

Evaluating the multi-factor structure of the Self-Compassion Scale with confirmatory factor analysis in a clinical sample

Abstract

Objective: There has been a growing interest in the concept of self-compassion in Eastern psychology. The aim of the present study was to explore the dimensionality of the widely used Self-Compassion Scale (SCS), in a clinical and non-clinical sample.

Method: Several Confirmatory Factor Analysis (CFA) were computed in a mixed clinical ($n = 316$) and in a non-clinical sample ($n = 1128$) from the Portuguese population. Also, differences were tested between the groups in the SCS six factors.

Results: The CFA supported both a six-factor model and a hierarchical model in both samples. Also, the SCS showed good psychometric properties, with good internal consistency, test-retest reliability and convergent validity. Our study further suggests that individuals with several psychopathological disorders showed significantly lower self-compassionate abilities.

Conclusions: The SCS is thus a reliable instrument to assess self-compassion, allowing a rich phenomenological analysis of this construct, which is useful for research and in particular for clinical practice.

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In recent years, there has been a growing interest in the concept of self-compassion and its impact on psychological well-being (e.g., Gilbert, 2010; Neff, 2003a). The concept of self-compassion, however, is not new in eastern traditions, such as Buddhism, in which is considered as equally important as compassion for others. In a broad sense, compassion involves being moved by and desiring to alleviate others' distress (Neff, 2003a, 2003b). Self-compassion entails the same features, but directed inward, with feelings of care and kindness towards oneself in the face of personal suffering.

Drawing on several Buddhist readings (e.g., Bennett-Goleman, 2001; Brach, 2003; Goldstein & Kornfield, 1987; Salzberg, 1997), Neff (2003a, b) has proposed a definition of self-compassion based on three main components: self-kindness, common humanity and mindfulness. Self-kindness refers to the ability to be caring and understanding to oneself when facing suffering, inadequacy or failure, and is opposed to self-judgment. Common humanity involves recognising that all humans are imperfect, make mistakes and encounter life difficulties, which promotes feelings of connectedness when experiencing suffering, rather than isolation and feeling cut off from others. The mindfulness component entails a balanced approach to one's negative experiences so that one neither suppresses nor exaggerates painful feelings or disliked aspects of oneself, allowing for the right amount of distance from one's emotions so that they are fully experienced and approached with awareness and mindful objectivity. This process is opposed to over-identification, in which the individual feels overwhelmed and is carried away by its subjective negative emotional reactions and thoughts.

Not much has been written regarding the relations between the components, and whether one can be self-compassionate without having all three components. Neff (2003a)

offers the most comprehensive discussion on this topic. According to the author, compassion, whether directed toward the self or others, seems to necessarily entail all three components. Also, although these aspects of self-compassion are conceptually distinct, and are experienced differently at the phenomenological level, they also interact so as to mutually enhance and engender one another. For example, self-kindness may foster common humanity and mindfulness, in the sense that if a person is caring and understanding toward themselves the negative impact of the emotional experience will be lower making it easier to hold painful thoughts and emotions in mindful awareness. Also, as opposed to withdrawing and believing that they struggle alone with failures and flaws, self-kind people are more likely to stay in contact with others and share their struggle, as they may feel less ashamed of their faults. Simultaneously, one can hypothesise that common humanity may foster self-kindness and mindfulness. People who feel connected to others may judge themselves less harshly for their flaws and failures as they recognise that being imperfect is part of being human. Also, they may understand that they should treat themselves with the empathy and kindness they normally extend to others in the face of suffering. Also, realizing that suffering and personal failure happens to all people helps put one's experience into perspective, enhancing the ability to be mindful of one's thoughts and emotions and to not over-identify or avoid with them.

Self-compassion is thought to be different from self-pity in the sense that those who pity themselves tend to lose a sense of common humanity and to over-identify with the experience. In the same vein, the common humanity component of self-compassion separates it from self-centeredness, since it fosters social connection rather isolation and self-absorption. Neff (2003a) found that self-compassion was significantly correlated with social connectedness and that more self-compassionate individuals rated themselves as being equally kind to self and others. Self-compassion is also different from self-esteem, a

distinction that has been empirically validated (Leary, Tate, Adams, Allen, & Hancock, 2007; Neff & Vonk, 2009). Although low self-esteem is linked to several negative psychological outcomes, several authors argue that an over-emphasis on evaluating and liking the self may lead to self-centeredness, self-absorption, self-enhancement, narcissism and lack of concern for others (Chang, 2008; Damon, 1995; Seligman, 1995).

Standing from a different perspective, based on evolutionary psychology, neurobiology and attachment theory, Gilbert (1989, 2005) suggests that the experience of self-compassion activates in the individual the same neurophysiological mechanisms that are activated when the individual is the recipient of experiences of care and kindness from others. According to the author (self) compassion taps into an evolved mammalian physiological system (linked to secure attachment and the oxytocin-opiate system) that, when activated via external signals (other people's behaviour) or internal signals (self-directed emotions and thoughts) of caring and kindness, contributes to feelings of connectedness, contentment and soothing. According to Gilbert (2010), compassion involves several emotional, cognitive and motivational elements. These include: care for the welfare of others, sympathy, distress tolerance, empathy, non-judgment, distress sensitivity and the ability to create opportunities for growth and change with warmth.

Recent research has been highlighting the associations between self-compassion and psychological well-being, in a variety of domains such as affect, cognitive patterns and social connections. Although these studies are correlational in nature and rely on self-report measures they may provide initial evidence that interventions that increase self-compassion may contribute to positive changes in these domains.

Several studies have been suggesting that low self-compassion is associated with greater negative affect and less positive affect in the face of real, imagined and remembered events (Leary et al., 2007; Neff, Kirkpatrick, & Rude, 2007; Neff & Vonk, 2009). Also,

greater self-compassion has been robustly linked to less anxiety and depression, even when controlling for the effects of self-criticism and negative affect (Neff et al., 2007; Mills, Gilbert, Bellew, McEwan, & Gale, C., 2007; Ying, 2009). However, it is not clear if these associations would be different in individuals with clinical levels of depression and anxiety. Additionally, self-compassion has been found to be negatively associated with rumination, thought suppression and avoidance strategies (Neff & Vonk, 2009; Raes, 2010; Neff et al., 2007; Neff, 2003a; Neff, Hseih, & Dejithirat, 2005). Also, a recent meta-analysis with 14 studies found a large effect size for the association between self-compassion and psychopathology, thus supporting the idea that self-compassion is an important variable in understanding mental health and resilience (MacBeth & Gumbley, 2012)

Besides its buffering effects, self-compassion also seems to promote positive states. Research shows that self-compassion has been associated with feelings of social connectedness and life satisfaction (Neff, 2003a; Neff, Pisitsungkagarn, & Hsieh, 2008), as well as with feelings of autonomy, competence and relatedness (Neff, 2003a). In addition, self-compassionate individuals seem to have more happiness, optimism and curiosity (Neff et al., 2007). Self-compassion has also been associated with adaptive emotional regulation, evidenced by findings that self-compassionate individuals show more emotional intelligence and emotional coping skills (Neff, 2003a; Neff, Rude, & Kirkpatrick, 2007).

Experimental studies, using self-compassion inductions (e.g., Adams & Leary, 2007; Leary et al., 2007), confirm the findings of these cross-sectional studies, suggesting that self-compassion can indeed be enhanced and that can contribute to well-being and to less psychological distress.

There is evidence that several psychological interventions may enhance self-compassion. For example, the Compassionate Focused Therapy (CFT) stands from the idea that the cultivation of compassion is central to adaptive emotional regulation, especially when

dealing with patients who struggle with feelings of shame and who exhibit self-critical cognitions. Patients are trained in several skills (e. g, compassionate guided imagery) aimed at cultivating a sense of kindness, warmth and tolerance for self and others. Although research on CFT its still in its early stages, studies have been published reporting its positive effects across different clinical populations (Braheler, Gumbley, Harper, Wallace, Norrie, & Gilbert, 2013; Gale, Gilbert, Read, & Goss, 2012; Gilbert & Procter, 2006; Lucre & Corten, 2013; Mayhew & Gilbert, 2008).

Recently, Neff and Germer (2013) developed a program specifically to enhance self-compassion called Mindful Self-Compassion (MSC). Results from a pilot study and a randomised control trial indicate that the intervention increased self-compassion, mindfulness and well-being, with gains maintained at 6-month and 1-year follow up.

Therapeutic approaches based on mindfulness have also been shown to be an effective way for the development of self-compassion (e.g., Abercrombie, Zamora, & Korn, 2007; Birnie, Speca, & Carlson, 2010; Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Brown, & Biegel, 2007; Tirsh, 2010).

To date, most of the research on self-compassion has been conducted using the Self-compassion Scale (SCS; Neff, 2003a). Confirmatory factor analysis suggested six factors (Kindness, Common Humanity, Mindfulness, Judgment, Isolation and Over-identification). It further showed that a single higher-order self-compassion factor encompasses the six subscale factors, and that the scale has also demonstrated construct validity. The Greek (Mantzios, Wilson, & Giannou, 2013), Chinese (Chen, Yan, & Zhou, 2011) and Turkish (Deniz, Kesici, & Sumer, 2008) versions of the SCS replicated the original six-factor structure, in university student samples.

Although this scale has proved to be a sound and reliable instrument for the assessment of self-compassion and has been used in the majority of research in this field, it

should be noted that it was developed in a sample of undergraduate students and to our knowledge no studies have explored its factor structure and reliability in clinical samples.

This study will be a tentative to surpass this limitation.

This study sets out to explore the dimensionality of the self-compassion construct, in a clinical and in a non-clinical sample from the Portuguese population.

Method

Participants and Procedure

A total of 1444 subjects from both general and clinical population participated in the study. The non-clinical sample ($n = 1128$) was recruited between 2007 and 2008 and included students from the University of Coimbra and University of Aveiro enrolled in several courses ($n = 928$), and a community group recruited in the north and centre regions of Portugal, using non-random methods (convenience sample; $n = 200$).

Students were informed of the study by announcements made at the end of lectures, with previous knowledge and authorisation of the Professor in charge, and subjects from the community sample were recruited in several institutions.

Individuals from the non-clinical sample had a mean age of 24.50 ($SD = 8.03$), and 14.20 ($SD = 4.59$) years of education. Also the majority of the sample were students (68%), female (75%) and single (84%).

Participants from the clinical group were recruited from outpatient Psychiatric services of different public hospitals in Portugal's north and centre regions, and were indicated by the psychologists and psychiatrists in charge. All participants were clinically assessed by a trained therapist using several diagnostic structured interviews, namely: Structured Clinical Interview for DSM-IV Axis I Disorders – SCID I (First, Spitzer, Gibbon, & Williams, 1997); Anxiety Disorders Interview Schedule for DSM-IV – ADIS-IV (DiNardo, Brown, & Barlow, 1994); Structured Clinical Interview for DSM-IV Axis II

Personality Disorders – SCID-II (First, Gibbon, Spitzer, Williams, & Benjamin, 1997); and Borderline Personality Disorder Severity Index – BPDSI-IV (Arntz et al., 2003). Data were collected between 2007 and 2010 and in total 316 patients with Axis I and II disorders participated in the study. The study was approved by an institutional board.

The individuals from the clinical sample had a mean age of 28.69 ($SD = 8.74$), and 13.95 ($SD = 3.38$) years of education. Also, 40% of the sample were students and, from the remaining, 24% belonged to the medium socio-economic level; 80% were female and 72% were single.

The original version of the SCS was translated independently to Portuguese by a specialist in the area of study with a high-quality use of English and Portuguese. Retroversion of the items was conducted by a bilingual translator, and translated and back-translated versions of the SCS were compared.

The questionnaires were preceded by a page informing the subjects about the study aims, importance of their participation and confidentiality. This page also contained several socio-demographic questions. In line with the ethical requirements, it was emphasized that participants' cooperation was voluntary and that their answers were confidential and would only be used for the purpose of this study. Then, the self-report questionnaires were filled in by the volunteers in the presence of the researcher taking, on average, forty minutes in the non-clinical sample. All participants provided their written informed consent.

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

Measures.

Self-Compassion.

Self-Compassion Scale (SCS; Neff, 2003b; Portuguese version/preliminary studies by Castilho & Pinto-Gouveia, 2011). The SCS 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 rate on a 5-point Likert scale from *almost never* to *almost always*. Research indicates that the SCS demonstrates concurrent validity, convergent validity, discriminate validity and test–retest reliability (Neff, 2003a; Neff, Kirkpatrick, et al., 2007). In past research the SCS has demonstrated good internal consistency (Cronbach’s $\alpha = .92$). In this study, Cronbach’s alpha for the total scale was .94 in the non-clinical sample and .92 in the clinical sample, and ranges between .70 and .88 for the subscales.

External Shame.

Other as Shamer Scale (OAS; Allan, Gilbert, & Goss, 1994; Goss, Gilbert, & Allan, 1994; Portuguese version by Matos, Pinto-Gouveia, & Duarte, 2012). This self-report questionnaire was devised to measure external shame (Allan et al., 1994; Goss et al., 1994). Participants are asked to rate the 18 items on a 5-point Likert scale according to the frequency in which they make certain evaluations about how others judge them (0 = ‘never’ to 4 = ‘almost always’). Items include “feel other people look down on me”, “other people see me as somehow defective as a person” and “other people always remember my mistakes”. Higher scores on this scale reveal high external shame. In the original study the scale showed good reliability with a Cronbach’s alpha of .92 (Goss et al., 1994).

Social Comparison.

Social Comparison Scale (SCS; Allan & Gilbert, 1995). This scale was developed to measure self-perceptions of social rank and relative social standing. This scale uses a semantic differential methodology and consists of 11 bipolar constructs. Participants are required to make a global comparison of themselves in relation to other people and to rate themselves along a ten-point scale. The 11-items cover judgements concerned with rank, attractiveness and how well the person thinks they ‘fit in’ with others in society. Low scores point to feelings of inferiority and general low rank self-perceptions. The scale has been found to have good reliability, with Cronbach’s alphas of .88 and .96 with clinical populations and .91 and .90 with student populations (Allan & Gilbert, 1995, 1997).

General Health.

General Health Questionnaire (GHQ-28; Goldberg & Hillier, 1979; Portuguese version by Pais-Ribeiro & Antunes, 2003). The General Health Questionnaire-28 is a self-report instrument designed for detection and assessment of 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-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 score on the ranging from 0 to 84, higher scores corresponding to poorer mental health status. The GHQ has been translated into about 38 languages, and over 50 validity studies have been published. The psychometric properties of the questionnaire are well studied in several countries and clinical populations (e.g., Pais-Ribeiro & Antunes, 2003; Werneke, Goldberg, Yalcin, &

Ustun, 2000). Pais-Ribeiro and Antunes (2003) did a preliminary study to identify the psychometric properties of this Portuguese version of the 28 item General Health Questionnaire using two groups of participants: one group ($n = 30$) without disease and one group ($n = 30$) of inpatients with infectious diseases. Results show that the Portuguese version shares the same psychometric properties of the original version, and that it seems adequate to be used in research.

Analytical procedure.

A Confirmatory Factor Analysis (CFA) was conducted to test whether the factor solution of the SCS proposed by Neff (2003b) demonstrated a good fit to the Portuguese population. Under the principles of Structural Equation Modelling, the six-factor model was assessed using the following goodness-of-fit statistics: normed chi-square statistic (χ^2), comparative fit index (CFI), Tucker and Lewis index (TLI) and root mean square error of approximation (RMSEA). A good fit is obtained when the Normed χ^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 assumption of normality of the items and the existence of outliers was assessed.

When conducting a CFA, one should never be governed by the fit indices of the model alone. There are other factor to consider such as the factor loadings and the discriminant validity. Thus, we analysed items' factor loadings (λ) 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 $\lambda \geq .50$. Convergent validity was assessed by calculating the

Average Variance Extracted (AVE) and composite reliability (CR) of each latent construct. Discriminant validity was assessed by comparing the value of the AVE and the square multiple correlation between constructs. To assume that all variables are orthogonal of one another, the value of AVE should be greater than the square multiple correlation between the respective variables (Hair et al., 2006). The refinement of the models was based on Modification Indexes (greater than 11; $p < .001$) and theoretical assumptions.

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 the assumption of normality of several variables was not assumed. Pearson product-moment correlation coefficient was used to assess the test-retest reliability of the measure, and the convergent validity of the SCS with other measures (OAS, SCS and GHQ-28).

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

Descriptive Statistics

Descriptive statistics for both samples are presented in Table 1. As expected, individuals from the general population showed higher mean values in Self-compassion Total, Self-kindness, Mindfulness and Common Humanity, and lower values in Self-judgment, Isolation and Overidentification, when compared to the clinical sample.

[Insert Table 1]

Confirmatory Factor Analyses in a Nonclinical Sample

Six-factor model of the SCS (Model 1).

Goodness-of-fit indices indicated an overall satisfactory fit of the model to the data, $\chi^2/df = 7.047, p < .001$; TLI = .887; CFI = .899; RMSEA = .073; $p < .001$.

The respecified model, with two pair of correlated residuals (items 15-16 and 25-26) showed a good fit to the data, $\chi^2/df = 5.906, p < .001$; TLI = .909; CFI = .919; RMSEA = .066; $p < .001$.

The respecified Model 1 presented lower values for AIC (2217.582 < 1878.993) and ECVI (1.968 < 1.667), although the chi-square difference was not statistically significant, $\chi^2_{diff} = 342.59, df_{diff} = 2, p < .001$.

Overall, we can conclude that the model proposed has a good fit to the data.

Second-order model of SCS (Model 2).

Goodness-of-fit indices indicated an overall satisfactory fit of the model to the data, $\chi^2/df = 10.936, p < .001$; TLI = .815; CFI = .830; RMSEA = .094; $p < .001$.

The respecified model, with five pair of correlated residuals (Mindfulness-Kindness, Mindfulness-Common Humanity and Kindness-Common Humanity, items 15-16 and items 25-26) showed a good fit to the data, $\chi^2/df = 5.980, p < .001$; TLI = .907; CFI = .916; RMSEA = .066; $p < .001$.

The respecified Model 2 presented lower values for AIC (3425.715 > 1924.100) and ECVI (3.040 > 1.707) and was statistically superior to the original Model 2, $\chi^2_{diff} = 1511.615, df_{diff} = 5, p < .001$.

Construct validity.

The composite reliability (CR) of each subscale exceeds .70 (Hair et al., 1998), satisfying the minimal acceptable value ($SC_{self-kind} = .92$; $SC_{c.humanity} = .85$; $SC_{mindfulness} = .85$; $SC_{self-judge} = .93$; $SC_{isolation} = .89$; $SC_{overidentification} = .88$). Items' standardized loadings (λ) ranged from .56 to .83, which is clearly above the cut-point of .40 (Tabachnick & Fidell, 2007). In addition, the coefficients of determination (R^2) ranged between .31 and .69, thus

showing acceptable values ($> .25$). The six first-order factors' standardized loadings on the second-order factor were .56 for self-kindness ($R^2 = .31$), .52 for Mindfulness ($R^2 = .27$), .42 for Common Humanity ($R^2 = .18$), -.95 for self-judgment ($R^2 = .90$), -.94 for Isolation ($R^2 = .88$), and -1.00 for over-identification ($R^2 = 1.00$).

The convergent validity analysed through the average variance extracted (AVE) was also very good ($> .05$; Hair et al., 1998) for all the subscales, indicating that the latent factors are well explained by its observable variables: $AVE_{\text{self-kind}} = .70$; $AVE_{\text{c.humanity}} = .60$; $AVE_{\text{mindfulness}} = .59$; $AVE_{\text{self-judge}} = .73$; $AVE_{\text{isolation}} = .67$; and $AVE_{\text{overidentification}} = .66$.

Regarding discriminant validity, the results indicate that the factors of the positive pole (self-kindness, mindfulness and common humanity) of the SCS are clearly distinguished from the factors of the negative pole (self-judgment, over-identification and isolation). However, the factors of the positive pole were not orthogonal of one another, and neither were the factors of the negative pole (see Table 2 for squared correlations between the factors).

[Insert Table 2]

Confirmatory Factor Analyses in a Clinical Sample

Six-factor model of the SCS (Model 3).

Goodness-of-fit indices indicated an overall satisfactory fit of the model to the data, $\chi^2/df = 2.661$, $p < .001$; TLI = .860; CFI = .875; RMSEA = .073; $p < .001$.

The respecified model, with three pair of correlated residuals (items 15-16, 19-20 and 25-26) showed an adequate fit to the data, $\chi^2/df = 2.373$, $p < .001$; TLI = .884; CFI = .898; RMSEA = .066; $p < .001$.

The respecified Model 3 presented lower values for AIC ($2217.582 < 878.993$) and ECVI ($1.968 < 1.667$), but the chi-square difference was not statistically significant, $\chi^2_{\text{diff}} = 342.59$, $df_{\text{diff}} = 2$, $p < .001$.

Overall, we can conclude that the model proposed has a good fit to the data.

Second-order model of SCS (Model 4).

Goodness-of-fit indices indicated an overall satisfactory fit of the model to the data, $\chi^2/df = 3.456, p < .001$; TLI = .793; CFI = .809; RMSEA = .089; $p < .001$.

The respecified model, with one pair of correlated residuals (Mindfulness-Common Humanity) showed adequate fit to the data, $\chi^2/df = 3.114, p < .001$; TLI = .822; CFI = .837; RMSEA = .082; $p < .001$.

The respecified Model 4 presented lower values for AIC (1189.349 > 1085.839) and ECVI (3.824 > 3.491) and was statistically superior to the original Model 2, $\chi^2_{diff} = 105.51, df_{diff} = 1, p < .001$.

Construct validity.

The composite reliability (CR) of each subscale exceeds .70 (Hair, Anderson, Tatham, & Black, 1998), satisfying the minimal acceptable value ($SC_{self-kind} = .92$; $SC_{c.humanity} = .85$; $SC_{mindfulness} = .85$; $SC_{self-judge} = .93$; $SC_{isolation} = .89$; $SC_{overidentification} = .88$). Items' standardized loadings (λ) ranged from .51 to .81, and the coefficients of determination (R^2) ranged between .26 and .66. The six first-order factors' standardized loadings on the second-order factor were .61 for self-kindness ($R^2 = .37$), .68 for Mindfulness ($R^2 = .46$), .54 for Common Humanity ($R^2 = .29$), -.93 for self-judgment ($R^2 = .86$), -.92 for Isolation ($R^2 = .85$), and -1.00 for over-identification ($R^2 = 1.00$).

The values of the convergent validity were acceptable for all the subscales: $AVE_{self-kind} = .67$; $AVE_{c.humanity} = .59$; $AVE_{mindfulness} = .52$; $AVE_{self-judge} = .60$; $AVE_{isolation} = .53$; and $AVE_{overidentification} = .60$. The results of discriminant validity were similar to those of the non-clinical sample, again suggesting that the factors of the positive pole are distinct from the factors of the negative pole, but not between them (Table 3).

[Insert Table 3]

Reliability Studies

Test-retest reliability.

Test-retest reliability was assessed by computing *Pearson* correlations from the SCS scores of 34 students in two consecutive administrations of the questionnaire within a 4-week interval. Test-retest reliability was acceptable for the total scale ($r = .78$).

Convergent validity.

Convergent validity was assessed by computing *Pearson* correlations between SCS and other self-report measures, namely the Portuguese versions of the *General Health Questionnaire* (GHQ-28), the *Social Comparison Scale* (SCS) and the *Other as Shamer Scale* (OAS). *Pearson* correlations are shown in Table 4. In general, the correlations were as expected in both samples, suggesting that self-compassion is negatively associated with psychopathological symptoms and shame, and associated with positive social comparison, and thus supporting the convergent validity of the measure.

[Insert Table 4]

Differences between the groups in self-compassion

To test the differences between the clinical and non-clinical samples in of self-compassion, Mann-Whitney tests were conducted. Our findings suggested that individuals from the clinical population had higher median scores in self-judgment ($Md = 19.00, n = 316; Md = 14.00, n = 1128$), $U = 102076,50, Z = 11.58, p < .001, r = .34$, isolation ($Md = 15.00; Md = 12.00$), $U = 100307,00, Z = 11.86, p < .001, r = .35$, and over-identification ($Md = 15.00; Md = 12.00$), $U = 102263,50, Z = 11.56, p < .001, r = .34$, and lower median scores in self-kindness ($Md = 10.00; Md = 14.00$), $U = 105818,50, Z = -11.01, p < .001, r = -.33$, mindfulness ($Md = 10.00; Md = 11.00$), $U = 116770,50, Z = -9.36, p < .001, r = -.28$, and common humanity ($Md = 10.00; Md = 12.00$), $U = 125627,50, Z = -7.99, p < .001, r = -.24$

and in the total scale ($Md = 60.00$; $Md = 78.00$), $U = 89212,00$, $Z = -13.55$, $p < .001$, $r = -.40$.

Overall, the effect sizes were medium.

Percentiles

To further analyze the differences between the clinical and non-clinical sample in self-compassion scores, a graphic representation of the percentiles for the six factors was conducted. An inspection of Figures 1 and 2 suggests that in the clinical sample there is greater variability in the scores of the self-compassion factors. Specifically, the three negative factors seem to differ from the positive factors and thus using a total score or a mean of self-compassion can bias the data and give an incomplete picture of the nature of self-compassion, mainly in clinical populations.

[Insert Figure 1]

[Insert Figure 2]

Discussion

The aim of the present study was to explore the factorial structure of the Self-Compassion Scale in two different samples (non-clinical and clinical), from the Portuguese population.

Overall, the Confirmatory Factor Analysis suggested that both the six-factor and the second-order models presented a good fit to the data, in both samples. Goodness-of-fit values were lower for the clinical sample, which can be explained by the sample size (Tabachnick & Fidell, 2007). However, one shouldn't be governed by fit indexes alone, and other factors should be taken into account. Thus, despite the lower goodness-of-fit indexes, composite reliability and factorial validity were well demonstrated. These results indicate that when using the scale, one can look at the six individual components or use a total score of the SCS. This is in line with Neff's conceptualization, in which self-compassion entails extending kindness and understanding to oneself rather than harsh self-criticism and judgment; seeing one's experiences as part of the larger human experience rather than as separating and isolating; and holding one's painful thoughts and feelings in balance awareness rather than over-identifying with them (Neff, 2003a, b). Regarding discriminant validity, results indicated that the factors of the positive pole (self-kindness, mindfulness and common humanity) of the SCS are clearly distinguished from the factors of the negative pole (self-judgment, over-identification and isolation), but the factors of the positive pole were not orthogonal of one another, and neither were the factors of the negative pole. Other studies have found similar results, in which the original factor structure was replicated (e. g., Deniz et al., 2008; Mantzios et al., 2013). However, in a recent study the 6-factor hierarchical structure was not endorsed in any of the three samples used (a convenience sample, a sample that practices meditation, and a sample of patients with recurrent depression; Williams, Dalgleish, & Kuyken, 2014).

Several reliability studies were performed to explore the psychometric properties of the scale. Results showed good internal consistency for the six subscales, and test-retest reliability analysis for a four-week period supported overall stability of the measure in both samples.

The pattern of correlations obtained indicated that the SCS is positively associated with favourable social comparison, suggesting that individuals that have a warm and kind self-to-self relationship, that see one's experiences as part of the human condition, and are more aware and accepting of their painful internal experiences (thoughts and feelings) compare with others in a more favourable way. These results are in accordance with previous findings that showed the importance of self-compassion as an adaptive process especially relevant for the interpersonal sphere (social connectedness; Neff, 2003a, b; Neff et al., 2005). Also, self-compassion was negatively correlated with measures assessing psychopathological symptoms, in particular depression and external shame. These results are in line with the literature and previous findings, in which self-compassion was negatively associated with other psychopathological facets (see MacBeth & Gumbley, 2012 for a review of the association between self-compassion and psychopathology).

The results obtained from the comparison between clinical and non-clinical samples further support these findings. In particular, we found that individuals with several psychiatric diagnosis presented significantly lower levels of self-compassion (self-kindness, mindfulness and common humanity) as well as higher levels of self-judgment, over-identification and isolation.

In short, this study showed that one can use either a self-compassion total score of the six factors separately. However, the analysis of the percentiles indicates that the total score should be used with caution in clinical populations, and that an analysis of the six

components separately may provide more detailed information regarding the phenomenology of self-compassion, which can then be useful for research and clinical purposes.

This study has several strengths. First, this is the only study to our knowledge that explored the factor structure and psychometric properties of the SCS in a large clinical sample. This has important implications. In fact, given that this study and others showed that individuals with psychopathology lack the ability to be self-compassionate and this can be a maintenance factor of their difficulties and impact on the treatment efficacy and relapse (Gilbert & Procter, 2006; Gilbert & Irons, 2005; Rector et al., 2000), it is important for the clinical to have a validated instrument to assess this construct. This can then inform the clinician regarding the therapeutic intervention, by targeting the development of specific self-compassion skills (e.g., kindness, mindfulness and recognition of common humanity). Also, we highlight the robust statistical strategy (namely the use of composite reliability as an alternative to the Cronbach's alpha, factor loadings, AVE and discriminant validity) which is not common in studies reporting CFA, and that allow the researchers to have greater confidence in the results.

Our results should be interpreted in light of some limitations. Specifically, the sample was mainly female, highly educated, in young adulthood, and with a high percentage of college students in particular in the non-clinical sample. Thus, future studies should use more homogeneous samples regarding the socio-demographic characteristics, and include other developmental stages (e.g., adolescents and elderly).

In sum, given the good psychometric properties of the Self-Compassion Scale, its use is encouraged and recommended for the assessment of self-compassion and its components in clinical and research settings.

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