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Taking a one-week break from social media improves wellbeing, depression, and anxiety – a randomised controlled trial.

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Social media cessation and mental health

Abstract

The present study aimed to understand the effects of a one-week break from social media (SM) (Facebook, Instagram, Twitter, and TikTok) on wellbeing, depression, and anxiety compared to using SM as usual. We also aimed to understand whether time spent on different SM platforms mediates the relationship between SM cessation and wellbeing, depression, and anxiety. We randomly allocated 154 participants (mean age of 29.6 years) to either stop using SM (Facebook, Twitter, Instagram, and TikTok) for one-week or continue to use SM as usual. At one-week follow-up, significant between-group differences in wellbeing (mean difference (MD) 4.9, 95% confidence interval (CI) 3.0 to 6.8), depression (MD -2.2, 95% CI -3.3 to -1.1), and anxiety (MD -1.7, 95% CI -2.8 to -0.6) in favour of the intervention group were observed, after controlling for baseline scores, age, and gender. The intervention effect on wellbeing was partially mediated by a reduction in total weekly self-reported minutes on SM. The intervention effect on depression and anxiety was partially mediated by a reduction in total weekly self-reported minutes on Twitter and TikTok, and TikTok alone respectively. The present study shows that asking people to stop using SM for one-week leads to significant improvements in wellbeing, depression, and anxiety. Future research should extend this to clinical populations and examine effects over the longer term.

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Introduction

Social media (SM) has revolutionized how we communicate with each other, allowing users to interact with friends and family and meet others based on shared interests by creating virtual public profiles.¹ In the UK, the number of adults using SM has increased from 45% in 2011 to 71% in 2021. When broken down by age, SM use ranges from 90% to 97% in people between 16 and 44.² Furthermore, 95% of adults have used the internet within the last three months, with social networking being the most frequent activity performed. (Office for National Statistics, 2020) Facebook, Instagram, and Twitter are three of the most popular SM platforms with close to 4 billion users.³ TikTok has also experienced an exponential increase of 7.5 million users during COVID-19.⁴ This widespread adoption of SM has led to an abundance of research examining its impact on individuals physical and mental health. Feeling 'low' and losing pleasure in things are core characteristics of depression, whereas anxiety is characterised by excessive and out of control worry. Symptoms such as irritability, restlessness, tiredness, sleep problems and poor concentration and memory often accompany depression and anxiety. Conversely, well-being refers to an individual level of positive affect, life satisfaction, and sense of purpose.⁵ Well-being, depression and anxiety are distinct but related constructs that are all associated with each other.⁶ Low levels of well-being have also been shown to predict future depression.⁷ Understanding how SM impacts this range of mental health indices is therefore critical.

The transdiagnostic cognitive behavioural conceptualisation of SM use proposes that motivations for SM use (i.e., underlying gratifications driving initial engagement), SM use (i.e., patterns and use of SM), information processing biases (i.e., what information we attend to), platform features and affordances (i.e., the extent to which the SM platform is asynchronous, visual, public and available), consequences and feedback loops (i.e., the information we receive as a result of our input) and mode of engagement (i.e., intentional vs automatic) feed into the cycle of thoughts, feelings and behaviours leading to positive or

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51 negative psychological outcomes.⁸ This model, therefore, provides a useful lens to
52 understand how SM use might be driving negative psychological outcomes.

53 Previous studies have demonstrated negative relationships between SM use and various
54 mental health indices.⁹ For example, a cross-sectional study of 1,787 US adults (aged 19 to
55 32) looked at self-reported daily SM use.¹⁰ Compared to those in the lowest quartile of total
56 daily and weekly usage, participants in the highest quartile had significantly greater odds of
57 depression after controlling for covariates including age, ethnicity, relationship status, living
58 situation, household income and education level. In addition, a longitudinal study of 12,866
59 young people age 13 to 16 years in England found that very frequent (multiple times daily)
60 SM use at age 13-14 years also predicted poorer mental health two years later. The findings
61 from this study suggest that high levels of SM use led to decreased wellbeing. However, the
62 direction of association is difficult to interpret.¹¹ For example, on the one hand, it is possible
63 that high levels of social media use led to subsequent issues in mental health. On the other
64 hand, it may be that depressed individuals feel a diminished sense of self-worth and turn to
65 SM interactions as a means of validation.¹²

66 Experimental research largely supports findings from cross-sectional and longitudinal studies
67 showing positive effects on various wellbeing indices when taking a break from SM. For
68 example, a study in Denmark found that regular Facebook users who took a one-week break
69 from Facebook had higher levels of wellbeing post-intervention than those who continued as
70 normal.¹³ However, other important areas of mental health (e.g., depression, anxiety) and
71 other SM sites (e.g., Instagram, Twitter) were not considered. Another study in the United
72 States found significantly lower levels of loneliness and depression but no changes in
73 anxiety, self-esteem, and psychological wellbeing when comparing undergraduates who
74 were asked to either limit their use of Facebook, Instagram, and Snapchat to 10 minutes per
75 day or to continue as normal for three weeks.¹⁴ However, it should be noted that this study
76 only included iPhone users and did not include SM platforms TikTok or Twitter which are
77 both widely used platforms today.

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78 There is currently still a lack of studies examining the effect of reducing SM use on
79 wellbeing, depression, and anxiety, with studies calling for more experimental research.^{15,16}
80 Furthermore, there is a need to understand whether the effect of SM usage-reduction
81 interventions on mental health is mediated by the time spent of different SM platforms. To
82 address these gaps, the present study aimed to understand the impact of taking a one-week
83 break from SM (Facebook, Instagram, Twitter, and TikTok) on wellbeing, depression and
84 anxiety compared to using SM as normal. We also aimed to understand whether time spent
85 on different SM platforms mediates the relationship between SM cessation and wellbeing,
86 depression, and anxiety. The key hypotheses for this for this study were as follows:

- 87 1. People randomised to come off SM for one-week will experience larger
88 improvements in wellbeing, depression, and anxiety post intervention compared to
89 people using SM as usual.
- 90 2. Improvements in wellbeing, depression and anxiety post intervention compared to
91 people using SM as usual will be moderated by baseline symptoms.
- 92 3. Changes in time spent on SM platform will mediate the effect of SM cessation on
93 changes in wellbeing, anxiety, and depression.

94 **Materials and Methods**

95 **Trial Design**

96 The study was reported in line with the Consolidated Standards of Reporting Trials
97 recommendations for reporting of randomised controlled trials (RCTs).¹⁷ The present trial
98 employed a 2-arm, parallel-groups RCT design with participants individually randomised in a
99 1:1 allocation ratio. The study was approved by the institutional research ethics board of the
100 authors' university.

101 **Participants**

102 Participants were eligible for the study if they were aged 18 years old or above, reported
103 using SM every day, and were willing to stop using SM for one-week. Specific to Android

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104 users, eligible participants were those who were willing to download the ActionDash
105 application. Those with an iPhone were eligible for participation if they could access the
106 ScreenTime application.

107 Procedure

108 Participants were recruited via SM sites such as Facebook, Twitter and Instagram and
109 through word-of-mouth. The study also gained public attention through local news
110 advertisements and radio broadcasts. No costs were associated with the study's promotion,
111 and participants were not paid for their involvement. Prospective participants were sent a
112 participant information sheet, a consent form, and a link to the baseline questionnaire via
113 email. Those who provided informed consent were asked to complete the baseline
114 questionnaire. After completion, participants were emailed with their group allocation
115 (intervention or control group).

116 Group allocation was completed through simple randomisation at the individual level in a 1:1
117 allocation ratio via an online random generation service (JustFlipACoin, n.d.). The
118 randomisation website generated participant grouping by flipping either heads (intervention
119 group) or tails (control group) on a virtual coin. Participants' group allocation was concealed
120 during the randomisation phase. Due to the study's nature, researchers were not blinded to
121 which condition participants were allocated to post-randomisation.

122 Participants allocated to the intervention group were asked to quit using SM sites: Facebook,
123 Twitter, TikTok, and Instagram for one-week. At this point, participants were provided with a
124 tips sheet to help them stop using the relevant SM sites (both app and website versions)
125 during the cessation period. These tips included signing out of the relevant SM sites,
126 deleting relevant SM apps, turning their phone off, turning off SM notifications, disconnecting
127 from Wi-Fi, and downloading an app blocker to block the use of the relevant SM sites. These
128 tips were advisory and not compulsory to participate in the study. Alongside the tips sheet,
129 participants were informed that a second survey would be emailed to them after one-

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130 week. Participants in the control group were encouraged to continue using SM as usual for
131 one-week.

132 After one-week, participants in both groups were emailed a link to the follow-up survey. At
133 that point, all participants were asked to provide evidence of their screen time during the last
134 week using either the ActionDash or ScreenTime application, depending on which
135 smartphone they used. Participants were provided with instructions on viewing their screen
136 time and returning the relevant data to the researchers. Participants were asked to take
137 screenshots of their screentime usage and send these to the researchers via email.
138 Following completion of the follow-up survey, participants were sent a final email, which
139 included signposts to appropriate mental health resources in case they wanted further
140 information or guidance on the mental health areas touched upon within the questionnaires.

141 Measures

142 *Wellbeing:* The Warwick-Edinburgh Mental Well-being Scale (WEMWBS) is a 14-item
143 instrument that asks respondents to respond to statements about their feelings and thoughts
144 that best describes their experience over the previous two weeks on a 5-point scale.¹⁸
145 Example items include: "I've been feeling optimistic about the future" and "I've been thinking
146 clearly." The WEMWBS has good validity and reliability ($\alpha = .89$).¹⁸

147 *Depression:* The Patient Health Questionnaire-8 (PHQ-8) is an 8-item instrument that
148 measures the frequency of depressive symptoms over the last two weeks on a 3-point
149 scale.¹⁹ A score of 0-4 indicates no depression, 5-9 indicates mild depression, 10-14
150 indicates moderate depression, 15-19 indicates moderately severe depression, and 20-24
151 indicates severe depression. The PHQ-8 has good validity and reliability ($\alpha = .81$).¹⁹

152 *Anxiety:* The General Anxiety Disorder Scale (GAD-7) is a 7-item instrument that measures
153 the frequency of anxiety symptoms over the last two weeks on a 3-point scale.²⁰ A score of
154 0-4 indicates no anxiety, 5-9 indicates mild anxiety, 10-15 indicates moderate anxiety, and

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16-21 indicates severe anxiety. Evidence of validity and reliability has been shown for the GAD-7 ($\alpha = .86$).²⁰

157 **Sample Size**

158 Sample size calculations revealed that at least 148 participants were needed to detect a 4-
159 point change on the WEMWBS score.²¹ This was based on an estimated population mean
160 score of 51.61 and a standard deviation of 8.71.²²

162 **Statistical Methods**

163 SPSS statistical software version 25 (IBM Corp., 2017) was used for all analyses.
164 Descriptive statistics were produced for demographic characteristics and all measures at
165 baseline and one-week post-randomisation. Between-group differences were presented as
166 medians and interquartile ranges alongside adjusted mean differences and 95% confidence
167 intervals. Linear models were selected to understand if there were significant differences in
168 primary and secondary outcomes between groups at follow-up while controlling for baseline
169 levels, age, and gender (Hypothesis 1). Moderation and mediation analyses were performed
170 using PROCESS v3.5,²³ with the product of coefficients method. For the moderation models,
171 'condition' (intervention or control) was specified as the independent (X) variable, baseline
172 wellbeing, depression, or anxiety was specified as the moderator (W) variable, and post-
173 intervention wellbeing, depression, or anxiety were specified as the outcome (Y) variable
174 (Hypothesis 2). For the mediation models, 'condition' was specified as the independent (X)
175 variable, 'time spent on social media' was specified as the mediator (M) variable, and post-
176 intervention wellbeing, depression, or anxiety were specified as the outcome (Y) variable
177 (Hypothesis 3). Baseline scores, age, and gender were specified as covariates for all
178 moderation and mediation models. All analyses were conducted on an intention to treat,
179 complete-case basis, and missing data were not imputed.

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181 **Results**182 **Participant flow**

183 A total of 201 people responded to the adverts and 154 were eligible for inclusion and
184 randomized in the trial between November 2020 and March 2021 (Figure 1). Overall
185 retention at one-week post-randomization was 91%. Three (2%) participants withdrew from
186 the study, and 11 (7%) participants did not respond to emails to complete the follow-up
187 questionnaire.

188 [INSERT FIGURE 1 HERE]

189 **Baseline Data**

190 At baseline (Table 1), the mean age was 28.9 years, with females accounting for 62% of the
191 study. The majority (64%) of participants classed their ethnicity as White and most were
192 either employed (39%) or students (49%). Nearly all of the participants were educated at or
193 above A-level (90%). Nearly half the sample was single (47%) and 20% were married.
194 Almost a third (30%) of the sample met the criteria for major depressive disorder (≥ 10 on the
195 PHQ-8).

196 [INSERT TABLE 1 HERE]

197 **Primary analysis**

198 For the whole sample at baseline ($n = 155$), the mean (SD) scores for wellbeing, depression
199 and anxiety were 45.0 (8.1), 7.6 (4.7) and 6.4 (4.7) respectively. When controlling for
200 baseline scores, age and gender, there was a significant adjusted mean improvement in
201 wellbeing in favour of the intervention group ($p < 0.001$). There were also significant
202 reductions in symptoms of depression ($p < 0.001$) and anxiety ($p < 0.01$) in favour of the
203 intervention group (table 2).

204 **Moderation analysis**

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205 The model including group allocation as a predictor variable and depression at time 1 as a
206 moderator accounted for 45% of the variance in depression at time 2 ($R^2 = .45$, $MSE =$
207 10.48 , $F = 21.96$, $p < .0001$). The interaction between group allocation and depression at
208 time 1 on change in depression at time 2 was significant and negative ($B = -0.28$, $SE = .12$, t
209 $= -2.31$, $p = .022$). Specifically, the negative effect of group allocation on depression at time
210 2 was only significant when depression at time 1 was 4.3 or above with 72% of participants
211 falling within this region of significance. No moderation effects were found for baseline
212 anxiety or wellbeing.

213 [INSERT TABLE 2 HERE]

214 Mediation analysis

215 Table 3 shows mean (SD) scores for the self-reported and objective time in minutes spend
216 on SM per week at baseline and follow-up. At baseline, participants self-reported spending a
217 mean of more than 484 minutes per week on SM, with Instagram being the most used,
218 followed by Facebook, Twitter, and then TikTok. There were no significant differences
219 between groups at baseline ($P > 0.05$). At follow-up, participants reported a large reduction
220 in minutes spent on all SM sites. A sub-sample of objective data (measured by a
221 smartphone app) also corroborated these findings.

222 [INSERT TABLE 3 HERE]

223 For wellbeing, the mediation effect of group allocation on depression via a change in self-
224 reported weekly minutes of SM was positive and significant ($B = 1.3$, 95% CI = 0.1, 2.5)
225 suggesting the intervention effect is partially mediated by a reduction in self-reported
226 minutes of SM use. For depression, mediation effects of group allocation on depression via
227 reduction in self-reported weekly minutes of SM ($B = -1.0$, 95% CI = -1.8, -0.2), reduction in
228 weekly minutes of Twitter use ($B = -0.33$, 95% CI = -0.66, -0.08), and reduction in weekly
229 minutes on TikTok ($B = -0.43$, 95% CI = -0.91, -0.07) were negative and significant
230 suggesting partial mediation. For anxiety, the indirect effect of group allocation on anxiety via

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231 a reduction in weekly minutes on TikTok was negative and significant ($B = -0.28$, 95% CI = -
232 0.63, -0.03) suggesting partial mediation.

233

234

Discussion

235 This study found that asking people to take a one-week break from SM led to significant
236 improvements in wellbeing, depression, and anxiety. This study adds to the growing body of
237 causal evidence that short breaks in SM can positively impact wellbeing¹³ and depression.¹⁴
238 For example, Tromholt (2016) found that a one-week break from the SM platform, Facebook,
239 had positive effects on life satisfaction and emotions.¹³ Hunt et al. (2018) found that limiting
240 undergraduates' SM usage to just 10 minutes per platform per day for three weeks led to a
241 clinically significant reduction in depression. However, Hunt et al. (2018) also found no
242 effects of limiting SM use on anxiety, which stands in contrast to our findings.¹⁴ One of the
243 key reasons for this could be that participants in the intervention group in our study were
244 spending fewer minutes on SM ($M = 28$, $SD = 64$) per week than in the study by Hunt et al.
245 (2018) ($M = 179$, $SD = 140$). Our findings also stand in contrast to a previous study that
246 found that asking undergraduates to abstain from SM led to a decline in life satisfaction,
247 increased negative affect, and increased loneliness compared to control.²⁴ This could be an
248 artefact of the recruitment method. For example, in the present study, we included
249 participants based on their willingness to abstain from SM for one week, meaning they may
250 have been more motivated. We also found that reducing time spent on different SM sites
251 may differentially mediate mental health outcomes.

252 Our findings also address important gaps in the literature by exploring how different SM sites
253 may be impacting different aspects of mental health. These differences align with the
254 transdiagnostic cognitive behavioural conceptualisation of SM. Particularly, the notion that
255 different platforms drive differential psychological outcomes based on differences in their
256 features and affordances. For example, our results indicated that reducing time spent on

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257 Twitter and TikTok may mediate the effect abstaining has on reductions in symptoms of
258 depression, whereas only TikTok mediates reductions in anxiety. This could be an artefact of
259 "doomscrolling" a term used to describe the phenomenon of the negative affect people can
260 experience after viewing pandemic-related media.²⁵

261 **Strengths and Limitations**

262 The present study had several strengths. First, the randomised controlled design allowed us
263 to infer a causal relationship between ceasing SM use and the subsequent effects on
264 depression, anxiety, and wellbeing. Second, we included multiple SM platforms, rather than
265 focussing on only one, as was done in previous studies.^{13,26} Third, we used validated,
266 measures of depression and anxiety making our findings comparable with other clinical
267 literature looking at depression and anxiety. Several limitations need to be acknowledged.
268 First, there may have been a selection bias effect. Numerous individuals who registered an
269 initial interest in the study chose not to participate as they did not want to take a break from
270 SM. This may have introduced bias as only those who participated may have been lighter
271 users or those who felt motivated and able enough to come off SM entirely. Second, a 7-day
272 intervention period may not be indicative of the longer-term effects of coming off SM. Third,
273 the effect of the COVID-19 pandemic may have impacted our results (e.g., SM use during
274 this period might not be reflective of SM use in non-pandemic times). Fourth, participants
275 were predominately young white females in higher education. This potentially impacts the
276 generalisability of our results to the wider population.

277 **Future Directions**

278 Future work could look at the longer-term effects of a one-week SM break on mental health.
279 Many participants people emailed the researcher during the study alluding to an intention to
280 change their relationship with SM. It could be that a one-week break is enough to generate
281 long-lasting behaviour change. Further research is also needed to determine if supporting
282 people to reduce their SM can be applied in other contexts. For example, in clinical contexts

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1
2
3 283 increased SM use may be contributing to underlying psychopathologies (e.g., in child and
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5 284 adolescent mental health and primary care). Finally, future work could attempt to recruit a
6
7 285 larger sample of participants to explore process-related questions around frequency,
8
9 286 intensity and type of SM and add further understanding to the mechanisms by which
10
11 287 reducing SM can contribute to better mental health. Future research should also examine
12
13 288 how participant level psychological, social, behavioural, and individual factors moderate the
14
15 289 effect of SM abstinence on mental health outcomes.²⁷

290 **Conclusion**

21 291 The present study shows that asking people to take a one-week break from SM can lead to
22
23 292 significant improvements in wellbeing, depression, and anxiety. Future research should
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25 293 extend this to clinical populations and examine effects over the longer term.
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297 **References**

- 298 1. Kuss DJ, Griffiths MD. Online social networking and addiction--a review of the
299 psychological literature. *Int J Environ Res Public Health* [Internet]. 2011;8(9):3528–52.
300 Available from:
301 <http://search.ebscohost.com/login.aspx?direct=true&db=cmedm&AN=22016701&site>
302 =ehost-live
- 303 2. Office for National Statistics. Internet access - households and individuals, Great
304 Britain: [Internet]. 2020. Available from:
305 <https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/datasets/internetaccesshouseholdsandindividualsreferencetables>
- 306
307
- 308 3. Statista. Most popular social networks worldwide as of July 2021, ranked by number
309 of active users [Internet]. 2021. Available from:
310 [https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-](https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/)
311 [of-users/](https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/)
- 312 4. Ofcom. Online nation: 2020 report. Ofcom. [Internet]. 2020. Available from:
313 [https://www.ofcom.org.uk/__data/assets/pdf_file/0027/196407/online-nation-2020-](https://www.ofcom.org.uk/__data/assets/pdf_file/0027/196407/online-nation-2020-report.pdf)
314 [report.pdf](https://www.ofcom.org.uk/__data/assets/pdf_file/0027/196407/online-nation-2020-report.pdf)
- 315 5. Diener E, Suh EM, Lucas RE, Smith HL. Subjective well-being: Three decades of
316 progress. *Psychol Bull.* 1999;125(2):276–302.
- 317 6. Watson D, Naragon-Gainey K. On the Specificity of Positive Emotional Dysfunction in
318 Psychopathology: Evidence from the Mood and Anxiety Disorders and
319 Schizophrenia/Schizotypy. *Clin Psychol Rev.* 2010;30(7):839–48.
- 320 7. Grant F, Guille C, Sen S. Well-Being and the Risk of Depression under Stress. *PLoS*
321 *One.* 2013;8(7):1–6.

Social media cessation and mental health

- 1
2
3 322 8. Tibber MS, Silver E. A trans-diagnostic cognitive behavioural conceptualisation of the
4
5 323 positive and negative roles of social media use in adolescents' mental health and
6
7 324 wellbeing. *Cogn Behav Ther.* 2022;15.
- 8
9
10 325 9. Kross E, Verduyn P, Demiralp E, Park J, Lee DS, Lin N, et al. Facebook Use Predicts
11
12 326 Declines in Subjective Well-Being in Young Adults. *PLoS One.* 2013;8(8):1–6.
- 13
14
15 327 10. Lin L, Sidani J, Shensa A, Radovic A, Miller E, Colditz J, et al. Association between
16
17 328 Social Media Use and Depression among U.S. Young Adults. *Depress Anxiety.*
18
19 329 2016;33(4):323–31.
- 20
21
22 330 11. Viner R, Ward J, Hudson L, Stiglic N, Nicholls D. Roles of cyberbullying, sleep and
23
24 331 physical activity in mediating the impact of social media use on mental health and
25
26 332 wellbeing: findings from a national cohort of English young people. *Lancet Child*
27
28 333 *Adolesc Heal.* 2019;3(10):685–96.
- 29
30
31 334 12. Caplan SE. Problematic Internet use and psychosocial well-being: Development of a
32
33 335 theory-based cognitive-behavioral measurement instrument. *Comput Human Behav.*
34
35 336 2002;18(5):553–75.
- 36
37
38 337 13. Tromholt M. The Facebook Experiment: Quitting Facebook Leads to Higher Levels of
39
40 338 Well-Being. *Cyberpsychology, Behav Soc Netw.* 2016;19(11):661–6.
- 41
42
43 339 14. Hunt MG, Marx R, Lipson C, Young J. No more FOMO: Limiting social media
44
45 340 decreases loneliness and depression. *J Soc Clin Psychol.* 2018;37(10):751–68.
- 46
47
48 341 15. Lerma M, Marquez C, Sandoval K, Cooper T V. Psychosocial Correlates of Excessive
49
50 342 Social Media Use in a Hispanic College Sample. *Cyberpsychology, Behav Soc Netw.*
51
52 343 2021;00(00):1–7.
- 53
54
55 344 16. Hartanto A, Quek FYX, Tng GYQ, Yong JC. Does Social Media Use Increase
56
57 345 Depressive Symptoms? A Reverse Causation Perspective. *Front Psychiatry.*
58
59 346 2021;12(March):1–5.
- 60

Social media cessation and mental health

- 1
2
3 347 17. Eldridge S, Chan C, Campbell M, Bond C, Hopewell S, Thebane L, et al. CONSORT
4
5 348 2010 statement: extension to randomised pilot and feasibility trials. *Br Med J*.
6
7 349 2016;355:i5239.
- 8
9
10 350 18. Tennant R, Hiller L, Fishwick R, Platt S, Joseph S, Weich S, et al. The Warwick-
11
12 351 Dinburgh mental well-being scale (WEMWBS): Development and UK validation.
13
14 352 *Health Qual Life Outcomes*. 2007;5:1–13.
- 15
16
17 353 19. Kroenke K, Strine TW, Spitzer RL, Williams JBW, Berry JT, Mokdad AH. The PHQ-8
18
19 354 as a measure of current depression in the general population. *J Affect Disord*
20
21 355 [Internet]. 2009;114(1–3):163–73. Available from:
22
23 356 <http://dx.doi.org/10.1016/j.jad.2008.06.026>
- 24
25
26 357 20. Spitzer RL, Kroenke K, Williams JBW, Löwe B. A Brief Measure for Assessing
27
28 358 Generalized Anxiety Disorder. *Arch Intern Med* [Internet]. 2006;166(10):1092.
29
30 359 Available from:
31
32 360 <http://archinte.jamanetwork.com/article.aspx?doi=10.1001/archinte.166.10.1092>
- 33
34
35 361 21. Kane S. Sample Size Calculator. ClinCalc: [Internet]. 2019 [cited 2021 Nov 9].
36
37 362 Available from: <https://clincalc.com/stats/samplesize.aspx>.
- 38
39
40 363 22. Taggart F. WEMWBS Population Norms in Health Survey for England Data 2011.
41
42 364 2014.
- 43
44
45 365 23. Hayes A, Montoya A, Rockwood N. The Analysis of Mechanisms and Their
46
47 366 Contingencies: PROCESS versus Structural Equation Modeling. *Australas Mark J*.
48
49 367 2017;25(1):76–81.
- 50
51
52 368 24. Vally Z, D’Souza CG. Abstinence from social media use, subjective well-being, stress,
53
54 369 and loneliness. *Perspect Psychiatr Care*. 2019;55(4):752–9.
- 55
56
57 370 25. Price M, Legrand AC, Brier ZMF, Van Stolk-Cooke K, Peck K, Dodds PS, et al.
58
59 371 DoomsScrolling during COVID-19: The negative association between daily social and
60

Social media cessation and mental health

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2
3 372 traditional media consumption and mental health symptoms during the COVID-19
4
5 373 pandemic. Preprint [Internet]. 2021;1–8. Available from:
6
7 374 <https://storywrangling.org/?ngrams=>
8
9
10 375 26. Vanman EJ, Baker R, Tobin SJ. The burden of online friends: the effects of giving up
11
12 376 Facebook on stress and well-being. *J Soc Psychol* [Internet]. 2018;158(4):496–507.
13
14 377 Available from: <https://doi.org/10.1080/00224545.2018.1453467>
15
16
17 378 27. Baker DA, Algorta GP. The Relationship between Online Social Networking and
18
19 379 Depression: A Systematic Review of Quantitative Studies. *Cyberpsychology, Behav*
20
21 380 *Soc Netw.* 2016;19(11):638–48.
22
23
24 381
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382 Table 1. Participant characteristics at baseline

	Intervention		Control	
	N	Mean (SD) or N (%)	N	Mean (SD) or N (%)
Age in years	81	29.5 (13.6)	73	28.3 (11.9)
Gender	81		73	
Female		50 (61.7)		45 (61.6)
Male		30 (37.0)		28 (38.4)
Other		1 (1.2)		0 (0.0)
Ethnicity	81		73	
English, Welsh, Scottish or Irish		51 (63.0)		48 (65.8)
Indian		2 (2.5)		4 (5.5)
Chinese		6 (7.4)		5 (6.8)
Arab		2 (2.5)		0 (0.0)
Pakistani		1 (1.2)		0 (0.0)
African		0 (0.0)		1 (1.4)
Irish		0 (0.0)		2 (2.7)
White Asian		6 (7.4)		4 (5.5)
Other white background		7 (8.6)		7 (9.6)
Other Asian background		4 (4.9)		1 (1.4)
White and black African		1 (1.2)		0 (0.0)
White and black Caribbean		1 (1.2)		0 (0.0)
Other ethnic background		0 (0.0)		1 (1.4)
Employment status	81		73	
Employed		36 (44.4)		24 (32.9)
Student		36 (44.4)		40 (54.8)
Self-employed		4 (4.9)		7 (9.6)

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Unemployed	4 (4.9)	1 (1.4)
Prefer not to say	1 (1.2)	1 (1.4)
Education status	81	73
A level	26 (32.1)	18 (24.7)
Undergraduate	32 (39.5)	36 (49.3)
GCSE	5 (6.2)	7 (9.6)
Postgraduate	16 (19.8)	11 (15.1)
Doctorate	2 (2.5)	1 (1.4)
Marital status	81	73
Single	44 (54.3)	28 (38.4)
Relationship	15 (18.5)	22 (30.1)
Married	14 (17.3)	16 (21.9)
Living with partner	7 (8.6)	4 (5.5)
Separated/divorced	1 (1.2)	2 (2.7)
Prefer not to say	0 (0.0)	1 (1.4)
Moderate depression (≥ 10 on PHQ-8)	81	73
Yes	24 (29.6)	22 (30.1)
No	57 (70.4)	51 (69.9)

^aData were positively skewed, so medians (interquartile ranges) are reported

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389 Table 2. Mental health outcomes at baseline and one-week follow-up

	Intervention			Control			Adjusted mean difference (95% CI)
	N	Mean	SD	N	Mean	SD	
Wellbeing (WEMWBS)							
Baseline	81	46.00	7.78	73	43.92	8.33	
One-week follow-up	74	55.93	7.65	66	45.05	8.06	4.90 (2.97, 6.83)***
Depression (PHQ-8)							
Baseline	81	7.46	4.62	73	7.84	4.80	
One-week follow-up	74	4.84	3.89	66	6.95	4.45	-2.17 (-3.28, -1.06)***
Anxiety (GAD-7)							
Baseline	81	5.95	4.32	73	6.92	5.00	
One-week follow-up	74	3.88	3.84	66	5.94	4.30	-1.68 (-2.79, -0.57)**

390 * $P > 0.05$. ** $P > 0.01$. *** 0.001

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399 Table 3. Minutes of weekly SM use at baseline and one-week follow-up.

	Intervention			Control		
	N	Mean	SD	N	Mean	SD
Mins of app-measured SM use						
one-week follow-up	52	28.3	64.0	41	580.2	414.0
Mins of self-reported weekly SM use						
Baseline	81	509.6	340.6	73	484.5	344.6
one-week follow-up	74	20.7	50.6	66	445.5	374.4
Mins of self-reported weekly Instagram use						
Baseline	81	221.5	198.5	73	214.1	189.7
one-week follow-up	74	9.7	33.7	66	213.2	211.0
Mins of self-reported weekly Facebook use						
Baseline	81	148.1	175.1	73	170.5	171.4
one-week follow-up	74	8.5	28.7	66	143.2	165.6
Mins of self-reported weekly Twitter use						
Baseline	81	71.1	138.2	73	39.0	84.5
one-week follow-up	74	1.2	6.0	66	29.1	64.2
Mins of self-reported weekly TikTok use						
Baseline	81	68.9	143.4	73	60.8	128.0
one-week follow-up	74	1.2	7.8	66	60.0	126.1

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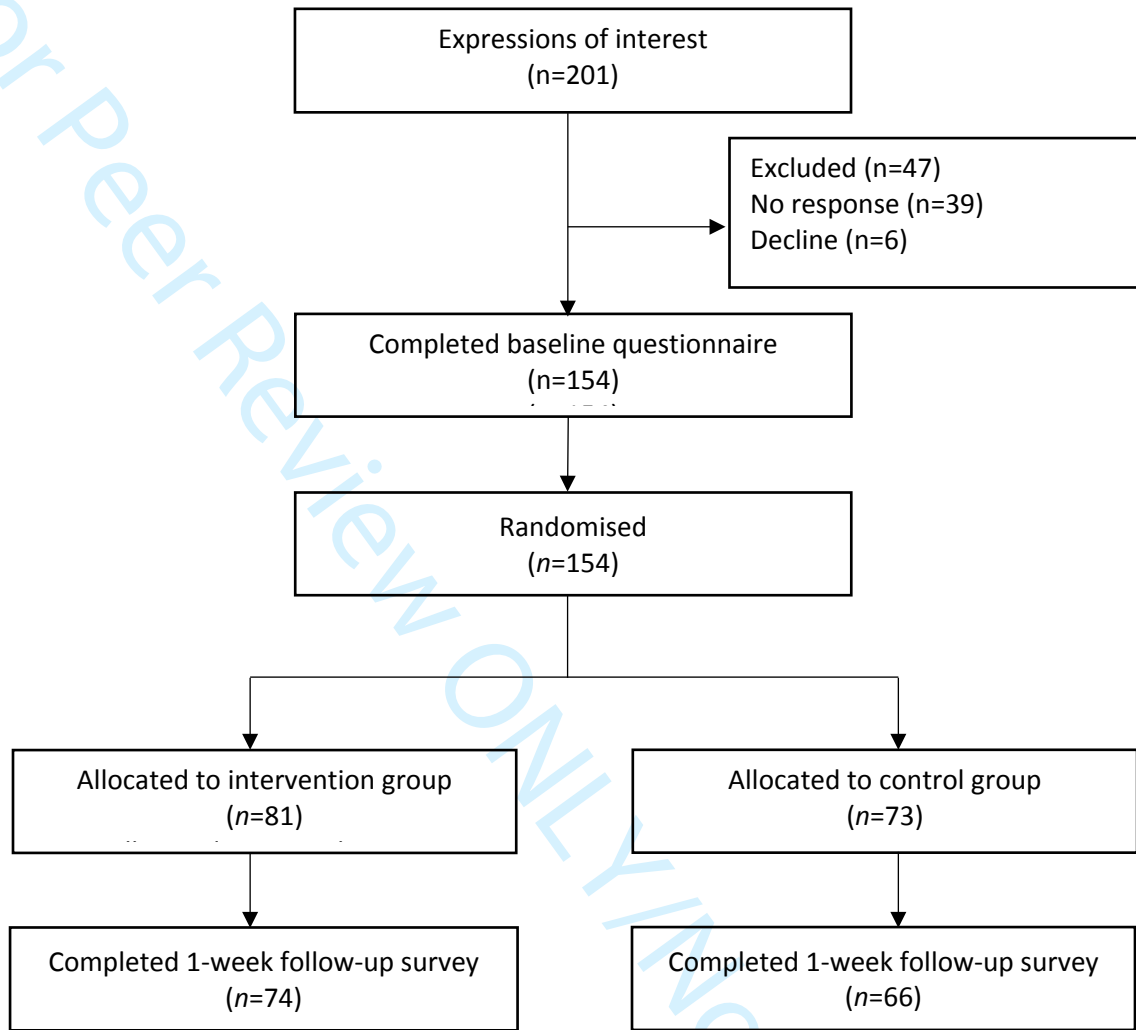


Figure 1. CONSORT Participant Flow Diagram.