

**The Influence of a Self-Control Training App on Self-Control and Social Networking  
Sites Usage for Students Using ESM and SCED**

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Master Thesis PCPT

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July 12<sup>th</sup>, 2023

### Abstract

**Background:** Excessive Social Networking Site (SNS) usage is a social problem. It causes disadvantages, like anxiety, sleep disturbances, depressive symptoms, and poorer mental well-being. Research found that excessive SNS usage is negatively associated with self-control. Thus, self-control training (SCT) could be used to decrease excessive SNS usage, in which users train their ability to override unwanted thoughts and behaviors. Research has proven the effectiveness of a mobile SCT app in enhancing self-control in people. However, little is known about the effectiveness of SCT apps on students' self-control and excessive SNS usage.

**Aim:** This study examined the effectiveness of an SCT app (SCIPP) on increasing self-control and decreasing SNS usage at the within-person level of students.

**Methods:** This study conducted a single-case experimental design to evaluate the SCT app involving a sample ( $N=4$ ) of Dutch-speaking students. An introduction-withdrawal design was used for 28 days. Self-control was measured using the Brief Self-Control Scale (trait self-control) and four daily items (state self-control). Excessive SNS usage was measured using the excessive social media use scale and time spent on SNS. The SCT app, SCIPP, was used as the intervention. This study performed a visual and statistical analysis using a single-case visual analysis, a single-case randomization test, and a single-case meta-analysis to analyze the effectiveness of the SCT app on the variables.

**Results:** The visual and statistical analysis showed no effect of the SCT app on excessive SNS usage and state self-control. These findings suggest that using an SCT app does not impact state self-control and excessive SNS usage at the within-person level of students. Nevertheless, observations seemed to indicate an effect of the SCT app on trait self-control. Moreover, results may have shown a relationship between trait self-control and excessive SNS usage.

**Conclusion:** This study found that an SCT app did not increase state self-control and decrease excessive SNS usage in students. Nevertheless, this study indicates that an SCT app could increase students' trait self-control. Moreover, this study has shown a relationship between trait self-control and excessive SNS usage. Based on the study findings, future research should further examine the seen relationships and additionally focus on examining other ways of decreasing excessive SNS usage, for example, by creating behavior interventions focusing on digital self-monitoring of SNS usage to reduce the negative consequences this has on students.

## **The Influence of Self-Control Training on Self-Control and Excessive SNS Usage in Students Using ESM and SCED**

Smartphones are a part of our world and have become indispensable in many lives. Smartphones offer many advantages, such as easy information access, communication, social connection, and entertainment (Yang et al., 2022). However, next to these advantages, smartphone use can also be problematic. The excessive engagement of people with their phones is known as 'smartphone addiction,' which is a significant social problem these days (Kwak et al., 2022). It is associated with many disadvantages, such as anxiety, sleep disturbances, depressive symptoms, and poorer mental well-being (Gao et al., 2021; Pera, 2020; Wacks & Weinstein, 2021; Yang et al., 2022). However, little is known about effective ways of decreasing the excessive use of smartphones to reduce smartphone addiction's negative consequences.

Literature suggests that people are not addicted to their smartphone devices but to their media applications. According to Kwak et al. (2022), Social Networking Sites (SNS) are the most influential part of people's smartphone addiction. SNS are relationship-oriented applications, such as Instagram, Facebook, Snapchat, Twitter, and TikTok, where users can create profiles and share content to manage their social relationships (Kwak et al., 2022). Higher SNS usage does not automatically result in excessive SNS usage and negative consequences for everyone. In a study by Valkenburg (2021), some individuals mentioned that they only benefited from SNS usage and did not show adverse effects. They can spend much time on SNS with low levels of dependence (Hodes & Thomas, 2021). SNS usage becomes excessive when individuals show addictive symptoms caused by their SNS usage (Pahlevan Sharif & Yeoh, 2018; Zahrai et al., 2022). Studies show, for example, that excessive SNS usage is associated with addictive symptoms such as salience, low level of tolerance, arousal of conflicts, withdrawal symptoms, and relapse (Cha & Seo, 2018; Masood

et al., 2020; Meshi et al., 2019; Ünal-Aydın et al., 2020; Zahrai et al., 2022).

Moreover, according to the literature, the term social media addiction raises controversies, and the interpretation of excessiveness is not yet acknowledged. Therefore, to measure excessiveness in the context of SNS, this must be estimated by measuring both the quantity and quality of time spent on SNS (Zahrai et al., 2022). Additionally, a study by Zhong et al. (2022) found a significant relationship between time spent on smartphones and smartphone addictions, where more time spent on the phone resulted in higher scores on the smartphone addiction scale. Therefore, this study includes both the quality (time spent on SNS) and quantity (addictive symptoms evoked by SNS usage) of SNS usage when discussing excessive SNS usage.

University students seem to have a great risk for excessive SNS usage. A study by Alhazmi et al. (2018) found in their study sample that 36.5 % of university students displayed excessive SNS usage. Additionally, a study by Zhong et al. (2022) found even more remarkable results in their meta-analysis, with 41,9 % of students showing excessive SNS usage on average. So, excessive SNS usage seems to be common for university students.

Reduced self-control levels could explain these high prevalence rates among university students. Self-control is the ability to prevent executing unwanted behaviors or to override unwanted thoughts (Kip et al., 2022; Kwak et al., 2022; Sok et al., 2019). With self-control, dominant responses such as impulses, urges, emotions, and thoughts can be suppressed and replaced with more functional responses such as higher-order goals, attitudes, or standards (Kip et al., 2022; Kwak et al., 2022). When conceptualizing self-control, literature states it is vital to distinguish between trait and state self-control, where trait self-control is seen as part of the personality of a person, which is stable over time (Tangney et al., 2004), and state self-control is seen as something that can fluctuate across time and context and is sensitive to situational factors, such as previous attempts at self-control for example

(Inquiry et al., 1996). Therefore, this study focuses on both trait and state self-control.

To continue, Wang et al. (2017) state that developing self-control is critical for proper functioning in adolescence and early adulthood, allowing one to control impulses and override unwanted thoughts caused by SNS in students. Self-control develops over time; therefore, studies state that self-control could be lower for students than adults (Wang et al., 2017), which could explain why students display higher prevalence rates of excessive SNS usage.

Moreover, several studies show that self-control is related to excessive SNS usage in students. An analysis by Lee et al. (2017) stated that lack of control was higher in people with excessive SNS usage than in non-excessive SNS usage. Moreover, several studies found that self-control was negatively associated with excessive SNS usage. They found that when people had problems with adequately regulating their behavior and controlling themselves, thus experiencing self-control failure, their addiction to SNS and time spent on SNS were higher (Coyne et al., 2019; Kwak et al., 2022; Valkenburg, 2021; Yıldız Durak, 2020). At last, research has shown that self-control may act as a protective factor against the harmful effects of excessive SNS usage, like depression (Coyne et al., 2019). Thus, low levels of self-control could be a factor of excessive SNS usage in students and serve as a predictor for the adverse effects this has on students.

An effective strategy to decrease excessive SNS usage by students and the adverse effects this has on them could thus be to enhance self-control. Self-control can be improved using Self-Control Training (SCT). Self-control training is based on the idea of a strength model of self-control. This model suggests that self-control efforts draw from a limited self-control source which can be depleted regardless of which behaviors a person executes (Friese et al., 2011; Kip et al., 2022). Thus, based on this model, the self-control source would be drained after a busy day, and it would be harder to stick to goal-oriented behavior. The

strength model sees self-control as a muscle that can be trained. This training can be done using SCT, where the participant is asked to suppress dominant responses for everyday tasks. In this way, the self-control muscle is strengthened, which results in a more extensive resource from which self-control can be drawn. Ultimately, this decreases the chance of undesired behaviors that require self-control, like excessive SNS usage in students.

Many studies have proven that SCT effectively improves self-control and, consequently, the behaviors driven by self-control (Beames et al., 2017; Friese et al., 2017; Hagger et al., 2010). So showed, Friese et al. (2017) in their meta-analysis on self-control training effects that the average effect size of self-control training on self-control is a small-to-medium effect size of 0.13 to 0.24. Moreover, Beames et al. (2017) also performed a meta-analysis on the effect of SCT. They found in their study a general small to medium ( $g = 0.36$ ) effect size of SCT and thus comparable to that of Friese et al. (2017). At last, an older meta-analysis by Hagger et al. (2017) found a large effect size of 1.07. However, this seemed to be an overestimation of the effect of SCT due to the incorporation of three studies with substantial effect sizes and very unclear methodologies. Inzlicht and Berkman (2015) deleted these three studies in their meta-analysis and found an effect size of 0.62 for SCT. So, the meta-analyses seem to point to a small to medium effect size of SCT, proving its effectiveness.

More recent studies focused on examining the effectiveness of SCT through the use of mobile phones. So examined Kip et al. (2022) if self-control interventions using SCT through a mobile intervention app called SCIPP could be used in order to improve self-control and reduce unwanted behaviors. They created SCIPP based on a precursor called HandSwitch (Da Silva, 2019). HandSwitch was primarily designed to see if SCT in app form could effectively enhance self-control because app forms have many advantages in delivering SCT in clinical practice over face-to-face delivery, like more scalability and easy implementation (Dekkers et

al., 2022). Where most self-control interventions purely focus on cognitive efforts, HandSwitch targets the automatic route of a person based on the strength model. For example, the participant was requested to suppress their impulsive and dominant responses by not using their dominant hand for daily tasks. HandSwitch was altered into SCIPP to make the app more fitting for the target group of people with severe mental illnesses. This was done with critical design changes like simplified text, a flat hierarchical structure, and memory traits. Additionally, the app was made more visually attractive and contained friendly reminders and positive feedback to overcome treatment motivation problems and nonadherence for the target group. Research showed that SCT in app form effectively enhanced self-control (Cristina Da Silva, 2019; Kip et al., 2021). However, SCIPP itself is not evaluated yet in the context of students and excessive SNS usage.

Many recent studies mainly focused on the association of self-control and excessive SNS usage between participants using cross-sectional studies. However, little is known about effective ways to increase self-control in students and as a consequence decrease their excessive SNS usage. Thus, this study will focus on how SCIPP effects these processes of self-control and excessive SNS usage over time within participants in order to be able to say something about the effectiveness of SCIPP in enhancing students state and trait self-control and decreasing their excessive SNS usage.

For this purpose, intensive longitudinal data will be collected using a combination of an experienced sampling method (ESM) and a single-case experimental design (SCED). ESM is a structured diary method where mood, context, symptoms, and appraisal can be examined the way they occur in daily live with the use of self-report measures (Myin-Germeys et al., 2018). ESM helps to overcome retrospective recall bias because the observed behaviours and experiences are measured in the moment rather than at the end of the study as in most cross-sectional studies for example (Myin-Germeys et al., 2018). To continue, SCED is a research



design where the effects of an intervention can be examined using the data of one individual or a small group of individuals. It uses a within-subject design whereby each participant has a control phase and an experimental phase, the participant therefore in fact forms his own 'control group' (Krasny-Pacini & Evans, 2018). Therefore, the effectiveness of SCIPP can first be examined on a small sample instead of time-intensive and costly RCTs.

In sum, this study examines the effect of digital SCT (SCIPP) on state and trait self-control and qualitative and quantitative SNS usage in students. Therefore, the research question of the current study is; How does a SCT app effect self-control and excessive SNS usage in students? This study hypothesises that using a SCT app (SCIPP) results in higher state and trait self-control and lower qualitative and quantitative SNS usage for students.

H1: Using SCIPP is positively associated with trait and state self-control and negatively associated with qualitative and quantitative SNS usage at the within-person level.

## **Methods**

### **Design**

This study used a single-case experimental design (SCED), an ABAB introduction-withdrawal design (see Figure 1), with A1 being the baseline phase, B being the intervention phase, and A2 being the withdrawal/no intervention phase. SCED focuses on within-subject effects at the individual level (Krasny-Pacini & Evans, 2018). Within the ABAB introduction-withdrawal design, the intervention is manipulated systematically across multiple phases of introduction and withdrawal while the outcome variable is measured repeatedly. In this way, the participants functioned as their control group, which was valuable for studying the effect of SCIPP (Krasny-Pacini & Evans, 2018).

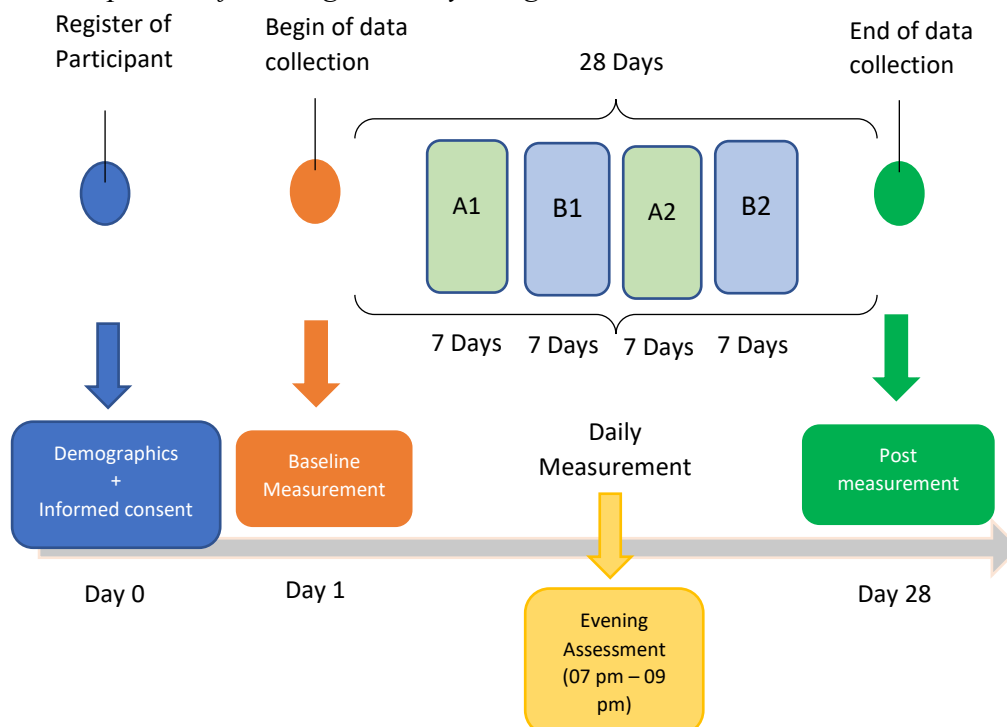
Participants' self-control and SNS usage were assessed using ESM throughout all phases. This study used an interval-contingent sampling design (see Figure 1), meaning a random notification was sent each day within a fixed assessment schedule. This study used

this design because the unpredictability of the assessments increases the ecological validity of the study and reduces reactivity to the assessments. At the same time, its fixed assessment schedule also somewhat reduces participant burden (Myin-Germeys & Kuppens, 2022).

The notifications were sent every evening between 07 – 09 pm for both the self-control and excessive SNS usage assessments. Additionally, participants were asked on days 1, 7, 14, 21, and 28 to complete a weekly trait self-control assessment. The weekly assessment on day one and day 28 are the baseline and post-measurement of this study. The questionnaire data was measured and gathered via the smartphone application Ethica. Ethica is the mobile version of the Ethica Data platform. This study collected data between April 2023 and May 2023. The BMS ethics committee of the University of Twente (ref. 230104) provided ethical approval for this study.

## Figure 1

*Visual depiction of the original study design*



*Note.* A1 = baseline phase, B = intervention phase, and A2 = withdrawal phase.

## Participants

This study recruited participants (see Table 1) using convenience sampling via the

SONA systems of the University of Twente and Facebook. Inclusion criteria for this study were; 1) being a student, 2) having sufficient knowledge of the Dutch language since SCIPP is a Dutch app, and 3) owning an Android telephone since SCIPP is only available for Android. Before participating in this study, all participants were informed about the study (Appendix A) and had to provide informed consent (Appendix B). The participant received partial study credits for their cooperation in the study.

## **Materials**

### **Demographic Questions**

This study asked several demographic questions to provide a detailed account of basic information about the participants in the study. These questions were about gender, age, and nationality.

### **Trait Self-Control**

Trait self-control is measured using the Brief Self-Control Scale (BSCS) by Tangney et al. (2004). It is used to measure the ability of the self to suppress dominant responses such as impulses, urges, emotions, and thoughts. The scale consists of 13 items on a 5-point Likert scale ranging from 1 (not at all like me) to 5 (very much like me), which means it is easily administrable. To compute the mean score, items 2, 3, 4, 5, 7, 9, 10, 12, and 13 needed to be reversed. Higher scores reflect higher levels of self-control. A mean score of 5 would be the highest possible score, while a mean score of 1 would be the lowest possible score for the scale. Example items include “I was good at resisting temptation this week” and “I had a hard time breaking bad habits this week”. The Cronbach’s alpha of the BSCS of the original study was between 0.83 and 0.85, showing good internal consistency at all measuring moments and high-scale reliability (Tangney et al., 2004).

### **State Self-Control**

State self-control is measured using four daily items following a research protocol on

studying daily self-control by Dekkers et al. (2022). After a small pilot study with five participants, the items were developed over several iterations and had adequate face validity, feasibility, and comprehension (Bagala, 2021; Schwankweiler, 2016). The scale consists of items on a 5-point Likert scale ranging from 1 (not at all like me) to 5 (very much like me) to reflect on their daily self-control experiences. Example items include items about decision making (“it is hard to make up my mind about even simple things”), subjective feelings of ego depletion (“I had less mental and emotional energy than I normally have”), goal-directed behavior (“I was able to do what I had planned), and inhibitory control (“I was able to resist temptations). A score of 5 would be the highest possible mean score, whereas a score of 1 would be the lowest possible score.

### **Excessive SNS Usage**

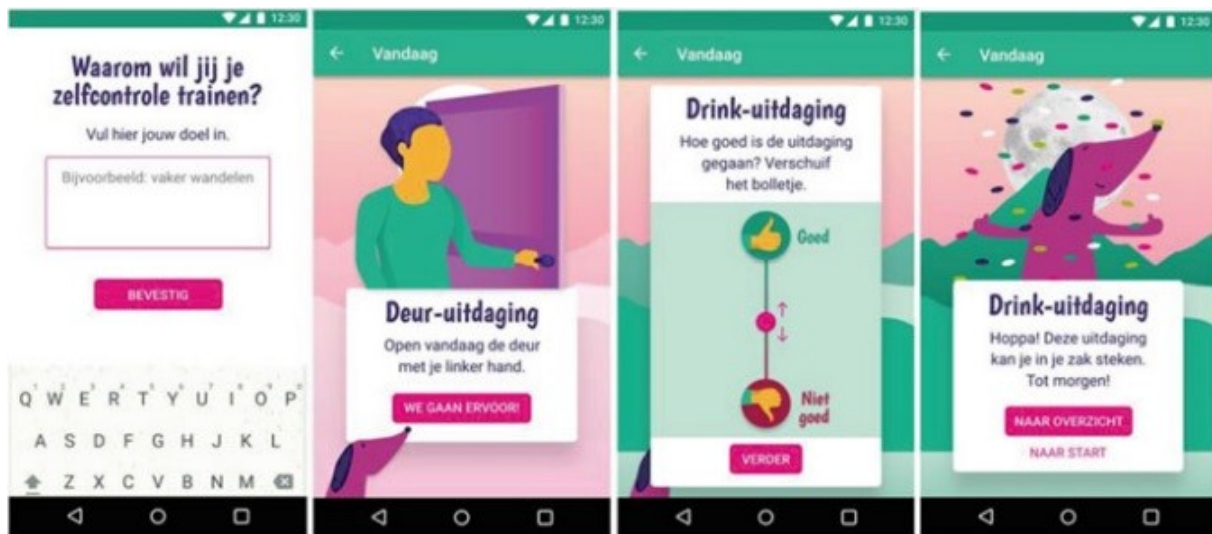
As mentioned, to measure excessive SNS usage, both the quantity and quality of time spent on SNS must be estimated (Zahrai et al., 2022). Therefore, excessive SNS usage of the participants was measured using one quantitative item and several qualitative items. The quantitative item read; “How many minutes, all added together, did you spend on social media today?”. Higher scores reflect higher levels of SNS usage. Participants were instructed to check their SNS usage in the settings of their Android phone under the heading ‘digital wellbeing and parental controls’. They were asked to count all the hours spent on their different SNS (e.g., WhatsApp, Facebook, TikTok, Instagram, and Snapchat) and fill in this value to overcome recall biases.

Moreover, five items were used to measure the quality of excessive SNS usage on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). These items were based on the excessive social media use (SMU) scale of Zahrai et al. (2022). They based their items on the internet use (EIU) scale of Blinka et al. (2015). The EIU scale items were created from the components of the model of behavioral addictions (Griffiths, 2005) to cover 5 out of

6 addictive symptoms; salience, withdrawal symptoms, conflict, tolerance, and relapse. In the study of Zahrai et al. (2022), the items of the EIU were transformed to fit the context of SNS usage. Moreover, the current research tailored the items of Zahrai et al. (2022) to fit the ESM context. Example items include “I have gone without eating and sleeping because of my social media usage today” and “I have spent less time than I should with either family, friends, or doing schoolwork because of the time I spent on social media today”. Higher scores reflect higher levels of excessive SNS usage. A score of 5 would be the highest possible mean score, whereas a score of 1 would be the lowest possible score. The Cronbach’s alpha of the EIU of the original study was .77, showing good internal consistency at all measuring moments and large-scale reliability (Blinka et al., 2015).

### **Intervention: SCIPP**

The self-control training app (SCIPP) was created by Kip et al. (2022) based on the evaluated HandSwitch app (Cristina Da Silva, 2019). The app SCIPP was designed to increase self-control by challenging users to use their non-dominant hands for different tasks. It was specifically designed for people with severe mental illnesses, like forensic psychiatry patients, to promote goal-oriented behavior, like increasing physical activity or reducing levels of aggression. The app consists of 14 different challenges where users complete one daily challenge for 14 days. Example challenges are: “Open the door with your left-hand today” and “Pick up your phone with your left-hand today”. SCIPP was tailored to people with SMI by making its design more appealing and comprehensible, using less text, a more positive approach, and more reminders (Kip et al., 2022) (see Figure 2). A control question was formulated to control if participants used the SCIPP app in the study when needed. This question was: “I used the app SCIPP today”. The answer options for this question were: “Yes”, “No, because it was not needed today”, and “No, because I forgot to use the app today”.

**Figure 2***Screenshots of the Dutch SCIPP app*

*Note.* The screenshots display from left to right; 1) Opportunity to state the end goal and motivation for training self-control. Once training is completed, this initial goal is shown to the users and can be adapted if needed; 2) Explanation of the daily challenge with reminders in SCIPP, the daily challenges are easily found on the main page when opening the app; 3) Opportunity to provide feedback on challenge difficulty in SCIPP; and 4) Display of the virtual coach Scipp in SCIPP, Scipp praises users for completing challenges.

### ***ESM app: Ethica***

Ethica is an online platform in which researchers can create, modify and distribute surveys via access through a specific web browser. Ethica allows researchers to obtain, view and follow the data of the participants of their study in real-time. This real-time following of the data allows for identifying and correcting errors while the study runs and strengthens data collection's ecological validity and reliability (Van Berkel et al., 2017). Using digital devices for participation reduces pressure and distress by the participants because they no longer have to worry about carrying study-related materials. Additionally, Ethica provides the use of trigger logistics, which is a fundamental part of ESM studies (Lathia et al., 2013). Trigger logistics decreases the burden on participants because it helps them to remind to fill out the

surveys of the study. This reminding is done using fitting notification schedules and notification expiry times (see Appendix C) for the questionnaires used in the study.

### **Procedure**

The participants could sign up for the study via SONA systems of the University of Twente or a message on Facebook. Once the participants had enrolled for the study via SONA or Facebook and given their informed consent, they were asked to create an account on Ethica following the researchers' instructions. After creating an account on Ethica, they were asked for their e-mail address and to share information about their dominant hand. The researchers then could make a SCIPP account for the participant and send the unique code for registration to the participant so that they could log in on SCIPP.

Once the accounts for SCIPP and Ethica were arranged and the participant logged in on both apps, the following day, the four weeks study began with the ABAB design. To help the participants follow this line of intervention/non-intervention, they received a notification on days 7 and 21 to be reminded to use the SCIPP app for the following seven days.

Additionally, on days 1, 14, and 28 of the study, they received a notification not to use the SCIPP app for the following seven days and ignore the messages of SCIPP on their phone. Moreover, on the first day of the study, the participants had to fill in a trait assessment for self-control using the BSCS measuring the baseline. Additionally, after this first baseline measurement, the participants received a notification every seven days to answer the trait questionnaire again. So, the trait assessment had to be answered on days 1, 7, 14, 21, and 28. Next, participants received one daily notification for assessments each day in the evening between 07 pm and 09 pm. Each questionnaire could be answered within this 2-hour frame before it expired.

Moreover, participants received 30 minutes, 1 hour, and 1,5 hours after the first notification a reminder to fill in the questionnaire (see Appendix C). The first part of the

questionnaire of the evening assessment assessed the participants' levels of state self-control of that day. The second part of the questionnaire set the participants' SNS usage for that day. Moreover, the evening assessment examined the participants' excessiveness of their SNS usage using the SMU scale. At last, the participants were asked to fill in if they used SCIPP that they.

After 28 days and filling in their last questionnaire, the participants were informed that this was the end of the study and thanked for their participation. Every participant could withdraw from the study at any point in time. Students who signed up for the study via SONA systems received a confirmation for their study points from the researchers after completing the study.

### **Data Analysis**

For analyzing the data and answering the research question, Shiny SCDA was used (De et al., 2020). Shiny SCDA is a web app that uses codes from R out of the SCRT-R software package (Bulté & Onghena, 2009). This study structured their data in separate files containing each participant's mean daily self-control and SNS usage levels. Moreover, to increase the study's validity, participants with less than three data points at one of the study phases were removed from the study. This cut-off score was based on a systematic review by Smith (2012), who stated that there should be a minimum of 3-5 data points per phase of the study to be able to determine the effect of an intervention using SCED. However, participants with less than three data points were still included in the study for explorative analysis purposes.

To be able to answer the hypothesis, this study performed a visual and statistical analysis for each participant using a single-case visual analysis (SCVA), a single-case randomization test (SCRT), and a single-case meta-analysis (SCMA) in the Shiny SCDA web app. The data analysis steps of Bulté & Onghena (2008) were used for these analyses. To



visually interpret the data, the data of SNS usage and state self-control will be presented as a time series graph, with days on the horizontal axis, SNS usage/self-control on the vertical axis, and phase changes presented as vertical lines. With the graphical display of the SCVA, the level, trend, variability and consistency of the data will be looked at. Level means the mean of all data points in one phase, and it is used to compare changes between phases. Looking at level it will be expected that for self-control, this will be higher, and for SNS usage, it will be lower at the B phases compared to their previous A-phases. The trend is the slope of the most fitting trend line for the data in one phase, and it is used to determine trends toward improvement or decline using a split-middle trend line. For self-control, trend is expected to (greater) incline in B-phases compared to A-phases, whereas for SNS usage this is expected to (greater) decline. To continue, the graphical display of the variability expresses the standard deviation of the data about the best fitting trend line in a phase. Expected is that the variability in the B-phases is less than the variability in the A-phases for self-control and SNS usage. At last, consistency involves analyzing whether data patterns (level, trend) are consistent in phases with the same condition. More consistent data patterns provide more evidence for a relationship between the intervention and the variables than inconsistent data patterns (Bulté & Onghena, 2012; Dekkers et al., 2022). So, this study will examine whether SNS usage and self-control in students reach similar levels and trend effects in both A and B phases.

The SCRT evaluated the effectiveness of SCIPP on state self-control and qualitative and quantitative SNS usage per participant by analyzing the data using test statistics, randomization distributions, and p-values (Bulté & Onghena, 2013). The effect sizes were interpreted according to the procedure of Gibson-Smith et al. (2015), where effect sizes of 0.2–0.5 are considered small, effect sizes of 0.5–0.8 are considered medium, and effect sizes > 0.8 are considered large. At last, the SCMA was used to determine whether the overall

effect of SCIPP on state self-control and qualitative and quantitative SNS usage was significant by combining the p-values of the several sequentially replicated single-case experiments (Bulté & Onghena, 2013).

## Results

In this study, four people participated. All participants complied with the inclusion and exclusion criteria and were incorporated into the data sample. Table 1 displays the demographics and baseline trait self-control scores of all participants.

**Table 1**

*Participant Demographic Information and Trait Self-Control Baseline Score.*

Participant	Age	Sex	Nationality	Mental Illness	Trait Self- Control Baseline Score
1	23	Female	Dutch	no	2.92
2	24	Female	Dutch	no	3.38
3	23	Male	Dutch	no	2.77
4	23	Female	Dutch	no	2.67

### Trait Self-Control

Table 2 presents the scores for the trait questionnaire of self-control over the 28 days of the study. Overall the participants reported a mean (SD) self-control of 3.01 (.37) in the A1 baseline phase, 3.80 (.60) in the B phases, and 3.13 (.59) in the A2 phase. These findings show that, on average, self-control was highest in the intervention phases (3.80) compared to the baseline phase A1 (3.01) and non-intervention phase A2 (3.13). Looking at the baseline and post-measurements of each participant individually, all post-measurement scores for trait

self-control were higher than the baseline-measurement scores.

**Table 2**

*Participants' Trait Self-Control Scores*

Participant	Day 0 (Baseline)	Day 7	Day 14	Day 21	Day 28 (Post Measure)
		A1	B1	A2	B2
1	2.92	2.85	4.54	2.69	4.69
2	3.38	3.54	3.46	4.00	4.21
3	2.77	3.54	3.08	2.92	3.54
4	2.67	2.77	3.46	2.92	3.38

### Visual and Statistical Analysis

#### *State Self-Control*

Each participant's mean state self-control scores over the study period of 28 days are represented graphically in Figures 2, 3, and 4. The level of state self-control seemed to increase in the intervention B-phases compared to their previous A-phases for participants 1, 2, and 3. However, almost no increase in state self-control levels was detected for Participant 4. The variability in the B-phases compared to the A-phases seemed to decrease for participants 1 and 4. In contrast, the variability of participants 2 and 3 did not correspond to what is expected from an effective intervention, as the variability in the B-phases compared to the A-phases increased or remained the same. Moreover, the trend did not (greater) incline for state self-control in B-phases compared to A-phases for all participants. At last, data patterns were consistent for participants 1, 2, and 3 in their A-phases and B-phases. For Participant 4, data patterns were not consistent.

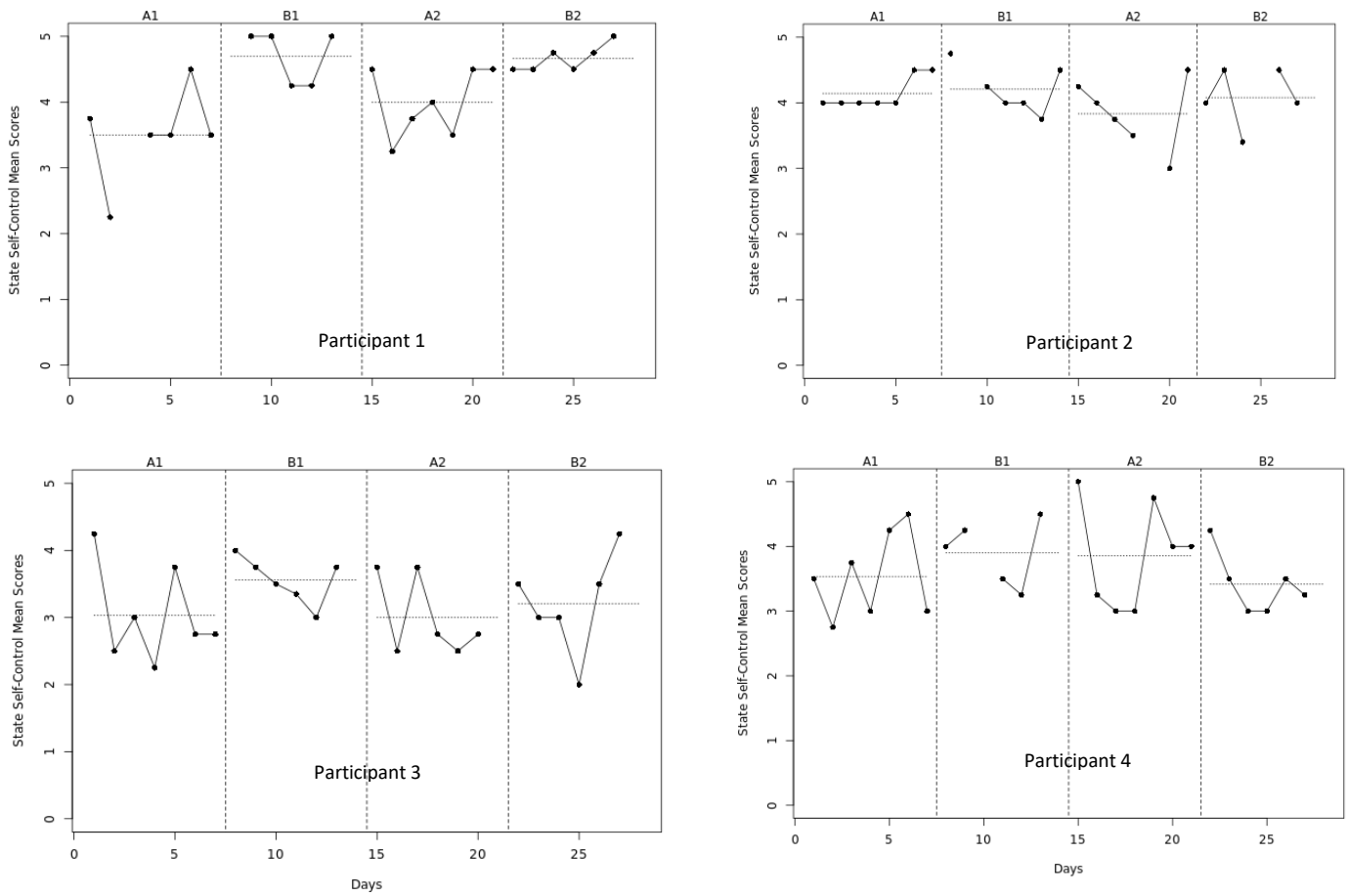
However, this study found no significant effects on the participants for state self-

control. The overall effect of SCIPP on state self-control was also non-significant ( $p=.17$ ).

Therefore, SCIPP did not affect the participants' state self-control in this study (see Table 3).

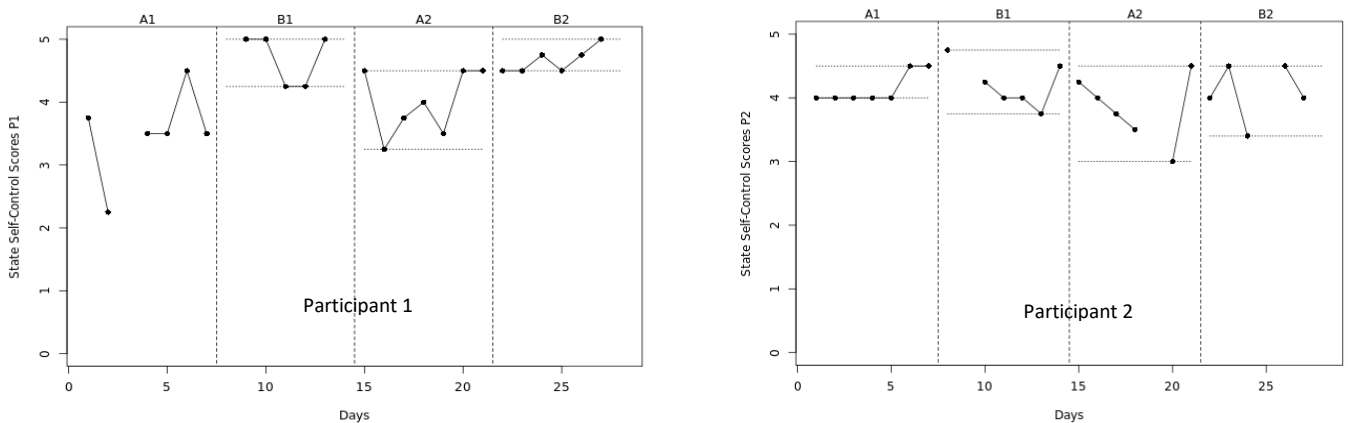
**Figure 2**

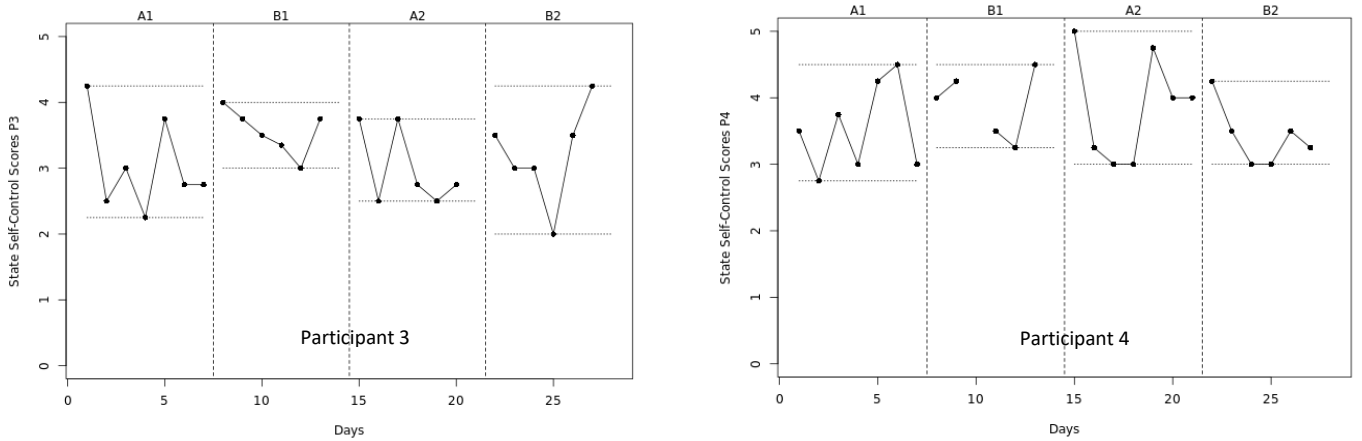
*The Effect of SCIPP on State Self-Control for 4 Students Looking at Level*



**Figure 3**

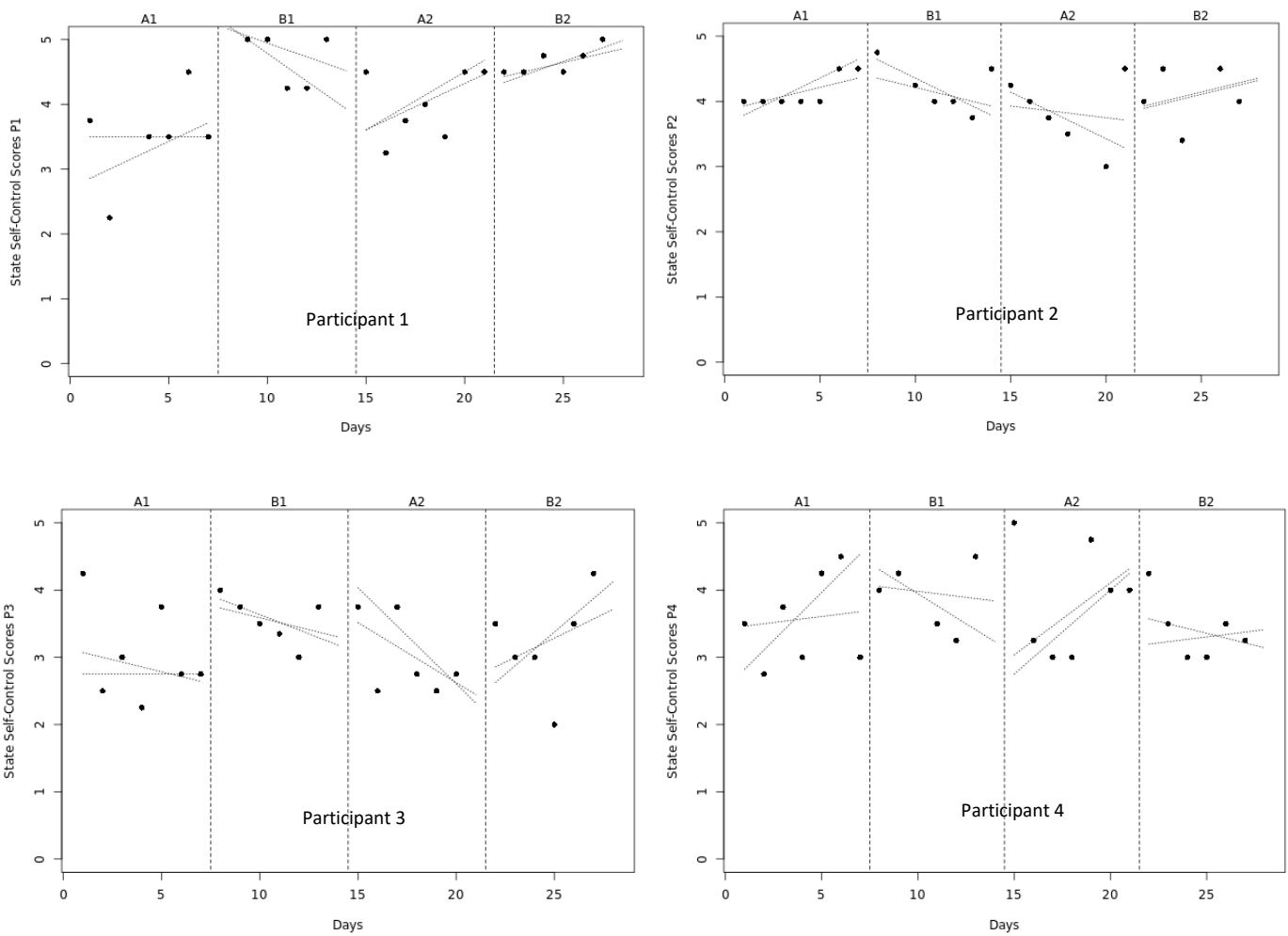
*Effect of SCIPP on State Self-Control for 4 Students Looking at Variability*





**Figure 4**

*The Effect of SCIPP on State Self-Control for 4 Students Looking at Trend*



**Qualitative SNS Usage**

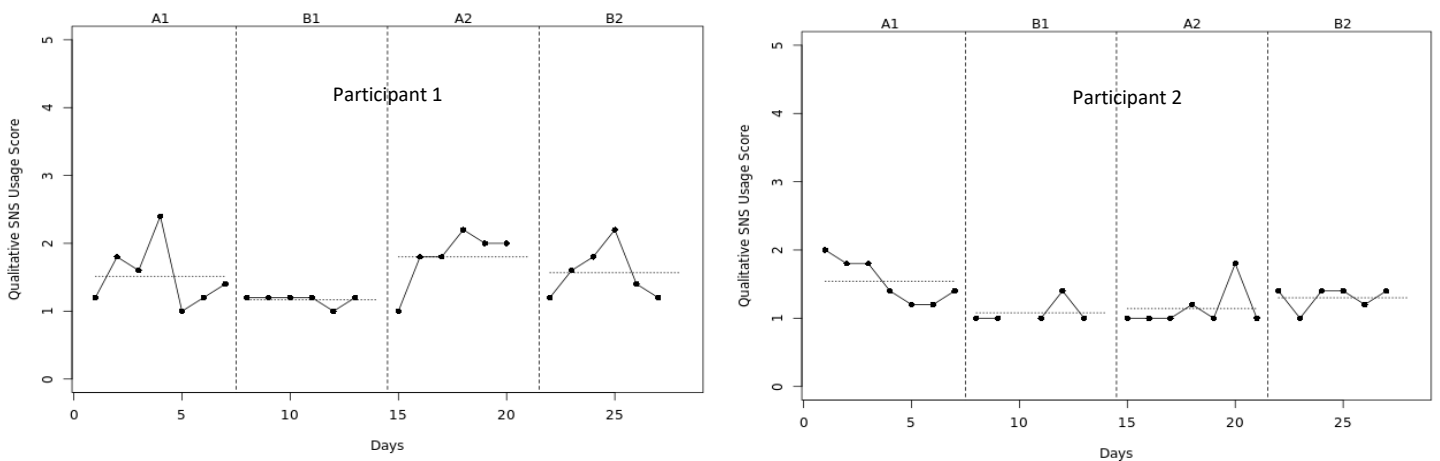
Each participant's mean qualitative SNS Usage scores over the study period of 28 days

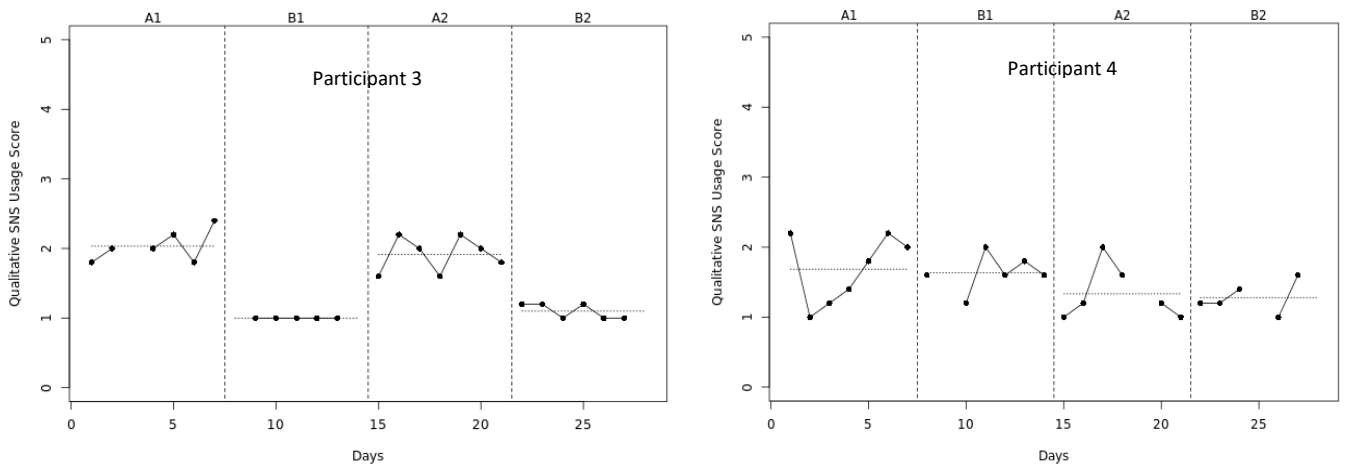
are represented graphically in Figures 5, 6, and 7. The level of qualitative SNS usage decreased in the B-phases compared to their previous A-phases for participants 1, 2, and 3 during the intervention period. However, almost no changes in qualitative SNS usage levels were detected for Participant 4. The variability in the B-phases compared to the A-phases seemed to decrease for all participants. This corresponds to what is expected from an effective intervention. Moreover, the trend did not (greater) decline in A-phases compared to the B-phases for participants 2, 3, and 4. For Participant 1 trend had a greater decline in the A-phases than in the B-phases. At last, data patterns were consistent for all participants except for Participant 4.

However, this study found almost no significant effects on the participants for qualitative SNS usage. Only for Participant 1, a significant effect ( $d=-3.81$ ;  $p=.00$ ) was found for qualitative SNS usage. This effect size indicates a large decrease in qualitative SNS usage for participant 1 during the intervention phases. The overall effect of SCIPP on qualitative SNS usage was also non-significant ( $p=.08$ ). Therefore, SCIPP did not affect the participants' qualitative SNS usage in this study (see Table 3).

**Figure 5**

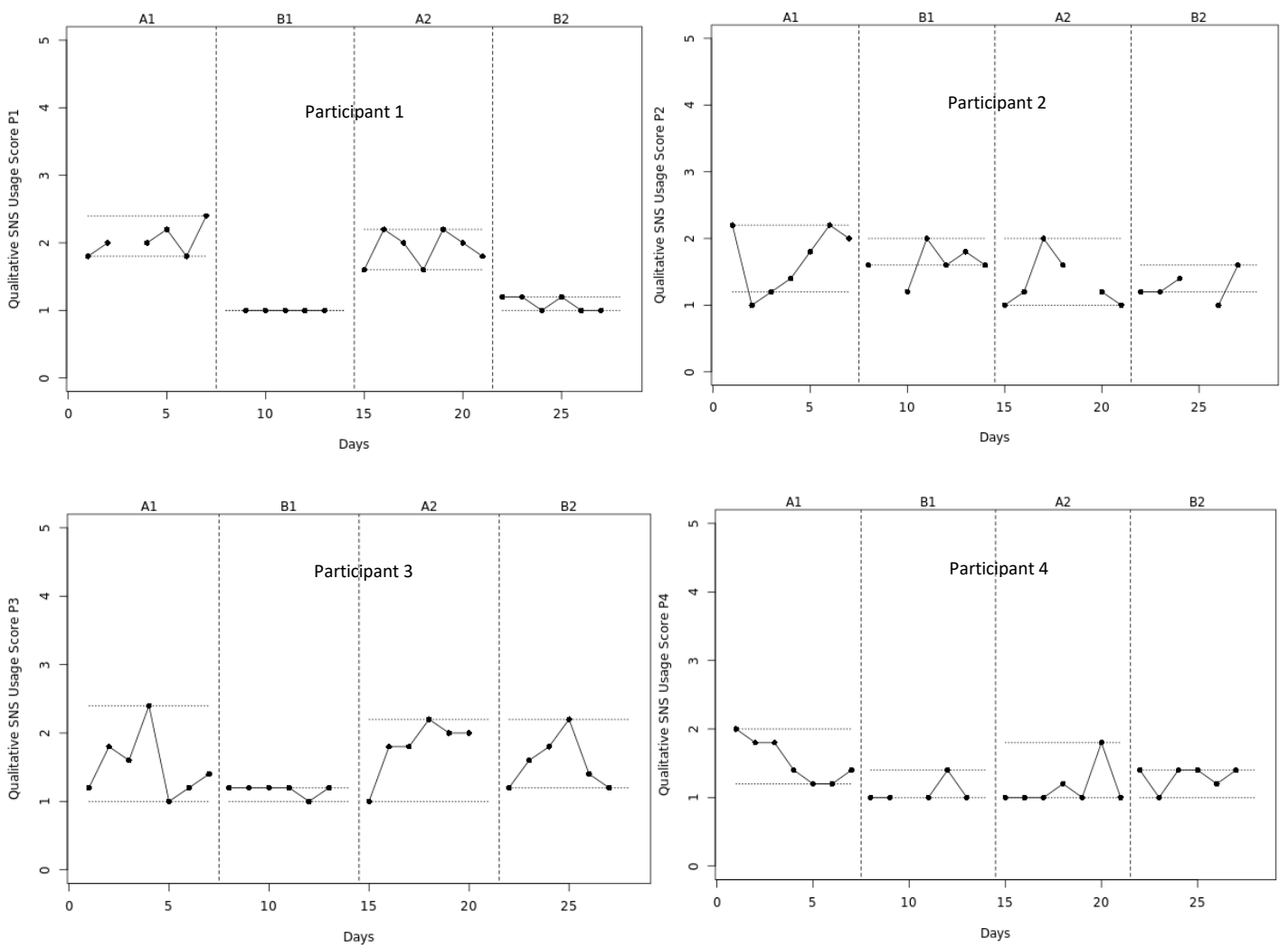
*The Effect of SCIPP on Qualitative SNS Usage for 4 Students Looking at Level*





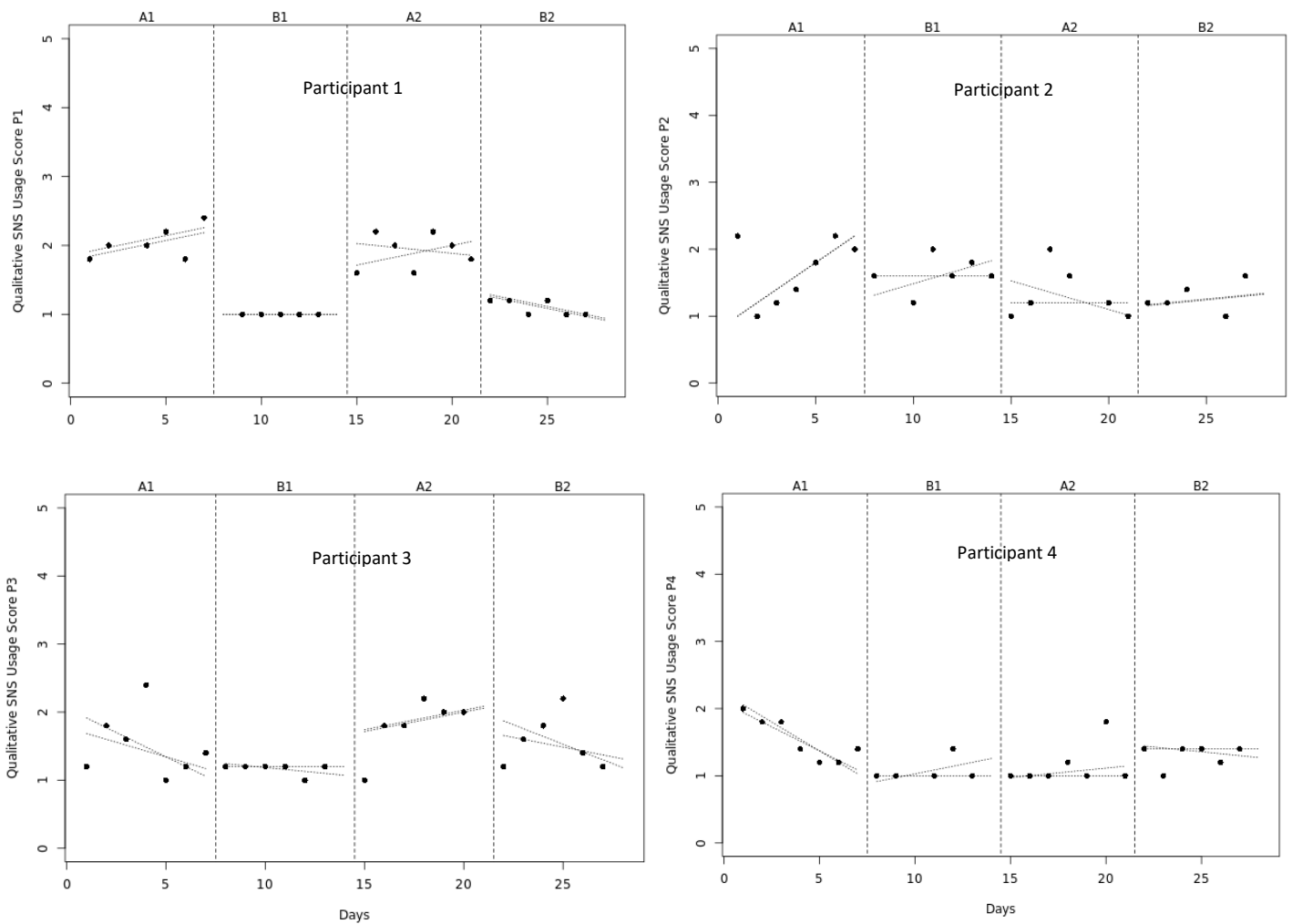
**Figure 6**

*The Effect of SCIPP on Qualitative SNS Usage for 4 Students Looking at Variability*



**Figure 7**

*The Effect of SCIPP on Qualitative SNS Usage for 4 Students Looking at Trend*



**Quantitative SNS Usage**

Each participant's mean quantitative SNS Usage scores over the study period of 28 days are represented graphically in Figures 8, 9, and 10. The level of quantitative SNS usage seemed to decrease in the B-phases compared to their previous A-phases for almost all participants during the intervention period. Only no changes in quantitative SNS usage levels were detected for Participant 2. The variability in the B-phases compared to the A-phases did not seem to decrease for Participant 2 either. The trend seemed to (greater) decline in the B-phases compared to the A-phases for Participant 3. For participants 1, 2, and 4, the trend did not show a greater decline in the B-phases compared to the A-phases, but for participants 1

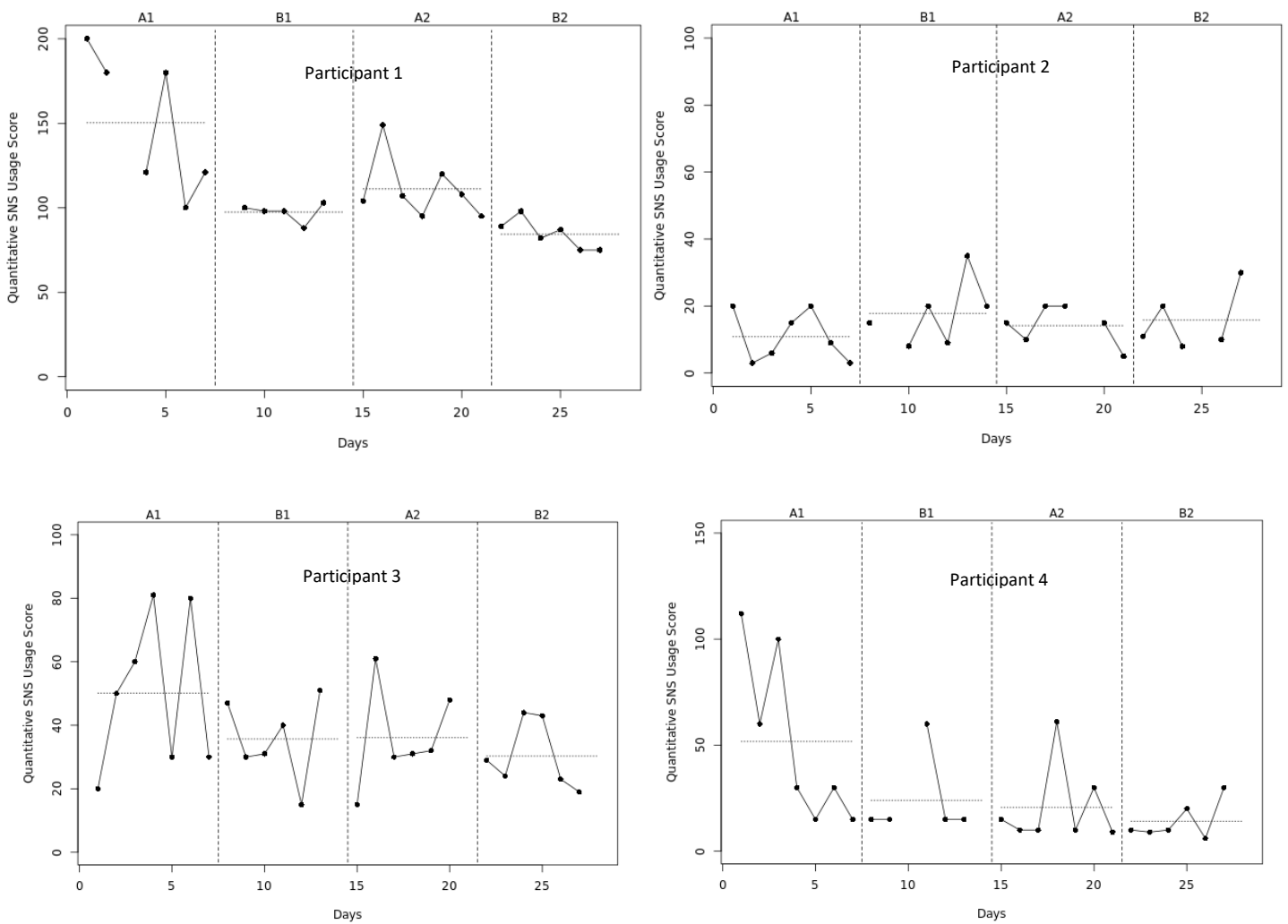


and 4, the trend declined considerably in the A1 phase compared to the B1, A2, and B2 phases. At last, data patterns were consistent for all participants in their A-phases compared to their B-phases. However, for Participant 2, this was a consistency of no change.

However, this study found no significant effects on the participants for quantitative SNS usage. The overall effect of SCIPP on quantitative SNS usage was also non-significant ( $p=.36$ ). Therefore, SCIPP did not affect the participants' quantitative SNS usage in this study (see Table 3).

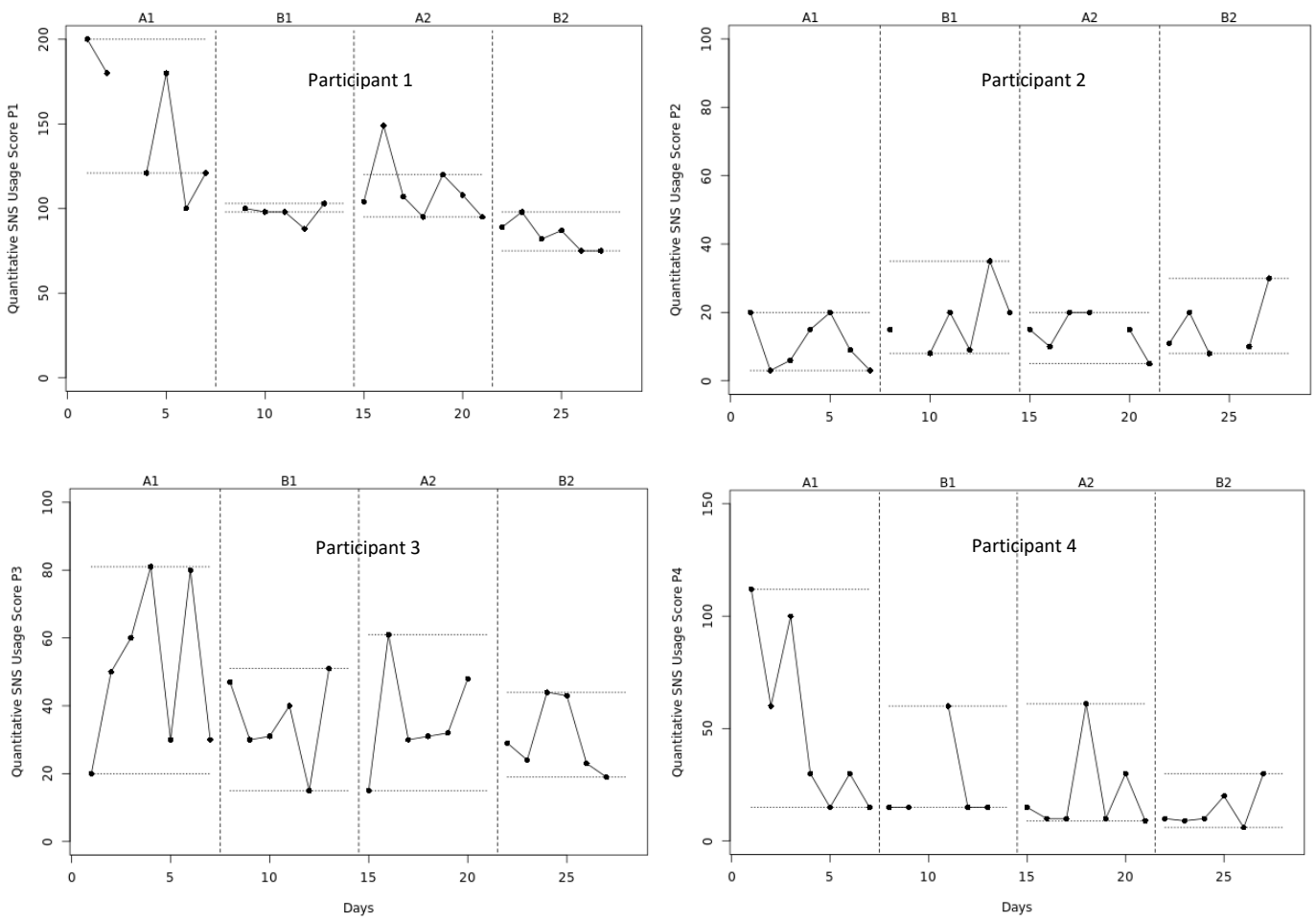
**Figure 8**

*The Effect of SCIPP on Quantitative SNS Usage for 4 Students Looking at Level*



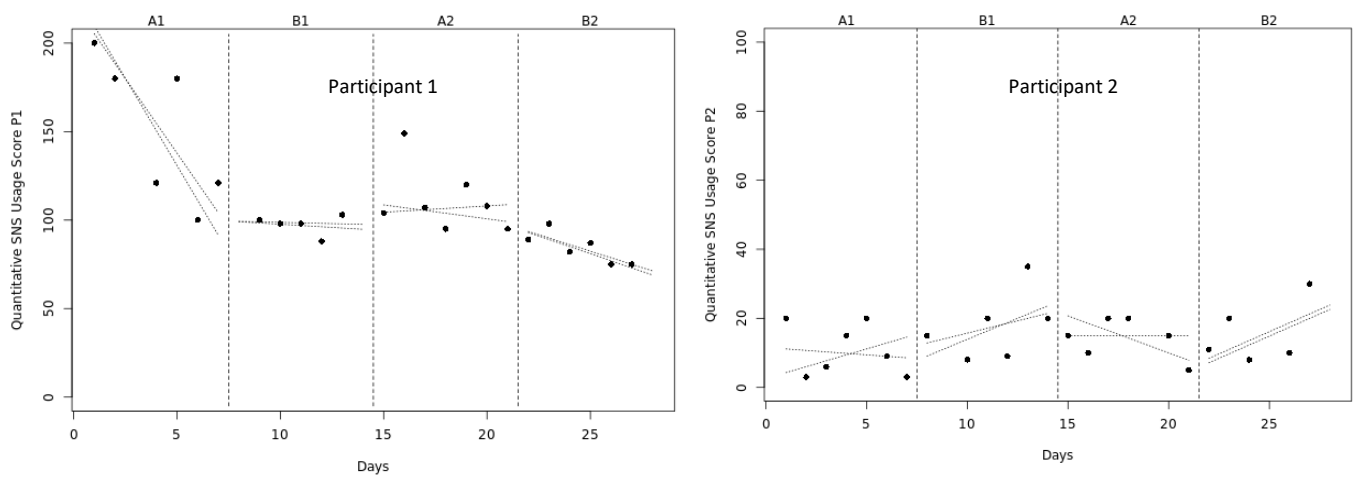
**Figure 9**

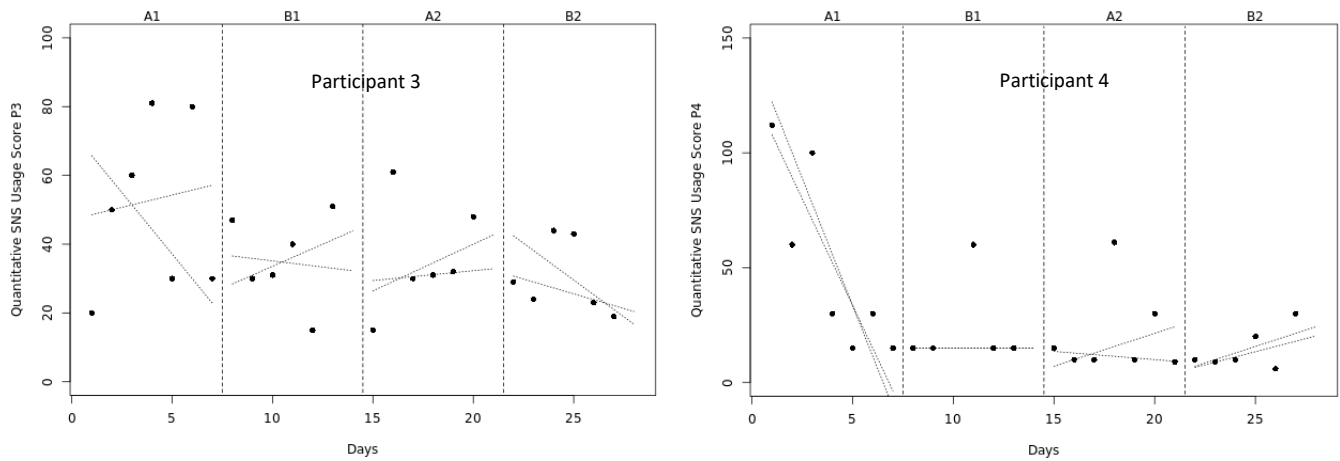
*The Effect of SCIPP on Quantitative SNS Usage for 4 Students Looking at Variability*



**Figure 10**

*The Effect of SCIPP on Quantitative SNS Usage for 4 Students Looking at Trend*





**Table 3**

*Statistical Analysis SCRT and SCMA Values for State Self-Control, Qualitative SNS Usage, and Quantitative SNS Usage*

Participant	Variable	Observed test statistic	p-value	Effect size	Combined p-values
1	State Self-Control	.93	.08	1.47	
	Qualitative SNS Usage	.92	.00	-3.81	
	Quantitative SNS Usage	39.87	.28	-1.36	
2	State Self-Control	.16	.33	.36	
	Qualitative SNS Usage	.05	.44	-.12	
	Quantitative SNS Usage	-4.30	.67	.61	
3	State Self-Control	.37	.20	.54	
	Qualitative SNS Usage	.29	.18	-.64	
	Quantitative SNS Usage	10.15	.27	-.47	
4	State Self-Control	-.04	.58	.00	
	Qualitative SNS Usage	.15	.56	-.46	

	Quantitative SNS Usage	17.13	.57	-.52
All	State Self-Control			.17
Participants	Qualitative SNS Usage			.08
	Quantitative SNS Usage			.36

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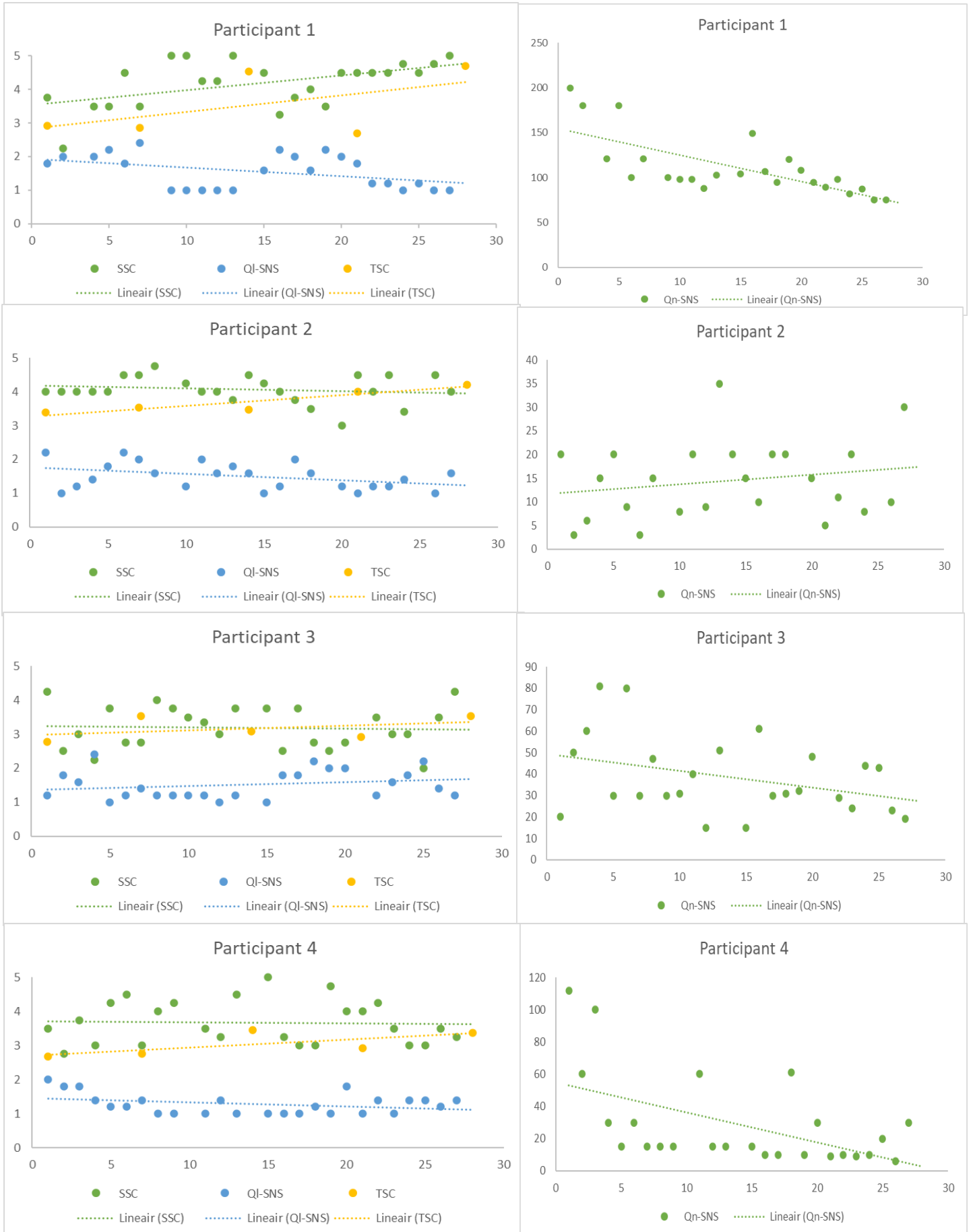
### ***General Trend and Observations***

Figure 10 displays the general trends per participant for each variable during the study period of 28 days. Looking at Figure 10, it seems there is a general upward trend for all participants for trait self-control. Moreover, the general trend for state self-control only seemed upward for Participant 1. For qualitative SNS usage, the general trend seemed to decline slightly for participants 1, 2, and 4. Nevertheless, for Participant 3, there appeared to be no trend. At last, there seemed to be a general downward trend for participants 1, 3, and 4 for quantitative SNS usage. For Participant 2, the general trend for quantitative SNS usage seemed to go slightly upward.

Looking at the general trends for the variables at the personal level, an upward trend of trait self-control seemed to be accompanied by a downward trend for quantitative and qualitative SNS usage for all participants except for Participant 3 for qualitative SNS usage and Participant 2 for quantitative SNS usage. At last, looking at the general trends for the variables at a personal level, a general upward trend of state self-control seemed to be accompanied by a general downward trend for quantitative and qualitative SNS usage for only Participant 1. However, there should be noted that this was the only participant with a general upward trend for state self-control.

### ***Figure 10***

*General Trend for Each Participant for Each Variable During the Study Period*



## Discussion

This study evaluated the effect of a self-control intervention app, SCIPP (Kip et al., 2022), on students' state and trait self-control and excessive SNS usage using a single-case experimental design and experience sampling. This study aimed to test if using an SCT app for seven days would increase state and trait self-control levels and decrease excessive SNS usage. The results showed no significant effects for state self-control or quantitative or qualitative SNS usage on individual and group levels. Therefore, using an SCT app is not positively associated with state self-control and negatively associated with qualitative and quantitative SNS usage on the within-person level. However, study observations seemed to show an effect of the SCT app on trait self-control.

### The Effect of an SCT App on Self-Control

The current study's findings indicate that SCT in app form does not increase state self-control. These results were not in line with the expectations of this study and other research on the effectiveness of SCT (Beamer et al., 2017; Friese et al., 2017; Hagger et al., 2010). However, the findings aligned with another study on self-control training. Miles et al. (2016) found that repeated practice of tasks using a non-dominant hand did not improve self-control. Moreover, their research participants were no better at intentionally controlling their behavior or exerting self-control in everyday life. Initially, this non-effect in the study of Miles et al. (2016) was explained by the fact that the participants in their study already had higher state self-control levels at the baseline phase and were, therefore, less susceptible to the SCT. However, the study of Miles et al. (2016) ultimately found that SCT did not particularly benefit specific groups over other groups, like people with lower self-control abilities over people with higher self-control abilities, for example. Overall, it thus seems unclear if an SCT App effectively improves state self-control in a student sample.

However, results may indicate that SCIPP did affect trait self-control. When looking at

the results and observations of trait self-control, it seemed that SCIPP did increase levels of trait self-control for the participants since all baseline measurements of trait self-control were lower than the post-measurements. Moreover, looking at the general trend for all participants, an upward trend was seen. These findings were in line with the results of another study where the precursor of SCIPP (HandSwitch) improved levels of trait self-control in 209 healthy students (Kip et al., 2021). So, an SCT app could affect students' trait self-control. However, future research should examine whether these observations are correct and whether an SCT app effectively increases trait self-control.

### **The Effect of an SCT App on Excessive SNS Usage**

Moreover, observations showed that for almost all participants, their qualitative and quantitative SNS usage had a (slight) downward trend, even with a non-intervention phase during the study period. However, the downward trend for qualitative SNS usage seemed less than for quantitative SNS usage. It was noticed that all levels of qualitative SNS usage were already relatively low at the beginning of the study period for all participants. This could be explained by the fact that social media use has become such an essential part of student's life that students do not necessarily notice their level of excessiveness to their smartphones and SNS usage (Roberts et al., 2014). Students do not always perceive their SNS usage as excessive because they use it for motivational reasons and think to gain from it (Hodes & Thomas, 2021; Hutchison & Mitchell, 2009; Valkenburg, 2021). So, it seems the participants in the study did not perceive their SNS usage as highly excessive. This could explain the minor downward trend for the qualitative variable (already low at the start of the study), compared to the greater downward trend for the quantitative variable (higher value at the start of the study) since, according to studies, more SNS usage does not automatically result in higher qualitative SNS usage. When individuals think they purely benefit from SNS usage, they do not perceive their time spent on SNS as excessive (Valkenburg, 2021).

Moreover, observations showed an overall upward trend of trait self-control and a (minor) downward trend for almost all participants for qualitative and quantitative SNS usage. These observations could indicate that these variables are related to each other. This observation and idea align with other studies that found that trait self-control was negatively associated with excessive SNS usage (Coyne et al., 2019; Kwak et al., 2022; Valkenburg, 2021; Yıldız Durak, 2020).

### **Future Studies in SNS Usage**

However, there could also be other explanations for the seemingly decrease in SNS usage at the within-person level other than an increase in trait self-control. This study could have affected levels of quantitative SNS usage due to the self-monitoring of the SNS usage, for example. Self-monitoring of behavior is a behavior change technique (BCT) whereby an individual monitors and records their behavior as part of the behavior change intervention (Berry et al., 2021). This was done in this study to some extent because the participants needed to self-monitor and keep track of their time spent on SNS. The explanation of self-monitoring as the possible cause of the effect on quantitative SNS usage seems likely as two participants in this study had a remarkable decrease in quantitative SNS usage directly after the start of data collection but prior to even having used SCIPP.

This assumption is also in line with other research. For example, Berry et al. (2021) found in their meta-analysis that digital self-monitoring interventions of physical activity and diet were effective at increasing physical activity and reducing calorie intake compared with interventions that did not provide digital self-monitoring (Berry et al., 2021). Moreover, a study by McLoughlin et al. (2019) found that students in the high self-monitoring group had more considerable gains in their physical activity per day and more significant declines in hours per day of screen time behavior compared to the students in the low self-monitoring group. So, it seems that self-monitoring SNS usage could reduce time spent on SNS and,



therefore, be a sufficient intervention in reducing this behavior.

In addition, decreased time spent on SNS seems sufficient to decrease the adverse outcomes of excessive SNS usage. A study by Raut Prafulla Patil (2016) found, for example, that most of the negative impacts of excessive SNS usage on students can be overcome by solely reducing time spent on SNS. Therefore, future studies should focus on creating behavior interventions that focus on digital self-monitoring of SNS usage to reduce time spent on SNS and, consequently, the adverse effects this has on students.

### **Future Studies in SCT**

The central idea of SCT involves increasing self-control by improving people's ability to inhibit a dominant response using a non-dominant hand for tasks. However, self-control involves more than inhibiting impulses (which is central to state self-control). There is emerging evidence that people with higher levels of trait self-control may not actually be better at inhibiting impulses (Miles et al., 2016). The findings of a study by Hofmann et al. (2012) suggest that trait self-control might be associated with reduced experience of temptation rather than increased control of temptation by inhibiting impulses. Moreover, research suggests that people with good self-control may actively avoid temptation (Ent et al., 2015). Therefore, these findings call into question that current SCT training, focused on inhibition training based on the strength model, should necessarily result in improved self-control outcomes. Research offers suggestions for improving trait self-control rather than effortful inhibition, such as changing goal appraisals and responding to self-control failures with acceptance (Miles et al., 2016).

All in all, future studies should focus on ways to improve trait self-control using SCT apps by focusing on inhibition control and, for example, by changing goal appraisals and responding to self-control failures with acceptance. This would be more beneficial as SCT only did not decrease excessive SNS usage. Using SCT apps in the future with a broader

perspective on self-control could, therefore, be more beneficial in reducing anxiety levels, sleep disturbances, and depressive symptoms associated with excessive SNS usage since trait self-control and excessive SNS usage seemed related.

### **Strengths and Limitations**

A great strength of this study was that the study was conducted in the participants' daily lives and everyday environments. This dramatically increases the ecological validity of the study compared to other studies in more experimental settings (Myin-Germeys & Kuppens, 2022). Another strength of this study was the usage of SCED, a practical design for testing interventions on the within-person level and in heterogeneous populations (Krasny-Pacini & Evans, 2018). The combination of SCED with ESM makes it possible to say something about the actual effect of SCT on the participants on both trait and state self-control and quantitative and qualitative SNS usage separately, which is an excellent advantage over other studies. At last, most SCED studies focus solely on a visual analysis, which is very susceptible to subjectivity. This can increase the chances of bias in the results and conclusion of the study. Therefore, this study combined the visual analysis with a statistical analysis decreasing the chance of type 1 and type 2 errors (Tate et al., 2016). Thus, decreasing the chance of falsely rejecting the null hypothesis or failing to reject it even if it is false.

A limitation of the study is that there was no observation of the participants' intervention process and usage of SCIPP. Therefore, it could be that participants did not use the SCIPP app correctly, misused it, or did not use it at all, despite the control questions and additional reminders. This could have impacted the validity of the study's outcomes and increased the chance of a type 2 error, so not rejecting the null hypothesis when it's false (Malmivaara, 2016). Future studies could benefit from adding extra control in the correct use of the SCIPP app by scheduling regular phone calls with the participants and visiting them.

Then there can be stated more confidentially that the app was used correctly and study results are valid.

### **Conclusion**

Overall, this study shows that an SCT app does not affect students' state self-control and excessive SNS usage. However, this study indicates that an SCT app can increase student trait self-control. Moreover, this study also has shown a relationship between trait self-control and qualitative and quantitative SNS usage. Nevertheless, more research is needed to state which effect SCT apps have on student trait self-control and SNS usage. Researchers should then emphasize controlling for the correct use of the SCT app by scheduling regular phone calls with the participants and visiting them.

Furthermore, we suggest that future research could benefit from creating SCT apps that focus on enhancing trait self-control in more ways beyond solely focusing on inhibition training. This study suggests that SCT apps which do more than training people to effortfully inhibit impulses may achieve greater success in increasing self-control and reducing unwanted behaviors like excessive SNS usage. At last, we suggest future research will also benefit from examining other ways to reduce quantitative SNS usage in students, for example by creating behaviour interventions which focus on digital self-monitoring of SNS usage. This could reduce chances on the negative outcomes excessive SNS usage has on students such as, anxiety, sleep disturbances, depressive symptoms and poorer mental well-being.

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## Appendices

### Appendix A

Beste Deelnemer,

Bedankt voor je interesse in onze studie! Via deze brief willen wij je op de hoogte brengen van onze studie en geven wij informatie over hoe de studie er voor jou uit zal gaan zien.

#### **1. Doel van het onderzoek**

Dit onderzoek wordt geleid door Brigit Beukeveld en Emma Simons in het kader van hun masterthesis psychologie onder leiding van dr. Tessa Dekkers. Het doel van dit onderzoek is het testen van een app (SCIPP) om zelfcontrole mee te trainen en te onderzoeken hoe zelfcontrole verband houdt met verschillende concepten.

#### **2. Wat moet je doen als je meedoet?**

Doe je mee aan het onderzoek? Dan duurt dat in totaal 28 dagen waarbij je deelneemt aan 2 onderdelen; het invullen van vragenlijsten via Ethica, en het gebruik van de app SCIPP.

#### ***Vragenlijsten invullen via Ethica***

Je zal deelnemen aan een onderzoek waarbij we informatie zullen vergaren door meerdere (korte) vragenlijsten voor te leggen gedurende een periode van 29 dagen, welke je kunt invullen via je mobiele telefoon. Deze vragenlijsten vul je dagelijks in, soms meerdere malen, gedurende de gehele periode van het onderzoek. Je zal elke dag gevraagd worden deze vragenlijsten in te vullen tussen 11.00 uur en 13.00 uur en tussen 20.00 uur en 22.00 uur. Je zult via Ethica herinneringen ontvangen wanneer je deze vragenlijsten in moet vullen. Daarnaast zal er wekelijks een extra vragenlijst uitgevraagd worden.

#### ***SCIPP app: de app om je zelfcontrole te trainen***

Verder wordt je gevraagd om de dagelijkse zelfcontrole oefeningen uit te voeren die in de app SCIPP weergegeven worden. Deze interventie vindt plaats volgens een zogenaamd ABAB design. Dit houdt in dat je bepaalde dagen van het onderzoek de app SCIPP wel gebruikt, en bepaalde dagen niet. Hieronder zie je een overzicht van de dagen dat je deze app wel gebruikt, en op welke dagen niet.

Dag 1 t/m 7 **GEEN** gebruik maken van SCIPP en bijkomende training

Dag 8 t/m 14 **WEL** gebruik maken van SCIPP en bijkomende training

Dag 15 t/m 21 **GEEN** gebruik maken van SCIPP en bijkomende training

Dag 22 t/m 28 **WEL** gebruik maken van SCIPP en bijkomende training

Je zal tijdens de periode dat u de app **NIET** gebruikt, wel meldingen ontvangen van SCIPP om de app te openen en om de zelfcontrole training uit te voeren. Wij vragen je deze berichten in de periodes dat je de app niet hoeft te gebruiken te  **negeren** en de SCIPP app dan niet te openen en de oefeningen niet uit te voeren. Sla het bovenste schema op zodat je het makkelijk terug kan vinden. Via Ethica zal je ook herinneringen ontvangen over de momenten dat je de app SCIPP wel gebruikt, en wanneer niet.

### **3. Potentiële risico's en ongemakken**

Er zijn geen fysieke, juridische of economische risico's verbonden aan je deelname aan deze studie. Je hoeft geen vragen te beantwoorden die je niet wilt beantwoorden. Je deelname is vrijwillig en je kunt op elk gewenst moment stoppen.

### **4. Vergoeding**

Je ontvangt voor deelname aan dit onderzoek geen vergoeding, wel kun je na het deelnemen aan deze studie studiepunten krijgen via Sona systems.

### **5. Vertrouwelijkheid van gegevens**

We willen graag jouw informatie gebruiken voor het onderzoek. Zo kunnen we namelijk antwoorden vinden op de vragen van dit onderzoek.

Alles wat je invult en vertelt blijft geheim. Je gegevens krijgen een nummer. Wij doen er alles aan jouw privacy zo goed mogelijk te beschermen, er wordt op geen enkele wijze vertrouwelijke informatie of persoonsgegevens van of over je naar buiten gebracht waardoor iemand je zal herkennen.

Uitsluitend ten behoeve van het onderzoek zullen de verzamelde onderzoeksgegevens worden gedeeld met Universiteit Twente, gevestigd in Nederland. Voordat onze onderzoeksgegevens naar buiten gebracht worden, worden je gegevens zoveel mogelijk geanonimiseerd en worden pseudoniemen gebruikt. De formulieren en andere documenten die in het kader van deze studie worden gemaakt of verzameld, worden opgeslagen op een beveiligde digitale omgeving van de Universiteit Twente en op de beveiligde (versleutelde) gegevensdragers van de onderzoekers. De onderzoeksgegevens worden bewaard voor een periode van 3 jaar. Uiterlijk na het verstrijken van deze termijn zullen de gegevens worden verwijderd of worden geanonimiseerd zodat ze niet meer te herleiden zijn tot een persoon.

We vragen je wel je e-mail adres door te geven zodat wij contact met je op kunnen nemen over het onderzoek mocht er bijvoorbeeld iets misgaan. Ook gebruiken we dit e-mail adres om af en toe te polsen hoe het met je gaat. Deze gegevens zullen anoniem worden verwerkt zodat je data niet aan je e-mail adres gekoppeld kan worden.

Tot slot is dit onderzoek beoordeeld en goedgekeurd door de ethische commissie van de faculteit BMS (domain Humanities & Social Sciences).

## **6. Als je niet mee wilt doen of wilt stoppen**

Deelname aan dit onderzoek is geheel vrijwillig. Jij kunt als deelnemer je medewerking aan het onderzoek ten allen tijde stoppen, of weigeren dat je gegevens voor het onderzoek mogen worden gebruikt, zonder opgaaf van redenen. Het stopzetten van deelname heeft geen nadelige gevolgen voor jou. Als je tijdens het onderzoek besluit om te stoppen, zullen de gegevens die je reeds hebt verstrekt tot het moment van intrekking van de toestemming in het onderzoek gebruikt worden.

Wil je stoppen met het onderzoek, of heb je vragen en/of klachten? Neem dan contact op met de onderzoeksleiders

Onderzoeksleider: Brigit Beukeveld  
E-mail: [b.m.beukeveld@student.utwente.nl](mailto:b.m.beukeveld@student.utwente.nl)

Onderzoeksleider: Emma Simons  
E-Mail: [e.m.simons@student.utwente.nl](mailto:e.m.simons@student.utwente.nl)

Voor bezwaren met betrekking tot de opzet en of uitvoering van het onderzoek kan jij je ook wenden tot de Secretaris van de Ethische Commissie van de faculteit Behavioural, Management and Social Sciences. Indien je specifieke vragen hebt over de omgang met persoonsgegevens kun je deze ook richten aan de Functionaris Gegevensbescherming van de UT door een mail te sturen naar [dpo@utwente.nl](mailto:dpo@utwente.nl).

Tot slot heb je bij deelname het recht een verzoek tot inzage, wijziging, verwijdering of aanpassing van je gegevens te doen bij de onderzoeksleider.

## **7. Hoe doe ik mee?**

Je kunt eerst rustig nadenken over het onderzoek. Wil je mee doen? Dan vragen wij je aan te melden via Sona systems.

**Wij hopen dat je mee wilt doen met dit onderzoek. Heb je nog vragen? Stel ze aan Brigit of Emma.**

Hartelijk bedankt,

Brigit Beukeveld & Emma Simons

(Msc studenten aan de Universiteit Twente)

**Appendix B**

## TOESTEMMINGSFORMULIER

*Studie: Het testen van de effectiviteit van de interventie SCIPP.*

- Ik begrijp dat Brigit Beukeveld en Emma Simons aan mij vragen om mee te doen aan een onderzoek naar zelfcontrole. Ik ga daarvoor de Ethica app en de SCIPP app gebruiken.
- Ik ben voldoende geïnformeerd over het onderzoek door middel van een separaat informatieblad. Ik heb het informatieblad gelezen en heb daarna de mogelijkheid gehad vragen te kunnen stellen. Deze vragen zijn voldoende beantwoord.
- Ik begrijp dat mijn informatie vertrouwelijk en anoniem wordt verwerkt en gepubliceerd.
- Ik heb genoeg tijd gehad om na te denken of ik mee wil doen.
- Ik neem vrijwillig deel aan dit onderzoek. Er is geen expliciete of impliciete dwang voor mij om aan dit onderzoek deel te nemen. Het is mij duidelijk dat ik deelname aan het onderzoek op elk moment, zonder opgaaft van redenen, kan beëindigen. Ik hoef een vraag niet te beantwoorden als ik dat niet wil.
- Ik doe mee aan de studie en geef toestemming dat mijn data gebruikt wordt voor het onderzoek.

Naam: .....

Handtekening: ..... Datum: .....

*Ondergetekende, verantwoordelijke onderzoeker, verklaart dat de hierboven genoemde persoon zowel schriftelijk als mondeling over het bovenvermelde onderzoek is geïnformeerd. Zij verklaart tevens dat een voortijdige beëindiging van de deelname door bovengenoemde persoon, van geen enkele invloed zal zijn op de zorg die hem of haar toekomt.*

Naam: .....

Handtekening: ..... Datum: .....



## Appendix C

Zelfcontrole, Social media en Emotie Regul... License: Full

Below you can add new activities to your study or configure the current activities. Create New Activity

Name	ID	Status	Triggering Logics	Expiry Time	Notification Templates	Description
Zelfcontrole en Social Media gebruik en Emotie regulatie (wekelijks)	18497	Published	1 Time	After 180 mins		Dagelijkse vragen in social media gebruik
Dagelijkse vragen Emotie regulatie (ochtend)	18535	Published	1 Time	After 180 mins		Dagelijkse vragen over effect van zelfcontrole
Wekelijkse zelf-controle vragen	18572	Published	5 Time	After 360 mins		Wekelijkse vragen over zelfcontrole
Demografische vragen	18573	Published	1 User, 1 Time	Never expires	-	Wat vragen over jou anoniem.
SCIPP gebruiken	18574	Published	2 Time	After 10080 mins		Melding dat de partij gebruiken
SCIPP niet gebruiken	18575	Published	3 Time	After 10080 mins		Vanaf vandaag hoeft app voor 7 dagen niet

*Note. Example activity overview of the study on Ethica, including expiry times for each activity*

TL ID: 0 Time Triggering Logic Duplicate Delete Edit

Specify the time pattern based on which you expect Ethica to prompt the activity to the participants. You can prompt the activity only once, or repeat it multiple times.

Criteria	-
Button Caption	-
Icon	-
Base Time	Study Registration Date
Period	Yes
First Trigger	Between 1 day at 11:00:00 And 1 day at 13:00:00
Repetition	Repeatedly trigger the activity.
Repeat	Daily every 1 day
End Repetition	After 35 occurrences
Summary	First Trigger Between 1 day at 11:00:00 And 1 day at 13:00:00, Relative to the mid-night of the Study Registration Date using Uniform distribution function repeats Daily every 1 day and ends After 35 occurrences.

TEST THE SCHEDULE

*Note. Example Triggering Logistic*

Zelfcontrole en Social Media gebruik en Emotie regulatie (wekelijks)    Content > Triggering Logics > Notification Templates > Preview & Publish    SAVE

Linked notification templates + CREATE TEMPLATE

ID	Label	Notify On	Recipients	Offset	Linked Activities	Mediums	Actions
3		Session Released	Participants	Immediately	Survey(s); (18497, 18572)		
9		Session Released	Participants	1 hour, 30 minu'	Survey(s); (18497)		
10		Session Released	Participants	1 hour	Survey(s); (18497)		
11		Session Released	Participants	30 minutes	Survey(s); (18497)		

*Note. Example notification template*