



Reliability and validity of the Turkish version of forms of self-criticizing/attacking and self-reassuring scale (FSCRS) in clinical and non-clinical samples

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Abstract

The study aims to investigate the psychometric properties of the Turkish version of Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS) in clinical and community samples. A total of 269 depression outpatients (71.7% females; $M_{age} = 28.28$, $SD_{age} = 9.11$) and 305 participants from the general population (54.5% females; $M_{age} = 43.11$, $SD_{age} = 9.60$) were recruited. Participants completed the FSCRS, The Levels of Self-Criticism (LOSC) and Beck Depression Inventory (BDI). A three-factor model of FSCRS (reassured-self, inadequate-self, and hated-self) showed the best-fitting measurement model in both samples. Measurement invariance of the test for clinical and non-clinical samples was also examined, and the findings support the measurement invariance of FSCRS scores across clinical and community sample. The dimensions of self-criticism had positive, and reassured-self had negative correlations with BDI and subscales of LOSC in both groups. Internal consistency was analyzed via Cronbach's alpha coefficients. The Cronbach's alpha coefficients for clinical and non-clinical sample were found to be .86 and .78 for inadequate-self, .85 and .74 for reassured-self, and .75 and .65 for hated-self respectively. Our results show that the FSCRS demonstrates good psychometric properties in clinical and non-clinical sample. The Turkish version of FSCRS can be used as a process and outcome scale for clinicians and researchers in clinical and non-clinical sample.

Keywords Self-criticism · Depression · Assessment · Self-reassuring

Introduction

Self-critical ways of thinking patterns can be described as maladaptive self-to-self relationships (Sommers-Spijkerman et al., 2018). Their associations with emotional memories (Gilbert, 2010) and self-directed, strong relationships with negative emotions like humiliation (contempt), and disgust can be explained within their characteristics that disrupt psychological adjustment (Whelton & Greenberg, 2005).

Studies conducted within the last three decades showed that self-criticism is a trans-diagnostic mechanism and it is

associated with certain forms of psychopathology such as; depression (e.g., Ehret, Joormann, & Berking, 2015), eating disorders (e.g., Steele, O'Shea, Murdock, & Wade, 2011), social anxiety (e.g., Cox, Walker, Enns, & Karpinski, 2002), and post-traumatic stress disorder (Cox, MacPherson, Enns, & McWilliams, 2004). In addition to these, the negative effect of self-criticism on psychological interventions is well known. For instance, Rector and his colleagues (Rector, Bagby, Segal, Joffe, & Levitt, 2000) stated that CBT responses of self-critical patients were positive at a lower level, from this point of view, it would not be wrong to say that self-criticism is one of the determining factors on therapy responses/results. (Rector et al., 2000). Also, Marshall, Zuroff, McBride, and Bagby (2008) stated that self-criticism predicted poorer treatment outcome among individuals in interpersonal psychotherapy. In a more recent systematic review and meta-analysis study, which was conducted by Löw, Schauenburg, and Dinger (2020), similar findings found that higher levels of self-criticism were related to poorer outcomes in terms of psychotherapy. It was stated that the overall association between psychotherapy outcome and pre-treatment self-criticism was $r = -.20$ (95% CI = $-.25 - -.16$, $p < .0001$).

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Unlike self-criticism, self-reassurance is a fundamental component of self-compassion, and it means soothing, pacifying the self when things go wrong (Sommers-Spijkerman et al., 2018). In the event of a failure or defeat, efforts to relieve and remind one their positive aspects and competencies (Petrocchi, Dentale, & Gilbert, 2018), were found to be negatively associated with depression in both clinical and non-clinical samples (Castilho, Pinto-Gouveia, & Duarte, 2015). Moreover, self-reassurance is associated with psychological well-being (Muris & Petrocchi, 2016). In a study conducted with obesity patients, it was found that self-reassurance was related to well-being in participants attempting to manage their weight (Duarte et al., 2017). Duarte et al. (2017) also stated that the positive association between self-reassurance and well-being was stronger than the negative association between self-criticism and well-being.

Most of the factor analytic studies showed that self-criticism and self-reassurance could not be regarded as the positive and negative aspects of a single-factor structure (e.g., Gilbert, Clarke, Hempel, Miles, & Irons, 2004; Küpeli, Chilcot, Schimidt, Campbell, & Troop, 2013). In other words, one is not the opposite of the other, nor can be expected to not exist in the presence of the other (Petrocchi et al., 2018). A similar finding exists in the results of a study conducted by Halamova and colleagues (Halamová et al., 2020) to examine the factor structure of the Self-Compassion Scale. According to the researchers, it has been noted that the “Self-Compassionate and Self-Uncompassionate dimensions in SCS are related constructs but cannot be reliably included in a single dimension”. Strong support for those findings come from the fMRI study conducted by Longe et al. (2010). In this study, self-criticism and self-reassurance responses to imaginary scenarios involving a personal defeat were reported to stimulate different brain systems. It was shown that dorsolateral prefrontal cortex activity was correlated positively with high levels of self-criticism and had greater error handling and behavioral inhibition in these individuals. In contrast, self-reassurance and compassion were found to be associated with ventrolateral prefrontal cortex activity (Longe et al., 2010).

Self-criticism, can be measured in different ways. In the related literature, it is seen that there are various measurement tools developed to evaluate self-criticism tendency. When the scales are examined historically, the Depressive Experiences Questionnaire (DEQ) which was developed by Blatt, D’Afflitti, and Quinlan (1976), based on Blatt’s (1974) two-factor depression model draws attention. In the aforementioned model, it is suggested that depression has two forms: anaclitic (dependent) and introjective (self-critical). According to this model, anaclitic depression is characterized by the feelings of helplessness and weakness; the individual is intensively afraid of being abandoned and left unprotected and vulnerable. The other type of depression described in the model, introjective depression, is characterized by self-criticism

and feelings of worthlessness, inferiority, failure and guilt. This structure includes high personal standards, rigid self-control and negative self-evaluation. The individual has a chronic fear of being invalidated, criticized and losing the love and acceptance of the significant others. The DEQ, has three dimensions: dependency, self-criticism and competence. Self-criticism is considered to be setting high goals and being inadequate to reach these goals. Negative attitudes and evaluations regarding the self are measured in the self-criticism dimension of the scale, but the self-reassurance ability is not evaluated.

Another measurement tool is the Levels of Self Criticism Scale (LOSC) developed by Thompson and Zuroff (2004). This tool has two dimensions: the first one is “comparative self-criticism” that measures the negative view of the individual regarding himself/herself compared to other people; the second is “internalized self-criticism” that measures the negative view of the individual regarding himself/herself compared to his/her own internal standards.

The Self-Compassion and Criticism Scale (SCCS), the only scale evaluating the situational state of self-criticism, was developed by Falconer, King, and Brewin (2015), consisted of eight scenarios that may threaten the self and lead to self-criticism or self-compassion at different levels. Participants rated how harsh, humiliating, hostile, cold, critical, soothing, reassuring, compassionate and warm they would behave towards themselves for each imaginary scenario over a 7-point Likert scale (1 = not at all, 7 = highly). The literature review revealed that there is no Turkish adaptation for this scale.

A more recently developed scale is the Self-Critical Rumination Scale (SCRS) developed by Smart, Jessica, and Baer (2015). It was reported that the scale, which had no Turkish version and no adaptation study, showed higher internal consistency than other self-criticism (LOSC) and rumination scales used in the study, especially in terms of borderline personality disorder characteristics and prediction of general stress (Smart et al., 2015).

Trait Self-Criticism Scale was developed by Brewin, Cozens, Furnham, and McManus (1992). The scale consists of a combination of items of DEQ and “The Scale of Responsibility for Negative Outcomes” (Brewin & Shapiro, 1984). This 9-item questionnaire measures self-criticism and perception of guilt regarding life-related negative outcomes. The literature review revealed that there was no Turkish adaptation for this scale, as well.

Forms of Self-Criticizing/Attacking & Self-Reassuring Scale-FSCRS

Forms of Self-Criticizing/Attacking & Self-Reassuring Scale-FSCRS, developed by Gilbert and his colleagues (Gilbert et al., 2004), was developed to measure the levels of self-criticism and self-reassurance and it is a self-report providing

information regarding how an individual thinks and feels when things go wrong.

The starting point of the FSCRS was the question of “Can there be different forms and functions of self-criticism / self-attacking?” Moreover, the lack of such a distinction in previous scales (example: DEQ) motivated the researchers to develop the scale. In their study, it was found that feelings of inadequacy regarding the self were distinct from feelings of self-hatred; and self-criticism / self-attacking had two different functions, such as the desire of self-improving (or self-correction) and self-harming/persecuting (Gilbert et al., 2004). The scale consists of 22 items and three dimensions. Inadequate-self dimension evaluates feelings of irritation, frustration and inadequacy towards self. Hated-self dimension is the most extreme state of self-criticism and evaluates self-repugnance and the desire of hurting oneself in response to failures. The third dimension is the reassured-self that assesses the capacity of self-soothing and the ability to be self-compassionate and tolerant in case of negative performances (Petrocchi et al., 2018).

The scale has a short form consisting of 14 items (Sommers-Spijkerman et al., 2018). The reliability and validity studies conducted within the Dutch community sample showed that the short form also has a three-factor structure as in the original form (Sommers-Spijkerman et al., 2018).

Baião, Gilbert, McEwan, and Carvalho (2015) conducted confirmatory factor analysis, with the data of 12 previous studies, to determine the factor structure of the scale in both clinical and community samples. The findings of the study showed that the three-factor structure (inadequate-self, hated-self and reassured-self) has better fit indices in both clinical and non-clinical samples. In another cross-cultural study examining the factor structure of FSCRS in 13 different community samples, the three-factor structure was supported in all cultures, but it was also shown that two-tier models with two general factors (1- self-criticism: inadequate and hated-self dimensions; 2- self-reassurance) had a better fit for all samples. Based on the findings of this study, it was stated that inadequate-self and hated-self sub-dimensions could be combined as a single factor for community samples (Halamova et al., 2018).

Objectives

The main aim of the current study was to investigate the psychometric properties of the Turkish version of FSCRS in a non-clinical and in a clinical sample. The specific aims were as follows:

1. To examine factor structure of the Turkish form of FSCRS in clinical and non-clinical sample.
2. To investigate convergent and criterion validity of the Turkish version of FSCRS through relationships between

dimensions of Levels of Self Criticism Scale and Beck Depression Inventory in both groups.

3. To examine reliability of the Turkish form of FSCRS using internal consistency and test-retest methods.
4. To investigate measurement invariance across two samples.

Self-criticizing and blaming thoughts and self-dissatisfaction are cognitive and emotional traits which are frequently observed in depression. Therefore, depression patients were chosen to constitute the clinical group of the study. FSCRS not only measures self-criticism but it also measures self-reassurance and this feature of the scale puts it in a separate and superior place among the other scales that measure self-criticism concept. This priority was the theoretical rationale behind adapting the scale.

Method

Participants

A total of 574 subjects recruited from the general population and clinical settings participated in the study (Table 1). The clinical sample consisted of outpatients ($n = 269$), diagnosed with major depressive disorder and receiving medical treatment in various psychiatric services of different state hospitals in Turkey. Inclusion criteria for the clinical sample were as follows: (1) not having any psychotic and/or bipolar disorder, (2) not having any cognitive disorder (3) not having mental retardation, (4) getting a score above 17 on the BDI.

The non-clinical sample ($n = 305$), representing a non-clinical population, were recruited from various cities of Turkey. Inclusion criteria for the non-clinical group were as follows: (1) being above age 18, (2) not receiving any psychiatric/psychological treatment at the time of participation, (3) not using any psychiatric medicine at the time of participation, and (4) getting a score under the cut-off score on Beck Depression Inventory (see Table 1).

Procedure

First of all, in order to start adapting the scale to Turkish, permissions were obtained from the developer of the FSCRS via e-mail. Then the translation process was started after getting the ethical permission. Two independent experts who are fluent in English translated the items of the scale into Turkish. These two different translations were gathered together, and a mutual form was formed after a comparison. Afterwards, a different expert back-translated the Turkish form into English and the required approval was obtained from the developer of the scale. The data were collected between September 2018 and February 2019. For the community

Table 1 Demographic characteristics of clinical and non-clinical sample

Demographic variables	Clinical sample ($n=269$)	Non-clinical sample ($n=305$)	Significance
Age in years	28.28 ($SD=9.11$)	29.96 ($SD=9.60$)	$t(572)=1.960; p=.51$
Male	76(28.3%)	125 (41%)	$\chi^2(1)=10.18; p\leq.001$
Female	193 (71.7%)	180 (59%)	
BDI scores	33.61 ($SD=8.84$)	7.90 ($SD=5.00$)	$t(411.8)=1.960; p\leq.001$
Age range	18–60	18–60	

sample, we collected data with the assistance of 15 psychology students who volunteered to participate in the study. These students applied the questionnaire battery to their social environment. The data of the clinical sample were collected from 269 adult outpatients who applied to psychiatry clinics and received a diagnosis of depression in Adana and Mersin state hospitals by clinical psychologists. In order to determine the test-retest reliability, it was administered to a group of 52 university students twice with an interval of three weeks. In this sample, 54.7% of the participants were female ($n=29$) and 45.3% were male ($n=23$), with a mean age of 21.49 ($SD=2.18$). All participants were informed about the purpose of the study. No financial benefit was offered, and participation to the study was voluntary.

Measures

Forms of Self-Criticizing/Attacking & Self-Reassuring Scale - (FSCRS)

Forms of Self-Criticizing/Attacking & Self-Reassuring Scale- (FSCRS) was developed by Gilbert et al. (2004) in order to assess the levels of self-criticism and self-reassurance. The scale is a self-report that provides information regarding how people think and feel when something goes wrong. It consists of 22 items scored on a 5-point Likert scale (ranging from 0 = not at all like me to 4 = extremely like me). The FSCRS is comprised of three dimensions. The first one of these dimensions, inadequate self, evaluates personal inadequacy (e.g., ‘I am easily disappointed with myself’); the second dimension, hated-self, addresses the desire of an individual to attack or harm oneself (e.g., ‘I have become so angry with myself that I want to hurt or injure myself’); the third component, reassured self, addresses the reconstruction of trust (e.g., ‘I am able to remind myself of positive things about myself’). In the original study, Cronbach’s alpha coefficients of the dimensions were reported as: .90 for inadequate-self, .86 for hated-self, and .86 for reassured-self (Gilbert et al., 2004).

The Levels of Self-Criticism (LOSC)

The LOSC (Thompson & Zuroff, 2004; Turkish version by Öngen, 2006) is a 22-item self-report questionnaire that measures two dimensions of self-criticism: comparative self-criticism (12 items), and internalized self-criticism (10 items). Each item consists of a statement, and participants indicate how much the statement describes themselves on a 7-point Likert scale ranging from 1 (not at all) to 7 (very well). The Turkish version of the LOSC demonstrated acceptable internal consistency (Cronbach’s alpha of .67 for CSC and .77 for ISC). In the current study, Cronbach’s alpha coefficients were reported as .78 and .69 for the non-clinical sample and .88 and .70 for the clinical sample, for internalized self-criticism and comparative self-criticism, respectively.

Beck Depression Inventory (BDI)

Beck Depression Inventory (BDI; Beck, Ward, & Mendelson, 1961; Turkish version by Hisli, 1988) is a self-report questionnaire that measures the change in the severity of depression and the levels of depressive symptoms and examines the risk of depression. The BDI consists of 21 self-evaluation sentences. Each item consists of 4 sentences ranging from 0 to 3. BDI total score ranges from 0 to 63, and it has a cut-off point, which is 17. While scores between 10 and 17 indicate mild to moderate levels of depression, scores between 18 and 29 indicate moderate to severe levels of depression, and finally, scores between 30 and 63 indicate severe depression. In the current study, Cronbach’s alpha coefficients were calculated as .88 and .96 for clinical and non-clinical groups, respectively.

Statistical Analyses

Questionnaires with more than 10% missing data were not included in the analysis. The missing values in the scales were replaced by the mean values of these items. Preliminary analyses were performed to analyze the sample characteristics. An evaluation of skewness (sk) and kurtosis (Ku) was conducted to examine the assumption of normality of the dimensions.

According to Kline (2015), $Sk > |3|$ and $Ku > |10|$ indicate severe deviations to normal distribution. In the current study Kline's (2015) criteria for skewness and kurtosis was used.

Confirmatory factor analysis was conducted to determine the factorial structure of the scale. In line with the recommendations, various goodness-of-fit indices and cut-points were used to evaluate model fit: Chi-square (χ^2 ; $p \leq 0.05$), normed Chi-square [$\chi^2/df \leq 3$ indicate adequate model fit (Anderson & Gerbing, 1984)], Comparative Fit Index [CFI ≥ 0.90 , acceptable, and ≥ 0.95 , excellent (Hu & Bentler, 1998)], adjusted goodness of fit index [AGFI ≥ 0.90 , acceptable, and ≥ 0.95 , excellent (Hooper, Coughlan, and Mullen (2008))], Root Mean Square Error of Approximation [RMSEA ≤ 0.06 , good fit (Steiger, 2007)] and Standardized Root-Mean-Square Residual [SRMR ≤ 0.08 (Hu & Bentler, 1999)].

To assess the convergent validity, in line with the original study (Gilbert et al., 2004), the correlation coefficients between dimensions of the FSCRS and dimensions of LOSC, comparative self-criticism and internalized self-criticism, were calculated. For criterion validity, the relations between dimensions of FSCRS and BDI were calculated.

Finally, reliability of FSCRS was tested with the Cronbach's alpha internal consistency coefficients, test-retest method and the item total correlations. Independent sample *t* tests were performed to explore group differences in hated-self, inadequate-self and reassured-self.

Furthermore, measurement invariance across samples (clinical and non-clinical) was assessed through a multi-group confirmatory factor analysis. Measurement invariance aims to test whether the values of model parameters vary between different samples or not (Kline, 2015). The measurement invariance is tested by a series of model comparisons, and each model is used to make basic comparisons with the previous model (Steenkamp & Baumgartner, 1998). In this study, model comparisons proposed by Vandenberg and Lance (2000) were used.

The confirmatory factor analysis and the measurement invariance analyses were conducted with "Lavaan" package version 0.5–22 (Rosseel, 2012) library of R 3.3.1 Software. All remaining analyses were performed with SPSS Statistics Version 21.0.

Results

Preliminary Data Analysis

Table 2 shows the means, item numbers of dimensions, standard deviations, maximum–minimum scores and skewness–kurtosis scores of the FSCRS in both non-clinical and clinical samples. When the skewness and kurtosis scores in Table 2 are examined, it can be seen that scores obtained from the scale showed a normal distribution for both samples.

Confirmatory Factor Analysis

To assess the factor structure of the FSCRS, we compared two factor model (combining hated-self and inadequate-self into a single factor) recommended by Halamova et al. (2018) and original version of the FSCRS (Gilbert et al., 2004; K upeli et al., 2013) in both groups.

Three-factor solution chi-square goodness of fit was significant for clinical sample ($\chi^2 [204, N = 269] = 373.76, \chi^2/df = 1.83$). In addition, all fit indices met the criteria (RMSEA = .052, GFI = .933, CFI = .933, AGFI = .87, $p \leq .001$). However, fit indices for the two-factor model suggested a poor fit to the data ($\chi^2 [202, N = 269] = 473.285, \chi^2/df = 2.34$, RMSEA = .071, GFI = .853, CFI = .877, AGFI = .816, $p \leq .001$).

Similarly, three-factor solution for non-clinical sample chi-square goodness of fit was significant ($\chi^2 [202, N = 305] = 417.127, \chi^2/df = 2.06, p \leq .001$) and fit indices met the standards of acceptable fit criteria (RMSEA = .059, SRMR = .067, CFI = .904, AGFI = .95). Fit indices for the two-factor model suggested a poor fit to the data ($\chi^2 [203, N = 305] = 586.107, \chi^2/df = 2.89$, RMSEA = .079, SRMR = .087, CFI = .819, AGFI = .934, $p \leq .001$).

In both samples, based on the goodness-of-fit indices, it can be concluded that the three factor models provided the best fit for the data compared the two-factor models. The diagrams of the three-factor solutions of both clinical and non-clinical samples are given in Figs. 1 and 2.

Convergent and Criterion Validity: Correlations with Other Self-Report Measures

Pearson correlations were performed to explore dimensions of FSCRS associations with other measures (Table 3). As expected, inadequate-self and hated-self dimensions presented significant and positive, reassured-self showed significant and negative correlations with dimensions of LOSC and also BDI in the clinical sample. Similarly, inadequate-self and hated-self dimensions were found to be positively correlated to dimensions of LOSC and BDI in the non-clinical sample. Reassured-self correlated to inadequate self-BDI and comparative self-criticism, whereas there was no significant relationship with internalized self-criticism dimension in the non-clinical sample. In addition, it can be seen that, the correlations of the clinical sample were stronger for all measures compared to the relations in the non-clinical sample.

Reliability

Reliability of FSCRS was examined using internal consistency and test-retest methods. Cronbach's alpha coefficients for clinical and non-clinical samples were found to be .86 and .78 for inadequate-self, .85 and .74 for reassured-self, and .75 and

Table 2 Descriptive statistics of the FSCRS in clinical and non-clinical sample

		Item No	Min	Max	<i>M</i>	<i>SD</i>	Skewness	Kurtosis
Non-clinical Sample	Inadequate-Self	9	0	36	15.35	7.36	.310	-.410
	Hated-Self	5	0	19	2.87	3.59	1.796	.017
	Reassured-Self	8	4	32	22.56	5.90	-.612	3.578
	BDI	21	0	16	7.90	5.05	-.010	-1.241
Clinical Sample	Inadequate-Self	9	2	36	23.28	7.78	-.405	-.628
	Hated-Self	5	0	20	7.15	4.86	.673	-.026
	Reassured-Self	8	0	32	15.58	7.32	.141	-.026
	BDI	21	1	72	28.10	11	.786	1.171

BDI, Beck Depression Inventory

Fig. 1 CFA of the Three-factor model of the FSCRS in the Community Sample

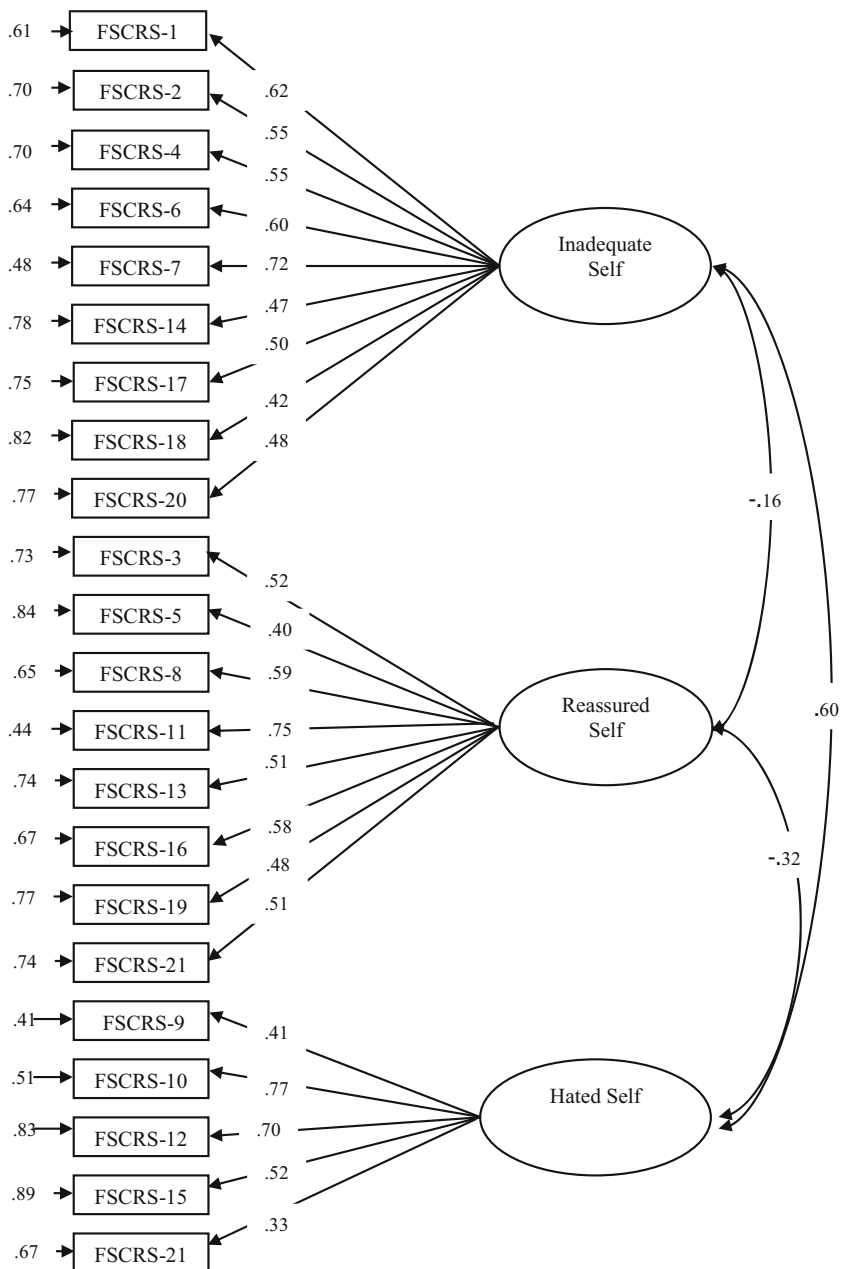


Fig. 2 CFA of the Three-factor model of the FSCRS in the Clinical Sample

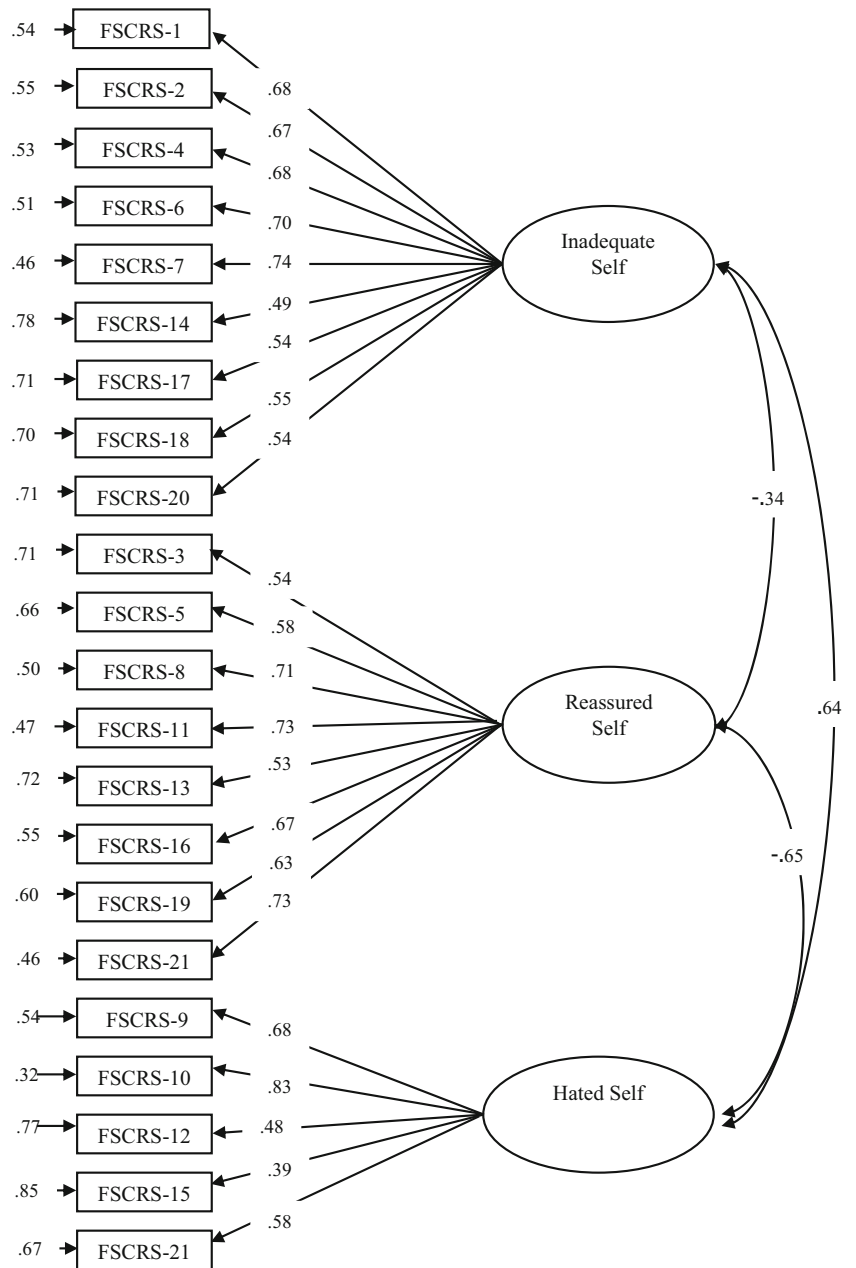


Table 3 Correlation coefficients between the study variables in both samples

	Inadequate self		Reassured-self		Hated-self	
	Clinical Sample (n=269)	Non-clinical Sample (n=305)	Clinical Sample (n=269)	Non-clinical Sample (n=305)	Clinical Sample (n=269)	Non-clinical Sample (n=305)
1. ISC	.600**	.557**	-.209**	.011	.401**	.152**
2. CSC	.446**	.311**	-.489**	-.273**	.496**	.228**
3. BDI	.391**	.398**	-.396**	-.153**	.499**	.271**
4. Inadequate-Self	—	—	-.293**	-.120*	.540**	.353**
5. Reassured-self	—	—	—	—	-.517**	-.284**

ISC, Internalized Self-criticism; CSC, Comparative Self-criticism, * $p < .05$; ** $p < 0.01$

.65 for hated-self respectively. For the test-retest reliability analyses, the Pearson correlation coefficients indicated by the subscales showed sufficient test-retest reliability, which were conducted with a group of 52 university students, at 3-week intervals: inadequate-self = .78, hated-self = .66 and reassured-self = .79. Moreover, Item-total correlations of the scale for the clinical sample ranged between .39 and .67, whereas for the non-clinical sample, they ranged from .31 to .59.

Measurement Invariance

Table 4 shows the measurement invariance analysis findings of the FSCRS in two groups/samples (clinical and non-clinical sample). Firstly, the findings of the analysis to test the configuration model showed that the fit indices of the model were acceptable. In the second model, which is performed to test the metric invariance model, the factor loads of the models in the two groups were equalized. When the fit indices in this process were examined, it was seen that the indices were acceptable, and the CFI difference between the two models was found to be less than .01 ($\Delta\text{CFI} = .007$). The results of the analysis to test the third model, which is the Scalar invariance model, showed that the CFI difference was less than .01 ($\Delta\text{CFI} = .008$), similar to the second model. Finally, the error variances of the scale items were compared for both samples after being equalized (strict model), the ΔCFI value ($\Delta\text{CFI} = .034$) was calculated with the fit indices, this model was insignificant.

Comparison of the Scores of FSCRS

Independent samples t-test was used to determine whether the scores obtained from the subscales of FSCRS differed according to the sample groups or not. According to the findings from the analysis, there were significant differences in inadequate-self subscale scores [$t(572) = 12.930, p \leq .001$]. The inadequate-self subscale scores of the participants in the clinical sample ($M = .23.28, SD = 7.78$) were found to be statistically significantly higher than the scores of the participants in the non-clinical sample ($M = 15.35, SD = 7.36$). The findings of the analysis showed that scores obtained from the

reassured-self subscale of the FSCRS were also very different for the two groups [$t(514) = -12.913, p \leq .001$]. According to these findings, reassured-self subscale scores of the community sample ($M = 22.56, SD = 5.90$) were statistically significantly higher than the scores of the clinical sample ($M = 15.58, SD = 7.32$). Finally, findings showed that hated-self subscale scores of the participants in both groups were significantly different from each other [$t(489) = 12.989, p \leq .001$]. Hated-self subscale scores of the participants in the clinical sample ($M = 7.15, SD = 4.25$) were found to be statistically significantly higher than the scores of the participants in the community sample ($M = 2.87, SD = 3.59$).

Discussion

The aim of the current study was threefold: 1) to assess the reliability and validity of FSCRS, 2) to establish the factor structure of Turkish form of the FSCRS in a clinical sample diagnosed with depression and in a non-clinical sample and 3) to investigate measurement invariance of the FSCRS across clinical and non-clinical samples.

Gilbert et al. (2004) used a sample of 246 female students to determine the factor structure of the scale they developed to assess how an individual relates to himself/herself in case of a failure and/or a loss in personal and social status. The authors obtained a three-factor solution/structure in this study. It was reported that self-criticism has two components: the first one is the inadequate-self dimension, defined as criticizing oneself, focusing on mistakes and feelings of inadequacy; the other one is the hated-self dimension, defined as the desire to hurt oneself, and feeling disgust/hate towards oneself. The third dimension/factor of the scale is the reassured-self, which is defined as self-soothing and focusing on positive aspects when things go wrong. In line with the original study, some studies supported the three-factor structure of the scale. For instance, K upeli et al. (2013), in their study that they conducted to determine the factorial structure of the scale with a sample of 1570 individuals, reported that the three-factor structure consisting of reassured-self and two forms of self-criticism (inadequate-self and hated-self) had the best model fit. Similarly, Bai ao et al. (2015) reported that the three-factor structure (inadequate-self, hated-self and reassurance-self) had better fit indices in both clinical and community sample. On the other hand, some studies (e.g. Richter, Gilbert, & McEwan, 2009; Rockliff, Karl, McEwan, Gilbert, and Matos (2011) reported that the scale should consist of two factors which are self-criticism (a combination of inadequate-self and hated-self) and self-reassurance. Besides, studies (Gilbert et al., 2004; Irons, Gilbert, Baldwin, Baccus, and Palmer (2006)) reported a high association between the two factors of self-criticism (inadequate-self and hated-self), supporting this view. Furthermore, in a study (Halamova,

Table 4 Multigroup confirmatory factor analysis of FSCRS in clinical and non-clinical sample

	CFI	RMSEA	ΔCFI	ΔRMSEA
Configural model	0.913	0.059	–	–
Metric model	0.906	0.060	0.007	0.001
Scalar model	0.898	0.061	0.008	0.001
Strict model	0.864	0.069	0.034	0.008

Kanovský, & Pacúchová, 2017), the correlation coefficient between these two factors was reported to be as high as .81. This finding shows that there may be multicollinearity between these two factors (Howell, 2002).

In the light of this evidence, to determine the best factorial structure of the Turkish form of the scale, fit indices of the two and three-factor structures of both clinical and community sample were assessed. The findings of these analyses showed that the three-factor solution of the scale has good fit indices for both of the samples. However, fit indices for the two-factor models suggested a poor fit to the data for both samples. Following these findings, using a three-factor solution (inadequate-self, hated-self and reassurance-self) for the Turkish version of the scale for both clinical and non-clinical samples is recommended.

Although Halamová et al. (2018) reported that the findings of their multicultural study would facilitate for both clinicians and researchers to use the two-factor solution of the scale; they also stated that these findings still needed to be empirically supported. The same researchers suggested the use of a three-factor structure in the clinical group and a two-factor structure consisting of self-criticism (the combination of inadequate-self and hated-self) and self-reassurance in non-clinical populations. They also emphasized the need to consider the potential ground effects of hated self-dimension in the non-clinical sample.

Several studies examining the relationship between psychopathology and two dimensions of self-criticism (inadequate-self and hated-self) show that the inadequate-self and hated-self are separate/different structures in clinical samples. For instance, while hated-self dimension was reported to be a strong predictor of self-harm, anxiety and depression (Gilbert et al., 2004), inadequate-self dimension was reported to be a strong predictor of eating disorders (Küpeli et al., 2017). Similarly, in this study the hated-self dimension had a statistically stronger relationship with depression than the inadequate-self dimension in clinical sample.

In the current study, measurement invariance analyses were performed to test whether the FSCRS has the same factorial structure in both clinical and community sample or not. The results of the analysis to test the configuration invariance showed that the model was significant. The presence of configuration invariance indicates that participants in both clinical and community samples used the same conceptual point of view to respond to the scale items when measuring the structure to be measured. When factor loadings and factor load patterns were equated, the metric model was also found to be significant. According to this finding, it can be said that the implicit variable measurements of the groups were equivalent to each other. The results of the analysis, conducted to test the third model, which is scalar invariance, showed that this model was significant; however, it was seen that strict model, in which the error variances were equated,

was not significant. Byrne and Stewart (2006) stated that although the equation of error variances is an important step, it is not a fundamental necessity in determining/identifying the factorial invariance. In addition to this, Widaman and Reise (1997) stated that among the tested models, the ones where the factor loadings and regression constants are equated could be regarded as sufficient evidence for the scale having a strong factorial invariance. In the light of this information, it can be said that the scale has the same factorial structure in terms of identifying characteristics of self-criticism and self-reassurance of an individual, without any difference between clinical and community samples. Castilho et al. (2015) tested measurement invariance with the three-dimension solution of FSCRS in the clinical and non-clinical sample and reported that the scale had the same structure in these two samples.

In a recent study, Halamová et al. (2019) investigated the measurement invariance of the FSCRS across 13 different samples and eight language versions. Although three subscales of the scale are generally reliable and valid for cross-cultural use, it has been found that not all subscales differ perfectly between all countries and groups. The result of this study showed that cross-cultural researchers should be careful when comparing scores.

Similar to the other studies conducted earlier (e.g., Castilho et al., 2015; Gilbert et al., 2004; Halamová et al. (2017), the LOSC was used to test the convergent validity of the scale in the current study. Findings showed that there were statistically significant correlations between the subscales of the FSCRS (inadequate-self, hated-self and reassured-self) and subscales of the LOSC (internalized self-criticism and comparative self-criticism). To assess criterion validity we used the BDI. Results of correlation analysis indicated that there were relations between the subscales of the FSCRS and the BDI.

Reliability analyses of the FSCRS were conducted via test re-test analysis and internal consistency coefficients. Findings of the analyses proved that the scale has a sufficient test re-test reliability. The internal consistency coefficients, reported in other studies of the scale in different languages, ranged between .72 and .89 for the community sample (Castilho et al., 2015; Gilbert et al., 2004; Halamová et al., 2017) and between .81 and .90 for the clinical sample (Castilho et al., 2015). In the current study, Cronbach's alpha coefficients for the clinical and community samples ranged between .75 and .86, and between .65 and .78, respectively. When compared to the results of the original form and to other results of the studies mentioned above, the internal consistency coefficients obtained from the current study were relatively low, even so it can still be said that the Turkish version of the scale is a reliable tool for both clinical and community samples.

Results of the t-test analysis conducted to compare the scores of the scale for clinical and non-clinical sample showed that participants in the clinical sample get significantly higher scores on inadequate-self and hated-self subscales; whereas

they get significantly lower scores on reassurance-self subscale, when compared to participants in a community sample. In parallel with these findings, Ehret et al. (2015) stated that the high levels of self-criticism increase the risk of experiencing depression repeatedly or chronically over the lifespan. Moreover, Petrocchi et al. (2018) reported that self-reassurance is a protective factor in the relationship between depressive symptoms and self-criticism.

Gilbert et al. (2004) stated that most cognitive-based theories explain self-criticizing/attacking as a single process (e.g. Beck et al. 1979) and present scales of self-criticism (e.g. DEQ) do not let researchers identify different types of self-criticism. However, FSCRS allows researchers to distinguish types of self-criticism such as hated-self, inadequate self and also reassured-self. This feature of FSCRS can be important in the treatment processes because inadequate feelings could be separated from hated feelings for the self (Gilbert et al., 2004). Information that will be gathered from FSCRS can be used by the practitioners to explore different types of self-criticizing in detail. This exploration can let the practitioners, for some people, find out feelings of possible aggression/disgust and emotions that stem from forms of self-criticism (Gilbert et al., 2004). Illuminating such emotions that are associated with different types of self-criticism can let the therapists work on them with the client. Another feature of the scale is pointing out self-reassurance. Gilbert et al. (2004) stated that pointing out self-reassurance even when one is self-critical or disappointed with oneself is an important therapeutic task. From this point it can be said that FSCRS would be a useful tool for Turkish sample in terms of treatment implications.

This study has several limitations. First, the clinical sample included only depression outpatients. For future studies, it is recommended to increase the diagnostic variety in the clinical sample. Second, there was a significant difference in terms of the gender variable between two samples. Third, participation in this research was voluntary. Participants who completed the scales used in the study might be prone to expressing their own personality traits. Therefore, the generalizability of the study may be limited in terms of self-selection bias.

One of the strengths of the current study is the examination of the factor structure of FSCRS in both clinical and non-clinical samples and the analysis of measurement invariance of the scale in these two samples. In most of the studies conducted to determine the psychometric properties of the scale in other languages, data was generally collected from university students (e.g., Hermanto et al., 2016; Halamová et al., 2017; Zuroff, Sadikaj, Kelly, & Leybman, 2016; Küpeli et al., 2013; Gilbert et al., 2004). In the current study, the data was collected from a community sample covering a wide age range, which increases the generalizability of the results.

Despite these potential limitations, the results from this research provide evidence that the Turkish version of FSCRS is a valid and reliable tool for both clinical and

community samples. Given the good psychometric properties of the Turkish version of the FSCRS, we suggest that it may be a useful tool in Turkish-speaking populations. Moreover, its use is encouraged and recommended for identifying the etiology in psychopathology and monitoring the progress in treatment processes.

Data Availability Data available on request from the authors.

Declarations

Ethical Approval The research described in this article was approved by Mersin University Social Sciences Ethical Committee.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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