CASE STUDY

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THE DETRIMENTAL EFFECTS OF SMARTPHONE OVERUSE: CASE STUDY

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SUMMARY

Background: The use of multifunctional smartphones has changed lives in recent years and raised concerns around the world. The ability of smartphones to perform multiple tasks simultaneously is appealing. However, the total amount of time spent using smartphones every day is alarming, and excessive use might impact physical and mental health. The main goal is to determine the adequacy of the term “addiction” for excessive and problematic smartphone use.

Case study: We present the case of Jalila, a 32-year-old woman who excessively uses her smartphone. We evaluate Jalila’s symptoms, noting that she spends about 9 hours per day on her smartphone. Jalila’s excessive cellphone use includes various addictive habits, such as instant chatting, watching YouTube videos, browsing the web, and visiting social media sites. The total amount of time she spends on these activities indicates a high degree of smartphone usage.

Conclusions: When considered in its entirety, the smartphone, with all its functionalities, is a tool that can be used for all of these activities throughout the day. Jalila’s phone activities are primarily focused on community sites, and she uses her smartphone more than she intends to, indicating a loss of control that is affecting her health and well-being.

Key words: Smartphone addiction, Behavioral addiction, Loss of control, Instant messaging, Social network sites, Health

BACKGROUND

The smartphone has become an integral part of everyday life for a growing number of users throughout the world. All age groups seem to be constantly using a mobile phone as a multifunctional and useful tool easy reach in every situation because of the limitless number of applications [1]. Numerous studies have shown that smartphone has significantly altered our daily life. Since they offer quick access to many tools, including the Global Positioning System (GPS), calculator, camera, multimedia player, phone, Internet browser, navigation system, e-mail, gaming device, and social networking services (SNS), all in one small device, they provide a variety of touch-screen functions [2]. Owing to the multiple features of smartphones, users frequentlybecome fascinatedand preoccupied with their devices(3).While smartphones have made life more pleasant, there are a number of negative side effects as well [4,5].

According to Griffiths (2011) smartphone overuse can have a negative impact on real-life social interaction, while also impairing neurocognitive function. The smartphone use can also limit and disturb physical activity [6].Impacts of Smartphone overuse on human psychology and neurocognition are tremendous; It is established that obsession with smartphone is responsible for significantly altering our brain‘s perception and cortical control [7].Parts of the brain that regulate emotions, reasoning, willpower, and executive function may also be overwhelmed by excessive smartphone use [8].Smartphone overuse also is linked to other mental disorders such as social anxiety, depression, irritability, and isolation, as well as attention disabilities [9].Problematic smartphone use has also been shown to affect social involvement and parent-child communication [10]. While numerous studies from around the world have confirmed that smartphone use will become a true addiction in the future.

The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) does not yet list excessive smartphone use as a clinical disorder, but there are many characteristics of the behavior that match other identified behavioral addictions [11]. “nomophobia” (no mobile phone phobia) is a situation which causes fear of missing out,and people keep checking their phones and tend to switchedon their devices 24 hours a day [12].

In 2020, time spent using a smartphone on a normal weekday climbed by 40 minutes, and time spent on a weekend day increased by over 2 hours. This has been reported as the biggest increase since 2010, owing in part to the ongoing COVID-19 pandemic and related containment measures such as social distancing and online learning [13].

The amount of hours spent on a smartphone has been considered by some academics as one of the criteria for determining tolerance or overuse. Lin et al (2017), for example, identified a total duration of 4.62 hours per day and 68.4 counts per day (usage frequency) as problematic smartphone use using an app-generated metric. As a result, evaluating problematic smartphone use would require factoring in motivation and pleasure [14].

There is a lack of case studies to illustrate the functional impairment in clinical setting supported by healthcare professional to confirm the clinical level of problematic smartphone use [15].

The aim of this study is to describe and discuss a possible case of smartphone addiction. We try to fit the case to the criteria of behavioral addiction.

CASE STUDY

Jalila is a 32-year-old woman, she had experienced depressive symptoms, saying, “I’m a sad person, I need love and pleasure in my life”. Jalila was one of users who answered our study questionnaire, she had taken part in a focus group about excessive smartphone usage. The excessive use of smartphone has affected her social relationships.

She was very concerned about using her smartphone in order to get pleasure. Her use of a cell phone is not controlled, and she said, “I use smartphone more often than I intended, and it does hurt, because I waste a lot of time and don’t do many other important activities in my life”. She spends nearly 6 to 9 hours a day on her cell phone. She feels an increasing urge to check her smartphone every few minutes. She becomes nervous in the situation in which she is without her cell phone. She lost frequently control. Inthe same vein, smartphone dependency has as yet a negative influence on her job performance. A significant overweight was remarkable due to lack of physical activity and sedentarity life style. Outright withdrawal, upset symptoms could occur when her mobile device is not used. Other than that, a severe pain that occur predominantly in her fingers.

Having also a real awkward state limiting the smartphone use; several negative consequences could occur such as unsafe attachment, anxiety and a paucity of self-esteem when she found herself in situations in which she could not use her device

A therapy strategies based on controlling the development of addiction, lasting 6months,weresuggested. This method of remediation sets goals how to manage the use of smartphone: turning off phone before bedtime, and specially replacing device by healthier activities, removing some of social media apps, limit news feed checks and developing real friendship instead of virtual. Cognitive behavioral therapy (CBT) to enhance self-awareness, counselling, group supports and needful medication are the specialist treatment for the smartphone overuse [16]. Jalila had difficulties dealing with her negative emotions during therapy; she feels socially isolated, and losing her wayto get escape from her worries. The objective of the therapy was to identify her emotions, work with her self-awareness and self-control abilities, and motivate her to seek a smartphone detox. Jalila was attached to the therapy; she always decided to reduce smartphone time use; saying, “I want to get a healthy life and reduce smartphone use”. More so, sport practice had a significant positive effect on lowering her smartphone insecure attachment.

DISCUSSION

The DSM-5 and IDC-11 Diagnostic and Statistical Manuals of Mental Disorders do not list smartphone-addiction as an addiction. Thus, numerous studies have been defined problematic smartphone use as an obsessive-compulsive behavior characterized by the excessive use of the device that results in various disturbances of psychological, physical, or social performance. The subject in our case report is trying to avoid difficult situations in her life that she cannot resolve. Excessive smartphone usage acts as an outlet for all her anxious and stressful emotions. The present case report highlights that excessive use of the smartphone has the potential for the development of addiction symptomatology, based on DSM-5 criteria for gambling disorder and substance abuse (APA, 2013). Addiction is the more appropriate prescription we can talk about when describing Jalila's behavior, following to the addiction criteria conceptualized by Goodman (1990) in a format similar to that of DSM-III-R [17].These criteria are general terms and not restricted by reference to a particular behavior; they are capable of determining whether a given behavioral syndrome (excessive smartphone use in this case) is an addictive disorder. As indicated by the individual exhibiting four (or more) of the following criteria during a period of 12 months:

1. *Tolerance:* pleasure seeking and increased need to use smartphone in order to achieve the desired satisfaction. Jalila reported that she reached a daily level of 6- to 9-hours phone use per day over the recent 4 years. (Sometimes more when she is in a bad mood, high anxiety or conflicts).
2. *Withdrawal:* occurs because her cognition constantly focused around smartphone. If she does not use her phone, she feels a craving. When attempting to stop smartphone usage she is irritable and her distressand anxiety level increases [18].
3. *Use for longer than intended*: Jalila responded that she generally spends a lot of time using her smartphone more frequently than intended. Nevertheless, she mentions that she has often tried to control or to reduce unplanned prolonged smartphone usage. Her repeated efforts to control the time she spends on her smartphone were unsuccessful. She had difficulties to cut back obsessive thoughts related to the smartphone use [18].
4. *Uncontrolled use:* Jalila reports that she cannot stop herself from being preoccupied and frequently checking her smartphone. She reaches a daily level of 6- to 9-hours phone use, without realizing it, especially when she feels upset. Indeed, loss of control is likely to represent this inability to stop use.
5. *Wasting time* because of owing to smartphone use: smartphone use frequency is gradually growing; Jalila feels some urge to use her smartphone phone about every 10 min, this eventually leads to keep on checking her device which constitutes symptom of dependence.
6. *Negative impact on personal, professional, or social spheres*: Due to mobile usage, her relationships with her husband and daughters have become shallower and many times, she avoids activities or going out with them to deal

with her phone. Severe negative consequences stemming from the overuse, a poor self-esteem, insecure attachment and anxiety .She reported that her smartphone attachment altered her social performance.

7. *Conscious of dysfunctional use*: Jalila is aware that she constantly loses control over her smartphone use, which often results in several negative outcomes. She does consider herself a smartphone addict. She feels ashamed and worried about herself when she spends more than 5 hours on her smartphone built-in applications as well as watching online or downloaded videos. Nevertheless, she has many other activities, engagements and functions to achieve.
8. *Relies on others* to provide money to relieve desperate financial situations caused by mobile phone usage. This criterion do not fit Jalila because she does not use her phone for calls, but for other free functions [19]. This is one of the criteria that cannot be adapted to smartphone usage, which is a special characteristic of gamblers.

Jalila may have a smartphone addiction, as proven by the fact that her symptoms match those of behavioral addictions according to Goodman's (1990) criteria as well as those of addiction as defined by the DSM-5. However, before claiming this, we must consider whether we might refer to Jalila as a smartphone addict or whether she is dependent on a certain apps or feature that the phone offers (e.g., addicted to social networks or games). According to Jalila, the average daily use is the following: at least 4–5 hours for social networking, 1 hour for surfing on the Internet, 1 hour for watching new videos on YouTube channels, 0.5 hour for taking or editing her photos, 0.5 hour for listening to music.

The total amount of time spent on each of these activities leads to a very high rate of smartphone use. According to Jalila, even when her device is not connected to internet, she keeps using it, to delete or edit photos, watching downloaded videos, or reading documents she has already downloaded on her phone, such as activities who are not classified as social networking. That's mean she is addict to her smartphone as a device with or without internet even if her mobile phone activity is organized mostly around community sites. We think that smartphone addiction is a better concept to describe Jalila's case. The cell phone provides Jalila unlimited availability in the case of various behaviors [20]. Owing to the ability of being held everywhere, the mobile phone deemed as source of addiction.

The social problems might lead Jalila to use the phone as a means of escaping from real problems or might be a source of causing troubles and perturbing her daily life. During the therapy for cell phone addiction, we are facing similar problems as in other addictions, such as craving. As a result of being offline and unable to keep up with the most recent events and experiences of others, withdrawal symptoms might be developed, heightens thus the sense of exclusion [21].

Overall, based on Jalila's data;we think that intervention strategies for smartphone addiction should not only ban the behavior, but also take into consideration underlying causes and reasons [22]. Besides providing enjoyment, lowering pain and stress; using smartphone couldbe a result of inability of monitoring usagedespite detrimental effects on one's health, physical well-being, and social relationships [23].

The most common mechanism projection, which is used to avoid facing the involved negative emotions is to practice physical and recreational sports relieving thus addiction symptoms. It is known that smartphones are constraints for physical activities and this may be a reasonto take precaution to a sedentary lifestyle [24].

The Jalila's atitudes of addiction to smartphone might be explained by the microgenetic theory of symptom formation [25]. Her behavior releases emotions, because it stimulates the reward / punishment system by creating new connections in the brain. Using a smartphone is for Jalila's brain reward. If she doesn't use a smartphone, her reward system weakens and her punishment system strengthens (cf. Fig. 1). Thus, a smartphone addiction is formed to stimulate her reward system. As Pachalska [25] note, the activation of the reward/ penalty systems is not indifferent to the organism, as new connections in the brain can create new neural circuits, and successively Jalila uses her smartphone more than she intends to, indicating a loss of control that is affecting her health and well-being.

Jalila, indeed, have reduced the atitudes of addiction to smartphone by practicing sports and giving care to get rid of sedentary lifestyle. However, it requires a lot of self-denial due to the forementioned involvement of the reward /penalty system and the need to remodel the brain's connection patterns,

Taken together, the addiction to smartphone become seemingly widespread. This case studied have a real behavioral addiction to smartphone; the impact of using this tool still largely as yet unknown. The solutions suggested might of great interest in reducing or even disappear the effect of addiction. Further investigations are needed to shed more light.

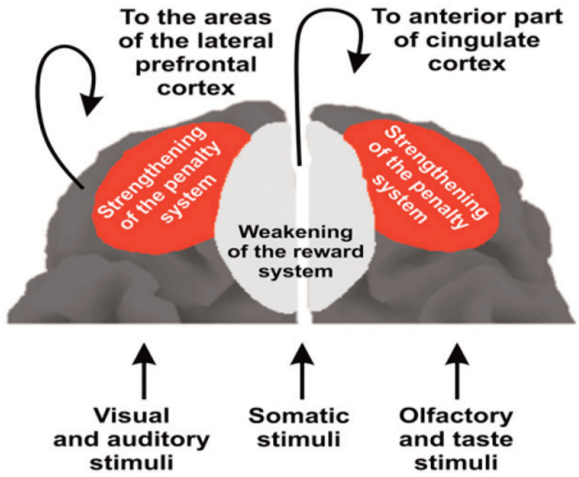

Fig. 1. The reward /penalty system: the medial part involves the processing of the reward, and the lateral part involves the processing of the penalty.
Source: [25]

CONCLUSIONS

The current study highlights preliminary evidence demonstrating the smartphone as an object of easy addiction that may associate with emotion regulation difficulties, problematic personalities, or psychosocial troubles while allowing for problematic and compulsory use in specific situations and contexts. Here; Jalila has suffered long-lasing consequences of smartphone addiction and needless to say, built-in applications.

Although excessive use of smartphones is not currently recognized as a formal clinical disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) or International Classification of Diseases (ICD-10), many aspects of the behavior appear to share similarities with other recognized behavioral addictions. A proposed therapy intervention has considerably changed the lifestyle of Jalila after being prisoner of smartphone after facing negative emotions involved by therapy defying the leaving.

Further, it is necessary to assert a conceptual definition of smartphone addiction diagnostic features and a consensus among researchers and clinical practitioners concerning the best strategies forof clinical recommendations and intervention targets to address problematic smartphone use. There is also the issue as for loss of control, the field lacks studies that have addressed the question in a more direct and valid way, with the aim of obtaining a global consideration. The neurobiological and psychological process involved in the etiology of smartphone addiction is needed to get more clear-cut data.

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