Transitions in Depression (TRANS-ID) Recovery:
Study protocol for a repeated intensive longitudinal n=1 study design to
search for personalized early warning signals of critical transitions towards
improvement in depression

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Abstract

Aim. The Transitions in Depression (TRANS-ID) Recovery study has gathered intensive longitudinal data in a group of individuals with depression during psychological therapy. The study was designed to gather high-resolution time series to monitor individual change processes in great detail, to allow for personalized predictions of shifts in depressive symptoms.

Method. The data collection combined experience sampling methods to assess momentary affect and behavior (five 27-item questionnaires a day, for four months), ambulatory assessment of physical activity and heart rate (continuous, for four months), and depression symptom assessments (weekly for six months, and monthly for the six months thereafter, twelve months total). In addition to a baseline diagnostic interview, baseline questionnaires covered a range of constructs, including overall psychopathology symptoms, medication use, psychological treatment history, alexithymia, life events, quality of life, and chronotype. After the four-month ambulatory assessment period, a personal report of the experience sampling data was given to each participant, and a semi-structured qualitative interview was conducted to evaluate participants' own retrospective experience of symptom changes during the research period.

Conclusion. The TRANS-ID Recovery study procedures and materials are described in detail in this document. The study protocol was approved by the Medical Ethical Committee of the University Medical Center Groningen (reg. number: NL58848.04.16).

Introduction

The Transitions in Depression (TRANS-ID) Recovery study is aimed at gathering intensive longitudinal data in a group of depressed patients during psychological therapy. We expect that relatively swift and large symptom improvements may occur during therapy, and that these transitions may be preceded by generic early warning signals (EWS), such as seen in complex dynamical systems [1–6]. However, the nature of such transitions toward improvement of depressive symptoms, particularly the dynamics within the day and at the within-person level, is largely unexplored and undefined from a complex system framework. One of the aims of this project is thus to gain insight into the process of depressive symptom change during therapy, and create a better understanding of what might constitute a ‘critical transition’ toward fewer symptoms.

Per person, we gathered between 500-600 momentary measurements of mood (5 times a day, for 4 months) using the Experience Sampling Method (ESM), as well as weekly symptom checklists and heart rate and actigraphy measurements. This enabled us to capture changes and improvements in depressive complaints and behavior within persons on several time scales, and to examine whether EWS such as autocorrelation, variance and overall network connectivity increase before large symptom jumps in repeated $N = 1$ investigations.

Study population

Intended sample size

We aimed to include 50 people, with an expected attrition rate of 10% resulting in an expected sample size of 45 participants. We expected sudden shifts in symptoms in about 50% of the group [7–11]. Participants entered the study between May 2017 and May 2019, with the data collection finalising in May 2020 – ending on a total of 41 participants that completed the full study procedures.

Selection criteria

Inclusion criteria were checked during the screening telephone call and in more detail during the baseline interview. To be eligible for participation the following criteria needed to be met: age ≥ 18 ; presence of depressive symptoms (Inventory of Depressive Symptomatology score ≥ 14); being set to start psychological treatment for depressive symptoms (within a month from the participation start date); capable of following the study procedures; and willing to and capable of giving informed consent.

Exclusion was decided on the following criteria: presence of a current manic episode or current psychotic symptoms; chronic depressive symptoms (> 2 years); reported primary diagnosis of a personality disorder; insufficient Dutch language skills to understand the diary questions, inability to work with a smartphone.

Procedure

Recruitment

To recruit study participants, a website was set up that contained information on the study aims, study procedures, and the eligibility criteria – a link to the full information letter was also provided. Potential participants indicated their interest in the study by filling out their phone number, full name, and date of birth on a form on the website, thereby consenting to be called by a member of the research project team. We advertised the study in local and national newspapers as well as via social media, including paid advertisements. In addition, information on the study and a link to the website was distributed among mental health care institutions.

Two paths to inclusion were possible (details below). Procedure 1) flyer only – a participant-led approach, in which participants registered through the study website after seeing the flyer or advertisement for the study. Procedure 2) flyer and information letter – a clinician-led approach, in which the full information package was given to participants by their mental health care provider, and a consent for contact-form replaced the need for participants to register themselves via the website. Procedure 2 was an amended approach (approved by the Medical Ethics Committee) for one mental health care institution, which allowed the steps before the baseline interview to progress more quickly and more patients to be included *before* they started therapy. A graphical representation of the recruitment procedures is provided in Figure 1 below.

Inclusion procedure 1: flyer only

Flyers and posters were distributed via mental health clinics and placed in community centers. The flyers contained a brief overview of the study and the link to the website. In the participating clinics, flyers were given to potential participants by a mental health care provider at their intake or sent along with the intake-invitation letter. Interested persons could then get in touch with the researchers by signing up for the study through the website.

Screening telephone call

One of the members of the research team called new applicants within a few days after registration. During this telephone call, information about the study was provided and individuals were given the opportunity to ask questions. A first check of all the inclusion and exclusion criteria was performed.

Figure 1. Inclusion procedures 1 and 2 for TRANS-ID Recovery

Legend: **Dashed outline:** general recruitment approach for that procedure. **Light grey boxes:** procedural steps that occur only if applicable.

Procedures 1: participants take the initiative to register via the website and are provided with an information pack after the telephone screening. Researchers await the signed consent form before continuing the inclusion procedures.

Procedures 2: participants are given the flyer and information letter by their mental health care provider. They can indicate with the clinician during intake if they are interested to be contacted by the researchers. Providing the information pack early allowed for a speedier procedure: if participants seemed eligible during the telephone screening, they could immediately schedule a baseline interview.

Information letter

Eligible individuals who remained interested in study participation after the screening telephone call, were sent the patient information letter and an informed consent form by post and/or email. Individuals were asked to use the return-envelope to send the informed consent form within two weeks. If the informed consent form was not received after two weeks, they were sent a reminder. After the informed consent was received, an appointment was made via telephone for the introductory baseline interview.

Inclusion procedure 2: flyer and information letter

In some mental health care institutions, the intake procedures allowed the flyer and the full information letter to be distributed together. Individuals who had been referred to the mental-health institution because of depressive symptoms received the flyer and information letter with their intake-

invitation. The information letter stipulated that the TRANS-ID Recovery study would be discussed with them during intake. The practitioner asked whether the patient would be interested in study participation and whether they agreed to be contacted by the researchers with more information. If they agreed, patients confirmed this by signing a contact consent form with their contact phone number and signature.

Screening telephone call

Patients who signed the contact consent form during intake, were called by one of the members of the research team. During the telephone call, information about the study was provided and individuals were given the opportunity to ask questions. A first check of all the inclusion and exclusion criteria was performed. As they had previously received the full information letter, they were asked if they were still interested to participate in the study and if so, an appointment for the introductory baseline interview was set straightaway at the end of the screening telephone call.

Baseline assessments

Pre-interview inclusion check

To capture the period of change during therapy as closely as possible, the baseline interview was planned in the range of one month before a patient's treatment start, to maximum two weeks after the start of therapy. In some cases this meant that patients on a waitlist for treatment also had to wait for the start of the study, and in other cases participants were excluded for being too far into the therapy process.

A week before the baseline interview, an e-mail invitation for the online baseline assessments was sent (see Table 1 for the list of instruments). Completing the questionnaires took about 20 minutes, maximum one hour. The score on the Inventory for Depressive Symptomatology – Self Report (IDS-SR)[12, 13] was checked by a researcher before the interview took place to determine whether individuals met the inclusion criterion of 'presence of depressive symptoms'. A score lower than 14 on the IDS-SR, meant exclusion from study participation.

Baseline interview

Diagnostic check: mini-SCAN

In the first half of the interview, history of depression, current depressive symptoms, chronic depression, as well as the presence of a psychotic or a bipolar disorder were assessed using the relevant prompts and diagnostic questions of the mini-SCAN (Nienhuis, van, Rijnders, de Jonge, & Wiersma, 2010). If a diagnosis of current psychosis and/or mania was indicated, or if there was no current depressive episode indicated, further participation in the study was not possible, and the interview was ended at that point. Participants who had not done so yet (after following recruitment Procedures 2) signed the informed consent form.

Figure 2. Overview of the participation trajectory: duration of the various assessment periods, timing of the interviews and questionnaires, and the within-day structure for the ambulatory assessments

Note: To further clarify the visual representation of the ambulatory assessments, participants did the following: they wore the actigraph continuously, and 1) upon waking: pressing the actigraph event marker, and five minutes of heart rate measurement; 2) during the day: five two-minute ESM questionnaires at three-hour intervals (the times in the figure are an example); 3) before sleep: five minutes of heart rate measurement, and pressing the actigraph event marker.

Training for the ambulatory assessments

Next, the physiological measurements were explained. The participant was asked to start wearing the actigraph continuously from that point onward. The use of the event-marker was demonstrated. Moreover, a step-by-step demonstration of the use of the Cortrium heart rate monitor was given, along with a visual instruction sheet, and a detailed trouble-shooting booklet. Participants were asked to repeat the heart rate measurement without help from the researcher to ensure they mastered all steps. They were given the device, dedicated iPhone for the measurements, and a supply of electrodes to take home. All participants signed a lending-agreement for the electronic devices they were provided with.

After this, participants were given a detailed instruction for the ESM-questions, for which they could use their own smartphone. A test-questionnaire was sent to them, so they could practice filling out the diary questions, and the weekly symptom-questions. Researchers followed a detailed protocol to give concrete examples and prompts in reaction to a participant's intuitive response style. This was

intended to train participants to best capture both daily and long-term changes in their mood over four months' time – i.e., training them to use the scale across their depressed and healthy range of feelings. If individuals did not manage to fill out the ESM-questions on the smartphone by themselves after practicing, they were excluded from the study. Furthermore, participants were allowed to add two additional questions to make the list more personalized. Researchers helped them with the phrasing to make the items as informative as possible. As the ESM-text messages were sent at the same times every day, the researchers took time to find the optimal schedule for each individual. At the end of the instruction, the key points for answering the ESM-questions were repeated, and any remaining questions answered. Appointments were made for two follow-up calls.

Practical details

The baseline interview took two to two and a half hours. Most interviews took place face-to-face at the University Centre for Psychiatry in Groningen. Travel costs for participants were reimbursed. However, in some cases, traveling to Groningen was not feasible. In those cases interviews took place via video call on two occasions: a first appointment for the mini-SCAN diagnostic check (and in some cases, the ESM-explanation), and a second appointment for the (continuation of the) ambulatory assessment training. The break between the two sessions was required to send the research devices to the participant, which would only be done after eligibility was confirmed by the mini-SCAN.

Ambulatory assessment period (months 1-4)

Contact during the ambulatory period

The researcher who included a participant at the baseline interview remained a participant's primary point of contact throughout the ambulatory period. Regular moments for telephone contact were set during the ambulatory period. First, approximately two days after the baseline interview was completed, and again two weeks after the start. After that point, participants were contacted every three to four weeks, depending on preferences and availability.

During the first call, participants were encouraged to discuss any difficulties or questions that had arisen since the initial instructions. The researcher asked whether participants could recall the most important instructions from the ESM-training, and repeated and reinforced the points that were missed or unclear. Additionally, participants were asked if they had removed the actigraph at any time, or had any issues with the heart rate monitor. During the regular 3-week contacts, the researchers asked how the measurements were going, as well as registering any new information about how participants were doing in terms of mood, symptoms, and treatment.

The calls were intended to motivate the participant, answer questions about the study procedures, and to provide technical help. The researcher was also available by telephone and e-mail if participants needed help at other moments. Regular (weekly) data checks were done to verify that

participants were completing the daily questionnaires at a rate of about 80%, and that the weekend symptom-questionnaires were completed. If it appeared that a participant had a low completion rate, the researcher called and/or emailed the participant to discuss and resolve any issues or concerns that were preventing the participant from filling out the questions.

About a week before the end of the ambulatory assessment period, participants were contacted to plan the evaluation interview. They were also asked whether any of the momentary mood items in the ESM-questionnaire were particularly interesting for them to have highlighted in their personal reports. They were also asked to bring any agenda or notebooks with them; this was intended as a memory aid during the interview to help them give a more precise timing of important events or psychological changes with more precision.

Evaluation (after month 4)

Evaluation questionnaires

An online evaluation questionnaire containing questions regarding the therapy, changes in medication, and evaluations of the ambulatory assessments (see Materials, and Table 1) was sent in the week after the end of the ambulatory assessment period. Participants were asked to complete it within seven days, or at least before the evaluation interview.

Evaluation interview

During this second appointment, participants returned the research devices, went through a semi-structured interview about the changes in their depressive complaints during the research period, and received a personal report of their data over time. The interview questions pertained to daily assessments, and events and experiences that might have influenced their depressive symptoms and the transition towards improvement (for more detail, see instruments below). The personal report consisted of descriptive graphs of their daily ESM-data and the weekly symptom scores, as well as a print-out of the comments they wrote in the ESM-questionnaires and in the weekly open questions. Noticeable peaks and shifts in the daily or weekly data were discussed with the participant, as were periods of missing data.

The full evaluation interview took approximately two hours. All interviews were led by one researcher (MAH) to maintain consistency, and she served as a point of contact for all participants for the remainder of their study period. The evaluation interview typically took place face-to-face at the University Center of Psychiatry, Groningen. However, if preferable, the interview could take place via video call, in which case participants were asked to send the electronic devices back via post.

Follow-up symptom assessments (months 5-12)

Every Monday, a researcher checked whether any weekend symptom questionnaires (weekly and monthly) were missing and, if so, contacted those participants via telephone or e-mail to request that they complete the questionnaire by the end of the day.

Follow-up contact moments and questionnaires

In the eight months after the ambulatory assessment period, the moments of contact became less frequent as the assessments did. The evaluation interview took place two to four weeks after the ambulatory period ended, and after that, participants were contact twice more via telephone: at the halfway point at six months, and at the end of the study period, at twelve months. At the six-month halfway point, the weekend questionnaires were switched from a weekly protocol to monthly, and the participants received an email with a link to the online ‘six-months’ questionnaires (see Table 1).

Materials

Baseline, evaluation and six-months questionnaires

A selection of questionnaires was sent to participants before the baseline interview, after the four months of ambulatory assessment, and at six months (see Figure 2). For an overview of all (standard) instruments and the relevant assessment moments, see Table 1.

Mini-SCAN

The mini-SCAN is a validated semi-structured interview designed to assess psychiatric disorders [14], which automates the scoring and diagnosis via an online interface. Yes-or-no questions appear on screen for the interviewer to read out, followed by further questioning at the researcher’s discretion, until they are satisfied to mark a symptom as present ‘yes’ or not ‘no’. For the purpose of this study, only the bipolar (mania), psychosis and depression screening prompts were used. The section on mood disorders was always administered, a list of approximately 30 questions, with 3 additional questions on psychotic characteristics only appearing if indicated by a previous answer.

Additionally, for this study, a relevant period for questioning needed to be determined. In particular, a period over which the complaints had been relatively stable and comparable over time. Thus, from the last noticeable, large shift in symptoms – be it an improvement or worsening of the complaints – until the day of the interview. If this period was too difficult to determine or too lengthy (e.g., a four months or more) to recall easily, the researcher proposed focusing on the past month. In total, the mini-SCAN interview took approximately 20-45 minutes.

Ambulatory assessment protocols

Experience Sampling protocol

The ESM measurements consisted of five measurements a day, at fixed intervals of three hours, over the course of four months (total ca. 600 prompts per participant). The questionnaires were sent via text-message, with a reminder-text after ten minutes and a half hour time window for completion. A measurement took about two minutes to complete and the timings were set according to the sleep-wake habits of a participant, with specificity up to 15-minutes to be optimally convenient for a participant.

Experience Sampling instrument

The full 27-item ESM-questionnaire is available in the appendix, as well as in the project's online repository (<https://osf.io/a8572/>). Items were rated on a visual analogue scale, with anchors 'not at all', to 'very much' and the underlying scale ranging from 0 to 100, at two-decimal point precision. The items list includes ten momentary affect items based on the circumplex model of affect [15], momentary cognition items, levels of physical discomfort, current social environment and the degree of physical activity and types of activities in the past three hours. Participants were also given the opportunity to add a maximum of two personalized items. Finally, there was a text-field in which any remarkable or influential moments could be reported.

Heart rate measurement protocol

Heart rate measurements were done using the Cortrium C3 device [16, 17], with three ECG-channels and a Bluetooth connection to a dedicated research iPhone. The Cortrium C3 device has been tested for validity against the golden standard [18]. In order to capture a stationary heart rate signal, it is preferable that the measurements are preceded by a relatively calm period of activity. Therefore, participants were asked to complete their 5-minute measurements every morning just after waking up, and in the evening before going to bed.

To start a measurement, participants attached three electrode stickers to the Cortrium device, turned it on, and attached it to the middle of their chest, on their sternum and ribs. They were instructed to find a comfortable sitting position, in which they could sit still for five minutes. Because of the live connection to the phone, participants could check whether the signal from all three channels seemed in order before they started each recording. If all was in order, they were to 'freeze' the screen so they would not be viewing their own heart rate, and were encouraged to place the phone away from them, and set an alarm for five minutes. In the Cortrium app on the iPhone, then pressed 'start recording'. Talking, drinking and moving were not allowed during that period. After the five minutes passed, participants ended the recording and, with a click of a button, sent the data to an anonymized and secure UMCG server. All data was also stored locally on the iPhone.

Actigraphy protocol

The MotionWatch 8 by CamNtech [19, 20] was used for the actigraphy measurements. The accelerometer measured cumulative uni-axial MotionWatch-counts over 60-second epochs.

Participants were asked to wear the wristwatch-like device continuously during the ambulatory assessment period of four months. Twice a day, the event marker button on the actigraph was to be pressed: when they woke up and when they went to sleep. The MotionWatch 8 is waterproof, so participants could wear the device in the shower and swimming pool as well. Only for sauna visits, certain contact-sports, and in rare cases if severe skin irritation occurred was non-wear warranted. To mark a period of non-wear, participants were asked to press the event marker twice in quick succession, in order to mark the start and end of a non-wear period distinctively from a sleep/wake period.

Weekly and monthly symptom questionnaires

Assessment of symptoms and individual perception of changes and events

To assess the course of depressive symptoms over time, participants completed fourteen items of the SCL-90 depression subscale every week in the first six months, and monthly in the last six months of participation (see Figure 2). The SCL-90 depression subscale [21] consists of sixteen items, but the questions on suicidal ideation, and self-esteem were removed for this study as they were deemed potentially too burdensome to fill in at a weekly frequency for a vulnerable population such as depressed patients.

In addition to the symptom checklist, participants were given several optional questions, which they could complete if they were applicable. First, three open questions: 1) have they recently experienced a noticeable shift in symptoms, 2) do they expect a noticeable shift in symptoms in the near future, and 3) have people in their close environment remarked on any changes, and *if so* (for 1, 2, and 3), what and when? Finally, they were given room to describe and rate any important or impactful experiences of the past week or month — a maximum of three at week-level, and five at the month-level assessment. The full weekly questionnaire took about five (additional) minutes to complete.

During the ambulatory assessment period (months 1-4)

In the first four months, the weekly questionnaire was sent along with the ESM-prompts during the weekend. From the first measurement time point on Saturday, a participant's ESM-questionnaire was immediately followed by the weekly depressive symptom questionnaire. The weekly questionnaire was presented again after each ESM-prompt – the same 30-minute completion window applied –, until completed or until the very last prompt on Sunday evening.

Follow-up symptom assessment periods (weekly, months 5-6; monthly months 6-12)

For the two months of weekly, and six months of monthly (every 28 days) assessments, participants received a link to the questionnaire via text or email on the weekend. Timing of the texts was kept consistent with the participant's ESM-schedule, and prompts were sent until the questionnaire was completed. A maximum of ten prompts (no reminder texts after ten minutes) were sent on Saturday and Sunday - five per day, three hours apart -. The questionnaire could be completed at the participant's convenience within 72 hours of the first prompt (no 30-minute completion window).

Evaluation interview

The semi-structured evaluation interview was designed specifically for the TRANS-ID Recovery study, with the intent to gather qualitative data about the changes in depression that participants experienced during the first four months of the study and what the process of change looked like for an individual. Sessions were recorded on audio and answers were noted down verbatim during the interview.

The interview contained open questions, probes for deeper questioning, and several questions on a scale from 1 (not at all) – 7 (very much). The overall tone of the interview put emphasis on a participant's subjective experience, and their views and ideas of how, why, and when their complaints changed over time. Questions included: compared to the start of the study period, which depressive symptoms have changed?; what changed first?; was the change rapid or gradual?; what was the most important driver of change?; what symptoms have improved and what has not?; what components of the therapy were helpful?; how strongly do they feel they have 1) experienced a decrease in depressive symptoms, and 2) recovered from their depressive symptoms? on a scale from 1-7; what were important events or insights that influenced their symptoms? Participants were also asked questions about the added value of monitoring daily experiences during psychological treatment and to comment on the data collection and the study in general. The evaluation interview questions are available in Dutch upon request.

Ethics and dissemination

Participation in this study was voluntary and written informed consent for scientific publication of their anonymised data was obtained from all participants, in accordance with the Declaration of Helsinki. All project-leading researchers undertook a training to increase their sensitivity to detect (legal) incapacity in participants. Questions to test for full understanding of study obligations and motivation (uncoerced willingness) to participate were part of routine protocol.

Participants were financially compensated for study participation. Participants could receive a maximum of €250,- for study participation, depending on their compliance with completing the daily, weekly, and monthly questionnaires.

Because the TRANS-ID Recovery group concerned a vulnerable group of individuals who were selected for their depressive complaints, a protocol was prepared to detect cases in which (immediate) clinical care was warranted. For instance, if a participant disclosed any suicidal ideations or plans. The protocol was developed together with psychologists and psychiatrists from the University Centre for Psychiatry in Groningen.

ESM and questionnaire data was collected via and stored in a protected online environment (governed by RoQua, www.roqua.nl), to which only selected researchers could gain access via two-step authentication. The safety of this system is guaranteed by, and meets the standards of the University Medical Center Groningen (UMCG). Participants were given a unique identification number, the key to which was also only available in the protected RoQua environment to project coordinators. Any data with personal identifiers (informed consent forms, therapist information) were kept in paper form in a locked cabinet, and in digital form on a dedicated server with no link to the coded data. Anonymous interview data and electronic written records of communications with participants were stored under participant identification numbers, on a dedicated protected server.

After the study's main results have been published, the data can be shared under certain conditions upon reasonable request and in accordance with data security and legal privacy requirements. The research results will be submitted for publication in (inter)national medical or psychological journals. Public disclosure and publication of the research data will be according to the Central Committee on Research Involving Human Subjects (CCMO) statement on publication policy.

Ethics approval

Medical Ethics Committee of the University Medical Center Groningen (ABR no. NL58848.042.16).

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Table 1. Overview of the instruments used in the various (online) questionnaires.

Purpose	Instrument	Abbreviation	Method	Moment of assessment			Reference
				Baseline (pre-AAP)	Evaluation (post-AAP)	Six-months (halfway)	
Descriptive characteristics	* Demographic information	-	SR	×			
	* Medication	-	SR	×	×		
	* History of and current psychological treatment	-	SR/INT	×	×		
	* Evaluation of ambulatory assessment and study procedures	-	SR		×		
Social functioning and well-being	The Self-Rating Scale of Happiness	-	SR	×			[22]
	* Meaning in Life Questionnaire — Short Form	MLQ-SF	SR	×			[23]
	Social Support List — Interactions and Discrepancies (first version)	SSL-I/SSL-D	SR	×			[24, 25]
	General Self-Efficacy	GSE	SR	×			[26]
	Toronto Alexithymia Scale — Difficulty Identifying Feelings and Difficulty Describing Feelings subscales (12 items)	TAS-20 DDF and DIF subscales	SR	×	×	×	[27, 28]
Personal risk factors	Munich Chronotype Questionnaire	MCTQ	SR	×			[29–31]
	List of Threatening Experiences	LTE	SR	×		×	[32]
	* Long-term difficulties	-	SR	×			[33–35]
Psychopathology and Depressive Severity	** Inventory of Depressive Symptomatology — Self Report	IDS-SR	SR	×			[12, 13, 36]
	Symptom Checklist 90 — Revised	SCL-90-R	SR	×			[21, 37, 38]
	** Short version of the Schedules for Clinical Assessment in Neuropsychiatry	mini-SCAN	INT	×			[14]

Note:

AAP = Ambulatory Assessment Period; SR = Self-Report; INT = Interview

* = Developed or adapted for TRANS-ID (from other instruments)

* = Developed or adapted by TRacking Adolescents' Individual Lives Survey (TRAILS)

** = Used for screening, inclusion criteria check

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Appendix Table A1. TRANS-ID Recovery Experience Sampling Questionnaire Items			
#	Item	Answer options and scale anchors	
1	I feel content	VAS	Not at all — Very much
2	I feel down	VAS	Not at all — Very much
3	I feel irritated	VAS	Not at all — Very much
4	I feel cheerful	VAS	Not at all — Very much
5	I feel listless	VAS	Not at all — Very much
6	I feel restless	VAS	Not at all — Very much
7	I feel stressed	VAS	Not at all — Very much
8	I feel energetic	VAS	Not at all — Very much
9	I feel at ease	VAS	Not at all — Very much
10	I feel tired	VAS	Not at all — Very much
11	I am experiencing physical discomfort (e.g., headache, backache, dizziness, nausea)	VAS	Not at all — Very much
12	I can concentrate well	VAS	Not at all — Very much
14	I am worrying	VAS	Not at all — Very much
15	I want to be with other people	VAS	Not at all — Very much
16	My thoughts about myself are currently...	VAS	Very negative — Very positive
17	Who am I with at this moment:	☐ Nobody ☐ Partner ☐ House mates ☐ Family ☐ Family (living elsewhere) ☐ Friends ☐ Colleagues/class mates ☐ Caregiver ☐ Acquaintances ☐ Strangers	
18a/b	✱ Optional personalized question (momentary or about the past three hours)		
19	The past three hours I was physically active	VAS	Not at all — Very much
33	The past three hours I have spoken with others	VAS	Not at all — Very much
20	I have had contact with (an)other(s) in the following way:	☐ Spent time with somebody ☐ (Video)calling ☐ WhatsApp-exchange/chat ☐ I had no contact with others	
21	The past three hours I have done the following:	☐ Eating ☐ Household tasks/groceries/admin ☐ Self care (e.g., shower, brushing teeth, clothes) ☐ Working/studying ☐ Taking care of (grand)children ☐ Psychological treatment ☐ Sports/walking/cycling ☐ Something calm (e.g., watching TV, internet) ☐ Hobby (e.g., make music, DIY) ☐ Outing (e.g., visit to town, a museum) ☐ Something with another/others ☐ Making contact with someone ☐ Be on the way (somewhere) ☐ Sleeping ☐ Resting/nothing	
	Think of the most striking event or activity in the past three hours.		
22	↳ How (un)pleasant was this event?	VAS	Very unpleasant — Very pleasant
23	↳ How impactful was this event?	VAS	Not at all — Very much
24	☾ I am experiencing tension due to something that will occur in the near future	VAS	Not at all — Very much
25a	☉ I look forward to the rest of the day	VAS	Not at all — Very much
25b	☾ I look forward to tomorrow	VAS	Not at all — Very much
26a/b	✱ Optional personalized question (end of the day)		
	Is this the first questionnaire you are completing today?		Yes / No
27a	↳ Yes → I have slept well last night	VAS	Not at all — Very much
28	✱ How many cigarettes have you smoked in the past three hours?		0 — 25
29	✱ How many cups of coffee and glasses of caffeinated soda did you drink in the past three hours?		0 — 25
30	✱☾ How many glasses of alcohol did you drink today?		0 — 25
32	Note down any remarks: was there something that influenced your answers?		... {text field}
<i>Note:</i> This table, and the original Dutch version of the questionnaire can also be found in the online project repository https://osf.io/a8572/ . Numbering in this table is kept consistent with the TRANS-ID dataset. VAS: Visual Analogue Scale, underlying scale of 0.00 to 100.00.			
✱: Item added only if applicable for participant. ☾: Item appears only in the last questionnaire of the day. ☉: Item occurs only the first 4 questionnaires.			