Adherence to Time Limitations on Social Media Platforms and Its Relationship to Mental Wellbeing

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Abstract

Purpose: Popularity of social media use has led to the question of its impact emotional well-being. Screen time apps can be used to regulate social media use. It was proposed that self-control would have a moderating effect on the frequency of adherence and thus influencing the time spent on social media.

Method: A survey design was used for this study. Participant sample included 99 individuals (M_{age}= 22.41, $SD_{age=}$ 2.46; 31.3% male, 67.7% female, 1% other). Nationality of participants included 6.1% Dutch, 70.7% German, and 23.3% other. Linear mixed models were used to obtain results.

Results: A 17.5% correlation between social media use and emotional well-being was found, ($F(2,96)= 10.18$, $p < .05$). Frequency of adherence does not predict social media screen time use, $r(26)= -.09$, $p=.66$. Self-control does not moderate the relationship between frequency of adherence and social media use, $r^2(26)= .07$, $p=.65$.

Conclusion: Well-being gradually declines as time spent on social media increases. Investigating social media use and its relation to well-being in a longitudinal study is recommended to improve accuracy of results. Comparison of self-control between those who have time limitations on their social media platforms and those who do not, could explain moderation findings more adequately.

Keywords: social media, emotional well-being, adherence, time limitations, self-control

Adherence to Time Limitations on Social Media Platforms and Its Relationship to Mental Wellbeing

In recent decades, smartphones have become essential devices that allow people to stay socially connected, digitally, at any distance. Digital social connections can be facilitated by applications, termed social media platforms, "…designed to enable users to create, interact, collaborate, and share in the process of creating as well as consuming content" (Obar & Wildman, 2015, p. 746). These digital platforms have become the modern channel by which people stay in touch, interact with others from all over the world through their formed identities online (Berryman et al., 2018). A new generation of young adults are growing up alongside these social platforms, and as such a widespread interest on the use of social media on a person's mental well-being. Past research on social media with its relation to mental well-being has presented mixed findings. Positive outcomes are evident in increased social well-being through social connectedness and perceived social resources (Orben, 2020). However, it facilitates negative emotional well-being (ex. depressive symptoms and anxiety) (Orben, 2020; Twenge and Campbell, 2018). Hence, while individuals may benefit socially from social media connection, their emotional health could deteriorate. Social media platforms may promote an ease for social interaction and connection, but what impact does this new form of connectivity have on an individual's well-being?

Current State of Research: Social Media Use and Well-being

Placing more emphasis on emotional health, research on social media screen time specifically in relation to emotional well-being, finds both negative outcomes on emotional well-being (Twenge & Campbell, 2018, 2019) but also evidence of reduced life satisfaction (Kross et al., 2013). Emotional well-being is measured through the presence and balance of positive affect and negative affect lead by a general view of life satisfaction (Keyes, 2003). Therefore, through literature we can see that most studies that focus on well-being, they seem to come to the conclusion that emotional well-being suffers but point out that social implications are the ones that show mixed findings (Schønning et al., 2020).

A study by Przybylski and Weinstein (2017) proposed the digital Goldilocks hypothesis, stating that excessive social media screen time could have adverse effects of replacing real-life social activity or too little use of social media could raise concerns of a lack of social connectivity among adolescent peers. The study found that optimal well-being could be observed with moderate amounts of social media screen time (ex. more than an hour, less than

five hours). However, another similar study had different findings compared to the Goldilocks hypothesis, that light social media users (less than an hour) fared significantly better in terms of psychological wellbeing compared to those who were either abstinent, moderate, or heavy users (Twenge & Campbell, 2019). On the other hand, Berryman et al. (2014) found that it is not the quantity of social media use but how it is used which affects individual well-being. Other findings also suggest that the relation of social media usage on well-being should take into account differences in the type of intervention conducted (e.g. overall smartphone use including social media or only focusing on social media use) or the outcome variables being investigated (e.g. general well-being, depression, or sleep quality) (van Wezel et al., 2021).

The outcome of these studies, despite having both positive and negative findings are still a cause of concern given that there is an association between social media use and decreased emotional well-being. These research outcomes have become a public topic of discussion as an ever increasing number of today's young adults are frequent users of social media platforms. Data collected on individuals in the U.S. aged between 18-29 found that 84% use at least one social media application (Pew Research Center, 2021). One call to action for this concern by the public is seen from two major investors of Apple Inc., urging the company to be socially responsible as smartphone developers to include features that allow for screen time tracking as well as parental control over time limits on smartphone usage (Benoit, 2018). As such, the introduction of screen time tracking applications in smart devices, such as Screen Time and Digital Well-being features, were seen to be embedded in iOS (Apple Inc., 2018) and Android smartphones.

Screen Time Tracking: Implementation, Features, Usability Outcomes

Prior to the roll out of screen time tracking features by major smartphone companies, early research on smartphone users showed that implementation and use of screen time tracking applications have garnered positive feedback, such as personal monitoring of device usage, reducing device usage, increased productivity, and self-disciplining of device usage (Rooksby et al., 2016). These screen time application features deliver a comprehensive breakdown of overall smartphone usage, categorical type of app usage (e.g. Social, Entertainment, Productivity etc.), screen time for specific apps used (e.g. Instagram, Twitter, Facebook), and also give choice to implement temporary time limitations on a selection of apps or categories if desired (Apple Inc., 2018). These features allow users to set time limitations on specific apps or a category of apps, that will notify the user when the time limit is approaching and blocking

the app once the time limit has been reached. However, the choice to "ignore" these time limits or request a few more minutes of app use after the time limit has been reached, is also an imbedded function to allow continued access if the user desires (Apple Inc., 2018).

Self-control

Research from an external screen time app, MyTime developed by Hiniker et al. (2016), found that warnings for time limits were dismissed 64% of the time. Given that the app provides the option for a time extension, 30% of the time participants would select that option and adhering to the warning by closing the app was only observed 6% of the time. For users to exercise the psychological effort of adhering to the warning for time limits, it is required for them to exercise a level of self-control to adhere to the notification of the time limit and not continue using the app.

Self-control is defined as the "ability to override or change one's inner responses, as well as to interrupt undesired behavioural tendencies (e.g. impulses) and refrain from acting on them" (Reinecke & Meier, 2021). Moreover, van Wezel et al. (2021) has found self-control as an inter-individual variance in predicting the effectiveness of implementing social media screen time limits. Another study on social media addiction also voiced similar opinions. The study's findings suggest that individuals who possessed higher trait self-control have weaker ties to the habitual use of social media platforms (Brevers & Turel, 2019). Later, findings from Reinecke et al., (2022) corroborates the role of self-control on individuals' ability to uphold their goals or give into media temptations, which led to the observation that this trait also had effects on reducing individuals initiating media use in the first place. Therefore, it would be relevant to investigate how a person's self-control influences their ability to adhere to limitations put in place on social media use.

Current Study

This exploratory research is designed to investigate the differences in the emotional well-being of social media users based on their social media screen time. Subsequently, participants who implement time limitations on their social media apps and those who have not will be distinguished. Participants who indicated placing time limitations on their social media applications will further be assessed, based on their level of perceived self-control as a moderating factor, on their frequency of adherence to these time limitations.

Thus the first research question for this study is: To what extent is time spent on social media linked to emotional wellbeing? Taking into account the Goldilocks hypothesis and the study done by Twenge and Campbell (2019), it will be an interesting point of research to investigate the emotional well-being difference between low, moderate, and high social media users. Consequently, three hypotheses can be formulated:

Hypothesis 1: Participants with less than one hour of social media use will have low emotional well-being.

Hypothesis 2: Participants with more than five hours of social media use will have low emotional well-being

Hypothesis 3: Participants with more than one hour and less than five hours of social media use will have high emotional well-being.

The second research question for this study is: To what extent does perceived self-control moderate the relationship between the frequency of adherence to time limitations and time spent on social media? Based on the Reinecke and Meier (2021) study of self-control, it is hypothesized that:

Hypothesis 4: There is a relationship between the frequency of adherence to time limitations and time spent on social media.

Hypothesis 5: Perceived self-control moderates the relationship between the frequency of adherence to time limitations and time spent on social media.

Methods

Participants

Participants were recruited via SONA system at University of Twente and social media (e.g. Instagram, WhatsApp, etc.). A participation criterion applied, ensuring all participants be of social media platform users from the ages of 18 to 30. Participants were removed from the dataset when they failed to fill out the consent form completely (n=17). Participants were further excluded if the survey was filled out incompletely (n=96), or if participants were not the intended sample size age group (n=3).The required sample size for this research to represent good statistical power, calculations made using the G*Power calculator, would require 89 participants.

In total, the participant sample comprised of 99 individuals for the first research question (M_{age}= 22.41, $SD_{age=}$ 2.46; 31.3% male, 67.7% female, 1% preferred not to say). The nationality of participants consisted of 6.1% Dutch, 70.7% German, and 23.3% listed as other. For the second research question, the sample size comprised of only 26 individuals which does not meet the requirements, as only participants that indicated that they had set time limits on their social media applications would be used for the research design (M_{age}= 21.88, $SD_{age=}$ 2.05; 11.5% male, 88.5% female). The nationality of participants consisted of 3.8% Dutch, 80.8% German, and 15.4% listed as other.

Procedure

Upon entering the survey, an information page detailed the purpose, content of the study, and informed form of consent for voluntary participation. The study was approved by the BMS Ethics Committee (EC) of the University of Twente (220244). Participants were asked to select which type of smartphone device system they currently used (ex. iOS or Android), followed by detailed instructions on how to locate the necessary screen time data on both iOS and Android, to answer the following survey questions. The estimated time needed to complete the survey was between 30 to 45 minutes. This survey was administered in collaboration with other researchers that also included other questions and scales, but the ones relevant to this study are discussed.

Measures

Time Spent on Social Media and Social Media Use

Participants were asked to provide their screen time in the form of total screen time during their last full week (Monday to Sunday) as well as their total screen time across all social media platforms in the last full week (incl. Instagram, Facebook, Snapchat, Pinterest, Whatsapp, Twitter, TikTok, and Youtube). Then, participants were asked to indicate if they placed time limits on their social media platforms. If they answered yes, participants were directed to the next question, asking them to select which platforms they had set time limits for, and to indicate the time limit amount for each respective platform. In the following question, participants were asked to estimate the frequency of adherence to the set time limits on a five point Likert scale (1 = Never to 5 = Always). Finally, participants were asked to indicate their total screen time of the last week, for each social media platform respectively.

Emotional Well-being

To measure emotional well-being of participants in this sample, the 20-item PANAS scale by Watson et al. (1988) was used. The reliability of the scales using the current sample size showed ten positive affect items with high internal consistency (α=.81) and test-retest reliability of .79, followed by ten negative affect items with also high internal consistency (α=.84) and test-retest reliability = .81. Both scales showed good reliability. Participants were given the instructions: "*This scale consists of a number of words that describe different feelings and emotions. Indicate the extent you have felt this way on average over the past week.*", followed by positive affect items such as: "*Interested*", "*Strong*", and "*Excited*". An example of negative affect items included: "*Guilty*", "*Hostile*", and "*Afraid*". All items were scored on a scale ranging from 1 = Very slightly or not at all to 5 = Extremely. A higher score indicated more frequent experiences of positive or negative emotions respectively.

Self-control

To measure self-control, the 13-item Brief Self-Control Scale derived from the original Self-Control Scale by Tangney et al. (2004) was used. Example of questions include "*I am good at resisting temptation*." and "*I have trouble concentrating*.", on a 5-point Likert scale (1= Not at all to 5= Very much). The Brief SCS in this study is observed to have low internal reliability (α =.38) and test-retest reliability of .87.

Data Analysis

To prepare and analyse the data, SPSS (version 26) was used. Observed outliers (n=2) were removed from the analysis as the data collected looked to be biased towards a certain extreme, which in this case, participants that only provided responses that either skewed towards one extreme answer or the other. Responses for the total screen time of social media use were transformed from hours to minutes, after which a daily average was computed.

To answer the first two hypotheses, the emotional well-being score was computed by subtracting the total sum score obtained on the negative affect scale from the total sum score of the positive affect scale, generating the variable *wellbeing*. A quadratic regression model was used to answer the first three hypotheses to investigate the relationship between social media use on a daily average on emotional well-being. The assumptions of linearity, independence of residuals, multivariate normality, homoscedasticity, and collinearity were tested and met.

Next, to investigate the third hypothesis, a Pearson's bi-variate correlation analysis was used to investigate the relationship between the frequency of adherence to time limitations and time spent on social media. Finally, a moderation analysis is conducted to investigate self-

control as a moderating variable in the relationship between adherence to time limitations and time spent on social media. To conduct a moderation analysis, the standardised score from the Brief Self-Control Scale was first computed. Then both the standardised score of the BSCS and frequency of adherence were computed to obtain the interaction effect between both variables. Finally, the moderation analysis is performed using a multiple linear regression with the independent variables, unstandardised score of the BSCS, frequency of adherence, and the interaction effect with the daily average of social media screen as the dependent variable. All assumptions were tested, and the P-P plot suggests that the assumption of normality of residuals were not violated but should be interpreted with caution.

Results

Time Spent on Social Media and Well-being

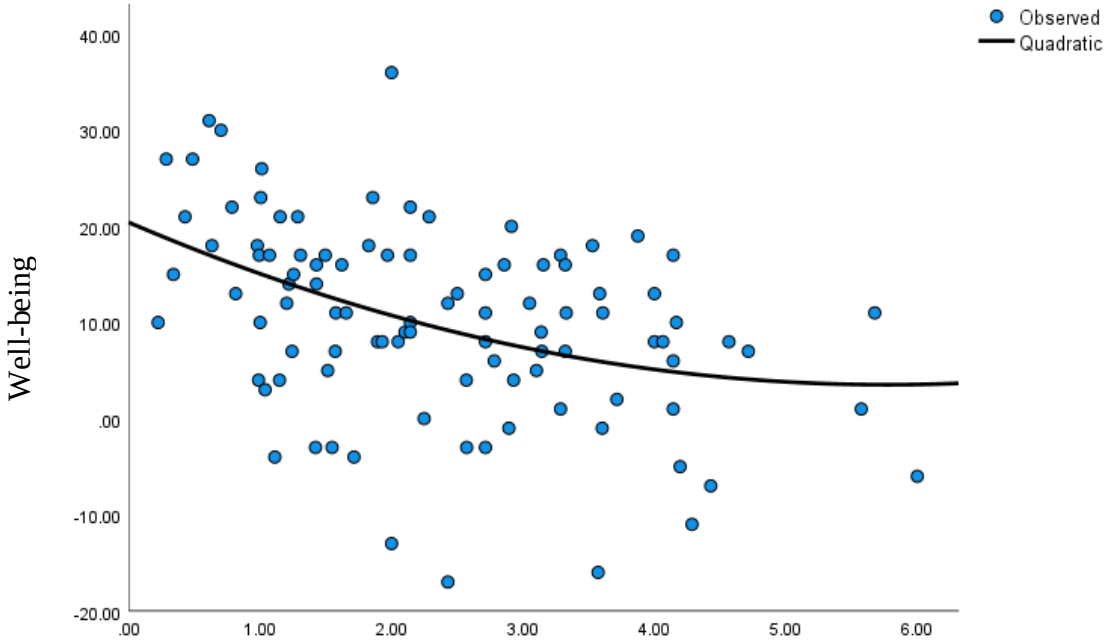
To answer the first research question, it was predicted that the results would show a curvilinear relationship between daily average social media screen time and emotional well-being. Results of the quadratic regression showed that there was a statistically significant relationship between the explanatory variable, daily average social media use, and the response variable, emotional well-being, ($F(2,96)= 10.18$, $p < .05$). A second explanatory variable, (social media squared) produced when running a quadratic regression, was not included as the effect on emotional well-being did not show a significant effect ($F(2,96)= 10.18$, $p=.28$). However, through the regression analysis we can still infer that daily average of social media use accounts for 17.5% of the variability in emotional well-being, as shown in Figure 1 below. Given that the *wellbeing* score of participants were between -20 and 40, we could score well-being of participants as low if they score beneath the median value (e.g. -20 to 10) and high if they score above the median (e.g. 11-40), as evidenced by previous literature using the PANAS as a measure for emotional well-being (Masch, 2021).

Firstly, we can conclude that we failed to reject the null hypothesis stating that less than one hour of daily average social media use would result in low emotional well-being. On the other hand, due to the nature of the quadratic regression line, we can reject the null hypothesis that more than five hours of daily average social media use will result in low emotional well-being. Lastly, the third null hypothesis for observing high emotional well-being in those that spend between one to five hours on social media on a daily average can also be rejected, as higher emotional well-being was observed within most of the sample size. It is important to

note that Figure 1 also showed that while many of the points observed had higher levels of emotional well-being, of those that tend to score below zero for emotional well-being were also daily users of social media between the hours of one to five.

Figure 1

Emotional Well-being based on Time Spent on Social Media



Self-control: moderating effect on adherence to time spent on social media

It was predicted that perceived self-control is associated with frequency of adherence to time limits placed on social media apps, which affects the amount of time participants spend on social media. To investigate this, 26 survey participants affirmed that they placed time limits on either one or more social media applications. Of those who indicated time limit implementations on their social media application, 7.7% indicated that they never adhere, 69.2% indicated moderate adherence (e.g. not very often, sometimes), and 23% of participants indicated they will either very often or always adhere to the time limit notifications.

To investigate Hypothesis 4, results from the Pearson's correlation coefficient showed a small insignificant negative correlation between the frequency of adherence in predicting one's social media screen time use, $r(26)= -.09$, $p=.66$. However, a moderation analysis was still conducted to answer the fifth hypothesis that self-control would moderate the relationship between frequency of adherence in predicting social media screen time. Results of the

interaction effect were found to be statistically insignificant in moderating the effect on the relationship between adherence and social media screen time, $r^2(26)= .07$, $p=.65$. Thus, we failed to reject both null hypotheses investigating a relationship between frequency of adherence to time limitations and time spent on social media, even with self-control as a moderating variable.

Table 1

Moderation analysis: Self-control as moderator

	B	SE	β	t	Sig.*	95% Confidence Intervals	
						Lower Bound	Upper Bound
Intercept	-7.23	6.18		-1.17	.23	-20.06	5.60
Adherence	-.10	.22	-.09	-.44	.66	-.55	.36
BSCS score	.20	.16	1.14	1.22	.24	-.14	.54
Interaction	-.37	.31	-1.11	-1.19	.25	-1.00	.27

Note. Dependent variable = time spent on social media. * indicates p-value.

Discussion

The purpose of this research was to investigate if the time spent on social media would influence an individual's emotional well-being. Findings revealed that while there was a significant relationship between time spent on social media and emotional well-being, the relationship was small. A central theme of research was also to examine to what extent variables, such as self-control and adherence to time limitations set on social media applications, had an effect on the time spent on social media. Unlike the first research question, there did not seem to be any relationship at all observed between either of the variables in predicting social media use.

To answer the first research question the daily average of time spent on social media had a small but significant influence on emotional well-being. However, we can see in Figure 1 that although a quadratic regression line was best fit for the model, the slope for well-being observed was curved towards a U-shaped curve instead of a bell-shaped curve, as was predicted for the hypotheses of the first research question. These findings do not appear to corroborate previous research based on the Goldilocks hypothesis proposed by Przybylski and Weinstein (2017) that found a quadratic concave-shaped trend in their data. Furthermore, although the

quadratic line was a good fit for the model, the curve seems to be only slightly U-shaped. The data trend also shows that for those who spent less than one hour on social media had mostly scored higher on emotional well-being, while almost none scored low as was predicted by the digital Goldilocks's hypothesis. This phenomenon is echoed by Twenge et al. (2018) and Kross et al. (2013) when investigating psychological well-being. They found that those who used social media moderately (e.g. <5 hours) were found to have the highest psychological well-being. Although, there are differences in the measures of psychological and emotional well-being, Twenge et al. (2018) did use the measure of life satisfaction, in their measure for well-being, making their study a relevant consideration in explaining the current research findings. Social media users who spent between one to five hours did show high emotional well-being, but it is also evident from Figure 1 that half of those participants had also scored low on well-being. This observation was a surprising result but literature from Twenge and Campbell (2018) would say otherwise in support of these findings.

The second research question investigated the extent of perceived self-control in moderating the relationship between frequency of adherence to time limitations and time spent on social media. Statistical analyses show that only a quarter out of 26 participants who had placed time limits on their social media platforms would almost always heed the warnings and close the apps. The small sample used to draw conclusions for this research question seems questionable, yet almost 70% of participants only exhibited moderate adherence to social media screen time use. We can assume that half the time they did and the other half they did not. Therefore, it would explain the insignificant relationship concerning the frequency of adherence as a predictor of time spent on social media. There is a lack of literature surrounding adherence and its correlation to social media use specifically. However, based on the study of Hiniker et al. (2016), they found significant reduction of social media use after placing time limitations because participants within their study had goal-achievement aims that could have contributed to positive results.

The second hypothesis for this research question taking into account self-control as a moderator did not seem to change the significance of effects observed. The interaction effect itself did not seem to show significance (p=.25) which was unexpected considering previous literature that all found contrasting results (Van Wezel et al, 2021; Brevers & Turel, 2019; Reinecke et al., 2022). As such these findings had completely deviated from the study of Reinecke and Meier (2021) regarding self-control which was the original basis of the research question. The authors however do suggest that taking into account media habits (e.g. only using

social media at certain times of day) as a potential variable to better investigate its influence on self-control.

Limitations

This study has drawn from past literature research but has still fallen short of finding significant relationships between the investigated variables. Considerations towards insignificant findings could be explained that although a large sample size (n=99) was obtained in research, only 26 individuals from the original sample size had been included to answer the second research question. Thus, it has come to light that to measure self-control, the Brief Self-Control Scale had a relatively low internal reliability (α =.38) when measured against the sample size used. This contributed to limitations that could have been eliminated had the sample size been substantial enough to provide statistically adequate, which could in turn impact the outcome of the moderation analysis conducted. Throughout the data processing procedure, many participants data were removed due to incompleteness of the questionnaire. The survey collected was in collaboration with other researchers, making the response time needed rather long. Some participants were found to not fill out the questionnaire adequately, thus hindering the accuracy of data, and had to be removed from the sample.

Future research

It might be interesting to investigate due to the data trend seen in the quadratic linear regression, that a linear regression line may better explain the data trend. Thus, future studies could investigate the relationship between time spent on social media and emotional well-being that may fall more in line with literature found in Twenge and Campbell's (2019) study. Their study found evidence that light social media users (less than an hour) fared significantly better in terms of psychological wellbeing compared to those who were either abstinent, moderate, or heavy users.

Moreover, future research could implement a sample criteria for recruitment of only participants that place time limits on their social media applications or extend data collection period to ensure sufficient sample size is used. Looking at the results pertaining to frequency of adherence to social media screen time, it was difficult to find literature that would substantiate current findings. Cause of such difficulties could be understood since screen time applications had only emerged as a widely recognised feature in recent years. There could be more in depth research into how frequency of adherence is measured and how that ultimately affects the amount of time users continue spending on social media. Perhaps it would also be

useful to investigate self-control as an independent variable apart from the frequency of adherence to time limitations. We could also further investigate how self-control differs between the groups that have the intention of reducing social media use and those who do not, since the study of Hiniker et al. (2016) had found success in their study when participants had set goals they intended to achieve.

Last but not least, investigating well-being could be taken a step further by implementing a longitudinal study over a week, for example such as van Wezel, et al. (2021), to gain immediate response from participants about their current well-being state to potentially yield more accurate results that correspond to participant's screen time data. A study done by Kost and Rosa (2018) found that shorter survey lengths, ranging from 13-25 questions, yielded the highest response and completion rates. Therefore, these changes are another alternative in preventing future participants disengaging from the questionnaire, if the time taken to answer survey questions were distributed over a longer period of time.

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Appendix A

Participation information

Dear participant,

Thank you for taking part in this study. Please read the following information carefully.

Purpose of this study

The purpose of this study is to examine the relationship between social media platforms and user's mental health and/or well-being. This survey will take approximately 15-25 minutes to complete. To take part in this study, you have to be above the age of 18.

Study content

This study is part of the bachelor's theses of a group of psychology students from the University of Twente. As the focus of each thesis differs slightly, the questions will be divided into several sections. First, you will be asked to answer some demographic questions. This will be followed by questions that concern your daily social media consumption, including topics such as your average screen time and your intention of social media use. Lastly, you will be asked to answer some sets of questions concerning your personality and other psychological factors. Please note, that there are no right or wrong answers as this survey intends to measure your own experiences. Please read the questions carefully and answer them honestly.

Data acquisition

Your participation in this study is voluntary. You have the right to withdraw at any time without giving any reason. Your response will be anonymous and cannot be traced back to you. Your data will be treated as confidential and only used for academic purposes. There are no known risks expected from the participation in this study.

Contact

For questions about the ethical approval and your rights as a participant, you can reach any of the researchers or the ethicscommittee-bms@utwente.nl. This study is approved by the ethical committee of the Behavioural, Management and Social Sciences (BMS) of the University of Twente.

Appendix B

Informed consent

- I have read and understood the study information.
- I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and withdraw from the study at any time, without having to give a reason.
- I understand that participating in this study involves filling out an online questionnaire and involves questions about my demographics, social media usage, mental health and other psychological factors.
- I understand that my responses will be used for academic purposes and are part of the bachelor theses at the University of Twente.
- I understand that the collected information cannot be traced back to my identity and is not shared with people outside the study team.
- I give permission for the anonymized answers to be archived in the University of Twente Research repository so it can be used for future research and learning.
- I understand that there are no known risks expected from participating in this study and that the survey was approved by the ethics committee of the University of Twente.
- I hereby declare that I am at least 18 years old and voluntarily participate in this study.

Appendix C

Demographic questionnaire

- What is your nationality?
    - German
    - Dutch
    - Other
- How old are you? (Please enter only the number)
- With which gender do you identify most?
    - Female
    - Male
    - Diverse
    - Intersex
    - Transgender
    - Non-binary
    - Other
    - Prefer not to say

Appendix D

Device use and instructions for Android and iOS devices

On the following pages, you will be asked several questions regarding your screen time. To make sure that you are able to access the necessary information on your smartphone, we will provide you with some instructions on how to find it.

- What device are you using?
    - iOS
    - Android

Appendix E

Social media use

Below you will be asked to provide your screen time. Please indicate your screen time in the following format: hours.minutes. For example, if your screen-time is 2 hours and 45 minutes you will write: 2.45 (that is, with a dot (.) in between the hour and the minutes).

Additionally, you will be asked to provide your total screen-time. The total screen-time refers to the overall screen-time during a week. Thus, please add up the number of hours spent on social media each day during the last week.

- Indicate your total screen time during the last full week (from Monday to Sunday). If your screen-time from last week looks like this: Mon: 2h, Tue: 1h, Wed: 1h, Thu: 2h, Fri: 3h, Sat: 1h, Sun: 1h, your total screen time is 2+1+1+2+3+1+1 = 11 hours.
- What was your total screen time only on social media during the last week (from Monday to Sunday)? Please add up the number of hours spent on all social media platforms during the last week.

(Social media platforms include: Instagram, Facebook, Snapchat, Pinterest, WhatsApp, Twitter, TikTok, Youtube)

- Do you place time limits on your social media platforms?
    - Yes
    - No

For each of the following social media platforms, please indicate your total screen time during the last week (Monday to Sunday). If you are not able to access your total screen time, please indicate your average screen time during the last week in the format hours.minutes

    - Instagram
    - Snapchat
    - Pinterest
    - TikTok
- Did you answer with your total or average screen time during the last week?
    - Total
    - Average

Appendix F

Positive and Negative Affect Scale

This scale consists of a number of words that describe different feelings and emotions. Indicate the extent you have felt this way ***on average*** over the ***past week***.

- Interested
- Distressed
- Excited
- Upset
- Strong
- Guilty
- Scared
- Hostile
- Enthusiastic
- Proud
- Irritable
- Alert
- Ashamed
- Inspired
- Nervous
- Determined
- Attentive
- Jittery
- Active
- Afraid

Appendix G

Brief Self-Control Scale

1. I am good at resisting temptation.
2. I have a hard time breaking bad habits.
3. I am lazy.
4. I say inappropriate things.
5. I do certain things that are bad for me, if they are fun.
6. I refuse things that are bad for me.
7. I wish I had more self-discipline.
8. People would say that I have iron self-discipline.
9. Pleasure and fun sometimes keep me from getting work done.
10. I have trouble concentrating.
11. I am able to work effectively toward long-term goals.
12. Sometimes I can't stop myself from doing something, even if I know it is wrong.
13. I often act without thinking through all the alternatives.