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A new millennium: A new age of behavioral disorders?

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Introduction

The Internet has become one of the most widely accessible media and is a significant part of everyday life in adolescence, offering opportunities for social networking and communication, education and entertainment. However, over the past decade a specific behavioral pattern has been researched in respect to Internet use, leading to isolation and neglect of everyday activities, social life –even personal health in general. The phenomenon has received increasing attention from the scientific community, describing it in various terms such as "excessive", "problematic", "pathological", "addictive" use among others.

European research on Internet addictive behavior have been conducted in the past years giving various results, however tools that have been used are not validated, ages that have been studied vary a lot and cultural factors have not been taken under full consideration. The EU Kids Online project (1) notes several key gaps in the evidence base of research on Internet safety issues for children and young people. Internet addictive behavior is one of the risks identified as little researched in Europe. According to the latest EU Kids Online report (1), further research on teenagers is needed as they continue to take the lead in the depth and breadth of Internet use. Specifically, additional indicators are needed by which to identify particularly "vulnerable" or "at risk" children.

The adolescent years

Minors and especially adolescents in the middle chronological period (14 to 17 years) appear especially vulnerable to such a behavior due to the developmental characteristics of this phase. In detail,

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young people do not yet have the ability to filter and evaluate given information and their critical thinking and sense of boundaries are still unclear (2). When it comes to acquiring knowledge, apart from theoretical education, trial and error seems to be the most frequent process of learning and deciding. Thus, adolescents are more exposed to various influences while they undergo an era of experimentation. In addition, they are by nature enthusiastic and unable to control activities that stimulate them, such as Internet games. Continuously escaping from real life to cyberspace has been associated with serious problems in adolescents' daily life. On the other hand, young people are our hope for the future and their healthy psychosocial development is the key to producing happy, well-functioning and healthy adults. Focusing on youth mental health will lead to personal, social and economic profit for all societies and it is of major public concern to research and finally give potential solutions to any problem they face, in order to minimize any negative outcome. Especially as Internet use is a major part of their life and it offers them great opportunities and possibilities, it is very crucial to get information on potential hazards that this activity may lead to, in order to create a safe Internet environment.

Particularly among adolescents, the Internet is observed to be increasingly adopted as a readily accessible means for information retrieval, entertainment, and socialization (3-4). Excessive Internet use may instigate potential adverse effects upon the psychosocial development of adolescents (5). While both the adoption of excessive Internet use, as well as the adverse psychosocial effects, may be attributed to the compromised psychosocial well-being prior to the initiation of Internet use (6), the likelihood of developing addictive patterns of behavior during adolescence is observed to be eminent (7-8). Consequently, as adolescents allocate ever-increasing time periods for Internet use, the risk for developing Internet addictive behavior is inherent.

Internet addictive behavior

While Internet addictive behavior has received ever-increasing research attention, a consistent definition of this construct has not been currently applied

throughout the scientific literature (9). Several reports state that conceptually the diagnosis falls under the compulsive-impulsive spectrum disorder (OCD) involving online and/or offline computer usage (10) and consisting of at least three subtypes: excessive gaming, sexual preoccupations, and e-mail text messaging. These subtypes share the following factors: (a) excessive use, which is associated with a loss of sense of time or a neglect of basic drives, (b) withdrawal, including feelings of anger, tension, and/or depression when computer is inaccessible, (c) tolerance, including the need for better computer equipment, more software, or increased hours of use, and (d) negative repercussions, including arguments, lying, poor achievement, social isolation, and fatigue (11).

Research also suggests that excessive Internet use resembles addictive behaviors such as gambling and drug use (12). Problematic Internet use is defined by the following characteristics: (a) uncontrollable Internet use, (b) Internet use that is markedly distressing, time-consuming or results in social, occupational or financial difficulties and (c) Internet use not solely present during hypomanic or manic clinical episodes (10). According to a most recent definition for addictive Internet use, a person must present at least five of the six following criteria: (a) spending increasing amount of time online; (b) failure to reduce use with concomitant feelings of restlessness and depression; (c) staying online longer than originally intended; (d) running the risk of losing a relationship or other opportunities due to Internet use; (e) lying to conceal the extent of Internet use; and (f) using the Internet in order to escape negative feelings (13).

A recent, epidemiological evaluation in Greece demonstrated that 1% and 13% of adolescents living in Athens (mean age: 14.5 years) presented with Internet addictive behavior and borderline scores for Internet misuse respectively (14). According to the scientific literature, the prevalence of Internet addictive behavior varies among adolescents in other European countries. The prevalence of Internet addictive behavior in Norway is 1.98% (12), in Great Britain 18.3% (11), in the Netherlands 4% (15), in Romania 1.4% (16), in Italy 5.4% (17), in Germany 5.1% (18), and in Austria 2.7% (19).

Internet addictive behavior rates among adolescents seem to differ from country to country depending on the age group, cultural differences, and technological tools used. However, the phenomenon is considered to be a serious global public health issue (20). In a Norwegian study much concern is raised on the increasing number of individuals abandoning school or work in order to spend more time on computers (12).

In this special issue

The phenomenon of Internet addictive behavior is relatively new and although studies have documented what has become an increasing health care issue, scientific conceptualization of the problem is progressing. In this special issue we have compiled an up-to-date collection of papers with the current literature addressing this growing topic. You will find the main clinical features of addictive behaviors in general and introducing ways to conduct differential diagnosis and assess comorbidity; an overview of the main areas of inquiry into the etiology of Internet addictive behaviors; review of the current literature regarding Internet addictive behavior and psychiatric comorbidities; the main assessment tools that have been used to measure Internet addictive behavior; different applications that may potentially lead to Internet addictive behavior; social networking use in particular and focus on the psychological underpinning of use (motivations or needs) and on associations with Internet addictive behaviors. You will also find a focus on the psychological, sociological and neurobiological factors relevant to the development of excessive and addicted computer gaming, highlights of the importance of designing prevention and intervention programmes for adolescent Internet addictive behavior specialized intervention techniques, including cognitive-behavioral therapy and motivational interviewing to address Internet addictive behaviors and last relevant policy issues.

We hope that this special issue contributes to the ongoing dialogue between practitioners and researchers. For academics interested in review of Internet addictive behaviors and relevant issues in the field, this special issue will be valuable. Practitioners

from diverse backgrounds will also find the various approaches in screening and treating clients who exhibit these behaviors helpful. Finally, this special issue could also be a useful resource for scholars conducting ongoing research in the area of Internet addictive behaviors.

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