

Smartphone Addiction: new disorder or just a hype

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ABSTRACT

For last few years there has been a considerable interest in the field of Behavioral addiction. As a result of which Pathological gambling has been included in DSM-V as a disease entity. With the advent of smartphone and its huge popularity among youngsters, has raised the issue of Smartphone addiction. We searched the internet with the key words – smartphone addiction, adolescents, practical solution, digital literacy and behavioral addiction. From the selected studies we analyzed the – risk factors, assessment and diagnosis, consequences and practical solutions for the smartphone addiction in youngsters.

Keywords: Smartphone addiction, Digital literacy, Behavioral addiction, Peer support network, Cyber psychology.

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Definition

Several behaviors produce short-term reward that may engender persistent behavior despite knowledge of adverse consequences, i.e., diminished control over the behavior. This similarity has given rise to the concept of non-substance or “behavioral” addictions, i.e., syndromes analogous to substance addiction, but with a behavioral focus other than ingestion of a psychoactive substance.

Background

The recent development of the multifunctional smartphone and its huge global popularity has changed the communication and information landscape; ignited the interests, values, and desires of many users; and raised concerns around the world about overuse and possible addiction [1].

However, till date, no mention has been made of smartphone addiction in either the DSM-5 or in the ICD-11's draft although Internet addiction has been mentioned as area of interest in DSM-V. Nevertheless, research on smartphone and mobile phone addiction has notably increased in recent years [2-5] particularly in east Asian countries including – Korea, Taiwan, China etc.

Most of the screening studies estimate that smartphone addiction ranges from anywhere between just above 1% and 35%⁶. One study reported that 48% of undergraduate university students were smartphone addicted [2]. One reason put forward for high smartphone use in Asian countries is that lack of opportunity for adolescents to mix freely with members of opposite gender in social situations and that's why they depend on virtual world to make friends.

Kardefelt-Winther and others [6] proposed a model of Behavior Addiction: (a) significant functional impairment or distress as a direct consequence of the behavior and (b) persistence of the behavior over time. If the harm is not significantly severe, the disorder would be better classified as problematic or maladaptive use. The major criticisms against the disease model of Smartphone addiction [7] are the lack of longitudinal data, lack of consistency in methodology, lack of a clinical sample, lack of better explained

by criteria' as for example those used for Pathological Gambling – the behavior of gambling is not better explained as part of Manic episode.

However, there are many studies favoring for a disease entity of Smartphone addiction. Leung's study showed that the possibility of becoming a smartphone addict for adolescents seeking sensation due to boredom was higher [8]. Excess use of smartphones may harm people's functionality and lead to a psychological and behavioral addiction [9]. Students use Smartphone for easy communication, free texting, photo-sharing, talk, entertainment, and obtaining and sharing information [10]. But when it starts to affect their functional capacity in – academics, social relationship, interpersonal relationships, family relationships or occupational field then it becomes a diagnosable condition. Use of smartphones among youth is fast gaining prevalence. This fast increase brings along smartphone addiction.

Consequences

Although evidence is limited, excessive use can have a small negative impact on mental wellbeing [11]. Excessive use of digital technologies and Smartphone use are associated with mental illness [12]. There is a significant association between playing video games in the evening and sleep deprivation [13]. Smartphone may provide tools for cyber-bullying [14]. It may also cause body image distortions [15] and eating disorders [16].

Greater social media use, night-time social media use are all associated with higher levels of anxiety and depression [17]. Using screen entertainment for more than 2 hours a day is found to be associated with emotional and conduct problems in 5-year-old girls [18].

Its effect on driving performance increases the number of car accidents [19]. Excessive smartphone use can interfere with concentration at school or work [20] and can cause headache, dizziness, blurred vision, wrist pain [21].

Diagnosis

Hsuan Lin and others [22] developed a diagnostic criterion by evaluating 281 college students. Each study subject was assessed systematically for smartphone use behavior by psychiatrists structured diagnostic interview. The accuracy, sensitivity and specificity of the candidate symptom criteria were analyzed by using psychiatrist's clinical global impression. The optimal model selection with definite cut off points of the diagnostic criteria differentiating smartphone addicts from those not addicted to smartphone was then done by best diagnostic accuracy. The final smartphone addiction diagnostic criteria consisted of – six symptoms criteria, four functional impairment criteria and one exclusion criteria with minimum three months' duration and three symptoms cut off and two functional impairment criteria for diagnosis. This diagnostic criterion has an accuracy of 85%.

Criteria category	Description
Criteria A	Maladaptive pattern of smartphone use, leading to clinically significant impairment or distress, occurring at any time within the same 3-month period. Three (or more) of the following symptoms having been present: <ol style="list-style-type: none"> 1. Recurrent failure to resist the impulse to use the smartphone 2. Withdrawal: as manifested by dysphoria, anxiety and/or irritability after a period without smartphone use 3. Smartphone use for a period longer than intended 4. Persistent desire and/or unsuccessful attempts to quit or reduce smartphone use 5. Excessive time spent on using or quitting the smartphone use 6. Continued excessive smartphone use despite knowledge of having a persistent or recurrent physical or psychological problem resulting from smartphone overuse
Criteria B	Functional impairment: two (or more) of the following symptoms have been present <ol style="list-style-type: none"> 1. Excessive smartphone use resulting in persistent or recurrent physical or psychological problem 2. Smartphone use in a physically hazardous situation (e.g., smartphone use while driving, or crossing the street), or having other negative impacts on daily life 3. Smartphone use resulting in impairment of social relationships, school achievement, or job performance 4. Excessive smartphone use causes significant subjective distress, or is time-consuming
Criteria C	Exclusion criteria The smartphone addictive behavior is not better accounted for by obsessive-compulsive disorder or by bipolar I disorder.

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Min Kwon and others [23] developed a Smartphone Addiction Scale (SAS-SV) by assessing 540 participants of both genders with an average age of 14.5 years. It consisted of ten questions which can be scored in a six point Likert scale. The scale showed good reliability and validity for assessing smartphone addiction.

Appendix 1. English Version of SAS-SV						
Items	Strongly disagree	Disagree	Weakly disagree	Weakly agree	Agree	Strongly agree
1 Missing planned work due to smartphone use	1	2	3	4	5	6
2 Having a hard time concentrating in class, while doing assignments, or while working due to smartphone use	1	2	3	4	5	6
3 Feeling pain in the wrists or at the back of the neck while using a smartphone	1	2	3	4	5	6
4 Won't be able to stand not having a smartphone	1	2	3	4	5	6
5 Feeling impatient and fretful when I am not holding my smartphone	1	2	3	4	5	6
6 Having my smartphone in my mind even when I am not using it	1	2	3	4	5	6
7 I will never give up using my smartphone even when my daily life is already greatly affected by it.	1	2	3	4	5	6
8 Constantly checking my smartphone so as not to miss conversations between other people on Twitter or Facebook	1	2	3	4	5	6
9 Using my smartphone longer than I had intended	1	2	3	4	5	6
10 The people around me tell me that I use my smartphone too much.	1	2	3	4	5	6

Risk factors

Various studies have showed that there are some definite risk factors for developing smartphone addiction. Perceived stress, female gender, alcohol use, anxiety, social phobia, high need to belong, difficulties in emotional regulation are all positively related to smartphone addiction. On the other hand, academic performance, school satisfaction, self-esteem, peer support network, family support and membership in some organizations are all negatively associated with smartphone addiction.

Smartphone can bring both considerable benefits to children's education as well as exposure to online risks such as access to inappropriate content and abusive interaction with others, which could have a detrimental effect on their mental health [24]. Schools should develop digital literacy, providing young people with digital skills to recognize risks such as cyber-bullying and excessive use of social media, as well as strengthening emotional resilience. Governments should promote parental controls for different devices, as well as encourage co-viewing of content with children to help children understand what they are seeing and apply it to the world around them. In Japan, legislation has funded increased education on appropriate internet use and promoted internet filtering and monitoring to parents.

The children's commissioner for England formulated a 'Digital 5 A Day' framework for safe smartphone use [25].

Connect – Keeping an open dialogue so that parents can understand how their children is spending time online and enabling the children to seek help.

Be Active – Should have time to switch off and get moving.

Get Creative – Encourages children to learn and be creative. It discourages children to spend time online passively consuming content.

Give to Others – Posting positive messages, reporting harmful content, not sharing content that is fake or abusive. Encouraging family, friends and community offline as well.

Be Mindful – It may be difficult for children to put their phones down when apps are encouraging them to engage. Parents can help children with time management by using some app or by logging the amount of time.

Korea was the first country in the world to develop a national policy and allocate a budget [26]. The Korea Youth Counselling and Welfare Institute provides prevention and counselling services for young people. Counselling is available individually, in groups or via telephone, as well as at home when an individual has cut themselves off from social relationships in the real world. In extreme cases internet abstinence rehabilitation camps are offered by the National Center for Youth Internet Addiction Treatment, where young people receive a range of treatments for 12 days, including opportunities to engage in outdoor sports and activities [27].

Governments should encourage online broadcasters, digital developers and entrepreneurs to produce technology that fits a child's development via 'age-appropriate' content, as well as ensure inappropriate content is not accessible. Microsoft and Sony provide online guides and video demonstrations on setting time limits and content restrictions on their gaming systems [27]. Apps are now available to help limit children and young people's screen time and track their online activity, whether tracking and setting limits on daily social media usage via Moment, using Space and App Detox to set screen locks and time use goals. In response to this demand, Google, Apple, Facebook and Instagram are also introducing new tools for users to monitor daily use and set screen time limits.

Put the phone away during meals: sitting down to eat with family or friends, is a rare opportunity to talk face-to-face. Wonderful things can happen in conversation.

Make your last 30 minutes before bed a screen-free zone: our mind might start worrying with every text, Instagram post or email we look at. Any light tends to keep us awake – or wake us up – and that includes the phone screen.

Turn off all notifications: Limit notifications to the stuff that really matters. Just get rid of a lot of apps.

Track usage: with Moment, Flipd, Quality Time and SPACE. these apps track your smartphone activities and provide tools and training to curb that usage.

Start a conversation with a stranger: when alone in a public place, see if a live-and-in-person conversation might kill some time rather than diving into your phone. Sometimes the chat is brief, sometimes you learn something really interesting, and once in a while, you make a new friend.

Go outside: Walk, bike, hike, hit the gym, or just go for a walk. Trade an hour a day on your phone for an hour of some sort of exercise, and you're just going to feel better. The great thing about group yoga or fitness is that it's impossible to check the phone while you're doing it, and that frees your mind.

Test your brain: With the smartphone, facts are literally at our fingertips. Before you opt for the phone, spend a minute or two racking your brain (or your friends') for the answer.

Keep your child engaged: With shrinking play spaces, more and more children are forced to stay indoors. As a result, children get hooked to gadgets like smartphones. Take your child out to the park or some nearby playground to allow him to spend his time running and playing. If that is not an option, enroll him in a neighborhood sports club.

Set a good example: There are a number of parents who spend a lot of time on their smartphones. In such cases, instructing children may not be of much use. So, be a good role model for your child by limiting your usage of the phone. However, if your profession demands using phones a lot, do it away from the eyes of your child.

Bond with your child: It is important to take the time out for family bonding activities with children. You can also join your child in pursuing hobbies like listening to music, gardening, reading or painting.

What is the right Age: No two kids are the same, and there's no magic number? A kid's age is not as important as his or her own responsibility or maturity level. Some experts said 12 was the ideal age, while others said 14. The longer you wait to give your children a smartphone, the better. Ultimately, parents will determine when their child truly needs a smartphone. There are approaches for testing the waters before handing one to the child. One popular option is to start the child off with feature phones that can only send text messages or place phone calls, and to assess whether they can use those devices responsibly. A family

contract listing the rules of smartphone use, which may include promises never to take nude selfies and never to try to meet strangers from the internet in real life.

Indian Psychiatric Society Recommendations (0 to 5 Years)

- Co-view with children of 2-5 yrs. of age, not more than 1 hour a day.
- Avoid fast paced programs with lots of distracting contents.
- Avoid media as a way to calm your child.
- Be a good role model.
- Try to enhance interactions with your child.
- There is no substitute for a real human being.

Indian Psychiatric Society Recommendations (5 to 18 Years)

- Digital Literacy – Help the child embrace technology in healthy ways.
- Realistic and reasonable ground rules, mutually agreed upon.
- Gadget be used in a common room, not in seclusion.
- Promote daily physical activity for at least one hour. Designate media free time.
- Monitor children's media use and apps used. Test apps before the child uses them.
- Communicate the guidelines to other caregivers. Rules are followed uniformly.

Conclusions

Smartphone has become a part of our life because of its multifunctional nature. We must however use the smartphone rationally and keep track of our daily use. We must be good role model to our children. Smartphone addiction is a type of behavioral addiction although no official diagnostic category has yet been assigned. Children and adolescents are most vulnerable group. Parents should monitor the duration, pattern, type of contents used by their children. A little bit of internet use is positive, while excessive use has a negative impact on mental wellbeing.

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