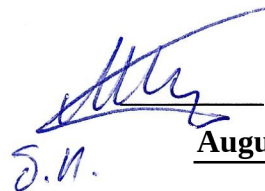


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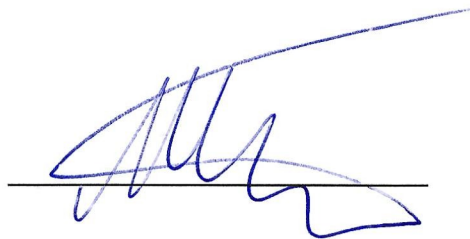
**APPROVED BY
CEO**


M. A. Volodina
August 31, 2026

**REPORT
ON RESEARCH WORK**

**“A STUDY OF THE ASSOCIATION BETWEEN GSR PRACTICE EXPERIENCE
AND THE PSYCHO-EMOTIONAL CHARACTERISTICS OF PARTICIPANTS”**

Principal Investigator

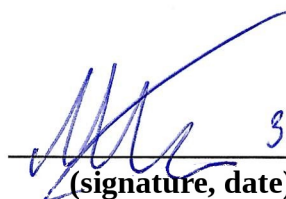


M. A. Volodina

Moscow 2026

LIST OF CONTRIBUTORS

**Principal Investigator,
CEO of BRAINSTART LLC,
Research Fellow at the Centre
for Bioelectric Interfaces,
HSE University, PhD in Biology**


(signature, date)

M. A. Volodina

Contributors:

**Junior Research Fellow at
BRAINSTART LLC, Junior Research
Fellow at the Centre for
Bioelectric Interfaces,
HSE University**


(signature, date)

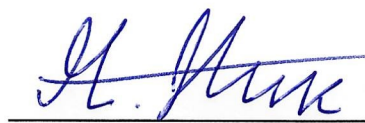
A. V. Rusinova

**Research Assistant at
BRAINSTART LLC,
Research Assistant at the Centre
for Bioelectric Interfaces,
HSE University**


(signature, date)

E. K. Potapkina

**Research Assistant at
BRAINSTART LLC**


(signature, date)

M. I. Nikolaeva

ABSTRACT

Report: 83 pp., 18 figures, 115 references.

This report presents the results of a cross-sectional study of the association between experience with GSR practice and a broad range of psychometric measures. The study was conducted as an online survey and includes data from 377 participants (22 individuals with no GSR experience and 355 individuals with varying experience of conducting self-sessions). Psycho-emotional characteristics were assessed using validated psychometric questionnaires: BSCS, TEIQue-SF, BFI-2-XS, BDI, STAI, PSS-10, COPE-30, CD-RISC-10, CFI, UWES, PGIS, RSES, GSES, CERQ, Grit-S, and SWLS.

The statistical analysis included a comparison between the control group and the group of GSR novices (fewer than 10 self-sessions), as well as regression models adjusted for demographic and behavioral covariates (age, sex, education, marital status, prior psychotherapy, and experience of meditative practices). After correction for multiple comparisons, GSR experience emerged as a significant predictor of scores on 34 psychometric scales.

Key findings: greater experience with GSR practice was statistically significantly associated with lower anxiety (both state and trait), lower depressive symptoms (both cognitive-affective and somatic), and lower perceived stress and distress; and with higher self-control, emotional intelligence, self-esteem, self-efficacy, resilience, personal growth initiative, life satisfaction, and work engagement (vigor, dedication, and absorption). A decrease in maladaptive coping strategies (denial, behavioral disengagement, substance use) and an increase in the use of planning as a cognitive emotion regulation strategy were also observed. The control group and GSR novices did not differ on the characteristics measured, which makes it less likely that the effects can be explained by initial self-selection. Tests for threshold effects revealed no abrupt shifts in scores once a particular level of cumulative experience had been reached; the changes are better described as gradual and monotonic.

These data characterize the profile of psychometric correlates of GSR experience. The robust associations found between greater practice experience and improvements across a broad range of measures indicate the potential adaptive value of this method. Since the control group and novices did not differ, and the regression analysis was adjusted for covariates, this reduces the risk that the results are explained by initial self-selection.

Keywords: GSR, psycho-emotional characteristics, self-regulation, stress, anxiety, depression, emotional intelligence, cross-sectional study, psychometric questionnaires.

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Introduction

This report presents the results of a cross-sectional study of the association between the number of self-sessions (sessions conducted on oneself) performed using the GSR method (RF patent No. 2857977, “A method for correcting a person’s psycho-emotional state”) and a broad set of psychometric measures. The study was conducted as an online survey and includes the results of an analysis of psychometric testing data from 377 individuals.

The aim of the study was to examine the association between the number of GSR self-sessions completed and participants’ psycho-emotional characteristics, as assessed by psychometric questionnaires.

The work involved a detailed statistical analysis, including a comparison of the control group (individuals with no GSR practice) and the group of GSR practitioners with minimal experience (fewer than 10 self-sessions). Regression models were also fitted to examine the association between psychometric measures and GSR practice experience, expressed as the number of GSR self-sessions performed by the participant. Psychological constructs were measured using validated psychometric questionnaires, supplemented by questions on participants’ age, sex, marital status, and lifestyle (frequency of alcohol use, smoking, attendance at psychotherapy, and engagement in meditative practices)

These data make it possible to describe systematically the profile of psychometric correlates of GSR experience and to formulate hypotheses for subsequent longitudinal studies, which are needed to determine the direction of these associations.

1. Aim and objectives of the study

Aim of the work:

to examine the association between the number of GSR self-sessions completed and participants' psycho-emotional characteristics, as assessed by psychometric questionnaires.

Objectives of the work:

- 2.1. Conduct a literature search on the topic of the study.
- 2.2. Select appropriate Russian-validated psychological questionnaires for assessing psycho-emotional characteristics.
- 2.3. Develop the design of a cross-sectional study, including recommendations on the number of participants at differing levels of GSR practice experience.
- 2.4. Recruit the participant sample (at least 150 GSR practitioners and 20 individuals with no experience of GSR sessions).
- 2.5. Organize online data collection using the selected questionnaires.
- 2.6. Perform statistical processing and analysis of the data obtained.
- 2.7. Write a research report describing the data obtained and their interpretation.

2. Literature review

Methodological approaches to studying the cumulative effects of interventions

In recent years, the prevalence of depressive and anxiety disorders in the general population has been steadily increasing [1], [2], [3]. This increase creates demand for the development of new methods of psycho-emotional self-regulation and for the validation of existing ones.

Research on the effects of psychotherapeutic interventions employs a variety of study designs, each with its own strengths and weaknesses. Cross-sectional studies are efficient for rapidly identifying associations in large samples and for generating hypotheses, but they do not establish causal relationships, since they cannot distinguish the direction of causality or rule out the influence of third variables. Quasi-experimental designs (pre-post without randomization) are convenient for assessing change before and after a practice under naturalistic conditions and demonstrate the practical significance of an intervention, but they are vulnerable because of the lack of a control condition. Randomized controlled trials (RCTs) with active or passive controls provide the highest level of evidence thanks to randomization, minimization of bias, and the ability to establish causality, but they require substantial resources, face problems with participant retention, and may have limited external validity because of their artificial conditions. Longitudinal cohort studies with repeated measurements track changes in measures over time, making it possible to distinguish developmental trajectories and dose effects of practice, but they are expensive, require prolonged follow-up, and are subject to attrition. Qualitative and mixed methods provide an in-depth understanding of the subjective experience of a practice, its mechanisms of action, and its context, complementing quantitative data, but they are limited by the subjectivity of interpretation and by low generalizability.

A taxonomy of psychotherapeutic approaches

To date, the contemporary literature has accumulated an extensive body of evidence on structured psychological protocols in which self-regulation is treated not as an abstract principle but as the object of the step-by-step development of specific skills.

Psychotherapeutic approaches are usually grouped into several broad traditions: psychodynamic, behavioral, and humanistic (existential-humanistic) [4]. It should be noted, however, that this classification is fairly conventional, since many contemporary methods integrate ideas from several traditions at once, and the choice of approach depends on the problem, the client's request, and the clinical context.

1. Cognitive behavioral approaches aim to change dysfunctional patterns of thinking, emotional responding, and behavior. This group includes classical cognitive behavioral therapy (CBT) [5], Ellis's rational emotive behavior therapy [6], and "third-wave" CBT methods, including acceptance and commitment therapy (ACT [7]), dialectical behavior therapy (DBT [8]), and mindfulness-based stress reduction (MBSR [9]). Their common principle is the teaching of

specific skills, such as cognitive reappraisal, self-monitoring, behavioral activation, acceptance, mindfulness, and emotion regulation.

2. Psychodynamic approaches view psychological difficulties through the lens of unconscious processes, internal conflicts, defense mechanisms, and the influence of early experience on current feelings and behavior [10]. They include classical psychoanalysis [11], psychodynamic psychotherapy, Jungian analysis [12], and contemporary object relations therapies.
3. Humanistic and existential approaches focus on the person's subjective experience, freedom of choice, the search for meaning, self-acceptance, authenticity, and personal growth. They typically include Rogers's client-centered therapy [13], Gestalt therapy [14], and existential psychotherapy [15]; in these approaches particular emphasis is placed on enhancing awareness of present experience, contact with one's needs, and reliance on one's own resources.

Cognitive behavioral therapy (CBT)

Cognitive behavioral therapy occupies a central place among empirically validated formats of psychological care. CBT combines procedures for identifying and correcting maladaptive beliefs and interpretations, behavioral activation in depression, systematic work with avoidance and behavioral patterns in anxiety disorders, and relapse prevention techniques based on the early recognition of warning signs. The method has been studied extensively, including in high-quality controlled research, and is rightly regarded as the benchmark for evidence-based psychological intervention.

In their review, Hofmann and colleagues (2012) [5] analyzed 106 published meta-analyses evaluating the effectiveness of CBT across a wide range of problems, including substance use, schizophrenia and other psychotic disorders, depression, bipolar affective disorder, anxiety disorders, somatoform disorders, eating disorders, insomnia, personality disorders, problems with anger and aggression regulation, propensity for criminal behavior, general stress, distress associated with general medical conditions, chronic pain and fatigue, and distress related to pregnancy complications and hormonal disorders in women. According to these meta-analyses, CBT proves most effective for anxiety disorders [16], bulimia [17], problems with anger and aggression [18], and occupational stress [19]. A number of studies compared the effectiveness of CBT with that of other treatments or control conditions: no treatment or a waiting list [20], other psychotherapeutic approaches [21], pharmacotherapy [22], [23] or combined treatment [24], placebo [25], [26] and applied relaxation [23], and EMDR, treatment as usual, or supportive counseling [27]. In most meta-analyses, the effectiveness of CBT was greater than or comparable to that of other psychotherapeutic methods.

Some of the studies included in the review used a longitudinal design, with treatment effects assessed at several time points, typically immediately after the end of therapy and several months later. Such a design makes it possible to evaluate delayed effects and the durability of treatment outcomes over time. Thus, a delayed positive effect of CBT has been demonstrated for patients with social anxiety [28] and hypochondriasis [29].

Some meta-analyses evaluated the role of the intensity and format of the intervention. For example, in the treatment of cannabis dependence, multi-session CBT was more effective than brief interventions [30].

At the same time, the comparative effectiveness of single-component and multi-component CBT interventions differed across samples. In studies of occupational stress, single-component CBT interventions produced a more pronounced effect [31], whereas in a sample of parents of children with developmental disorders, multi-component programs incorporating CBT proved more effective [32].

Mindfulness-based programs: MBSR and MBCT

The international literature distinguishes at least two widely cited formats of therapeutic programs developed on the basis of mindfulness practices.

Mindfulness-Based Stress Reduction (MBSR) has historically been described as a group training program in mindfulness practices directed at bodily sensations and the experience of the here and now, and it was initially applied mainly in medical contexts and in the treatment of chronic stress [33]. Mindfulness-Based Cognitive Therapy (MBCT) develops the idea of combining mindfulness practices with elements of cognitive therapy and became known primarily as a strategy for preventing relapse in recurrent depression [34]. Both programs are based on regular meditative practice involving the focusing of attention on the breath, bodily sensations, and present experience in general. These methods have been shown to be effective in improving emotion regulation and increasing bodily awareness [35], [36].

In a systematic review and meta-analysis of RCTs, Goyal and colleagues (2014) showed that meditation programs and meditation-based programs have moderate effects in reducing symptoms of anxiety, depression, and pain [37]. At the same time, the authors emphasize the limited evidence base for a number of outcomes and the heterogeneity of results when compared with active control conditions. This is an important methodological indicator: the term “meditation” (and “mindfulness” as an umbrella concept) covers interventions that differ in duration, intensity, and target populations, so the average effect obtained in a meta-analysis should not be equated with the effect of any particular method.

A broader analysis of evidence on the effectiveness of mindfulness-based therapy is presented by Khoury and colleagues [38]. The analysis included a substantial number of studies and participants; it reports significant effects in pre-post comparisons and relative to waiting-list participants, along with more moderate effects when compared with other active psychological interventions. On the basis of this analysis, it may be concluded that mindfulness programs often demonstrate effectiveness in standard psychotherapy research designs, but their advantage over alternative psychotherapeutic approaches is not always pronounced.

Studies that assess the effect of the duration of meditation practice are of particular interest. Some studies, for instance, included several groups of participants with differing meditation experience (individuals with no experience, participants who had begun meditating recently, and experienced meditators). Data from such studies allow the possible effects of long-term regular practice to be discussed, but their interpretation requires caution: in cross-sectional designs it is impossible to separate unambiguously the consequences of meditation from baseline differences between people who choose long-term practice and the general population [39]. With respect to cognitive and behavioral effects, experienced meditators have been reported to show higher executive attention and less interference in Stroop-type tasks than non-meditating participants [40]. In addition, greater experience of mindfulness meditation has been shown to be

associated with reduced emotional interference: in the study by Ortner et al., emotional stimuli were less distracting during the performance of a cognitive task in meditating participants [41]. An earlier cross-sectional study by Davidson et al. likewise linked meditative practice to features of attention and affective responding [42]. Moreover, greater meditation experience was associated with more pronounced changes in attention and self-regulation skills [43].

At the same time, as a number of studies with novices have shown, the effects of MBSR can also emerge over a relatively short term. In particular, the systematic review by Sharma and Rush considers MBSR a potentially effective stress-management program for healthy individuals [44]. In the study by Carmody and Baer, participation in an eight-week MBSR program was associated with improved well-being, reduced stress, and fewer psychological symptoms [45]. This suggests that the effects of meditative practice can emerge over the course of short-term programs, while with continued practice the magnitude of the effects and their mechanisms may change.

A separate body of research concerns the effect of MBCT on the treatment of depressive relapse. Early RCTs showed that this method reduces the risk of relapse in patients in remission compared with a control group [46]. Subsequent meta-analyses confirmed this effect and indicated that its magnitude may depend on the number of previous depressive episodes [47]. Later studies compared MBCT with maintenance antidepressant pharmacotherapy, including medication-tapering strategies, and analyzed both clinical and economic outcomes [48]. This line of research is the most relevant to the topic of self-regulation, since MBCT deliberately targets automatic cycles of rumination and emotional reactivity as objects of prevention.

Third-wave CBT: ACT and DBT

Acceptance and commitment therapy (ACT) belongs to the transdiagnostic third-wave approaches within cognitive behavioral therapy and is grounded in the concept of psychological flexibility — a person's ability to act in accordance with their values even in the presence of difficult thoughts, emotions, or bodily sensations [7]. This model is built on six interrelated processes grouped into two main components: acceptance and values-based action. Acceptance comprises mindfulness and open attention to the present moment; cognitive defusion, the ability to distance oneself from thoughts by regarding them as transient events of consciousness rather than absolute truth; and acceptance itself, the willingness to experience unpleasant internal states without struggling against them or avoiding them. Values-based action includes a clear awareness of personal values as guiding principles of life, the formulation of specific, attainable goals consistent with those values, and the stance of “self as context” — the ability to observe one's own experience from the position of an observer without becoming fully identified with the contents of consciousness.

ACT overlaps conceptually with mindfulness and meditation practices, in which mindfulness serves not merely as a relaxation technique but as a tool for developing metacognitive awareness and psychological flexibility. Empirical evidence, including meta-analyses, supports small to moderate effects of ACT in the treatment of anxiety, depression, chronic pain, and stress-related disorders [49].

Dialectical behavior therapy (DBT) is grounded in the concept of a dialectical balance between acceptance and change, with an emphasis on developing skills of emotion regulation, distress tolerance, and interpersonal effectiveness. Developed by Marsha Linehan [50] for the treatment of borderline personality disorder [51], [52], DBT is today applied to a broader range of problems — eating disorders, post-traumatic stress disorder, depression, and chronic stress [53], [54]. DBT is based on a four-component skills model: mindfulness as the foundation for observing present experience without judgment; distress tolerance for surviving crises without destructive behavior; emotion regulation through the identification, labeling, and modulation of affect; and interpersonal effectiveness for maintaining relationships while preserving self-respect. These skills are taught in a group training format supplemented by individual therapy, telephone coaching, and therapist consultation, creating a multi-level system of intervention. The dialectical method involves the continuous resolution of contradictions, such as radical acceptance of reality and active striving for change, which fosters the integration of opposites within the psyche.

DBT overlaps conceptually with mindfulness and meditation practices, borrowing elements of Zen Buddhism for training attention and non-reactive presence [55], and with ACT through a shared focus on acceptance and psychological flexibility.

Psychodynamic approaches

Unlike methods oriented primarily toward changing specific behavioral or cognitive patterns, the psychodynamic tradition views psychological difficulties through the lens of unconscious processes, internal conflicts, defense mechanisms, early experience, and enduring interpersonal scenarios. Accordingly, therapeutic change within this tradition is usually described not only as symptom reduction but also as a deeper reworking of emotional experience and a change in modes of self-understanding, defensive organization, and relational patterns [56].

The psychodynamic perspective also makes it possible to view psychological difficulties in the context of the intergenerational transmission of emotional and traumatic experience. According to psychodynamic models, parents' unprocessed experiences may manifest themselves in stable modes of emotional responding, defensive organization, family beliefs, and patterns of interaction with children [57]. The consequences of traumatic experience may be transmitted through the way it is made sense of and discussed within the family, through parental emotional availability, through modes of affect regulation, and through the nature of parent-child relationships [58]. Attachment theory posits that trauma may disrupt parental availability and emotion regulation processes, which is associated with the child's development of maladaptive emotion regulation strategies and heightened anxiety [59], [60]. The changes achieved in psychotherapy at the level of awareness and reworking of experience, defense mechanisms, and interpersonal scenarios may therefore affect the psychological processes that sustain the intergenerational transmission of trauma-related patterns. At the same time, such an effect should be regarded as possible and indirect, since its magnitude depends on the nature of the therapy, the family context, and actual changes in interaction between family members [61].

In one of the most frequently cited reviews, Shedler summarizes evidence on the effectiveness of psychodynamic therapy and emphasizes that its effects are broadly comparable to those of other

empirically supported psychotherapeutic methods, and that the changes achieved may persist and continue to develop after treatment ends [10]. Similar conclusions are presented in the systematic review by Leichsenring et al., which draws on randomized controlled trials to examine the effectiveness of psychodynamic therapy in depressive, anxiety, somatoform, and personality disorders, eating disorders, post-traumatic stress disorder, and substance use disorders [62].

There is research showing that short-term psychodynamic psychotherapy can be useful for people with a range of mental health problems. One review [63] compared this form of psychotherapy with control conditions and treatment as usual and found that short-term psychotherapy can help people with depression, anxiety, stress, physical problems, and interpersonal difficulties. Another meta-analysis, by Driessen et al., likewise confirmed the effectiveness of short-term psychodynamic psychotherapy relative to control conditions in depression [64]. Importantly, the improvements were durable and persisted at follow-up. A study conducted by Steinert and colleagues compared different types of psychotherapy, including psychodynamic therapy and cognitive behavioral therapy (CBT) [65]. The results showed that the two methods produce similar outcomes. At the same time, as with CBT, the magnitude of the effects depends on the clinical group, the duration of therapy, the type of control condition, and study quality.

For long-term psychoanalytic and psychodynamic therapy, the findings remain more heterogeneous and contested. In Leichsenring's meta-analysis, long-term psychodynamic psychotherapy was regarded as an effective approach for complex mental disorders, including chronic and personality disorders [66]. Similarly, the systematic review by de Maat reported moderate to large effects of long-term psychoanalytic therapy across a wide range of conditions [67]. The meta-analysis by Smit et al., however, emphasizes that the evidence for the effectiveness of long-term psychoanalytic psychotherapy remains limited and inconsistent, especially in comparison with control conditions and other active therapeutic approaches [11]. Thus, with regard to classical psychoanalysis and long-term psychoanalytic therapy, it is more accurate to speak not of unequivocally demonstrated superiority but of promising yet heterogeneous evidence.

Jungian analysis and Jungian psychotherapy also have their own evidence base, although it is considerably less extensive than that for psychodynamic therapy as a whole. Roesler's review reports evidence that Jungian therapy may be associated with improved psychological health and reduced use of medical services [12]. A recent study likewise confirms that Jungian psychotherapy can improve psychological state, enhance quality of life, and reduce a variety of symptoms [68].

Humanistic and existential approaches

Humanistic approaches, which include client-centered therapy, Gestalt therapy, emotion-focused therapy, psychodrama, and a number of related traditions, are treated in the literature as a family of methods oriented toward awareness of subjective experience, emotional processing, the development of self-understanding, acceptance, and authenticity, and the improvement of interpersonal functioning [69]. Unlike cognitive behavioral approaches, where the emphasis is often placed on correcting dysfunctional beliefs and behavioral patterns, the humanistic-experiential tradition views therapeutic change as a process

of deepening contact with one's own experience, becoming aware of emotions, and forming a more integrated relationship with oneself and others.

The overall evidence base for this tradition is presented in the review and meta-analysis by Elliott et al. [70]. It covered 91 empirical reports on humanistic-experiential therapies published between 2009 and 2018. The authors showed that such approaches are accompanied by pronounced positive change from the start to the end of therapy, outperform no therapy, and on the whole demonstrate effectiveness comparable to that of other psychotherapeutic methods. The most robust effects were observed for interpersonal difficulties, self-harming behavior, coping with chronic illness, and psychotic disorders, whereas findings for depressive and anxiety symptoms were more heterogeneous. Specific evidence on depression is presented in the systematic review and meta-analysis of randomized controlled trials by Duffy et al. [71]. The authors included 17 RCTs in their meta-analysis and showed that these approaches were more effective than standard treatment or usual care immediately after the end of therapy, although at follow-up the differences became less stable. Moreover, when compared with other active psychotherapeutic interventions, the advantages of humanistic-experiential therapies are less pronounced.

Client-centered and non-directive supportive therapy occupy an important place in the humanistic tradition, as they are directly linked to Rogers's model. According to that model, therapeutic change becomes possible thanks to three key conditions: the therapist's empathic understanding, unconditional positive regard, and congruence [72]. Research shows that such approaches can also reduce symptoms of depression. The meta-analysis by Cuijpers et al. [73], which included 31 studies of non-directive supportive therapy for depression in adults, found a moderate effect relative to control conditions. On average, this approach was less effective than other psychological interventions, but the differences disappeared once researcher allegiance — investigators' preference for a particular method — was taken into account. This means that some of the differences between therapies may be explained not only by their effectiveness but also by features of study design. A recent meta-analytic review by Cuijpers et al. (2024) likewise indicates that non-directive supportive therapy is probably effective for depression, although its effects may be somewhat smaller than those of other therapeutic approaches. The authors note that this may be because non-directive therapy is often used as a control condition rather than as a fully fledged active intervention [74].

The evidence base for Gestalt therapy is as yet less extensive and more heterogeneous than that for humanistic-experiential approaches as a whole. Raffagnino's systematic review of empirical research on Gestalt therapy [75] included 11 studies published in English and Italian; the author reported positive change on clinical and social-behavioral measures, particularly in group formats. However, the limited number of studies, differences in design, small samples, and dissimilar control conditions preclude conclusions as strong as those available for more thoroughly developed psychotherapeutic traditions. Contemporary evidence also points to the possible effectiveness of Gestalt therapy for common mental disorders. The study by Kaisler et al. [76] assessed psychological well-being, psychosocial health, self-efficacy, and self-regulation in patients undergoing Gestalt therapy; positive change was observed on a number of these measures after the intervention.

Cross-disciplinary methods for evaluating psychotherapeutic approaches

In recent years, research on psychotherapeutic methods has shown a marked strengthening of the cross-disciplinary approach, which combines data from clinical psychology, psychophysiology, and the neurosciences. Whereas the effectiveness of psychotherapy was previously assessed mainly through questionnaires, interviews, and subjective self-reports, today researchers increasingly use comprehensive designs in which psychometric measures are supplemented by the recording of objective physiological parameters reflecting the activity of the autonomic and central nervous systems. The most commonly used measures include heart rate variability, electrodermal activity, heart rate, respiratory parameters, electromyographic activity, and electroencephalographic indices [77], [78], [79].

This approach substantially broadens the possibilities for analyzing the psychotherapeutic process. Patient self-report and the clinician's assessment make it possible to describe subjectively experienced change, but they do not always fully capture the dynamics of the regulatory processes underlying emotional recovery, reduced tension, and the normalization of stress responses. Recording physiological measures allows a more precise study of how the state of the body changes within a single session and over the course of a whole treatment. Heart rate variability, in particular, is regarded as one of the most informative indicators of autonomic regulation and adaptive resources [80], [81], [82], while skin conductance [83] and respiratory parameters [84] are used to assess the level of physiological arousal and emotional activation.

A cross-disciplinary design is especially valuable for studying the mechanisms of action of psychotherapy. Recent reviews emphasize that the study of mechanisms of change in psychotherapy should rest not only on statistical or conceptual models but also on functional explanations consistent with evidence about the workings of the body's biological systems [77], [85], [86]. This is precisely why recent years have seen growing interest in studies that assess not only clinical outcomes but also the biological correlates of psychotherapeutic intervention, including changes in the autonomic, neuroendocrine, and central nervous systems. Such an approach is particularly important for methods aimed at working with stress, anxiety, traumatic experience, and emotional dysregulation, where the clinical effect is often accompanied by changes in physiological markers of tension and recovery [87], [88].

From a practical standpoint, adopting a cross-disciplinary approach makes it possible to increase the reliability of assessments of psychotherapy outcomes and to reduce the dependence of conclusions on a single source of data. Combining questionnaires, clinical scales, and objective physiological recording creates a fuller picture of the changes occurring in the patient and helps to distinguish a short-term subjective effect, sustained clinical change, and the biophysiological mechanisms of improvement themselves. This is especially important in applied research, where it is necessary not only to confirm that a therapeutic effect exists but also to show which regulatory processes bring it about.

At the same time, a cross-disciplinary approach makes it possible to consider psychotherapeutic change not only at the level of immediate symptoms and physiological markers but also in the broader context of a person's life and family experience. In this respect, family, attachment-related, and intergenerational mechanisms that may be involved in the formation of stable emotional and behavioral patterns take on particular importance. Psychotherapeutic approaches aimed at becoming aware of and reworking family

and emotional patterns may be linked to changes in stable modes of experiencing and regulation, including those formed in early experience and maintained in an intergenerational context [89]. The transmission of the consequences of traumatic experience is viewed as a multi-component process involving both biological and psychological mechanisms. In particular, epigenetic research shows that traumatic experience may be associated with changes in the regulation of genes involved in the stress response, including the functioning of the hypothalamic-pituitary-adrenal axis [90], [91]. These changes may also be observed in offspring, potentially affecting their sensitivity to stress.

3. Methods

3.1 Study participants

Data from 377 individuals were included in the final analysis: 22 individuals with no experience of GSR practice (the control group) and 355 individuals with varying experience of GSR practice. Practice experience was determined from participants' self-reports of the number of self-sessions they had completed. Participants were asked to choose one of the response options provided. For the analysis, information on the number of completed self-sessions was subsequently converted into a ranked variable. Category 0 represented the control group, which was unfamiliar with the GSR method; category 1 represented people who had taken up the practice but had completed fewer than 10 self-sessions. Table 1 shows the number of participants falling into each category.

Table 1. Distribution of participants across groups

Category	Range of self-sessions	n	n women	n men
0	control	22	17	5
1	fewer than 10	14	14	0
2	10-100	40	31	9
3	100-200	26	23	3
4	200-300	28	25	3
5	300-400	23	21	2
6	400-500	26	23	3
7	500-1000	60	51	9
8	1000-10 000	115	95	20
9	more than 10,000	23	21	2

It should be noted that women made up more than 85% of the sample, which may be a limitation for generalizing the findings to both sexes.

All participants completed an online questionnaire on the Webask platform (webask.io). The full text of the questionnaire is provided in Appendix 1. The questionnaire included questions on sex, age, marital status, and lifestyle, as well as the battery of psychometric instruments described below.

3.2 Psychometric questionnaires

3.2.1. Brief Self-Control Scale, BSCS

The Brief Self-Control Scale (BSCS) is designed to assess self-control as a stable personality characteristic. The scale reflects a person's ability to regulate behavior, emotions, and impulses, to maintain goal-directed action, and to resist situational desires and distractions.

The Russian-language adaptation of the instrument was carried out by T. O. Gordeeva, 2016 [92]. The questionnaire comprises 13 items rated on a 5-point scale.

Score interpretation

13-27 points — low self-control.

May indicate a tendency toward impulsive behavior, difficulties with self-regulation, and lower resistance to distracting or stressful influences.

28-45 points — moderate self-control.

Reflects a moderately pronounced ability to regulate behavior, emotions, and impulses. This result corresponds to a normative level of self-discipline.

46-65 points — high self-control.

Indicates a pronounced capacity for goal-directed behavior, organization, persistence, and resistance to impulsive reactions.

3.2.2. Trait Emotional Intelligence Questionnaire–Short Form, TEIQue-SF

The Trait Emotional Intelligence Questionnaire (TEIQue-SF) is designed to assess emotional intelligence as a personality trait. Within this model, emotional intelligence is understood as a set of emotion-related self-perceptions and stable personality characteristics associated with understanding, regulating, and using emotions. The questionnaire comprises 30 items rated on a 7-point scale. The Russian-language adaptation by A. A. Pankratova, 2021, was used [93]. It distinguishes two main scales: “relationship maintenance” and “social competence.” A global emotional intelligence score is also computed as the sum of the two scales.

The “Relationship maintenance” scale reflects intrapersonal aspects of emotional intelligence, including the understanding and regulation of one’s own emotions, as well as personal qualities that support harmonious interpersonal relationships.

Interpretation of “Relationship maintenance” scores:

75 points or below — low.

May indicate difficulties in understanding and regulating one’s own emotions, as well as fewer resources supporting emotional stability and harmonious relationships.

76-103 points — moderate.

Reflects a normative level of emotional self-regulation and of the ability to maintain relationships.

104 points or above — high.

Indicates a well-developed understanding of one’s own emotions, emotional stability, optimism, lower impulsivity, and more effective maintenance of relationships.

The “Social competence” scale reflects interpersonal aspects of emotional intelligence, including the understanding of other people’s emotions, the management of interaction, and the effective use of emotional information in communication.

Interpretation of “Social competence” scores:

46 points or below — low.

May indicate difficulties in recognizing other people’s emotions and in social interaction.

47-61 points — moderate.

Reflects a normative level of interpersonal skills and social adaptability.

62 points or above — high.

Indicates a well-developed ability to understand others’ emotional states and to build communication effectively.

The global emotional intelligence score is computed as the sum of the “Relationship maintenance” and “Social competence” scales.

Interpretation:

123 points or below — low.

May indicate reduced emotional self-regulation, difficulties in understanding and using emotional information, and less effective emotional functioning in interpersonal interaction.

124-162 points — moderate.

Corresponds to a normative level of emotional intelligence as a personality trait.

163 points or above — high.

Reflects well-developed abilities to understand and regulate emotions and to use emotional information effectively in interpersonal interaction; it is also associated with higher psychological well-being and life satisfaction and with lower anxiety and negative affect.

3.2.3. Big Five Inventory–2 Extra-Short Form, BFI-2-XS

The Big Five Inventory (BFI-2-XS) is designed to assess five basic personality traits within the five-factor model of personality: extraversion, agreeableness, conscientiousness, negative emotionality, and open-mindedness.

The questionnaire, adapted for a Russian sample by A. M. Mishkevich, 2022, [94], comprises 15 items rated on a scale from 1 to 5.

Extraversion reflects sociability, energy, activity, emotional expressiveness, and an orientation toward interacting with other people.

Score interpretation:

Up to 6 points — low.

The person is more often reserved, prefers limited social interaction, and may feel more comfortable in solitude.

6-11 points — moderate.

Reflects a moderate level of extraversion. The person may be either sociable or inclined toward solitude, depending on the situation.

12 points or above — high.

Indicates pronounced sociability, energy, and an active orientation toward social contact.

Agreeableness reflects cooperativeness, trust, empathy, tact, and a willingness to collaborate.

Score interpretation:

Up to 7 points — low.

The person may be more direct, critical, and skeptical, with less inclination to yield.

7-12 points — moderate.

Reflects a balanced combination of cooperativeness and the ability to assert one's own boundaries.

13 points or above — high.

Indicates empathy, trustfulness, tact, and a pronounced orientation toward cooperation.

Conscientiousness reflects organization, responsibility, self-discipline, and persistence in pursuing goals.

Score interpretation:

Up to 7 points — low.

The person may prefer a more spontaneous style of action and be less oriented toward planning.

7-12 points — moderate.

Reflects moderate organization and self-discipline while retaining flexibility.

13 points or above — high.

Indicates pronounced responsibility, organization, and persistence.

Negative emotionality reflects a tendency toward anxiety, emotional sensitivity, and the frequent experience of negative emotions.

Score interpretation:

Up to 7 points — low.

Indicates emotional stability and a lower propensity for negative affect.

7-12 points — moderate.

Reflects moderate emotional sensitivity within the normative range.

13 points or above — high.

Indicates heightened emotional reactivity, anxiety, and a tendency to experience tension.

Open-mindedness reflects curiosity, interest in novelty, imagination, and receptiveness to intellectual and aesthetic stimuli.

Score interpretation:

Up to 8 points — low.

The person more often prefers the familiar, the tried and tested, and the practical.

8-12 points — moderate.

Reflects a balance between interest in novelty and an orientation toward familiar approaches.

13 points or above — high.

Indicates pronounced curiosity and interest in new experiences, ideas, and creative activity.

3.2.4. Beck Depression Inventory, BDI

The Beck Depression Inventory (BDI) is designed for the screening assessment of the severity of depressive symptoms over the past week. The inventory separately assesses cognitive-affective and

somatic manifestations of depression. It comprises 21 items, each scored from 0 to 3 points. The Russian adaptation by N. V. Tarabrina, 2001, was used [95].

Cognitive-affective symptoms of depression include disturbances of thinking (pessimism, difficulty concentrating, psychomotor slowing) and of the emotional sphere (lowered mood, anhedonia)

Somatic symptoms of depression include a variety of bodily symptoms, such as chronic fatigue, sleep disturbance, changes in appetite and weight, bodily pain without an evident organic cause, and cardiovascular and gastrointestinal complaints.

Interpretation of total scores

0-9 points — no or minimal depressive symptoms.

10-18 points — mild depressive symptoms / subclinical depression.

19-29 points — moderate depression.

30-63 points — severe depression.

3.2.5. State-Trait Anxiety Inventory (Spielberger–Hanin), STAI

The State-Trait Anxiety Inventory (STAI) assesses two types of anxiety: state (reactive) anxiety, a current condition, and trait anxiety, a stable disposition to perceive situations as threatening. The inventory comprises 40 items answered on a 4-point scale. The adaptation was carried out by Yu. L. Hanin, 1976 [96].

Score interpretation:

Up to 30 points — low anxiety.

May reflect emotional stability and a low propensity to experience anxiety.

31-44 points — moderate anxiety.

Corresponds to a normative level of anxiety.

45 points or above — high anxiety.

Indicates a pronounced tendency toward anxious experiences, inner tension, and sensitivity to stressful situations.

3.2.6. Perceived Stress Scale, PSS-10

The Perceived Stress Scale (PSS-10) assesses how stressful a person perceives their life to have been over the past month. The instrument reflects the subjective experience of tension, feeling overloaded, and control over life circumstances. It comprises 10 items answered on a 5-point scale. The Russian adaptation by A. A. Zolotareva, 2023, was used [97].

Score interpretation:

0-15 points — low perceived stress.

The person usually feels in control of their life and copes with difficulties fairly effectively.

16-31 points — moderate perceived stress.

This is the most typical range, in which signs of stress may be present but remain manageable.

32-56 points — high perceived stress.

May indicate feelings of being overloaded, tense, and less in subjective control.

Distress

factor

Reflects the subjective experience of tension, overload, and stress over the past month. High scores indicate a pronounced sense of pressure and psychological discomfort.

Score interpretation:

0-7 — low.

8-17 — moderate.

18-28 — high.

Coping

factor

Reflects the subjective sense of being able to meet life's demands and to maintain control in stressful circumstances. High scores indicate a stronger sense that the situation is manageable.

Score interpretation:

0-11 — low.

12-21 — moderate.

22-32 — high.

3.2.7. Coping Orientation to Problems Experienced, COPE-30

Coping Orientation to Problems Experienced Inventory (COPE-30) is designed to assess typical strategies for coping with stress. The questionnaire identifies both adaptive and less adaptive ways of responding to difficult life situations. It comprises 15 scales, with responses rated on a 4-point scale. The Russian adaptation by M. A. Odintsova, 2022, was used [98].

Score interpretation:

2-4 points — low use of the strategy.

The strategy is used rarely or almost never.

5-6 points — moderate use of the strategy.

The strategy is used situationally.

7-8 points — high use of the strategy.

The strategy is a stable, habitual way of coping.

Adaptive strategies

Active coping — taking direct action to overcome the stressful situation.
Planning — thinking through actions and organizing a sequence of decisions.
Seeking instrumental support — asking for advice, information, or practical help.
Seeking emotional support — seeking sympathy, understanding, and moral support.
Positive reframing — attempting to reappraise the situation in a more constructive light.
Acceptance — willingness to acknowledge the reality of what is happening and to take it into account in one's behavior.

Turning to religion — drawing on religious or spiritual resources in a stressful situation.
Humor — using humor as a means of emotion regulation.
Suppression of competing activities — focusing on solving the problem and temporarily limiting distracting pursuits.
Restraint — a tendency to wait for the right moment and not to act hastily.

Maladaptive strategies

Self-distraction — turning to other activities in order to take one's mind off the problem.
Denial — a tendency not to acknowledge the reality of the problem or its significance.
Substance use — using alcohol, medication, or other substances as a way of escaping stress.
Behavioral disengagement — a tendency to give up attempts to solve the problem actively.
Focus on and venting of emotions — preoccupation with one's feelings and their active emotional expression.

3.2.8. Connor–Davidson Resilience Scale, CD-RISC-10

The Connor-Davidson Resilience Scale (CD-RISC-10) is designed to assess resilience — psychological hardiness, the ability to adapt to difficulties, to maintain functioning under stress, and to recover after adverse events. The scale comprises 10 items rated from 0 to 4. The adaptation was carried out by S. K. Nartova-Bochaver, 2021 [99].

Interpretation

Total score ranges from 0 to 40: the higher the score, the greater the resilience (the ability to cope with difficulties). A high CD-RISC-10 score is significantly associated with psychological well-being, positive affect, self-esteem, and authentic living, whereas a low score is associated with depressive symptoms, negative affect, and self-alienation (which supports the construct validity of the scale).

3.2.9. Cognitive Flexibility Inventory, CFI

The Cognitive Flexibility Inventory (CFI) measures cognitive flexibility — the ability to change one's way of thinking, to generate alternative explanations, and to perceive difficult situations as controllable and open to reappraisal. The inventory comprises 20 items rated on a 7-point scale. The adaptation for a Russian sample was carried out by S. S. Kurginyan, 2018 [100].

Scales

The “Alternatives” scale reflects the ability to see different explanations for events and to generate several possible solutions to difficult situations. The “Control” scale reflects the perception of difficult situations as to some degree manageable and open to influence.

Interpretation of the “Alternatives” scale:

Below 57 points — — low.

The person tends toward single-cause explanations and finds it difficult to generate alternative reasons for events.

58-77 points — moderate.

Cognitive flexibility is shown situationally.

78-84 points — high.

Indicates a pronounced capacity for divergent thinking and for generating several possible solutions.

Interpretation of the “Control” scale:

8-27 points — low.

The person perceives difficulties as external and largely beyond their influence.

28-42 points — moderate.

A situational sense of control: in some circumstances the person feels more agentic, in others less so.

43-56 points — high.

Indicates a stable sense of being able to influence the course of events through one’s own actions and attitude.

Interpretation of the total score:

20-88 points — low, cognitive rigidity.

89-117 points — moderate.

118-140 points — high cognitive flexibility.

3.2.10. Utrecht Work Engagement Scale, UWES

The Utrecht Work Engagement Scale (UWES) is designed to assess work engagement and comprises three components: vigor, dedication, and absorption. The scale contains 9 items. Responses are rated on a 7-point scale. Adaptation by D. A. Kutuzova, 2006 [101].

Scales

Vigor reflects the level of energy, capacity for work, alertness, willingness to invest effort, and persistence.

Dedication reflects a sense of the significance of one’s work, inspiration, pride, and inner involvement.

Absorption reflects deep concentration on work, a state of involvement, and the experience of “flow.”

Interpretation:

The higher the mean score, the more pronounced the corresponding component of engagement. Low scores may reflect reduced energy, interest, or emotional involvement, or difficulty becoming immersed in the work process.

3.2.11. Personal Growth Initiative Scale, PGIS

The Personal Growth Initiative Scale (PGIS) is designed to assess the strength of a person's striving for deliberate self-development and positive change. The scale comprises 9 items rated on a 6-point scale. Adaptation by D. V. Semenov, 2016 [102].

Score interpretation:

Below 24 points — low.

May indicate a more passive attitude toward personal growth, less initiative in self-development, and a tendency to expect change to come from external circumstances.

25-38 points — moderate.

Reflects a situational striving for growth: the person may be active in some areas and take a more passive stance in others.

39-54 points — high.

Indicates pronounced personal growth initiative, readiness for self-development, an active attitude toward change, and the ability to learn from experience.

3.2.12. Rosenberg Self-Esteem Scale, RSES

The Rosenberg Self-Esteem Scale (RSES) is designed to assess global self-esteem — how a person perceives their own worth and competence overall. The scale comprises 10 items. Responses are rated on a 4-point scale. Adaptation by A. A. Zolotareva, 2022 [103].

Score interpretation:

Below 15 points — low self-esteem.

15-24 points — normal/moderate self-esteem.

25-30 points — high self-esteem.

3.2.13. General Self-Efficacy Scale, GSE

General Self-Efficacy Scale (GSE) is designed to assess a person's subjective confidence in their own ability to cope with difficulties, achieve goals, and act effectively in challenging circumstances. The scale comprises 10 items rated on a 4-point scale. Adaptation by V. G. Romek, 1996 [104].

Score interpretation:

10-20 points — low.

May indicate a lack of confidence in one's own resources and doubts about the ability to cope with difficulties.

21-30 points — moderate.

Reflects moderate confidence in one's own capabilities.

31-40 points — high.

Indicates a pronounced belief in one's own effectiveness and readiness to deal with obstacles.

3.2.14. Cognitive Emotion Regulation Questionnaire, CERQ

The Cognitive Emotion Regulation Questionnaire (CERQ) is designed to assess the cognitive strategies used to regulate emotions following negative or stressful events. The questionnaire comprises 36 items rated on a 5-point scale. Each of the 9 scales consists of 4 items. Adaptation by E. I. Rasskazova, 2011 [105].

Table 2. CERQ scales and normative cut-offs

Scale	Low	Moderate	High
Self-blame	4–9.3	9.4–16.1	16.2–20
Acceptance	4–7.8	7.9–14.9	15–20
Rumination	4–10.2	10.3–17.7	17.8–20
Positive refocusing	4–9.5	9.6–15.9	16–20
Refocus on planning	4–9.1	9.2–15.3	15.4–20
Positive reappraisal	4–9.3	9.4–15.5	15.6–20
Putting into perspective	4–9.2	9.3–15.5	15.6–20

Catastrophizing	4–9.5	9.6–16.3	16.4–20
Other-blame	4–8.9	9–15.7	15.8–20

Adaptive strategies (effective regulation):

Acceptance — thoughts of accepting what has happened.

Positive refocusing — turning one’s thoughts to other, more pleasant events and situations instead of dwelling on the difficulties experienced.

Refocus on planning — thinking about what steps to take next in response to what has happened.

Positive reappraisal — seeking a positive meaning in the event in terms of personal growth or new experience.

Putting into perspective — reducing the exclusive importance of the event by comparing it with other situations.

Maladaptive strategies (increasing distress):

Self-blame — thoughts in which the person blames themselves for what has happened.

Rumination — persistent dwelling on the thoughts and feelings associated with the difficult situation experienced.

Catastrophizing — thoughts about the enormity of the event and its negative consequences.

Other-blame — placing the blame for the event experienced on other people.

3.2.15. Short Grit Scale, Grit-S

The Short Grit Scale (Grit-S) is designed to assess perseverance and consistency of interests in the pursuit of long-term goals. The scale comprises 12 items rated on a 5-point scale. Adaptation by Yu. A. Tyumeneva, 2014 [106].

The scale includes 2 components: consistency of interests and perseverance of effort. **Perseverance of effort** — the ability to keep working toward a goal despite setbacks. This subscale characterizes a person's willingness to invest effort and to achieve the goals they have set. People with high scores continue to pursue a goal even when they encounter serious difficulties along the way. **Consistency of interests** — the ability to sustain the same goal over long periods of time. In other words, it characterizes the stability of the goals a person sets. People who score high on this subscale may show commitment to their interests and goals over many years.

Interpretation:

The higher the total score, the higher the level of grit.

3.2.16. Satisfaction With Life Scale, SWLS

The Satisfaction With Life Scale (SWLS) is designed to assess global cognitive life satisfaction. The scale comprises 5 items rated on a 7-point scale. Adaptation by S. P. Elshansky, 2015 [107].

Score interpretation:

5-9 points — very low life satisfaction.

10-14 points — low life satisfaction.

15-19 points — somewhat low life satisfaction.

20-24 points — average satisfaction.

25-29 points — high life satisfaction.

30-35 points — very high life satisfaction.

3.3. Statistical analysis

In the first step, groups 0 and 1 were compared in order to test whether GSR novices differ from the control group before accumulating substantial practice experience. For quantitative and psychometric measures, non-parametric Mann–Whitney comparisons were used; for categorical variables, χ^2 tests and Cramér's V. Benjamini–Hochberg FDR correction was applied for multiple comparisons.

The main regression model was fitted among GSR participants and took the form: $\text{score} \sim \text{n_session_grade} + \text{age} + \text{sex} + \text{education} + \text{marital_status} + \text{psychotherapy_ever} + \text{meditation_status}$. The effect of GSR experience was thus estimated while controlling for age, sex, education, marital status, prior psychotherapy, and meditation practice status.

The number of modules completed was not included in the main model, since it is closely related to the number of self-sessions and conceptually reflects the overall level of involvement in GSR. The role of modules was tested separately in the higher experience categories. Possible non-linearity was also tested by comparing linear, quadratic, and categorical models.

In addition, a threshold / piecewise analysis was carried out to test for possible threshold effects. For every scale that showed a reliable association with GSR experience in the main model, models of the following form were fitted: $\text{score} \sim \text{n_session_grade} + \max(0, \text{n_session_grade} - k) + \text{covariates}$, where k

successively took values from 2 to 8. This approach makes it possible to test whether the slope of the association changes beyond a certain level of practice. The covariates were the same as in the main model: age, sex, education, marital status, prior psychotherapy, and meditation practice status. For each scale, the linear, piecewise, and categorical models were compared; a possible threshold was indicated by an improvement in AIC relative to the linear model together with a significant hinge term after FDR correction.

4. Results

4.1. Comparison of the control group (no GSR experience) and the group with minimal GSR experience (fewer than 10 sessions)

The group with no GSR experience and the group with fewer than 10 self-sessions were comparable in age, gender composition, and level of education. After correction for multiple comparisons, the groups also did not differ on the psychometric questionnaires. This indicates that, in our sample, people who take up GSR practice but have not yet accumulated substantial experience did not differ statistically from the control group on the characteristics measured.

4.2. Association between GSR practice experience and psychometric questionnaire scores

To assess the association between GSR practice experience and psychological characteristics, a series of regression models was fitted in which the dependent variable was the score on a psychometric scale and the predictor was GSR practice experience (ranked). Age, sex, education, marital status, prior psychotherapy, and engagement in meditative practices were included in the model as covariates.

After correction for multiple comparisons, GSR experience proved to be a significant predictor of scores on 34 psychometric scales. Figure 1 presents the significant results.

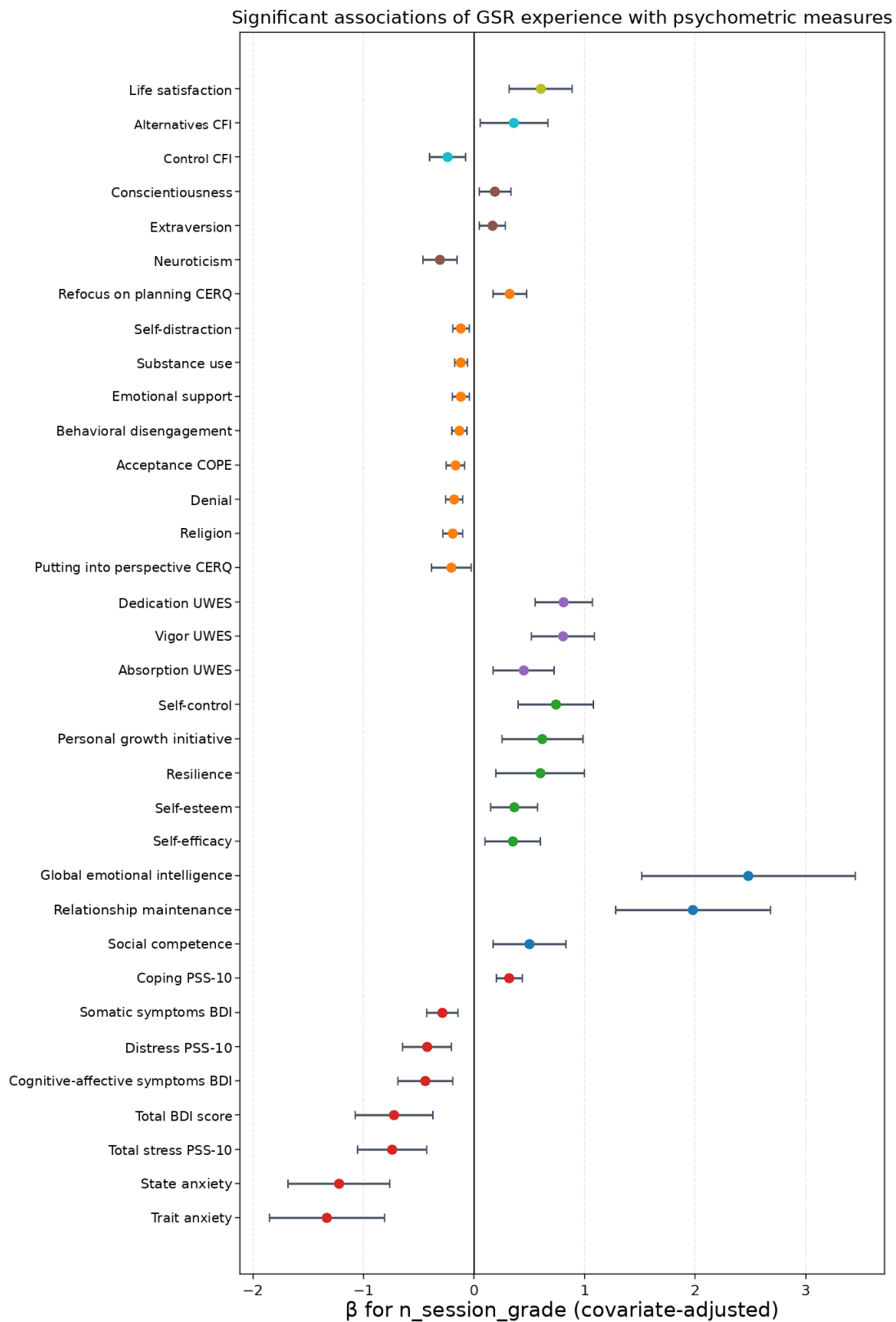


Figure 1. Significant effects of GSR experience. The figure shows the β coefficients and 95% confidence intervals. Positive values indicate an increase in the measure with greater experience, negative values a decrease.

4.3 Regression analysis results for individual questionnaires

4.3.1. Brief Self-Control Scale, BSCS

The BSCS assesses self-control as the ability to regulate behavior, emotions, and impulses, to act purposefully, and to resist situational desires. A positive association was found between self-control scores and GSR experience ($\beta=0.738$, $q=0.00011$).

Brief Self-Control Scale, BSCS

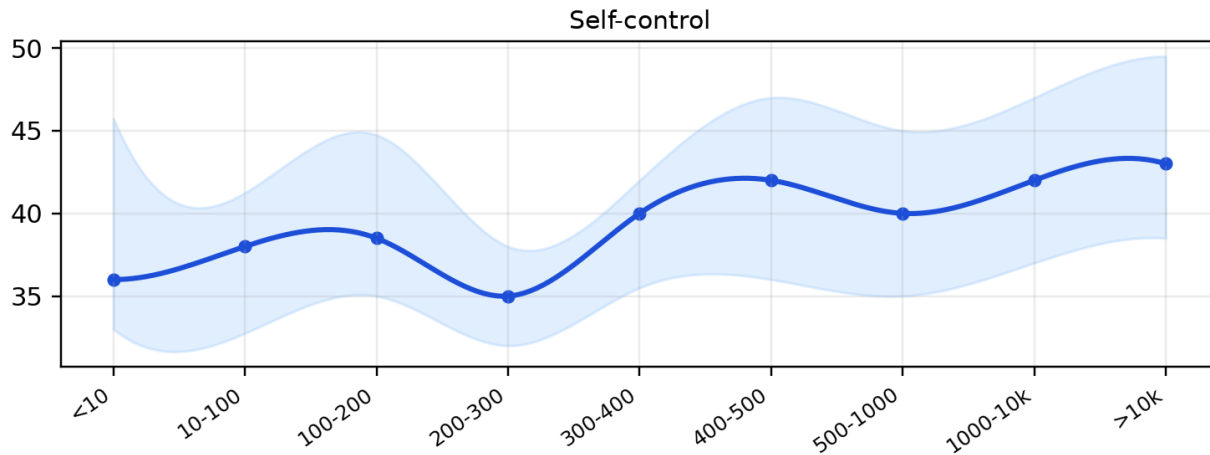


Figure 2. Change in Brief Self-Control Scale (BSCS) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.2. Trait Emotional Intelligence Questionnaire–Short Form (TEIQue-SF)

This questionnaire assesses emotional intelligence as a personality trait. The “Relationship maintenance” and “Social competence” scales and the global emotional intelligence score were analyzed separately.

All three measures showed a positive association with GSR experience: “Relationship maintenance” ($\beta=1.978$, $q=6.51e-07$), “Social competence” ($\beta=0.500$, $q=0.00623$), and global emotional intelligence ($\beta=2.480$, $q=4.02e-06$). The results of the analysis are presented in Figure 3.

Trait Emotional Intelligence Questionnaire — Short Form, TEIQue-SF

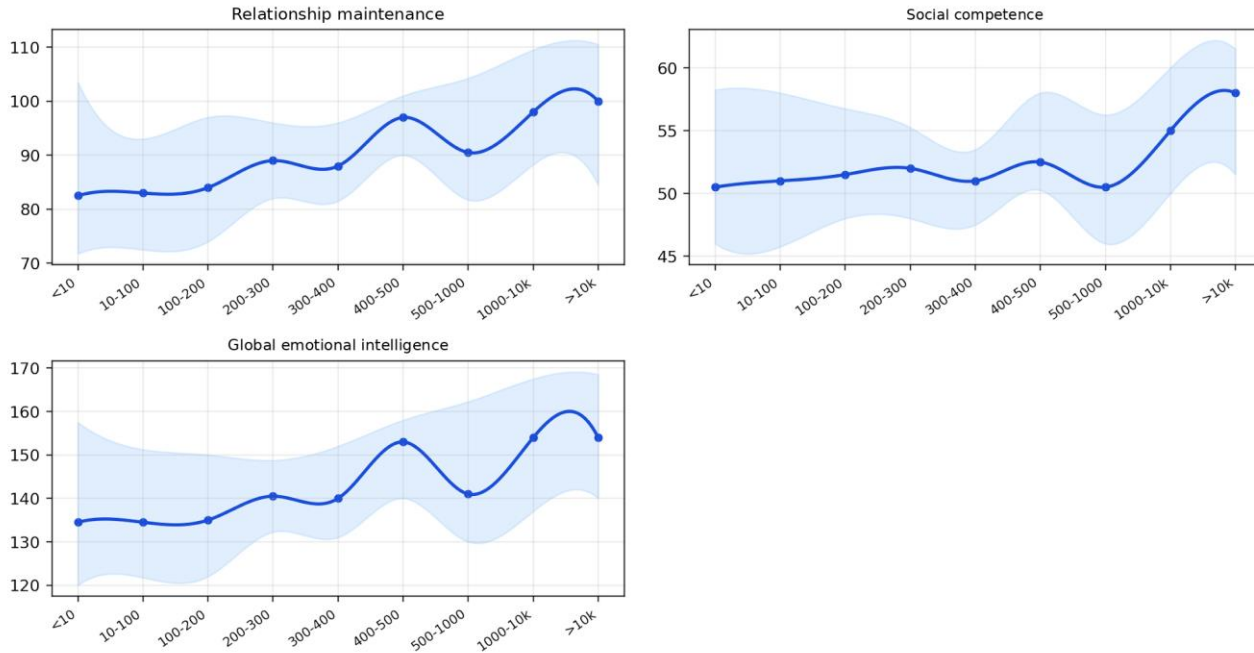


Figure 3. Change in Trait Emotional Intelligence Questionnaire (TEIQue-SF) scale scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.3. Big Five Inventory–2 Extra-Short Form, BFI-2-XS

The BFI-2-XS assesses basic personality traits: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience.

After correction for multiple comparisons, a positive association with GSR experience was found for scores on the “Extraversion” ($\beta=0.163$, $q=0.0108$) and “Conscientiousness” ($\beta=0.188$, $q=0.0186$) scales. Scores on the “Neuroticism” scale, by contrast, decreased with greater GSR practice experience ($\beta=-0.310$, $q=0.000233$).

For the “Agreeableness” and “Openness to experience” scales, no significant association with GSR experience was found.

The results are presented in Figure 4.

Big Five Inventory, BFI-2-XS

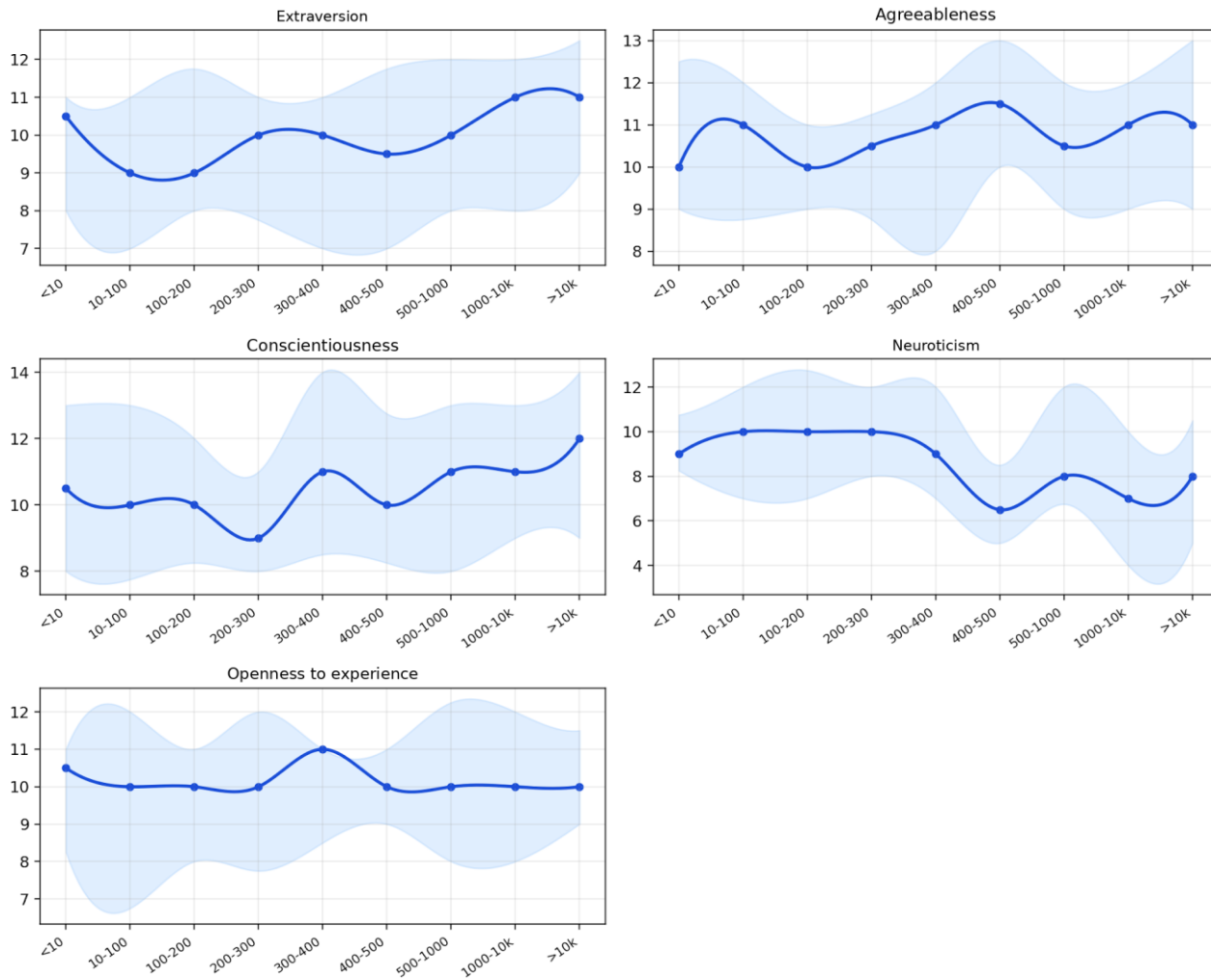


Figure 4. Change in Big Five Inventory (BFI-2-XS) scale scores with increasing GSR experience. The association of GSR experience with scores on the “Agreeableness” and “Openness to experience” scales was not significant. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.4. Beck Depression Inventory, BDI

The BDI assesses the severity of depressive symptoms. Both the separate “Cognitive-affective symptoms” and “Somatic symptoms” scales and the total depression score were analyzed.

All three measures decreased significantly with greater GSR practice experience: “Cognitive-affective symptoms” ($\beta=-0.441$, $q=0.00131$), “Somatic symptoms” ($\beta=-0.289$, $q=0.000227$), and the total depression score ($\beta=-0.727$, $q=0.000176$). The results are presented in Figure 5.

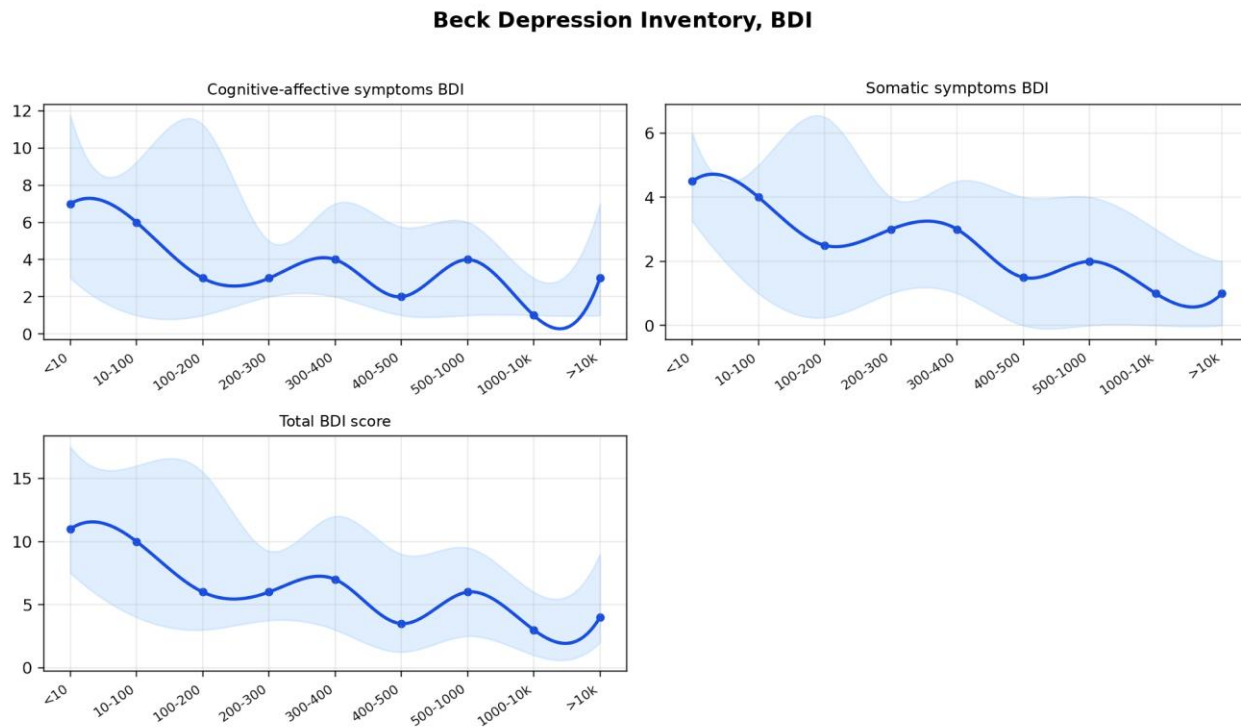


Figure 5. Change in Beck Depression Inventory (BDI) scale scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.5. State-Trait Anxiety Inventory (Spielberger–Hanin), STAI

The STAI assesses state anxiety as a current condition and trait anxiety as a stable disposition toward anxious responding. Both measures decreased with greater practice experience: state anxiety ($\beta=-1.225$, $q=2.08e-06$) and trait anxiety ($\beta=-1.333$, $q=4.02e-06$). The results are presented in Figure 6.

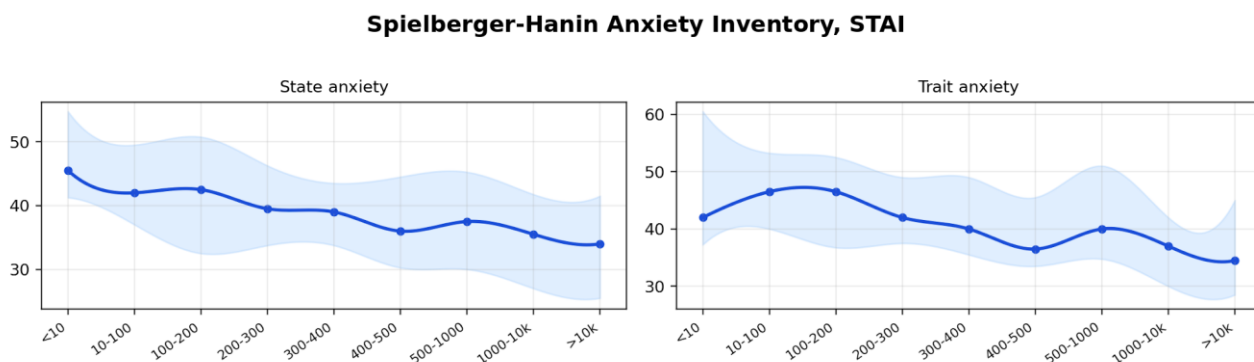


Figure 6. Change in State-Trait Anxiety Inventory (STAI) scale scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.6. Perceived Stress Scale, PSS-10

The questionnaire includes separate “Distress” and “Coping” scales (the subjective sense of being able to meet life’s challenges), as well as a total score reflecting the level of perceived stress. A significant association with GSR practice experience was found for all three measures. Scores on the “Coping” scale increased with practice experience ($\beta=0.316$, $q=2.08e-06$), whereas scores on the “Distress” scale ($\beta=-0.428$, $q=0.000388$) and the total level of perceived stress decreased ($\beta=-0.744$, $q=1.78e-05$). The results are presented in Figure 7.

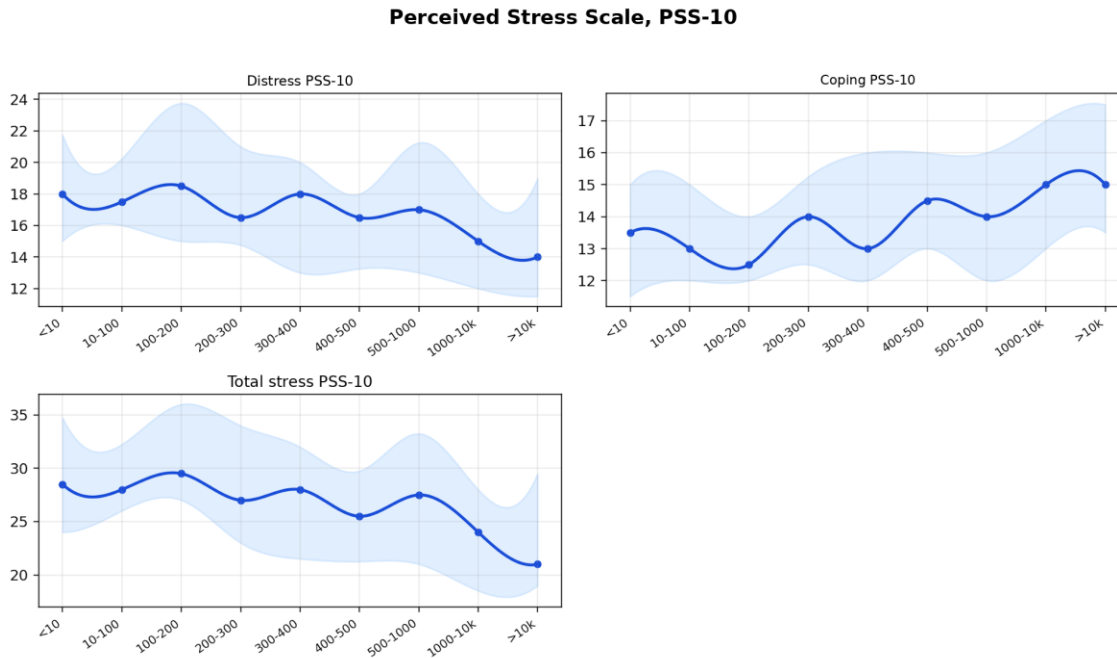


Figure 7. Change in Perceived Stress Scale (PSS-10) scale scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.7. Coping Orientation to Problems Experienced, COPE-30

COPE-30 assesses typical strategies for coping with stress and makes it possible to describe the profile of adaptive and maladaptive responses to difficult life situations. For eight subscales of the questionnaire, a significant linear association with GSR practice experience was found after correction for multiple comparisons: on all of these measures, scores decreased as experience increased. The strongest associations were observed for the strategies “Denial” ($\beta=-0.182$, $q=1.78\times10^{-5}$), “Religion” ($\beta=-0.196$, $q=1.10\times10^{-4}$), “Substance use” ($\beta=-0.120$, $q=1.76\times10^{-4}$), “Acceptance” ($\beta=-0.170$, $q=2.27\times10^{-4}$), and “Behavioral disengagement” ($\beta=-0.133$, $q=3.88\times10^{-4}$). Scores also decreased significantly for “Self-distraction” ($\beta=-0.120$, $q=0.00354$) and “Emotional support” ($\beta=-0.122$, $q=0.00511$). It is worth noting that the strategies whose use declined with greater GSR experience included both adaptive ones (“Religion,” “Acceptance,” “Self-distraction,” “Emotional support”) and maladaptive ones (“Denial,” “Substance use,” “Behavioral disengagement”). The results are presented in Figure 8.

COPE-30

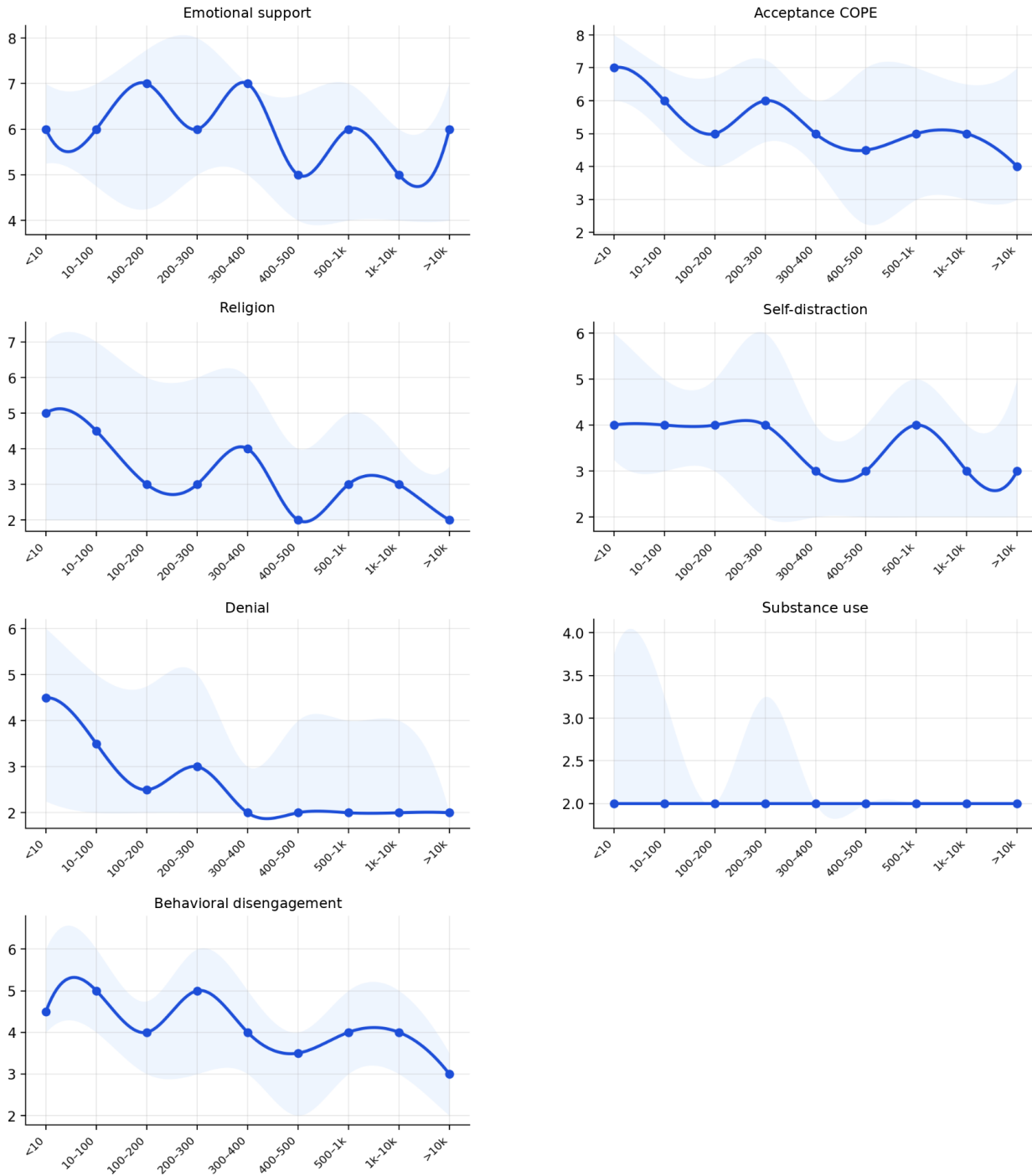


Figure 8. Change in scores on those COPE-30 scales for which a significant association with GSR experience was found. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.8. Connor–Davidson Resilience Scale, CD-RISC-10

CD-RISC-10 assesses resilience, psychological hardiness, and the ability to recover after stress. A significant increase in scores on this scale was found among participants with greater GSR practice experience ($\beta=0.596$, $q=0.00672$). The results are presented in Figure 9.

Connor-Davidson Resilience Scale, CD-RISC-10

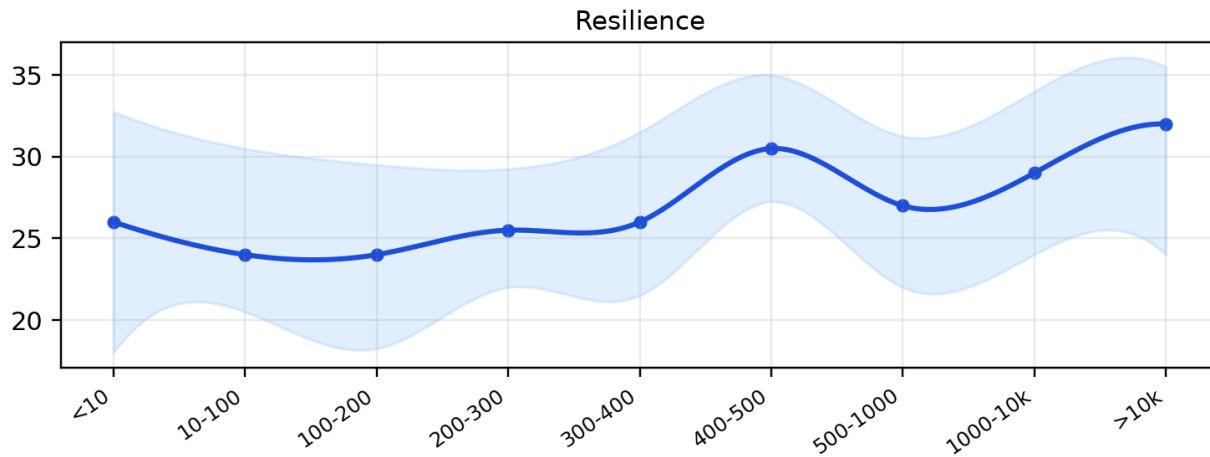


Figure 9. Change in Connor–Davidson Resilience Scale (CD-RISC-10) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.9. Cognitive Flexibility Inventory, CFI

The Cognitive Flexibility Inventory assesses the ability to generate alternative explanations (the “Alternatives” scale) and to perceive difficult situations as manageable (the “Control” scale). The analysis revealed a positive association of GSR experience with scores on the “Alternatives” scale ($\beta=0.359$, $q=0.0361$) and a negative association with scores on the “Control” scale ($\beta=-0.243$, $q=0.00672$). No reliable association was found between the total cognitive flexibility score and GSR experience. The results are presented in Figure 10.

Cognitive Flexibility Inventory, CFI

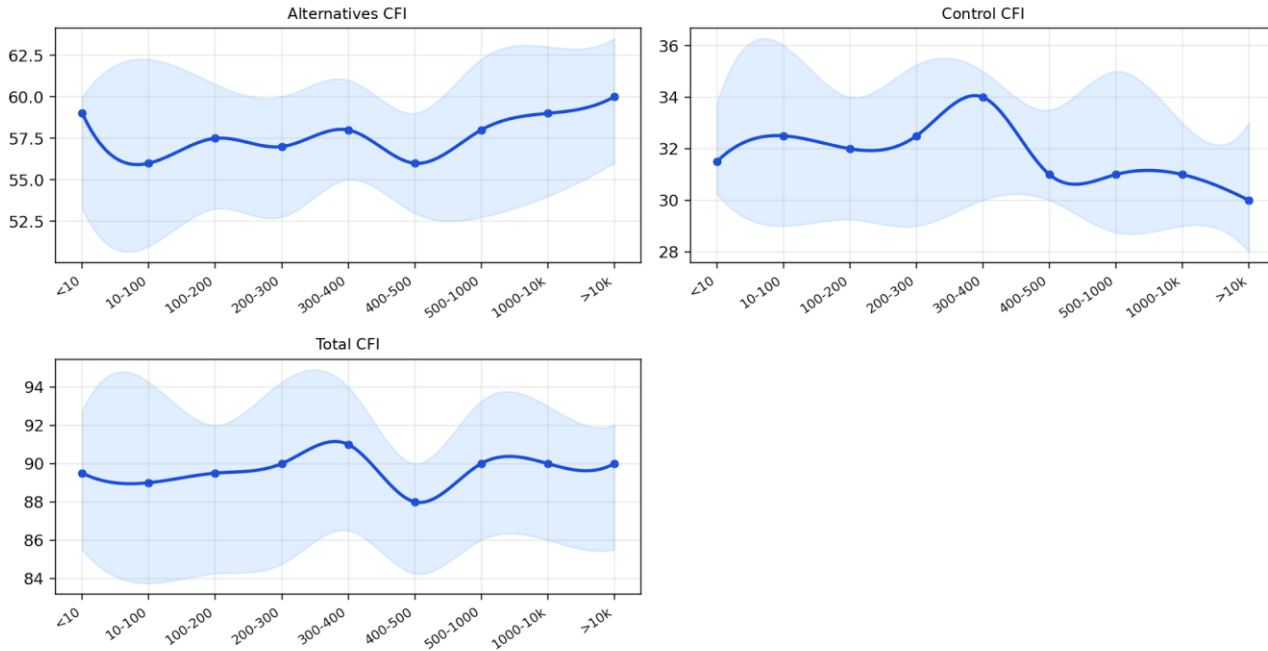


Figure 10. Change in Cognitive Flexibility Inventory (CFI) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.10. Utrecht Work Engagement Scale, UWES

The work engagement questionnaire comprises three scales: “Vigor,” “Dedication,” and “Absorption.” Scores increased with greater GSR practice experience on all three scales: “Vigor” ($\beta=0.803$, $q=6.51e-07$), “Dedication” ($\beta=0.809$, $q=6.34e-08$), and “Absorption” ($\beta=0.446$, $q=0.00347$). The results are presented in Figure 11.

Utrecht Work Engagement Scale, UWES

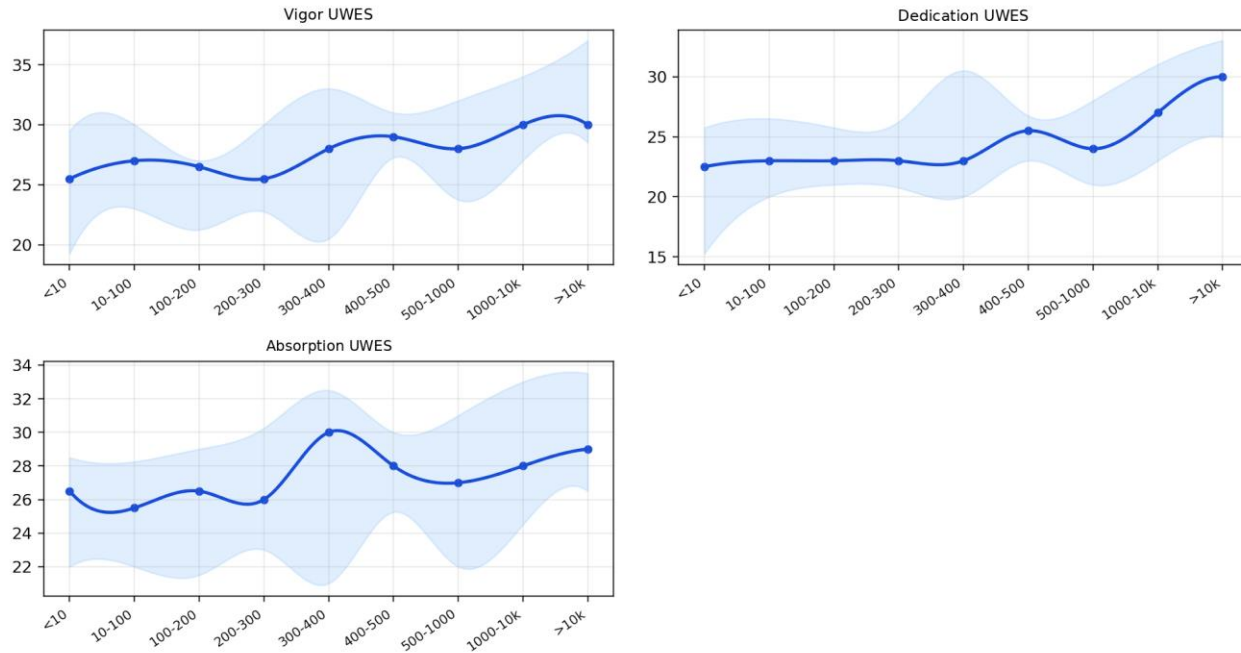


Figure 11. Change in Utrecht Work Engagement Scale (UWES) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.11. Personal Growth Initiative Scale, PGIS

The PGIS reflects personal growth initiative and an active striving for self-development.

Scores on this scale were positively associated with GSR experience ($\beta=0.616$, $q=0.00245$) (Figure 12).

Personal Growth Initiative Scale, PGIS

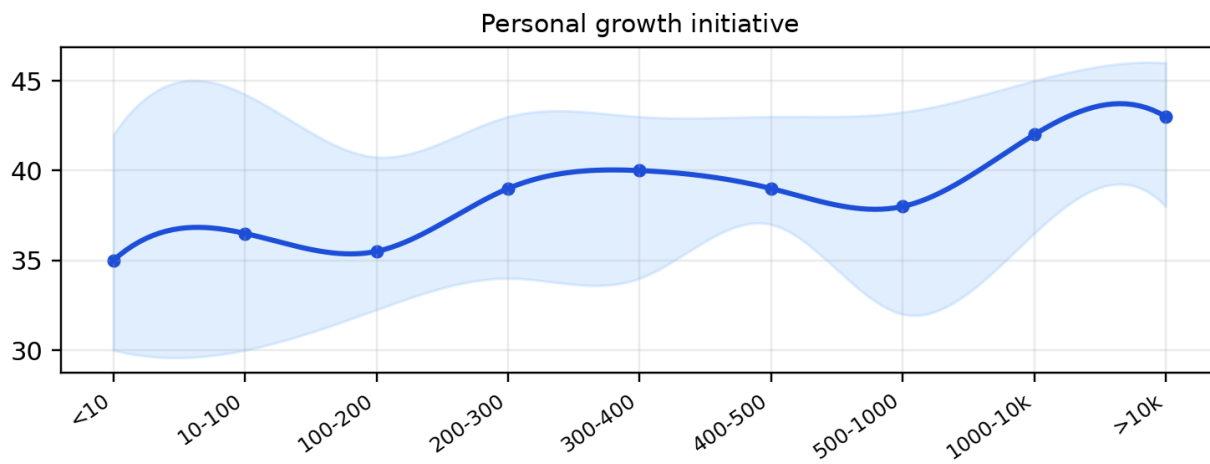


Figure 12. Change in Personal Growth Initiative Scale (PGIS) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.12. Rosenberg Self-Esteem Scale, RSES

This scale assesses global self-esteem and the positivity of one's attitude toward oneself. Scores on the scale increased with greater GSR experience ($\beta=0.360$, $q=0.00223$) (Figure 13).

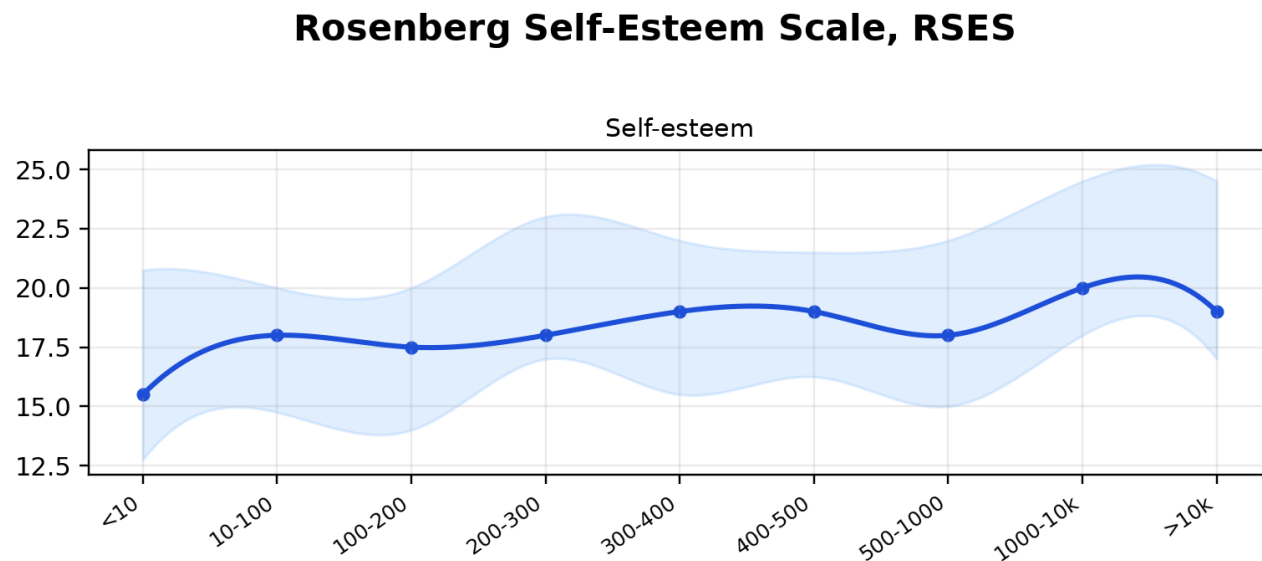


Figure 13. Change in Rosenberg Self-Esteem Scale (RSES) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.13. General Self-Efficacy Scale, GSE

The GSE reflects a person's confidence in their ability to cope with difficulties and achieve goals. Scores on the scale increased with greater GSR experience ($\beta=0.348$, $q=0.0112$).

General Self-Efficacy Scale, GSE

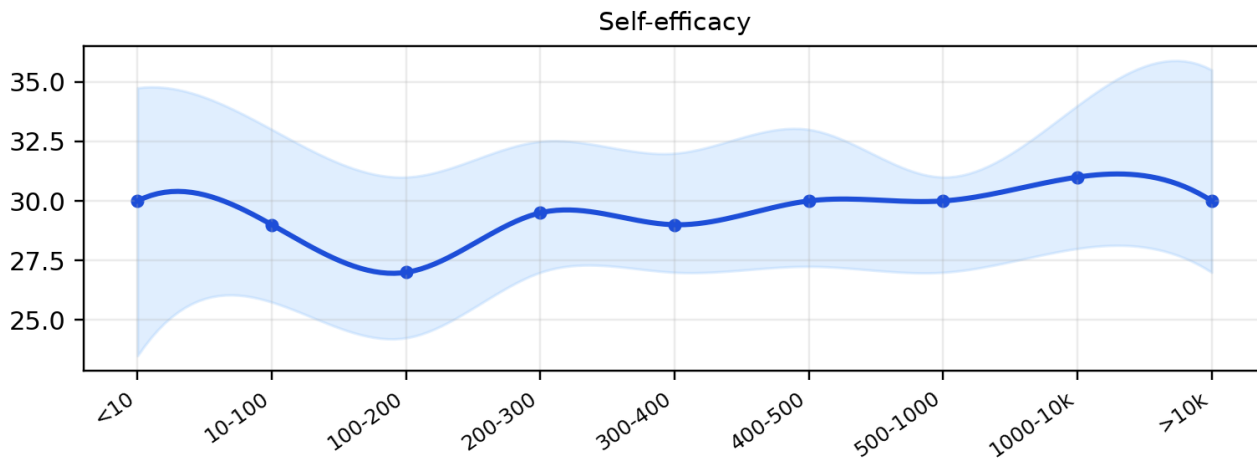


Figure 14. Change in General Self-Efficacy Scale (GSE) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.14. Cognitive Emotion Regulation Questionnaire, CERQ

The questionnaire assesses both productive and destructive cognitive strategies for regulating affective experience. GSR experience was positively associated with scores on the “Refocus on planning” scale ($\beta=0.320$, $q=0.000154$) and negatively associated with scores on the “Putting into perspective” scale ($\beta=-0.209$, $q=0.0361$). No reliable association was found for the following scales: “Self-blame,” “Acceptance,” “Rumination,” “Positive refocusing,” “Positive reappraisal,” “Catastrophizing,” and “Other-blame.” The results are presented in Figure 15.

Cognitive Emotion Regulation Questionnaire, CERQ

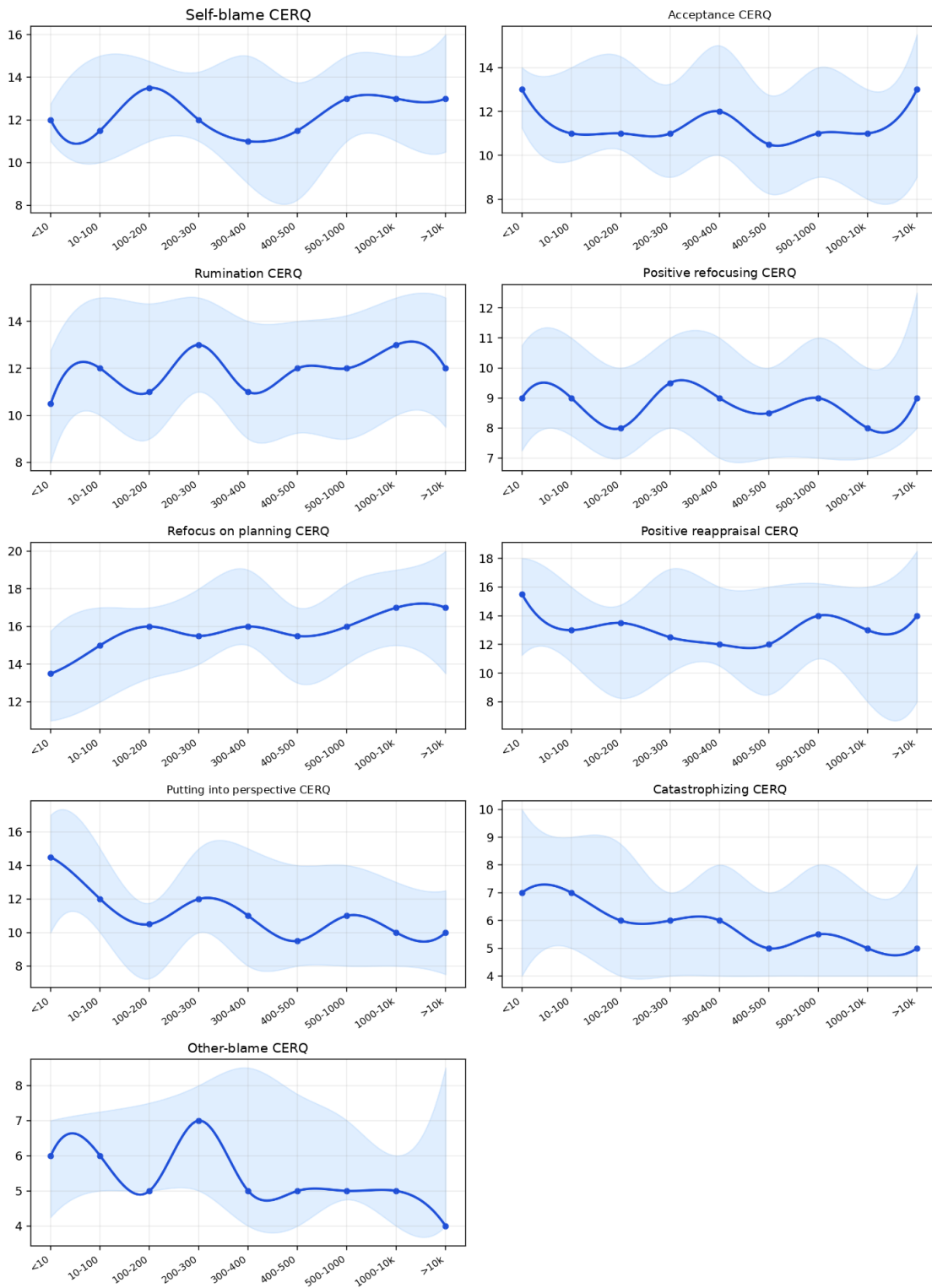


Figure 15. Change in Cognitive Emotion Regulation Questionnaire (CERQ) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range

Q1–Q3, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.15. Short Grit Scale, Grit-S

This questionnaire assesses perseverance of effort and consistency of interests in the pursuit of long-term goals. After correction for multiple comparisons, no significant association with GSR experience was found for any of the scales (“Perseverance of effort,” “Consistency of interests,” or the total score).

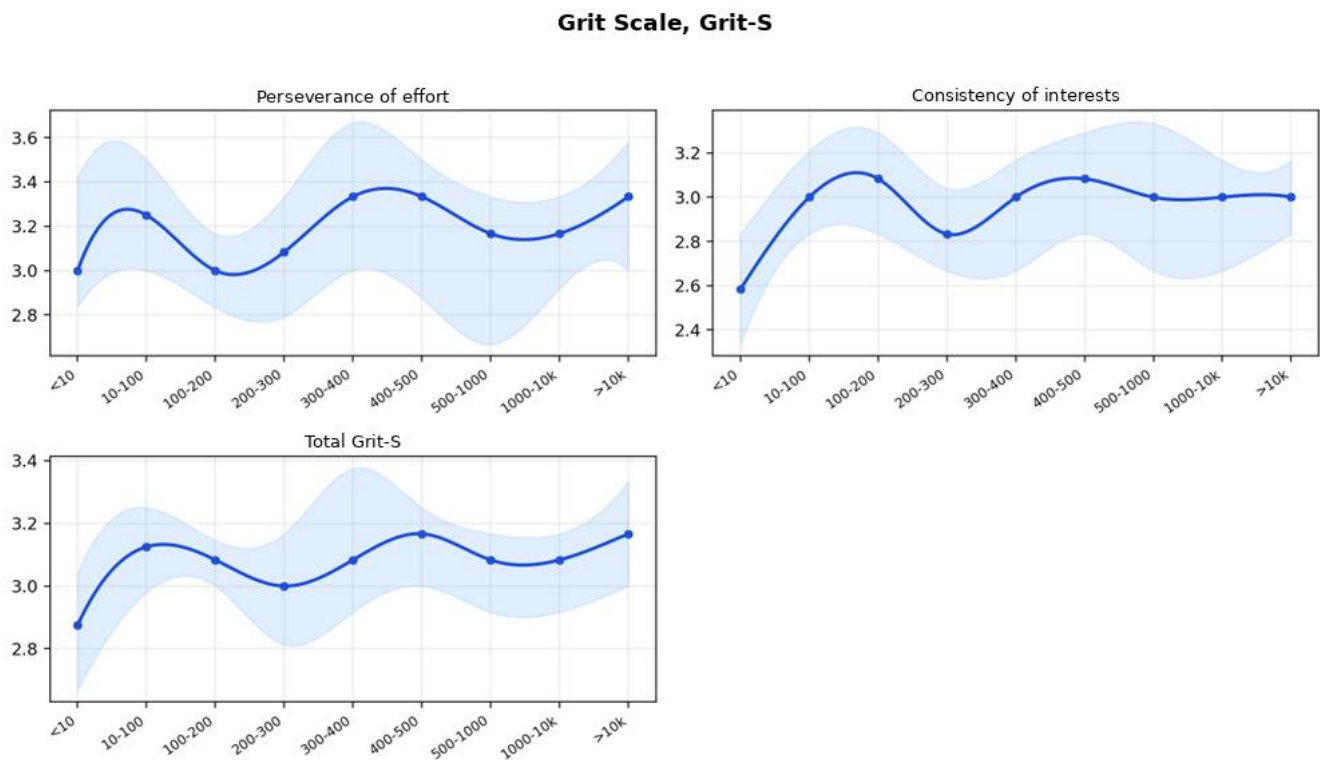


Figure 16. Change in Short Grit Scale (Grit-S) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range Q1–Q3, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.3.16. Satisfaction With Life Scale, SWLS

Scores on the SWLS, which assesses global cognitive satisfaction with one’s own life, were positively associated with GSR experience ($\beta=0.601$, $q=0.000154$) (Figure 17).

Satisfaction With Life Scale, SWLS

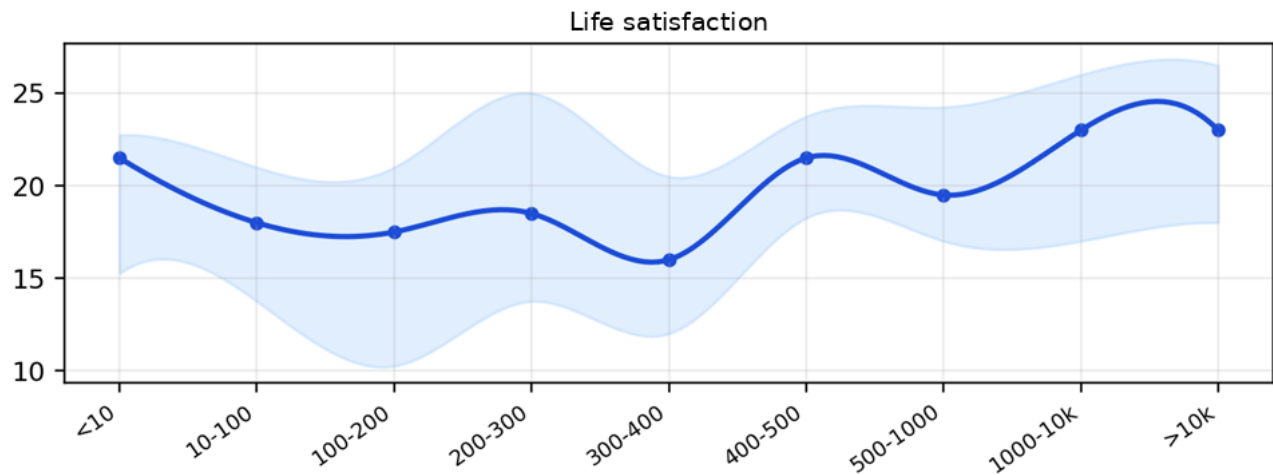


Figure 17. Change in Satisfaction With Life Scale (SWLS) scores with increasing GSR experience. The line shows the smoothed median, and the light blue band shows the interquartile range $Q1-Q3$, that is, the range from the 25th to the 75th percentile containing the central 50% of observations.

4.4. Testing for threshold effects

For all 34 scales that were significant in the main model, a test for possible threshold effects was carried out — a search for a level of GSR practice experience beyond which a marked change in the measure occurred. No stable threshold was found for any scale. Categorical models likewise offered no convincing advantage over linear models. Consequently, the observed associations between GSR experience and psychometric measures are better described as gradual, monotonic, and predominantly linear changes accompanying the accumulation of practical session experience, rather than as an abrupt jump after a particular number of sessions.

4.5. Alcohol use and smoking

The frequency of alcohol use and smoking was analyzed separately in people with differing GSR experience. The control group (no GSR experience) and the group with minimal GSR experience (fewer than 10 sessions) did not differ on these measures. At the same time, when these habits were analyzed across people with differing GSR practice experience, greater experience was associated with less frequent alcohol use and a lower probability of currently smoking (at the present stage of life). The association with having smoked in the past was not significant, which suggests that GSR experience is related to current behavior rather than to characteristics of the sample drawn to the practice.

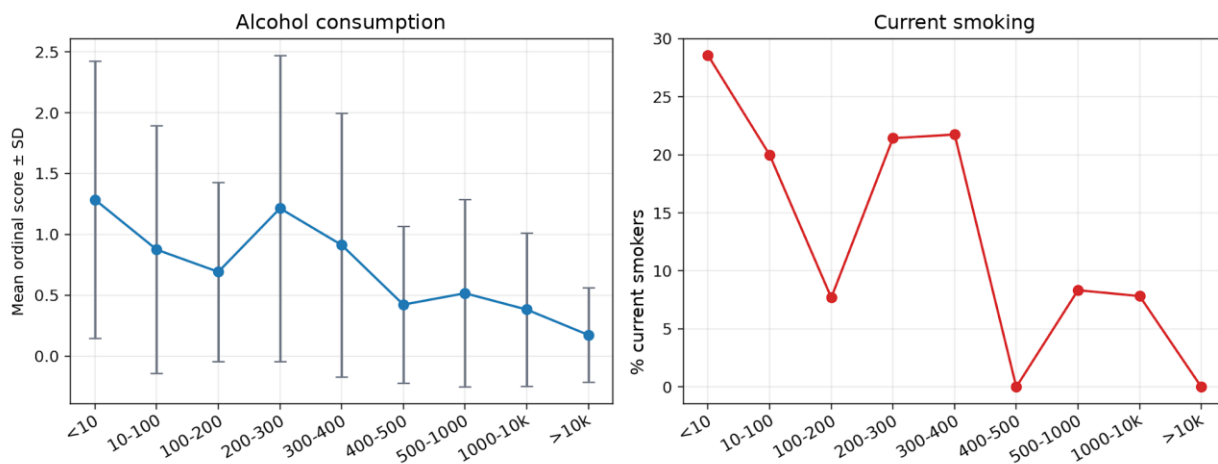


Figure 18. Alcohol use and current smoking by range of number of self-sessions. For alcohol, means $\pm$ SD are shown.

5. Discussion

The results obtained can be summarized as follows.

Emotional functioning and self-regulation. Global emotional intelligence, relationship maintenance, and social competence increased with greater GSR experience. This points to an association between practice experience and better understanding and regulation of emotions, greater effectiveness in interpersonal interaction, and stronger resources for maintaining relationships. Self-control also increased, which is consistent with the idea that voluntary regulation of behavior and impulses develops with practice.

Stress, anxiety, and depressive symptoms. Greater GSR experience was associated with lower state and trait anxiety, lower overall perceived stress, lower PSS-10 distress, a lower total BDI score, and fewer cognitive-affective and somatic symptoms of depression. This block of findings forms the most coherent pattern: the greater the practice experience, the lower the level of emotional distress.

Personality and resource measures. GSR experience was associated with higher self-esteem, self-efficacy, resilience, personal growth initiative, and life satisfaction. These effects can be interpreted as a link between the practice and stronger internal resources, greater confidence in one's ability to cope with difficulties, and a more positive appraisal of one's own life.

Work engagement. All three components of the work engagement scale (UWES) — vigor, dedication, and absorption — were positively associated with GSR experience. This indicates that more experienced participants are characterized by greater energy, inner involvement, a sense of the significance of their activity, and the ability to become deeply immersed in their work.

Coping strategies and cognitive emotion regulation. With greater experience, reliance on coping strategies such as denial, behavioral disengagement, self-distraction, and substance use declined, as did certain forms of emotion-focused responding. At the same time, the use of the CERQ planning strategy increased. This may indicate a shift from avoidance and passive responding toward more structured appraisal and regulation of difficult situations.

Personality traits and cognitive flexibility. GSR experience was associated with a lower level of neuroticism and higher levels of extraversion and conscientiousness. A positive association was also found with the CFI “Alternatives” scale, which reflects the ability to generate different explanations and possible solutions. The negative association with the CFI “Control” scale requires cautious interpretation and may reflect a complex dynamic in the subjective attitude toward control among those with extensive practice experience.

Taken together, the results show that greater GSR practice experience is associated with a more favorable psychological profile. The strongest and most consistent associations were found for reductions in anxiety, stress, and depressive symptoms, and for increases in emotional intelligence, self-control, engagement, and personal resources. This pattern is consistent with the hypothesis that regular practice may be linked to the development of self-regulation skills, emotional awareness, and more constructive responses to stress.

Many of the questionnaires used reflect, directly or indirectly, the experience of stress and related states. In interpreting the results it is important to bear in mind that chronic and severe stress is associated with adverse consequences for the body [108], including accelerated aging [109] and increased biological age indicators, elevated risk of cardiovascular disease [110] and of gastrointestinal disease [111], chronic fatigue [112], cognitive decline [113], and a number of other adverse effects. In this sense, the observed associations between greater GSR practice experience and reduced stress-related and adjacent symptoms are of interest not only from the standpoint of subjective well-being but also in the broader context of the possible prevention of stress-related burden on health.

The results obtained are comparable to those described in studies of psychotherapeutic and meditation-based approaches. Cognitive behavioral therapy, for example, often shows effects in reducing depressive and anxiety symptoms through changes in interpretations, behavioral activation, and coping skills training [5]. Mindfulness-based approaches are typically associated with reduced perceived stress [114], improved emotion regulation [115], and lower reactivity. Our study shows a similar profile of associations: lower stress, anxiety, and depressive symptoms, and higher self-regulation, resources, and engagement. Direct comparison of the effectiveness of GSR with that of other psychotherapeutic methods would require additional research.

It is notable that GSR experience is associated not only with symptom measures but also with resource characteristics: self-control, self-esteem, self-efficacy, resilience, personal growth initiative, and work engagement. This distinguishes the findings from a narrowly symptom-focused picture and allows us to speak of a potential systematic effect of GSR practice.

6. Conclusion

GSR practice experience shows a robust association with a broad range of psychometric measures. Greater experience is associated with lower anxiety, stress, depressive symptoms, and maladaptive strategies, and with greater self-regulation, emotional intelligence, personal resources, engagement, and life satisfaction. Greater experience is additionally associated with less frequent alcohol use and a lower probability of currently smoking. This result allows us to speak of a potential systemic positive effect associated with GSR practice.

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Appendix 1

Block 1. Tell us a little about yourself and your lifestyle

1. Sex
 - Female
 - Male
2. Age (full years, please write as a number)
3. Education
 - Secondary
 - Vocational secondary
 - Higher
 - Candidate of Sciences
4. Field of study (please write your answer)
5. Marital status
 - Single
 - Cohabiting
 - Married
6. Do you have children?
 - Yes
 - No
7. GSR practice experience (in months since your first self-session)
8. How many GSR self-sessions have you completed
 - Fewer than 10
 - 10-100
 - 100-200

- 200-300
 - 300-400
 - 400-500
 - 500-1000
 - 1000-10000
 - More than 10,000
9. Check ALL the modules you have completed
- Module 1
 - Module 2
 - Module 3
 - Module 4
 - Module 5
 - Module 6
 - Module 7
 - Module 8
 - Module 9
 - Expert module
 - Curator module
 - I have not completed any GSR module
10. Experience of seeing a psychotherapist
- Currently attending
 - Attended in the past, not currently
 - No
11. How often do you exercise
- I do not exercise
 - 1-2 times a month
 - 1-2 times a week
 - 3-4 times a week
 - 5-7 times a week
12. If yes, which kind (please write your answer)
13. Do you engage in meditative practices?
- Yes
 - No
 - I did in the past, but not now
14. If yes, how often
- I do not practice
 - 1-2 times a week
 - 3-4 times a week
 - 5-7 times a week
15. If yes, which ones (please write your answer)
16. How often do you drink alcohol
- I do not drink
 - Very rarely (on major holidays)

- From time to time (roughly 1-2 times a month)
- Regularly (1-2 times a week)
- Often (almost every day)

17. Do you smoke

- Yes
- No
- I used to smoke but have quit

Block 2. Relationship with yourself: awareness, attention, and self-control

Questionnaire 1 of 17

Please read the statements and, for each one, choose the answer that describes you most accurately.

1 – Strongly disagree

2 – Somewhat disagree

3 – Neither one nor the other

4 – Somewhat agree

5 – Strongly agree

№		1	2	3	4	5
1	I am good at resisting temptation.					
2	I have a hard time breaking bad habits.					
3	I am lazy.					
4	I sometimes say inappropriate things.					
5	When choosing between what is pleasant and what is useful, I choose what is pleasant.					
6	I am able to give up things that are bad for me.					
7	I wish I had more self-control.					
8	I come across as a very disciplined person.					
9	The saying “measure twice, cut once” is not about me.					
10	Sometimes I cannot finish a task because I get distracted by more pleasant things.					
11	I sometimes find it hard to concentrate.					
12	I am able to set and achieve long-term goals.					

13	Sometimes I do things even though I know I should not.						
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Questionnaire 2 of 17

Please read the statements and, for each one, choose the answer that describes you most accurately.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Don't know

5 – Somewhat agree

6 – Agree

7 – Completely agree

№		1	2	3	4	5	6	7
1	I find it easy to put my emotions into words.							
2	As a rule, I find it hard to see a situation through another person's eyes.							
3	On the whole, I am a very goal-oriented person.							
4	As a rule, I find it hard to control my emotions.							
5	On the whole, life does not seem joyful to me.							
6	I can interact effectively with people.							
7	I often change my mind.							
8	Sometimes I cannot tell which emotion I am feeling.							
9	I believe I have many good qualities.							
10	I usually find it hard to stand up for my rights.							
11	As a rule, I can influence another person's emotional state.							
12	On the whole, I see the future in a gloomy light.							
13	People close to me often complain that I treat them badly.							
14	I usually find it hard to adjust to circumstances.							

15	On the whole, I can cope with stress.							
16	I usually find it hard to show the people close to me that I love them.							
17	As a rule, I can put myself in another person's shoes and understand what they are feeling.							
18	I usually find it hard to stay interested in what I am doing.							
19	If I need to, I can always find a way to manage my emotions.							
20	On the whole, I am satisfied with my life.							
21	I believe I am good at coming to an agreement with people.							
22	I often get into things that I later regret.							
23	I often pause to make sense of what I am feeling.							
24	I believe I have many strengths.							
25	I tend to give in even when I know I am right.							
26	I think I have no influence at all on other people's feelings.							
27	I believe that everything in my life will turn out well.							
28	I find it hard to maintain close emotional bonds even with people close to me.							
29	As a rule, I adapt easily to new conditions.							
30	People around me admire my ability to always remain calm.							

Block 3. General emotional state

Questionnaire 3 of 17

Below is a list of qualities that may or may not describe you. Please indicate the extent to which you agree or disagree with each item.

I am someone who...

1 – Strongly disagree

2 – Somewhat disagree

3 – Neutral, no opinion

4 – Somewhat agree

5 – Strongly agree

№		1	2	3	4	5
1	tends to be quiet.					
2	is compassionate and kind-hearted.					
3	tends to be disorganized.					
4	worries a lot, is anxious about everything					
5	is fascinated by painting, music, or literature.					
6	is dominant and acts as a leader.					
7	is sometimes rude to others.					
8	has difficulty getting started on work.					
9	is prone to sadness and depression.					
10	has little interest in abstract ideas.					
11	is full of energy.					
12	tends to see only the good in other people.					
13	is reliable and can always be counted on.					
14	is emotionally stable and not easily upset.					
15	generates new ideas and thinks originally.					

Questionnaire 4 of 17

You are presented with a series of statements. In each group, choose the one statement that best describes how you have been feeling over the past month, including today. Before making your choice, read all the statements in each group carefully.

1. Which best describes how you have felt over the past week and today?

- I do not feel unhappy.
- I feel unhappy.
- I feel unhappy all the time and cannot get free of this feeling.
- I am so unhappy and sad that I cannot bear it.

2. Which best describes how you have felt over the past week and today?

- When I think about the future, I do not feel especially discouraged.

- When I think about the future, I feel discouraged.
- I feel there is nothing to look forward to in the future.
- I feel the future is hopeless and that nothing will change for the better.

3. Which best describes how you have felt over the past week and today?

- I do not feel like a failure.
- I feel I have had more failures than most other people.
- When I look back on my life, all I see is a series of failures.
- I feel like a complete failure.

4. Which best describes how you have felt over the past week and today?

- I get as much satisfaction out of life as I used to.
- I do not get as much satisfaction out of life as I used to.
- I do not get real satisfaction from anything.
- I am dissatisfied with everything and fed up with everything.

5. Which best describes how you have felt over the past week and today?

- I do not feel particularly guilty.
- I feel guilty fairly often.
- I feel guilty almost all the time.
- I feel guilty all the time.

6. Which best describes how you have felt over the past week and today?

- I do not feel that I am being punished for anything.
- I feel that I may be punished for something.
- I expect to be punished.
- I feel that I am being punished for something.

7. Which best describes how you have felt over the past week and today?

- I am not disappointed in myself.
- I am disappointed in myself.
- I am disgusted with myself.
- I hate myself.

8. Which best describes how you have felt over the past week and today?

- I do not feel that I am worse than others in any way.
- I am self-critical and acknowledge my weaknesses and mistakes.
- I blame myself for my mistakes all the time.
- I blame myself for everything bad that happens.

9. Which best describes how you have felt over the past week and today?

- I have no thoughts of ending my life.
- I have thoughts of ending my life, but I would not act on them.
- I would like to end my life.
- I would end my life if the opportunity arose.

10. Which best describes how you have felt over the past week and today?

- I do not cry any more than usual.
- I cry more than I used to.
- I now cry all the time.
- I used to be able to cry, but now I cannot even if I want to.

11. Which best describes how you have felt over the past week and today?

- I am no more irritated now than usual.
- I get irritated more easily than before, even over trifles.
- I am irritated all the time now.
- Nothing irritates me any more, because I have become indifferent to everything.

12. Which best describes how you have felt over the past week and today?

- I have not lost interest in other people.
- I am less interested in other people than I used to be.
- I have almost lost interest in other people.
- I have lost all interest in other people.

13. Which best describes how you have felt over the past week and today?

- I can make decisions as well as I ever could.
- I put off making decisions more often than usual.
- I have more difficulty making decisions than before.
- I can no longer make any decisions at all.

14. Which best describes how you have felt over the past week and today?

- I do not feel that I look any worse than usual.
- I am worried that I look old or unattractive.
- I feel that the changes in my appearance have made me unattractive.
- I am sure that I look ugly.

15. Which best describes how you have felt over the past week and today?

- I can work as well as I used to.
- I have to make an extra effort to get started on anything.
- I have great difficulty making myself do anything.
- I cannot work at all.

16. Which best describes how you have felt over the past week and today?

- I can sleep as well as usual.
- I do not sleep as well as I used to.
- I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
- I wake up several hours earlier than usual and cannot get back to sleep.

17. Which best describes how you have felt over the past week and today?

- I do not get tired any more than usual.
- I get tired more easily than usual.
- I get tired from almost everything I do.
- I am too tired to do anything at all.

18. Which best describes how you have felt over the past week and today?

- My appetite is no worse than usual.
- My appetite is not as good as it used to be.
- My appetite is now much worse.
- I have lost my appetite altogether.

19. Which best describes how you have felt over the past week and today?

- If I have lost weight recently, it has been very little.
- I have lost more than 2 kg in weight.
- I have lost more than 4 kg in weight.
- I have lost more than 6 kg in weight.

20. Which best describes how you have felt over the past week and today?

- I am no more concerned about my health than usual.
- I am troubled by problems such as various aches and pains, stomach upsets, and constipation.
- I am so concerned about my health that I find it hard to think about anything else.
- I am so concerned about my health that I cannot think about anything else at all.

21. Which best describes how you have felt over the past week and today?

- I have not noticed any change in my sexual interest.
- I am less interested in sex than usual.
- I am now much less interested in sex.
- I have completely lost interest in sex.

Questionnaire 5 of 17

Below are a number of statements that people commonly use to describe how they feel. Read each statement carefully and choose the answer that best describes how you feel at this moment

1. I feel calm.

- Not at all
- Somewhat
- Moderately so
- Very much so

2. Nothing is threatening me.

- Not at all
- Somewhat
- Moderately so
- Very much so

3. I feel tense.

- Not at all
- Somewhat
- Moderately so
- Very much so

4. I feel regretful.

- Not at all
- Somewhat
- Moderately so
- Very much so

5. I feel at ease.

- Not at all
- Somewhat
- Moderately so
- Very much so

6. I feel upset.

- Not at all
- Somewhat
- Moderately so
- Very much so

7. I am worried about possible misfortunes.

- Not at all
- Somewhat
- Moderately so
- Very much so

8. I feel rested.

- Not at all
- Somewhat
- Moderately so
- Very much so

9. I feel anxious.

- Not at all
- Somewhat
- Moderately so
- Very much so

10. I feel a sense of inner satisfaction.

- Not at all
- Somewhat
- Moderately so
- Very much so

11. I feel self-confident.

- Not at all
- Somewhat
- Moderately so
- Very much so

12. I feel nervous.

- Not at all
- Somewhat
- Moderately so
- Very much so

13. I am restless.

- Not at all
- Somewhat
- Moderately so
- Very much so

14. I feel on edge.

- Not at all
- Somewhat
- Moderately so

- Very much so

15. I do not feel constrained or tense.

- Not at all
- Somewhat
- Moderately so
- Very much so

16. I am content.

- Not at all
- Somewhat
- Moderately so
- Very much so

17. I am worried.

- Not at all
- Somewhat
- Moderately so
- Very much so

18. I feel over-excited and uneasy.

- Not at all
- Somewhat
- Moderately so
- Very much so

19. I feel joyful.

- Not at all
- Somewhat
- Moderately so
- Very much so

20. I feel pleasant.

- Not at all
- Somewhat
- Moderately so
- Very much so

Questionnaire 6 of 17

Below are a number of statements that people commonly use to describe how they feel. Read each statement carefully and choose the answer that best describes how you generally feel

21. I usually feel pleasure.

- Almost never
- Sometimes
- Often
- Almost always

22. I usually tire quickly.

- Almost never
- Sometimes
- Often
- Almost always

23. As a rule, I can cry easily.

- Almost never
- Sometimes
- Often
- Almost always

24. I would like to be as happy as others seem to be.

- Almost never
- Sometimes
- Often
- Almost always

25. I often lose out because I do not make decisions quickly enough.

- Almost never
- Sometimes
- Often
- Almost always

26. I usually feel energetic.

- Almost never
- Sometimes
- Often
- Almost always

27. I am usually calm, cool, and collected.

- Almost never
- Sometimes
- Often

- Almost always

28. Anticipated difficulties usually worry me a great deal.

- Almost never
- Sometimes
- Often
- Almost always

29. I worry too much over trifles.

- Almost never
- Sometimes
- Often
- Almost always

30. I am quite happy.

- Almost never
- Sometimes
- Often
- Almost always

31. I take everything too much to heart.

- Almost never
- Sometimes
- Often
- Almost always

32. I lack self-confidence.

- Almost never
- Sometimes
- Often
- Almost always

33. I usually feel secure.

- Almost never
- Sometimes
- Often
- Almost always

34. I try to avoid critical situations and difficulties.

- Almost never
- Sometimes

- Often
- Almost always

35. I get the blues.

- Almost never
- Sometimes
- Often
- Almost always

36. As a rule, I am content.

- Almost never
- Sometimes
- Often
- Almost always

37. All sorts of trifles distract and upset me.

- Almost never
- Sometimes
- Often
- Almost always

38. I take my disappointments so keenly that I cannot put them out of my mind for a long time afterward.

- Almost never
- Sometimes
- Often
- Almost always

39. I am a well-balanced person.

- Almost never
- Sometimes
- Often
- Almost always

40. I become very uneasy when I think about my affairs and concerns.

- Almost never
- Sometimes
- Often
- Almost always

Questionnaire 7 of 17

Please rate how often over the past month you have had the following thoughts and feelings, using the response scale provided.

1 – Never

2 – Almost never

3 – Sometimes

4 – Often

5 – Very often

No		1	2	3	4	5
1	have you been upset because of something that happened unexpectedly?					
2	have you felt unable to control the important things in your life?					
3	have you felt nervous and stressed?					
4	have you felt confident about your ability to handle your personal problems?					
5	have you felt that things were going your way?					
6	have you found that you could not cope with all the things you had to do?					
7	have you been able to control irritations in your life?					
8	have you felt that you were on top of things?					
9	have you been angered because of things that were outside your control?					
10	have you felt that difficulties were piling up so high that you could not overcome them?					

Questionnaire 8 of 17

This instrument examines how people respond to difficulties. There are many ways of dealing with life's difficulties, and different situations can be responded to differently. Indicate what you do and how you feel when you find yourself in a difficult situation. There are no right or wrong answers, since every person responds differently to different situations. What matters to us is what you personally do when you encounter a difficult situation.

1 – No

2 – Occasionally

3 – Sometimes

4 – Often

№		1	2	3	4
1	I try to keep myself from doing anything too hastily.				
2	I hope that God will help me.				
3	I talk about what has happened in order to understand the situation better.				
4	I daydream about other things to distract myself.				
5	I ask God for help.				
6	I try to plan and think through my next steps.				
7	I turn what has happened into a joke.				
8	I try to get emotional support from friends or relatives.				
9	I take some further action to try to overcome the situation.				
10	I give vent to my feelings.				
11	I try to look at the situation from a more positive angle, in a different light.				
12	I talk to someone who could give concrete help with my problem.				
13	I concentrate fully on solving this problem and, if necessary, set other matters aside.				
14	I drink or take medication in order to think about the problem less.				
15	I joke about what has happened.				
16	I stop trying to get what I want.				
17	I look for something good in what has happened.				
18	I act as if nothing has happened.				
19	I try not to act too hastily, so as not to make the situation worse.				
20	I go to the movies or watch television to think about the problem less.				
21	I try to accept the situation and live with it.				

22	I feel my emotions and express them openly.				
23	I take active steps to deal with the problem.				
24	I reduce the amount of effort I put into solving this problem.				
25	I talk about my feelings with someone close to me.				
26	I drink alcohol or take sedatives, because it helps me get through the problem.				
27	I am learning to live with it.				
28	I set other matters aside in order to focus on solving the problem.				
29	I think carefully about the steps I will take to solve the problem.				
30	I simply act as if nothing has happened.				

Questionnaire 9 of 17

Below are a number of statements about you and your state over the past month. Consider how far you agree or disagree with each of them. If you have not encountered a particular situation, try to imagine how you would feel if it occurred. Please choose the one answer that best reflects your state.

1 – Not true at all

2 – True, but rarely

3 – Sometimes true

4 – Often true

5 – True nearly all the time

№		1	2	3	4	5
1	I am able to adapt when changes occur.					
2	I can deal with whatever comes my way.					
3	I try to see the humorous side of things when I face problems.					
4	Having to cope with stress can make me stronger.					
5	I usually bounce back quickly after illness, injury, or other hardships.					
6	I believe I can achieve my goals despite obstacles.					

7	Even under pressure, I stay focused and think clearly.					
8	I am not easily discouraged by failure.					
9	I think of myself as a strong person who can handle life's difficulties.					
10	I am able to handle unpleasant or painful feelings such as sadness, fear, and anger.					

Block 5. Thinking style: rationality, flexibility, and intuition

Questionnaire 10 of 17

For the list of statements below, indicate how far you agree or disagree with each of them using the scale provided.

1 – Strongly disagree

2 – Disagree

3 – Somewhat disagree

4 – Hard to say

5 – Somewhat agree

6 – Agree

7 – Strongly agree

№		1	2	3	4	5	6	7
1	I am good at sizing up situations.							
2	I have a hard time making decisions in difficult situations.							
3	Before making a decision, I consider several options.							
4	When I encounter difficult situations, I feel that I am losing control.							
5	I prefer to look at difficult situations from different angles.							
6	I look for additional information, not always obvious, before determining the causes of behavior.							
7	Difficult situations make me so tense that I cannot think of a way to resolve them.							

8	I try to look at things from another person's point of view.							
9	I find it difficult that there are many different ways of resolving difficult situations.							
10	I am able to put myself in another person's place.							
11	When I encounter difficult situations, I simply do not know what to do.							
12	It is important to consider difficult situations from different angles.							
13	In difficult situations, I consider several options before deciding how to act.							
14	I often look at a situation from different points of view.							
15	I am able to overcome the difficulties I encounter in life.							
16	When explaining the causes of behavior, I take all the available information into account.							
17	I feel that in difficult situations I am powerless to change anything.							
18	When I encounter difficult situations, I pause and try to think through several ways of resolving them.							
19	I can think of more than one way of resolving a difficult situation I have encountered.							
20	I consider several options before responding to difficult situations.							

Block 6. Capacity for work and propensity for dependent behavior

Questionnaire 11 of 17

Please indicate how often you experience the feelings and states listed below. For each statement, choose the one answer corresponding to how often you have these thoughts and feelings.

1 – Never

2 – Very rarely

3 – Rarely

4 – Sometimes

5 – Often

6 – Very often

7 – Every day

№		1	2	3	4	5	6	7
1	At my work, I feel bursting with energy.							
2	My work is purposeful and meaningful.							
3	When I am working, time flies.							
4	At my work, I feel a surge of strength and energy.							
5	I am enthusiastic about my job.							
6	When I am working, I forget everything else around me.							
7	My job inspires me.							
8	When I get up in the morning, I feel glad to go to work.							
9	I am happy when I am working intensively.							
10	I am proud of the work that I do.							
11	I become fully immersed in my work.							
12	I can keep working for very long periods at a time.							
13	My job presents me with difficult and interesting challenges.							
14	I let my work carry me away.							
15	At my work, I am very persistent and am not distracted by other things.							
16	It is difficult to detach myself from my job.							
17	I keep working even when things do not go well.							

Block 7. Goal setting, effectiveness, well-being

Questionnaire 12 of 17

Using the scale provided, choose the answer that best matches the extent to which you agree or disagree with each statement.

1 – Definitely disagree

2 – Generally disagree

3 – Disagree to some extent

4 – Agree to some extent

5 – Generally agree

6 – Definitely agree

№		1	2	3	4	5	6
1	I know how to change what I want to change in my life.						
2	I have a good sense of where my life is heading.						
3	If I want to change something in my life, I do it.						
4	I can choose the role I would like to play in a group.						
5	I know what I need to do to start moving toward the goal I have set.						
6	I have a specific plan of action that will help me reach the goals I have set.						
7	I take responsibility for my life.						
8	I know what unique contribution I can make and where.						
9	I have a plan for making my life more balanced.						

Questionnaire 13 of 17

Indicate how far you agree or disagree with the statements below.

1 – Completely disagree

2 – Disagree

3 – Agree

4 – Strongly agree

№		1	2	3	4
1	On the whole, I am satisfied with myself.				
2	At times I think I am no good at all.				

3	I feel that I have a number of good qualities.				
4	I am able to do many things as well as most other people.				
5	I feel I do not have much to be proud of.				
6	At times I feel useless.				
7	I feel that I am a person of worth, at least on an equal plane with others.				
8	I wish I could have more respect for myself.				
9	All in all, I am inclined to feel that I am a failure.				
10	I take a positive attitude toward myself.				

Questionnaire 14 of 17

Read each statement and decide whether it is true or not true of you.

1 – Not at all true

2 – Hardly true

3 – Moderately true

4 – Exactly true

№		1	2	3	4
1	If I try hard enough, I can always find a solution even to difficult problems.				
2	If something stands in my way, I can still find ways to reach my goal.				
3	It is fairly easy for me to achieve my goals.				
4	In unexpected situations, I always know how I should behave.				
5	When unforeseen difficulties arise, I believe I can handle them.				
6	If I put in enough effort, I can deal with most problems.				
7	I am ready for any difficulty, because I rely on my own abilities.				
8	When I am faced with a problem, I can usually find several ways of solving it.				
9	I can think of something even in situations that at first seem hopeless.				

10	I am usually able to keep a situation under control.				
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Questionnaire 15 of 17

Before you begin, please recall a few stressful situations that were difficult for you. After reading each statement, rate how characteristic such thoughts are of you in a difficult situation. When answering, focus on your thoughts and feelings rather than on the actions you take. Choose the answer that matches your view.

1 – Almost never

2 – Sometimes

3 – Regularly

4 – Often

5 – Almost always

№		1	2	3	4	5
1	I feel that I am the one to blame for what has happened.					
2	I think that I will have to accept that this has happened.					
3	I often think about how I feel about what has happened.					
4	I think about pleasanter things than what has happened to me.					
5	I think about what would be the best thing for me to do.					
6	I think that this situation will teach me something.					
7	I think that things could have been much worse.					
8	I often think that what has happened to me is much worse than what happens to others.					
9	I feel that others are to blame for what has happened.					
10	I feel that I am the only one responsible for what has happened.					
11	I think that I will have to accept the situation as it is.					
12	I am preoccupied with what I think and feel about what has happened.					
13	I think about pleasant things that have nothing to do with what has happened.					

14	I think about how best to cope with this situation.					
15	I think that I will become stronger as a result of this.					
16	I think that others go through far more difficult ordeals.					
17	I keep thinking about how terrible it is that this has happened to me.					
18	I feel that others are responsible for what has happened to me.					
19	I think about the mistakes I have made.					
20	I think that there is nothing I can change.					
21	I want to understand why I feel the way I do about what has happened.					
22	I think about something pleasant instead of thinking about what has happened.					
23	I think about how to change the situation.					
24	I think that this situation also has its positive sides.					
25	It seems to me that this is not the worst thing that could have happened.					
26	I often think that what has happened to me is the worst thing that can happen to anyone.					
27	I think about the mistakes others have made in this situation.					
28	I think that, on the whole, the cause of it all lies within me.					
29	I think that I need to learn to live with this.					
30	I focus in detail on the feelings the situation has aroused in me.					
31	I think about my positive experiences.					
32	I think through a plan of what would be best to do in this situation.					
33	I look for the positive sides of the situation that has arisen.					
34	I tell myself that there are worse situations in life.					
35	I keep thinking about how terrible the situation that has occurred is.					
36	I feel that, on the whole, the cause of what has happened is what others have done.					

Rate how far you agree with the statements.

1 – Completely disagree

2 – Somewhat disagree

3 – Neither one nor the other

4 – Somewhat agree

5 – Completely agree

№		1	2	3	4	5
1	As a rule, I set a goal and then switch to a different one.					
2	I can call myself a hard worker without any irony.					
3	New ideas and new projects sometimes distract me from previous ones.					
4	I have achieved goals that took me many months of work.					
5	Every few months I become interested in some new pursuit.					
6	I have usually continued to work on a task after unsuccessful attempts.					
7	My interests change from year to year.					
8	Setbacks usually stop me.					
9	A particular idea takes hold of me for a short time, and then I lose interest in it.					
10	I am no good with projects that drag on for many months, for example longer than a year.					
11	I finish whatever I begin.					
12	I am diligent in my work.					

Block 8. Well-being, life satisfaction, vitality

Questionnaire 17 of 17

Below are statements that you may agree or disagree with. Indicate the extent of your agreement with each of them.

1 – Definitely disagree

2 – Disagree

3 – Disagree to some extent

4 – Neither agree nor disagree

5 – Agree to some extent

6 – Agree

7 – Definitely agree

№		1	2	3	4	5	6	7
1	In most ways my life is close to ideal.							
2	The conditions of my life are excellent.							
3	I am satisfied with my life.							
4	So far I have got the important things I want in life.							
5	If I could live my life over, I would change almost nothing.							