Cross-cultural adaptation of the Clinical Perfectionism Questionnaire (CPQ) for Brazilians

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Abstract
The goals of this paper are the cross-cultural adaptation and psychometric properties evaluation of the Brazilian version of the Clinical Perfectionism Questionnaire (CPQ), a scale that measures the tendency of a person to pursue self-demanding standards and the subjective consequences provided by achieving them or not. The original instrument was translated to Portuguese and back-translated to English. The preliminary version was judged by one of the authors of the instrument and by Brazilian specialists, producing content validity indicators. The final version was applied to a sample of 250 Brazilian undergraduate students, aged from 18 to 60 years old (*M*=24.9, *SD*=8.63), mostly female (76%). In the Exploratory Factor Analysis, data have revealed a bidimensional structure, and the other psychometric properties, such as internal consistency and validity regarding other variables, have shown adequate to the instrument. Additional analyses of unidimensional congruence reinforced the multidimensionality of the measure.
Keywords: perfectionism; personality traits; translation; test validity; psychometrics.

Adaptação Transcultural do *Clinical Perfectionism Questionnaire* (CPQ) para brasileiros

Resumo
Os objetivos deste artigo são a adaptação transcultural e a avaliação das propriedades psicométricas da versão brasileira do *Clinical Perfectionism Questionnaire* (CPQ), escala que avalia a tendência de a pessoa perseguir elevados padrões de exigência autoimpostos e as consequências subjetivas decorrentes de alcançá-los ou não. O instrumento original foi traduzido para o português e retrotraduzido para o inglês. A versão preliminar foi julgada por um dos autores do instrumento e por especialistas brasileiros, gerando indicadores de validade de conteúdo. A versão final foi aplicada em uma amostra de 250 estudantes universitários brasileiros, com idades entre 18 e 60 anos (*M* = 24,9, *DP* = 8,63), majoritariamente do sexo feminino (76%). Na análise fatorial exploratória, os dados revelaram uma estrutura bidimensional, e as demais propriedades psicométricas, como consistência interna e validade em relação a outras variáveis, mostraram-se adequadas para o instrumento. Análises adicionais de congruência unidimensional reforçaram a multidimensionalidade da medida.
Palavras-chave: perfeccionismo, traços de personalidade, tradução, validade do teste psicometria

Adaptación transcultural del *Clinical Perfectionism Questionnaire* (CPQ) para brasileños

Resumen
Los objetivos de este artículo son la adaptación transcultural y la evaluación de las propiedades psicométricas de la versión brasileña del *Clinical Perfectionism Questionnaire* (CPQ), una escala que evalúa la tendencia de la persona a perseguir altos niveles de exigencia autoimpuestos y las consecuencias subjetivas resultantes de alcanzarlos o no. El instrumento original fue traducido al portugués y retrotraducido al inglés. La versión preliminar fue juzgada por uno de los autores del instrumento y por expertos brasileños, generando indicadores de validez de contenido. La versión final se aplicó a una muestra de 250 estudiantes universitarios brasileños, con edades comprendidas entre los 18 y los 60 años (*M*=24,9, *DS*=8,63), en su mayoría mujeres (76%). En el análisis factorial exploratorio, los datos revelaron una estructura bidimensional, y las demás propiedades psicométricas, como la consistencia interna y la validez en relación con otras variables, resultaron adecuadas para el instrumento. Análisis adicionales de congruencia unidimensional reforzaron la multidimensionalidad de la medida.
Palabras clave: perfeccionismo; rasgos de personalidad; traducción; validez del test; psicometría.

The attention paid to perfectionism has been growing, especially because this variable has been highlighted as a transdiagnostic process, that is, a set of cognitive or behavioral aspects that perform an important role in the etiology, maintenance and course of several psychopathological states (Egan, Wade, & Shafran, 2011; Egan, Wade, Shafran, & Antony, 2014; Shafran, Cooper, & Fairburn, 2002). Furthermore, the presence of perfectionism has been pointed out as an obstacle for the treatment of several mental disorders, for example, impairing the well-succeeded engagement of the patient (Egan et al., 2011; Shafran et al., 2002).

Perfectionism might be defined as a personality trait characterized by the setting of high self-demanding

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standards and effort towards perfection achievement (i.e., flawless state), in general, accompanied by self-criticism (Stoeber, 2018). In this context, a perfectionist individual has demanding criteria for defining one's success, strives to achieve high standards and avoid failures – or what is judged as failure – and makes critical evaluations about one's behavior and self-worth.

Although, several times, perfectionism is referred in singular, an increasing number of studies suggests that its components are divided into two correlated dimensions, named, hegemonically, Perfectionistic Strivings (PS) and Perfectionistic Concerns (PC) (Stoeber, 2018). The first covers cognitions and behaviors related to setting high self-demanding standards and pursuing them, while the second includes cognitions and behaviors concerning imperfections and their negative consequences (Stoeber, 2018, 2020). In other words, the PS dimension is based on the perfection expectation and motivation to do as best, whereas the PC dimension is connected to the fear of failing and to the motivations to avoid the error (Slade & Owens, 1998; Stoeber, 2020). Even though it may seem, initially, that one dimension is positive and another negative, this must be an empirical question, that is, whether and to what degree the dimensions of perfectionism are adaptive or maladaptive depends on researches that relate it to other variables.

In this sense, one of the main contributions of the bi-dimensional perspective of perfectionism is the finding that each dimension presents distinct relationships with the psychopathological symptoms and conditions (Stoeber, 2020). A meta-analysis performed with 284 empirical studies – mostly cross-sectional – revealed that both perfectionistic dimensions were positively correlated to psychopathological outcomes (i.e., mental disorders, symptoms of mental disorders and outcomes related to psychopathology, as suicidal ideation and general psychological distress) (Limburg, Watson, Hagger, & Egan, 2016). It means, the higher the levels of PS and PC, the higher the levels of psychological maladjustment indicators. Nevertheless, single effect values of PC have shown to be superior to those of PS, after these dimensions' overlap control ($\beta \leq 0.70$ and $\beta \leq 0.25$, respectively). The authors concluded, therefore, that PS are less related to psychopathology when compared to PC, and both perfectionistic dimensions are positively correlated between each other, what tends to inflate the relation of PS with psychopathology indicators. This way, it is necessary that studies addressing the analysis of the relationship between perfectionism and psychopathology verify the single effect of each one of the dimensions (Limburg et al., 2016; Stoeber, 2020).

Similar results have been found by another meta-analysis that investigated the longitudinal relation between perfectionism and depression symptoms in 10 studies with different samples (Smith et al., 2016). After the depression symptoms control at the baseline, both PS and PC revealed a little effect over depression symptoms throughout time. However, after the PC control at the baseline, PS no longer predicted depression symptoms, indicating that PS granted vulnerability to depression symptoms through PC's overlap.

Another meta-analysis verified the relationship between perfectionism and anxiety symptoms in 11 longitudinal studies with different samples (Smith, Vidovic, Sherry, Stewart, & Saklofske, 2018). The PC dimension and, to a minor extent, PS predicted an increase in anxiety symptoms throughout time. Notwithstanding, observed effects were of marginal-small magnitude after the anxiety symptoms control at the baseline.

Since perfectionism has been associated with a range of psychopathological indicators, besides being able to create obstacles in the psychotherapeutic treatment and holds two dimension with distinct relations with psychopathological outcomes, assessing it accurately is essential to the advance of scientific knowledge concerning this field and the development of an Evidence-Based Practice in Psychology. Among the available instruments to evaluate perfectionism, the Clinical Perfectionism Questionnaire (CPQ) (Fairburn, Cooper, & Shafran, 2003) is detached.

The CPQ was developed aiming at the measurement of perfectionism through a cognitive-behavioral conceptualization, in which this construct is defined as a subordination of self-worth to the capacity of achieving self-imposed and high levels of demands (Shafran et al., 2002). Thus, according to the cognitive processing of clinical perfectionism, reaching high self-demanding standards grants self-worth, whereas not reaching them evokes thoughts about being a failure as a person (Fairburn et al., 2003; Shafran et al., 2002). Based on this, the 12 items of CPQ measure the tendency of a person to pursue self-demanding standards and the subjective consequences provided by achieving them or not (Egan et al., 2014).

The main differential of CPQ is that it seeks to measure core characteristics of perfectionism (Shafran et al., 2002). For Shafran et al. (2002), many items from

other scales do not evaluate integral elements of perfectionism, but assess related constructs, as beliefs about other people´s standards and the perception that others pressure the individual to be perfect. In addition, CPQ was built on the basis of a clinically-based construct of perfectionism, that is, it captures the core psychopathological aspects of perfectionism, as morbid fear of failure, dichotomous thinking (i.e., operationalization of standards in the form of rules that are either met or not), and selective abstraction (i.e., paying more attention to negative perfectionism-relevant information than to positive information).

Although clinical perfectionism has been theoretically conceptualized as unidimensional by Shafran et al. (2002), validity studies that investigated the latent structure of CPQ are not consensual regarding the number of factors. The majority of studies with different samples found the presence of two similar factors to PS and PC dimensions (Dickie, Surgenor, Wilson, & McDowall, 2012; Egan et al., 2016; Moloodi, Pourshahbaz, Mohammadkhani, Fata, & Ghaderi, 2017; Stoeber & Damian, 2014). It is, one factor comprises the items related to demanding standards, while the other embraces the items regarding failure and its consequences. However, more recent studies have found a global factor for the instrument in addition to specific factors through bifactor approach (Howell, Anderson, Egan, & McEvoy, 2020; Prior et al., 2018).

Dickie et al. (2012), through principal components analysis (PCA) and varimax rotation, found the two mentioned factors. Nevertheless, items 8 ("to do just enough to get by") and 7 ("to judge oneself on the basis of the ability to achieve high standards") were removed due to low item-total correlation and crossloading, respectively. PCA from Stoeber and Damian (2014) found similar results, but with four out of the 12 items presenting crossloading. These researchers performed an Exploratory Factor Analysis (EFA) and the results also revealed two factors, but the crossloadings on items 7 and 8 persisted.

Egan et al. (2016), through EFA, carried out two studies: one with a non-clinical sample and the other with a sample of individuals with Eating Disorders. Solutions of two factors for CPQ were extracted in both studies, but items 1, 7 and 8 presented crossloading. Internal Consistency of the measure was adequate, as well as the discriminative capacity between the clinical and non-clinical samples. Moloodi et al. (2017), through Confirmatory Factor Analysis (CFA), have found similar results regarding CPQ psychometric properties.

In another sample composed by patients with Eating Disorders, Prior et al. (2018) tested, through CFA, three models of CPQ: unidimensional, two oblique factors and bifactor. Fit was revealed as poor for the first two models, and the bifactor model was not able to converge. After the exclusion of items 2 and 8, a bifactor model presented good fit to data: a global factor with 10 items and a specific factor (PS) with seven items.

Similarly, Howell et al. (2020) compared the unique factor, two factors and bifactor models with scores from the 10-item version of CPQ (i.e., without items 2 and 8). The results also provided bigger support to the bifactor model, with a global and two specific factors. Additional analyses were performed in order to verify whether the instrument is predominantly unidimensional. Out of the four indicators generated to that end, two (i.e., Omega and H Coefficient) indicated a predominance of the global factor, while the other two (i.e., Percent uncontaminated correlations and explained common variance) did not confirm the unidimensionality of the instrument.

In summary, the factorial structure of CPQ is not consensual. Most studies found two dimensions, as well as from other instruments that measure perfectionism. According to the results of these studies, PS and PC measured by the CPQ are two different factors, however related to one another — correlations between 0.23 and 0.48 (Dickie et al., 2012; Egan et al., 2016; Stoeber & Damian, 2014). Some items presented substantial factor loading in both factors (i.e., 1 'pushing oneself really hard to meet goals', 7 'judging oneself on the basis of the ability to achieve high standards' and 8 'doing just enough to get by'), indicating a non-discriminative capacity (Dickie et al., 2012; Egan et al., 2016; Stoeber & Damian, 2014).

In another direction, two recent studies found that the bifactor model has indicated good fit to data based on CFA in some cases, which suggests the coexistence of specific and global factors (Howell et al., 2020; Prior et al., 2018). In this sense, the two specific factors of the CPC (i.e., PS and PC) could be combined into a general factor that holds all items.

Besides factorial structure analysis, reverse items (i.e., 2 'tendency to focus on what one has achieved, rather than on what one have not achieved' and 8) demonstrated little impact on the global score through the CITC calculation, suggesting that they do not contribute significantly to the CPQ global score (Dickie et al., 2012; Moloodi et al., 2017; Stoeber & Damian,

2014). The factors' internal consistency has shown to be acceptable through Cronbach's alpha in all validity studies ($0.69 \leq \alpha \geq 0.80$). A study investigated the temporal stability of the instrument, finding moderate rates of reliability (Dickie et al., 2012).

As proposed by Shafran et al. (2002), CPQ aims to capture the most central and pathological elements of the perfectionism, through a cognitive-behavioral conceptualization. In this sense and considering that perfectionism (or at least one of its factors) is transdiagnostic, this instrument can be used as an important clinical indicator for the prevention and treatment of several mental disorders. However, as it was observed, some questions remain open regarding its psychometric properties, especially its factorial structure. Thus, in order to contribute to the fulfillment of gaps previously mentioned, the goals of this paper are the cross-cultural adaptation (Study 1) and psychometric properties evaluation (Study 2) of the Brazilian version of the CPQ.

Study 1

The present study aims at the cross-cultural adaptation of the CPQ with 12 items for Brazilians, which consists in its translation to Portuguese and its content validity verification.

Methods

In consonance with scientific literature about instruments cross-cultural adaptation (Pacico, 2015; Pasquali, 2013), the following stages have been pursued:

Stage 1 - Forward Translation: the translation from the original language (i.e., English) to Portuguese was performed by two English proficient translators, whose maternal language is Brazilian Portuguese. The first translator is a psychologist with clinical expertise and was informed about the scale's purpose. The second was neither informed about the construct measured by the instrument, nor is a professional from Psychology or Health Science. This translator is called a 'naïve translator' and is employed in order to offer a language that is closer to the general population, since there is no influence from the knowledge area. The translations were performed independently.

Stage 2 - Synthesis: both versions of the scale, produced in the previous stage, were compared by a committee composed of the first author, his doctoral advisor and the doctoral students from his research group aiming at a consensus version. This preliminary version was, then, compared item by item with the original version of the scale, minding the original meaning.

Stage 3 - Back-translation: the consensual version was back-translated to the original language by a Portuguese proficient translator, whose maternal language is English, completely unfamiliar with the original scale and without previous knowledge of Psychology or Health Science. The back-translated version was, then, sent to the original scale authors, towards checking whether the items were reflecting the same content than the originals.

Stage 4 - Committee Approach: the preliminary version of the instrument in Portuguese was submitted to five qualified judges' evaluation (psychologists, doctors in Psychology and with theoretical and practical Clinical Psychology expertise). These judges classified each item through a Likert-type scale from 1 ("very little") to 5 ("very much), regarding language clarity, theoretical relevance, and practical pertinence. From these scores, the Content Validity Coefficient (Hernández Nieto, 2002) for each item (CVC_{item}) and the instrument as a whole (CVC_{total}) was calculated. The error calculation for each item was also performed in order to eliminate possible biases from the judges. Hernández Nieto (2002) recommended that acceptable CVC's must present values equal or superior than 0.80, which indicates 80% of concordance among the judges.

Stage 5 – Discussion Groups: three discussion groups were organized with undergraduate students in order to evaluate the items' semantics. Each item was presented and the participants described, with their own words, what they understood. The items that showed consensus related to the comprehension were maintained.

Results and Discussion

Concerning the $CVC_{total,}$ the language clarity was 0.94, the theoretical relevance was 0.98 and the practical pertinence was 0.98, indicating satisfactory content validity. Basically, all items in portuguese reached CVC_{item} superior to 0.80 on the three rated dimensions, suggesting high concordance among the evaluators. The only exception was item 8, regarding language clarity dimension (CVC_{item} = 0.76). In this case, the item was reformulated according to the judges' suggestions. In the next step, all items presented good and consensual comprehension among the participants of the discussion groups, not requiring, therefore, alterations.

Study 2

After the stage of content validity, the CPQ was responded by a university sample and the scores were submitted to the statistical analysis, in order to examine the instrument's psychometric properties, such as factor structure, internal consistency and validity in relation to other variables. Once the present research is part of a larger range of studies, the same database of Rocha, Hernandez, and Falcone (2021) has been analyzed applying different research questions and different analytical approaches, as suggested by Fine and Kurdek (1994) and by Kirkman and Chen (2011).

Methods

Participants

Thus, 250 Brazilian undergraduate students participated of this study, with ages from 18 to 60 years old (M = 24.9, SD = 8.63), being 76% of female sex (n = 190), 23.2% of male sex (n = 58), 0.4% trans woman (n = 1) and 0.4% neutral (n = 1). Regarding marital status, 84.8% declared to be single (n = 212), 13.6% married (n = 34), 1.2% divorced or separated (n = 3) and 0.4% widowed (n = 1). Related to the original region of the respondents, 88.8% are from the southeast region of the country (n = 222), 9.2% from the south (n = 23), 1.6% from northeast (n = 4) and 0.4% from Midwest (n = 1). From the total of participants, 77 responded to the instrument again between 25 and 39 days from the first collection day (M = 30.64, SD = 2.71).

Instruments

The CPQ adapted in the Study 1 was applied. The instrument is composed of 12 items that examine the frequency of some behaviors and cognitions related to perfectionism in the last 30 days (e.g., In the last 30 days, did anyone tell you that your standards were too high?). The respondent must indicate the answer through a Likert-type scale from 1 (Not one time) to 4 (All the time). Items 2 and 8 are reversed.

It was also applied the Marlowe-Crowne Social Desirability Scale – short version. The scale proposes to measure the participants' propensity to respond biased to the questions presented, according to which is more socially acceptable or approved. It is composed of 13 items that portray culturally desirable behaviors, but, unlikely, in which the person must indicate whether the item describes her/him (true or false). The answer given in each sentence is analyzed and turned into a "0" or "1" score, according to a provided sieve. The total score of the scale is obtained by the simple addition of individual scores. The higher the score, the higher the tendency of the participant to respond to questions biased. At the cross-cultural adaptation to Brazilian samples (Ribas, Seidl-de-Moura, & Hutz, 2004), the short version exhibited a KR20 = 0.70 and a very strong correlation with the entire scale (r = 0.90, $p < 0.001$).

Lastly, the Depression, Anxiety and Stress Scales – Short Form (DASS-21) by Lovibond and Lovibond (1995), adapted to the Brazilian population by Vignola and Tucci (2004), was employed. It is a self-report instrument composed of 21 items equally divided among the Depression, Anxiety and Stress subscales. The respondent must indicate how much each one was related to his/her reality during the last week. The answers are given in a Likert-type scale, from "Did not apply to me at all" (0) and "Applied to me very much, or most of the time" (3). The analyses of the psychometric properties performed by Rocha et al. (2021) revealed good convergent validity, internal consistency and temporal reliability indicators for the scale in the employed sample. It is possible to identify three specific factors (i.e., depression, anxiety and stress) and a general factor (i.e., negative affectivity) for the DASS-21 latent structure, although the measure is predominantly unidimensional (Rocha et al., 2021).

Procedures

After approval of the project by the Ethics in Research Committee of the institution to which this study is attached, an online questionnaire was created through Google Forms, containing the Written Informed Consent Form (WICF) and the research instruments. The invitation to participate in the project was made through social media (e.g., Facebook) and e-mails to university professors, requesting the forwarding of the form link to their students. The form was available for completion between December 2018 and June 2019. Respondents took an average of 12 minutes and 44 seconds to complete the form. The resource of mandatory responses was used for all items, which prevented the form from being returned with missing values.

After agreeing with the WICF and fulfilling the instruments, the participant was asked about the interest in taking part in the second stage of the research posteriorly. If yes, the email should be given to future contact. For those participants who informed the e-mail address, the same form was sent again to be

answered a second time with an average of 30 days after the first reply.

Data Analysis

Data collected from the CPQ were inserted at the statistical software SPSS (version 23). Initially, the scores multivariate and univariate distribution analyses were performed, in order to verify data distribution. In the next stage, the Corrected Item-Total Correlation (CITC) of each item was investigated (i.e., the correlation of each item with the sum of the remaining items), replicating Dickie et al. (2012) and Stoeber and Damian (2014). The CITC corresponds to an indicator applied to verify if each item contributes significantly to the global score of the scale, recommending values above 0.30 (Streiner, Norman, & Cairney, 2015).

Furthermore, it was employed the Factor software (version 10.10.01) in order to perform Exploratory Factor Analysis (EFA). Polychoric Correlation Matrix and Robust Diagonally Weighted Least Squares (RDWLS) extraction method with Promax rotation were applied. The decision about the number of factors to be retained was made through Parallel Analysis, with a random permutation of observed data (Timmerman & Lorenzo-Seva, 2011). In addition, the unidimensionality of data was tested, as originally proposed by Shafran et al. (2002), through the calculation of Unidimensional Congruence (UniCo), Explained Common Variance (ECV) and Mean of Item Residual Absolute Loadings (MIREAL) indicators. For the instrument's conception as essentially unidimensional, UniCo and ECV values must be superior to 0.95 and 0.85, respectively, and the MIREAL value must be inferior to 0.30 (Ferrando & Lorenzo-Seva, 2018).

The internal consistency was calculated through Composite Reliability and Cronbach's alpha coefficients. It is suggested 0.70 as cutoff for these indicators (Hair, Black, Babin, Anderson, & Tatham, 2009; Streiner et al., 2015). The instrument's temporal stability was checked through test-retest method, calculating the Intraclass Correlation Coefficient (ICC) and its Confidence Intervals (CI 95%). ICC values inferior to 0.50 indicate poor reliability, between 0.50 and 0.75, moderate, and between 0.75 and 0.90, good reliability (Koo & Li, 2016).

In order to seek validity evidence based on relation to other variables, bivariate correlations of the CPQ scores and Social Desirability scores were performed. Moderate-high correlations of CPQ with Social Desirability measure would indicate that respondents are not answering with complete honesty, but according to what is socially desirable (i.e., response bias) (Costa & Hauck Filho, 2017; Kwak, Holtkamp, & Kim, 2019). In contrast, low correlations between them indicate that Social Desirability is not a primary factor explaining the CPQ answers.

Bivariate and partial correlations of the CPQ scores with DASS-21 scores were also performed in the first and second application waves for the purpose of generating more indicators of validity evidence in relation to other variables. Partial correlations collaborate to verify the relation between two variables, removing the influence from a third one (Dancey & Reidy, 2018). The use of DASS-21 as validity criteria was opted for two reasons: (1) other instruments validated to measure perfectionism in Brazilians were not found, and (2) the literature about the relationship between perfectionism and negative affectivity is enormous (e.g., Limburg et al., 2016; Smith et al., 2016; Smith, Saklofske, Yan, & Sherry, 2017), allowing comparisons.

Results

The scores' multivariate distribution analysis showed a non-normal distribution, once Mardia's Coefficient was 3.21 (standardized = 1.14). Nevertheless, variables' univariate distribution analysis revealed asymmetry values $< \pm 0.70$ and kurtosis $< \pm 1.1$, which does not represent an extreme normality violation (Tabachnick & Fidell, 2018).

When analyzing CITC, item 8 presented a correlation coefficient near zero with total corrected ($r = 0.02$) and item 2 presented low correlation ($r = -0.15$). All other items presented CITC coefficients between 0.31 (item 12) and 0.54 (item 5). It suggests that only items 2 and 8, both reversed, do not contribute significantly to the CPQ total score.

Regarding the factor analysis, Kaiser-Meyer-Olkin (KMO) measure exhibited an index of 0.75 and Bartlett's sphericity test of $\chi^2(66) = 571$, $p < 0.001$, both indicating data adequacy of this sample for factorialization. Parallel Analysis recommended an extraction of two factors (Table 1). All items loaded substantially in one of the two dimensions (loading ≥ 0.42), except item 8, that did not present significant loadings in any factors (Table 2). The solution of two factors was responsible for 66.56% of ECV. The factors presented moderate and positive correlation between each other ($r = 0.37$). Testing the factor structure designed by

Shafran et al. (2002) and found by Howell et al. (2020), UniCo and ECV values were 0.75 and 0.66, respectively, while the MIREAL value was 0.33, recommending the instrument should not be treated as a predominantly unidimensional measure.

Concerning reliability indicators, Composite Reliability and Cronbach's alpha values for both factors were superior to the cutoff (Table 2), indicating acceptable internal consistency. Test-retest temporal stability revealed ICC values of 0.70 (CI 95% between 0.56 – 0.80) to Factor 1 (i.e., PS dimension) and 0.59 (CI 95% between 0.42 – 0.72) to Factor 2 (i.e., PC dimension), suggesting moderate reliability for both factors.

Correlations with the Social Desirability variable were near zero and not significant to Factor 1 and weak and significant to Factor 2 (Table 2), demonstrating good validity evidence based on relation to other variables. Bivariate correlations of the CPQ factors with DASS-21 scores collected at the first wave were superior to Factor 2 in comparison to Factor 1 (Table 2). The correlation value between Factor 1 and DASS-21 scores considerably decreased after Factor 2 overlap control, through partial correlations (Table 2). Similarly, both CPQ factors at the first wave correlated significantly to DASS-21 scores at the second wave (Table 3), being Factor 2 coefficients superior to Factor 1. When controlling negative affectivity symptoms at the first wave through partial correlations, the coefficients considerably decreased (Table 3), however, Factor 2 continued presenting week correlations.

Discussion

The present study analyzed the CPQ's psychometric properties with a sample of Brazilian undergraduate students. Generally, item analysis, factorial structure, internal consistency, temporal stability and construct validity in relation to other variables were investigated.

Similarly to what was found by Dickie et al. (2012) and Stoeber and Damian (2014), reversed items (i.e., 2 and 8) demonstrated low contribution to total score through CITC calculation. Although some authors include positive and negative items attempting to reduce the acquiescence bias, doing so in an unbalanced manner, as in the case of CPQ, might reduce the quality of the instrument (Roszkowski & Soven, 2010).

A possible explanation for this occurrence is that the inclusion of only some negative items in a mostly positive questionnaire seems to stimulate the tendency of a misinterpretation by the respondents, because he/she is being requested to shift gears in the cognitive processing a few times, what tends to create a response bias (Roszkowski & Soven, 2010). Thereby, the homogeneity of the measure will be impaired, decreasing the internal consistency indicators.

Although some authors, as Dickie et al. (2012) and Shu et al. (2019), have removed items 2 and 8 based on the low CITC coefficient, we decided to keep them in subsequent analysis for two main reasons: to investigate, in a Brazilian sample, the factorial structure of the CPQ including all 12 items and to avoid losing potentially relevant information — especially in the case of item 2 that measures selective abstraction, a core characteristic in the conceptualization of clinical perfectionism. In order to increase participation of items 2 and 8 on CPQ total score, future studies might turn them into direct items from its content's alteration.

Related to CPQ latent structure, EFA suggested a two factors solution with the exclusion of item 8 due to the non-saturation in any of the two factors. Items that are similar to the PS dimension (i.e., setting high standards and pursuing them) loaded in the first factor, while items that are similar to the PC dimension (ie.,

Table 1.
Parallel Analysis Results

Factors	Percentage of variance explained of real data	Percentage of variance explained of random data (CI95%)
1	35.8191*	19.6082
2	19.6510*	17.0101
3	9.5389	14.9861

Note. *The number of factors to be retained is two, since two factors of real data present % of variance explained greater than random data.

Table 2.
Factor structure of the Clinical Perfectionism Questionnaire (CPQ)

Items	F 1	F 2
3. *Alguém lhe disse que seus padrões de exigência são muitos elevados?*	**0.70**	-0.08
10. *Você acha que as pessoas te consideraram perfeccionista?*	**0.68**	-0.16
11. *Você continuou tentando alcançar seus padrões de exigência, mesmo que para isso tenha que ter aberto mão de algumas coisas?*	**0.63**	-0.05
6. *Você aumentou seus padrões de exigência por achá-los fáceis demais?*	**0.45**	0.16
9. *Você checou repetidamente o quão bom você é em atingir seus padrões de exigência (por exemplo, comparando seu desempenho ao dos outros)?*	**0.44**	0.15
7. *Você avaliou seu valor com base em sua habilidade de atingir seus elevados padrões de exigência?*	**0.44**	0.23
1. *Você se pressionou muito para atingir seus objetivos?*	**0.42**	0.19
4. *Você se sentiu um fracasso como pessoa por não ter conseguido atingir seus objetivos?*	-0.03	**0.87**
5. *Você teve medo da possibilidade de não alcançar seus padrões de exigência?*	0.15	**0.75**
12. *Você evitou pôr sua capacidade à prova por medo de falhar?*	-0.1	**0.62**
2. *Você focou no que alcançou, ao invés de focar no que você não conseguiu alcançar?*	0.28	**-0.54**
8. *Você fez estritamente o que era necessário?*	0.19	-0.15
Explained Common Variance 4.85 (66.6%)	2.45	2.40
Cronbach's Alpha	0.73	0.71
Composite Reliability	0.74	0.79
Bivariate Correlations		
Social Desirability	-0.03	-0.30*
Depression	0.20*	0.65*
Anxiety	0.35*	0.45*
Stress	0.43*	0.53*
Negative Affectivity	0.36*	0.62*
Partial Correlations		
Depression	0.01	0.63*
Anxiety	0.26*	0.38*
Stress	0.34*	0.47*
Negative Affectivity	0.24*	0.57*

Note. Factor loadings > 0,32 in bold. Extraction Method: RDWLS. Promax Rotation. *p<0.01. F1 = Perfectionistic Strivings. F2 = Perfectionistic Concerns.

regarding mistakes and their consequences) loaded in the second one. In international studies, similar results were found with university, adults and clinical samples (Dickie et al., 2012; Egan et al., 2016; Moloodiet al., 2017; Stoeber & Damian, 2014). Nevertheless, differently from these studies, no item presented significant loadings in both factors, what may have happened due to the Polychoric Correlation Matrix and the extraction method used in the present study.

The unidimensional predominance of the scale was not corroborated. There is evidence that traditional general fit indices tend to favor bifactor models over

Table 3.
Correlations between the CPQ first wave and DASS-21 second wave

	Bivariate Correlations		Partial Correlations	
	Factor 1	Factor 2	Factor 1	Factor 2
Depression	0.17	0.58**	0.07	0.20
Anxiety	0.32**	0.50**	0.15	0.25*
Stress	0.29*	0.44**	0.01	0.22*
Negative Affectivity	0.29*	0.58**	0.07	0.23*

Note. *$p < 0.05$. **$p < 0.01$. F1 = Perfectionistic Strivings. F2 = Perfectionistic Concerns.

other models (Gignac, 2016), as found by Howell et al. (2020) and Prior et al. (2018) in the case of CPQ. Thus, it is necessary to assess the robustness of the global factor using additional statistical indices. The results found by the present study reinforce the bi-dimensional structure of perfectionism measured by CPQ.

Reliability indexes of CPQ factors, through Composite Reliability and Cronbach's alpha coefficients, were satisfactory and similar to the ones obtained by other studies (Dickie et al., 2012; Egan et al., 2016; Moloodiet al., 2017; Stoeber & Damian, 2014). The reliability represented by the temporal stability of two CPQ factors presented moderate indexes, suggesting that the assessed constructs did not vary considerably in the studied intervals, as found by Dickie et al. (2012).

Near zero and weak values of the correlations between CPQ and social desirability grant good construct validity evidence based on relation to other variables of the instrument. Low correlations with social desirability indicate that the participants' responses to the instrument are little subject to what is socially desirable, demonstrating a less biased and more accurate assessment of the variable of interest (Costa & Hauck Filho, 2017; Kwak et al., 2019). Thus, what is expected is that social desirability does not substantially influence the responses that participants indicate in the instruments used, as it did not occur in the present study for responses to the CPQ.

The CPQ factors also showed validity evidence based on relation to other variables when analyzing its correlations with psychopathological indicators, cross-sectionally and longitudinally. Just as found by other studies (Limburg et al., 2016; Smith et al., 2016; Smith et al., 2018), PS are less related to psychopathology in comparison with PC, especially when the overlap between these factors is under control. It suggests that, regarding depression, anxiety and stress symptoms, having high self-demanding standards, pushing oneself to reach them and evaluating the self-worth according to the ability to achieve them are less harmful perfectionistic traits than being afraid of not reaching demanding standards, feeling a failure as a person for not achieving them and avoiding being tested.

As suggested by Shafran et al. (2002), reaching high self-demanding standards grants self-worth (i.e., PS dimension), whereas not reaching them evokes thoughts about being a failure as a person (i.e., PC dimension), and, in the last case, it generates, consequently, more psychopathological indicators. PS dimension can be seen as goal-oriented mindset that motivates a person to search for resources and rewards, as achieving high standards. On the other hand, PC dimension can be seen as a threat-oriented mindset that motivates fight, flight or avoidance behaviors in face of dangerous situations (real or imagined), as avoiding being a failure. The second one has been shown to be more associated with depression, anxiety, and stress symptoms.

However, both dimensions can interact with each other and the PS traits might be used as a strategy to try to avoid negative consequences of PC, what tend to inflate the relation of PS with psychopathology indicators (see Stoeber, Madigan, & Gonidis, 2020). In this regard, an individual may pursue high standards (concerning PS dimension) in order to feel safe and avoid the feeling of inferiority (concerning to PC dimension), for example. Thereby, it is necessary to measure both dimensions and control their overlap when comparing with other variables for the purpose of finding the single effect of each of them, as indicated by Limburg et al. (2016) and Stoeber (2020).

Final Considerations

In summary, current results indicate that the CPQ presented content validity, factorial validity, internal consistency, temporal stability, and construct validity in relation to other variables with Brazilian participants. EFA found the presence of two correlated factors, being these similar to those the literature denominates as Perfectionistic Strivings and Perfectionistic Concerns. It is important to emphasize that unidimensionality indicators did not bear the instrument unidimensionality. As well as in international studies using different scales, the Perfectionistic Strivings dimension was less associated with negative affectivity symptoms in comparison with the Perfectionistic Concerns dimension, especially when the overlap between them was under control.

It is noteworthy, however, that the present study shows some limitations with respect to the non-probabilistic sample, exclusively composed of undergraduate and mostly female, which might hinder generalizations to the population. It is suggested for future researches to investigate the CPQ validity with a wider sample and with different characteristics from the one presented, such as with adults, elderly and, mainly, clinical samples. Another limitation is the large age range of the sample used, taking different phases and different social pressures that could have a different impact on perfectionist cognitions and behaviors. Moreover, the scale applied to assess psychopathology indicators is a symptoms screening questionnaire and not a mental disorders diagnostic instrument. The results, therefore, must be conceived within these limits.

References

Costa, A. R. L., & Hauck Filho, N. (2017). Menos desejabilidade social é mais desejável: neutralização de instrumentos avaliativos de personalidade. *Interação em Psicologia*, *21*(3), 239-249. doi: 10.5380/psi.v21i3.53054

Dancey, C. P., & Reidy, J. (2018). *Estatística sem matemática para Psicologia* (5th ed.). Porto Alegre: Penso.

Dickie, L., Surgenor, L. J., Wilson, M., & McDowall, J. (2012). The structure and reliability of the Clinical Perfectionism Questionnaire. *Personality and Individual Differences*, *52*(8), 865-869. doi: 10.1016/j.paid.2012.02.003

Egan, S. J., Shafran, R., Lee, M., Fairburn, C. G., Cooper, Z., Doll, H. A., ... Watson, H. J. (2016). The reliability and validity of the clinical perfectionism questionnaire in eating disorder and community samples. *Behavioural and Cognitive Psychotherapy*, *44*(1), 79-91. doi: 10.1017/S1352465814000629

Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: A clinical review. *Clinical psychology review*, *31*(2), 203-212. doi: 10.1016/j.cpr.2010.04.009

Egan, S. J., Wade, T. D., Shafran, R., & Antony, M. M. (2014). *Cognitive-behavioral treatment of perfectionism*. New York: Guilford Publications.

Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). *The Clinical Perfectionism Questionnaire*. Unpublished manuscript, Department of Psychiatry, University of Oxford, UK.

Ferrando, P. J., & Lorenzo-Seva, U. (2018). Assessing the quality and appropriateness of factor solutions and factor score estimates in exploratory item factor analysis. *Educational and Psychological Measurement*, *78*, 762-780. doi: 10.1177/0013164417719308

Fine, M. A., & Kurdek, L. A. (1994). Publishing multiple journal articles from a single data set: Issues and recommendations. *Journal of Family Psychology*, *8*(4), 371-379. doi: 10.1037/0893-3200.8.4.371

Gignac, G. E. (2016). The higher-order model imposes a proportionality constraint: That is why the bifactor model tends to fit better. *Intelligence*, *55*, 57-68. doi: 10.1016/j.intell.2016.01.006

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2009). *Análise multivariada de dados* (6th ed.). Porto Alegre: Bookman

Hernádez Nieto, R. A. (2002). *Contributions to statistical analysis*. Mérida: Universidad de Los Andes.

Howell, J., Anderson, R., Egan, S., & McEvoy, P. (2020). One factor? Two factor? Bi-factor? A psychometric evaluation of the Frost Multidimensional Scale and the Clinical Perfectionism Questionnaire. *Cognitive Behaviour Therapy*, *49*, 1-13. doi: 10.1080/16506073.2020.1790645

Kirkman, B. L., & Chen, G. (2011). Maximizing your data or data slicing? Recommendations for managing multiple submissions from the same dataset. *Management and Organization Review*, *7*(3), 433-446. doi: 10.1111/j.1740-8784.2011.00228.x

Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients

for reliability research. *Journal of chiropractic medicine*, *15*(2), 155-163. doi: 10.1016/j.jcm.2016.02.012

Kwak, D. H., Holtkamp, P., & Kim, S. S. (2019). Measuring and controlling social desirability bias: Applications in information systems research. *Journal of the Association for Information Systems*, *20*(4), 317-345. doi: 10.17005/1.jais.00537

Limburg, K., Watson, H. J., Hagger, M. S., & Egan, S. J. (2016). The relationship between perfectionism and psychopathology: A meta-analysis. *Journal of Clinical Psychology*, *73*(10), 1301-1326. doi: 10.1002/jclp.22435

Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, *33*(3), 335–343. doi: 10.1016/0005-7967(94)00075-u

Moloodi, R., Pourshahbaz, A, Mohammadkhani, P., Fata, L., & Ghaderi, A. (2017). Psychometric properties of the Persian version of Clinical Perfectionism Questionnaire: Findings from a clinical and non-clinical sample in Iran. P*ersonality and Individual Differences*, *119*, 141–146. doi: 10.1016/j.paid.2017.07.003

Pacico, J. C. (2015) Como é feito um teste? Produção de itens. In C. S. Hutz, D. R. Bandeira, & C. M. Trentini (Eds.). *Psicometria* (pp. 55-69). Porto Alegre: Artmed.

Pasquali, L. (2013). Psicometria: teoria dos testes na psicologia e na educação (4th ed.). Petrópolis: Vozes.

Prior, K. L., Erceg-Hurn, D. M., Raykos, B. C., Egan, S. J., Byrne, S., & McEvoy, P. M. (2018). Validation of the clinical perfectionism questionnaire in an eating disorder sample: A bifactor approach. *International Journal of Eating Disorders*, *51*(10), 1176-1184. doi: 10.1002/eat.22892

Ribas, R. de C., Seidl-de-Moura, M. L., & Hutz, C. S. (2004). Adaptação brasileira da escala de desejabilidade social de Marlowe-Crowne. *Avaliação Psicológica*, *3*(2), 83-92. Retrieved from http://pepsic.bvsalud.org/pdf/avp/v3n2/v3n2a03.pdf

Roszkowski, M. J., & Soven, M. (2010). Shifting gears: Consequences of including two negatively worded items in the middle of a positively worded questionnaire. *Assessment & Evaluation in Higher Education*, *35*(1), 113-130. doi:10.1080/02602930802618344

Rocha, L. F. D., Hernandez, J. A. E., & Falcone, E. M. O. (2021). Latent structure evidence of the Depression, Anxiety and Stress Scales – Short Form. *Estudos de Psicologia (Campinas)*, *38*, e190103. doi: 10.1590/1982-0275202138e190103

Shafran, R., Cooper, Z., & Fairburn, C. G. (2002). Clinical perfectionism: A cognitive–behavioural analysis. *Behaviour research and therapy*, *40*(7), 773-791. doi: 10.1016/S0005-7967(01)00059-6

Shu, C. Y., O'Brien, A., Watson, H. J., Anderson, R. A., Wade, T. D., Kane, R. T., … Egan, S. J. (2019). Structure and validity of the Clinical Perfectionism Questionnaire in female adolescents. *Behavioural and Cognitive Psychotherapy*, *48*(3), 1–12. doi: 10.1017/s1352465819000729

Slade, P. D., & Owens, R. G. (1998). A dual process model of perfectionism based on reinforcement theory. *Behavior modification*, *22*(3), 372-390. doi: 10.1177/01454455980223010

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2017). Does perfectionism predict depression, anxiety, stress, and life satisfaction after controlling for neuroticism?. *Journal of Individual Differences*, *38*, 63-67. doi: 10.1027/1614-0001/a000223

Smith, M. M., Sherry, S. B., Rnic, K., Saklofske, D. H., Enns, M., & Gralnick, T. (2016). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling for neuroticism? A meta-analysis of 10 longitudinal studies. *European Journal of Personality*, *30*(2), 201-212. doi: 10.1002/per.2053

Smith, M. M., Vidovic, V., Sherry, S. B., Stewart, S. H., & Saklofske, D. H. (2018). Are perfectionism dimensions risk factors for anxiety symptoms? A meta-analysis of 11 longitudinal studies. *Anxiety, Stress, & Coping*, *31*(1), 4-20. doi: 10.1080/10615806.2017.1384466

Stoeber, J. (2018). The psychology of perfectionism: an introduction. In J. Stoeber (Ed.), *The psychology of perfectionism: theory, research, applications* (pp. 3-16). London: Routledge.

Stoeber, J. (2020). Perfectionism. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *Encyclopedia of personality and individual differences*. New York: Springer.

Stoeber, J., & Damian, L. E. (2014). The Clinical Perfectionism Questionnaire: Further evidence for two factors capturing perfectionistic strivings and concerns. *Personality and Individual Differences*, *61*(62), 38-42. doi: 10.1016/j.paid.2014.01.003

Stoeber, J., Madigan, D. J., & Gonidis, L. (2020). Perfectionism is adaptive and maladaptive, but what's the combined effect?. *Personality and Individual Differences*, 161, 1-9. doi: 10.1016/j.paid.2020.109846

Streiner, D. L, Norman, G. L., & Cairney, J. (2015). *Health measurement scales: a practical guide to their development and use* (5th ed.). New York: Oxford University Press.

Tabachnick, B. G., & Fidell, L. S. (2018). *Using Multivariate Statistics* (6th ed.). Boston: Pearson.

Timmerman, M. E., & Lorenzo-Seva, U. (2011). Dimensionality Assessment of Ordered Polytomous Items with Parallel Analysis. *Psychological Methods*, *16*, 209-220. doi: 10.1037/a0023353

Vignola, R. C. B., & Tucci, A. M. (2014). Adaptation and validation of the depression, anxiety and stress scale (DASS) to Brazilian Portuguese. *Journal of affective disorders*, *155*(1), 104-109. doi: 10.1016/j.jad.2013.10.031

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