



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Commentary

Smartphone overuse: A hidden crisis in COVID-19

Zubair Ahmed Ratan^a, Sojib Bin Zaman^{b,*}, Sheikh Mohammed Shariful Islam^c,
Hassan Hosseinzadeh^a

^a School of Health and Society, University of Wollongong, NSW, Australia

^b Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Victoria, Australia

^c Institute for Physical Activity and Nutrition (IPAN), School of Exercise & and Nutrition Sciences, Deakin University, Geelong, Victoria, Australia

ARTICLE INFO

Article history:

Available online 23 January 2021

Keywords:

Smartphone overuse
Mental health
COVID-19

The COVID-19 has interrupted normal activities and surfaced as the most significant health and economic challenges after the 2nd World War [1]. Most countries have imposed lockdown to break the chain of community transmission of this notorious virus, which has changed the way we are used to living in. Stay at home and work from home strategies are recommended worldwide as the most useful to prevent infection at both individual and community levels [2]. This self-isolation has encouraged people to turn to their smartphones to stay connected increasingly.

Smartphones forge opportunities for individuals to engage more in different online activities such as participating in social network sites, playing video games, surfing the web, and so on. A recent global survey showed that about 70 percent of internet users, especially the young generation worldwide, were using their smartphones or mobile phones more as a direct result of lockdown due to the coronavirus outbreak [3]. Such findings suggest that COVID-19 related lockdown policies might lead to the overuse or excessive usage of smartphones. Now, the question is whether overuse or excessive use of smartphones during the COVID period could develop particular harmful health issues and remain unchanged in the post-lockdown period. Smartphone overuse may lead to physical and psychological health, different musculoskeletal pain such as the neck, lower back, shoulder pain, depression, and anxiety [4]. This may result in the problematic use of smartphone [5], which can hack the “reward system” of the brain to engage one in activities that s/he was employed during the lockdown period [6]. Thus,

there is a high chance that subsequent harms will persist in the form of various mental health disorders, even if the lockdown effect is withdrawn.

The overusing pattern of smartphone involves a tendency to check notifications all the time. Such behaviour pattern can induce “reassurance seeking” pathway which broadly includes symptoms such as loneliness, low self-esteem, depression, and anxiety [7]. This reassurance-seeking behaviour is explainable with the theoretical model of ‘problematic mobile phone use’ suggested by Bilieux and colleagues [8]. Excessive use of smartphones may also affect sleep patterns by reducing rapid eye movement sleep, slow-wave sleep and consequently causing sleep deficiency. Excessive use of smartphones can potentially lead to gaming disorders and internet use disorders and eventually be considered to cause psychosocial crisis (i.e., sleep deprivation, stress, mood disorder and anxiety), which could be the aftermath of the COVID period [9].

School students are also vulnerable, as one study suggested that 61% of parents classified their children as addicted to their smart devices for doing activities [10]. As educational institutions are temporarily closed, and school-children are passing their time at home or pursuing online classes, they can potentially be more exposed to using the internet and smart devices for their entertainment.

As countries are taking steps to relax lockdown, it is high time to identifying people who might have the problematic use of smartphones or other smart devices. First, we need a screening tool to identify people. Second, we require developing and implementing psychiatric intervention (e.g., establishing peer support). Third, though smartphone overuse currently is not an official diagnosis, the introduction of general health education services is required to reduce smartphone use. Therefore, health communication is required through the mass media to sensitise people about

* Corresponding author at: Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Melbourne VIC 3168, Australia.

E-mail address: sojibbz@gmail.com (S.B. Zaman).

the problematic use of smartphone. For many users, problematic smartphone use might not pose a problem at all. Thus, without proper initiative, problematic smartphone usage can turn into an emerging public health challenge to annihilate lives by perpetuating the socio-psychological problems. It will be a crucial step to monitor smartphone overuse and take necessary action to minimise the problem through protective policies and family support during and after this COVID-19 pandemic.

Ethical approval

Not required.

Funding

Sojib Bin Zaman received a scholarship from the Australian Government research training program (RTP) in support of his academic career. This funding source had no role in the design, implementation, analyses, interpretation of the data, or decision to submit results.

Authors' statement

All authors equally contributed to prepare, review and approve the manuscript.

Declaration of Competing Interest

Authors declared no conflict of interest.

References

- [1] World Health Organization Coronavirus disease (COVID-2019) situation report-154; 2020 <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/> Accessed November 5, 2020.
- [2] Cacioppo S, Grippo AJ, London S, Goossens L, Cacioppo JT. Loneliness: clinical import and interventions. *Perspect Psychol Sci* 2015;10(2):238–49. doi:10.1177/1745691615570616.
- [3] Sebire K. The coronavirus lockdown is forcing us to view 'screen time' differently. That's a good thing. *The Conversation*; 2020 <https://theconversation.com/the-coronavirus-lockdown-is-forcing-us-to-view-screen-time-differently-thats-a-good-thing-135641> Accessed November 5, 2020.
- [4] Alsalameh AM, Harisi MJ, Alduayji MA, Almutham AA, Mahmood FM. Evaluating the relationship between smartphone addiction/overuse and musculoskeletal pain among medical students at Qassim University. *J Fam Med Prim Care* 2019;8(9):2953–9. doi:10.4103/jfmpc.jfmpc_665_19.
- [5] Sohn S, Rees P, Wildridge B, Kalk NJ, Carter B. Correction to: prevalence of problematic smartphone usage and associated mental health outcomes amongst children and young people: a systematic review, meta-analysis and GRADE of the evidence. *BMC Psychiatry* 2019;19(1):397. doi:10.1186/s12888-019-2393-z.
- [6] Haynes TJSitN. Dopamine, smartphones & you: a battle for your time. 2018; <http://sitn.hms.harvard.edu/flash/2018/dopamine-smartphones-battle-time/>. Accessed November 5, 2020.
- [7] Elhai JD, Dvorak RD, Levine JC, Hall BJ. Problematic smartphone use: a conceptual overview and systematic review of relations with anxiety and depression psychopathology. *J Affect Disord* 2017;207:251–9. doi:10.1016/j.jad.2016.08.030.
- [8] Billieux J, Maurage P, Lopez-Fernandez O, Kuss DJ, Griffiths MD. Can disordered mobile phone use be considered a behavioral addiction? An update on current evidence and a comprehensive model for future research. *Curr Addict Rep* 2015;2(2):156–62. doi:10.1007/s40429-015-0054-y.
- [9] Király O, Potenza MN, Stein DJ, et al. Preventing problematic internet use during the COVID-19 pandemic: consensus guidance. *Compr Psychiatry* 2020;100:152180. doi:10.1016/j.comppsy.2020.152180.
- [10] Robb M. The new normal: parents, teens, screens, and sleep in the United States. *Common Sense Media*; 2019 <https://www.commonsensemedia.org/research/the-new-normal-parents-teens-and-devices-around-the-world> Accessed November 5, 2020.