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Problematic Internet use in Older Adults, A Critical Review of the Literature

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Abstract

Lately, the use of Internet has become increasingly common and is source of benefits in terms of information, communication and health applications. Its use is, sometimes, problematic with psychiatric and physical negative consequences. Growing literature provides data on adolescents and adults. Entry into advanced age and characteristics involve interaction with Internet, different from that of the adult or young adult.

This paper aimed to review literature on problematic Internet use in elder persons. Literature search on Medline database has shown no study on problematic Internet use targeting subjects aged over 60 years old. Only 3 studies including subjects entering into elder age (over 55 years old) have been found. They showed Problematic Internet use (PIU) being present in this subgroup population but no further data were presented specifically for this age group.

Why problematic Internet use in elderly should be a concern for the medical community at a neurological, social, somatic and psychiatric level is discussed in the present article.

Further research is needed to screen for problematic use of Internet in this population and to characterize it. The expected outcome of this research to be developed is to design specific therapeutic and preventive strategies

Keywords: Internet addiction; Elders; Geriatric; Internet use disorder; Problematic internet use

Introduction

Lately, the use of Internet has become increasingly common as a potent information tool, as a communication enhancer and as a relevant healthcare tool recognized by WHO [1]. The other side of the cone is that problematic use of Internet is increasingly reported in adults and adolescents [2] with significant somatic and psychiatric issues [2-5].

Problematic Internet use as a disorder is yet of debate. Some researchers' tend to hypothesize it as an impulse control disorder, others as an obsessive-compulsive disorder and, finally, others as an addiction [6]. The phenomenon was first described in 1996 [7]. K. Young exposed that in most situations, patients described moderate to severe consequences of Internet use on their quality of life and failed in controlling their behaviour [7]. Scientific research since then has provided a growing evidence for Internet addiction reality and its psycho-physiological and neurobiological closeness to addictive disorders [8]. Internet Gaming Disorder has been recently listed in DSM V Section III to encourage more clinical research and experience [9]. As Internet provides easy access to some engines (online stores, online casinos ...) it could also represent a potential worsening vector to a pre-existing offline addiction (e.g., pathological gaming or gambling, compulsive buying). Nevertheless, addictive properties of the vector Internet itself have also been discussed [10].

Entry into advanced age is particularly marked by somatic disorders and a resurgence of factors leading to the emergence of psychiatric disorders [11]. In these circumstances, the arising question is the place Problematic Internet use (PIU) takes (or will take in the future) in old people, despite its controversial belonging to addictive or other psychiatric disorders [11].

The purpose of this article is to review existing published data on PIU in elderly and to discuss arguments for it to be a concern for medical community.

Literature Review

Bibliographic search consisted of a computerized screening Medline database in January-march 2013, without limited date of publication, regardless to the language, using the following keywords: Internet addiction, Internet problematic use, cyber addiction, elderly, older population, older people, geriatric. Literature review yielded to an initial pool of 262 results. Inclusion criteria applied then, were: (a) the target problem is Internet addiction or PIU, and (b) the study's target sample is elder people population. Exclusion criteria were (a) reviews, meta-analysis, scales validation studies and conceptual articles and (b)

non specified sample age. All studies focused on pathological Internet use within youth or adult population and no one specifically targeted older subjects, even after a second wave of literature review ran in September 2015. From the reviewed studies on adult samples, 3 have included populations aged over 55 years old. The first paper [12] studied PIU in a general Swedish population sample that median age was 45 years old and 13% of the sample had a retired status. They found half of their sample meeting at least one criteria of PIU but no specific data was presented on PIU in elder people [13]. The second study found comorbid IA in patients aged from 16 to 64 years old and suffering from addictive disorders (alcohol, cannabis and gambling) [14]. Authors found IA to be correlated to some personality traits (higher neuroticism and lower extraversion and conscientiousness) [14]. Unfortunately data were not presented by age category. Another study from Reed et al. [15] surveyed a sample that included 4.2% of subjects aged 50-59 years old and 5.9% aged over 60. They found PIU in third of their sample with an average of 40 hours of Internet connection per week and this was found to be correlated to depression, anxiety, social isolation, sleep problems and self-reported impaired immune function [15]. Data were not specifically presented for the elder subjects, nevertheless they found no significant relationship between age and PIU scores (IAT above 40) [15].

Besides these three studies, one case report [16] stated for online gambling disorder being developed after widowhood in an 83 years old man with previous offline gambling disorder.

In view of the importance that this issue takes among young and adult people, it seems interesting to address this issue in the elder person. We discuss in the next section some arguments in favour and specific parameters to consider in this population subgroup.

Discussion

Definition of older person doesn't rely on a standard criterion and United Nations agreed cut-off 60+ years old to refer to elderly [17]. No specific studies on elderly were found in the present literature review. Nevertheless, data on samples including older people showed PIU being present.

The lack of data in elderly could be partly due to the novelty of the field. It also could be explained by the tendency to under consider addictive disorders in older adults that motivated WHO recent focus on screening for those disorders in old people [18]. IA could possibly impact elders' health risk factors, by more isolation, psychiatric comorbidities, increasing suicidality and deteriorating prognosis; in a context of hypothesized increasing prevalence of this problematic use. In the absence of available clinical data and research targeting this specific population, we propose to discuss why it should be developed in the future.

Almost 20 to 67% of people aged over 55 years old are connected to Internet [19]. It seems that the access to the Internet among seniors is progressively increasing as for the rest of age categories (11 percentage points between 2009 and 2013 in Europe) [19].We can expect the continuous increase of Internet use, because of the marketing coverage but also because of the actual adults used to this technology will constitute the old users of the future. In this sense it is reasonable to assume that the use of the Internet tends to some uniformity through age categories and it will be an integral part of life of all older people in the near future.

In the lack of data on this specific sample, we can only hypothesize that health problems reported for other younger groups could also affect old persons with some additional specific consequences.

A somatic conducive condition

Ageing is associated with a physical activity reduction worsening old people's physical health [20]. Interventions using emerging technologies have been reported to have a role in promoting physical activity in older [21].Nevertheless, lonely use of fast Internet available at home and mediating number of needs (e.g., shopping, socializing, managing administrative and health-related procedures, leisure activities) is making outgoing unnecessary and could lead to reduced activity. Sedentary life-style has been found to be associated to heavy Internet use [22] and increased time spent on Internet has been shown to be at risk for IA [9] in younger population groups.

A psychiatric and neurological conducive course

A link has been reported between IA and ADHD, major depression and social phobia [4] and online gambling linked to more frequent psychiatric comorbidity than offline gambling [23]. Psychiatric disorders are highly prevalent in older people [11], and depression is the most studied psychiatric disorder in this population [11]. Depressed patients are more likely to use the Internet to alleviate depressive symptoms and problematic use of the Internet could lead to adverse effects on daily life and social context, triggering a "vicious circle" between depressive illness and IA [2].

Potential impacts of mental illness in the elders are social isolation, suicide, increased somatic pathologies, increased death, and cognitive decline [11]. IA is also linked to substance abuse, more frequently alcohol abuse [2,23]. This substance use disorder is precisely the most frequent in older adults [20].

There is an accumulation of evidence in literature that risk of developing dementia or Alzheimer's disease is inversely associated to some lifestyle's parameters (i.e., social, physical, and mental activities) [24]. Several studies have reported a strong correlation between sedentary habits and the risk of cognitive decline [24]. Undiagnosed early dementia could cause by itself decreased activity and interpersonal interaction [24]. Progression in reduced mental activities can belong to the same vicious circle of the others Internet overuse associated lifestyle's parameters. However, better cognitive abilities are found in elderly who "normally" used Internet to simplify some of the every day's tasks, as searching for health information [25]. Alzheimer is a dementia widely observed in older people. It is linked to brain matter atrophy and the degree of hippocampal atrophy is a biomarker of disease's progression from the early stages of cognitive decline until obvious dementia [26]. In a recent study, a significant link was found between the lengths of IA, grey matter atrophy and changes of white matter fractional anisotropy in particular brain regions [27]. Even though the study sample was young adults, it is nonetheless true that they represent the next generation of older adults and some questions arise: Shall we find an increased rate of dementia in relation to IA in the future? Shall we have to face new cognitive disorders?

Parkinson disease (PD) could also impact on Internet use in elders. Dopamine agonists, used in the treatment of PD are strongly related with the onset of Impulse Control Disorders (ICDs) [28]. This could lead to proneness to excessive gambling, hyper sexuality, compulsive spending/shopping, binge eating, compulsive buying, and compulsive computer use. Treated Parkinson patients with higher dopamine

agonist doses may develop in up to 30% an ICD [29]. The expression of this problem may be facilitated by Internet a vector for increased accessibility to gambling and shopping.

Switching from offline gambling disorder to an online gambling disorder has been recently reported in late life after a stressful life-event and in an impaired somatic context [17].

A social conducive context

With the improvement of life-quality and the extended life expectancy last decades, aged people are more and more active with social interests and leisure activities. Retirement from 60 years-old, enhances free-time and could lead to the known retirement boredom. Additionally, it has a financial significant negative impact in the latest world crisis and pension reductions political decisions [30]. This could lead to engage more and more in online activities (chatting, gaming, and gambling) with a risk for IA.

Online gambling for example is more at-risk for pathological involvement than offline gambling [31]. Furthermore, gambling offer is distinct from offline [32]. The popular poker online for example, has a greater probability to win money than offline gambling, which could lead to an additive reinforcing, motivating and/or maintaining factor for IA [32].

Online social networks facilitate interpersonal contacts with peers and family worldwide and offer anonymity, permanent accessibility, narcissistic reinforcement and immediate interactivity [33]. Social factors are the most important motivations for social networking and an IA risk factor for introvert's subjects (social compensation) and narcissistic trait [33]. Negative correlates include the decrease of in real life social participation and relationship problems [33]. In older people, this could be an additional isolating factor in some cases related to vulnerability factors to develop PIU.

An additional life-threatening

Several studies have revealed a significant correlation between Internet addiction, suicidal ideation and self-aggressive behaviour [4] thus placing IA among suicide risk factors. Suicide in the older people is a real public health problem; loneliness and social disconnection are two very relevant predisposing factors in this age group [34]. Though it has been described that the regular Internet use improves social connection and subjective wellbeing in old age [35], the greater Internet use has been associated with a higher level of emotional loneliness [35]. IA may be then directly or indirectly involved in suicide in the older people.

In summary

Our review has found no data on the field that addresses the Internet addiction problem specifically targeting a sample of a population aged over 60 years. Nevertheless, (a) evidence in other population sub-groups, (b) social, somatic and psychiatric context of the old-age, and (c) the life-threatening issue; justify the need of scientific data on IA in elders. Other challenges that we will be facing in the future are the specific preventive strategies against Internet overuse that should be developed to target old people. Awareness on this issue has to be developed in old people social and familial environment. Healthcare geriatric professionals and general practitioners should be trained to screen and refer IA, and IA treatment programs should adapt to geriatric population (e.g., cognitive impairment and limited mobility). Maybe multidisciplinary units have to be developed with addiction and geriatric staffs working together.

Conclusion

Some data states for PIU's existence in subjects over 60 years old. But still is needed to describe this phenomenon in elder and its specific characteristics (at an epidemiological, psychological and neurobiological level). Further research is to be realized to enable us to better understand Internet addiction in older people before it becomes a real public health problem. It could lead to tailor treatment and prevention strategies to this population sub-group. We can already argue for the importance of this disorder in other age samples and the role it might take in the future among other mental disorders in some seniors.

Internet could also be a vector of treatment, against elders' isolation and physical and cognitive impairment (e.g., sports videogames and cognitive training programs).

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