Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Letter to the Editor

The association between screen time and mental health during COVID-19: A cross sectional study

Dear editor,

COVID-19 was declared a global pandemic in March 2020. To prevent transmission of the SARS-CoV-2 virus on 23rd March 2020 the UK government issued guidance that all citizens should stay at home, and only leave their house for essential medical care, shopping for food and medicine and for one period of exercise (National Health Service, 2020). The impact of following the guidance on health-related behaviours is largely unknown. With people spending large periods of time indoors, screen time (e.g. watching TV, using computers, tablets etc) is likely to increase. Excessive screen time use has been shown to be associated with a range of negative mental health outcomes (Allen et al., 2019; Huang et al., 2020; Teychenne et al., 2015).

Therefore, we aimed to investigate levels and correlates of screen time during COVID-19 self-isolation in a sample of the UK public, and its association with mental health.

1. Our study

Participants were recruited to a cross-sectional epidemiological online survey, through social media and national media outlets. Participants were directed to a data encrypted website where they indicated their consent to participate. The survey was launched on 17th March 2020 in the United Kingdom and approved by the Anglia Ruskin University Research Ethics Committee.

Participants were asked to report the time spent per day (in hours) using a screen and was dichotomized into low and high screen time using the median of responses (six hours).

Mental health was measured using the Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI). These are both 21-item questionnaires with higher BAI and BDI scores indicating more severe anxiety and depressive symptoms. The short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS) is a 7-item measure of mental well-being, lower SWEMWBS scores indicate poorer mental wellbeing. Poor mental health was defined as the presence of at least one of the following three criteria: moderate-to-severe anxiety symptoms (BAI score ≥ 16), moderate-to-severe depressive symptoms (BDI score ≥ 20) and poor mental wellbeing (SWEMWBS metric score ≤ 15.8).

Demographic data collected, included sex, age (in 10-year age bands), marital status (single/separated/divorced/widowed or married/in a domestic partnership), employment status and annual household income ($< £15,000$, $£15,000 - < £25,000$, $£25,000 - < £40,000$, $£40,000 - < £60,000$, $\geq £60,000$). Participants were also asked to indicate which of the four main UK countries they lived in (England,

Northern Ireland, Scotland, Wales). Measures of health status were also included, as well as the number of days participants had been in isolation.

The association between screen time per day in hours and poor mental health was studied in the overall population and in sex and age groups with adjusted logistic regression models.

2. Findings

Nine hundred and thirty-two adults were included in this cross-sectional study. There were 36.1% of men, and 50.4% of the population was aged between 35 and 64 years.

Younger age (18–34 years), single/separated/divorced/widowed, employment, high annual income ($\geq £60,000$), living in England, and current smoking were more common in people with higher screen time per day (≥ 6 hours/day) than those with low screen time (< 6 hour/days). The number of chronic physical conditions and time spent in moderate-to-vigorous physical activity per day during self-isolation were lower and sitting time per day during self-isolation higher in the high screen time compared to the low screen time per day group. The mean (standard deviation) number of hours of screen time per day was 7.2 (3.8) in the overall population, and this was higher in younger adults [8.8 (3.7) hours in adults aged 18–34 years versus 5.2 (2.9) hours in those aged ≥ 65 years].

After adjusting for several potential confounding factors, a positive association between screen time per day in hours and poor mental health in the overall sample (OR = 1.07, 95% CI = 1.02–1.13) was noted. The relationship between screen time per day and poor mental health was also found to be significant in women (OR = 1.07, 95% CI = 1.01–1.14) and adults aged 35–64 years irrespective of sex (OR = 1.13, 95% CI = 1.05–1.22).

3. Take-aways

In this cross-sectional study of UK adults self-isolating due to COVID-19, being of a younger age, unmarried or single, employed, higher income, living in England, a smoker, having fewer physical conditions and taking lower amounts of MVPA were associated with higher daily screen time.

This is the first study to investigate the association between screen time and mental health during UK COVID-19 social distancing measures. However, findings from the study must be interpreted in light of its limitations. First, participants were asked to self-report their screen

time and thus potentially introducing self-reporting bias into the findings. Second, analyses were cross-sectional and thus it is not possible to determine trajectories of screen time and mental health during the current pandemic. Third, since we used a convenience sampling method to recruit participants, there is the possibility of a selection bias.

In conclusion, public health responses to address screen use and promote good mental health during COVID-19 related social distancing measures are likely required.

Declaration of Competing Interest

All authors declare no conflicts of interest.

Funding

References

Allen, M.S., Walter, E.E., Swann, C., 2019. Sedentary behaviour and risk of anxiety: a systematic review and meta-analysis. J. Affect. Disord. 242, 5–13. https://doi.org/10.1016/j.jad.2018.08.081.

Huang, Y., Li, L., Gan, Y., Wang, C., Jiang, H., Cao, S., Lu, Z., 2020. Sedentary behaviors and risk of depression: a meta-analysis of prospective studies. Transl. Psychiatry 10 (1), 26. https://doi.org/10.1038/s41398-020-0715-z.

National Health Service, 2020. Coronavirus (COVID-19). https://www.nhs.uk/conditions/coronavirus-covid-19/ (accessed 21 May 2020).

Teychenne, M., Costigan, S.A., Parker, K., 2015. The association between sedentary behaviour and risk of anxiety: a systematic review. BMC Public Health 15, 513. https://doi.org/10.1186/s12889-015-1843-x.

Lee Smith[a,1,*], Louis Jacob[b,1], Mike Trott[a], Anita Yakkundi[c], Laurie Butler[d], Yvonne Barnett[d], Nicola C Armstrong[e], Daragh McDermott[f], Felipe Schuch[g], Jacob Meyer[h], Rubén López-Bueno[i], Guillermo F. López Sánchez[j], Declan Bradley[k], Mark A Tully[l]

[a] *The Cambridge Centre for Sport and Exercise Sciences, Anglia Ruskin University, Cambridge, UK, CB1 1PT*

[b] *Faculty of Medicine University of Versailles Saint-Quentin-en-Yvelines, 78180 Montigny-le- Bretonneux, France Research and Development Unit Parc Sanitari Sant Joan de Déu, CIBERSAM Dr. Antoni Pujadas 42, Sant Boi de Llobregat, 08830, Barcelona, Spain*

[c] *Northern Ireland Public Health Research Network and the School of Health Sciences, Ulster University, Northern Ireland*

[d] *Faculty of Science and Engineering, Anglia Ruskin University, Cambridge, UK, CB1 1PT*

[e] *Health and Social Care Research & Development Division, Public Health Agency, Northern Ireland*

[f] *School of Psychology and Sport, Anglia Ruskin University, Cambridge, UK, CB1 1PT*

[g] *Department of Sports Methods and Techniques, Federal University of Santa, Maria, Brazil*

[h] *Department of Kinesiology, Iowa State University, Ames, IA, USA*

[i] *Department of Physical Medicine and Nursing, University of Zaragoza, Zaragoza, Spain*

[j] *Faculty of Sport Sciences, University of Murcia, Murcia, Spain*

[k] *Centre for Public Health, Queens University Belfast, Belfast, UK*

[l] *Institute of Mental Health Sciences School of Health Sciences, Ulster University, Newtownabbey, UK*

E-mail address: lee.smith@anglia.ac.uk (L. Smith).

* Corresponding author.

[1] Authors contributed equally.