

Written evidence submitted by International Gaming Research Unit,  
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**Excessive and problematic use of social media in adolescence:  
A brief overview**

***Executive summary***

- Social media use is one of the online activities of choice in late childhood and early adolescence incurring significant psychosocial benefits (i.e. emotional support and community building, self-expression) but also negative impacts.
- Excessive recreational screen time has been associated with serious physical conditions (i.e. obesity, diabetes), co-occurring psychosocial problems and a decrease in well-being.
- Research over the last few years has consistently shown that a small minority of adolescents can experience negative physical (i.e. sleep deficits, poor dietary habits) social (i.e. loneliness, hostility) and psychological (i.e. anxiety, depression) consequences as a result of excessive and problematic social media use.
- Problematic social media use has also been found to have a negative association with academic achievement and is increasingly associated with cognitive impairment, with symptoms of distraction, procrastination and attention deficit hyperactivity disorder (ADHD).
- There is a growing scientific evidence base to suggest excessive social networking site (SNS) use in both adolescence and emerging adulthood may lead to symptoms traditionally associated with substance-related addictions and behavioural addictions, such as gambling addiction.
- Excessive and problematic social media use in adolescence is inextricably associated with excessive and problematic smartphone use and with parallel use of multiple devices. Research on excessive use of smartphones has been associated with negative outcomes, such as impaired social interactions, social isolation, as well as both somatic and mental health problems, including anxiety, depression and stress.
- Common factors that are associated with problematic and addictive SNS are personality factors, such as neuroticism and extraversion, as well as psychological states, such as FoMO (i.e., the fear of missing out) and nomophobia (i.e., 'no mobile phone phobia').
- FoMO may contribute to SNS addiction because individuals who worry about being unable to connect to their networks may develop impulsive checking habits that over time may develop into a potential behavioural addictive problem. FoMO appears to be a significant predictor or possible component of potential SNS addiction.
- Research seems to suggest younger generations (and particularly adolescents) may be more at risk for developing addictive symptoms as a consequence of their SNS use.

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- Current UK public policy advice is risk focused with minimal reference to socio-emotional consequences and impacts experienced by children and adolescents.
- Increased focus on time devoted to the activity is misleading and disregards important scientific evidence suggesting that context, content and quality of relationship formation are more crucial aspects in addressing problematic use.
- Prevention initiatives appear to have promising results for problematic screen time.

**Brief overview of evidence base**

- Seven large nationally representative surveys of US adolescents<sup>[1]</sup> spanning years 1976-2016 (N=8.44 million, ages 13-19 years) have suggested a delayed developmental trajectory than earlier cohorts, with fewer adolescents engaging in adult activities (having sex, dating, drinking alcohol, working for pay, going out with parents and driving) that may be linked to increased internet use. This potentially demonstrates the pervasiveness of online use with significant implications on a psychosocial, public policy and clinical level (i.e. prolonged education, delayed reproduction etc.).
- The amount of time children in the UK spend online has more than doubled in the past decade (6.2 hours spent online per week in 2005 for 8-15 years vs. an average of 15 hours in 2015)<sup>[2]</sup> with 91% of 16-25 year olds using the internet for social media<sup>[2]</sup>.
- While social media use can have some important benefits among its users, research over the last few years has consistently shown that a small minority of adolescents can experience negative consequences as a result of excessive and problematic social networking site [SNS] use<sup>[3-6]</sup>. Earlier research tended to concentrate on use of one particular SNS (i.e., *Facebook*), but social media use now has many platforms, and adolescents are far more likely to be using platforms such as *Snapchat* and *Instagram* than *Facebook* and in spite their popularity, they have been assessed by UK adolescents as having the highest net negative impact on health and wellbeing<sup>[7]</sup>. Here, we briefly overview some of the major issues surrounding problematic adolescent social media use based on the empirical evidence.
- There is a growing scientific evidence base to suggest excessive SNS use may lead to symptoms traditionally associated with substance-related addictions and behavioural addictions, such as gambling addiction<sup>[8]</sup>. Research has demonstrated that adolescents experiencing problematic social media use display consequences associated with more traditional addictions (i.e., salience, mood modification, tolerance, withdrawal symptoms, conflict, and relapse). For a small minority of individuals, their use of SNSs may become the single most important activity that they engage in, leading to a preoccupation with SNS use (salience). The activities on these sites are then being used in order to induce mood alterations, pleasurable feelings or a numbing effect (mood modification). Increased amounts of time and energy

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are required to be put into engaging with SNS activities in order to achieve the same feelings and state of mind that occurred in the initial phases of usage (tolerance). When SNS use is discontinued, addicted individuals will experience negative psychological and sometimes physiological symptoms (withdrawal), often leading to a reinstatement of their SNS use (relapse). Problems arise as a consequence of the engagement in problematic SNS use, leading to intrapsychic conflicts (within the individual, often including a subjective loss of control) and interpersonal conflicts (i.e., problems with the immediate social environment, including relationship problems and work and/or education being compromised)<sup>[7]</sup>.

- While there are many studies that have examined problematic SNS use and potential SNS addiction in many countries, very few studies have used nationally representative samples. One study reported that 4.5% of 5,961 Hungarian adolescents (mean age 16 years old) were categorized as 'at-risk' of SNS addiction<sup>[9]</sup>. Another German study of 9173 adolescents (11-19 years) reported that using social networking sites intensely was more often indicative of internet addiction (4.1% boys, 3.6% girls) and had higher levels of psychosocial distress<sup>[10]</sup>. Cross-cultural research including 10,930 adolescents from six European countries (Greece, Spain, Poland, the Netherlands, Romania, and Iceland) showed that using SNSs for two or more hours a day was related to internalizing problems and decreased academic performance and activity<sup>[11]</sup>. A Chinese study<sup>[12]</sup> using a sample of 920 secondary school students indicated that the personality traits neuroticism and extraversion predicted SNS addiction, clearly differentiating individuals who experience problems as a consequence of their excessive SNS use from those individuals who used games or the Internet in general excessively, further contributing to the contention that SNS addiction appears to be a behavioural problem separate from the more commonly researched gaming addiction. In other related recent research, when compared to other behavioural addictions such as gaming addiction, SNS addiction displayed the same detrimental effects on mental health, contributing to increased levels in symptoms of generalized anxiety, stress, and depression, further highlighting the addictive potential and seriousness of the phenomenon in terms of its clinical relevance<sup>[13]</sup>.
- Recent research has suggested that high engagement in social networking is partially due to what has been named the 'fear of missing out' (FoMO)<sup>[14,15]</sup>. FoMO is "*a pervasive apprehension that others might be having rewarding experiences from which one is absent*"<sup>[16]</sup>. Higher levels of FoMO have been associated with greater engagement with *Facebook*, lower general mood, lower wellbeing, and lower life satisfaction<sup>[16]</sup>. In addition to this, research suggests that FoMO predicts problematic SNS use and is associated with SNS addiction<sup>[17-19]</sup>. In one study using 5,280 social media users from several Spanish-speaking Latin-American countries<sup>[13]</sup>, it was found that FoMO predicts negative consequences of maladaptive SNS use. It has also been found that FoMO mediates the relationship between high SNS use and decreased self-esteem<sup>[14]</sup>. Taken together, these findings suggest FoMO may be a significant predictor or possible component of potential SNS addiction.

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- Over the last decade, research assessing problematic and possibly addictive mobile phone use (including smartphones) has proliferated<sup>[20]</sup> suggesting some individuals (including adolescents) may develop addiction-related problems as a consequence of their mobile phone use, and usage patterns differ across age group<sup>[21]</sup>. Recent research has suggested that problematic mobile phone use is a multi-faceted condition, with dependent use being one possible consequence<sup>[22]</sup>. An addictive pattern of mobile phone use is characterised by the use of specific applications, including calls, instant messaging, and the use of SNSs, stress and impulsivity<sup>[23]</sup>, as well as the frequency of engaging with smartphone notifications<sup>[24]</sup>. This suggests that rather than being an addictive medium *per se*, mobile technologies including smartphones and tablets are simply media that enable the engagement in potentially addictive activities, including SNS use. Put another way, it could be argued that mobile phone addicts are no more addicted to their phones than alcoholics are addicted to bottles.
- Similarly, it has been argued previously that individuals do not become addicted to the Internet *per se*, but to the activities they engage in on the Internet, such as SNS use<sup>[25]</sup>. Using SNSs is a particularly popular activity on smartphones, with around 80% of social media used via mobile technologies<sup>[26]</sup>. For instance, approximately 75% of *Facebook* users access the SNS via their mobile phones<sup>[27]</sup>. Therefore, SNS addiction is intertwined with smartphone use or a factor for smartphone dependency<sup>[28]</sup>. Large-scale research on a sample of over 23,000 Norwegians supported this supposition by specifically indicating that social networking is often engaged in via phones, which may contribute to its addictive potential<sup>[29]</sup>.
- Related to both FoMO and mobile phone addiction is nomophobia (i.e., the fear of being without one's mobile phone<sup>[30]</sup>). The criteria for nomophobia include: regular and time-consuming use of mobile phones, feelings of anxiety when the phone is not available, 'ringxiety' (i.e., repeatedly checking one's phone for messages, sometimes leading to phantom ringing), constant availability, preference for mobile communication over face-to-face communication, and financial problems as a consequence of use<sup>[30]</sup>. Nomophobia is inherently related to a fear of not being able to engage in social connections, and a preference for online social interaction (which is the key usage motivation for SNS use and has been linked to problematic internet use and negative consequence of technology use)<sup>[19,31,32,33]</sup>, further pointing to a strong association between nomophobia and SNS addiction symptoms.
- Decreases in psychological well-being in adolescence after 2012 has been linked to screen time and the use of smartphone usage<sup>[34]</sup>. As noted above, research on excessive use of social media on smartphones by adolescents and young adults has been associated with negative outcomes, such as impaired social interactions, social isolation, as well as both somatic and mental health problems, including anxiety, depression and stress. Consequently, nomophobia can lead to using the mobile phone in an impulsive way and may thus be a contributing factor to SNS addiction

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because it can facilitate and enhance the repeated use of social networking sites, forming habits that may increase the general vulnerability for the experience of addiction-related symptoms as a consequence of problematic SNS use.

### **Conclusions**

- To date, research has shown that there is a fine line between frequent non-problematic habitual use and problematic and possibly addictive use of SNSs among adolescents, suggesting that users who experience symptoms and consequences traditionally associated with substance-related addictions (i.e., salience, mood modification, tolerance, withdrawal, relapse, and conflict) may be addicted to using SNSs. Research has also indicated that a FoMO may contribute to SNS addiction because individuals who constantly worry about being unable to connect to their networks may develop impulsive checking habits that over time may develop into an addiction. The same patterns appear to hold true for mobile phone use and a fear of being without one's mobile phone (i.e., nomophobia), which may be viewed as a medium that facilitates excessive use of SNSs (rather than being addictive *per se*). Given that engaging in SNS is a key activity of mobile technologies, FoMO, nomophobia, and mobile phone addiction appear to be associated with SNS addiction.
- Research on hostility, aggression, cyberbullying, anxiety, depression symptomatology and attention deficits in relation to screen time suggest that there are wider-impacting psychological and functional issues that do not fall under the addiction paradigm, but are experienced from social media use and affecting youth, that require further investigation.
- Overall, research from a developmental perspective suggests younger generations are more at risk for developing addictive symptoms as a consequence of their SNS use, whilst perceptions and experiences of SNS addiction appear to differ across generations. Younger individuals tend to view their SNS use as less problematic than their parents might, further contributing to the contention that SNS use has become a way of being and is contextual, which must be separated from the experience of actual psychopathological symptoms. The ultimate aim of research must be not to over-pathologise everyday behaviours, but to carry out better quality research as this will help facilitate treatment efforts in order to provide support for those who may need it.

### **Recommendations**

- Given the paucity of robust research and lack of longitudinal and epidemiological studies in the field, funding should be made available to carry out a large nationally representative study examining: (i) the nation-wide prevalence of SNS addiction and (ii) the potentially detrimental effects of SNS addiction among adolescents, and (iii) the relative contribution of SNS use in overall screen time across the various developmental stages. This study will

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help ascertaining the need for treatment, developing new treatment protocols and shaping new health-related policies toward healthy SNS use in order to reduce the social and economic burden of SNS addiction.

- A scientific working group should be set up under the Department of Health to collate the latest evidence relating to the effects of social media use in adolescence and emerging adulthood. This could then inform – further to the 2017 Internet Safety Strategy Green Paper – an evidence-based paper on social media use, psychological consequences and parental mediation in order to: (i) provide clarity regarding the evidence and the recommendations, (ii) be shared as a common guideline and practice by all UK organizations (i.e. The UK Council for Child Internet Safety, Parent Zone, Childnet) that deal with support and advice provision towards parents and the community. This is a crucial step towards developing social awareness and the need for preventive measures aimed to curb SNS addiction, similarly to what is being currently done in other European countries.
- Educational materials and guidelines should be developed for schools and colleges concerning social media use and embedded within the National Curriculum as a core subject of Personal and Social Health Education classes. Focus should complement cybersafety, encourage reflection and provide solutions – from within the student community – on the problems that arise from adverse impacts of excessive social media use. This approach will complement the point made above in terms of helping raise the social awareness in relation to SNS use and addiction. Alongside this, there needs to be awareness-raising and prevention of developing possibly addictive behaviours (alongside prevention approaches for gaming addiction, as available in other countries).
- A multi-stakeholder approach to prevention engaging children and adolescents, parents and school teachers should be encouraged to support prevention efforts. To ensure attendance and compliance, mandatory social media awareness seminars for parents and teachers should be established, followed up by yearly booster sessions (to keep up with technological developments). This ‘inoculation’ of knowledge will help reduce the generational gap, enhance parenting and communication skills within the family for navigating the online environment and help raise children with more balanced media habits.

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**References**

1. Twenge, J.M., & Park H. (2017) The decline in adult activities among U.S. adolescents, 1976-2016. *Child Development*. <http://doi.wiley.com/10.1111/cdev.12930>
2. Ofcom (2017). Children and parents: Media use and attitudes report [Internet]. London: Ofcom. Available from: <https://www.ofcom.org.uk/research-and-data/media-literacy-research/childrens/children-parents-2017>
3. Griffiths, M.D. & Kuss, D.J. (2011). Adolescent social networking: Should parents and teachers be worried? *Education and Health*, 29, 23-25
4. Kuss, D.J. & Griffiths, M.D. (2011). Excessive online social networking: Can adolescents become addicted to Facebook? *Education and Health*, 29, 63-66.
5. Kuss, D.J. & Griffiths, M.D. (2011). Online social networking and addiction: A literature review of empirical research. *International Journal of Environmental Research and Public Health*, 8, 3528-3552.
6. Kuss, D.J. & Griffiths, M.D. (2017). Social networking sites and addiction: Ten lessons learned. *International Journal of Environmental Research and Public Health*, 14, 311; doi:10.3390/ijerph14030311
7. Royal Society for Public Health (2017). #StatusOfMind: Social media and young people's mental health and wellbeing [Internet]. Available from: <https://www.rsph.org.uk/our-work/campaigns/status-of-mind.html>
8. Andreassen, C. S. (2015). Online social network site addiction: A comprehensive review. *Current Addiction Reports*, 2(2), 175-184.
9. Bányai, F., Zsila, A., Király, O., Maraz, A., Elekes, Z., Griffiths, M.D., Andreassen, C.S., & Demetrovics, Z. (2017). Problematic social media use: Results from a large-scale nationally representative adolescent sample. *PLoS ONE*, 12(1): e0169839. doi:10.1371/journal.pone.0169839.
10. Müller, K. W., Dreier, M., Beutel, M. E., Duven, E., Giralt, S., & Wöfling, K. (2016). A hidden type of internet addiction? Intense and addictive use of social networking sites in adolescents. *Computers in Human Behavior*, 55, 172-177.
11. Tsitsika, A.K., Tzavela, E.C., Janikian, M., Ólafsson, K., Lordache, A., Schoenmakers, T.M., Tzavara, C., & Richardson, C. (2014). Online social networking in adolescence: Patterns of use in six European countries and links with psychosocial functioning. *Journal of Adolescent Health*, 55, 141-147.
12. Wang, C.-W., Ho, R.T.H., Chan, C.L.W., & Tse, S. (2015). Exploring personality characteristics of Chinese adolescents with internet-related addictive behaviors: Trait differences for gaming addiction and social networking addiction. *Addictive Behaviors*, 42, 32-35.
13. Pontes, H. (2018). Investigating the differential effects of social networking site addiction and Internet gaming disorder on psychological health. *Journal of Behavioral Addiction*, 6, 601-610.
14. Buglass, S. L., Binder, J. F., Betts, L. R., & Underwood, J. D. M. (2017). Motivators of online vulnerability: The impact of social network site use and FoMO. *Computers in Human Behavior*, 66, 248-255.
15. Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. (2017). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of Adolescence*, 55, 51-60.
16. Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841-1848.
17. Al-Menayes, J. (2016). The Fear of Missing out Scale: Validation of the Arabic version and correlation with social media addiction. *International Journal of Applied Psychology*, 6(2), 41-46.
18. Gil, F., Chamarro, A., & Oberst, U. (2016). Addiction to online social networks: A question of "Fear of Missing Out"? *Journal of Behavioral Addictions*, 4(Suppl. 1), 51.
19. Pontes, H.H., Taylor, M., & Stavropoulos, V. Beyond "Facebook addiction": The role of cognitive-related factors and psychiatric distress in social networking site addiction. *Cyberpsychology, Behavior, and Social Networking*. Epub ahead of print. doi: 10.1089/cyber.2017.0609

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20. Lopez-Fernandez, O., Kuss, D. J., Griffiths, M. D., & Billieux, J. (2015). The conceptualization and assessment of problematic mobile phone use. In Z. Yan (Ed.), *Encyclopedia of Mobile Phone Behavior* (Vol. 1, 2 & 3, pp. 591-606). Hershey, PA: IGI Global.
21. Kuss, D. J., Kanjo, E., Crook-Rumsey, M., Kibowski, F., Wang, G. Y., & Sumich, A. (2018). Problematic mobile phone use and smartphone addiction across generations: The roles of psychopathological symptoms and smartphone use. *Journal of Technology in Behavioral Science*. in press.
22. Billieux, J., Maurage, P., Lopez-Fernandez, O., Kuss, D. J., & Griffiths, M. D. (2015). Can disordered mobile phone use be considered a behavioral addiction? An update on current evidence and a comprehensive model for future research *Current Addiction Reports*, 2(2), 156-162.
23. Kuss, D. J., Harkin, L., Kanjo, E., & Billieux, J. (2018). Problematic smartphone use: Investigating contemporary experiences using a convergent design. *International Journal of Environmental Research and Public Health*, 16(15), 1.
24. Kanjo, E., Kuss, D. J., & Ang, C. S. (2017). NotiMind: Responses to smartphone notifications as affective sensors. *IEEE Access*. 5, pp. 22023-22035. ISSN 2169-3536.
25. Pontes, H.M., Szabo, A. & Griffiths, M.D. (2015). The impact of Internet-based specific activities on the perceptions of Internet Addiction, Quality of Life, and excessive usage: A cross-sectional study. *Addictive Behaviors Reports*, 1, 19-25.
26. Marketing Land. (2017). Nearly 80 percent of social media time now spent on mobile devices. Retrieved July 26, 2017, from <http://marketingland.com/facebook-usage-accounts-1-5-minutes-spent-mobile-171561>
27. Statista (2017). Share of Facebook users worldwide who accessed Facebook via mobile from 2013 to 2018. Retrieved July 26, 2017, from <https://www.statista.com/statistics/380550/share-of-global-mobile-facebook-users/>
28. Lopez-Fernandez, O., Kuss, D.J., Romo, L., Morvan, Y., Kern, L., Graziani, P., Rousseau, A., Rumpf, H-J., Bischof, A., Gässler, A-K., Schimmenti, A., Passanisi, A., Männikkö, N., Kääriäinen, M., Demetrovics, Z., Király, O., Chóliz, M., Zacarés, J., Serra, E., Griffiths, M. D., Pontes, H., Lelonek-Kuleta, B., Chwaszcz, J., Zullino, D., Rochat, L., Achab, S., & Billieux, J. (2017). Self-reported dependence on mobile phones in young adults: A European cross-cultural empirical survey. *Journal of Behavioral Addictions*, 6(2), 168-177.
29. Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., et al. (2016). The relationship between addictive use of social media and video games and symptoms of psychiatric disorders: A large-scale cross-sectional study. *Psychology of Addictive Behaviors*, 30(2), 252-262.
30. Bragazzi, N. L., & Del Puente, G. (2014). A proposal for including nomophobia in the new DSM-V. *Psychology Research and Behavior Management*, 7, 155-160.
31. Caplan, S. E. (2003). Preference for online social interaction: A theory of problematic Internet use and psychosocial well-being. *Communication Research*, 30(6), 625-648.
32. Pontes, H.M., Andreassen, C.S. & Griffiths, M.D. (2016). Portuguese validation of the Bergen Facebook Addiction Scale: An empirical study. *International Journal of Mental Health and Addiction*, 14, 1062-1073.
33. Pontes, H.M., Caplan, S.E. & Griffiths, M.D. (2016). Psychometric validation of the Generalized Problematic Internet Use Scale 2 in a Portuguese sample. *Computers in Human Behavior*, 63, 823-833.
34. Twenge, J. M., Martin, G. N., & Campbell, W. K. (2018). Decreases in psychological well-being among American adolescents after 2012 and links to screen time during the rise of smartphone technology. *Emotion*. Epub ahead of print. doi: 10.1037/emo0000403