**Original paper**

# The Portuguese version of the Difficulties in Emotion Regulation Scale and its relationship with psychopathological symptoms

## Versão portuguesa da Escala de Dificuldades de Regulação Emocional e sua relação com sintomas psicopatológicos

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**Received:** 6/23/2009 – **Accepted:** 9/25/2009

## Abstract

**Background**: Emotion dysregulation is a unifier dimension of several psychopathological symptoms thus an instrument that measures it is needed. **Objectives**: To adapt to Portuguese the Difficulties in Emotion Regulation Scale and study its psychometric qualities. A second goal was to explore the association between DERS dimensions and specific types of psychopathology symptoms. **Method**: The original measure was translated to Portuguese and completed by a sample of 324 individuals who also completed the Brief Symptom Inventory. **Results**: The results show a very similar factor structure to the original measure: good test-retest stability, very good internal consistency (Cronbach's α = ,93) and good external validity with BSI. The analysis performed with the subset of 115 individuals that composed the clinical sample showed that psychopathologic individuals present more difficulties in emotion regulation than normal individuals. Through the correlation analysis between the different DERS and BSI subscales, we found that the Strategies and Goals subscales present the highest level of association with all the psychopathological symptoms. **Discussion**: This may suggest that these two dimensions are present in various psychological disorders and could, therefore, be included in psychological interventions focused on emotion regulation skills.

*Coutinho J, et al. / Rev Psiq Clín. 2010;37(4):145-51*

**Keywords:** Emotion dysregulation, psychological assessment, psychopathological symptoms, instrumental study.

## Resumo

**Contexto:** As dificuldades de regulação emocional estão presentes em vários quadros psicopatológicos, sendo necessário o recurso a um instrumento que as possa medir adequadamente. **Objectivos**: Fazer a adaptação para o português da Escala de Dificuldades de Regulação Emocional e analisar as suas qualidades psicométricas. Um segundo objectivo do estudo era o de explorar a associação entre as dimensões da DERS e sintomas psicopatológicos específicos. **Método:** A escala original foi traduzida para o português e preenchida por uma amostra de 324 sujeitos que também preencheram o Inventário Breve de Sintomas. **Resultados**: Os resultados revelam uma estrutura factorial muito semelhante à da versão original, bons valores de estabilidade temporal, de consistência interna (Cronbach's α = ,93) e bons níveis de validade externa com o BSI. A análise realizada com o subgrupo de 115 sujeitos que compuseram a amostra clínica revelou que os indivíduos com psicopatologia apresentam mais dificuldades de regulação emocional do que os indivíduos normais. Por meio da análise de correlação entre as diferentes subescalas da DERS e do BSI, verificamos que as subescalas Estratégias e Objectivos apresentam o valor mais elevado de associação com todos os sintomas psicopatológicos. **Discussão:** Esses resultados sugerem que essas duas dimensões são transversais às várias perturbações psicopatológicas e poderiam, por isso, ser incluídas em intervenções psicológicas focadas na capacidade de regulação emocional.

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**Palavras-chave:** Desregulação emocional, avaliação psicológica, sintomas psicopatológicos, estudo instrumental.

## Introduction

Psychology has studied the concept of emotional regulation during the last three decades. According to Gross[1], emotion regulation refers to "*… the processes by which individuals influence the emotions they have, when they have them, and how they experience and express these emotions*" (p. 275).

Traditionally this topic has been studied in the field of developmental psychology, but more recently the focus of its study has extended to the psychopathology and psychotherapy research. This must be a consequence of the deficit in emotion regulation capacity being related to the development of several psychological disorders[2,3]. High levels of negative emotions are highly associated with different kinds of psychopathology, thus they constitute an unspecific susceptibility factor[4].

Considering the growing attention on emotion regulation as a unifier dimension of the several symptoms and maladaptive behaviors[2], Gratz and Roemer[5] developed the *Difficulties in Emotion Regulation Scale* (DERS) in 2004.

In this paper we explore the psychometric properties of the Portuguese version of the scale and the aforementioned relationship between the deficits in emotion regulation and psychopathological symptoms.

We will first describe the authors' theoretical conceptualization of the emotion regulation, then the instrument and, lastly, review some empirical literature that supports the relationship between emotion dysregulation and different kinds of psychological disorders.

The DERS aims to evaluate clinically significant difficulties in emotion regulation. It is important to note that Gratz and Roemer[5] parted from a perspective that assumes the functional nature of emotions[5]. As Esperidião-Antonio *et al.*[6] point through an updated account of the neurobiological aspects of emotions, decision making processes of different complexity are directly dependent on the emo-

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tional association made by the individual when he/she experiences daily-life situations.

According to this perspective of the functional role of emotions, emotion regulation and emotion control are not equivalent, and the awareness and understanding of emotions are seen as very important regulatory strategies[7]. Different authors stress the importance of the ability to accept and value emotional reactions[8,9], being that the opposite tendency, to avoid distressful internal experiences, may originate several psychopathological symptoms[10].

Another important aspect stressed by Gratz and Roemer[5] has to do with the need to consider the individual's goals when evaluating emotion regulation[10-12], as well as the intensity and duration of the emotional experience. This conceptualization stresses the capacity of adjusting the intensity and duration of the emotion, instead of eliminating the emotion itself. It also stresses the capacity of inhibiting impulsive behaviors and acting according to one's goals when experiencing negative emotions[9,13].

Therefore, Gratz and Roemer[5] propose a multidimensional conceptualization of emotion regulation involving: (a) the awareness and understanding of emotions, (b) the acceptance of emotions, (c) the ability to control impulsive behaviors and behave according to desired goals when experiencing negative emotions, and (d) the ability to use emotion regulation appropriately by implementing strategies that modulate emotional responses in a flexible manner, in order to meet individual goals whilst considering situational demands. The relative absence of any or all of these abilities would indicate the presence of difficulties in emotion regulation, or emotion dysregulation[6]. These dimensions correspond to the DERS's subscales.

The first study of the original version of the instrument[6], made with a sample of 357 college students, suggested that DERS has a good level of internal consistency for the total score (α Cronbach = .93), good internal consistency for all the subscales (α Cronbach > .80) and a good test-retest reliability for a period of 4-8 weeks ($\rho_I$ = .88, P < .01 for the total score, $\rho_I$S > .57, PS > .01 for the subscales). The instrument has also revealed an adequate concurrent validity with measures of emotion dysregulation and emotional avoidance, and a good predictive validity of behaviors associated with emotion dysregulation such as self-harm behaviors and marital violence.

After its publication, other studies have used the DERS, thus contributing to its validation. Gratz *et al.*[14] used the instrument for the evaluation of individuals with Borderline Personality Disorder. Salters-Pedneault *et al.*[15] used the DERS in a sample of individuals with Generalized Anxiety Disorder and were able to confirm the good psychometric properties of the scale.

The aforementioned relationship between psychopathology and emotion dysregulation, that justified our need to use this scale with our clinical samples in Portugal, is well documented.

According to Mennin *et al.*[16] individuals with Generalized Anxiety Disorder show lower emotional understanding and acceptance, higher negative emotional reaction and lower capacity to regulate negative emotional experiences. The same authors argue that social phobia is associated with lower expressivity of positive emotions, lower capacity to attend to emotions and higher difficulty in describing them.

Baker *et al.*[17] concluded that individuals with panic disorder had more difficulty in naming emotions and a greater tendency to trying to control anxiety and other negative emotions. The central role of emotion regulation in the definition of several diagnostic classifications is also evident in post-traumatic stress disorder[15].

The association between emotion regulation deficits and depression has also been supported by several studies[18,19].

As the previous studies show, emotion dysregulation seems to be a general dimension to all psychopathological manifestations but, there is also some support to the hypothesis that certain deficits in emotion regulation might be more related to certain symptoms rather than others. Therefore, the second purpose of this paper is to examine the relationship between difficulties in emotional regulation assessed by the DERS and psychological symptoms ranging from anxiety to psychoticism assessed by the Brief Symptom Inventory (BSI).

## Method

### Participants

Questionnaires were distributed to 343 adults from the general population but 19 were excluded from the analysis due to missing data on one or both measures (DERS and BSI). The final sample of 324 participants ranged in age from 17 to 68 years old with a mean age of 28 (SD = 10,2) years. Sixty-one percent (n = 199) were female. Sixty-seven percent (n = 217) were single, 28% were married or living together (n = 89) and 2% (n = 6) were divorced. The educational level ranged from primary school (3,1%), basic secondary education (19,4%), higher secondary education (12th grade) (66,6%) to higher university education (10,2%). The majority of the individuals, 94% (n = 305), were Portuguese and all the elements of the sample spoke fluent Portuguese.

We formed the clinical sample by dividing the initial sample in two groups: the individuals with a positive symptom index (PSI) higher than 1,7 made up the clinical sample and those with a PSI score equal or inferior to 1,7, the non-clinical sample. From the 324 participants, 115 met the PSI ≥ 1,7 criterion and integrated the clinical sample. The vast majority, 96,5%, of these individuals were Portuguese, 78% were female, 73,9% were single, 22,6% were married or living together and 2,6% were divorced.

### Measures

Socio-demographic questionnaire: this short questionnaire that we created allowed us to describe the sample in a similar way to that of the original study. It included elements such as age, gender, nationality, educational level and marital status.

The Brief Symptom Inventory (BSI)[20]: this is a self-report measure developed to assess general psychiatric symptomatology. It contains 53 items rated on a 5-point scale of distress from 0 (*not at all*) to 4 (*extremely*). This instrument assesses nine primary symptom dimensions: depression, somatization, hostility, interpersonal sensitivity, anxiety, paranoid ideation, obsession-compulsion, phobic anxiety and psychoticism and three global indices of distress. Hayes[21] reported internal consistency estimates ranging from .70 (Phobic Anxiety) to .89 (Depression), as well as evidence of convergent validity through moderate to high correlations between subscale scores and scores from theoretically similar items on a problem checklist. This instrument was adapted in Portugal by Canavarro[22], showing good psychometric properties: the majority of the subscales have internal consistency values higher than .70, only the phobic anxiety and psychoticism subscales had a Cronbach's alpha of .62; the test-retest reliability ranged from .65 (Hostility) to .80 (Depression) and the instrument was able to discriminate between clinical and non-clinical samples, showing a good capacity of classifying the individuals in the two groups. In the present study the Cronbach's alpha reliability ranged from .75 (Psychoticism) to .88 (Depression).

The Difficulties in Emotion Regulation Scale (DERS)[5] assesses the individuals' typical levels of emotion dysregulation across six domains: non-acceptance of negative emotions, inability to engage in goal-directed behaviors when experiencing negative emotions, difficulties controlling impulsive behaviors when experiencing negative emotions, limited access to emotion regulation strategies that are perceived as effective, lack of emotional awareness, and lack of emotional clarity. It contains 36 items rated on a 5-point scale ranging from 1 (almost never applies to me) to 5 (almost always applies to me). The scale has been found to have high internal consistency (alpha = .93), good test-retest reliability (rs = .88) and adequate construct and predictive validity[6].

### Procedure

The procedure started with the translation process of the original scale. The questionnaire was originally translated by a bilingual individual, being entitled in Portuguese "*Escala de Dificuldades na*

*Regulação Emocional* (EDRE)". After this, the retroversion of this first translation to English was made. A discussion between specialists in this area ("*talked reflection*") also took place and, after some changes, the final version was ready. This process of translation was followed by the author of the scale, who gave us her feedback on the retroversion of the first translation.

The sample was collected using a convenience method and the data collection was done in two different phases due to the impossibility of achieving a sufficient number of subjects to perform the analysis during the first data collection. Both data collections occurred in the same year. University students from different universities and courses were asked to answer both questionnaires just before a lesson. Their participation was voluntary. The sample was also collected in the university counseling center where the patients filled in both questionnaires at the beginning of their psychotherapeutic process. Both instruments were used by this mental health service as measures of the client's initial level of functioning and of therapy efficacy. People who filled in the questionnaires were guaranteed anonymity (i.e., a code number was assigned to each questionnaire before the analysis and access to the data was limited to the researchers of the study). Permission to administer the questionnaires was requested to the persons responsible for the contexts in which the data collection occurred.

For test-retest reliability study, a subgroup of subjects who agreed to fill in the second measurement that took place four weeks later, was selected (71 subjects corresponding to 22% of the total sample).

The statistical analysis was performed using the statistical software SPSS (Statistical Package for Social Sciences) version 16.0.

## Results

### Evaluation of the psychometric properties of the Portuguese version of the DERS

#### *Preliminary analysis*

Prior to conducting the factor analysis, the response distributions of all individual items were examined. For all the 36 items, the five categories of response were completed and for the great majority of the items the coefficients of Skewness and Kurtosis ranged in the interval between -1 and +1. For the items whose coefficients did not lay in that interval (items 4, 31 and 32), the values were still satisfactory (never higher than 2). Therefore no items were excluded from the analysis on the basis of their sensibility to the different positions the subject may have towards them.

### Validity

#### *Construct validity*

To assess the construct validity of the scale, i.e. the degree to which we know what the scale measures[23], the responses to the 36 items were subjected to a Factor Analysis using the Principal Axis Factoring method of extraction and *promax* oblique rotation, in order to allow for correlations among factors, as done by the authors of the scale. Before conducting the Factor Analysis we guaranteed that the correlation matrix was adequate for this kind of analysis. As required, the Kaiser-Meyer-Olkin measure of sampling adequacy was .91 (higher than. 60) and the Bartlet's test of Sphericity was significant ($X^2$ = 630,00; p = .000).

The exploratory factor analysis resulted in seven factors with *eigenvalues* > 1, however the authors of the original scale concluded that a factorial structure with six factors is ideal for this instrument, thus the analysis was done upon the extraction of six factors. After the extraction, the six factors explained 58,24% of the total variance. The structure of seven factors explained 61,25% of the total variance (see Table 1).

**Table 1.** Eigenvalues and percentage of variance accounted for by the six factors of DERS Portuguese version (N = 324)

| | Initial Eingenvalue | | Extraction sums of squared loadings | | Rotation sums of squared loadings(a) |
|---|---|---|---|---|---|
| Factor | Total | % Variance | Total | % Variance | Total |
| 1 | 11,072 | 30,755 | 11,072 | 30,755 | 6,568 |
| 2 | 3,497 | 9,713 | 3,497 | 9,713 | 8,582 |
| 3 | 2,194 | 6,095 | 2,194 | 6,095 | 7,705 |
| 4 | 1,581 | 4,391 | 1,581 | 4,391 | 7,102 |
| 5 | 1,418 | 3,938 | 1,418 | 3,938 | 3,351 |
| 6 | 1,205 | 3,347 | 1,205 | 3,347 | 5,309 |

As to the distribution of the items across the subscales, we followed Almeida and Freire's[23] and Pasquali's[24] guidelines, according to which factor loadings of .30 or higher are considered meaningful. None of the items were excluded using this criterion and, the distribution of the items according to the factors of the Portuguese version is very similar to that of the original. Only two items belong to a different subscale in the Portuguese version: item 30 that in the original DERS belongs to subscale 1, in the Portuguese version belongs to subscale 2 and item 23 that in the original DERS belongs to subscale 2, in the Portuguese version belongs to subscale 1. Item 24 has a loading higher than .30 on more than one factor, therefore we decided to include it in the subscale considered more related to the item from a theoretical point of view: difficulties in impulse control. The loading of the item on this factor is -.43 (see Table 2). The Portuguese version of the scale with the items that compose which of the factors is presented on table 3.

### Concurrent validity

The concurrent validity was analyzed by reference to external criteria achieved at the same moment[23]. A bivariate correlation was used to compare the total score of the DERS and the positive symptoms index (PSI) of the BSI. Evidence for the construct validity of this measure of emotion dysregulation would be provided by positive correlations with the measure of psychopathology. The exploratory analysis of the variables showed that the requirement for the use of parametric correlations was not satisfied for the distribution of the PSI values. Therefore, we performed a non-parametric bivariate correlation between the total scores of the DERS and the PSI of the BSI. The Spearman test showed that there is a positive and significant correlation between the DERS total score and the PSI of the BSI ($r_{sp}$ = .58, p < .001). We also found positive and significant correlations between the PSI and all the DERS subscales. Only the awareness subscale presented a positive but non-significant correlation (see Table 4).

### Reliability

#### *Internal consistency*

Cronbach's α was calculated to determine the internal consistency of the items. Results indicate that the DERS has high internal consistency (α = .924, a value close to the one obtained in the original study). All the subscales had high internal consistency (α ≥ .75 for each subscale). See table 5 for additional information on the internal consistency of the Portuguese version.

### Test-retest reliability

The subset of 71 participants that completed the second measurement ranged in age from 17 to 57 years old with a mean age of 30 (SD = 11) years. Fifty-eight percent were female; 54% were single,

40% were married or living together and 3% were divorced. This subset is equivalent to the one that completed the first measurement, satisfying the criteria of sample correspondence required for the test-retest reliability estimation. The scale presented excellent values of temporal stability (r = .82, p < .000). At the subscale level, the values of test-retest reliability were also very satisfactory: .81 (Strategies); .70 (Non-acceptance); .67 (Awareness); .75 (Impulse control); .74 (Goals); .74 (Clarity), p < .000.

## Relationship between difficulties in emotion regulation and different types of psychopathological symptoms

A T test for independent samples was performed and the results show that there are significant differences between psychopathologic and normal individuals in terms of difficulties in emotion regulation: t (187) = -9,8 , p < .001, being that individuals with psychopathology present more difficulties in emotion regulation, manifested in a higher DERS total score (M = 96, SD = 21), than normal individuals (M = 73, SD = 16).

**Table 2.** Factor loadings for the 36 DERS items (N = 324)

| Item | Factor | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| EDRE29 | **.813** | .444 | .397 | .471 | .039 | .198 |
| EDRE11 | **.768** | .312 | .317 | .300 | .068 | .168 |
| EDRE21 | **.766** | .358 | .195 | .363 | .033 | .331 |
| EDRE30 | **.760** | .576 | .433 | .580 | .025 | .260 |
| EDRE12 | **.753** | .263 | .249 | .240 | .064 | .247 |
| EDRE25 | **.743** | .337 | .388 | .410 | .029 | .344 |
| EDRE16 | .440 | **.809** | .586 | .513 | .110 | .414 |
| EDRE31 | .361 | **.784** | .493 | .506 | -.070 | .316 |
| EDRE15 | .366 | **.770** | .548 | .452 | .053 | .561 |
| EDRE28 | .415 | **.730** | .585 | .452 | -.039 | .324 |
| EDRE22 | -.196 | **-.700** | -.333 | -.242 | .331 | -.130 |
| EDRE35 | .409 | **.697** | .529 | .508 | .121 | .357 |
| EDRE36 | .423 | **.675** | .554 | .668 | .180 | .413 |
| EDRE23 | .550 | **.623** | .466 | .442 | .059 | .411 |
| EDRE24 | -.238 | **-.470** | -.369 | -.432 | .363 | -.015 |
| EDRE26 | .399 | .522 | **.885** | .424 | .006 | .320 |
| EDRE18 | .341 | .524 | **.828** | .437 | .064 | .324 |
| EDRE13 | .367 | .509 | **.807** | .471 | .040 | .270 |
| EDRE33 | .305 | .595 | **.731** | .398 | .120 | .352 |
| EDRE20 | -.223 | -.470 | **-.629** | -.299 | .290 | -.240 |
| EDRE19 | .482 | .559 | .476 | **.811** | -.110 | .429 |
| EDRE14 | .444 | .383 | .479 | **.802** | -.189 | .352 |
| EDRE32 | .342 | .492 | .399 | **.771** | -.049 | .318 |
| EDRE27 | .361 | .464 | .615 | **.728** | -.092 | .303 |
| EDRE3 | .226 | .369 | .217 | **.548** | .103 | .234 |
| EDRE6 | .008 | -.064 | -.092 | .009 | **.770** | -.334 |
| EDRE2 | .000 | -.165 | -.153 | -.046 | **.719** | -.391 |
| EDRE8 | -.047 | -.172 | -.284 | -.019 | **.639** | -.478 |
| EDRE10 | -.032 | -.087 | -.011 | -.080 | **.590** | -.074 |
| EDRE34 | .207 | .181 | .179 | .169 | **.588** | .108 |
| EDRE17 | -.035 | -.062 | -.008 | -.149 | **.479** | .048 |
| EDRE5 | .228 | .370 | .325 | .400 | -.120 | **.728** |
| EDRE9 | .355 | .460 | .340 | .357 | -.045 | **.705** |
| EDRE7 | -.196 | -.313 | -.364 | -.180 | .405 | **-.657** |
| EDRE1 | -.224 | -.452 | -.339 | -.120 | .479 | **-.608** |
| EDRE4 | .254 | .146 | .164 | .250 | -.041 | **.592** |

Items loading on each factor are in boldface.

**Table 3.** Items composing the Portuguese version of the DERS´s factors in Portuguese

| Factor | Item |
|---|---|
| 1: Acesso Limitado às Estratégias de Regulação Emocional (ESTRATÉGIAS) | 22) Quando estou em baixo, sei que vou conseguir encontrar uma maneira de me sentir melhor (r) |
| | 16) Quando estou em baixo, penso que vou acabar por me sentir muito deprimido |
| | 15) Quando estou em baixo, penso que vou-me sentir assim por muito tempo |
| | 28) Quando estou em baixo, acho que não há nada que eu possa fazer para me sentir melhor |
| | 31) Quando estou em baixo, acho que a única coisa que eu posso fazer é afundar-me nesse estado |
| | 35) Quando estou em baixo, demoro muito tempo até me sentir melhor |
| | 23) Quando estou em baixo, sinto que sou fraco<br>36) Quando estou em baixo, as minhas emoções parecem avassaladoras |
| 2: Não aceitação das Respostas Emocionais (NÃO ACEITAÇÃO) | 29) Quando estou em baixo, fico irritado comigo próprio por me sentir assim |
| | 25) Quando estou em baixo, sinto-me culpado por me sentir assim |
| | 21) Quando estou em baixo, sinto-me envergonhado de mim próprio por me sentir assim |
| | 12) Quando estou em baixo, fico embaraçado por me sentir assim |
| | 11) Quando estou em baixo, fico zangado comigo próprio por me sentir assim |
| | 30) Quando estou em baixo, começo a sentir-me muito mal comigo próprio |
| 3: Falta de Consciência Emocional (CONSCIÊNCIA) | 6) Estou atento aos meus sentimentos (r) |
| | 2) Presto atenção a como me sinto (r) |
| | 8) Interesso-me com aquilo que estou a sentir (r) |
| | 34) Quando estou em baixo, dedico algum tempo a perceber aquilo que realmente estou a sentir (r) |
| | 10) Quando estou em baixo, apercebo-me das minhas emoções (r) |
| | 17) Quando estou em baixo, acredito que os meus sentimentos são válidos e importantes (r) |
| 4: Dificuldades no Controlo de Impulsos (IMPULSOS) | 14) Quando estou em baixo, fico fora de controlo |
| | 32) Quando estou em baixo, eu perco o controlo dos meus comportamentos |
| | 27) Quando estou em baixo, tenho dificuldade em controlar os meus comportamentos |
| | 19) Quando estou em baixo, sinto-me fora de controlo |
| | 3) Vivo as minhas emoções como avassaladoras e fora do controlo |
| | 24) Quando estou em baixo, sinto que consigo manter o controlo dos meus comportamentos (r) |
| 5: Dificuldades em Agir de Acordo com os Objectivos (OBJECTIVOS) | 26) Quando estou em baixo, tenho dificuldade em concentrar-me |
| | 18) Quando estou em baixo, tenho dificuldade em concentrar-me noutras coisas |
| | 13) Quando estou em baixo, tenho dificuldade em realizar tarefas |
| | 33) Quando estou em baixo, tenho dificuldade em pensar noutra coisa qualquer |
| | 20) Quando estou em baixo, continuo a conseguir fazer as coisas (r) |
| 6: Falta de Clareza Emocional (CLAREZA) | 9) Estou confuso sobre como me sinto |
| | 5) Tenho dificuldade em atribuir um sentido aos meus sentimentos |
| | 7) Sei exactamente como me estou a sentir (r) |
| | 1) Percebo com clareza os meus sentimentos (r) |
| | 4) Não tenho nenhuma ideia de como me sinto |

**Table 4.** Construct Validity: correlations between DERS subscales and PSI (N = 324)

| Subscale | PSI |
|---|---|
| DERS Total | .58*** |
| Factor 1 – STRATEGIES | .59*** |
| Factor 2 – NONACCEPTANCE | .34*** |
| Factor 3 – AWARENESS | .05 |
| Factor 4 – IMPULSE | .45*** |
| Factor 5 – GOALS | .48*** |
| Factor 6 – CLARITY | .48*** |

PSI = BSI's positive symptom index, *** p < .001.

**Table 5.** Internal consistency reliability analyses for DERS subscales (N = 324)

| Subscale | No of items | Cronbach's α | Range of item-total correlations | Range of inter-item correlations | Mean inter-item correlations |
|---|---|---|---|---|---|
| STATEGIES | 8 | .88 | .48 – .75 | .28 – .69 | .49 |
| NONACCEPTANCE | 6 | .86 | .61 – .74 | .42 – .72 | .51 |
| AWARENESS | 6 | .74 | .31 – .66 | .16 – .61 | .33 |
| IMPULSE | 6 | .80 | .38 – .72 | .19 – .72 | .42 |
| GOALS | 5 | .85 | .48 – .77 | .34 – .69 | .53 |
| CLARITY | 5 | .75 | .38 – .58 | .28 – .69 | .49 |

Relationships between difficulties in emotion regulation assessed by DERS subscales and symptoms of depression, anxiety, hostility, somatization and other psychopathological symptoms assessed by the BSI were studied by means of Spearman correlations, because the normal distribution requirement was not satisfied. All the correlations found were statistically significant and in the expected directions, that is, the higher the difficulties in emotion regulation, the higher the severity of symptoms.

As shown in table 6, for anxiety, depression, obsession-compulsion, psychoticism and interpersonal sensitivity, a higher correlation pattern with the Strategies and Goals subscales is present, as well as a positive, but not so high, correlation with the other DERS subscales. Also, phobic anxiety and paranoid ideation show the same pattern. The hostility scale represents an exception to this pattern, being that the highest association is with the difficulties in impulse control subscale (r = .55).

The Somatization subscale does not show an interpretable correlation pattern with the difficulties in emotion regulation, in that it only correlates in a significant way with the goals subscale.

## General discussion

The findings of this study show that the Portuguese version of the DERS has very adequate psychometric properties, which means that the scale is now an instrument available for clinicians and researchers who want to assess the individual's difficulties in emotion regulation. It is however important to note that the version of the scale that was adapted in our study is in Portuguese of Portugal, therefore another adaptation will be necessary so that the scale can be used in Brazil.

The results show a very similar factor structure to the original measure, a very good test-retest reliability (r = .82), a very good internal consistency (Cronbach's α = .93) and a good external validity with BSI.

The only subscale that showed less pleasing psychometric properties was the Awareness subscale. Its correlation with the BSI score is not statistically significant, which might suggest some problems in terms of external validity. Also the test-retest reliability and the internal consistency are inferior when compared to the other subscales, but still satisfactory.

This study may thus represent a good starting point for research in this area, being that the validation of this instrument in clinical populations is fundamental and will fill a gap felt by Portuguese clinicians in terms of emotional regulation assessment.

The statistically significant difference found between clinical and non-clinical individuals in terms of difficulties in emotion regulation (with psychopathological individuals presenting more difficulties in emotion regulation than normal individuals) represents an empirical support to the well accepted idea that these difficulties are in some way related with the emergence of clinical problems[4,5].

Another goal of this study was to shed some light in the way in which this relationship occurs, that is, what specific type of difficulty in emotion regulation is more related to each type of psychopathological symptoms?

When we look at the relationship between the different DERS and BSI subscales, we see that the Strategies subscale significantly correlates with all the psychopathological symptoms. This scale represents difficulties in accessing emotion regulation strategies perceived as effective, that is, a high score in this subscale suggests that the individual believes there is little that can be done to regulate emotions effectively once he is upset. What our results seem to imply is that this difficulty is highly related with the presence of different psychological symptoms.

The Goals subscale also had a significant correlation (though not as high as the Strategies subscale) with all the psychopathological symptoms. This subscale represents difficulties engaging in goal-directed behaviors when experiencing negative emotions.

This may suggest that these two dimensions are present in various psychological disorders and could therefore be included in psychological interventions focused on emotion regulation skills.

**Table 6.** Correlations among DERS subscales and BSI subscales (N = 115)

| | | DERS Strategies | DERS Non-acceptance | DERS Impulses | DERS Goals | DERS Clarity | DERS Awareness |
|---|---|---|---|---|---|---|---|
| Spearman's rho | Anxiety | .47*** | .24*** | .27*** | .44*** | .23** | ns |
| | hobic anxiety | .42*** | .31*** | ns | .33*** | .32*** | ns |
| | Depression | .58*** | ns | .28*** | .38*** | .27*** | ns |
| | Hostility | .34*** | ns | .55*** | .33*** | .35*** | .20** |
| | Paranoid ideation | .33*** | .24** | ns | .24** | ns | ns |
| | Obsessive-compulsive | .35*** | .28*** | ns | .43*** | .31*** | .22** |
| | Psychoticism | .53*** | .26*** | .27*** | .35*** | .32*** | ns |
| | Interpersonal sensitivity | .47*** | .33*** | .32*** | .40*** | .30*** | ns |
| | Somatization | .22** | ns | .19** | .25** | ns | ns |

*** Correlation is significant at the .001 level; ns: non significant at the .10 level.
** Correlation is significant at the .01 level.

A previous study by Garnefski and Kraaij[25] found a strong cross-sectional relationship between symptoms of depression and anxiety, assessed by the BSI, and cognitive emotion regulation strategies such as rumination, catastrophizing, self blame and positive reappraisal (inversely), assessed by the Cognitive Emotion Regulation Questionnaire. We may notice some resemblance between these cognitive emotion regulation strategies and the DERS Strategies and Goals subscales, when we observe the content of the items of the two DERS subscales. The strategies subscale includes items such as: *When I'm upset, I start to feel very bad about myself; When I'm upset, I believe that I'll end up feeling very depressed;* And the goals subscale includes items such as*; When I'm upset, I have difficulty getting work done; When I'm upset, I have difficulty thinking about anything else*. As we may notice, the way Gratz and Roemer[5] operationalized both difficulties includes the ideas of rumination, catastrophizing, and self-blame, referred by Garnefski and Kraaij[25].

Therefore, our findings support those obtained by Garnefski and Kraaij[25], suggesting that the individual's belief that there is nothing s/he can do to regulate his/her negative emotions, and consequently the difficulty to engage in goal directed behaviors, is associated with diverse psychopathological symptoms. Garnefski and Kraaij[25] had only examined the BSI depression and anxiety scales, which leads us to hypothesize that if they had studied the relationship with the other clinical symptoms, they would have found that those cognitive emotion regulation strategies are related with other symptoms, as we did.

There is already some evidence suggesting that the effectiveness of psychological interventions can be promoted by addressing the general emotion-regulation deficits that are involved in the development and maintenance of mental health problems[26-28]. Our findings suggest that limited access to emotion regulation strategies and the difficulties engaging in goal-directed behavior should be given more attention during psychological interventions focused on emotion regulation deficits.

Other authors[29,30] have already stressed the importance, for the individual's mental health, of being able to actively modify negative emotions in order to feel better.

In contrast, the awareness subscale does not correlate with the BSI subscales. The correlation is only slightly significant with the hostility and obsession-compulsion subscales. Again this may suggest this is a less central dimension to the presence of psychopathology. Another possible explanation may have to do with the less strong psychometric characteristics of the subscale.

As previously stated, the majority of the BSI scales seem to be highly and positively correlated with the Strategies and Goals subscales but there appears to be a lower, although still positive, correlation with the other DERS subscales. In contrast, the Hostility scale presents a distinct pattern, with the highest association being that with the Impulse Scale. It is not surprising that the difficulties in impulse control are highly correlated to symptoms that involve acting out, such as hostility.

Finally, the somatization scale did not correlate significantly with any of the DERS subscales, except for the Goals. We think this might be explained by these individuals general difficulty in accessing mental states, that is, a self report measure that asks the subject to think about his/hers cognitions and feelings when s/he feels upset might be too challenging for him/her, which may explain the non-interpretable correlation pattern we found.

The fact that the DERS is able to explore the role of different dimensions of emotion dysregulation in clinical problems may be helpful in the task of defining specific emotional regulation intervention goals for different clinical symptoms. This instrument can be used by clinicians in individual or group therapeutic settings as a means of emotional regulation diagnosis. By specifying the kind of emotional regulation ability in which the patient has more difficulty, this instrument may help the therapist to guide the therapeutic work so that it focus in those subscales the patient had a higher score. Is it the case that the patient is not aware of his/her emotions, or he does not accept them or he/she has limited access to emotional regulation strategies?

Also giving the patient the feedback on the scale results may work as a way of re-framing the symptoms he/she presents, and as a way of defining therapeutic tasks and goals focused on the emotional regulation improvement.

This study has some limitations such as the exclusive reliance on self-report measures of emotion regulation, which limits the participant's description of attitudes and behaviors he or she is aware of, being that much emotion regulation operations such as attention flexibility may occur at a non-conscious level[31,32]. Besides, all the self-report methods are vulnerable to social desirability effects.

The present study validated the DERS to a Portuguese sample but was not able to validate the instrument to the clinical population. Although our sample included individuals with psychopathological symptoms and non-clinical individuals, the N of the clinical sample (115) was not sufficient to validate the instrument.

Further research with additional measures of emotional regulation difficulties and psychological symptoms would provide additional validation of our findings.

This research was supported by the Portuguese Foundation for Science and Technology (BD 27654/2006).

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