

**Exploring self-criticism: Confirmatory Factor Analysis of the FSCRS in a clinical  
and in a nonclinical sample**

## **Abstract**

The Forms of Self-criticizing/attacking and Self-reassuring Scale (FSCRS) is a self-report questionnaire that assesses the forms of self-criticism and self-reassurance. The aim of this study was to explore the latent structure of the FSCRS in a nonclinical and in a clinical sample. Data from 381 participants from the general population and from 304 participants from clinical settings were subjected to confirmatory factor analyses to explore several structural models reflecting alternative representations of the FSCRS dimensionality. Overall, the model with the best fit to the data, in both samples, was the three-factor model (Inadequate Self, Hated Self and Reassured Self subscales) replicating the FSCRS original structure. The scale showed good psychometric characteristics and the three factors discriminated between the clinical and nonclinical sample. To our knowledge, this is the first study to confirm the factor structure of the FSCRS in a purely clinical sample, and to test alternative models. This study adds to the existent literature that has been supporting the conceptualisation of self-criticism as a multidimensional construct. Given the good psychometric properties of the Portuguese version of the FSCRS, its use is encouraged and recommended for the assessment of self-criticism in both clinical and research settings.

**Keywords:** Forms of Self-criticizing/attacking and Self-Reassuring Scale (FSCRS); Self-Criticism; Confirmatory Factor Analysis; Psychometric properties; clinical sample.

## Exploring self-criticism: Confirmatory Factor Analysis of the FSCRS in a clinical and in a nonclinical sample

Self-criticism is known to be a vulnerability personality trait for the development of psychopathology and psychosocial impairment. In fact, many theorists have viewed self-devaluation, self-condemnation, and self-critical/attacking feelings and cognitions as important components of psychopathology (e.g., Arieti & Bemporad, 1980; Beck, 1983; Blatt, 1974, 1990; Greenberg, 1979). In the last decades, a large amount of empirical research has shown that self-criticism can prospectively predict later adjustment (Zuroff, Koestner, & Powers, 1994) and depression (Dunkley, Sanislow, Grilo, McGlashan, 2009; Zuroff, Igreja, & Mongrain, 1990), is associated with mood disorders (e.g., Blatt & Zuroff, 1992; Hartlage, Arduino, & Alloy, 1998; Luyten et al., 2007; Castilho, Pinto-Gouveia, Amaral, & Duarte, 2012), social anxiety (Cox et al., 2000), and post-traumatic stress disorder (Harman & Lee, 2010), and poor social support (Dunkley, Zuroff, & Blankstein, 2003; Priel & Shahar, 2000). Also, in a recent review Kannan and Levitt (2013) pointed out that self-criticism might act to impair the therapeutic alliance, which can determine poorer treatment outcomes (Marshall, Zuroff, McBride, & Bagby, 2008; Rector, Bagby, Segal, Joffe, & Levitt, 2000).

Despite the important role that self-criticism plays in many forms of psychopathology, and its prominence in many theories, it tends to be treated as a single process that varies in terms of degree or severity (e.g., Blatt, 1974, 1990). However, other authors have argued that such broad conceptualisations may not capture the phenomenology of self-criticism, and suggest that it can display different subtypes and functions (e.g., to self-correct, to maintain standards, to prevent the self from taking risks, to punish or to elicit sympathy; Driscoll, 1989; Gilbert, Clarke, Hempel, Miles, & Irons, 2004; Thompson & Zuroff, 2004).

Derived from an evolutionary approach, Gilbert (2000) conceptualises self-criticism as a form of self-to-self relating that is based on evolved psychobiological systems for social interaction. Accordingly, it has been suggested that humans have evolved specific competencies to be able to learn, understand and endorse different social roles (e.g., for attachment, affiliation, dominance-subordination). For example, a hostile competitive mentality uses tactics of social undermining involving threats and derogating attacks of shaming and put down (Gilbert, 1989). These social competencies are the basis for internal self-evaluations and operate through the same information processing systems and behavioural patterns that evolved for social relating (Gilbert, 2000). For example, when we fail we can be angry with ourselves and self-critical, in the same way as we can be angry and derogate somebody else who failed, we see as inferior or who has let us down. In other words, just as we can have anger, contempt or hatred for others so we can have these for ourselves - we can become the object of our own 'attack' system. This self-directed anger can further activate defensive strategies (e.g., submission) that lead to feelings of defeat when we are unable to defend against our own self-attacks. This is because our inner negative self-evaluations can have similar psychophysiological effects as external signals and thus can, under some conditions, activate response systems that evolved to cope with external threats, such as submissive and defensive behaviours and emotions (Gilbert, 1989; LeDoux, 1998).

Self-attacking is typically activated when people feel they have failed in important tasks, or when things go wrong, and is aimed at correcting and improving behaviours or personal characteristics, such as a parent who criticises a child to prevent him from making future mistakes and to be obedient. However, under some hostile and threatening circumstances, humans can use other coercive tactics, such as persecuting, excluding and eliminating others. These behavioural patterns are often accompanied by

emotions such as disgust, hatred, aversion and contempt. Some people can develop this orientation towards themselves, that is, endorse harsh self-attacks with self-directed anger and contempt, such as individuals who self-harm. In fact, this form of self-criticism has been shown to be especially associated with psychological suffering and is more prevalent in individuals with personality and psychotic disorders (Birchwood et al., 2004; Castilho & Pinto-Gouveia, 2013a). Self-disgust and self-hate are thus linking into different emotional and relational systems.

Based on this theoretical model, Gilbert and colleagues (2004) developed a self-report measure of self-criticism and self-reassurance design to assess how people relate to themselves in situations of failure and loss of personal and social status (Forms of Self-Criticism/attacking and Self-Reassuring Scale – FSCRS). An exploratory factor analysis confirmed the existence of two forms of self-criticism: a) *inadequate self* is focused on feelings of inadequacy and inferiority due to personal failures and setbacks, and in aspects of the self that need to be corrected or improved; b) *hated self*, the most toxic and pathogenic form, is characterised by self-punishment and feelings of disgust, aversion, hatred and contempt for the self, and is focused mainly on the desire to hurt, persecute and attack the self. An alternative form of self-to-self relating was also identified (*reassured self*) that reflects, in contrast, a positive and warmth attitude for the self, that allows acceptance, compassion and understanding of flaws and failures as part of the human condition; it focuses on positive aspects (positive memories and past successes) and implies reassurance and tolerance when facing vulnerability and fragility (Gilbert et al., 2004).

Other psychometric instruments have been developed to assess self-criticism, based on different conceptualisations of the concept, such as the Depressive Experiences Questionnaire (DEQ; Blatt, 1974), the Dysfunctional Attitude Scale (DAS;

Weissman & Beck, 1978) and the Levels of Self-Criticism Scale (LOSC; Thompson & Zuroff, 2004). Both the DEQ and the DAS offer broad and unidimensional conceptualisations of the construct. However, as stated above, other authors have been proposing that self-criticism is a multidimensional trait that can have various forms and functions. Although standing from different theoretical conceptualizations, the LOSC and the FSCRS are the only known available measures that reflect this multifaceted nature of self-criticism.

To date, several studies have been conducted to assess the factorial structure of the FSCRS and its psychometric properties. The scale was originally validated by Gilbert et al. (2004) in a sample of 246 female students, a methodological limitation that may compromise the generalizability of the findings. Recently, an exploratory factor analysis ( $n = 372$ ) of the Portuguese version of the FSCRS suggested a factor structure similar to the original three-factor version (Castilho & Pinto-Gouveia, 2011b). Also Kupeli, Chilcot, Schmidt, Campbell and Troop (2013) explored the latent structure of the FSCRS. Although exploratory and confirmatory factor analyses replicated the original three-factor model, the authors tested only one model. In addition, a sample of the general population was used, which can limit the replicability of the model to different populations (e.g., clinical).

Given the methodological limitations of the aforementioned studies, we sought out to confirm the multidimensional structure of the Portuguese version of the FSCRS in a nonclinical and in a clinical sample. In addition, we aimed to explore the psychometric properties of the Portuguese version of the FSCRS in these samples and its ability to discriminate between the clinical and nonclinical sample.

## Method

### Participants and Procedures

A total of 685 subjects recruited from the general population and clinical settings participated in the study (Table 1). The nonclinical sample ( $n = 381$ ) included students from the University of Coimbra enrolled in several courses ( $n = 270$ ) and a community group recruited in different regions of Portugal, using non-random methods (convenience sample;  $n = 111$ ). The student sample completed the self-report measures during lecture, with the authorisation of the Professors. Participants from the clinical group were recruited from outpatient Psychiatric services of different public hospitals in Portugal, and were indicated by the psychologists and psychiatrists in charge. All participants were clinically assessed by a trained therapist and author of this study using several diagnostic structured interviews, namely the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID I; First, Spitzer, Gibbon, & Williams, 1997), the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; DiNardo, Brown, & Barlow, 1995), the Structured Clinical Interview for DSM-IV Axis II Personality Disorders (SCID II; First, Gibbon, Spitzer, Williams, & Benjamin, 1997), and the Borderline Personality Disorder Severity Index (BPDSI-IV; Arntz et al., 2003). In total, 304 patients (Table 1, Table 2) with Axis I and II disorders participated in the study, which was previously approved by the hospitals' ethics committees.

In this study, we used the Portuguese versions of the questionnaires. The questionnaires were preceded by a page informing the subjects about the study aims, importance of their participation and confidentiality. All participants provided their written informed consent.

[Insert Table 1 here]

[Insert Table 2 here]

## **Measures**

### ***Self-criticism***

The Forms of Self-Criticizing/attacking and Self-reassuring Scale (FSCRS; Gilbert et al., 2004; Portuguese version by Castilho & Pinto-Gouveia, 2011b) is a 22-item self-report questionnaire in which participants are asked to rate how they typically think and react when things go wrong for them. To a first probe statement: “When things go wrong for me...” participants respond on a 5-point Likert scale (ranging from 0 = *not at all like me* to 4 = *extremely like me*). A factor analysis of the scale suggested three factors: Inadequate Self (e.g. ‘*I think that I deserve my self-criticism*’; ‘*I remember and dwell on my failings*’), Hated Self (e.g. ‘*I stop caring about myself*’; ‘*I do not like being me*’) and Reassured Self (e.g. ‘*I still like being me*’; ‘*I can feel lovable and acceptable*’). Gilbert et al. (2004) found that this measure of self-criticism/self-reassuring was congruent with other measures of self-criticism (e.g., Levels of Self-criticism Scale; Thompson & Zuroff, 2004) and found good internal consistency (Cronbach’s alphas were: .86 for Hated self and Reassured self and .90 for Inadequate self). The Portuguese version of the scale showed Cronbach’s alphas between .62 and .89. In this study Cronbach’s alphas were .89, .72 and .87 for the nonclinical sample, and .91, .82 and .81 for the clinical sample, for Inadequate Self, Hated Self and Reassured Self, respectively.

The Levels of Self-criticism Scale (LOSC; Thompson & Zuroff, 2004; Portuguese version by Melo, 2006) is a 22-item self-report questionnaire that measures two dimension of self-criticism: *comparative self-criticism* (12 items), defined as a negative view of the self in comparison with others; and *internalized self-criticism* (10



items), defined as a negative view of the self in comparison with internal, personal standards. *Comparative self-criticism* items include: ‘*I am usually uncomfortable in social situations where I don’t know what to expect*’, and ‘*I fear that if people get to know me too well, they will not respect me*’. *Internalized self-criticism* items include ‘*I get very upset when I fail*’, and ‘*When I don’t succeed, I find myself wondering how worthwhile I am*’. Participants are asked to rate how well the statements describe them on a Likert scale from 1 (*not at all*) to 7 (*very well*). Thompson and Zuroff (2004) reported good reliability of the scale, with Cronbach’s alpha coefficients of .81 for *Comparative self-criticism* and .87 for *Internalized self-criticism*. They also reported a moderate correlation between the two dimensions ( $r = .45$ ). In the Portuguese version of the scale the authors found Cronbach’s alphas of .90 and .76 for *Internalized self-criticism* and *Comparative self-criticism*, respectively. In this study we found Cronbach’s alpha for *Comparative self-criticism* of .74 in the clinical sample and .83 in the nonclinical sample, and alpha coefficients of .87 in the clinical sample and .90 in the nonclinical sample for *Internalized self-criticism*.

### ***Self-Compassion***

The Self-Compassion Scale (SCS; Neff, 2003; Portuguese version by Castilho & Pinto-Gouveia, 2011a) is a 26-item self-report questionnaire that includes six subscales: *Self-Kindness* (5 items; e.g., ‘*I try to be understanding and patient towards those aspects of my personality I don’t like*’), *Self-Judgment* (5 items; e.g., ‘*I’m disapproving and judgmental about my own flaws and inadequacies*’), *Common Humanity* (4 items; e.g., ‘*I try to see my failings as part of the human condition*’), *Isolation* (4 items; e.g., ‘*When I think about my inadequacies it tends to make me feel more separate and cut off from the rest of the world*’), *Mindfulness* (4 items; e.g., ‘*When something painful happens I try to take a balanced view of the situation*’), and *Over-identification* (4

items; e.g., ‘*When I’m feeling down I tend to obsess and fixate on everything that’s wrong*’). Mean scores on the six subscales can be averaged (after reverse-coding negative items) to create an overall self-compassion score. Participants are asked to rate the items on a 5-point Likert scale from *almost never* to *almost always*. Research indicates that the SCS demonstrates concurrent validity, convergent validity, discriminant validity and test–retest reliability (Neff, 2003). The Portuguese version of the SCS demonstrated good internal consistency (Cronbach’s alpha of .92 in a clinical sample and .94 in a nonclinical sample). In this study, Cronbach’s alpha for the total scale was .90 in the nonclinical sample and .92 in the clinical sample.

### ***Optimism***

The Life Orientation Questionnaire Test-Revised (LOT-R; Scheier, Carver, & Bridges, 1994; Portuguese version by Monteiro, Tavares, & Pereira, 2006) was designed to measure optimism and pessimism. The LOT-R consists of 10 coded items, 3 statements described in a positive manner, 3 statements described in a negative manner, and 4 non-scored items. Subjects respond to the statements by indicating the extent of their agreement along a 5-point Likert scale, ranging from *strongly agree* to *strongly disagree*. Factor analysis indicates that the LOT-R can be construed as unidimensional, representing whether a person is an optimist or pessimist. The internal consistency (Cronbach's alpha = .78) and test-retest reliability ( $r = .68$  over a four-week interval,  $r = .60$  over twelve months,  $r = .56$  over twenty-four months, and  $r = .79$  over twenty-eight months) for the unidimensional use of the LOT-R has been shown to be adequate. Evidence of convergent validity was demonstrated by the significant correlations with other constructs (e.g., depression, hopelessness, self-esteem, perceived stress, and locus of control; Scheier et al., 1994). The Portuguese version of the scale showed good internal consistency ( $\alpha = .66$ ). In this study, Cronbach’s alpha was .62 for the

nonclinical sample and .81 for the clinical sample. It should be noted, however, that only 85 individuals from the nonclinical sample completed the LOT-R in this study.

### ***Psychopathology***

The General Health Questionnaire (GHQ-28; Goldberg & Hillier, 1979; Pais-Ribeiro & Antunes, 2003) is a self-report instrument designed to detect and assess individuals with an increased likelihood of current psychiatric disorder. The original questionnaire consists of 60 items from which shorter versions of 30, 28, 20 and 12 items were developed. The GHQ is used as a community screening tool and for the detection of non-specific psychiatric disorders among individuals in primary care settings. The GHQ-28 is a self-report measure of emotional distress and incorporates four subscales: *somatic symptoms* (7 items); *anxiety/insomnia* (7 items); *social dysfunction* (7 items), and *severe depression* (7 items). In the GHQ-28 the respondent is asked to compare his recent psychological state with his usual state. For each item four answer possibilities are available (from *not at all* to *much more than usual*). It can be scored from 0 to 3 for each response with a possible total score ranging from 0 to 84, with higher scores corresponding to poorer mental health status. The GHQ has been translated into more than 38 languages, and over 50 validity studies have been published. The Portuguese version of the GHQ-28 shares the same psychometric properties of the original version. Good internal consistencies were found for the total scale ( $\alpha = .94$ ) and for the subscales (somatic symptoms  $\alpha = .85$ ; anxiety/insomnia  $\alpha = .88$ ; social dysfunction  $\alpha = .83$ ; and severe depression  $\alpha = .89$ ), as well as good discriminant validity between the groups. In this study, Cronbach's alphas for the total scale were .94 for the nonclinical sample and .95 for the clinical sample.

The Depression, Anxiety, Stress Scale (DASS-42; Lovibond & Lovibond, 1995; Portuguese version by Pais-Ribeiro, Honrado, & Leal, 2004) is a self-report measure

composed by 42 items designed to assess three dimensions of psychopathological symptoms: Depression, Anxiety and Stress. The items describe negative emotional symptoms and participants rate each item using a 4-point Likert scale of severity and frequency (ranging from 0 to 3). Lovibond and Lovibond (1995) reported good internal consistency for these components (Depression subscale Cronbach's  $\alpha = .91$ ; Anxiety subscale Cronbach's  $\alpha = .84$ ; Stress subscale Cronbach's  $\alpha = .90$ ). The Portuguese version showed good internal consistency, similar to the original version, and good convergent and discriminant validity (Pais-Ribeiro et al., 2004). In this study, we found good internal consistency (Cronbach's alpha for Depression = .91 and .97; for Anxiety = .85 and .93; for Stress = .92 and .96, for the nonclinical and clinical samples respectively).

### **Data analytic plan**

The factorial structure of the FSCRS was assessed through Confirmatory Factor Analysis (CFA). Specifically, we used Structural Equation Modelling with Maximum Likelihood estimation method. An evaluation of skewness ( $Sk$ ) and kurtosis ( $Ku$ ) was conducted to assess the assumption of normality of the items. According to Kline (2005),  $Sk > |3|$  and  $Ku > |10|$  indicate severe deviations to normal distribution. To check for possible outliers quadratic Mahalanobis distance ( $MD^2$ ) was used.

The models' global adjustment was assessed through the following fit statistics: Normed Chi-Square ( $\chi^2/df$ ), Goodness of Fit Index (GFI), Tucker Lewis Index (TLI), Comparative Fit Index (CFI) and Root-Mean Square Error of Approximation (RMSEA). A good fit is obtained when the Normed  $\chi^2$  is 2 or lower, the CFI, GFI and TLI are .90 or higher, and the RMSEA is .10 or lower. To compare the relative fit of the competing models Akaike Information Criterion (AIC) and the Expected Cross-

Validation Index (ECVI) were used. The model with the smallest AIC and ECVI has the better fit. The Chi-Square Difference Test was used to test the statistical significance of differences in model fit between competing models. The refinement of the models was based on Modification Indexes (MI). Thus, for Lagrange Multiplier (LM) values greater than 11 ( $p < .001$ ), we employed the exploratory strategy in which the residuals with higher LM values and with related theoretical content are sequentially correlated (Marôco, 2010). When conducting a CFA, one should never be governed by the fit indices of the model alone. There are other factors to consider such as the factor loadings and the discriminant validity. Thus, we analysed items' factor loadings ( $\lambda$ ) of the observed variables and the square of the factor loadings, which provides the amount of variance in the observed variable that the underlying construct is able to explain. Normally, it is expected that all items of the factor present values of  $\lambda \geq .50$ . In addition, we explored the discriminant validity of the measure, defined as the ability of a latent variable to account for more variance in the observed variables associated with it than a) measurement error or similar external, unmeasured influences; or b) other constructs within the conceptual framework. To assess the discriminant validity we compared the Average Variance Extracted (AVE) of each construct with the shared variance between constructs. For any two constructs, A and B, the AVE for A and the AVE for B both need to be larger than the shared variance (i.e., square of the correlation) between A and B (Hair, Anderson, Tatham, & Black, 1998). We first tested a single-factor model, as it has been suggested this should be a first step in CFA models (Kline, 2005). Then, we analysed the fit of an alternative, hierarchical model, consisting of a higher-order self-criticism factor. Finally we tested the original three-factor model of the FSCRS. These three models were tested in a sample from the general population, and only the latter was replicated in a clinical sample.

Scale reliability was assessed using both Cronbach's Alpha and Composite Reliability, which provides a much less biased estimate of reliability than alpha and is more appropriate for multidimensional scales (Marôco, 2011). The comparison between the groups was conducted using a non-parametric test (Mann-Whitney), given that several variables didn't show a normal distribution.

Pearson product-moment correlation coefficient was used to assess the test-retest reliability of the measure, and the convergent validity of the FSCRS with other measures (LOSC, GHQ-28, DASS-42, SCS and LOT-R).

The statistical procedures were computed using Software PASW Statistics (v.17; SPSS Inc, Chicago, IL) and Software AMOS (v.19; SPSS Inc., Chicago, IL).

## **Results**

### **Confirmatory Factor Analyses in a Nonclinical Sample**

#### ***Single-factor Model (Model 1)***

Fit indices for the respecified single-factor model (Model 1) suggested a poor fit to the data,  $\chi^2/df = 5.216, p < .001$ ; TLI = .704; CFI = .736; RMSEA = .082,  $p < .001$  (Table 3).

#### ***Second-order Model of FSCRS (Model 2)***

The second-order model showed a poor fit to the data,  $\chi^2/df = 4.426, p < .001$ ; TLI = .775; CFI = .796; RMSEA = .095;  $p < .001$  (Table 3). To avoid purely statistically driven post hoc model fitting, only error covariances deemed both theoretically and statistically justified were used to respecify the model. The respecified Model 2, with three pairs of error terms correlated, showed rather good fit to the data,  $\chi^2/df = 3.221, p < .001$ ; TLI = .854; CFI = .870; RMSEA = .076;  $p < .001$ . Also, it presented lower values for AIC ( $1056.993 < 801.519$ ) and ECVI ( $2.782 < 2.109$ ) and

was statistically superior to the original Model 2,  $\chi^2_{diff} = .673$ ,  $df_{diff} = 3$   $p < .001$  (Table 3).

Items' standardised loadings ( $\lambda$ ) ranged from .52 to .86. In addition, the coefficients of determination ( $R^2$ ) ranged between .27 and .74. The three first-order factors' standardized loadings on the second-order factor were .10 for Inadequate Self ( $R^2 = .01$ ), .16 for Hated Self ( $R^2 = .03$ ), and -.18 for Reassured Self ( $R^2 = .03$ ). These results showed that the second-order model of the FSCRS may not be appropriate to explain the correlational structure of the data.

### ***Three-factor model of the FSCRS (Model 3)***

Model fit indices for the three-factor model indicated overall acceptable fit to the data,  $\chi^2/df = 3.254$ ,  $p < .001$ ; TLI = .852; CFI = .866; RMSEA = .077;  $p < .001$  (Table 3). The respecified model (Figure 1), with two pairs of error terms correlated, was statistically superior. Specifically, several fit indices indicated a good fit to the data,  $\chi^2/df = 2.796$ ,  $p < .001$ ; TLI = .882; CFI = .894; RMSEA = .069,  $p < .001$ . The respecified model also presented lower values for AIC ( $812.080 < 714.771$ ) and ECVI ( $2.137 < 1.881$ ), however the differences didn't reach statistical significance,  $\chi^2_{diff} = .458$ ,  $df_{diff} = 2$ ,  $p < .001$ .

[Insert Figure 1 here]

[Insert Table 3]

### ***Construct validity***

The composite reliability was very good ( $> .70$ ), with .95 for Inadequate Self, .86 for Hated Self and .94 for Reassured Self. All items presented standardised loadings

> .50 and the coefficients of determination ( $R^2$ ) also showed acceptable values, ranging from .28 to .73. The Average Variance Extracted (AVE) was .68 for Inadequate Self, .56 for Hated Self and .66 for Reassured Self ( $> .05$ ), showing that the latent factor is well explained by its observable variables. Discriminant validity was assessed through the comparison between the AVE and the square correlation between the factors. So,  $AVE_{\text{inadequate self}} = .68$  and  $AVE_{\text{reassured self}} = .66, r^2 = .27$ ;  $AVE_{\text{hated self}} = .64$  and  $AVE_{\text{reassured self}} = .63, r^2 = .40$ ; lastly,  $AVE_{\text{inadequate self}} = .71$  and  $AVE_{\text{hated self}} = .64, r^2 = .71$ . These results indicate a good discriminant validity between Inadequate Self and Reassured Self and between Hated Self and Reassured self, but less evident between Inadequate Self and Hated Self.

These results suggest that the three-factor model (Model 3) showed the best fit to the data, which gives support to the underlying theoretical model.

### **Confirmatory Factor Analysis in a Clinical Sample**

#### *Three-factor model of the FSCRS (Model 4)*

A confirmatory factor analysis of the three-factor model of the FSCRS was conducted in a clinical sample, given that this model showed the best fit to the nonclinical sample data.

Model fit indices for the three-factor model in the clinical sample indicated overall acceptable fit to the data,  $\chi^2/df = 2.443, p < .001$ ; TLI = .913; CFI = .922; RMSEA = .069;  $p < .001$  (Table 3).

#### *Construct validity*

The composite reliability was very good ( $> .70$ ), with .96 for Inadequate Self, .86 for Hated Self and .95 for Reassured Self. All items presented standardised loadings



> .50 and the coefficients of determination ( $R^2$ ) also showed acceptable values, ranging from .31 to .79. The Average Variance Extracted (AVE) was .73 for Inadequate Self, .56 for Hated Self and .69 for Reassured Self ( $> .05$ ), showing that the latent factor is well explained by its observable variables. Also, our results indicated a good discriminant validity between Inadequate Self and Reassured Self and between Inadequate Self and Hated Self ( $AVE_{\text{inadequate self}} = .73$  and  $AVE_{\text{reassured self}} = .69$ ,  $r^2 = .32$ ;  $AVE_{\text{inadequate self}} = .73$  and  $AVE_{\text{hated self}} = .69$ ,  $r^2 = .69$ ). However, discriminant validity was less evident between Hated Self and Reassured Self ( $AVE_{\text{hated self}} = .56$  and  $AVE_{\text{reassured self}} = .69$ ,  $r^2 = .67$ ). This could be explained by the high correlation between these two factors, given that this particular sample shows high levels of Hated self and low levels of Reassured self.

### **Test-Retest Reliability and Convergent Validity of the FSCRS**

These studies were conducted in the total sample ( $N = 685$ ), comprised by the clinical ( $n = 304$ ) and nonclinical samples ( $n = 381$ ).

#### **Test-retest reliability**

Test-retest reliability of the FSCRS was assessed with the scores of 41 participants in two consecutive administrations of the questionnaire within a 4-week interval. Test-retest reliability was good for the subscales Inadequate Self ( $r = .72$ ), Hated Self ( $r = .78$ ) and Reassured Self ( $r = .65$ ), and for the FSCRS items varied from  $r = .31$  to  $r = .86$ .

#### **Convergent validity**

Convergent validity was assessed by computing Pearson correlations between FSCRS and self-report measures that evaluate theoretically related constructs. Overall,

the pattern of correlations found was as expected, and suggests that FSCRS and its subscales have good convergent validity (Table 4).

[Insert Table 4 here]

### **Differences Between the Groups in Self-Criticism**

The ability of the FSCRS to discriminate between clinical and nonclinical populations was assessed by comparing 381 individuals from the general population and 304 patients with several psychiatric disorders. A Mann-Whitney U Test revealed significant differences between the clinical and nonclinical sample in all subscales: Inadequate Self ( $Md = 2.78, n = 304; Md = 1.22, n = 381$ ),  $U = 18680.50, Z = -15.25, p < .001, r = .58$ ; Hated Self ( $Md = 1.40, n = 304; Md = .20, n = 381$ ),  $U = 19728.00, Z = -14.98, p < .001, r = .57$ ; and Reassured Self ( $Md = 1.56, n = 304; Md = 2.38, n = 381$ ),  $U = 29576.00, Z = -11.02, p < .001, r = .42$ . According to Cohen (1988) these results suggest medium to large effect sizes. Means and standard deviations for the three factors in both samples can be found in Table 5.

### **Discussion**

Many theorists have viewed self-devaluation and self-condemnation feelings and cognitions as important components of psychopathology (e.g., Beck, 1983; Blatt, 1974, 1990; Blatt & Zuroff, 1992).

The aim of the present study was to explore the factorial structure of the Portuguese version of the Forms of Self-Criticizing/attacking and Reassuring Scale (FSCRS). Specifically, we sought to evaluate the extent to which the three-factor structure of the FSCRS proposed by Gilbert et al. (2004) would be replicated in a

nonclinical sample and in a clinical sample, from the Portuguese population. This is the first study, to our knowledge, in which: a) the original three-factor structure of the FSCRS was compared to alternative models; and b) the factorial structure of the FSCRS was confirmed in a purely clinical sample. Three hypothesised models were tested: a single-factor model; a hierarchical model (the three first-order factors are expected to load significantly in an overarching, second-order factor); and the original three-factor model of the FSCRS. These models were tested in the nonclinical sample. Only the three-factor model was tested in the clinical sample, given that it showed the best fit to the data and is in accordance with the underlying theoretical model.

In both samples, the original three-factor model showed a good fit to the data. These results were also supported by the analysis of discriminant validity. It should be noted that most studies reporting CFA rely only upon model fit indices (Farrell & Rudd, 2009). The fact that we further consider other factors, such as discriminant validity, is, in our opinion, an important methodological strength of this study. Our results suggest that having a self-to-self relation based on inadequacy, flaws and feelings of inferiority, aimed at correcting and improving the self, is phenomenologically different from a self-critical style focused on feelings of aversion, hatred and disgust for the self with the function of punishing, harming and persecuting. Also, these two forms of self-criticism are clearly different from a more positive and reassuring self-to-self relation.

In addition, the FSCRS subscales showed good internal consistency (Cronbach's alpha and composite reliability) in both samples, and test-retest reliability analysis for a four-week period supported overall stability of the measure. Additionally, convergent validity for the three subscales was largely supported.

Lastly all subscales significantly differentiate individuals from the clinical sample and individuals from the general population. In fact, and as expected,

individuals from the clinical sample presented significantly higher scores on self-criticism and lower scores on reassured self, when compared with the non-clinical sample. Previous studies showed that self-criticism might be implicated in several forms of psychopathology, such as depression and anxiety (e.g. Gilbert, et al., 2004; Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006), self-harm (e.g., Castilho & Pinto-Gouveia, 2013a) and eating disorders (Pinto-Gouveia, Ferreira, & Duarte, 2012), suggesting that it may be a transdiagnostical vulnerability trait. Nonetheless, the different forms of self-criticism (inadequate and hated self) may have a specific contribution to specific psychiatric conditions. For example, a recent study (Castilho, Dinis, Pinto-Gouveia, & Duarte, 2013b) found that individuals with Borderline Personality Disorder, when compared with other disorders (Social Phobia, Avoidant and Obsessive-Compulsive Personality Disorders) showed significantly higher levels of the Hated Self form. Although these differences should be further explored, our preliminary findings suggest that the components of self-criticism are phenomenologically different and this may have important implications for research and clinical purposes.

This study has several strengths. First, to our knowledge, this is the first study to confirm the factor structure of the Portuguese version of the FSCRS in a clinical sample. Second, this is the first attempt to test the original three-factor model by comparing it with alternative models. Third, we demonstrated the ability of the scale to discriminate between clinical and nonclinical samples. This study, therefore adds to the existent literature that has been supporting the conceptualisation of self-criticism as a multidimensional construct, and suggests that unidimensional approaches may not capture its important subtypes and forms.

In conclusion, the current paper has built on the original development of the FSCRS by expanding its generalizability. Given the good psychometric properties of

the Portuguese version of the FSCRS and its ability to discriminate between individuals from the general population and clinical settings, its use is encouraged and recommended for the assessment of self-criticism in both research and psychotherapeutic contexts.

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Table 1.

*Demographic Characteristics of the Clinical and Nonclinical Samples (N = 685)*

	Clinical sample ( <i>n</i> = 304)		Nonclinical sample ( <i>n</i> = 381)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age (years)	28.75	8.77	22.49	7.75
Years of education	14.21	3.28	13.00	1.88
	<i>n</i>	%	<i>n</i>	%
<b>Gender</b>				
Male	61	20.1	84	22
Female	243	79.9	297	78
<b>Marital Status</b>				
Single	219	72	339	89
Married	65	21.4	41	10.8
Divorced	9	3.0	1	.30
Widowed	2	0.7	-	-
Cohabiting	9	3.0	-	-
<b>Socio-economic level</b>				
Low	64	21.1	12	3.1
Medium	75	24.7	90	23.6
High	48	15.8	11	2.9
Students	117	38.5	268	70.3

Table 2.

*Frequencies and Percentages of Axis I and II Disorders (DSM-IV-TR) in the Clinical Sample*

	Axis I		Axis II		Comorbidity	
	(n = 24)		(n = 58)		Axis I and Axis II	
	n	%	n	%	n	%
<i>Axis I</i>						
<i>Anxiety Disorders</i>	9	37.5	-	-	139	62.6
Agoraphobia without History of Panic Disorder	0	0	-	-	0	0
Panic Disorder with and without Agoraphobia	4	16.7	-	-	22	9.9
Social Phobia (Generalised)	3	12.5	-	-	91	41
Social Phobia (Simple)	0	0	-	-	9	4.1
Obsessive-compulsive disorder	1	4.2	-	-	19	8.6
Posttraumatic Stress Disorder	1	4.2	-	-	0	0
<i>Mood Disorders</i>	10	41.7	-	-	129	58.1
Major Depressive Disorder	9	37.5	-	-	124	55.9
Dysthymic Disorder	1	4.2	-	-	4	1.8
<i>Eating Disorders</i>	13	54.2	-	-	60	27
Anorexia Nervosa	6	25	-	-	26	11.7
Bulimia Nervosa	5	20.8	-	-	25	11.3
Eating Disorder NOS	2	8.3	-	-	9	4.1
<i>Axis II</i>						
Avoidant Personality Disorder	-	-	19	32.8	142	64
Dependent Personality Disorder	-	-	1	1.7	19	8.6
Obsessive-compulsive Personality Disorder	-	-	47	81	160	72.1
Passive-Aggressive Personality Disorder	-	-	1	1.7	9	4.1
Depressive Personality Disorder	-	-	10	17.2	97	43.7
Paranoid Personality Disorder	-	-	5	8.6	19	8.6
Histrionic Personality Disorder	-	-	1	1.7	2	0.9
Narcissistic Personality Disorder	-	-	1	1.7	1	0.5
Borderline Personality Disorder	-	-	21	36.2	63	28.4

Table 3.

*Goodness-of-Fit Statistics for Comparative Models of the FSCRS*

Models	$\chi^2/df$	TLI	CFI	RMSEA	AIC	ECVI
1. Single-factor Model (Model 1)	5.216	.704	.736	.082		
2. Second-order Model (Model 2)	4.426	.775	.796	.095	1056.993	2.782
Modified Second-order Model	3.221	.854	.870	.076	801.519	2.109
3. Three-factor Model (Model 3)	3.254	.852	.866	.077	812.080	2.137
Modified Three-factor Model	2.796	.882	.892	.069	714.771	1.881
4. Modified Three-factor Model in the clinical sample (Model 4)	2.443	.913	.922	.069		

*Note.* TLI = Tucker–Lewis Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; AIC = Akaike Information Criterion; ECVI = Expected Cross-Validation Index.



Table 4.

*Correlation Coefficients (2-tailed Pearson r) Between the Study Variables in Both Samples*

	Inadequate Self		Hated Self		Reassured Self	
	Nonclinical	Clinical	Nonclinical	Clinical	Nonclinical	Clinical
	(n = 381)	(n = 304)	(n = 381)	(n = 304)	(n = 381)	(n = 304)
<b>DASS-42</b>						
Depression	.55**	.53**	.59**	.64**	-.40**	-.51**
Anxiety	.38**	.36**	.47**	.47**	-.29**	-.32**
Stress	.48**	.58**	.45**	.51**	-.26**	-.36**
<b>GHQ-28</b>						
Total	.31**	.46**	.45**	.57**	-.26**	-.46**
Somatic symptoms	.22**	.28**	.30**	.35**	-.19**	-.30**
Anxiety/insomnia	.32**	.37**	.43**	.43**	-.24**	-.31**
Social dysfunction	.18**	.38**	.27**	.41**	-.17**	-.39**
Severe depression	.29**	.48**	.47**	.67**	-.26**	-.51**
<b>LOSC</b>						
Comparative SC	.46**	.65**	.48**	.62**	-.45**	-.57**
Internalized SC	.59**	.71**	.33**	.47**	-.23**	-.43**
<b>SCS</b>						
Total	-.63**	-.68**	-.53**	-.59**	.56**	.65**
Self-Kindness	-.36**	-.49**	-.40**	-.49**	.59**	.63**
Self-Judgment	.66**	.69**	.50**	.55**	-.32**	-.46**
Common Humanity	-.17**	-.31**	-.16**	-.32**	.44**	.51**
Isolation	.54**	.56**	.44**	.49**	-.34**	-.44**
Mindfulness	-.26**	-.39**	-.26**	-.40**	.46**	-.54**
Overidentification	.60**	.68**	.42**	.49**	-.26**	-.47**

LOT-R <sup>a</sup>	-.37**	-.49**	-.43**	-.52**	.54**	.57**
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*Note.* \*\* $p \leq .01$ ; DASS-42 = Depression Anxiety and Stress Scales; GHQ-28 = General Health

Questionnaire; LOSC = Levels of Self-criticism Scale; SCS = Self-compassion Scale; LOT-R = Life

Orientation Questionnaire Test-Revised

a. The  $n$  for this scale was 389.

Table 5.

*Means, Standard Deviations, Minimum and Maximum for the FSCRS Factors in Both Samples*

Variables	Nonclinical Sample ( <i>n</i> = 381)				Clinical Sample ( <i>n</i> = 304)			
	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Inadequate Self	1.35	.80	0	4	2.59	.92	0	4
Hated Self	.40	.53	0	3	1.50	1.05	0	4
Reassured Self	2.38	.81	0	4	1.59	.89	0	4