

Resist the Temptation:

An Interview Study to Explore and Validate Measures of Psychotherapy Clients' Self-Control

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Abstract

Background. Self-control is an important factor in the aetiology, maintenance, and treatment of psychiatric disorders. In understanding how self-control failure affects mental health issues and psychotherapeutic success, state self-control remained understudied and lacks appropriate measures. The Experience Sampling Method (ESM) is a promising approach to study state self-control. For the understanding the relationship between psychiatric disorders and the development of ESM items, the lay beliefs of psychotherapy clients are important to consider.

Objective. This qualitative study explored self-control concepts of people who are diagnosed with psychiatric disorders and receive outpatient psychotherapeutic care. Furthermore, the study evaluated the face validity of seven novel ESM items designed to measure state self-control to assess the usability with this target group.

Methods. Five psychotherapy clients were included from a psychotherapeutic care centre in Germany via purposive sampling. Two-part interviews were conducted, (1) using an unstructured brainstorming session to explore self-control beliefs and (2) using a semi-structured protocol to evaluate face validity of the items. Content and thematic analysis was administered with an (1) inductive and (2) deductive approach for the different parts.

Results. Participants identified several life domains that required self-control and conceptualized self-control as behavioural and emotional control, reflective thought, and distinct from willpower. Most ESM items were consistently feasible and clearly formulated and only sometimes evoked unintended associations. One item required adjustments.

Discussion. In line with previous research, participants consistently associated self-control with positive effects on several life domains and individual differences showed in the emphasis of specific self-control domains. Findings indicate that the concepts of inhibitory self-control and self-control as an interpersonal skill are highly salient for psychotherapy clients, whereas, the distinction between trait and state self-control was an underrepresented aspect. The ESM items were evaluated as usable with psychotherapy clients and the results provide general insight into the formulation of ESM items.

Keywords: Self-control, willpower, qualitative, psychotherapy, psychiatric disorders

Introduction

Psychiatric disorders are a global concern (Whiteford et al., 2013) causing substantial personal suffering and the economic impact has become a leading financial burden in the public health sector of the EU (Trautmann et al., 2016). Understanding the predictors of psychiatric disorders provides the starting point for developing effective and cost-effective preventive interventions and purposeful psychotherapeutic services. Self-control is one central factor in the aetiology, maintenance, and treatment of psychiatric disorders (Simons et al., 2016; Strayhorn, 2002), which generally means the self's capacity to change or override responses and to regulate thoughts, behaviour, and emotions (De Ridder et al., 2018; De Ridder et al., 2012). Many psychiatric disorders including substance use disorders, conduct disorders, several personality disorders, anxiety and affective disorders, bulimia nervosa, or ADHD, and general mental health issues involve self-control failure to some extent (Asselmann et al., 2018; Strayhorn, 2002; Tangney et al., 2004). Research shows that low self-control can predict higher levels of depressive symptoms (Javakhishvili et al., 2020) and experiencing loss of self-control is a main negative effect of suffering from bipolar disorder (Crowe et al., 2012). In contrast, people with high self-control report less depression and anxiety (Bowlin & Baer, 2012). Effective self-control lowers the risk for mental health problems, addiction and shows positive associations with numerous outcomes in other life-domains (Tangney et al., 2004). The extensive impacts on psychiatric disorders highlight that we must be able to effectively address self-control issues in psychotherapy and in preventive efforts.

Greater self-control would likely benefit the ability of many psychotherapy clients to carry out highly efficacious cognitive and behavioural interventions to improve their mental health (Strayhorn, 2002). Self-control failures often hinder treatment progress and negatively affect mental health service users in applying psychotherapeutic interventions when clients simply find implementing the intervention too strenuous to follow through. High self-control can be utilized to foster treatment or prevent the development of several psychiatric disorders (Strayhorn, 2002), it promotes the ability to adapt, recover, and resist destructive coping behaviours, and may be helpful when facing adversity more generally (Fu et al., 2021). Psychiatric disorders can cause severe individual suffering and treatment response may often greatly impact the quality of life of those affected. Therefore, it is

important to better understand the extensive relationship between self-control, psychiatric disorders and treatment response.

Investigating the relationship between self-control and psychiatric disorders is complicated by the lack of consensus on a basic definition for self-control in the current academic discourse (Milyavskaya et al., 2019). Common elements in the various operationalisations of self-control are the idea of self-command to meet personally valued standards and achieve goals (Duckworth & Kern, 2011), and the definition of self-control as the capacity to hold back dominant responses, enable different responses, and to regulate own behaviour, thoughts, and emotions (De Ridder et al., 2012; Milyavskaya et al., 2019). These ideas were concisely integrated by Baumeister et al. (2007) who proposed that “self-control is the capacity for altering one’s own responses, especially to bring them into line with standards such as ideals, values, morals, and social expectations, and to support the pursuit of long-term goals” (p. 351). But, the self-control construct is complex and has become an umbrella term for numerous related psychological constructs (Duckworth & Kern, 2011; Milyavskaya et al., 2019), that are often used interchangeably (Tornquist & Miles, 2019). While self-control clearly influences psychiatric disorders in many ways, the general term self-control itself conveys little meaning (Milyavskaya et al., 2019). We need to understand more specifically what aspects from the multi-faceted self-control construct influence psychiatric disorders and treatment response.

Research distinguishes between *trait* and *state self-control*. Trait self-control means the ability to deal with self-control dilemmas that remains rather stable over time, whereas state self-control describes the temporary level of self-control that fluctuates across situations and time (De Ridder et al., 2018; De Ridder et al., 2012). This distinction means that self-control failure in psychiatric disorders may occur on trait or state levels and may need to be addressed accordingly in treatment. While previous research focused more on trait self-control (Weathers & Siemens, 2018) and has substantially advanced the understanding of the relationship between trait self-control and successful self-regulation (De Ridder et al., 2018), it only partially explains outcomes of specific behaviours across different life domains (De Ridder et al., 2012). Self-control is a rather stable trait, but state self-control also implies that it is unstable enough that hope to improve self-control capacities is warranted (Strayhorn, 2002). However, research focused on state self-control has been underrepresented and has

more controversially debated the nature and mechanisms of self-control (De Ridder et al., 2018). State self-control research has been concerned with the *ego depletion* effect, that describes how performance on self-control tasks decreases after repeated exertions leading to temporarily exhausted self-control capacities (Baumeister & Vohs, 2016). For example, people may experience more difficulties doing physical exercise after a busy day that depleted their self-control capacity than after a relaxing day off. Ego depletion has been mainly studied in the laboratory and state self-control fluctuations in everyday life are insufficiently explored (Baumeister et al., 2019).

Several explanations have been debated for the ego depletion phenomenon in recent years (De Ridder et al., 2018). The *strength model of self-control* describes self-control as a limited resource that can be exhausted after repeated use (Baumeister et al., 2007; Muraven & Baumeister, 2000), the *process model of self-control* suggests that failure of self-control after repeated exertion results from shifts in motivation and attention (Inzlicht & Schmeichel, 2012), and evidence suggests that personal beliefs and cultural factors strongly influence the capacity for self-control after the initial supposedly depleting tasks (Savani & Job, 2017). Yet other findings suggest that indeed all the above mentioned factors may contribute to self-control failure (Vohs et al., 2012). There are several approaches to state self-control, but its relationship with psychiatric disorders is not well understood.

While for trait self-control several measures are available, appropriate scales to address state-self-control with its situational and temporal dimension are currently lacking (De Ridder et al., 2012). The Experience Sampling Method (ESM) is a promising approach to systematically study state self-control in daily life of various populations (Barrett & Barrett, 2001). The ESM uses repeated in situ self-reports to measure behaviour, thoughts, and emotions throughout the day (Van Berkel et al., 2017). The wide range of studies that have used the ESM in general show that the in-context data collection provides exceptional representations of participants' natural behaviours. As part of a larger study which investigated state self-control in daily life, Bagala (2021) and colleagues designed a seven-item scale based on the ESM. However, it is not yet clear whether these items have face validity for test-takers and have only been used in one study. Face validity is the subjective judgement of non-experts to what extent a measure seems related to a specific construct and evaluates the measure in terms of feasibility, readability, clarity of language used, and consistency in style and format

(Taherdoost, 2016). The present study evaluates the face validity of these items to determine their usability for investigating state self-control of psychotherapy clients.

For understanding self-control in psychiatric disorders and treatment response, and developing measures of state self-control, taking lay beliefs into account is important for two reasons: First, research suggests that personal beliefs about self-control can at least partly explain self-control failure (Job et al., 2010). And second, adhering closely to people's beliefs will ensure state self-control ESM items have adequate usability and face validity. Lay beliefs about self-control often differ from academic perspectives (Wirtz et al., 2016) and people do not consciously reflect on their theories about their own and others' thoughts and behaviours (Job et al., 2018). Lay people lack the explicit understanding of how these theories influence everyday living (Job et al., 2018) and instead, they typically hold *implicit theories*. Depending on the theory, these beliefs can either limit or facilitate self-control capacities (Francis & Job, 2018; Job et al., 2015; Job & Walton, 2017). Psychotherapy clients who believe in limited resources for self-control may conclude that their self-control capacities have fixed physiological constraints (Job et al., 2010) and, thus, experience self-control failure including the negative effects on mental health and treatment response more often. Furthermore, possible unawareness of their self-control beliefs may impact how people understand and answer test items that measure self-control. We need clarification to what extent self-control beliefs deviate from academic perspectives to estimate how these beliefs impact measurement and indicate potential improvements of our instruments.

Only few studies have explored how lay people in general understand the term self-control. In previous qualitative research with adolescents diagnosed with major depression self-control was described as empowerment through emotional control and self-regulation (Serrander et al., 2021). Other qualitative studies with non-clinical populations found that people associate self-control with resisting temptations in the domains of food, social contact, media use, and sleep (Hofmann et al., 2012). One prominent long-standing folk idea of self-control is that of *willpower* (Baumeister et al., 2007). Crofton (2021) found various understandings of willpower among lay people, but suggested that willpower is generally perceived as a desirable quality. Veilleux et al. (2018) found that people frequently experience interpersonal self-control challenges along with the impulse to argue, criticize,

or avoid conversations. Also common were avoidance temptations, which occur when people want to avoid discomfort in general, or an interpersonal interaction appears likely to be uncomfortable. This brief review highlights the scarcity of clinical samples (Crofton, 2021) and shows the lack of insight into self-control concepts of psychotherapy clients, for whom the implications of self-control failure are particularly salient. Gaining these insights will further unravel the relationship between self-control, psychiatric disorders and treatment response, and will contribute to the development of ESM items as an urgently required measure of state self-control. Thus, the present study seeks to answer two questions:

- (1) How do psychotherapy clients conceptualize self-control?
- (2) How do psychotherapy clients evaluate the face validity of seven novel ESM items designed to measure state self-control?

Methods

Study Design

This study was designed as a cross-sectional interview study. Interviews were divided in two parts, with one unstructured part to explore the participants' concepts of self-control and one semi-structured part to evaluate the face validity of seven ESM items to measure state self-control. The ethics committee of the Faculty of Behavioural, Management and Social Sciences at the University of Twente in Enschede, The Netherlands, approved the study (request number 211381).

Participants

Five adult mental healthcare service users were recruited through purposive sampling. For inclusion, participants had to be adults between the age of 18 to 60 years, be currently diagnosed with at least one psychiatric disorder according to ICD-10 and had to currently use mental healthcare services. The available population only included psychotherapy clients in an outpatient care setting at a psychotherapeutic care centre in a major German city. Potential participants had to speak German fluently and required an appropriate level of functioning including the ability to express their thoughts clearly. This excluded clients experiencing forms of delusional thinking, hallucinations, disorganized thinking and speech, or any other condition that therapists identified as contra-indicative for participation. Therapists at the institution chose potential participants among their clients and willing

clients were then approached and briefed by the researcher via Email. No compensation was offered for participation. Therapist involvement in the sampling process ensured that clients with impairments as specified in the exclusion criteria were filtered out. The final sample consisted of five participants (3 females, 2 males; 24-33 years old, $M = 28.2$, $SD = 2.92$) with different ICD-10 diagnoses who all currently received long-term outpatient individual and group therapy from different therapists specialized in Cognitive Behaviour Therapy (CBT). Participants were not asked to disclose their ICD-10 diagnosis for privacy reasons. Four participants were currently working and one was studying at university. Three participants had met the researcher as an observer in their therapy sessions prior to the study.

Procedure and Materials

Data collection was conducted through single interviews by one researcher via video calls with the participants being at home in an undisturbed place. Informed consent (see Appendix B) was obtained via email in written form prior to the interviews. All interviews were audio recorded using Zoom (Zoom, 2021) and followed the same interview protocol. To address the two different research questions of this study, the interviews were structured in two separate parts (Part A and Part B) with different approaches and protocols (see Appendix A).

The unstructured Part A focused on personal ideas about the nature of self-control. The interview protocol was designed as a brainstorming session with concurrent verbal probing. Following the initial question (*What comes to mind when you think about 'self-control'?*) participants were free to report all their associations with self-control. Spontaneous probes and five scripted probes (e.g. *In what areas of life do you exert self-control?*) were used in no particular order. These included comprehension, paraphrasing, specific, and general probes that were derived from Willis' (1999) cognitive interviewing technique. In case participants were unable to report any associations with self-control, the interviewer provided a brief definition of self-control (see Appendix A). Part A had an average duration of 13 minutes (Range = 8–18).

The semi-structured Part B evaluated the face validity of seven ESM items designed to measure state self-control (see Table 1) for potential test-takers in outpatient psychotherapeutic care. This questionnaire was designed earlier in a related project at the University of Twente (Bagala, 2021).

Items 1-3 are the three-item State Self-Control Scale (SCSS) to measure ego depletion (Baumeister et al., 2019). Items 4 and 5 were generated by the researchers themselves based on the works of Simons et al. (2016) to measure goal-directed self-control. Items 6 and 7 were designed based on the works of Tornquist and Miles (2019) to measure inhibitory self-control, which is self-control to “restrain one’s impulses in the service of greater goals and priorities” (Milyavskaya & Inzlicht, 2017, p. 1).

Table 1

State Self-Control Experience Sampling Items Evaluated in this Study

Self-control component	Item*
Ego depletion	1. “In the past couple of hours, have you felt that it is hard to make up your mind about even simple things?”**
	2. “In the past couple of hours, have you felt that things are bothering you more than they usually would?”**
	3. “In the past couple of hours, have you felt that you have less mental and emotional energy than you normally have?”**
Goal-directed self-control	4. “In the past couple of hours, how easy was it for you to do something “good” that you did not really want to do (e.g. eating healthy food)?”
	5. “In the past couple of hours, were you able to stick to your goals?”
Inhibitory self-control	6. “In the past couple of hours, how easy was it for you to refrain from doing something “bad” you really wanted to do (e.g. snacking)?”
	7. “In the past couple of hours, were you able to resist temptations?”

Note. *All items to be answered on a five-point Likert-Scale, ranging from 0 (*not at all*) to 4 (*very much*).

**Item with reverse coding.

Each item was discussed separately by means of the cognitive interviewing technique with concurrent verbal probing (Willis, 1999). First, the item was presented through screen share and participants were asked to read out loud every item to detect unclear wording or syntax. Then, the cycle of probing and answering was repeated for all seven scripted open-ended probing questions in the same order (see Table 2). The two additional questions about all items were asked once at the very

end. Every interview question targeted one or more components of face validity (Taherdoost, 2016).

Part B had an average duration of 31 minutes (Range = 22-40).

Table 2

Probing Questions in Order Including the Targeted Face Validity Components

Probing question	Face validity component
1. "How would you answer this question?"	Feasibility
2. "Can you repeat the question in your own words?"	Clarity, Readability
3. "What is the first thing that comes to mind when you read this question?"	All
4. "What do you think this question is about?"	Readability
5. "Is the wording/phrasing clear to you?"	Clarity, Consistency
6. "To what extent do you find this question difficult to answer?"	Feasibility
7. "Is there something you would change about this question? If yes, what?"	Clarity, Consistency
"Do you suggest any other questions?" (Additional question)	All
"Do you have any additional thoughts about all or any of these questions?" (Additional question)	All

Both the interview protocols and ESM items were independently translated from English to German by the researcher and another researcher working on a similar project. Translations were then compared and combined into one translation. A slight difference in the German version of the interview protocol was the inclusion of an additional synonym for self-control (*Selbstbeherrschung*). All interviews were conducted in German, the native language of all participants.

Data Analysis

Data was analysed through content and thematic analysis. The audio recordings of all interviews were automatically transcribed in German using Amberscript (Amberscript, 2022). One researcher coded the data in English using ATLAS.ti Windows (Version 9.1.7.0). Different analysis approaches and coding schemes were used for Part A and B of the interviews.

Given the exploratory nature of the unstructured interview about self-control, content and thematic analysis was applied using an inductive approach (see Boeije, 2002). A preliminary coding scheme was created based on fragments from 2 of the 5 interviews. Fragments consisted of singular words or sentences and one or multiple codes were assigned to each fragment. The assigned codes were screened for potential overlap and the preliminary coding scheme was adapted accordingly. The same interview data used to create the preliminary coding scheme was then coded by a second researcher and the interrater reliability (IRR) was $\kappa = 0.70$, which is considered moderate to substantial (Landis & Koch, 1977; McHugh, 2012). Based on this the coding scheme was adapted. All interviews were then coded with this final coding scheme.

The face validity evaluation was analysed using a deductive approach. The preliminary coding scheme was created by one researcher prior to the coding process based on four components of face validity (see Table 3; Taherdoost, 2016). Fragments were coded as relating to one or several of the components *feasibility*, *readability*, *clarity*, and *consistency*. Data from 2 of 5 interviews and the preliminary coding scheme were given to a second researcher resulting in an IRR of $\kappa = 0.84$, which is considered strong to almost perfect (Landis & Koch, 1977; McHugh, 2012). Finally, the coding scheme was applied to the remaining interviews and the evaluation of the components was inferred from the content of the coded fragments. These results for the components feasibility, readability, and clarity were summarized in a narrative way for each experience sampling item individually. The results for consistency were derived from summarized coded fragments, interviewer observations, and comparing findings on all components for all items.

Table 3

Coding Scheme for Face Validity Evaluation of the State Self-Control Experience Sampling Items

Code	Definition
Feasibility	The degree to which participants feel able to answer the item.
Readability	The degree to which the content of the item is easily understood as associated with self-control.
Clarity	The degree to which the item is formulated in clear and comprehensible language.
Consistency	The degree to which the item is congruent in style and format with other items.

Results

Part A – Unstructured interview about self-control

The seven codes of the final coding scheme for Part A were grouped in two themes (see Table 4). The first theme *general associations with self-control* included concrete behaviours, mental actions, and concepts that participants associated with self-control. The second theme *specific life-domains associated with self-control* described the most important areas of life where the participants exerted self-control or thought this was necessary.

Table 4

Themes, Codes and Frequencies in the Unstructured Interview About Self-Control (SC)

Themes and codes	Definition	Number of interviews	Total fragments (n=82)
General associations with SC			
Regulate behaviour	Controlling or suppressing forms of impulsive behavioural responses to certain stressful situations.	5	24
Regulate emotions	Controlling or inhibiting impulsive emotional reactions to momentary stressful situations or managing the intensity of emotional states in general.	4	13
Reflect on thought and behaviour	Utilizing self-control in terms of critically considering and learning from past situations and own responses.	4	7
Difference with willpower	Viewing self-control and willpower as different and either complementary or integrated constructs.	(5)	(12)
Specific life-domains associated with SC			
Social relationships	Exerting self-control when interacting with family, friends or strangers in various daily life contexts.	5	11
Work or study	Exerting self-control when doing tasks and interacting with others in professional contexts.	5	7

Personal health	Exerting self-control to maintain a healthy lifestyle, in terms of diet and luxury foods, alcohol and tobacco.	4	8
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General associations with self-control

Regulate behaviour. All participants associated self-control with some form of altering or inhibiting behavioural responses to stressful or tempting situations. The participants explained how they tried not to act upon first impulses across various contexts, as impulsive behaviour was mostly deemed detrimental to achieving personal goals. Often mentioned was the need to filter the thoughts that are said out loud, or to respond calmly or professionally when having an argument. One participant described how he avoided voicing uncomfortable thoughts that may cause conflict:

“To bite your tongue, not to say anything. For example, when you are in a conversation. And then there’s like the ‘elephant in the room’. And you notice that everyone just beats around the bush. But you know what the matter is actually and in this moment you bite your tongue, because you know, when you speak up the party is over [...].” (Participant 3)

Regulate emotion. Associations of self-control with emotional control were reported by four participants. Regulating their own feelings meant for them to inhibit or tone down emotional reactions to avoid negative consequences in certain situations. This included preventing conflict or maintaining secrecy of one’s own emotive world. One participant mentioned that it also involved conscious attempts to regulate the emotions and purposefully vent them under suitable circumstances as a means of emotional coping and said:

“To have control regarding your feelings, by consciously fully allowing feelings and maybe also somewhat restrict them and have a look at, okay, in which situations it is okay to fully release your feelings.” (Participant 1)

All those four participants explained that they currently or in the past struggled with finding a helpful balance in the level of control over their emotions. The typical issue was experiencing deficits in the ability to prevent emotional outbursts in momentary stressful situations. Others had experienced obsessive self-control causing rigid thinking that they perceived as detrimental to their mental health.

Reflect on thought and behaviour. Four participants associated self-control with personal reflection in stressful situations. They described reflective processes to monitor their thoughts and

behaviour and subsequently regulate them to avoid getting angry, for example. They also reflected to evaluate past situations and learn how to better deal with self-control challenges in the future, or to evaluate progress on self-set goals for personal development. One participant said:

“[Self-control is] also that of course you’re not just more reflective in the situation, but that you generally reflect more. If you control everything a bit or you have this kind of self-control or try to have it, then of course you also think Okay, then I behaved in this or that way and then to reflect on everything in the aftermath.” (Participant 1)

Participants described this association after considering an alternative semantic interpretation of the term *self-control* in German, which translates to *Selbstkontrolle*. The German verb *kontrollieren* (= to control) may also literally mean *to check* or *to review* something. In this context, self-control can also describe *self-reflection* in the sense of evaluating own thoughts and behaviours.

Difference with willpower. Despite expressing a variety of different ideas about willpower, all participants agreed that willpower and self-control were different constructs and that these terms could not be used synonymously. The ideas on the nature of the relation between willpower and self-control were partially congruent, as most participants thought of both constructs as either interdependent or one being an integral part of the other. One participant explained:

“When you say ‘willpower’ I don’t immediately think of self-control, although, that comes afterwards when you think about it. With willpower I think about focusing, so first thing that comes to mind with willpower is focus. That’s something I don’t associate with self-control. You can separate the two, they are different. But maybe, they might depend on each other.” (Participant 3)

It must be noted that participants were directly asked whether self-control and willpower were synonymous to them after the first participant mentioned a distinction. Therefore, this code and the frequency of occurrences must be interpreted with caution.

Specific life-domains associated with self-control

Social relationships. All participants deemed self-control a necessity for social interactions in general. Three participants found self-control particularly relevant for interacting with their family-members. In this domain, talking diplomatically at family gatherings or keeping emotions to oneself to prevent conflict situations from occurring was often mentioned. With regards to friendships, the views differed on whether it was necessary to restrain certain thoughts, emotions, or actions, or whether feeling the need to self-control with friends rather indicated relationships that were insufficiently

trusting, for example. Two participants specifically described self-control as a crucial factor in societal existence and one said:

“I think [self-control] is fundamental for living together with other people, that you can control yourself and you don’t just do whatever you want, but to always pay attention to the others as well.” (Participant 5)

Work or study. All participants reported that they needed self-control in professional contexts. At the workplace participants described self-control as important for interactions with colleagues and customers at work, with the intent of maintaining a polite, friendly, neutral, objective, or generally professional conduct. Especially, controlling what information one should discuss with whom in the working environment was a salient concern for the majority of participants. One participant explained her use of self-control at her workplace:

“I am often in contact with externals or customers. And let’s say when I had a bad discussion in a meeting before that, where it perhaps also got personal, then it’s like in the next meeting with the next person you should actually appear neutrally again.” (Participant 2)

The one participant that studied at university described the purpose of self-control was described as to resist various distractions from productive study and maintain a certain daily structure.

Personal health. Most participants associated self-control with keeping a healthy lifestyle. Three participants reported using self-restraint or discipline in buying healthy food, following specific dietary routines and fixed mealtimes, and consuming less sweets. Maintaining a moderate level of alcohol and tobacco consumption was also mentioned to require self-control, although, the participants did not describe this as personally relevant. One participant explained how she used self-control for her eating behaviour:

“My weakness is chocolate, so as an example, when I go to the supermarket I make sure that I had a meal prior to that and that I choose fruits and just once per week buy something chocolate-like, but other than that I won’t go to the supermarket so that I don’t even have a chance.” (Participant 2)

Part B – Face validity evaluation of state self-control ESM items

Item 1 – In the past couple of hours, have you felt that it is hard to make up your mind about even simple things?

Feasibility. Most participants found the item easy to answer and spontaneously reacted with a simple yes or no. Some had difficulties giving an answer, as they found the meaning of *simple things*

to be open for interpretation. **Readability.** The most common associations with this item revolved around difficulties in decision-making. Participants considered to what extent their situational and general decision-making processes were straightforward and focused, or rather impulsive or prone to get lost in irrelevant details. However, two participants clearly pointed out this item lacked associations with self-control in their view. **Clarity.** Most participants had no issues understanding the question and found the formulation clear. Only one participant was irritated by the somewhat complex main and subordinate clauses.¹

Item 2 – *In the past couple of hours, have you felt that things are bothering you more than they usually would?*

Feasibility. For most participants answering this item was generally completely feasible. Possible problems mentioned by two participants included difficulties to answer the item on a scale instead of free text, and potential for interpretation of the exact meaning of *bothering* things.

Readability. The participants had similar associations with the item as each other and thought of recent instances where they experienced irritable and strained mood and therefore struggled to remain self-composed in stressful situations that were usually bearable. One participant explicitly linked this item to self-control, inasmuch as she felt prompted to evaluate her recent level of control over her reactions to stressful situations. **Clarity.** The wording and syntax of this item were largely comprehensible to all participants. One participant commented that *things* may be imprecise and may not clearly cover all possible stressors.

Item 3 – *In the past couple of hours, have you felt that you have less mental and emotional energy than you normally have?*

Feasibility. All participants stated that answering the item would generally be feasible, especially so for people who regularly engage in personal reflection. They assumed most people would easily find personal instances of depleted emotional and mental energy to compare against their current state and serve as the basis for their answer. However, one participant explained that mental

¹ The sentence structure in the German translation of Item 1 differs from the original English formulation and can be considered more complex (see Appendix A).

and emotional energy should not be assessed simultaneously, as these energy levels could be different at the same time. **Readability.** The item was frequently associated with normal day-to-day changes of mood, feelings, and clarity of thought. Participants particularly thought of situations that required and possibly exhausted their ability to control their emotions or to make clear choices. Two participants perceived this item as an assessment of pathologically low states of motivation for being active with the aim of scanning the person for psychiatric illnesses. **Clarity.** This item was evaluated as clearly formulated with no improvement necessary.

Item 4 – In the past couple of hours, how easy was it for you to do something “good” that you did not really want to do (e.g. eating healthy food)?

Feasibility. The participants had mixed views about the feasibility of this item. Two participants indicated that despite some issues with the formulation and uncertainties about the aim of the question, they could easily answer this item. One participant explained it was generally feasible, but doubted whether her answer would adequately correspond to the aim of the question. Two participants evaluated the item as difficult to answer. **Readability.** Participants were mainly prompted to think back specifically to instances of them eating healthy food and expressed difficulties with imagining other examples of doing something good to themselves. They explicitly ascribed this to the example *eating healthy food* presented in the item and explained that it narrowed down their focus of thoughts towards healthy eating. Furthermore, most participants felt unsure about the aim of this item. Only the two participants who deemed it feasible also clearly associated the item with willpower. **Clarity.** The item was evaluated as lacking clarity to some degree by all participants and two aspects of the formulation were criticised in particular. First, the meaning of doing *something good* was thought of as highly subjective, imprecise, and difficult to grasp without context. And second, participants then either suggested to remove the example to avoid steering thoughts, or to add other examples to create better understanding of the item’s aim.

Item 5 – In the past couple of hours, were you able to stick to your goals?

Feasibility. All participants found the item easy to answer. One participant specified that as long as a person had goals for the day, the question would be completely feasible. **Readability.** All participants felt prompted to evaluate their day goals and three participants clearly connected the item

to the degree to which daily fluctuating self-control or willpower influenced their goal achievement. Participants typically focused on the whole day when appraising their goals and commonly mentioned their workplace as a first association. Similar thoughts following from this item were related to the influence of stress on time- and self-management. **Clarity.** According to all participants, the item was properly formulated and needed no improvements.

Item 6 – In the past couple of hours, how easy was it for you to refrain from doing something “bad” you really wanted to do (e.g. snacking)?

Feasibility. Three participants reported no issues with answering this item. Two participants found it generally more complicated and more difficult to answer than other items, but overall feasible. Their concerns pertained the given example and the subjective definition of *something bad*.

Readability. All participants associated and some very explicitly linked this item with forms of self-control or willpower. Either following from the given example or from personal salience, most of the participants' thoughts focused on their eating behaviour in general, exerting discipline while grocery shopping, and snack foods. The majority of participants addressed that the item was narrowly focusing their thoughts on this particular domain and they had few other associations. **Clarity.** The formulation of the item was overall comprehensible, but multiple participants indistinctly suggested to remove, change, or preferably broaden the example. Although the term *bad* caused less confusion as the term *good* in Item 4 and was found much more understandable, two participants debated potential better suitability of another term, without having concrete alternatives in mind.

Item 7 – In the past couple of hours, were you able to resist temptations?

Feasibility. This item was described as feasible by most participants and only one explained that answering it on a scale would be challenging, but still possible. **Readability.** Almost all participants reported clear associations of the item with their ideas of self-control or willpower. Some said the item was the most definitive representation of a question about self-control. They focused on eating behaviour and grocery shopping when thinking about personal temptations. Two participants cautioned that this item was indeed very similar to Item 6 and explained the term *temptations* was actually synonymous with *something bad you really wanted to do* when considered in the context of self-control. **Clarity.** All participants stated that the formulation needed no improvements.

Consistency

In general, none of the items was described as outstanding from the rest in any remarkable negative way. One participant repeatedly expressed irritation with the given time-frame (*in the past couple of hours*) being limiting but not strictly defined at the same time, and was unsure what portion of his day he was supposed to include in his answer. While he suggested to specify the time-frame to an unambiguous period, others explained this time-period was helpful to recall the targeted information and enabled them to answer the items without problems. Another observation was that items that were phrased as closed questions (Items 1-3, 5, and 7) consistently elicited simple yes-or-no answers with little further details, if not enquired otherwise. In contrast, items formulated as open questions (Items 4 and 6) resulted naturally in more elaborate answers and were occasionally answered on a scale spontaneously.

Discussion

This study explored the perspectives of psychotherapy clients on self-control and evaluated the face validity of seven novel state self-control ESM items. Participants conceptualized self-control as inhibition of impulsive behaviours and emotions, as reflection on thoughts and behaviours, and as distinct from willpower. Life domains that required self-control were social relationships, professional contexts, and personal health. Although, participants often did not hold an elaborate and clear theory about self-control, their concepts were rather consistent. The only major individual difference was that they emphasised specific self-control domains more than others. They evaluated the face validity of ESM Item 2, 5 and 7 as satisfactory and minor adjustments may improve Item 1, 3, and 6. More substantial modifications were indicated for Item 4, which was difficult to answer, unclearly formulated, and lacked associations with self-control. All other items were considered feasible. The readability showed mixed results, because Item 1 also lacked associations with self-control, Item 3 evoked unexpected associations, and Item 6 led to narrow domain-specific associations. The wording and formulation was consistent and largely clear, except in Item 4 and 6. The findings in this study were largely consistent with previous research, however, the distinction between trait and state self-control was underrepresented in participants' self-control concept. Furthermore, this study highlighted the importance of formulating ESM items based on both theory and lay beliefs. The findings also

showed that inhibitory and interpersonal self-control are very salient for psychotherapy clients. Both inhibitory and interpersonal self-control might be central aspects in understanding psychiatric disorders and treatment response.

Associations of self-control with the domains of social relationships, behavioural and emotional control, personal health with an emphasis on food, and temptations are consistent with existing literature (Hofmann et al., 2012; Serrander et al., 2021; Veilleux et al., 2018). The findings are also largely consistent with the perspective that self-control is involved in the domains of achievement and task performance, impulse control, interpersonal relations, and psychological adjustment (Tangney et al., 2004). Most associations in participants' self-control concepts were also represented in the associations with the ESM items. These findings suggest that lay perspectives of psychotherapy clients in this study and academic concepts are not fundamentally different. However, the distinction between trait and state self-control was an underrepresented important concept in this study. Participants did not explicitly mention different types self-control, although, many associations resembled fluctuating states of self-control capacity more than stable dispositions. Results from the face validity evaluation of the ESM items also suggest that limited resource thinking is part of an implicit self-control theory. The items to measure ego depletion (Item 1-3) were partially associated with self-control and face validity was generally better when items clearly presented a limited resource theory (e.g. Item 3). However, these findings do not rule out that participants implicitly distinguished trait and state self-control. Additionally, the fact that participants seemed to believe in their ability to improve self-control capacities might indicate that they conceptualize self-control as a skill, rather than a resource (De Ridder et al., 2020). These speculations would clearly benefit from further research. Future studies using structured interviews to directly address implicit theories (Job et al., 2018) might reveal whether people actually do not distinguish trait and state self-control, and whether their concept endorses resource or skill thinking.

The findings provide some insight into the formulation of ESM items. Although limited resource thinking seems to be an implicit concept for psychotherapy clients and ESM items measuring ego depletion showed varying readability, the feasibility of these items was still high. Addressing an implicit belief does not seem to negatively affect the answerability of ESM items. This shows that

while designing ESM items in line with people's explicit beliefs may generally improve face validity of our measures, we can and should also base ESM items on theory to avoid failing to capture implicit beliefs about self-control. Another finding was that examples of specific self-control domains in ESM items seems to negatively affect the diversity of test-takers' associations with an item. Participants pointed out that they focused their thinking almost exclusively on the domain that was suggested by an example (e.g. in Item 4 and 6) and also thought about the same domain when answering following items. This suggests that we should either avoid providing examples or include several examples of self-control domains acknowledged by lay people to avoid one-sided associations with an item.

Inhibitory self-control seems to be among the most important forms of self-control for psychotherapy clients, particularly in the domains of social relationships, and behavioural or emotional control. The participants often described how they restrained impulses to voice certain thoughts or show emotional reactions to avoid negative consequences for them, for example. The importance was also highlighted by the strong associations of ESM items measuring inhibitory self-control (Item 6 and 7) with general self-control. *Resisting temptations* (Item 7) was the clearest representation of self-control overall. Goal-directed self-control was less prominent, albeit linked to food in the personal health domain. The findings in this study support the differentiation between inhibitory and goal-directed self-control (De Ridder et al., 2011) and highlight the importance of inhibition in mental illness (Lee et al., 2019). The important role of inhibitory self-control for participants in this study is consistent with previous research showing that deficits in inhibitory self-control are frequently occurring in various psychiatric disorders and mental health issues. For example, evidence shows that people suffering from major depression, bipolar disorder, or obsessive compulsive disorder have significantly impaired inhibition (Snyder et al., 2015). Inhibitory self-control is also critically linked to unhealthy snacking and obesity in general (Haynes et al., 2015; Lavagnino et al., 2016), which was a salient theme for the majority of participants in this study. The importance of inhibition for psychiatric disorders (Lee et al., 2019) and psychotherapy clients suggests that inhibitory self-control might be central to understanding self-control-related psychiatric disorders and improving treatment response.

Participants in this study conceptualized self-control as an important interpersonal skill to deal with conflict in relationships with family, colleagues, or strangers. These findings are similar to the

interpersonal self-control challenges and associated temptations, and temptations to avoid general and interpersonal discomfort described by Veilleux et al. (2018). Difficulties in interpersonal relationships have been described as a central factor for mental health, with evidence for the quality of current and past interpersonal relationships being key in the aetiology and treatment process of mental health problems (Pilgrim et al., 2009). All participants in this study reported current or past issues with self-control in interpersonal situations and this may explain why they emphasized the social function of self-control. The self-control behaviours they described, including emotional control, avoiding first impulses, and filtering thoughts that are said out loud, facilitate social functioning (Vohs & Ciarocco, 2004) and successful interpersonal emotion regulation strategies are associated with better well-being, particularly for anxiety and depression (Dixon-Gordon et al., 2015). Successful application of such self-control processes positively affects social belongingness and interpersonal relationships (Vohs & Ciarocco, 2004). The findings suggest that interpersonal self-control is important for understanding psychiatric disorders because this aspect is highly salient for psychotherapy clients. Future research may also investigate the manifold relationships between self-control, interpersonal relationships, and treatment success. ESM items similar to those evaluated in this study may be uniquely suited to examine the complex interplay of these factors in the daily life of mental health service users.

Strengths and limitations

The main strength of this study was its dual focus on exploring participants' self-control concept and evaluating the face validity of ESM items, because results from both interview parts complemented each other. The exploratory interview provided extensive data from a relatively small sample through an open brainstorming approach that retrieved broad associations with the self-control construct. The face validity evaluation of ESM items with the semi-structured procedure and deductive data analysis provided a systematic and comparable assessment of the items. Both approaches combined produced insight that could not have been gained by one part alone without compromising its strengths. For example, the results from the face validity evaluation allowed for inferences about implicit beliefs in the self-control concept of participants, which were not revealed by the non-directive exploratory interview. And having a tentative self-control concept at hand helped developing possible explanations for participants' evaluations of the items.

One limitation from the dual focus was that it created narrow time-constraints for each part. This meant that there was not always enough time to let participants elaborate on interesting or unexpected perspectives. Another limitation of this study was that the sample size was considerably smaller than the minimum of 9 interviews recommended to reach data saturation (Hennink & Kaiser, 2022). A larger sample could reveal different or additional themes in participants' self-control concept, or highlight individual differences. Furthermore, both form and previous amount of psychotherapeutic treatment might have influenced beliefs about self-control, as all participants received CBT, which focuses partly on improving unhelpful ways of thinking. Psychotherapy clients receiving different treatment may endorse other beliefs about self-control, and clients in the beginning of their treatment might view self-control as less 'optimistic' in terms of malleability, for example. Another limitation is that all study materials were translated to and interviews were conducted in German. It is unclear whether there are different self-control concepts across different languages, or to what extent translations of materials and interview data influenced the results. Indeed, the code *reflect on thought and behaviour* indicated that language-specific associations with self-control may exist, because this association makes sense in the context of self-control in German, but not in English, for example.

Conclusion

This study showed that for psychotherapy clients self-control is an important capacity or skill associated with positive outcomes in several life domains. Deficits in inhibitory self-control and interpersonal self-control seemed particularly salient and might play a central role for understanding and treating many psychiatric disorders. The explicit beliefs about self-control were rather consistent across individuals and showed similarities to our academic concepts, but we also saw diverse beliefs for specific self-control components and need to consider that many beliefs about self-control are implicit. Although participants did not explicitly distinguish trait and state self-control, the seven novel state self-control ESM items achieved generally satisfactory face validity. The items remained feasible even when they tested components of state self-control that are possibly implicit for people because they were not mentioned in the interviews. Overall, these items seem promising for measuring state self-control of psychotherapy clients.

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Appendix A

Interview protocols

English version

Part A

"The topic of this interview is self-control or willpower. This interview consists of two parts. First, I am interested in your ideas about self-control. Please feel free to mention anything that you associate with self-control. There is no right or wrong answer. If you are ready, we will now begin with the first question."

Definition of self-control (only read out if necessary!): "Self-control is the capacity for altering one's own responses, especially to bring them into line with standards such as ideals, values, morals, and social expectations, and to support the pursuit of long-term goals"

1. "What comes to mind when you think about 'self-control'?"
 - "What, to you, is self-control?"
 - "Can you give me an example of self-control from your life?"
 - "Is self-control a relevant topic for you? In what way is it relevant?"
 - "In what areas of life do you exert self-control?"
 - "In what situations do you think self-control is important?"
 - *Ask spontaneous probes if necessary.*
2. "Do you want to share any additional thoughts you have about self-control?"

Part B

"I will now present you with seven questions about self-control. The questions were designed to measure people's self-control throughout the day and I want to know whether they are usable. We will go through them one by one. (*Important:*) The aim is to assess whether or not these questions are understandable and make sense to you. There are no right or wrong answers. I will still ask you how you would answer these questions, although the purpose is not to assess you, but to evaluate the quality of the questions. Please do not hesitate to mention any difficulties you have with these questions, even if they may seem insignificant to you. Please also notice that I will ask you the same things about each question. This may seem repetitive, but your opinion matters." *Go through the items one by one. Let them read questions out loud.*

1. "In the past couple of hours, have you felt that it is hard to make up your mind about even simple things?"
2. "In the past couple of hours, have you felt that things are bothering you more than they usually would?"
3. "In the past couple of hours, have you felt that you have less mental and emotional energy than you normally have?"
4. "In the past couple of hours, how easy was it for you to do something "good" that you did not really want to do (e.g. eating healthy food)?"

5. “In the past couple of hours, were you able to stick to your goals?”
 6. “In the past couple of hours, how easy was it for you to refrain from doing something “bad” you really wanted to do (e.g. snacking)?”
 7. “In the past couple of hours, were you able to resist temptations?”
- “How would you answer this question?”
 - “Can you repeat the question in your own words?”
 - “What is the first thing that comes to mind when you read this question?”
 - “What do you think this question is about?”
 - “Is the wording/phrasing clear to you?”
 - “To what extent do you find this question difficult to answer?”
 - “Is there something you would change about this question? If yes, what?”
 - End: “Do you suggest any other questions?”
 - End: “Do you have any additional thoughts about all or any of these questions?”

German version

Teil A

„Das Thema dieses Interviews ist Selbstkontrolle bzw. Selbstbeherrschung, oder auch Willensstärke. Das Interview besteht aus zwei Teilen. Zunächst bin ich an Ihren Gedanken zum Thema Selbstkontrolle interessiert. Erwähnen Sie bitte alles, was Ihnen zu diesem Thema einfällt. Es gibt keine falschen oder richtigen Antworten. Wenn Sie bereit sind, beginnen wir jetzt mit der ersten Frage.“

Definition Selbstkontrolle (nur bei Bedarf vorlesen!): „Selbstkontrolle ist die Fähigkeit, die eigenen Reaktionen zu ändern, insbesondere um sie mit Idealen, Werten, Moral, und sozialen Erwartungen zu vereinbaren, und um das Streben nach langfristigen Zielen zu unterstützen.“

1. „Was kommt Ihnen in den Sinn, wenn Sie an Selbstkontrolle denken?“

- „Was ist Selbstkontrolle für Sie?“
- „Können Sie mir ein Beispiel für Selbstkontrolle aus Ihrem Leben nennen?“
- „Ist Selbstkontrolle ein relevantes Thema für Sie? Inwiefern ist es relevant?“
- „In welchen Bereichen Ihres Lebens üben Sie Selbstkontrolle aus?“
- „In welchen Situationen finden Sie Selbstkontrolle wichtig?“
- *Spontane Nachfragen nach Bedarf.*

2. „Haben Sie noch irgendwelche weiteren Gedanken zu dem Thema, die Sie teilen möchten?“

Teil B

„Ich zeige Ihnen jetzt sieben Fragen über Selbstkontrolle, bzw. Selbstbeherrschung, oder Willensstärke. Diese Fragen wurden entworfen, um die Selbstkontrolle von Menschen im Laufe des Tages zu messen und ich möchte wissen, ob sich diese Fragen dafür eignen. Wir werden uns jede Frage einzeln anschauen. Das vorrangige Ziel ist zu bewerten, ob diese Fragen für Sie verständlich sind und Sinn ergeben. Es gibt dazu keine richtigen oder falschen Antworten. Der Zweck ist nicht, Sie einzuschätzen, sondern die Qualität der Fragen zu beurteilen. Ich werde Sie dennoch fragen, wie Sie die Fragen beantworten würden. Bitte zögern Sie nicht, mir jegliche Schwierigkeiten mitzuteilen, die Sie mit dem Verständnis dieser Fragen haben, auch wenn diese Schwierigkeiten Ihnen unbedeutend vorkommen mögen. Bitte beachten Sie, dass ich von Ihnen die gleichen Dinge zu jeder Frage wissen möchte. Das mag repetitiv sein, aber Ihre Meinung ist wichtig.“

Die Fragen nacheinander durchgehen. Die Teilnehmer bitten, die Fragen laut vorzulesen.

1. Hatten Sie in den letzten Stunden das Gefühl, dass es schwierig für Sie ist, sich zu entscheiden, sogar bei Kleinigkeiten?
2. Hatten Sie in den letzten Stunden das Gefühl, dass Dinge Sie mehr stören als normalerweise?
3. Hatten Sie in den letzten Stunden das Gefühl, dass Sie weniger mentale und emotionale Energie haben als normalerweise?
4. Wie leicht ist es Ihnen in den letzten Stunden gefallen etwas „Gutes“ zu tun, was Sie nicht wirklich machen wollten? (z.B. etwas Gesundes essen)
5. Waren Sie in den letzten Stunden in der Lage, Ihre Ziele einzuhalten?

6. Wie einfach war es für Sie in den letzten Stunden etwas „Schlechtes“ zu unterlassen, was Sie gerne tun wollten? (z.B. ungesunde Snacks zu essen)
7. Waren Sie in den letzten Stunden in der Lage, Verlockungen zu widerstehen?
 - „Wie würden Sie diese Frage beantworten?“
 - „Können Sie die Frage in Ihren eigenen Worten wiederholen?“
 - „Was kommt Ihnen als erstes in den Sinn, wenn Sie diese Frage lesen?“
 - „Worum, denken Sie, geht es in dieser Frage?“
 - „Ist die Formulierung der Frage klar für Sie?“
 - „Wie schwierig wäre es für Sie, diese Frage zu beantworten?“
 - „Gibt es etwas, was Sie an dieser Frage ändern würden? Wenn ja, was?“
 - Ende: „Würden Sie weitere Fragen vorschlagen?“
 - Ende: „Haben Sie irgendwelche weiteren Gedanken zu einer oder allen Fragen?“

Appendix B

Consent form

Einverständniserklärung für „Selbstkontrolle – Perspektiven von Menschen in psychischer Gesundheitsfürsorge“

SIE ERHALTEN EINE KOPIE DIESER EINVERSTÄNDNISERKLÄRUNG

Zutreffendes bitte ankreuzen:

Ja Nein

Teilnahme an der Studie

Ich habe die Informationen zu dieser Studie gelesen und verstanden, oder sie wurden mir vorgelesen. Ich konnte Fragen zu dieser Studie stellen und meine Fragen wurden zufriedenstellend beantwortet.

Ich stimme zu, freiwillig an dieser Studie teilzunehmen und habe verstanden, dass ich mich weigern kann, Fragen zu beantworten und dass ich zu jeder Zeit meine Teilnahme an dieser Studie ohne Angabe von Gründen beenden kann.

Ich habe verstanden, dass die Teilnahme an dieser Studie ein Interview beinhaltet, dessen Ton aufgenommen wird. Ich habe verstanden, dass das Interview anonymisiert verschriftlicht und die Tonaufnahmen danach gelöscht werden.

Verwendung der Information in der Studie

Ich habe verstanden, dass meine Informationen aus dem Interview für eine Abschlussarbeit im Masterstudiengang „Positive Klinische Psychologie und Technologie“ verwendet werden.

Ich habe verstanden, dass persönliche Informationen welche mich identifizieren könnten, z.B. mein Name oder Wohnort, nicht über das Team der Studie hinaus weitergegeben werden.

Ich stimme zu, dass Aussagen von mir unter einem Pseudonym zitiert werden dürfen. Ich habe verstanden, dass diese Zitate keine Informationen enthalten, durch die ich identifiziert werden kann.

Ich stimme zu, dass der Ton dieses Interviews aufgenommen wird.

Zukünftige Nutzung der Informationen von Dritten

Ich erlaube, dass die anonymisierte Verschriftlichung des Interviews archiviert wird, so dass diese Informationen später zu Forschungs- und/oder Lernzwecken verwendet werden können.

Nachbesprechung der Studienergebnisse

Ich möchte nach Abschluss der Studie eine kurze Zusammenfassung der Ergebnisse per Email erhalten.

Unterschriften

Name des Teilnehmenden

Unterschrift

Datum

Ich habe die potentiell teilnehmende Person korrekt über die Studie informiert und habe nach bestem Wissen und Gewissen sichergestellt, dass die potentiell teilnehmende Person versteht, wozu sie freiwillig zustimmt.

Name des Forschenden

Unterschrift

Datum

Kontaktdaten der Studie:

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Kontaktinformationen für Fragen zu Ihren Rechten als Teilnehmende Person einer Studie

Sollten Sie Fragen zu Ihren Rechten als Teilnehmende*r einer Studie haben, sonstige Informationen erhalten möchten, Fragen stellen, oder jegliche Bedenken bezüglich dieser Studie mit einer anderen Person als dem Forschenden besprechen möchten, kontaktieren sie bitte das Sekretariat des Ethischen Komitees der Fakultät für Verhaltens, Management, und Soziale Wissenschaften der Universität Twente in Enschede, Niederlande, per Email:

ethicscommittee-bms@utwente.nl