

Social Media Use Only Helps, and Does Not Harm, Daily Interactions and Well-Being

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In two studies we explore how different levels of social networking sites (SNSs) use affect the psychological constructs of well-being, social connection, and social capital. Conducting two studies and using a multiday experimental design in both an individualistic (United Kingdom [U.K.]) and a collectivistic (Bulgaria [BG]) society, we investigated differences in the effects of abstaining from SNS use, overuse, and normal use. Participants (U.K. $n = 116$; BG. $n = 120$) in the two within-subject studies reported on connectedness and two types of social capital (bridging; bonding), and their well-being, on days in which they had lower use of social media, used it as normal, or overused it. Results revealed no significant differences on well-being scores across the three conditions for the U.K. and Bulgaria. Social connection and bonding social capital significantly decreased on lower use days in the U.K. sample. These effects were not replicated in the Bulgarian sample. Findings did not indicate significant differences on the scores for bridging social capital across the three levels of SNS use for the participants from the U.K. and from Bulgaria. For the U.K. sample, social connection, in particular, served as an independent mediator linking lower use days to lower well-being, in contrast with normal use days. Suddenly lowering one's social media use might lead to people experiencing less connected to others, thus impacting their well-being. However, overuse of SNS platforms is still underexplored, thus people should regulate their SNS use in an optimal way which best supports their daily lives.

Keywords: social media, digital detox, social media abstinence, psychological well-being, social capital and connectedness

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Social networking sites (SNSs) are online platforms or Web 2.0 internet-based applications which allow people to create profiles, build social networks and social relationships with other individuals or groups (Obar & Wildman, 2015). A large number of SNS are on

the market, including Facebook (2.38 billion users; Facebook, 2019), Snapchat (203 million active daily users; Snap, 2019), Twitter (130 million active daily users; Shaban, 2019; Twitter, 2019), LinkedIn (610 million users; LinkedIn, 2019), Tumblr (437 million visits in

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January 2019; Tumblr, 2019), and Pinterest (250 million active monthly users; Pinterest, 2019). Although these platforms have relatively different functions, they are united by one common goal, namely, connecting people. Perhaps for this reason, they have become an essential part of daily life. Overall, an estimated 3.48 billion people used social media in 2018, representing 45% of the world's population. On average, people between the ages of 16 and 64 years have around three active social media accounts (Smith & Anderson, 2018). Given the popularity of social media, and its increasing role as a form for daily communications and social connections, it is imperative to investigate the consequences of the usage of social media on well-being. Existing research attempting to do this has failed to reach consensus regarding the potential costs and benefits of social media use, further fueling discussions about whether its popularity might be considered dangerous and meriting regulation (for a review, see Orben, 2020).

In the present article, we test the downstream effects of social media use through its more immediate beneficial effects on social capital and social connection. Previous studies we review below have shown inconsistent *direct* effects of social media use on well-being (e.g., Sagioglou & Greitemeyer, 2014; Shakyia & Christakis, 2017; Trifiro & Gerson, 2019), but more robust evidence has been identified in favor of the relational (i.e., social) function of social media (Grieve et al., 2013; Sheldon et al., 2011). Building on this, we directly and experimentally tested the benefits of social media use for two indicators of interpersonal functioning: social capital and social connection (e.g., Carpenter et al., 2011; Reiss, 2012), and we test whether these interpersonal experiences affect downstream well-being following changes in social media use. In other words, we tested whether social connection and social capital could serve as mediators linking social media use and well-being.

Social Media Use Links With Well-Being

Cross-sectional studies have produced mixed findings for the link between social media use and well-being. Some suggest there is a correlational link between higher social media use and lower well-being (Kalpidou et al., 2011; Krasnova et al., 2015; Shakyia & Christakis, 2017), while others fail to evidence this link or find positive relations in the opposite direction (Bekalu et al., 2019; Berryman et al., 2018; Reinecke & Trepte, 2014). Costs to daily life satisfaction and negative mood have also been identified on a day-to-day level. Specifically, daily Facebook use was linked to declines in daily life satisfaction across 2 weeks (Kross et al., 2013; Sagioglou & Greitemeyer, 2014). Although this research indicated an overwhelmingly negative effect of social media—Facebook in particular—on well-being, contrary correlations have also been identified on improved mood and self-esteem when social media was used for communication (Trifirm, 2018; Wang et al., 2014). Furthermore, when testing social media use for entertainment, no relation with well-being was identified, and relations were observed with higher positive affect as a function of supportive interactions through social media (Oh et al., 2014). It appears that the frequency of social media use might not consistently influence psychological well-being, but the function of SNS use (e.g., for connection with others) may have predictive value.

The discrepancy in the results about the effect of usage of SNS on well-being may also be attributed to the inherently correlational nature of the studies reviewed above. This design increases susceptibility to confounding effects by individual differences that simultaneously make social media attractive to some, while also reducing their well-being. For example, those who have lower levels of social capital, social isolation, social loneliness, and dissatisfaction with social contacts seek social media, arguably to alleviate their loneliness (Arampatzi et al., 2018; Sheldon et al., 2011). This is concerning because links between well-being and both connectedness as well as social capital are well established. Individuals who report lower relatedness to others, namely, social loneliness, dissatisfaction with social contact, also report a decrease in their subjective well-being (Lyubomirsky et al., 2005; Reis & Gable, 2003; Ryan & Deci, 2017), and as stated above, the connection between social capital and subjective well-being has been reported as positive (e.g., Rodríguez-Pose & Von Berlepsch, 2014).

Social Media Abstinence

Because of the limitations of cross-sectional work, researchers are increasingly relying on experimental manipulations of social media use to test downstream effects. This approach is in line with a growing practice of taking a break from social media, a phenomenon known as “Facebook vacation,” which has received widespread attention in recent years due to the rising fears of the effects of online platforms on wellness (Garcia, 2019; O’Neil, 2019). Despite its appeal, the consequences of such actions are relatively unknown. Much like correlational findings concerning the amount of typical use, the evidence in the literature dealing with the effects of quitting or taking a break from social media is inconclusive. Findings of experimental studies showed that abstinence predicted higher levels of well-being on some measures (life satisfaction, Tromholt, 2016; salivary cortisol; Vanman et al., 2018), but no changes in well-being on others (perceived stress; Vanman et al., 2018), and lower levels of well-being on yet others (subjective well-being, particularly in active users; Hanley et al., 2019; Vanman et al., 2018). A common limitation across these studies is that they disregard the possibility that quitting Facebook (and in one case Facebook and Instagram; Hanley et al., 2019) could inadvertently increase participants’ use of other social networks. As such, we still have little causal understanding of social media use effects on well-being.

Social Capital and Social Connectedness

The nature of SNSs as a context for many of individuals’ daily interactions suggests that their use may influence daily social capital and felt connectedness to others. Social capital has been defined as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (Bourdieu, 1985, p. 51). The definition of social capital is simple as follows: These are the resources which become available to people via their social interactions (Lin, 2001). Social capital could be further broken down into two categories: bridging and bonding (Putnam, 2000). *Bridging social capital* relates to accessibility to new information, exposure to diverse perspectives, and a sense of belonging to a broader community, mainly experienced through interactions with weak-ties and acquaintances. On the other hand, *bonding social*

capital is related to receiving emotional support, companionship, and instrumental support derived from a person's inner circle of connection including family members and close friends (Verduyn et al., 2017). Social media has been linked to both forms of social support in cross-sectional, qualitative, and mixed-methods work (Abbas & Mesch, 2018; Ellison et al., 2007; Steinfield et al., 2008), though Burke et al. (2011) found that Facebook use predicted solely bridging, and not bonding, social capital, and Bano et al. (2019) conversely identified bonding social capital as a more potent mediator of social media use on well-being.

A different lens through which to understand the influence of social media is through felt social connection with others, an affective interpersonal experience of feeling close and related. Social connection is a universal basic need (Leary, 2010; Ryan & Deci, 2000), and has strong positive and independent effects on well-being and mental health (Baumeister & Leary, 1995; Ryan & Deci, 2008; Sheldon, 2004). In an experiment by Sheldon et al. (2011), participants refrained from using Facebook for 48 hr. The authors observed a decline in the levels of social connection, but not disconnection, following this 2-day period, and concluded that social connection was a result of Facebook use and not the reason that people use Facebook (Sheldon et al., 2011). Furthermore, extensive evidence links social capital and higher subjective well-being (e.g., Ateca-Amestoy et al., 2014; Rodríguez-Pose & Von Berlepsch, 2014). In addition, individuals who report lower social connection to others (e.g., social isolation, social loneliness, dissatisfaction with social contacts) also report substantially lower subjective well-being (Lyubomirsky et al., 2005; Reis & Gable, 2003; Ryan & Deci, 2017), and there is a robust positive association between one's social capital and their levels of subjective well-being (e.g., Rodríguez-Pose & Von Berlepsch, 2014). Thus, social capital and social connection could serve as potent mediators linking social media to higher well-being.

Cultural Differences

An interesting but understudied element of social media research is culture which can be understood through its variability along the individualism–collectivism dimension (Hofstede, 1980; Hofstede et al., 2005). Individualistic societies tend to focus on the needs, rights, and duties of the individual, while collectivistic societies prioritize the goals and identity of the group (Hofstede et al., 2005). Sheldon et al. (2017) concluded that American (individualistic) participants' primary motivator for using Instagram was self-promotion, thus their use was more me-focused. The Croatian (collectivistic) participants extracted greater gratification via social interaction; therefore, their use was more we-focused. Hsu et al. (2015) reported that in individualistic cultures information seeking was a strong predictor for social media use, while socialization was the stronger predictor for collectivistic societies. Kim et al. (2011) found that their American sample focused on entertaining themselves via making new friends, and their Korean sample was focused on nurturing existing relationships in SNS.

The Present Research

In the present research, we conducted two studies which experimentally manipulated levels of use of SNSs to rigorously examine the effects on interpersonal experiences (social capital and social

connection) and well-being. Precisely, using a random generator in Excel, participants were allocated to one of three conditions: use social media normally, use social media less than normally, and use social media more than normally. Each participant completed all conditions during three consecutive days. There was no specific order in which the conditions were completed. We further tested a mediational model assuming interpersonal experiences may mediate any effects of social media use on well-being. Although the focus has been on the contrast between normal use and abstinence (lower use), we further contrasted both conditions with overuse (i.e., using more than normal). There is an understanding that technology use, including social media use, is harmful but this is partly centered around an assumption about the disruptive effects of technology use on more enriching activities. For example, displacing other nourishing activities such as face-to-face communication, exercising, and sleeping (Moy et al., 1999; Przybylski & Weinstein, 2017).

To address a primary shortcoming of the existing literature, our two studies manipulated use of common web-based applications, namely, Facebook, Twitter, Instagram, Snapchat, Tumblr, Pinterest, Tinder, and Grindr. Another aim of the present studies was to serve as exploratory research into differences which might occur between individualistic and collectivistic societies; to achieve this, the first study included a sample from the United Kingdom (which scores 89/100 on a scale of 100 = *individualism* to 1 = *collectivism*; Hofstede, 2019) contrasted with a sample from a second study in the collectivist Bulgaria (which scores 30/100 on the same scale; Hofstede, 2019).

Stemming from the research by Tromholt (2016), taking a break from Facebook and Instagram has previously resulted in higher well-being. In line with this, we hypothesized as follows:

Hypothesis 1: Participants will report higher well-being on lower use days compared to normal days.

Further results by Kross et al. (2013), and Sagioglou and Greitemeyer (2014), indicated that increased engagement with Facebook resulted in decreases in well-being. Hence, Hypothesis 2 is as follows:

Hypothesis 2: Participants will report *lower* well-being on overuse days compared to normal days.

In addition, following Sheldon et al.'s (2011) argument that social connection was a result of Facebook use, and on the connection between social capital and well-being:

Hypothesis 3: Participants will report *lower* social experiences on lower use days.

Hypothesis 4: Participants will report *higher* social experiences on overuse days.

Hypothesis 5: Social experience will mediate the effect of condition on well-being.

Finally, the study also included an exploratory component looking at how these hypotheses might differ across individualistic and collectivistic cultures, with the expectation that bonding social capital will be negatively affected in individualistic cultures while

bridging social capital will be negatively affected in collectivistic cultures.

Hypothesis 6: Bonding social capital will be negatively affected in individualistic cultures, while bridging social capital will be negatively affected in collectivistic cultures.

These hypotheses were preregistered on the Open Science Framework (OSF; <https://doi.org/10.17605/OSF.IO/QDHF3>) before the start of the study.

Method

Participants

U.K. Sample

One-hundred and fifty-seven undergraduate students in Psychology at the Cardiff University signed up to take part in exchange for course credit; of them, 116 (73.88%) completed all 3 days of the experiment and were retained for analyses. The final sample was comprised of 105 (90.50%) women and 10 (8.60%) male students, while 1 (0.90%) participant did not disclose their gender. The mean age was 19.41 years (range = 18–30 years).

Bulgarian Sample

The Bulgarian sample comprised undergraduate and postgraduate students at the Sofia University. From the 207 people who initially registered their interest in taking part in the study voluntarily, 165 (79.71%) students completed at least 1 day of the study, and 120 (72.72%) completed all 3 days and were retained for analyses.¹ Of these, 94 were female (78.30%) and 26 (21.70%) were male. Their mean age was 29.9 years (range = 18–71 years).

Procedure

The study received ethical approval from the research ethics committee at the School of Psychology at Cardiff University (EC.18.11.13.5423 R) and the research ethics committee at the Faculty of Philosophy at Sofia University “St. Kliment Ohridski” (35A270319). Each experimental session lasted over three consecutive days which were always the same days of the week, that is, Monday, Tuesday, and Wednesday. We assumed that during the academic year on these 3 days the students would attend university and have similar experiences, thus keeping the influence of external factors to a minimum.

The study utilized a within-subjects design with three conditions: use social media normally, abstain from social media, and use social media more than normally. Participants received all three conditions after random allocation to one of the three orders in which they would receive the conditions. This was done with a formula for randomly generating a sequence of the numbers. Then, every Sunday at 17:00, participants received an email with information about the study, that is, how they would receive the instructions, as well as asking them to check their email accounts the following morning. In the mornings of each of the 3 days at 07:00, all participants received instructions for the day. In the evenings at 20:00, all participants received another email with a link to the study survey. In addition, at 23:00 each

evening, participants received a further email reminding them to complete the survey in case they had not done so.

At the end of each day, the participants completed a survey evaluating their compliance with the study, interpersonal experiences (bridging and bonding social capital and connectedness), and well-being (positive and negative affect, well-being, day satisfaction).

Materials

Instructions via email

The instructions sent via email in the morning guided participants on the task, that is, “use social media as you typically would”; “refrain from using all social media”; “use all social media more than you would typically use,” and included a list of the platforms (Facebook, Snapchat, Tinder, Instagram, LinkedIn, etc.).

Daily Interactions

Social Capital. A 23-item social capital scale was designed to measure quality and quantity of relationships. The items were presented in a random order. The 11 items measuring quality of relationships had a 7-point scale ranging from 1 (*Strongly Disagree*) to 7 (*Strongly Agree*), paired with statements about the quality of interactions, such as “Today, I felt my friends could be a source of emotional support, if I needed them to be”; “I shared my emotions with people today (using any means of communication, e.g., phone, text, in person, social media).” Twelve items additionally measured quantity of interactions, for example, “I shared my emotions with ___ people today.” Participants selected from 0 to *more than 20* from a drop-down menu.

To determine the underlying factors of the questionnaire, principal component analysis with Varimax (orthogonal) rotation was conducted for each of the studies in the two countries yielding two factors. In the U.K. study, the two factors explained 55.37% of the variance, and in the Bulgarian study 51.43% of the variance. The Rotated Matrix is shown in Table 1. The Bartlett test of sphericity was significant for both studies: U.K., $\chi^2(45) = 1450.127$, $p = .001$; Bulgaria, $\chi^2(45) = 1207.749$, $p = .001$. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy established a high strength of relationships among variables for the U.K. study (KMO = .87) and for the Bulgarian study (KMO = .86).

Factors were labeled as bridging social capital and bonding social capital. The former explored sharing of information, and exposure to differences perspectives, while the latter investigated emotional support and companionship mainly with strong tie-ins such as family and friends. In the U.K. study, the Factor 1 $\alpha = .79$ and Factor 2 $\alpha = .76$. In the Bulgarian study, Factor 1 $\alpha = .74$ and Factor 2 $\alpha = .70$.

Social Connection. Social connection was measured using the three items employed by Sheldon et al. (2011) on a Likert scale ranging from 1 (*not true at all*) to 9 (*very true*). The original version

¹ Independent sample *t* tests compared participants who completed all 3 days, and those who completed 1 or 2 days. There were no significant differences between these two groups of participants for any of our psychological constructs (well-being, social connection, bridging social capital, bonding social capital), $p > .05$. See Supplemental Table on <https://doi.org/10.17605/OSF.IO/8QD25>.

Table 1*Rotated Matrix From the Reliability Analysis on the Social Capital Scale for the U.K. and Bulgaria*

Items	Factor				Dimension
	U.K.		Bulgaria		
	1	2	1	2	
I disclosed something important to somebody today	.79		.74		Bridging social capital
I shared important things with people today	.78		.70	.35	
I shared my emotions with people today	.73		.69	.41	
I shared news or discussed a topic important to me with people today	.71		.66	.37	
Today, I engaged in more conversations than usually do	.50		.47		
I enjoyed talking to people today	.33	.76	.38	.63	Bonding social capital
I spoke with my friends today		.75	.35	.55	
Today, I felt my friends could be a source of emotional support if I needed them to be	.39	.70	.58	.41	
I spoke with family members today		.62		.78	
Today, I felt my family could be a source of emotional support if I needed them to be		.60		.54	
% variance	28.99	26.38	28.62	22.81	
Eigenvalue	4.38	1.16	4.06	1.08	
Cronbach's α	.79	.76	.74	.70	

Note. The values in bold indicate the factor the items belong to.

asked people to give ratings according to their experiences *during the last week*; however, for the purposes of this study, this was changed this to *today*. Internal reliability was $\alpha = .91$ for the U.K. study and $\alpha = .70$ for the Bulgarian one.

Daily Well-Being

Daily satisfaction question, self-esteem scale, positive, and negative affect scales were combined to create an overall composite score of participants' well-being. However, because the measures all had different Likert-type scale, participants' scores from each scale were converted into Z scores. Reliability for the U.K. sample was $\alpha = .79$ while for the Bulgarian sample was $\alpha = .70$.

Day Satisfaction. Daily satisfaction was measured using one single item, "In general, how good or bad was today?" on a scale from 1 (*Very bad*) to 7 (*Very good*). U.K. sample ($M = 5.10$, $SD = 1.28$, range: 2–7). Bulgarian sample ($M = 5.24$, $SD = 1.37$, range: 2–7).

Self-Esteem. Four items from the Rosenberg's (1965) Self-esteem scale were used to measure self-esteem, together with a Likert scale from 1 (*Strongly disagree*) to 4 (*Strongly agree*). For example, "I feel that I'm a person of worth, at least on an equal plane with others." Reliability for the U.K. sample was $\alpha = .87$ while for the Bulgarian sample was $\alpha = .80$.

Positive and Negative Affect. To measure positive and negative affect, the Positive and Negative Affect Schedule-Short Form (*PANAS-SF*) by Watson et al. (1988) was applied. Participants had to rate how much they felt each one out of 20 items on a scale from 1 (*very slightly or not at all*) to 5 (*Extremely*). Example of items were "interested," "hostile," "proud," and "nervous." Reliability for the U.K. sample was $\alpha = .79$ while for the Bulgarian sample was $\alpha = .78$.

Social Media Use

On each of the days the participants were also asked to estimate how much social media they used on a scale from 1 (*Infrequently*) to 7 (*Very frequently*). The U.K. participants were also asked to send a screenshot of their "Screen Time" settings page on their iPhones. The participants in Bulgaria did not send screenshots as prior data

which were collected showed that most of them were not iPhone users.

Surveys in Bulgaria

The studies for the U.K. and Bulgaria were identical with the exception of the language of presentation. In the U.K., the questionnaire was presented in English. In Bulgaria, using a back-to-back translation, the survey was presented in the native language Bulgarian.

Study Design

Participants took part in all three of the conditions, and the independent variables were therefore (1) within-subjects: the level of social media use (normal use; lower use; overuse) and between-subjects culture (individualistic and collectivistic). The dependent variables were the scores on composite measure for participants' well-being, the scores on the two factors of the social capital scale (bridging and bonding); and the scores on the social connection scale.

Results

Analytic Approach

Exploratory preliminary analyses served as a manipulation check to test whether the participants complied with the instructions which they received each morning. Following this, a repeated-measures multivariate analysis of variance (MANOVA) was conducted examining main effects of condition (lower use, normal use, overuse) on our outcomes of interest: social connection, bridging social capital, bonding social capital, and well-being. Country and age were included as covariates in this analysis.² Where a significant interaction by country was present in the MANOVA, we conducted simple repeated measures ANOVAs for each country investigating the differences on the scales for bonding social capital, and social connection, once again controlling for age. Finally, we performed a within-subjects mediation analysis to examine whether bridging

² Age was not a preregistered covariate. We followed recommendations from expert reviewers to control for it.

social capital, bonding social capital, and social connection would indirectly link condition (level of use) to well-being. This was done using the plug-in MEMORE for SPSS (Montoya & Hayes, 2017; www.afhayes.com).

Exploratory Preliminary Analyses

To test whether participants followed instructions, an ANOVA was conducted with the subjective question asking them to rate their social media use on each day. Results revealed significant differences between the magnitude of use across the 3 days for the U.K. using a Greenhouse–Geisser correction, $F(1.48, 170.66) = 272.26, p = .001, \eta_p^2 = .703$, and Bulgaria, $F(1.87, 215.46) = 235.68, p = .001, \eta_p^2 = .672$. For the U.K. sample, post hoc tests using the Bonferroni correction showed that during the overuse day the levels of subjective use of SNS increased by 0.621 on a 7-point scale compared to the normal use day, $t(115) = -5.91, p = .001$, during lower use day these levels decreased by 2.957 points, $t(115) = 16.05, p = .001$. For the Bulgarian sample, post hoc tests using the Bonferroni correction showed that during the overuse day the levels of subjective use of SNS increased by 1.319 on a 7-point scale compared to the normal use day, $t(118) = -8.19, p = .001$, during lower use day these levels decreased by 2.534, $t(116) = 15.02, p = .001$ (See Table 2).

As evident in Table 2, participants both in the U.K. and Bulgaria reported the lowest levels of use during the day when they had to abstain from social media. The highest levels of use were reported during the overuse day, when the participants were asked to use social media more than normally. This shows that they complied with the instructions when participating in the experiment.

In addition, objective data from the “Screen Time” function on the iPhones showed that during normal use the participants used social media on average for 2 hr and 5 min. During lower use the average use was 1 hr and 6 min, and during the overuse day 2 hr and 25 min. However, the data presented here include the use of WhatsApp, Facebook Messenger, and iMessage as the iPhone includes messaging applications in its social media category. Nevertheless, the decrease of more than 1 hr from the “normal use” day to the “lower use” day is another assurance that the participants in the study complied with the instructions. Given the results from the subjective and objective data, our manipulation appeared to be successful in shaping daily social media use, and participants generally complied with the instructions.³

Main Analyses

The following step in the analyses was to establish whether there were any differences across our three conditions regarding the

Table 2
Mean Levels of Social Media Use Across the Three Conditions for the U.K. and Bulgaria

Country	Conditions		
	Normal use	Lower use	Overuse
United Kingdom (<i>n</i> = 116)	5.51 (<i>SD</i> = 0.97)	2.55 (<i>SD</i> = 1.86)	6.13 (<i>SD</i> = 0.93)
Bulgaria (<i>n</i> = 116)	4.47 (<i>SD</i> = 1.37)	1.93 (<i>SD</i> = 1.61)	5.78 (<i>SD</i> = 1.30)

participants’ levels of well-being, social connection, and social capital. MANOVA tested main effects of condition, and their interaction with country, also controlling for age.⁴

MANOVA Results

Results of MANOVA omnibus test showed *Wilk’s* = .93, $F(8, 201) = 2.02, p = .045$, multivariate $\eta_p^2 = .075$. This indicates that there are significant differences among the three levels of social media use on a linear combination of the four dependent variables.

Well-Being

There were no significant differences for the well-being dimension between the three different levels of social media use, $F(2, 416) = 0.11, p = .892, \eta_p^2 = .001$. There was no significant interaction between the level of use and country, $F(2, 416) = 0.65, p = .523, \eta_p^2 = .003$ or between level of use and age, $F(2, 416) = 0.51, p = .599, \eta_p^2 = .002$.

Social Experiences

There were significant differences between the three levels of social media use, using a Greenhouse–Geisser correction, $F(1.92, 400.12) = 5.88, p = .003, \eta_p^2 = .027$. There was a marginally significant interaction between the level of use and country, $F(1.92, 400.12) = 2.99, p = .053, \eta_p^2 = .014$. There was no significant interaction between the level of use and age, $F(1.92, 400.12) = 0.50, p = .599, \eta_p^2 = .002$.

Given the marginal significance between the level of use and country, we conducted two repeated measures ANOVAs for each country, investigating the effect of level of use on connectedness, age of the participants was a covariate. The results for the U.K. sample revealed there were no significant difference across the three levels of use, $F(2, 228) = 1.94, p = .145, \eta_p^2 = .017$, and there was no significant interaction between the level of use and age, $F(2, 228) = 1.83, p = .163, \eta_p^2 = .016$. However, post hoc tests using the Bonferroni correction showed a reduction of 0.68 on the 7-point scale during the lower use day in the levels of social connection compared to the normal use day ($p = .001$), there were no differences between the overuse day and the normal use day (See Figure 1).

The results for the Bulgarian sample revealed no differences across the three levels of SNS use, $F(1.87, 215.35) = 1.14, p = .321, \eta_p^2 = .010$, and no interaction between level of use and age, $F(1.87, 215.35) = 0.64, p = .518, \eta_p^2 = .006$.

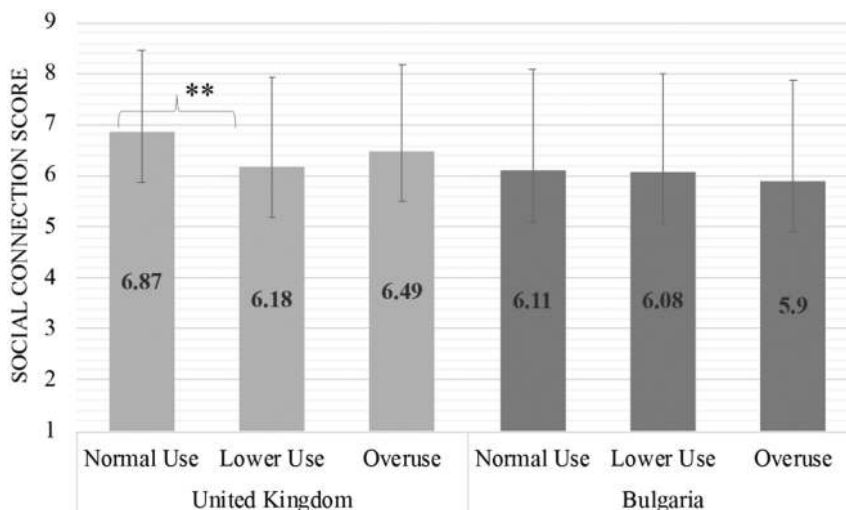
As shown in Figure 1, participants in the U.K. sample reported the highest levels of social connection during the day when they had normal levels of SNS use and the lowest when they had to abstain from social media. The reported levels on the day with overuse were in between. In the Bulgarian sample, there were no significant differences in the scores between the three conditions.

³ Looking at the objective and subjective raw data, we established that when asked to abstain from using social media some participants fully abstained while other used SNS less than normally.

⁴ This analysis is different from the analyses we have preregistered on the Open-Science Framework, where we indicated we would run a repeated measures ANOVA for each psychological construct separately.

Figure 1

Mean Scores on the Social Connection Scale as a Function of Within-Subjects Condition (Use Social Media Normally, Use Social Media Less Than Normally, or Use Social Media More Than Normal) for the U.K. and Bulgarian Participants



** $p < .001$.

Social Capital

Bridging Social Capital

The MANOVA showed no significant differences across the three conditions, $F(2, 416) = 1.84, p = .160, \eta_p^2 = .009$. There was no significant interaction between the level of use and country, $F(2, 416) = 2.01, p = .136, \eta_p^2 = .010$, or between level of use and age, $F(2, 416) = 2.12, p = .122, \eta_p^2 = .010$.

Bonding Social Capital

The MANOVA showed significant differences between the three levels of use and bonding social capital, $F(2, 416) = 4.82, p = .009, \eta_p^2 = .023$. There was a significant interaction between the level of use and country, $F(2, 416) = 6.39, p = .002, \eta_p^2 = .030$. No significant interaction was present between the level of use and age, $F(2, 416) = 2.83, p = .060, \eta_p^2 = .013$.

Given the significant interaction between the level of use and country, we ran two repeated measures ANOVAs for each country predicting connectedness. The results for the U.K. sample revealed no significant difference across the three levels of use, $F(2, 212) = 0.52, p = .592, \eta_p^2 = .005$, and no interaction between the level of use and age, $F(2, 212) = 0.68, p = .508, \eta_p^2 = .006$. However, based on preregistered hypotheses, post hoc tests using the Bonferroni correction showed that during the lower use day the levels of bonding social capital were reduced by 0.39 on 7-point scale compared to the normal use day ($p = .004$). In addition, there was an increase of 0.29 on the 7-point scale in the levels of bonding social capital from the “lower use” day to the “overuse” day ($p = .037$). Post hoc tests did not reveal significant differences between the “normal use” and the “overuse” day (Figure 2).

The results for the Bulgarian sample revealed no significant differences across the three levels of SNS use, $F(2, 232) = 2.20,$

$p = .113, \eta_p^2 = .019$, or interaction with age, $F(2, 232) = 2.85, p = .060, \eta_p^2 = .024$.

As shown in Figure 3, in the United Kingdom, the highest levels of bonding social capital could be observed during the day when the participants had normal usage of social media. The lowest levels were recorded during the lower use day. The Bulgarian sample had similar scores throughout the three condition; nevertheless, the highest scores were reported during the day with overuse of social media.

Mediation

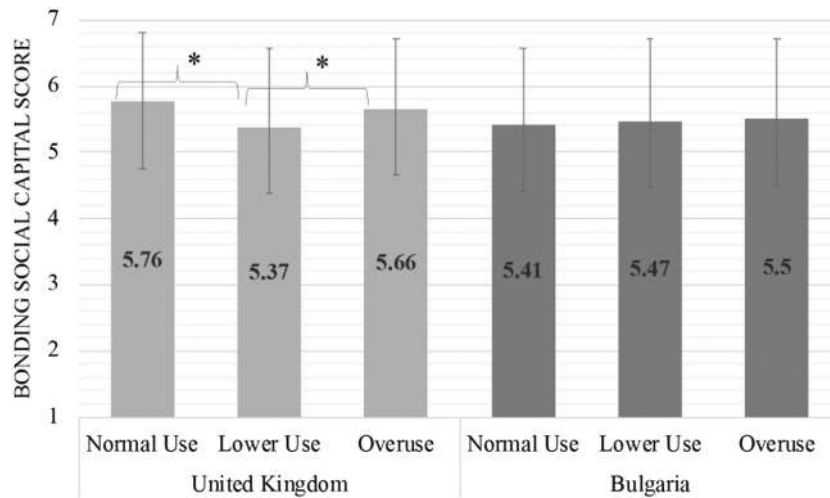
We conducted two separate mediation analyses, one for each country, using the macro MEMORE (MEDIATION and MODERATION analysis for REpeated measures designs) for SPSS. Bridging social capital, bonding social capital, and social connection were the mediators while well-being was the outcome. The results for the indirect effects and confidence intervals are shown in Table 3. Results for the direct effects of intervention on the outcomes are shown in Table 4. Supplemental results in the form of Structural Equation Models could be accessed via the Open Science Framework.⁵

U.K. Sample

The results revealed an indirect effect of intervention (X) on well-being through Social Connection (M), $b = .106, \text{BootSE} = .047, 95\% \text{ CI } [.025-.206]$. Therefore, during the lower use day the participants had higher scores of well-being by 10.6% through

⁵ For data analysis using structural equation modeling to test the conceptual model of social media use linked to daily well-being through the three proposed mediators, please go to Supplemental materials posted on <https://doi.org/10.17605/OSF.IO/8QD25>

Figure 2
Mean Scores on the Bonding Social Capital Scale as a Function of Within-Subjects Condition (Use Social Media Normally, Use Social Media Less Than Normally, or Use Social Media More Than Normal) for the U.K. and Bulgarian Participants



* $p < .05$.

social connection. There were no indirect effects of intervention on well-being through bonding social capital and bridging social capital (See Figure 3). There was no direct effect of the level of use on well-being in the U.K. sample.

Bulgarian Sample

The mediation analysis for the Bulgaria sample did not establish any indirect or direct effects of level of use on the dimension of well-being.

Discussion

The purpose of the present research was to investigate the effects of three different levels of use of SNSs on psychological well-being, social capital, and social connection. In addition, we explored whether there were any differences between individualistic and collectivistic societies by conducting two studies: one in the United Kingdom, defined as an individualistic culture, and the other in Bulgaria, defined as a collectivistic culture. Results from the two studies revealed that during normal use, lower use, and overuse of SNSs the participants had very similar levels of well-being. Thus, Hypothesis 1 which stated that during lower use the participants would report higher levels of well-being was not supported, and neither was Hypothesis 2, which stated that during overuse participants would report lower levels of well-being.

Results did not replicate findings by Tromholt (2016) who reported that taking a break from Facebook resulted in the higher levels of well-being, and those by Vanman, et al. (2018) who indicated that after a break their participants showed lower levels of subjective well-being. This may be due to more days spent abstaining in these previous studies, and to a wider list of SNSs included in this study. In our two studies, participants reduced their social media use for a single day. This might not have been enough time for participants to

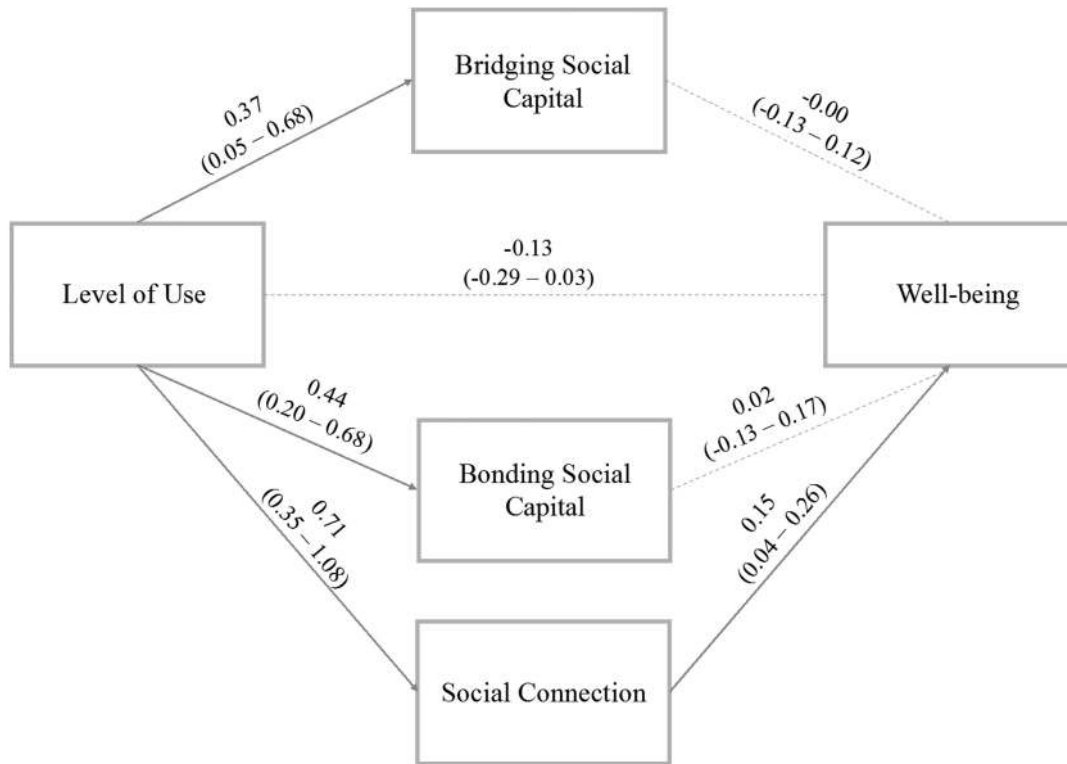
feel the effects of not using SNSs. Given that the body of work concerning social media effects is still nascent, there is no consensus on how long people should reduce their social media use before any effects are observed. It would be difficult to establish an exact time frame as it could be mediated by a variety of external factors related to individual differences, for example, the length of use prior taking a break, and prior interest in and exposure to the phenomenon “Facebook vacation” leading to better self-regulation. In addition, when signing up for the studies, we warned students they would give up SNS for a day, to provide them time to prepare for this change (e.g., notify family and friends, if they wished). Neither previous studies (Tromholt, 2016; Vanman et al., 2018) gave prior warning to their participants, which may have resulted in changes to social media use being more disruptive to daily interactions.

The present studies included eight different SNSs in their design, whereas most previous studies focused solely on Facebook use. However, there are exceptions to what is typically an overly simplistic view of social media use. For example, Hanley et al. (2019) found that after a week of refraining from Facebook and Instagram, active social media users showed a decrease in subjective well-being, while there was no change for passive users. In the present studies, the majority of participants used social media passively, consistent with the results from Hanley et al. (2019).

Findings from the experiment in the U.K. revealed that, in line with Hypothesis 3, during social media lower use, participants registered lower levels of both bridging and bonding social capital, and lower social connection, compared to normal use. On the other hand, participants did not report significantly lower scores on the three social outcomes measured during overuse, compared to normal use, as we had hypothesized in Hypothesis 4. It is difficult to directly compare the results from the present studies to previous research because our design included eight different SNS. As reported by Sheldon et al. (2011) not using Facebook for 48 hr led to a decline in the levels of social connection which is consistent with our findings. The students

Figure 3

A Within-Subject Mediation Model for the U.K. Sample, Showing a Significant Mediation Between the Level of Social Media Use and Social Capital on Well-Being, and Nonsignificant Mediation Between Level of Social Media Use and Bridging Social Capital, and Bonding Social Capital on Well-Being



felt less connected when they were asked to stop using all social media for 1 day. Consequently, abstaining from all social media even for 1 day could result in huge implications for people’s feelings of belonging and affiliation which are derived from interpersonal relationships formed within SNSs.

During the lower use day the participants were allowed to use messaging applications such as iMessage, WhatsApp, Facebook Messenger, Viber, and WeChat. This makes the results even more compelling as it shows that the decline in social connection is purely due to the lack of engagement with SNS such as Facebook, Instagram, Snapchat, etc. The fact that the Bulgarian sample was not affected by this might indicate that the Bulgarian students relied on

the abovementioned messaging apps to stay connected with their families and close friends during the lower use days. Thus, they did not rely on Facebook and other SNS applications to do so. Individualistic societies are thought to use social media more to stay in touch with acquaintances (Sheldon et al., 2017). Presumably, they would be less inclined to contact acquaintances directly via messaging applications, hence explaining why they felt less connected when refraining from SNS. The results regarding bonding social capital are in line, to a degree, with findings from Ellison et al. (2007), that social capital was positively connected with the intensity of Facebook use, and from Abbas and Mesch (2018) who reported a positive relationship between Facebook use and social capital.

Table 3

Model Coefficients, Standard Errors, and 95% Confidence Intervals (CIs) for the Individual Indirect Effects of Bridging and Bonding Social Capital, and Social Connection on Well-Being for the United Kingdom and Bulgaria

Country	Outcome	Mediators	Coeff.	SE	Bootstrapped BC 95% CI	
					Lower	Upper
United Kingdom	Well-being	Bridging social capital	-.000	.029	-.063	.061
		Bonding social capital	.010	.048	-.093	.104
		Social connection	.106	.047	.025	.206
Bulgaria	Well-being	Bridging social capital	-.006	.015	-.039	.023
		Bonding social capital	.002	.011	-.020	.029
		Social connection	.000	.012	-.025	.023

Note. BC 95% CI = bias-corrected 95% confidence intervals; SE = standard error. Values in bold indicate a significant result.

Table 4

Model Coefficients, Standard Errors, and 95% Confidence Intervals (CIs) for the Individual Direct Effects of Bridging and Bonding Social Capital, and Social Connection on Well-Being for the United Kingdom and Bulgaria

Country	Outcome	Mediator	Coeff.	SE	<i>t</i>	<i>p</i>	Bootstrapping BC 95% CI	
							Lower	Upper
United Kingdom	Well-being	Bridging social capital	-.130	.081	-1.60	.11	-.291	.031
		Bonding social capital	-.080	.075	-1.07	.28	-.229	.068
		Social connection	-.103	.073	-1.42	.15	-.247	.041
Bulgaria	Well-being	Bridging social capital	-.003	.053	-.06	.94	-.108	.101
		Bonding social capital	.003	.054	.06	.95	-.103	.109
		Social connection	-.008	.55	-.14	.89	-.117	.101

Note. BC 95% CI = bias-corrected 95% confidence intervals; SE = standard error.

The reduced bonding social capital for the U.K. study during the “lower use” day could be explained by external factors. For example, U.K. participants were young ($M = 19.41$ years), and on the whole were likely exposed to social media, in some form, from a very early age. The Bulgarian sample, however, included both bachelor and master students with a mean age of 29.9 years. Those in their later adolescence (16–24), such as our U.K. participants, prefer to stay connected and avoid isolation through technology use (Milner et al., 2016; Rawlins et al., 2008). Adults in their 30 s and 40 s—present in our Bulgarian sample—also use SNS for socialization but do not seem to rely on such interactions for social support (Leung, 2013). Furthermore, this speculation is supported by our findings including age as a covariate in analyses conducted separately for the two countries. Namely, we established significant differences in social connection and bridging social capital between normal use and lower use days only for our U.K. sample.

Results from the U.K. study also revealed indirect effects of condition (the level of SNS use) on well-being when social connection served as a mediator. This is in line with previous research which has reported that when experiencing social isolation and social loneliness, that is, lower levels of social connection, this results in lower levels of subjective well-being (Ryan & Deci, 2017). Finally, bridging social capital and bonding social capital did not serve as mediators in our model, this is partly due to the high correlations between the three constructs.

Limitations and Future Research

Certain limitations should be taken into consideration. First, both studies were advertised at psychology departments at two higher education institutions, and thus, the samples are predominantly educated, young adult, and female. Future studies should focus on including more diverse and representative samples to increase the generalizability of the findings. A further limitation of the studies is the use of self-report measures subject to social desirability bias. Though it may be that self-reports are best suited to measure the kinds of outcomes of interest here (social experiences, well-being), methodological advancements of this work may include measuring them from other parties (parents, friends, or partners of users).

Furthermore, we could not be sure that participants followed experimental instructions. Although screen time data were collected from the students’ iPhones, there were other ways in which they could access social media, for example, tablets, laptops, or a friend’s phone.

In addition, although there are reports showing Bulgaria as a collectivistic society, we did not include a measure for this dimension in our experiment. Thus, any conclusions related to differences between collectivistic and individualistic societies are based on prior research.

It is also important to note that in one case we reported a marginally significant trend as an interaction between the level of use and country. Reporting marginal significance increases the probability of Type I error and might affect the reproducibility of this research (Olsson-Collentine et al., 2019). In this case, on an exploratory basis we examined the difference between the two countries tested. Although we then describe the different patterns of results in each country, it may be that any differences do not prove robust in future comparisons.

Finally, future research should also focus on looking at the effects of lower use and overuse for longer periods of time. It would be interesting to conduct the study with a sample which includes both active and passive social media users because as there have been documented differences between the two. For example, active social media use is fundamentally more social, and may have differential well-being effects as a result (Hanley et al., 2019).

Conclusion

The main focus of the present studies was to establish the effects of the currently popular trend of people taking a “Facebook vacation” on well-being, social capital, and social connection. The results revealed there were no significant differences in the levels of well-being according to the extent of daily social media use. The studies also introduced a newly developed questionnaire for measuring social capital which proved to be reliable in the sociocultural contexts of both the United Kingdom and Bulgaria. The U.K. sample reported significant declines in their levels of both bridging and bonding social capital, as well as their connection, during lower use compared to normal use. However, in Bulgaria changing social media use had no impact on participants’ social or well-being outcomes. In the U.K. only, social connection served as a unique mediator factor linking SNS use and well-being.

As the internet continues to grow, people have become accustomed to building connections and relationships online. Taking a so-called “Facebook vacation” might be appealing but may have unintended consequences: People may feel less connected to others, with negative implications for well-being. However, the

consequences of overuse are still uncertain. Therefore, people should seek an optimal level of social media that serves to support them throughout their daily lives.

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