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The Psychometric Properties of the Persian Version of the State of Self-Compassion Scale

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Abstract

Introduction: This study aimed to adapt and validate the Persian version of the State Self-Compassion Scale (SSCS) for use in a Persian-speaking population, focusing on its factor structure and psychometric properties utilizing a Confirmatory Factor Analysis (CFA) approach.

Method: A cross-sectional survey was conducted in 2023 with an initial sample of 556 residents of Tehran. After data screening, the final sample consisted of 515 participants. The scale was translated using a standard forward-backward translation method. Participants completed the Positive and Negative Affect Schedule (PANAS) to assess concurrent validity. Following the "recall prompt" protocol, the factor structure was examined using Confirmatory Factor Analysis (CFA) via AMOS software.

Results: The CFA results demonstrated an excellent fit for the six-factor first-order model (= 1.66, CFI = 0.99, TLI = 0.98, RMSEA = 0.036), comprising Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness, and Over-Identification. The scale showed high internal consistency (Cronbach's alpha ranging from 0.81 to 0.96).

Conclusion: The Persian version of the SSCS is a reliable and valid tool with a confirmed six-factor structure. The findings support the utility of this measure for assessing the state of self-compassion in both research and clinical settings within Persian-speaking populations.

Keywords: Self-Compassion; Psychometrics; Factor Analysis, Statistical; Surveys and Questionnaires

Introduction

Self-compassion has been the subject of extensive studies over the past decades, referring to being supportive toward oneself when enduring pain or suffering caused by personal mistakes and inadequacies, or by external life challenges [1]. It has emerged as a fundamental concept in personal growth and as a remarkable, transformative way to cultivate our inner selves [2]. Neff [2] states that self-compassion can be categorized into three domains for responding to suffering: affective, cognitive, and attentional. Moreover, the six elements of self-compassion can be differentiated from each other, while having an influence on one another, forming a harmonious system where they occur together and experience simultaneous changes. Theoretically, self-compassion is measured by three elements indicative of increased compassionate responses: self-kindness (accepting and comprehending imperfection), common humanity (recognizing that suffering happens to everyone), and mindfulness (being consciously aware of personal suffering), and three elements indicative of decreased unkind responses: self-judgment (harshly judging oneself for flaws), isolation (feeling isolated from one's struggles), and over-identification (excessive rumination on negative aspects of oneself and one's life) [3].

Over the years, increasing research has investigated the complex structure, nature, and wide-ranging consequences of the trait of self-compassion in various areas of human experience. From mental health and emotional well-being to interpersonal relationships and performance outcomes, studies have consistently indicated the positive impact that self-compassion can have on individuals' lives [4, 5].

Notably, recent research underscores the synergistic relationship between self-compassion and other concepts such as mindfulness. Considering that mindfulness and self-compassion are both related to beneficial psychological outcomes, such as higher well-being and improved mental health, their relationship was shown to be significant [6]. For instance, a study by Neff & Germer [7] demonstrated that mindfulness-based interventions significantly increase self-compassion among participants, leading to reduced stress and improved emotional well-being. Additionally, Roca et al. [8] reported that compassion meditation training altered the network structure of psychological variables, revealing distinct pathways of change compared with mindfulness-based interventions.

Given the profound role of self-compassion, several measurements have been developed to assess self-compassion [9, 10]. Despite such advancements, the Self-Compassion Scale (SCS) by Neff [2] has remained the predominant tool to evaluate the trait of self-compassion. The validity of the SCS's factor structure has been confirmed across at least 23 samples [11-14]. However, rowing interest in how changes in self-compassion influence well-being, along with limitations of the Self-Compassion Scale (SCS), has led to the conceptualization of the *state* of self-compassion. In contrast to the extensive research on trait self-compassion, the state form has received relatively little empirical attention. Although these two concepts substantially overlap, they differ contextually. That is, even individuals high in the trait of self-compassion may encounter situations where they are not able to remain compassionate at that moment [15].

Therefore, a scale has been introduced to evaluate the six components of the state self-compassion (SSCS). This scale allows investigation of how the mechanisms of self-compassion influence well-being. It also enables determining whether all six components change simultaneously or not, confirming that they work together. In fact, the concept helps to assess one's self-compassion changes over time since it is subject to learning. Such scales allow capturing momentary fluctuations in self-compassion in response to specific events, often utilizing a "recall prompt" to activate the state of self-compassion during assessment [16, 17]. Overall, the state of self-compassion is shown as a subsidiary concept that refers to current temporary conditions of feeling it [18]. Although this scale has recently been designed and developed, it has been implemented in other populations and subjected to adaptation [15-19].

Ultimately, self-compassion has been extensively studied in the Persian-speaking population; for example, the impact of self-compassion on self-differentiation with mediation was investigated [20], or in another study, self-compassion alongside a sense of coherence was considered to predict flourishing [21]. Nevertheless, the status of self-compassion itself, despite its significant distinction, has not been thoroughly explored. Therefore, in this paper, in line with the previous literature, such as the study of Tavares et al. [22], the scale will be adapted to fill the gap and support future research. Specifically, adaptation of the SSCS is essential for evaluating its applicability across diverse cultural contexts, including Iran, a society that cannot be fully characterized as either Eastern or Western [23] Such an investigation is particularly important given prior evidence that psychological instruments often require structural modification during cultural adaptation in Iranian samples [24]. Therefore, the main research question of this study is whether the Persian version of the SSCS demonstrates acceptable psychometric properties, reliable internal consistency, and a stable factor structure among the Iranian adult population."

Method

The statistical population of this cross-sectional study comprised adult residents of Tehran, Iran, in 2023. An initial sample of 556 individuals was recruited via convenience sampling. The sample size was determined based on Kline's rule of thumb for CFA, which recommends a minimum of 200 cases or 10 cases per item; thus, our target exceeded the required sample for an 18-item scale. Inclusion criteria were being aged 18 to 65 years, fluency in the Persian language, and willingness to participate. Exclusion criteria included incomplete survey responses. After screening for univariate and multivariate outliers, 41 cases were removed, resulting in a final sample of 515 participants. The mean age of participants was 25.72 years (*SD* = 6.42, range: 20–63 years). Regarding gender distribution, 264 participants (51.3%) were female, and 251 (48.7%) were male.

The tools used in this study were as follows:

State Self-Compassion Scale (SSCS): The original English scale [17] was translated into Persian using a standard forward-backward translation method. Two independent bilingual translators initially translated the items into Persian. Discrepancies were resolved in consensus meetings to develop a preliminary version. This version was then back-translated into English and compared with the original scale to ensure semantic equivalence. A panel of experts, including psychiatrists, clinical psychologists, and methodologists, reviewed the final translation to confirm content validity. In the original validation study, Neff et al. [17] reported excellent psychometric properties for the SSCS, including a highly supported factor structure and excellent internal consistency (Cronbach's alpha = 0.92 for the total score), as well as strong convergent validity. The final Persian SSCS consists of 18 items across six dimensions: Self-Kindness, Common Humanity, and Mindfulness (representing compassionate responses), and Self-Judgment, Isolation, and Over-Identification

(representing uncompassionate responses). Items are rated on a 5-point Likert scale ranging from 1 (not at all true for me) to 5 (very true for me), with uncompassionate items reverse-coded for the total score.

PANAS: The Positive and Negative Affect Schedule (PANAS; Watson et al. [25] was used to evaluate concurrent validity. This 20-item scale assesses two separate dimensions: Positive Affect (PA) and Negative Affect (NA), with 10 items for each subscale. Participants rate each item on a 5-point scale from 1 (*very slightly or not at all*) to 5 (*extremely*). The original scale has demonstrated robust validity and high internal consistency, with Cronbach's alphas ranging from 0.86 to 0.90 for PA and 0.84 to 0.87 for NA in the original study [25]. The Persian version of PANAS has previously shown reliable psychometric properties, with an internal consistency of 0.77 and a KMO of 0.89 [26]. In this study, Cronbach's alpha was 0.83 for Positive Affect and 0.85 for Negative Affect, demonstrating good reliability.

This cross-sectional study was carried out using an online survey. Participants were first shown an informed consent form; only those who agreed to participate moved forward. Importantly, to evaluate state self-compassion, the study employed the "recall prompt" protocol from Neff et al.'s [17] validation study. Participants were explicitly instructed to: "Think about a situation you are experiencing currently that is painful or difficult for you," and then to rate how well each statement reflected their feelings toward themselves at that moment. This approach helps activate the self-compassion system for a valid assessment. After completing the SSCS, participants finished the PANAS. Incomplete questionnaires were excluded from the final analysis.

Data were analyzed using SPSS-26 and AMOS-26. Preliminary screening confirmed that assumptions of univariate normality and multicollinearity were met, and no significant outliers were detected. To evaluate the factor structure of the Persian SSCS, a Confirmatory Factor Analysis (CFA) was conducted using the Maximum Likelihood (ML) estimation method. The hypothesized Six-Factor First-Order Model was tested and compared against a One-Factor Model. Model fit was evaluated using standard goodness-of-fit indices, including χ^2/df, CFI, GFI, AGFI, and RMSEA.

Results

Table 1 presents the descriptive statistics (mean, standard deviation, skewness, and kurtosis) for the items of the Persian State Self-Compassion Scale (SSCS). The standard deviations of the items ranged from 1.05 to 1.47. The skewness (< |1.61|) and kurtosis (< |1.62|) indices indicated that none of the items exceeded the recommended thresholds of |3| for skewness and |8| for kurtosis. Therefore, consistent with Kline's [27] guidelines, the assumption of univariate normality was met for all items. Furthermore, multicollinearity was assessed using Tolerance and Variance Inflation Factor (VIF) statistics. Following the recommendations of Hair et al. [28], since all Tolerance values were greater than 0.10 and all VIF values were less than 3, the assumption of no multicollinearity was supported.

Confirmatory Factor Analysis (CFA): To evaluate the factor structure of the Persian SSCS, a Confirmatory Factor Analysis (CFA) was conducted. Initially, to assess the fit of the hypothesized model, the Independence Model was compared with the proposed model. The results showed that the fit indices for the Independence Model (which assumes all variables are uncorrelated) indicated a poor fit to the data (χ^2 (153, N=515) = 6952.56, $p < 0.001$, χ^2/df = 45.44).

As shown in Table 2, given the significance of the χ^2 test, other goodness-of-fit indices were examined. Due to the lack of consensus among statisticians regarding preferred fit indices [29,30], this study emphasized multiple fit indices, residual error terms, and modification indices, consistent with the logic of Arbuckle & Wothke [29].

Although the six-factor structure of the SSCS was considered the preferred conceptual model, testing this preferred logic against competing models provides a stronger defense for the hypothesized six-factor structure. Accordingly, the One-Factor Model was examined as a competing measurement model. The results for the One-Factor Model yielded poor fit indices (χ^2 = 4082.28, χ^2/df = 30.24, CFI = 0.42, GFI = 0.51, AGFI = 0.38, RMSEA = 0.24), indicating a lack of fit with the data (see Table 2).

Table 1. Descriptive Statistics (Mean, SD, Skewness, and Kurtosis) for the Items of the State Self-Compassion Scale

Items	Mean	SD	Skewness	Kurtosis
1 (Self-Kindness)	2.52	1.35	0.42	-1.20
2 (Over-Identification)	1.91	1.06	1.14	0.44
3 (Common Humanity)	3.41	1.43	-0.58	-1.07
4 (Self-Judgment)	1.68	1.05	1.53	1.35
5 (Mindfulness)	1.96	1.11	1.03	0.07
6 (Isolation)	2.90	1.30	0.04	-1.23
7 (Self-Kindness)	2.41	1.35	0.52	-1.13
8 (Over-Identification)	2.32	1.21	0.58	-0.87
9 (Common Humanity)	3.23	1.43	-0.42	-1.24
10 (Self-Judgment)	1.70	1.09	1.61	1.62
11 (Mindfulness)	1.86	1.07	1.24	0.74
12 (Isolation)	2.65	1.29	0.31	-1.14
13 (Self-Kindness)	2.31	1.32	0.63	-0.95
14 (Over-Identification)	2.04	1.12	0.91	-0.19
15 (Common Humanity)	3.09	1.47	-0.20	-1.43
16 (Self-Judgment)	1.73	1.12	1.49	1.13
17 (Mindfulness)	1.92	1.09	1.10	0.26
18 (Isolation)	2.55	1.32	0.41	-1.11

Finally, the Six-Factor First-Order Model (comprising multiple facets) was selected and tested. The results for the six-factor model demonstrated excellent fit indices (χ^2 = 201.002, χ^2/df = 1.66, CFI = 0.988, GFI = 0.959, AGFI = 0.942, RMSEA = 0.036), indicating a highly favorable fit with the data (Table 2).

Figure 1 displays the standardized regression weights for the six-factor measurement model of the SSCS. The results indicate that all regression weights were statistically significant ($p < 0.001$). As shown in Figure 1, the standardized regression coefficients ranged from 0.91 to 0.97 for Self-Kindness, 0.75 to 0.88 for Self-Judgment, 0.86 to 0.93 for Common Humanity, 0.77 to 0.87 for Isolation, 0.88 to 0.90 for Mindfulness, and 0.74 to 0.81 for Over-Identification.

To examine the internal consistency of the Persian SSCS, Cronbach's alpha coefficients, corrected item-total correlations, and alpha-if-item-deleted values were calculated for the six-factor structure. As presented in Table 3, Cronbach's alpha coefficients for all subscales were satisfactory, ranging from 0.81 to 0.96. Furthermore, all items revealed high and significant correlations with their respective subscale scores.

Table 2. Goodness-of-Fit Indices and Factor Loadings for the Competing Measurement Models

Competing Models	χ^2	χ^2/df	GFI	AGFI	CFI	RMSEA	Loadings
Independence Model	6952.56	45.44	0.32	0.23	0.000	0.34	-
One-Factor Model	4082.28	30.24	0.51	0.38	0.42	0.24	0.27 – 0.93
Six-Factor First-Order Model	201.00	1.66	0.959	0.942	0.988	0.036	0.74 – 0.97

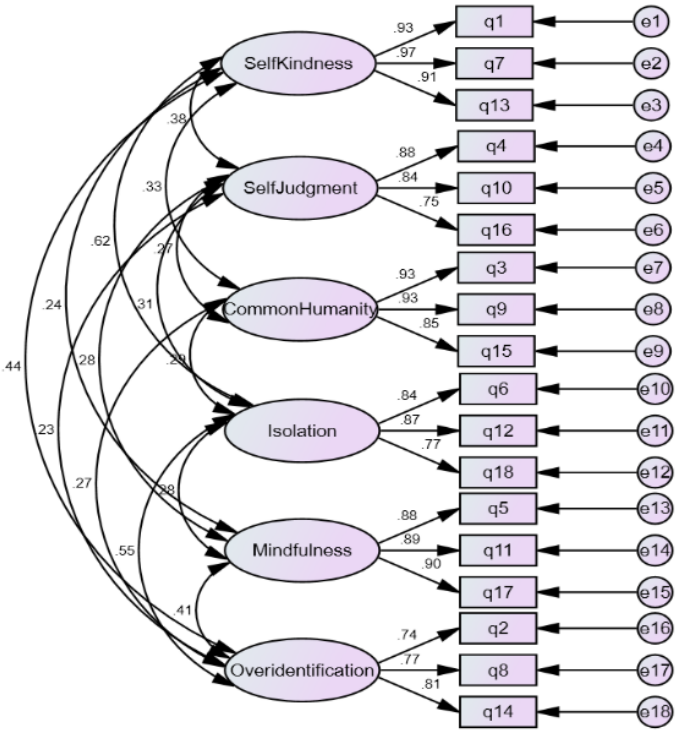


Figure 1. Confirmatory factor analysis of the six-factor structure of the state self-compassion scale.

In this study, the Average Variance Extracted (AVE) was utilized to assess the convergent validity of the Persian SSCS, while Composite Reliability (CR) was employed to evaluate its divergent validity. The calculated AVE values were 0.88 for Self-Kindness, 0.68 for Self-Judgment, 0.82 for Common Humanity, 0.69 for Isolation, 0.79 for Mindfulness, and 0.60 for Over-Identification. These values provided strong evidence supporting the convergent validity of the Persian SSCS. Furthermore, the CR values were obtained as 0.96 for Self-Kindness, 0.86 for Self-Judgment, 0.93 for Common Humanity, 0.87 for Isolation, 0.92 for Mindfulness, and 0.82 for Over-Identification, indicating robust divergent validity and composite reliability of the scale. Additionally, McDonald's ω coefficients for all subscales ranged from 0.82 to 0.96, which further confirms the excellent internal consistency of the measure (Table 4).

To assess criterion validity, consistent with the theoretical and empirical background, correlations between the dimensions of the SSCS and participants' Positive and Negative Affect (PANAS) were computed. The results indicated that the six-factor SSCS dimensions showed significant positive correlations with Positive Affect and significant negative correlations with Negative Affect. These findings, reflecting shared variance between the SSCS dimensions and affective states, provide strong evidence for the concurrent validity of the Persian SSCS (Table 4).

Table 3. Cronbach's Alpha Coefficients, Item-Total Correlations, and Alpha-if-Item-Deleted Values for the Six-Factor Model

Subscales / Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Self-Kindness (α = 0.96)		
1	0.90	0.94
7	0.94	0.92
13	0.89	0.95
Self-Judgment (α = 0.86)		
4	0.77	0.77
10	0.75	0.79
16	0.69	0.85
Common Humanity (α = 0.93)		
3	0.88	0.88
9	0.87	0.89
15	0.82	0.93
Isolation (α = 0.86)		
6	0.76	0.80
12	0.77	0.79
18	0.70	0.85
Mindfulness (α = 0.92)		
5	0.83	0.89
11	0.84	0.88
17	0.84	0.88
Over-Identification (α = 0.81)		
2	0.63	0.78
8	0.66	0.75
14	0.71	0.70

Table 4. Composite Reliability (CR), Average Variance Extracted (AVE), and McDonald's ω for the SSCS Subscales

Subscale	**McDonald's ω**	**AVE**	**CR**
Self-Kindness	.96	.88	.96
Self-Judgment	.86	.68	.86
Common Humanity	.93	.82	.93
Isolation	.87	.69	.87
Mindfulness	.92	.79	.92
Over-Identification	.82	.60	.82

Table 5. Correlations Between Dimensions of State Self-Compassion and Positive and Negative Affect

Self-Compassion Dimensions	**Positive Affect (PA)**	**Negative Affect (NA)**
Self-Kindness	0.45**	-0.35**
Self-Judgment (Reverse)	0.19**	-0.11*
Common Humanity	0.28**	-0.15**
Isolation (Reverse)	0.42**	-0.54**
Mindfulness	0.17**	-0.29**
Over-Identification (Reverse)	0.28**	-0.54**
Total Self-Compassion Score	0.50**	-0.67**

* Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level.

Discussion

The present study aimed to adapt and validate the Persian version of the State Self-Compassion Scale (SSCS), focusing on its factor structure, reliability, and validity within an Iranian sample. The findings provide robust evidence for the psychometric adaptation of the Persian SSCS, supporting its utility in both research and clinical settings.

It is important to clarify that our methodology aligns with Study 1 of Neff et al. [30], which employed a "recall prompt" (asking participants to recall a painful situation) to validate the scale's factor structure. While experimental induction protocols are valuable for assessing sensitivity to change (as in Neff et al., [30], Study 2), the primary aim of the present study was to establish the structural validity of the Persian SSCS. Our results confirm that the recall prompt effectively activates the self-compassion system for psychometric evaluation, consistent with the original validation procedures.

Confirmatory factor analysis supported the original six-component model (self-kindness, common humanity, mindfulness, self-judgment, isolation, over-identification) with excellent fit. Internal consistency was also high across all subscales (α = 0.81–0.96), indicating reliable measurement of each facet. Consistent with the theoretical framework proposed by Neff et al. [17], this finding suggests that state self-compassion in the Iranian

sample can be conceptualized as a multidimensional construct comprising interconnected components.

The confirmation of this multidimensional structure in the Iranian context can be explained by the universal nature of self-compassion as a fundamental emotional regulation strategy. While Iranian culture is often characterized by strong collectivistic values and interpersonal obligations—which might theoretically emphasize self-criticism or prioritizing others over oneself—the core components of state self-compassion appear to operate similarly to those in Western populations. This implies that in moments of acute stress or suffering, the internal mechanisms of mindfulness, common humanity, and self-kindness act as universally adaptive responses. In other words, the human capacity to respond to momentary personal inadequacy with compassion rather than harsh judgment transcends specific cultural boundaries. Furthermore, this structural equivalence highlights that conceptualizing self-compassion as a dynamic, momentary state (rather than solely a fixed trait) is theoretically sound and culturally robust, enabling individuals in diverse settings to actively engage this self-soothing system when facing immediate life challenges."

Moreover, as the compassionate subscales correlated positively with state positive affect and negatively with state negative affect, concurrent validity was confirmed. In other words, participants who reported greater momentary self-kindness, common humanity, and mindfulness also tended to experience more positive and less negative emotions in the same situation. This pattern illustrates that self-compassion stabilizes affect [15]. That is, higher state self-compassion has consistently predicted higher positive affect and lower negative affect [19], supporting the theoretical conceptualization of self-compassion as a regulatory mechanism that mitigates negative emotional states (such as anxiety and depression) and promotes emotional well-being [30, 31]. This finding is particularly significant as it demonstrates that the core function of self-compassion, transforming suffering into a more manageable emotional state, remains consistent in the Persian cultural context.

In line with previous research, in the German validation [32], a 6-factor model provided the best fit (after dropping two items), and the SSCS showed the expected pattern of correlations with state positive and negative affect. Similarly, [19] validated a Spanish SSCS–Long form and found that a correlated six-factor model fit best, with each "positive" subscale positively linked to positive affect and negatively to negative affect.

Regarding reliability, the Persian SSCS demonstrated high internal consistency for the total scale (α = 0.87), indicating that the items collectively measure a coherent psychological construct. The reliability coefficients for the subscales were moderate to good. It is worth noting that alpha values for brief subscales with only three items are mathematically constrained and may be lower than longer scales; nonetheless, all subscales exceeded the conventional threshold of 0.70. This pattern aligns with the Spanish validation [19], which also reported relatively lower reliability for the over-identification dimension, suggesting this component may be particularly sensitive to language or sample characteristics.

Importantly, differences emerge in how the latent structure of state self-compassion is conceptualized. Whereas the present study supported a correlated six-factor model, other validation research (e.g., [32] has explored bifactor and ESEM approaches and highlighted ongoing debate about whether a single global state self-compassion factor adequately captures the construct. These findings suggest that the structure of state self-compassion may be sensitive to analytical strategy and population context rather than being universally fixed.

Overall, state measures are crucial for experimental and clinical contexts [33]. Theoretical distinctions between trait and state self-compassion indicate that these constructs operate distinctly; for instance, individuals with high trait compassion may not necessarily access self-kindness under acute stress [34]. Thus, this study contributes novel insights by extending the SSCS framework to Persian-speaking populations. Although trait self-compassion has been assessed in Persian samples using the trait SCS [35], no measure existed to capture state self-compassion. Since many interventions (such as Mindful Self-Compassion training) employ brief compassion inductions or exercises and need a state-level outcome measure to confirm that participants feel self-compassionate in the moment [36], Persian SSCS can offer invaluable utility for researchers and clinicians to assess the immediate impact of compassion-based interventions within Persian-speaking populations.

Despite the strengths of this study, several limitations should be acknowledged. First, the use of a convenience sample drawn primarily from Tehran may limit the generalizability of the findings to rural or other distinct subcultures within Iran. Future studies should aim to include more diverse and representative samples. Second, the cross-sectional design precludes causal inferences about the stability of state self-compassion over time; longitudinal designs would be beneficial for assessing test-retest reliability. Third, while the model showed excellent fit, future research could explore measurement invariance across other demographic variables (e.g., age or clinical status) to further establish the scale's robustness. Finally, while this study confirmed the factor structure using a recall paradigm, future research in Iran should employ experimental designs with compassion induction protocols to further examine the scale's sensitivity to momentary changes in state self-compassion and to validate the psychometric properties of the short form of the SSCS in intervention contexts.

Conclusion

In conclusion, the findings of the present study suggest that the Persian version of the State Self-Compassion Scale (SSCS) demonstrates promising psychometric properties. Preliminary evidence indicates that it can be considered a reliable and valid tool for assessing state self-compassion in Persian-speaking populations. While these results support the cross-cultural applicability of the

construct, further longitudinal and experimental research is warranted to fully establish its utility in monitoring intervention outcomes.

Conflict of Interest

The authors declare no competing interests.

Ethical Approval

All procedures were performed in accordance with the Declaration of Helsinki and have been approved by the Tehran University Ethics Committee. In line with the committee's established policy at the time of data collection, observational survey studies did not receive a formal approval code (https://psyethic.ut.ac.ir); nevertheless, the committee reviewed the study materials and confirmed that the procedures met institutional ethical requirements. Participation was entirely voluntary, informed consent was obtained from all participants, and anonymity and confidentiality were strictly maintained. Participants were also informed regarding their right to withdraw at any stage of the study without any consequences.

Declaration of Generative AI and AI-Assisted Technologies

The authors declare that no generative AI or AI-assisted technologies were used in the writing process or data analysis of this manuscript.

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