Internet gaming/Social media addiction and pattern of usage and psychiatric comorbidities (Depression, Suicidality, and Anxiety).

HYPOTHESIS OF THE STUDY

The hypothesis of the study was that adolescents experiencing problematic internet use, Facebook addiction and/or Gaming disorder have psychiatric morbidity.

Chapter One

PROBLEMATIC INTERNET USE

Problematic Internet Use (PIU) has been described differently in many research studies; the other terms used to explain negative impact of internet use include ‘compulsive Internet use’, ‘pathological Internet use’, ‘Internet dependency’ and even ‘Internetomania’ (*Holden 2001; Haw et al., 2008*).

In 1996, the first Internet addiction research was conducted and results were displayed at the American Psychological Association (APA). The research study reviewed over six hundred cases of heavy Internet users who presented with clinical signs of addiction as evaluated via an adapted version of the DSM-IV criteria for pathological gambling (*Young, 1996*).

Previously conducted research studies were performed to define internet addiction and tried to assess behaviour patterns that discriminated compulsive from normal Internet usage. Updated research studies mainly focused on the prevalence of internet addiction and investigated risk factors and aetiologies correlated with the disorder (*Fu et al. 2010; Jang et al. 2008; Lin and Yu 2008; Moreno et al. 2011; Park et al. 2008; Poli and Agrimi 2012; Siomos et al. 2008*).

Over the past ten years of research efforts, the idea of Internet addiction has developed in terms of its acceptance as a clinical behavioural disorder requiring management. Hospitals and clinics have developed outpatient treatment services for Internet addiction, addiction rehabilitation centres have managed new cases of Internet addicts, and colleges have implemented support groups to aid addicted students (*Young, 2007*).

ON THE OTHER HAND; Internet Gaming Disorder (IGD) was added in the latest version of the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) as a possible disorder lately, while it is still on-going issue of debate is as to whether the condition called “Internet Addiction” (IA) could be fully acknowledged as an established disorder. The major dispute is how well IA could fulfil the validation criteria as a psychiatric disorder as in other well-recognised behavioural addictions.

There are considerable similarities within the various categories of addiction despite the addictive object, which may be a psychotropic substance, or Internet.

Some of the common alarming symptoms and red flag signs are:

- The individual's preoccupation with the addictive object, e.g. the Internet.

- The trial to conceal the degree of involvement with the addictive object and /or the frequent lying about the degree of involvement.
- Withdrawal from other pleasurable activities.
- Withdrawal from social activities.
- Defensive attitudes.
- Psychological isolation.
- Trial to escape from reality by engagement in the addictive object.
- The continuous engagement despite the negative sequelae.

(Dowling & Brown, 2010)

There is still a lack of precision about the psychodynamic function of problematic internet use and online gaming which causes users to engage considerably in gaming and to disregard their daily usual life activities and work duties. ***(Katrena Flora, 2010).***

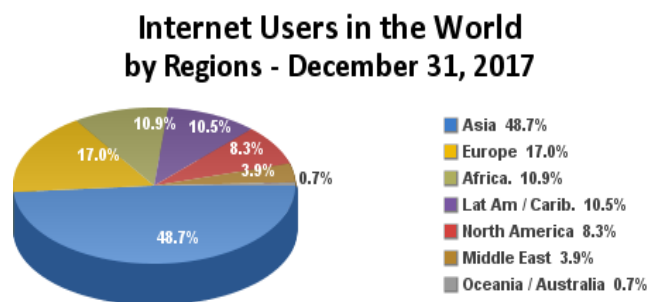
It is notable that although a considerable percentage of adolescents could be exposed to Internet risks, a much lower proportion negatively affected.

This raises the requirement to increase the knowledge of young aged people about the preventive measures against harm to reduce psychiatric co morbidities.

Pathological/problematic Internet use (PIU) is a behavioral addiction having a rising prevalence. Numerous researchers have reported a significant co-morbidity of **PIU** with mental and psychosomatic disorders.

Statistical indices and parameters concerning internet usage.

The global population calculated by 2018 was around 7,634,758,428, and internet users were 4,156,932,140, with a growth rate throughout 2000-2018 was around 1,052%.



Source: Internet World Stats - www.internetworldstats.com/stats.htm
Basis: 4,156,932,140 Internet users in December 31, 2017
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In Africa alone, total population by 2018 was around 1,287,914,329 (about 16.9% of the world), internet users were 453,329,534, with growth rate throughout years 2000-2018 anticipated to be around 99.41%.

In Egypt, total population 99,375,741, in which it is estimated 49,231,493 are internet users, with growth rate through 2000-2017 estimated as 10,840 %. (***World Internet Stats, 2018***). Number of research studies regarding pattern of

internet usage in every aspect of life has increased over the years (**Moreno et al., 2013**). Prevalence statistical indices differ widely across cultures, nations and societies. It is mentioned that around 6% to 13% of Internet users are Internet addicts.

About twenty percent of the global populations are in the age group 10 -19 years, representing around 1.2 billion adolescents, and 1.5 billion young people with an age range 10-24 years in the world. The majority (85%) of them are inhabiting the developing countries (**WHO, 2001**). Globally, it has been estimated that the prevalence of problematic internet use (PIU) among adolescents and young adults has been displayed to range from 0.9% till 38% (**Leung, 2004**).

In Europe, the prevalence has been mentioned by researchers to range from 1% - 9% (**Zboralski et al., 2009**), in the Middle East the prevalence is estimated from 1% -12% (**Canbaz, 2009**), and in Asia it is estimated from 2% to 18% (**Park, 2008**).

At a national level, in Egypt, more than 80% of Internet Café customers are from the young aged population, 60% of them were statistically surveyed to spend their time chatting, while 20% surfing pornography sites, 12% engaging in business online activities or scientific work and 8% visiting political networks (**UNPD, 2010**).

One of the chief popular online activities is browsing social network.

Since it was launched in 2004 by one of Harvard University students, Mark Zuckerberg, Facebook has become familiar to most people. Today, several online social network sites (SNSs) exist, but Facebook seems by far to be the most popular with more than one billion active users worldwide (**Kuo & Tang, 2014**). Although SNS has been associated with many positive attributes such as entertainment and social interaction, red flags have been raised regarding the potential of users becoming addicted to it (**Andreassen, 2015**).

Social networking addiction may be defined as “being overly concerned about SNSs, to be driven by a strong motivation to log on to or use SNSs, and to devote so much time and effort to SNSs that it impairs other social activities, studies/job, interpersonal relationships, and/or psychological health and well-being” (**Andreassen & Pallesen, 2014**).

Social network users represent around 68 percent of the global online population in 2016, and these figures are anticipated to increase in the upcoming years.

The number of social network users is projected to increase from 2.14 billion in 2015 to nearly three billion by 2020. Facebook is considerably a market leader, representing a total of 1.7 billion monthly active users in September 2016

(Statistica, 2016). In Egypt, it is revealed that 35,000,000 are Facebook subscribers in 2017 **(World Internet Stats, 2018)**. Facebook users could interact with friends, family, play games, and share content using the network.

According to results of Household Computational Technologies Utilization Research conducted in April 2010, age group of 16-24 was displayed to have maximum computer and internet usage rate **(TÜİK Haber Bülteni, 2011)**. The statistical fact that the use of Internet during adolescence phase of development is considerably high poses a risk for Internet addiction **(Kawabe et al., 2016)**.

In addition, adolescents are categorised as a potential risk group for developing internet addiction due to immature psychological development. There are research studies reporting that excessive internet usage in adolescents could cause relationships impairment within families and between friends and may have negative impact on social life quality of adolescents **(Johansson & Götestam, 2004)**. A recent statistical analysis revealed that around 65% of American adults use social network sites (SNS). The estimated indices for school-age users are even higher.

Another research study performed on a group of adolescent with an age range from 11–16 year old in 25 different European countries has revealed that around 29% of children experienced one or more of the five components

associated with excessive internet use, on the other hand very few around 1% displayed pathological levels of use (**Smahel et al., 2012**).

Around 65,000 person were enrolled in a research study done by I-cube ,results revealed that Internet heavy users used to be online for 8.2 hours/week, their percentage estimated around 38%, mainly for e-mail and instant messaging (98%), job hunting (51%), financial transactions (32%), bill payment (18%), stock trading (15%), marital search (15%). Young males showed the highest frequency of Internet addiction (**Goel et al., 2013**).

Among teens aged from 13 to 17 around 71% use Facebook while 98% of college-adults aged from 18 to 24 use any social network site (**Pew, 2015a, b**).

Another research study investigated 603 school-going adolescents, it revealed that the prevalence of internet addiction among males around 3.96% while among females estimated around 1.62%. 15 % in the total sample presented with internet abuse but not fitting fulfilling criteria of internet addiction.

Stress scores were considerably associated with the internet use patterns in males as well in females. It was observed that the chief internet use in both sexes was for surfing social network sites (**Sharma et al., 2016**).

Collected epidemiological data over the last twenty years on problematic internet use (PIU), revealed mixed findings. A prevalence of internet addiction ranged from 1% to 36.7%, with considerable variability in prevalence rates across studies which might reflect differences in the assessment tools and different operational definitions of behaviors associated with Problematic internet use (PIU) (*Ko et al., 2008a*).

Debates concerning the definition and classifications of addiction:

Despite the considerable efforts made to recognize the neurobiological basis of substance use disorder, the potentially (addictive) qualities of repetitive behaviors, and whether such behaviors constitute (behavioral addictions), is relatively neglected. Some conditions, such as gambling disorder, compulsive stealing, compulsive buying, and compulsive sexual behavior, and problematic internet use, were suggested to have phenomenological and neurobiological equivalents with substance use disorders. (*Mittal et al., 2013; Sun et al., 2012*).

Both the Diagnostic and Statistical Manual, 5th Edition (DSM-5) and International Classification of Disease, 11th Edition (ICD-11) have approached to tackle the nosological concern of whether (addiction) should be broadened to involve psychoactive substances, as well other types of behavior; and if so, what forms of behavior should be involved.

Behavioral addiction influences a great number of individuals and occurs when people find themselves not capable of controlling the frequency or amount of a previously harmless behavior e.g. love, sex, gambling, work, and internet and online chatting, shopping or exercise.

Behavioral addictions are considered impulse-control disorders and have in common various core similarities to substance addictions, involving aspects of tolerance, withdrawal, repeated unsuccessful attempts to cut back or quit and impairment in daily life functions (*Grant et al., 2006*).

In order to determine whether addictions should extend beyond substance use, it is crucial to have a definition for the term (addiction). Derived from the Latin (addicere) meaning (adherent to) or (locked up by), the term was used initially without a specific reference to substance use.

Over the previous centuries, it became identified progressively more with impaired control over substance use behaviors (*Maddux & Desmond, 2000*).

Going back several centuries ago, the term became correlated to excessive patterns of alcohol use and later to excessive patterns of drug use such that by the 1980s, there was evident consensus among some research group that addiction could be defined as “compulsive drug use”