Plasticity of personality structures: a study of changes in self-esteem following short-term psychotherapy

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Abstract

Objective To examine the possibility of modifying self-esteem as a key personality structure through a targeted short-term psychotherapy program.

Method The study included 58 participants (53 women and 5 men) who sought psychological help due to subjective difficulties related to self-esteem and self-perception. A repeated-measures design was employed. All participants underwent 10 individual psychotherapy sessions aimed at addressing dysfunctional aspects of self-esteem and related patterns of self-perception and interpersonal functioning. The following instruments were used to assess changes: the Sorensen Self-Esteem Test, the Self-Esteem Matrix by J. Weinhold, and Ryff's Psychological Well-Being Scale. Statistical analysis included the Wilcoxon signed-rank test and Spearman correlation analysis.

Results Following the psychotherapeutic intervention, statistically significant changes were observed across all measured variables. Sorensen Self-Esteem Test scores decreased, indicating improved self-esteem from 23.46 to 14.21 points ($Z = 5.40$; $p < 0.001$), self-esteem scores on the Self-Esteem Matrix increased from 61.80 to 70.00 points ($Z = 4.38$; $p < 0.001$), and psychological well-being scores on Ryff's scale increased from 348.75 to 374.89 points ($Z = 5.06$; $p < 0.001$). Stronger correlations were observed between self-esteem and psychological well-being after treatment.

Conclusions The findings indicate that substantial changes in self-esteem are possible in short-term psychotherapy. The observed changes support the view of self-esteem as one of the key clinical targets of psychotherapy and suggest the possibility of meaningful changes in personality structures even within brief psychotherapeutic interventions, challenging the assumption that personality structures are relatively fixed. Further controlled studies are needed to confirm these findings.

Keywords: self-esteem; psychological well-being; plasticity of personality structures; short-term psychotherapy; integrative causal psychotherapy.

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Introduction

Traditional personality theories have long conceptualized personality as a relatively stable system of traits, formed early in development and characterized by a high degree of structural stability across the lifespan [1]. In the early psychoanalytic tradition, personality stability was linked to early object relations, ego structure, and the formation of the superego [2, 3]. Classical psychoanalytic theorists emphasized that the key configurations of personality are formed primarily during early childhood and are subsequently reproduced in the form of stable patterns of perception, affective responses, and interpersonal interaction [2]. Similar views on personality stability are also present in dispositional theories of personality, particularly in the Five-Factor Model ("Big Five"), where personality traits are regarded as relatively stable structures [4].

For a long time, empirical research also supported the notion of high personality stability. Costa and McCrae pointed to the substantial temporal stability of personality traits in adulthood [4], while Roberts and DelVecchio demonstrated that the stability of personality characteristics increases with age and reaches its peak during mature adulthood [5]. According to these approaches, psychotherapy is

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considered to have a greater impact on symptoms, coping strategies, and levels of adaptation than on deep personality structures.

At the same time, over recent decades an increasing body of evidence has begun to challenge the notion of personality as a predominantly fixed system. Contemporary research in the fields of neuroplasticity, affect regulation, and memory reconsolidation suggests the possibility of changes in personality structures traditionally regarded as stable, including self-esteem, affective regulation, and core self- and object representations [6, 7].

One possible explanation for relatively rapid personality change is provided by contemporary models of emotional learning and memory reconsolidation. According to these models, the reactivation of emotionally significant experiences combined with a novel corrective experience can lead to the modification of previously established schemas of self- and other-perception. As a result, change may affect not only current emotional responses but also more stable cognitive-affective structures underlying self-attitudes and interpersonal functioning.

An additional explanation is offered by contemporary models of the mind that conceptualize personality as a system of internal models continuously updated through new experience. From this perspective, psychotherapy may serve as a unique context in which enduring beliefs about oneself, other people, and one's own capacities are re-examined and refined. Such an approach helps explain how meaningful changes in specific components of personality organization can occur not only over many years but also within the framework of relatively brief psychotherapeutic interventions.

Personality is increasingly conceptualized as a dynamic system of interconnected psychological structures that can change in response to affective experience, interpersonal relationships, and psychotherapeutic intervention [8, 9]. Contemporary meta-analytic research further supports the possibility of personality change through psychotherapy. For example, Roberts et al. demonstrated that psychotherapeutic interventions can produce statistically significant changes in personality traits, with the largest effects typically observed during the first months of treatment [9]. These findings challenge the view of personality characteristics as entirely stable entities and support the concept of their relative plasticity.

The concept of personality structure plasticity has been developed particularly extensively within contemporary psychodynamic and humanistic approaches. Otto Kernberg associated personality change with the transformation of internal object relations and the integration of affective experience [3]. Heinz Kohut considered the possibility of structural personality change through the correction of self-disturbances within therapeutic relationships [10]. In cognitive-behavioral therapy and schema therapy, central importance is assigned to the modification of deep-seated beliefs and maladaptive schemas that shape stable patterns of perceiving the self and the world [11].

One of the approaches that advances the concept of high plasticity of personality structures is Integrative Causal Psychotherapy (ICP)*. From the perspective of this approach, personality is viewed as a dynamic system of mental structures and habitual patterns of responding, many of which are formed implicitly through the individual's interaction with the social environment [12]. Within ICP, personality structures are regarded as more plastic than they are conceptualized in traditional theories of personality stability. Psychotherapeutic intervention targeting personality-related structures may modify self-representations, affective responding, and interpersonal functioning [12]. Particular emphasis within this approach is placed on self-perception, self-image, internal objects, limiting self-beliefs, and internalized social norms affecting psychological well-being.

One of the most significant personality constructs in this context is self-esteem. Self-esteem is closely related to processes of self-regulation, stress resilience, the quality of interpersonal relationships, self-efficacy, and psychological well-being [13, 14].

In contemporary literature, self-esteem is conceptualized not only as an indicator of one's attitude toward oneself but also as one of the central components of the system of personal structures that organize self-perception, emotional regulation, and interpersonal functioning. From this perspective, changes in self-esteem may be viewed as an indicator of broader processes of personality transformation. At the same time, the question of the extent of its plasticity remains controversial. On the one hand, self-esteem is regarded as a relatively stable personality characteristic shaped by early experience and social interactions [15]. On the other hand, contemporary psychotherapy research increasingly points to the possibility of

* Integrative Causal Psychotherapy is a psychotherapeutic approach developed by Yu. Tor that focuses on identifying core pathogenic mechanisms underlying mental disorders and developing therapeutic protocols aimed at addressing them.

clinically significant changes in self-esteem through interventions targeting affective experience, internal self-representations, and maladaptive cognitive-affective patterns [16, 17].

Self-esteem is increasingly viewed not as an isolated personality trait but as a component of a broader system of self-representations that includes self-acceptance, self-efficacy, and self-concept clarity [18]. Research has shown that self-esteem is closely associated with psychological well-being, the quality of interpersonal relationships, mental health, and successful adaptation across various domains of life [19].

Despite growing interest in the problem of personality plasticity, empirical studies examining changes in personality structures in short-term psychotherapy remain limited. Most studies focus either on symptomatic changes or on long-term psychotherapeutic processes. The possibility of relatively rapid modification of self-related formations within a structured short-term intervention remains underexplored. Accordingly, investigating the possibility of changes in self-esteem in short-term psychotherapy represents an important research objective.

Research hypotheses

- Self-esteem as a personality-related structure may undergo statistically significant changes during short-term psychotherapy.
- Changes in self-esteem are accompanied by improvements in indicators of psychological well-being.

Methods

Participants

The study included 58 participants (53 women and 5 men) who sought psychological help. Participants ranged in age from 18 to 45 years. Inclusion criteria were subjective difficulties related to self-esteem and self-perception, as well as willingness to participate in psychotherapy according to the study protocol. Exclusion criteria included diagnosed psychiatric disorders and severe somatic illnesses. The sample was non-clinical.

Study design

The study employed a pre–post design. Prior to the psychotherapeutic intervention, participants completed a baseline psychodiagnostic assessment. Following completion of therapy, repeated assessment was conducted using the same instruments.

All participants provided informed consent prior to participation. The study was conducted in accordance with the principles of confidentiality and professional ethics.

Measures

The following instruments were used:

- The Sorensen Self-Esteem Test, assessing self-esteem and related patterns of negative self-evaluation.
- The Self-Esteem Matrix by J. Weinhold, assessing the capacity for interpersonal connection, self-acceptance, acceptance of others, and maintaining a positive sense of self in relationships.
- Ryff's Psychological Well-Being Scale, measuring key dimensions of psychological well-being, including self-acceptance, autonomy, personal growth, environmental mastery, purpose in life, and positive relations with others.

Psychotherapeutic intervention

All participants completed a course of targeted* short-term psychotherapy consisting of 10 individual sessions. The intervention was conducted within the framework of Integrative Causal Psychotherapy (ICP) and consisted of weekly 50-minute online psychotherapy sessions conducted via videoconferencing.

The psychotherapeutic protocol primarily focused on self-esteem and related personality structures, including self-perception, self-image, limiting self-beliefs, and interpersonal interaction.

The main therapeutic focus included:

- processing emotionally significant experiences linked to a negative self-image;
- modifying maladaptive self-beliefs;
- developing a more stable, internally grounded sense of self-worth and self-acceptance independent of external evaluations and achievements;
- reducing discrepancies between actual and idealized self-representations;
- developing more adaptive affective responses and interpersonal functioning.

The therapeutic work focused primarily on unconscious components of cognitive, affective, and behavioral patterns through the processing of underlying affective material using ICP techniques, as well as motifs of catathym-imaginative psychotherapy (symboldrama).

* Targeted psychotherapy is defined as a psychotherapeutic intervention aimed at specific mechanisms involved in the development and maintenance of psychopathological symptoms.

The study was conducted in 2024 at the Academy of Integral Psychodynamic Psychotherapy. Psychotherapy was delivered by 25 trainee psychotherapists who received prior training in the treatment protocol and worked under regular supervision, ensuring standardization of the intervention and adherence to a unified therapeutic framework. The total study duration was 20 weeks.

Statistical analysis

Data were analyzed using the Shapiro–Wilk test, Wilcoxon signed-rank test, and Spearman's rank correlation coefficients. Effect sizes were additionally calculated using the formula $r = Z/\sqrt{N}$. In accordance with conventional guidelines, $r = 0.1$ was interpreted as a small effect, $r = 0.3$ as a medium effect, and $r \geq 0.5$ as a large effect.

Results

Distribution of the Sorensen Self-Esteem Test scores before and after psychotherapy was examined using the Shapiro–Wilk test (Table 1).

Because one variable significantly deviated from a normal distribution ($p < 0.01$), subsequent analyses were conducted using nonparametric methods.

Treatment effects were assessed using the Wilcoxon signed-rank test (Table 2).

Sorensen Self-Esteem Test scores decreased significantly from 23.46 to 14.21 points ($T = 146.5$; $Z = 5.40$; $p < 0.001$), indicating improved self-esteem.

Scores on the Weinhold measure increased from 61.80 to 70.00 points ($T = 275$; $Z = 4.38$; $p < 0.001$), reflecting greater self-acceptance and acceptance of others.

Psychological well-being scores also increased significantly, from 348.75 to 374.89 points ($T = 189.5$; $Z = 5.06$; $p < 0.001$). Improvements were observed across multiple domains of psychological well-being, including self-acceptance, autonomy, environmental mastery, purpose in life, positive relationships, and personal growth [20].

To examine changes in the relationships between the study variables following psychotherapy, Spearman correlation analyses were conducted (Table 3).

Correlation analyses revealed significant associations between self-esteem, psychological well-being, and self-acceptance/acceptance of others both before and after psychotherapy ($p < 0.001$). Following treatment, these associations became stronger: the correlation between self-esteem and self-acceptance/acceptance of others increased from −0.58 to −0.75, the correlation between self-esteem and psychological well-being increased from −0.66 to −0.72, and the correlation between self-acceptance/

		W	p
Pre-treatment	Sorensen	0.984	0.634152
	Weinhold	0.988	0.815028
	Ryff	0.980	0.440009
Post-treatment	**Sorensen**	**0.941**	**0.007308**
	Weinhold	0.980	0.440795
	Ryff	0.983	0.576381

Table 1. **Shapiro–Wilk test for normality**

Measure	Mean		T	Z	p	r
	Pre-treatment	Post-treatment				
Self-esteem (Sorensen)*	23.46	14.21	146.50	5.40	< 0.001	0.71
Self-acceptance and acceptance of others (Weinhold)	61.80	70.00	275.00	4.38	< 0.001	0.58
Psychological well-being (Ryff)	348.75	374.89	189.50	5.06	< 0.001	0.66

** Lower scores on the Sorensen Self-Esteem Test indicate higher self-esteem.*

Table 2. **Pre-post differences according to the Wilcoxon signed-rank test**

	Pre-treatment			Post-treatment		
	Sorensen	Weinhold	Ryff	Sorensen	Weinhold	Ryff
Sorensen		−0.58	−0.66		−0.75	−0.72
Weinhold			0.67			0.73
Ryff						

Note. Critical values for correlation coefficients at n = 58 were 0.26 for p = 0.05, 0.37 for p = 0.01, and 0.42 for p = 0.001.

Table 3. Spearman correlations before and after psychotherapy

acceptance of others and psychological well-being increased from 0.67 to 0.73.

Overall, psychotherapy was associated not only with improvements in self-esteem and psychological well-being, but also with stronger relationships between the measured variables. This pattern may reflect greater coherence across self-related psychological processes. The strengthening of associations among the measured variables may indicate not only improvements in individual aspects of psychological functioning but also an increase in their internal integration. This finding suggests that the psychotherapeutic changes affected not isolated characteristics but rather an interconnected system of self-representations.

Discussion

The present findings support the view that self-esteem is a relatively malleable personality structure that remains responsive to short-term psychotherapeutic intervention. The observed effect sizes were large (r = 0.58–0.71), indicating that the observed changes were substantial. The observed changes have not only statistical but also potential clinical significance. In particular, self-esteem scores on the Sorensen Self-Esteem Test decreased from 23.46 to 14.21 points, reflecting a substantial reduction in negative self-attitudes and the development of a more adaptive relationship with oneself. Similarly, improvements on the Weinhold and Ryff scales indicate positive changes in self-acceptance, interpersonal functioning, and subjective psychological well-being.

The present findings are consistent with research from various psychotherapeutic approaches demonstrating the possibility of statistically significant improvements in self-esteem during psychotherapy. In particular, similar effects have been reported in studies of cognitive-behavioral therapy for low self-esteem [17], as well as in meta-analytic research showing that psychotherapeutic interventions can lead to changes in enduring personality characteristics and self-related representations [9]. Thus, the observed changes are in line with a broader trend identified in the contemporary psychotherapy literature.

The findings also accord with contemporary views of personality as a dynamic system of interconnected psychological structures capable of relatively rapid change under the influence of emotional experience and psychotherapeutic intervention. In contrast to classical models that viewed personality structures as largely stable and resistant to change, contemporary psychotherapeutic approaches increasingly recognize the possibility of meaningful modification in self-related structures over the course of psychotherapy.

The present findings may be interpreted within contemporary conceptualizations of psychotherapeutic change as a process involving the modification of enduring cognitive-affective models that shape self-perception and interactions with the external world. From the perspective of Integrative Causal Psychotherapy (ICP), such changes may result from the targeted processing of affective experience, modification of negative self-beliefs, and transformation of automatic cognitive-affective patterns. The therapeutic protocol primarily focused on self-perception, limiting self-beliefs, and emotionally significant experiences underlying the development of self-esteem.

The observed improvement in psychological well-being suggests that the intervention may have affected multiple domains of psychological functioning, even within a relatively brief course of psychotherapy. The findings therefore suggest that self-esteem can be meaningfully modified during short-term psychotherapy.

Of particular interest is the strengthening of the associations among self-esteem, self-acceptance, and psychological well-being. This finding may reflect not only improvements in individual indicators but also an increased integration of the system of self-representations. From this perspective, the observed changes may be interpreted as reflecting greater coherence among different components of the self-

concept and the development of a more integrated and cohesive self-attitude.

It should be noted that the observed effect sizes (r = 0.58–0.71) fall within, and in some cases exceed, the range of effects reported in studies of psychotherapeutic interventions aimed at improving self-esteem [9, 17]. Nevertheless, the absence of a control group precludes an unambiguous interpretation of the observed differences as being attributable solely to the psychotherapeutic intervention. At the same time, further studies incorporating control groups and follow-up assessments are needed to determine the stability of the observed changes and clarify the causal nature of the identified relationships. The present design does not allow nonspecific factors, expectancy effects, or natural fluctuations in participants' psychological state to be ruled out. Additional limitations include the relatively small sample size and pronounced gender imbalance, both of which restrict the generalizability of the findings.

An important direction for future research may involve comparing the plasticity of personality structures during psychotherapy in individuals with normative vs borderline personality organization. Borderline personality organization is characterized by deficits in structural integration, impaired integration of self-representations, and unstable self-concept. It may therefore be assumed that both the mechanisms and limits of personality change differ qualitatively in such patients compared to individuals with normative levels of personality functioning.

Conclusion

The findings demonstrate statistically significant improvements in self-esteem following short-term psychotherapy. These changes were accompanied by marked improvements in psychological well-being, self-acceptance, and acceptance of others, as well as by stronger associations among the examined variables.

The results support the conceptualization of self-esteem as a dynamic and malleable personality-related structure responsive to targeted psychotherapeutic intervention. The observed changes are consistent with contemporary perspectives suggesting that personality structures may be modified even during relatively brief psychotherapeutic interventions.

The findings further suggest that self-esteem may represent an important clinical target in short-term psychotherapy and support the value of further research into the plasticity of personality structures in the context of psychotherapeutic intervention.

Conflict of interest statement

The study was conducted within an organization involved in the development and training of the Integrative Causal Psychotherapy approach.

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