




Portuguese validation of the Cognitive Emotion Regulation Questionnaire short version in youth: Validity, reliability and invariance across gender and age

Anabela C. Santos ^{a,b,c}, Celeste Simões ^{a,b}, João R. Daniel ^d
and Patrícia Arriaga ^c

^aAventura Social and DECSH, Faculdade de Motricidade Humana, Universidade de Lisboa, Lisboa, Portugal; ^bFaculdade de Medicina, Instituto de Saúde Ambiental (ISAMB), Universidade de Lisboa, Lisboa, Portugal; ^cISCTE – Instituto Universitário de Lisboa (IUL), CIS-ISCTE-IUL, Lisboa, Portugal; ^dWilliam James Center for Research, ISPA – Instituto Universitário, Lisbon, Portugal

ABSTRACT

The Cognitive Emotion Regulation Questionnaire (CERQ) is a multidimensional measure widely used to assess nine cognitive emotion regulation strategies. In this study, we examined the psychometric properties of the CERQ-Short Portuguese version. A sample of 1052 adolescents (aged 10–25 years old, 60.53% females) completed the CERQ-Short form, the Positive and Negative Affect Schedule, the Generalized Anxiety Disorder Scale, and the Patient Health Questionnaire. Confirmatory factor analyses showed that the nine latent dimensions of CERQ-Short provided an acceptable fit to the data. Measurement invariance (for gender and three age-groups), reliability and construct validity were adequate. The adaptive strategies were positively associated with higher positive affect, and maladaptive strategies with higher negative affect, symptoms of generalized anxiety and depression. These results suggest that CERQ-Short is a valid and reliable measure for Portuguese-speaking samples. Moreover, CERQ-Short's length makes it a cost-effective tool for both clinicians and researchers.

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Introduction

Emotion regulation is a dynamic and multifaceted process through which people manage their experiences and emotions (Gross, 2015). Children develop more efficient and flexible cognitive processes as they become

CONTACT Anabela C. Santos  anabelasantos@campus.ul.pt  Faculdade de Motricidade Humana, Lisbon University, Estrada da Costa, Cruz Quebrada – Dafundo 1495-688, Lisboa, Portugal
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young adults. As emotion-eliciting events are better decoded, there is an increase in regulatory strategies (Sanchis-Sanchis et al., 2020). Throughout childhood and adolescence, individuals become better at regulating their emotions independently, contrary to infants and younger children who rely more on their significant adults to regulate emotions.

The Cognitive Emotion Regulation Questionnaire (CERQ) measures self-regulatory cognitive emotion regulation strategies (ERSs) in response to stressful life events (Garnefski et al., 2001). The CERQ evaluates cognitive processes after the experience of negative or stressful situations to comprehend how these processes affect the course of emotional development (Garnefski et al., 2001). The CERQ has 36 items, with four items per each of the nine ERSs dimensions: *Acceptance*, *Positive Refocusing*, *Refocusing on Planning*, *Positive Reappraisal*, *Putting into Perspective*, *Catastrophizing*, *Rumination*, *Self-blame*, and *Other-blame* (Garnefski et al., 2001). The CERQ authors also provide an 18-item short version, with two items per dimension, allowing faster screening and its inclusion in larger assessment protocols (Garnefski & Kraaij, 2006).

The CERQ is a commonly employed emotion regulation measure. Originally in Dutch, the CERQ-Short has been validated in other languages (Cakmak & Cevik, 2010; Ireland et al., 2017; Orgilés et al., 2019), with studies reporting adequate psychometric properties for this short version. While the CERQ-36 has been validated in Portuguese (Martins et al., 2016; Moreira et al., 2020), CERQ-Short has not. The goal of this study is to validate the CERQ-Short version in a young Portuguese population.

Research has shown gender and age differences in CERQ dimensions. Although measurement invariance testing is scarce, some evidence shows adequate invariance for both age (Moreira et al., 2020) and gender (Chamizo-Nieto et al., 2020). To the best of our knowledge, measurement invariance was only tested in the CERQ36. Consequently, we will also investigate whether invariance holds across age and gender in the CERQ-Short.

Although the adaptability of ERSs is context-related, extensive research indicates ERSs can be maladaptive given certain mental health disorders (Schäfer et al., 2017). Thus, the first five ERSs are considered adaptative strategies associated with positive affect (Ireland et al., 2017), emotional intelligence and gratitude (Chamizo-Nieto et al., 2020), whereas the latter four are considered maladaptive and associated with high levels of depression and anxiety (Chamizo-Nieto et al., 2020; Garnefski & Kraaij, 2018; Martins et al., 2016).

Based on previous findings, we hypothesize that the nine-factor structure will have the best fit to our sample and subsamples (gender, age). Also, we hypothesize that the CERQ-Short adaptative strategies (Acceptance, Refocus on Planning, Positive Refocusing, Positive Reappraisal, Putting into Perspective) will negatively correlate with generalized anxiety symptoms (GAS), depressive symptoms, and negative affect while positively correlating with positive affect. In contrast, we expect the maladaptive strategies (Rumination, Catastrophizing, Self-blame and Other-blame) to correlate positively with GAS, depressive symptoms, and negative affect, while correlating negatively with positive affect.

Method

Participants

The collected sample comprised 1264 participants, though 212 participants had to be removed due to: i) total nonresponse, participants who opened the survey but failed to respond ($n = 35$), ii) participants that failed attention or seriousness check ($n = 37$), iii) missing values above 50% in each scale (Hair et al., 2014) ($n = 59$), iv) other nationality or information absent ($n = 81$). The final sample comprised 1052 Portuguese participants, aged 10–25 years old ($M = 15.97$, $SD = 3.08$; 10–14 age-group: $n = 324$, 30.84%, 15–17 age-group: $n = 402$, 38.22%, and 18–25 age-group: $n = 326$, 30.94%), and the majority being female ($n = 637$, 60.53%). Gender was proportional within each age group, with no observed differences ($\chi^2(4, N = 1040) = 5.54, p = .236$). Participants attended schools from rural and urban areas and were on different educational paths (e.g., regular and alternative compulsory education, technical and vocational education, and universities).

Measures

ERSs were measured with the CERQ-Short by selecting the items with the highest factor loadings in each dimension (Garnefski & Kraaij, 2006). The Portuguese version, translated and validated by Martins et al. (2016), was used. The CERQ-Short has 18 items, with two items for each dimension, and uses a 5-point scale (from 1 = never to 5 = always). Previous Portuguese studies with the CERQ36 have reported adequate

psychometric properties, with most Cronbach's alpha coefficients above .70, excepting for Acceptance, Refocus on Planning, Self-blame ($.62 < \alpha < .70$) (Martins et al., 2016; Moreira et al., 2020).

Positive and negative effects were assessed using the Portuguese version of the *Positive and Negative Affect Schedule Short-Form* (PANAS-SF; Galinha et al., 2014). PANAS-SF includes ten items, five for positive and five for negative affect. All items used a 5-point scale (from 1 = Very slightly or not at all to 5 = Very much so). The two-factor model of the measure showed a good fit to our sample (CFI = .97, TLI = .96, SRMR = .04, RMSEA = .05 with 90% CI [.04, .06]). Good internal consistency values were obtained for both the positive ($\alpha = .77$, 95% CI [.75, .79]) and negative subscales ($\alpha = .79$, 95% CI [.77, .81]).

GAS was assessed using the Portuguese version of the Generalized Anxiety Disorder 7-item scale (GAD-7; Bártolo et al., 2017), with answers given on a 4-point scale (0 = never to 3 = nearly every day). The unifactorial model of the measure showed a good fit to the data (CFI = .98, TLI = .97, SRMR = .03, RMSEA = .06 with 90% CI [.05, .08]) and a high internal consistency ($\alpha = .85$, 95% CI [.83, .86]).

Depressive symptoms were assessed using the Portuguese version of the Patient Health Questionnaire 9-item scale (PHQ-9; Ferreira et al., 2018), with answers given on a 4-point scale (0 = never to 3 = nearly every day). The unifactorial model of the measure showed an acceptable fit to the data (CFI = .91, TLI = .88, SRMR = .05, RMSEA = .08 with 90% CI [.08, .10]) and a high internal consistency ($\alpha = .83$, 95% CI [.82, .84]).

Procedure

The ISCTE-University Institute of Lisbon Ethics Committee (ref. 17/2019) approved all procedures. The study was disseminated through social networks and in classes at one university. Researchers collected data from randomly selected classes at five district schools. At the schools, researchers instructed students on how to complete the survey, answered questions and offered to read aloud to minimize differences between reading proficiency levels. Data collection took about 25 min. Contact details were provided. All adult participants provided informed consent, whereas parents/legal guardians provided it for minors. For ethical purposes, the school directors kept the physically signed consent forms in safe deposit boxes. To ensure comprehension of the younger participants, we conducted a pilot study in March 2019, and no changes were needed.

Data analysis

The expanded definition of adolescence may better reflect the development of adolescents in developed countries like Portugal (Sawyer et al., 2018). However, based on this definition, adolescence includes young people at very different stages, who must be disaggregated within age frames (Sawyer et al., 2018). Also, development may be represented better as a series of discrete stages (Leung & Shek, 2020) since it does not always follow a linear trajectory with cumulative changes (Santos et al., 2021). In this study, we disaggregate the 10–14, 15–17 and 18–25 age-groups, according to Arnett's (2013) definitions of early adolescence, late adolescence and emerging adulthood.

The percentage of missing values across the 46 variables varied between 0.1% and 1.24%. In total, 97 out of 1052 cases (9.2%) were incomplete. Graham (2009) describes multiple imputation as the preferred missing data handling technique. We imputed missing data using multivariate imputation by chained equations, using *mice* (3.2.0) (Van Buuren & Groothuis-Oudshoorn, 2011) and *miceadds* (3.11–6) (Robitzsch & Grund, 2021) R packages (R Core Team, 2021; version 4.0.5). We used the *pmm* imputation method (excepting for gender-*logreg*), set the number of iterations in the *mice* algorithm to 20, and created 10 different imputed datasets. In the proceeding analysis, each dataset was analysed separately, and results were subsequently pooled using Rubin's rules (Rubin, 1987).

Confirmatory factor analyses (CFAs) and multi-group CFA's were estimated using R package *semTools* (0.5–4; Jorgensen et al., 2021) with a robust estimator (MLR – maximum likelihood estimation with robust Huber-White standard errors). First, we tested the original Garnefski and Kraaij (2006) nine-factor model. Then, we tested two higher-order factor models: one with the nine dimensions grouped into two latent dimensions of adaptive strategies and maladaptive strategies (Garnefski et al., 2001), and another proposed by Liu et al. (2016) which includes acceptance in the less adaptive strategies. We considered the following indices for establishing model fit criteria: Comparative Fit Index (CFI) $\geq .95$; Tucker-Lewis Index (TLI) $\geq .90$; Standardized Root Mean Square Residual (SRMR) $< .08$; and Root Mean Square Error of Approximation (RMSEA) $\leq .08$ with a 90% confidence interval (CI) (Hair et al., 2014). Further, measurement invariance by age and gender were evaluated by a series of multiple-groups CFA processes for configural, metric and scalar invariance. As a pre-requisite, the functional equivalence (i.e., the model fit in each group) was confirmed (Milfont &

Fischer, 2010). We evaluated the fit of successive models with increasingly stringent constraints, namely $\Delta RMSEA \leq .015$, $\Delta CFI \leq -.010$. Also, two $\Delta SRMR$ thresholds were used, $\Delta SRMR \leq .030$ to test factor loading invariance and $\Delta SRMR \leq .010$ when testing intercepts invariance (Chen, 2007).

The same R package was used to investigate the correlation coefficients since these were based on the latent variables' correlations to account for the measurement error. Cronbach's alpha (α) coefficient with a CI 95%, means, standard deviations, minimum and maximum of the scales are presented.

Results

Confirmatory factor analysis

Three versions of the CERQ-Short were tested. The first-order nine-factor model of the Portuguese CERQ-Short presented a good fit to the data ($CFI = .96$, $TLI = .94$, $SRMR = .03$, $RMSEA = .04$ with CI 90% [.04, .05]), thus confirming the nine conceptually distinct scales. The standardized factor loadings ranged from .58 to .95 (all $p < .001$), showing an adequate performance of all items (see Table 1).

Measurement invariance

The hypothesized nine-factor model was tested for each group separately (see Table 2). The fit was good in all subsamples. Therefore, configural, metric and scalar invariance were subsequently tested.

Considering gender, metric and scalar invariance between two groups (males = 415, 39.47%, females = 637, 60.53%) was observed (see Table 2), since differences between successive models were below standard thresholds (Chen, 2007). Regarding age invariance with the three groups of participants (young-adolescents: 10–14, $n = 324$, 30.84%, middle-adolescents: 15–17, $n = 402$, 38.22%, and old-adolescents: 18–25, $n = 326$, 30.94%), fit indices were good for both the unconstrained and constrained models (see Table 2), with differences between models below the thresholds. Standardized factor loadings and explained variance for age-groups and gender are presented in the Supplementary Material.

Table 1. Standardized factor loadings (λ), explained variance (R^2) and (e) standardized error variances for the Cognitive Emotion Regulation Questionnaire short version.

Factor	Item	λ	R^2	e
Acceptance	1. I think that I have to accept that this has happened.	0.66	0.44	0.56
	5. I think that I have to accept the situation.	0.83	0.68	0.32
Refocus on planning	12. I think about how to change the situation.	0.69	0.47	0.53
	15. I think about a plan of what I can do best.	0.74	0.55	0.45
Putting into perspective	13. I think that it hasn't been too bad compared to other things.	0.62	0.39	0.62
	16. I tell myself that there are worse things in life.	0.70	0.49	0.51
Positive reappraisal	3. I think I can learn something from the situation.	0.69	0.48	0.52
	8. I think that I can become a stronger person as a result of what has happened.	0.75	0.56	0.44
Positive refocusing	7. I think of pleasant things that have nothing to do with it.	0.59	0.34	0.66
	11. I think of something nice instead of what has happened.	0.95	0.90	0.10
Rumination	2. I often think about how I feel about what I have experienced.	0.58	0.34	0.66
	6. I am preoccupied with what I think and feel about what I have experience.	0.76	0.57	0.43
	9. I keep thinking about how terrible it is what I have experienced.	0.73	0.53	0.47
Catastrophizing	17. I continually think how horrible the situation has been.	0.80	0.64	0.36
	4. I feel that I am the one who is responsible for what has happened.	0.72	0.51	0.49
Self-blame	14. I think that basically the cause must lie within myself.	0.81	0.66	0.34
	10. I feel that others are responsible for what has happened.	0.76	0.59	0.41
Other-blame	18. I feel that basically the cause lies with others.	0.80	0.64	0.36

Summary statistics

Mean values (see Table 3) suggest that adaptative strategies were reported more often, especially Positive Reappraisal ($M = 3.90$, $SD = 0.90$) and Acceptance ($M = 3.64$, $SD = 0.84$). The two least reported were Other-blame ($M = 2.03$, $SD = 0.87$) and Catastrophizing ($M = 2.81$, $SD = 1.08$). Also, mean values for state affect revealed that participants reported feeling more positive affect, with values above the mid-point ($M = 3.18$, $SD = 0.72$) and less negative affect, with values below the mid-point ($M = 2.01$, $SD = 0.77$). Finally, mean values for GAS ($M = 7.44$, $SD = 4.55$) and depressive symptoms ($M = 7.64$, $SD = 5.21$) fall in the mild category, according to the authors' guidelines (Kroenke et al., 2001; Spitzer et al., 2006).

Reliability

Most factors obtained values of acceptable internal consistency varying between .71 (Acceptance) and .76 (Other-blame), though some presented values below .70, with the minimum value being observed for Putting into Perspective and Rumination ($\alpha = .61$). Inter-correlations were weak to

Table 2. Confirmatory factor analysis fit statistics for the total sample, by gender and age groups and measurement invariance.

Model	Goodness-of-fit statistics					Model comparison			
	χ^2 ^a	df ^b	CFI ^a	TLI ^a	SRMR	RMSEA [90% CI] ^a	Δ CFI	Δ SRMR	Δ RMSEA
CERQ-short models' comparison									
Model 1	264,289	99	.960	.938	.034	.042 [.036, .049]			
Model 2	452,353	125	.918	.900	.062	.054 [.049, .060]			
Model 3	677,795	125	.866	.836	.091	.069 [.064, .074]			
Gender									
CFA by group	216,110	99	.956	.932	.037	.046 [.037, .054]			
Females	151,580	99	.964	.944	.041	.038 [.025, .049]			
Males	367,649	198	.959	.936	.037	.043 [.036, .049]			
Measurement invariance	386,245	207	.956	.936	.039	.043 [.036, .050]	-.003	.002	.000
Metric	395,271	216	.956	.938	.040	.042 [.035, .049]	.000	.001	-.001
Scalar									
Age									
CFA by group	163,428	99	.951	.925	.050	.046 [.033, .059]			
Young Adolescents	156,688	99	.963	.942	.042	.040 [.028, .052]			
Middle Adolescents	143,694	99	.968	.951	.040	.039 [.024, .052]			
Old Adolescents	377,329	297	.977	.965	.041	.029 [.019, .037]			
Measurement invariance	385,715	315	.980	.971	.042	.027 [.016, .035]	.003	.001	-.002
Metric	402,968	333	.980	.973	.043	.026 [.015, .034]	.000	.001	.001
Scalar									

Model 1 = nine-factor structure by (Garnafski & Kraaij, 2006); Model 2 = second-order structured by (Garnafski et al., 2001); Model 3 = second-order structured by (Liu et al., 2016);^a Method Robust; CFI = Comparative fit index; TLI = Tucker-Lewis Index; SRMR = Standardized root mean square residual; RMSEA = Root mean square error of approximation; CI = Confidence interval; Δ CFI, Δ SRMR and Δ RMSEA = change in fit indices between contiguous nested models.

Table 3. Descriptive, reliability and Pearson correlations between the scales of the Portuguese version of Cognitive Emotion Regulation Questionnaire short version.

Variables	Descriptive			Reliability alpha	Correlations between latent variables											
	M	SD	Min Max		1	2	3	4	5	6	7	8	9	10	11	12
1. Acceptance	3.64	0.83	1.00 5.00	.71 [.67, .74]	-											
2. Refocus on planning	3.58	0.87	1.00 5.00	.67 [.63, .71]	.45***											
3. Putting into perspective	3.31	0.97	1.00 5.00	.61 [.56, .65]	.41***	.62***										
4. Positive reappraisal	3.90	0.91	1.00 5.00	.68 [.64, .72]	.53***	.71***	-									
5. Positive refocusing	2.97	1.05	1.00 5.00	.71 [.68, .75]	.45***	.42***	.41***									
6. Rumination	3.58	0.92	1.00 5.00	.61 [.56, .65]	.15**	.10	.08	-.21***								
7. Catastrophizing	2.81	1.08	1.00 5.00	.74 [.71, .77]	-.09	-.19***	-.15**	-.21***	-.30***	.74***						
8. Self-blame	2.99	1.02	1.00 5.00	.74 [.70, .77]	.08	.02	.03	-.15**	-.28***	.57***	.55***					
9. Other-blame	2.03	0.87	1.00 5.00	.76 [.73, .79]	-.01	.03	.10*	.02	.11*	.15*	.27***	.03				
10. Positive affect	3.18	0.72	1.00 5.00	.77 [.75, .79]	.09	.35***	.22***	.37***	.27***	-.15**	-.22***	-.16***	.01			
11. Negative affect	2.01	0.77	1.00 4.80	.79 [.77, .81]	-.09*	-.16***	-.07	-.21***	-.22***	.35***	.37***	.42***	.06	-.28***		
12. GAS	7.44	4.55	0.00 21.00	.84 [.83, .86]	-.08	-.13**	-.05	-.16***	-.26***	.51***	.47***	.44***	.02	-.38***	.76***	-
13. Depression symptoms	7.64	5.21	0.00 27.00	.83 [.81, .84]	-.08	-.24***	-.14**	-.25***	-.33***	.48***	.52***	.54***	-.02	-.50***	.68***	.88***

GAS = Generalized Anxiety Symptoms, M = Mean, SD = Standard Deviation * $p < .05$, ** $p < .01$, *** $p < .001$.

strong. The stronger associations are observed between Positive Reappraisal and Refocus on Planning ($r = .71, p < .001$) and between Rumination and Catastrophizing ($r = .74, p < .001$), as in the original CERQ-Short development study (Garnefski & Kraaij, 2006). To note that correlations between dimensions considered as adaptative and those considered maladaptive are weak, like in the original version (Garnefski & Kraaij, 2006), confirming they correspond to different constructs. Inter-item correlations scores were between .44 (Putting into Perspective) and .60 (Other-blame), being above the threshold of .30 (Hair et al., 2014).

Construct validity

Regarding positive affect, we found weak to moderate positive associations with perceived adaptative ERSs (i.e., Refocus on Planning, Putting into Perspective, Positive Reappraisal and Positive refocusing; $.22 < r < .37, p < .001$) and weak negative association with three maladaptive ERSs: Catastrophizing ($r = -.22, p < .01$), Self-blame ($r = -.16, p < .001$) and Rumination ($r = -.15, p < .01$). For negative affect, the results were in the opposite direction of positive affect, presenting weak negative associations with adaptative ERSs (i.e., Acceptance, Refocus on Planning, Positive Reappraisal and Positive Refocusing; $-.09 < r < -.22, p < .05$) and positive moderate associations with maladaptive ERSs (i.e., Rumination, Catastrophizing and Self-blame; $.35 < r < .42, p < .001$). These associations agree with the results in Ireland et al. (2017). For anxiety and depression symptoms, weak to moderate negative correlations were found with adaptative ERSs (Refocus on Planning, Putting into perspective, Positive reappraisal and Positive refocusing; $-.13 < r < -.33, p < .01$) and moderate to large positive correlations with maladaptive ERSs were found (i.e., Rumination, Catastrophizing and Self-blame; $.44 < r < .54, p < .001$). Similar results have been reported in previous CERQ validation studies (Garnefski & Kraaij, 2006; Garnefski et al., 2001; Min et al., 2013; Orgilés et al., 2019), though, in most studies except two (Garnefski et al., 2001; Min et al., 2013) the effect size of maladaptive ERSs with anxiety and depressive symptoms were weak to moderate and not large, as found in the present study.

Discussion

The aim of the present study was to analyse the psychometric properties of the CERQ-Short in a Portuguese sample of 1117 youth participants. The results revealed the best fit for the nine-factor structure, which was consistent with previous studies (Ireland et al., 2017; Moreira et al., 2020), though the second-order model proposed by Garnefski and Kraaij (2006) also showed good fit to the data. The good fit of the Portuguese CERQ-Short found in this study has also been established in other languages (Cakmak & Cevik, 2010; Ireland et al., 2017; Orgilés et al., 2019). The factor loadings were all above the threshold of .40, indicating good fit. The fit obtained in the present study is better than the fit obtained by the two Portuguese studies that analysed CERQ36 (i.e., CFI = .88, SRMR = .06, RMSEA = .05 with CI 90% [.04, .05], (Moreira et al., 2020); CFI = .90, RMSEA = .050; IFI = .90, (Martins et al., 2016)), which is consistent with Ireland et al.'s (2017) findings.

In addition, we assessed the measurement invariance. Functional, configural, metric and scalar invariance were tested since violations of measurement invariance can hinder significant data interpretation. The multi-group analyses showed that the nine-factor structure was adequate for different ages and gender, which strengthens this measure's use for group comparisons. According to the literature, this is the first study that investigated measurement invariance with the CERQ-short version and our results show that the instrument is able to make valid comparison between gender and age. Our results are consistent with those obtained for the CERQ36 version regarding invariance for age (Moreira et al., 2020) and gender (Chamizo-Nieto et al., 2020). This suggests that the Portuguese CERQ-Short version is a psychometrically adequate measure of cognitive ERSs for both gender and young (10–14), middle (15–17) and older adolescents/young adults (18–25 years old).

The CERQ-Short showed adequate internal consistency values for the majority of the nine dimensions. Regarding scale inter-correlation, our findings also provided a pattern similar to other CERQ validation studies, with stronger correlations among adaptive and among maladaptive ERSs, and negative associations between adaptive and maladaptive strategies (Cakmak & Cevik, 2010; Garnefski & Kraaij, 2006; Ireland et al., 2017).

Our third hypothesis was also confirmed. Adaptive ERSs were associated with more positive affect and less symptomatology. In contrast, higher scores in maladaptive ERSs were related to higher negative affect,

GAS and depressive symptoms. These relations were expected and provided evidence of construct validity for the CERQ-Short Portuguese version, which is in line with the already reported relation between ERSs and mental health indicators (Schäfer et al., 2017). Similar findings were found in previous studies using CERQ with children, adolescents (Chamizo-Nieto et al., 2020; Garnefski & Kraaij, 2006, 2018) and adults (Martins et al., 2016).

Before concluding, some limitations must be mentioned. First, we have not analysed test–retest reliability and other forms of validity (e.g., convergent, discriminant or predictive validity). Second, four of the latent variables had reliability values below .70; Refocus on Planning, Putting into Perspective, Positive Reappraisal, Rumination. A low value may be due to only two items being used on each scale. Cronbach's alpha is positively related to the number of items in the scale, making harder for scales with fewer items to show high values (Hair et al., 2014). Nevertheless, values were all above .60 which is considered the lower limit of acceptability (Hair et al., 2014). Third, we performed no clinical disorder screenings, and based on a meta-analytic review, clinical samples report more maladaptive emotional strategies than non-clinical samples (Aldao et al., 2010). Nevertheless, our sample had mean values in the minimal or mild categories for GAS and depression symptoms, with 69.8% ($n = 734$) and 68.9% ($n = 724$) of participants in each scale scoring in the referred categories, suggesting that most of our sample are non-clinical regarding the assessed symptomatology. Fourth, we used a non-representative sampling procedure, although our sample was diverse, including adolescents from rural and urban areas and on different scholastic paths. Finally, not all participants underwent the same procedure (i.e., while the majority responded at school in the presence of a researcher, some 18-year-olds filled out the questionnaire alone). Regardless, participants could ask questions using the provided contact information and participants at schools responded independently. Future studies should investigate whether different data collection procedures (as the ones used) affect the responses.

To conclude, CERQ-Short Portuguese version is a valid and reliable tool to evaluate ERSs. It integrates a wide variety of ERSs in a single questionnaire, can be used in multiple settings and in a broad range of age groups (Ireland et al., 2017). Its brief nature allows for easier integration into assessment protocols. This study validates CERQ-Short use among Portuguese speakers and participation in cross-cultural studies.

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ORCID

Anabela C. Santos  <http://orcid.org/0000-0001-7963-8397>

Celeste Simões  <http://orcid.org/0000-0003-0229-1422>

João R. Daniel  <http://orcid.org/0000-0001-6609-2014>

Patrícia Arriaga  <http://orcid.org/0000-0001-5766-0489>

Authors' contributions

Conceptualization and Methodology: A.C. Santos, C. Simões and P. Arriaga; Investigation, data curation and project administration: A.C. Santos; Formal analysis: A.C. Santos, C. Simões and J.R. Daniel; Supervision: C. Simões and P. Arriaga. Writing - original draft preparation: A.C. Santos; Writing – review & editing: C. Simões, P. Arriaga and J.R. Daniel.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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