Social Network Sites Addiction- A New Challenge for New Times

OCTAVIAN VASILIU*, DANIEL VASILE**
* University Military Central Emergency Hospital "Dr. Carol Davila" Bucharest
** University of Medicine and Pharmacy "Dr.Carol Davila"
Mircea Vulcanescu Str., no.88, Bucharest
ROMANIA
octavvasiliu@yahoo.com

Abstract: Over 100 social network sites are currently available to the Internet users, and this number is continuously increasing. A real paradigmatic shift in the realm of communication could be described by switching from off-line, real-world, to on-line communication, through the use of laptops, cell phones, tablets etc. Therefore, interpersonal exchange of information has become more and more technology-mediated, and this aspect of the contemporary culture is not without consequences in more domains than the usual, daily, conversation. Psychometric instruments for the measuring social network sites addiction have been created and applied in variated cultures and population. Mechanisms of reward and gratification are the most supported pathogenetic substrates of social network sites addiction. A number of demographic variables and personality factors have been associated with a higher risk for this behavioural addiction. Reliable data about social network sites addiction treatment are lacking, and most of the information about therapeutic intervention for this condition is derived from the Internet addiction research. However, it must be kept in mind that social network sites addiction is form of specific Internet addiction, therefore subtle differences in the structure and monitoring of the therapeutic interventions could be anticipated.

Key-Words: social network sites, Facebook addiction, Internet addiction, post-modernism, communication, reward system, dopamine, cognitive-behavioral therapy, self-help

1 Introduction

An operational definition of the social network sites conceptualizes these sites as being web-based services with 3 basic properties: (1) they allow individuals to construct public or semi-public profile inside a pre-defined system, according to a specified set of rules; (2) persons can construct through these sites a list of other users with whom they want to share a connection, and (3) through these sites, individuals view their own list of connections and those made by others within the system [1].

Although behavioural addictions have been only recently included in official classifications like DSM-5 [2], they attracted very much the interest of both mental health specialists and large public. Epidemiologic researches detected that between 55% and 82% of teenagers and young adults use social network sites on a regular basis [3]. Data regarding the prevalence of this behavioural addiction vary according to the accessibility of the social network sites, and the Internet in general, but it looks like younger people are especially vulnerable. A prevalence rate of 34% was found in Chinese students [4].

The phenomenon of social network sites is continuously developing and these sites' accessibility determines an increasing percentage of Internet users to participate in online activities. Facebook, MySpace, WhatsApp, Tumblr, Instagram, Twitter, Skype and WeChat are between the most well-known social sites, but the current number of social network sites is more than one hundred.

Social networking is an important part of the postmodernist culture, and it caused significant changes in the way people communicate and interact [5]. A real paradigmatic shift in the realm of communication could be described by switching from off-line to on-line communication, through the use of laptops, cell phones, tablets etc. Therefore, face-to-face communication has become more and more technology-mediated, and this aspect of the contemporary culture is not without consequences in more domains than the usual, daily, conversation.

Positive effects of the online social networking have been placed in the domain of

increasing self-esteem through positive feed-back from peers, and a secondary increase of psychological well-being, with applications in work-related contexts, romantic relationship initiation, and connecting individuals with shared interests [6]. Increases in the "social capital" through social network use has been correlated with multiple positive outcomes, like better public health, lower crime rates, and more efficient financial markets [6].

Unfortunately, increased time spent online is related to a decline in communication with family members and other "real-world" contacts, which leads further to feelings of depression and a somewhat paradoxical loneliness [7]. For example, time spent online visiting social network sites correlated with Beck Depression Inventory Scale (BDI-II) score in a group of high school students [8].

Social networking sites addiction is classifiable as a specific type of Internet addiction, according to R.A. Davis cognitive model [9]. This means the focus of Internet user's attention is visiting and communication through social network for a significant amount of time, with invalidating professional, occupational or familial consequences. The user could lose control over this specific behaviour's frequency, duration, intensity, and could continue using social networking in excess to what he/she initially intentioned, although he/she is conscious that possible negative consequences appeared in his/her daily life.

A definition of the social network site addiction must include references to intense preoccupations with online social networking, strong motivation for using these sites, and investing so much time and effort in these activities that individual's daily functioning and well-being become impaired [10]. Interpersonal conflicts, impaired sleep, psychosomatic symptoms, impaired self-esteem, impaired life satisfaction, impaired work performance are between the most analysed consequences of this behavioural addiction [11].

2 Objectives

The main objective was to detect relevant data in the current literature regarding prevalence, risk factors, validated instruments for structured evaluation, pathophysiology and treatment options for individuals with social network sites addiction.

The secondary objective was to verify if there are sufficient data to recommend further investigations in the field of social network sites addiction, and if the response is positive, to delineate possible directions for further research.

3 Methods

A literature search was conducted using keywords "social network sites addiction", "social network sites dependence", "social networking sites use", combined with "risk factors", "prevalence", "treatment", "pathophysiology", "co-morbid disorders". Main electronic databases were researched- PubMed, Medline, Cochrane, Google Scholar, PsychInfo, EMBASE, and all papers detected in the interval 2000-2017 were analyzed according to the objectives of the current review.

4 Results

A large number of papers dedicated to the subject of social network sites was found. From the initial 107 published papers, a number of 56 were included in analysis, the rest of them being excluded due to the lack of correlation with our paper's objectives.

4.1. Social Network Sites addiction measurement scales

At least 7 different measures of social network sites addiction have been developed, but comparative analyses of these instruments have not been carried out [10].

Bergen Social Media Addiction Scale (BSMAS) [12,13] is derived from an initial pool of 18 items, 3 items for each of the 6 dimensions of addiction- salience, mood modification, tolerance, withdrawal, conflict, and relapse- with good test-retest reliability and factorial structure. Positive correlations have been described between BSMAS scores and Neuroticism and Extraversion factors of the NEO-FFI, while negative correlations between BSMAS scores and Conscientiousness have also been described [12].

Addictive social media use was associated with a need to feed the Ego and an attempt to inhibit a negative self-evaluation, and risk factors for this disorder, like female gender, being single, student, lower education, lower income, lower self-esteem, and narcissism have been identified [13].

Facebook Intrusion Questionnaire was developed based on key features of behavioural addictions, it has 8 items, with a single-factor structure, and high internal consistency [14]. Using this instrument, its authors detected a correlation between Facebook intrusion and relationship dissatisfaction, mediated by jealous cognitions and surveillance behaviours [14].

The Facebook Addiction Scale was created based on other two instruments for measurement of the Internet addiction [15]. A study that used this instrument in a group of 447 students revealed weekly time commitment, social motives, severe depression, anxiety and insomnia positively predict Facebook addiction, but no demographic variables could be positively correlated with this type of addiction [15].

4.2. Risk factors and co-morbidity

Men and women tend to be vulnerable to different types of Internet-related addictions: online video gaming, cyber-pornography, and online gambling are more frequently related to male gender, and social media addiction, texting and online shopping are more frequently diagnosed in women [16,17,18].

Addictive use of social media and video games addiction were investigated in a cross-sectional study with 23,533 adult participants, and correlations between symptoms of addictive technology use and mental disorder symptoms (attention-deficit/hyperactivity disorder, obsessive-compulsive disorder, anxiety, and depression) were positive and significant [19]. Other significant correlations detected in this research: age was inversely related to both video games and social media addiction, male gender was associated with addictive use of video games, while female gender with social media use, and being single was positively related to both addictive behaviours [19].

A large survey (n=11,018) investigated motivational and demographic aspects of employees using social network sites during working hours [4]. Male gender, single status, education, Extraversion, and Neuroticism were associated with tendency for this behaviour, while Counscientiousness, positive challenge at work, and quantitative demands were negatively associated with risk for social network sites addiction [4].

4.3. Pathophysiology

Three main mechanisms have been suggested as the pathogenetic fundament of social network sites addiction: (1) mentalizing network- the behaviour is sustained by the actual and presumed feed-back the user receive from peers, with a neurobiological basis represented by dorsomedial prefrontal cortex, bilateral temporoparietal junction, anterior temporal lobes, inferior cingulate gyri, and posterior cingulate cortex; (2) self-referential cognition network- the user post a lot of information about him/herself, with a neurobiological substrate represented by medial prefrontal cortex and posterior cingulate cortex; (3) reward network- the user receives social rewards through these sites, and this phenomenon stimulates ventromedial prefrontal cortex, ventral striatum, and ventral tegmental area [20].

Mechanisms of reward and gratification are the most supported data, according to a review of Facebook and other social network sites addiction [21]. Activation of the reward system through self-exposure is the core mechanism of social network sites - and other behavioural- addiction [21,22].

4.4. Treatment

Clear strategies for the treatment of Internet addiction disorder have not yet been established, although the history of this pathology has over two decades. Several authors suggest that knowledge obtained in studies with Internet addiction could be used in social network sites addiction [10].

As in the case of Internet addiction, social network site addiction focused therapeutic interventions should have as main objective a controlled use of the specific sites, with limits regarding the time spent online, increasing the number of the off-line activities associated with satisfaction, and changing of the Internet use patterns (d.e. breaks after every hour of continuous Internet/social network sites use). Self-help interventions using Apps destined to help users to cut down on time spent online or on specific social network sites exists [11].

Cognitive-behavioural therapy focused on automatic thoughts restructuring, daily activities scheduling, maintaining a diary of triggers for addictive behaviour, and motivational interviewing are also recommended for this condition, but trials are missing [11].

Pharmacological driven interventions are intuitively possible, due to the dopaminergic presumed mechanism of all behavioural addictions. However, until now no recommendation has been clearly formulated in this regard, due to the lack of experimentally proved effects of the psychotropic drugs in this disorder.

5 Conclusion

A large number of papers have been dedicated to the subject of social network sites addiction, if we take into the consideration the relative young "age" of this behavioral addiction.

The importance of the social network sites addiction derives from multiple factors, one of them being the functional impact over subjects' daily life. While trying to find diagnosis criteria for this

addiction, one should be careful in order to not over-pathologize a normal behavior.

The majority of the data refers to the vulnerability and co-morbidity researches, but specific information regarding pathophysiology and treatment are lacking.

Due to the high prevalence of this addiction especially in young individuals, to the negative impact over the daily functioning and well-being, as well as due to the continuous expansion of the social network sites, further research in this field is necessary.

As objectives for further research it may be important to find the vulnerability factors related to the personality, that could be addressed in a form of psychotherapy, and to establish realistic targets in a guideline for social network sites addiction treatment.

Also, in a future guideline for the evaluation and treatment of this behavioral addiction, it should be mentioned an initial thoroughly conducted interview, due to the high rate of psychiatric co-morbidity.

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