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Translation and Evidence of Validity of the Basic Empathy Scale

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Abstract

This research aimed to adapt and seek evidence of validity for the Basic Empathy Scale (BES). To obtain the data, the instrument was applied by providing an online link on a digital platform. The study had 376 participants, 311 women, and 62 men, with a mean age of 30.9 years (SD = 13.3). Data were collected by the REDCAP platform and analyzed by SPSS Statistics 23.0 and Factor. For data analysis, the Parallel Analysis data extraction method was used. The Brazilian validation of the EBE revealed adequate psychometric properties, specifically at the two-factor structural level (KMO = 0.85; FDI > 0.9). The internal consistency was 0.83. Convergent and discriminant validities had significant correlations. From the adequate psychometric indices, it can be concluded that the instrument was adequately adapted to the Brazilian population.

Keywords: empathy, cognition, affect, validation study, translation

TRADUÇÃO E EVIDÊNCIAS DE VALIDADE DA ESCALA BÁSICA DE EMPATIA

Resumo

O objetivo desta pesquisa foi adaptar e buscar evidências de validade para a Escala Básica de Empatia (EBE). Para a obtenção dos dados, o instrumento foi aplicado através da disponibilização de um link online em plataforma digital. O estudo obteve 376 participantes, sendo 311 mulheres e 62 homens, com idade média de 30,9 anos (DP = 13,3). Os dados foram coletados pela plataforma REDCAP® e analisados pelos programas *SPSS Statistics 23.0* e *Factor*. Para a análise de dados, foi utilizado o método de extração de dados de Análise Paralela. A validação brasileira da EBE revelou adequadas propriedades psicométricas, especificamente ao nível estrutural de dois fatores (KMO = 0,85; FDI > 0,9). A consistência interna foi de 0,83. As validades convergente e discriminante tiveram correlações significativas. A partir dos adequados índices psicométricos, pode-se concluir que o instrumento foi devidamente adaptado à população brasileira.

Palavras-chave: empatia, cognição, afeto, estudo de validação, tradução

TRADUCCIÓN Y EVIDENCIA DE VALIDEZ DE LA ESCALA BÁSICA DE EMPATÍA

Resumen

El objetivo de esta investigación fue adaptar y buscar evidencias de validez para la Escala de Empatía Básica (EEB). Para obtener los datos, se aplicó el instrumento proporcionando un enlace en línea en una plataforma digital. El estudio contó con 376 participantes, 311 mujeres y 62 hombres, con una edad media de 30,9 años (DE = 13,3). Los datos fueron recolectados por la plataforma REDCAP® y analizados por *SPSS Statistics 23.0* y *Factor*. Para el análisis de datos se utilizó el método de extracción de datos de Análisis Paralelo. La validación brasileña del EBE reveló propiedades psicométricas adecuadas, específicamente a nivel estructural de dos factores (KMO = 0,85; IED > 0,9). La consistencia interna fue de 0,83. Las validez convergente y discriminante tuvieron correlaciones significativas. De los índices psicométricos adecuados, se puede concluir que el instrumento se adaptó adecuadamente a la población brasileña.

Palabras clave: empatía, cognición, afecto, estudio de validación, traducción

The concept of empathy has undergone many transformations over the years of its research. In 1986, empathy was defined by Wispé as an attempt to understand the positive and negative experiences of others actively. Later, in 1991, Eisenberg et al. defined it as the ability to respond emotionally to the emotional state of others, considering the cognitive aspects as a separate construction. However, some authors argue that empathy can be divided into two types: Cognitive Empathy (CE) and Affective Empathy (AE) (Lockwood et al., 2014). Cognitive Empathy is the ability to identify and understand other people's emotions, while AE refers to being aware of and sensitive to these emotions (Jolliffe & Farrington, 2006). More recent studies suggest a new component beyond the cognitive and affective, the behavioral component. The behavioral part would appear as an empathic expression (verbal or non-verbal form), allowing the other to feel genuinely understood (Falcone et al., 2008).

Empathy is considered a motivational factor for prosocial behaviors (Lockwood et al., 2014), and its decrease may be associated with aggressive and antisocial behaviors (Jolliffe & Farrington, 2006). Studies indicate that individuals with adequate emotional regulation, for example, tend to have a higher level of social skills and prosocial behaviors and, even when experiencing an unpleasant emotion, tend to show empathic behaviors (Hein et al., 2018).

As it plays an essential role in developing morale and positively predicts prosocial behavior (Jolliffe & Farrington, 2006), decreased empathy may be associated with antisocial behavior and behavioral disorders (Pechorro et al., 2015). According to Jolliffe and Farrington (2006), individuals with low levels of empathy are more likely to engage in antisocial and aggressive behavior precisely because of their difficulties in understanding and sensitizing themselves to the suffering that their actions can cause in another person. Accordingly, the Basic Empathy Scale (BES) was developed to assess the multidimensional aspects of empathy.

The Basic Empathy Scale is configured as a cross-cultural instrument to measure the level of empathy in different populations worldwide. In addition to the original scale developed in England (Jolliffe & Farrington, 2006), translation and validation studies of this assessment tool have been conducted in countries such as Germany (Heynen et al., 2016), France (D'Ambrosio et al., 2009; Carré et al., 2013), Italy (Albiero et al., 2009), Portugal (Pechorro et al., 2015), Turkey (Topçu et al., 2010), Poland (Zych et al., 2020), China (Geng et al., 2012), Slovakia (Čavojová et al., 2012) and Spain (Herrera-López et al., 2017), as shown in Table 1.

Table 1

Translations and psychometric indexes of the Basic Empathy Scale in various languages around the world

Country (Authors)	Population	Reliability	Final Number of Items	Factor loadings
Germany (Heynen et al., 2016)	*N* = 94 boys (14 to 26 years)	Affective Empathy α = .71 Cognitive Empathy α = .78	12 items	Two factors (Affective Empathy and Cognitive Empathy)
France (D'Ambrosio et al., 2009)	*N* = 446 250 girls 196 boys (mean age 14.8 years; *SD* = 1.14)	Affective Empathy α = .77 Cognitive Empathy α = .66 Total empathy α = .80	20 items	Two factors (Affective Empathy and Cognitive Empathy)
France (Carré et al., 2013)	*N* = 370 260 women 110 men	Cognitive Empathy α = .69 Emotional Contagion α = .72 Emotional Disengagement α = .82	20 items	Three factors (Emotional Contagion; Cognitive Empathy; Emotional Disengagement)
		Affective Empathy α = .84 Cognitive Empathy α = .71	19 items	Two factors (Affective Empathy and Cognitive Empathy)
Italy (Albiero et al., 2009)	*N* = 655 403 girls 252 boys (14 to 18 years)	Affective Empathy α = .74 Cognitive Empathy α = .86 Total empathy α = .87	20 items	Two factors (Affective Empathy and Cognitive Empathy)
Portugal (Pechorro et al., 2015)	*N* = 221 boys (13 to 20 years)	Affective Empathy α = .87 Cognitive Empathy α = .90 Total empathy α = .91	20 items	Two factors (Affective Empathy and Cognitive Empathy)
Turkey (Topçu et al., 2010)	*N* = 358 178 girls 178 boys Two non-specific (13 to 21 years)	Affective Empathy α = .76 Cognitive Empathy α = .80	20 items	Two factors (Affective Empathy and Cognitive Empathy)
Poland (Zych et al., 2020)	*N* = 1052 572 girls 480 boys (9 to 16 years) Children divided into Primary (PE) and Secondary (SE) Education	Affective Empathy α = .75 (PE) and .76 (SE) Cognitive Empathy α = .64 (PE) and .77 (SE) Total empathy α = .85 (PE) and .84 (SE)	12 items	Two factors (Affective Empathy and Cognitive Empathy)
China (Geng et al., 2012)	*N* = 1524 741 girls 783 boys (9 to 18 years)	Affective Empathy α = .73 Cognitive Empathy α = .72 Total empathy α = .77	16 items	Two factors (Affective Empathy and Cognitive Empathy)

Table 1

Translations and psychometric indexes of the Basic Empathy Scale in various languages around the world

Country (Authors)	Population	Reliability	Final Number of Items	Factor loadings
Slovakia (Čavojová et al., 2012)	*N* = 426 210 girls 215 boys (10 to 16 years)	Affective Empathy α = .76 Cognitive Empathy α = .70	20 items	Two factors (Affective Empathy and Cognitive Empathy)
Spain (Herrera-López et al., 2017)	*N* = 747 383 girls 364 boys (12 to 17 years)	Emotional Contagion α = .66 Cognitive Empathy α = .69 Emotional Disengagement α = .80	20 items	Three factors (Emotional Contagion Cognitive Empathy; Emotional Disengagement)
England (Jolliffe & Farrington, 2006)	*N* = 363 169 girls 194 boys (mean age = 14.8 years; *SD* = 0.48)		20 items	Two factors (Affective Empathy and Cognitive Empathy)

Developed by Jolliffe and Farrington (2006), French researchers Carré et al. first adapted the scale for an adult audience in 2013, showing adequate psychometric results. The proposal to adapt an instrument initially developed for the youth public for adults permeates the recognition of the relevance of this instrument and the importance of measuring empathy in a more significant portion of the population.

The Basic Empathy Scale (BES) comprises two subscales (CE and AE), divided over the 20 items that compose it. The Cognitive Empathy subscale aims to assess the individual's ability to identify and comprehend the emotions of others. Affective Empathy seeks to evaluate the ability to be aware of and be sensitive to other people's feelings.

When investigating the studies that proposed, over time, to adapt or produce psychometric instruments for the assessment of empathy for the Brazilian context, it was possible to identify the Empathy Inventory (Inventário de Empatia – IE) (Falcone et al., 2008) the Multidimensional Interpersonal Reactivity Scale (MIRS) (Koller et al., 2001) and the Interpersonal Reactivity Index (IRI), translated and adapted to the Brazilian context by Sampaio et al. (2011).

The MIRS – a variation of the Interpersonal Reactivity Index (IRI) by Davis (1983) – was translated and adapted in 2001 by Koller et al. and is composed of three subscales: Empathic Consideration, Perspective Taking, and Personal Anguish. In addition to the scale proposed by Koller et al. (2001), the scale proposed by Davis (1983) also originated a second instrument to measure empathy in the Brazilian academic literature: the full version of the IRI, with the four original subscales, adapted for Brazil in 2011 by Sampaio et al. One of the main differences between the version initially presented by Koller et al. (2001) and that of Sampaio et al. (2011) was the number of proposed factors. In the study by Koller et al. (2011), the fourth factor

proposed, Fantasy, was not used in the MIRS (Koller et al., 2001), while in the most recent version by Sampaio et al. (2011), the Fantasy factor is included again, with the justification that "in the Brazilian context, people have a powerful tendency to identify with and be influenced by fictional characters from films, soap operas, and commercials" (Sampaio et al., 2011, p. 69). The Empathy Inventory developed by Falcone et al. (2008) is not the result of translations or adaptations; it was created by Brazilian researchers, targeting the country's population. This instrument has four factors: Interpersonal Flexibility, Affective Sensitivity, Perspective Taking, and Altruism.

Given this scenario, the Basic Empathy Scale (Jolliffe & Farrington, 2006) stands out as a good instrument for measuring empathy, presenting several advantages concerning the existing instruments previously mentioned. Compared to the Empathy Inventory (Falcone et al., 2008), the BES has fewer items and is easier to understand and practice, making it more accessible. Regarding the Interpersonal Reactivity Inventory (Sampaio et al., 2011), although it has been used for many years to assess empathy, it has also been the subject of considerable criticism. According to Jolliffe and Farrington (2004, 2006), there are inconsistencies in some of its subscales: the Perspective Taking component is not limited to comprehending an emotion, assessing a broader ability to adopt the other person's point of view, even when emotions are not involved. The Empathic Concern subscale suggests confusing empathy with sympathy, aiming to assess feelings of sympathy and concern. Finally, the authors argue that the Personal Anguish subscale does not adequately assess Affective Empathy since its items are geared toward emergency situations. Accordingly, the MIRS is susceptible to the same criticisms due to presenting three of the four subscales present in the IRI.

Therefore, this work aimed to translate and adapt the Basic Empathy Scale and obtain evidence of its validity with Brazilian adults. The translation and validation of the instrument will allow its more precise use in the context of Brazil. They can be used in research with different populations, with various age groups, genders, and people of other regions. Therefore, it could serve to develop assessments and interventions for people with empathy deficits.

Method

In the present study, the methodology proposed by Borsa et al. was used to translate and adapt the instrument (2012). This includes the orientation of the adaptation process of psychological instruments in different cultural contexts, recommended by the International Test Commission (ITC). Therefore, the steps followed were: initial translation; synthesis of translated versions; expert assessment; target audience assessment; and back translation. After the translation process, the instrument underwent construct validation, being submitted to exploratory factor analysis, analysis of the reliability coefficient (internal consistency), and concurrent and discriminant validation to assess the test's homogeneity, correlations of the construct, and variations in the instrument scores.

Translation process

Initial translation

Two translations of the original instrument from English to Portuguese were performed for the initial translation stage. This process was carried out independently by two different professionals. The selection criteria for the translators were as follows: being Brazilian, having academic or professional experience with the English language, and being fully fluent in both languages. The first translation was done by a professor at Syracuse University College of Law – located in New York, in the United States of America (USA) –a Brazilian citizen with extensive professional and academic experience abroad who has lived in the country for 20 years and is currently working as a teacher. The second, in turn, was done by a doctor in the Didactology of Foreign Languages and Cultures, focusing on the English language, having completed their doctorate abroad with a broad command of the required language. As recommended in the literature, both translators were bilingual, fluent in the instrument's original language, and native in the target language. They had not been informed about the concepts underlying the instrument.

Summary of the translated versions

After the initial translations of the work in question, the author evaluated both translated versions based on four aspects: 1) semantic equivalence – the evaluation of whether there were grammatical errors in the translation, whether the words had the same meaning, as well as whether the item could be understood ambiguously; 2) idiomatic equivalence – the evaluation of whether the items that were difficult to translate from the primary instrument were adapted with equivalent expressions, without changing the cultural meaning of the item; 3) experiential equivalence – the assessment of whether a given item of the instrument applies to the new culture or whether there was a need to replace it with an equivalent item; and 4) conceptual equivalence – the analysis of whether a given term or expression correctly translated evaluates the same aspect in different cultures. At the end of this stage, a single version of the translated and adapted instrument was obtained.

Expert assessment

This phase aimed to assess, with the help of specialists in the field of psychological assessment – or with specific knowledge about the construct – aspects not covered in the previous stages. For this, five professionals in the field of psychology were invited to answer a questionnaire critically analyzing the structure, instructions, and items of the instrument, emphasizing the clarity of the language, its representativeness, and compatibility with the evaluated construct. The content validity index proposed by Polit and Beck (2006) was used to assess the agreement between the judges.

For the choice of judges, it was established as a criterion that all specialists should: be Ph.D. researchers in the field of psychology, have at least five years of experience in the area, and

have experience with psychological assessment instruments. In this process, all judges were briefly informed about the Empathy construct – both Cognitive and Affective.

Target audience assessment

This step aimed to verify whether the items, instructions, and response scale were understandable to the target audience. It is understood as essential that the instrument be evaluated by individuals residing in different regions to ensure that, once validated, the instrument can be applied to diverse populations from different areas of the country. Therefore, a previous application of the instrument was conducted in a sample of four people who characterized the target audience. Four adults (age >18 years) were selected, two men and two women.

Back translation

The back translation consists of translating the synthesized version of the instrument back into the source language, aiming to assess the extent to which the translated version is equivalent to the content of the item, as proposed by the original instrument. As suggested in the literature, after the assessments mentioned above, the resulting scale was subjected to the back translation process from Portuguese to the original language (English) to analyze the coherence between the translated instrument and the original.

As with the initial translation, two professionals performed the reverse translation: two translators were invited – not those who participated in the initial translation process – following the same selection criteria. Both back translations were performed by bilingual professionals fluent in the original language of the BES. Then, a third professional, a foreign language teacher and native in the original language of the primary instrument, was asked to assess the reliability of the back translations. Once the professional confirmed the reliability of the translations, it was possible to conclude that the translated instrument had the content of its adaptation validated.

Content-related validity is a global, non-statistical procedure related to the systematic examination of the content of the test to determine whether the items developed to assess a construct comply with the criteria adopted for its elaboration (objectivity, simplicity, clarity, relevance, precision, variety, modality, typicality, credibility, and behavioral aspects) (Pasquali, 2013). Content validity assesses the degree to which each element of a measurement instrument is relevant and representative of a construct with a particular evaluation purpose (Pasquali, 2013). Therefore, this should be one of the first steps after developing instruments elaborated from a theoretical construct or model, being considered fundamental in developing and adapting measurement instruments (Sireci, 1998).

Validation

Procedures

After translating and validating the content, the scale was applied with a sample of the target audience composed of Brazilians over 18, recruited by convenience through social networks. The online platform REDCAP was used for its application due to the need for social distancing caused by the COVID-19 pandemic.

The individuals were invited to participate in the study through online dissemination on social networks, according to the non-probabilistic sampling strategy (Snowball) (Vinuto, 2014). When accessing the study on the REDCAP platform, the participant had access to the following contents: the consent form, sociodemographic questionnaire, Basic Empathy Scale, Empathy Inventory, and the Levenson Self-Report Psychopathy Scale. The study was approved by the Research Ethics Committee (REC) of the Bahia School of Medicine and Public Health under authorization no. 4.133.591, and Certificate of Presentation of Ethical Assessment no.: 31937020.1.0000.5544.

Participants

To determine the population of this study, the inclusion criteria defined for the sample were: Brazilian individuals over 18 years of age.

Since the scale aims to assess empathy in the general population of Brazil, it was necessary to consider that the diagnosis of certain mental/neurological disorders can lead to changes in empathic ability (e.g., Antisocial Personality Disorder, Schizophrenia, Autism Spectrum Disorder, etc.). Therefore, any previous psychiatric or neurological diagnosis was determined as an exclusion criterion. Accordingly, the research participants were asked whether they had received an earlier diagnosis in the sociodemographic questionnaire.

The collection was made with adults from all over the country. Of the 531 results obtained, 155 were excluded because they did not meet the criteria described – of these, 78.00% reported a psychiatric diagnosis, 1.55% reported a neurological diagnosis, and 20.45% did not complete the entire questionnaire. The data collected from the 376 final responses were then analyzed using the SPSS Statistics 23.0 and Factor platforms. Of these 376 participants, most were female (82.7%), and a minimal portion chose not to provide this information (0.8%). The age group of the participants ranged from 18 to 86 years, with a higher concentration of around 30.9 years (SD = 13.37). Table 2 presents the sociodemographic data of the final participants.

Table 2

Sociodemographic data of the study participants

		Number (%)
Gender	Female	311 (82.7)
	Male	62 (16.4)
	Did not declare	3 (0.9)
Ethnicity	White	263 (69.9)
	Black	18 (4.8)
	Mixed	85 (22.6)
	Other	10 (2.7)
Religion	With religion	256 (68)
	Without religion	120 (32)
Marital status	Single	255 (67.8)
	Married	80 (21.3)
	Stable union	18 (4.8)
	Other	23 (6.1)
Family income	Below R$710	1 (0.3)
	From R$711 to R$3,000	42 (13.1)
	From R$3,000 to R$10,000	81 (25.3)
	Over R$10,000	196 (61.3)
Age	Mean	30.926
	Standard Deviation	13.373
	Amplitude	68
	Minimum	18 years
	Maximum	86 years

Data analysis

An Exploratory Factor Analysis was carried out using the Factor software to evaluate the factor structure of the BES. Given the different results of factors identified in the validations of other countries, it was understood that the exploratory factor analysis would be more accurate and effective in identifying the factors in the Brazilian population. The research was implemented using a polychoric matrix and the Robust Diagonally Weighted Least Squares (RDWLS) extraction method (Asparouhov & Muthén, 2010). Since the authors of the original scale had already preliminarily determined the number of factors that make up the scale, the Parallel Analysis technique was used with a random permutation of data (Timmerman & Lorenzo-Seva, 2011) and Robust Promin rotation (Lorenzo-Seva & Ferrando, 2019) for the interpretation of factor loadings.

The Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Tucker-Lewis Index (TLI) were used to assess the adequacy of the model. The stability of the

factors was evaluated using the H index—a measure of the replicability of the factor structure (Ferrando & Lorenzo-Seva, 2018) - and through the analysis of the composite reliability (ideal being above .70), aiming to analyze how well a set of items represents a common factor (Ferrando & Lorenzo-Seva, 2018).

Convergent and discriminant validity

Convergent validity

Convergent validity requires agreement between the scores obtained with two instruments that aim to measure the same construct. Accordingly, the Empathy Inventory (Falcone et al., 2008) was simultaneously applied with the BES.

The IE, developed by Falcone et al. (2008), is an instrument composed of 40 self-report items on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). To measure the level of empathy, the instrument is composed of four subscales: Perspective Taking and Interpersonal Flexibility, related to Cognitive Empathy; and Altruism and Affective Sensitivity, focused on Affective Empathy. According to the authors, the instrument presented satisfactory construct validity, with a reliability index of .70 or more; therefore, it was suitable for use in this study.

To obtain the results, a bivariate correlation was made between the factors (subscales) of each instrument and between their totals.

Discriminant validity

Discriminant validity assesses the disagreement between two instruments that measure different constructs. Low correlations with tests that measure different constructs indicate the "discriminant validity" of the instrument. To this end, the Levenson Self-Report Psychopathy Scale (LSRP) (Hauck & Teixeira, 2014) and the BES were applied simultaneously. To obtain the results, a bivariate correlation was also made between the factors (subscales) of each instrument and between their totals.

The choice of an instrument that assesses aspects related to psychopathy and antisocial behavior is justified, as low levels of empathy are connected to a greater tendency towards antisocial behavior (Jollife & Farrington, 2006; Hauck & Teixeira, 2014; Pechorro et al., 2015).

The LSRP is a self-report instrument developed to assess psychopathy and has 26 items. The version used was its translation into Brazilian Portuguese by Hauck & Teixeira (2014). This instrument has two subscales: Primary Psychopathy and Secondary Psychopathy. Primary psychopathy is associated with harm prevention, disinhibition, and susceptibility to boredom. Secondary psychopathy is related to academic performance, stress reaction, disinhibition, and susceptibility to boredom. According to Wai & Tiliopoulos (2012 as cited in Hauck & Teixeira, 2014), primary psychopathy is more closely associated with affective deficits, such as a lack of empathy and an inability to connect with others, than secondary psychopathy emotionally. The LSRP was suitable for this study as it presents adequate psychometric indices.

There are no criteria for how high correlations must be to demonstrate convergent validity and how low they must be to confirm discriminant validity; however, the former must be higher than the latter (Selltiz et al., 1987). Reliability coefficients, in turn, should be more significant than validity coefficients, as they are based on more common elements.

Results

The result regarding the semantic validation revealed that the judges considered the instrument coherent concerning the evaluated construct and easy to understand. However, they identified semantic inconsistency in one item, idiomatic inconsistency in another, and a lack of clarity in the instructions. Based on these considerations, changes were made to two items to provide greater clarity and adequacy for the context of the Brazilian population. Another necessary change was altering the initial instructions to facilitate their comprehension. The participants (target audience) considered the items easy to understand, with no alterations suggested. The content validation showed agreement between the judges, with a content validity index of .96, considered an adequate index for the study proposal.

The analysis of the instrument's internal consistency (BES), through the composite reliability, revealed an adequate general index (.832) and adequate indexes for the "Cognitive Empathy" (.804) and "Affective Empathy" (.762) subscales.

Exploratory factor analysis

Bartlett's (2931,4 *df* = 190, *p* <.001) and the KMO (.85) sphericity tests suggested the interpretability of the items' correlation matrix. The parallel analysis suggested two factors as the most representative of the data, presenting percentages of 36.99*% (Factor 1 – Affective Empathy) and 11.84*% (Factor 2 – Cognitive Empathy).

The factor loadings of the items are presented in Table 3. Composite Reliability indices are also reported, as well as estimates of the replicability of the factor scores (H-index) (Ferrando & Lorenzo-Seva, 2018).

Table 3

Factor structure of the Basic Empathy Scale (BES)

Items	Affective Empathy	Cognitive Empathy
1. My friends' emotions don't affect me much.	**-.446**	.090
2. After being with a friend who is sad about something, I usually feel sad.	**.601**	-.066
3. I can understand my friend's happiness when s/he does well at something.	.150	**.365**
4. I get frightened when I watch the characters in a good scary movie.	**.437**	-.200
5. I caught up in other people's feelings easily.	**.745**	-.030
6. I find it hard to know when my friends are frightened.	.134	**-.684**
7. I don't become sad when I see other people crying.	**-.611**	-.054
8. Other people's feelings don't bother me at all.	**-.658**	-.046
9. When someone is feeling down, I can usually understand how s/he feels.	.089	**.553**
10. I can usually work out when my friends are scared.	-.257	**.930**
11. I often become sad when watching sad things on TV or in films.	**.643**	-.083
12. I can often understand how people feel even before they tell me.	-.103	**.690**
13. Seeing a person who has been angered has no effect on my feelings.	**-.507**	.031
14. I can usually work out when people are cheerful.	.179	**.583**
15. I tend to feel scared when I'm with friends who are afraid.	**.474**	-.154
16. I can usually realize quickly when a friend is angry.	-.002	**.783**
17. I often get swept up in my friend's feelings.	**.465**	.254
18. My friend's unhappiness doesn't make me feel anything.	**-.574**	-.196
19. I am not usually aware of my friend's feelings.	-.255	**-.435**
20. I have trouble figuring out when my friends are happy.	-.247	**-.563**
Composite Reliability	.836	.855
H-latent	.873	.896
H-observed	.852	.870

The items presented adequate factor loadings, which were high in their respective factors. No cross-loading pattern was found (i.e., items with factor loadings above .30 in more than one factor).

The composite reliability of the factors was also adequate for both. The measure of replicability of the factor structure (H-index) suggested that the two factors may be replicable in future studies (H >.80).

While the Overall Reliability of fully-Informative prior Oblique N-EAP (ORION) score represents reliability (accuracy of factor scores), the Factor Determinacy Index (FDI) reveals the extent to which factor scores represent the latent trait – for psychological assessment: FDI >.9 (Ferrando & Lorenzo-Seva, 2018). Both factors presented adequate indices, both with the

accuracy of the scores (ORION, Factor 1: .873; Factor 2: .896) and the representation of the latent trait (FDI, Factor 1: .935; Factor 2: .947).

Finally, the factor structure showed adequate fit indices (χ^2 = 273.56, df = 151; p <.001; RMSEA = .047; CFI = .975; TLI = .968).

Convergent and discriminant validity

Two factors were identified for the BES: Affective Empathy (AE) and Cognitive Empathy (CE). The AE factor showed the following positive and significant correlations with the Empathy Inventory subscales: Altruism (.345; p <.001), Perspective Taking (.212; p <.001), and Affective Sensitivity (.288; p <.001). The CE factor showed the following significant correlations with the Empathy Inventory subscales: Perspective Taking (.460; p <.001), Altruism (.173; p = .003), and Affective Sensitivity (.365; p <.001).

Analyzing the correlations between the factors of the same scale, the CE and the AE revealed a positive, moderate, and significant correlation between them (.426; p <.001).

A correlation between the totals of the respective instruments indicated a significant, medium-strength correlation (.423; p <.001). These results are presented in Table 4.

Table 4

Bivariate correlation between the Basic Empathy Scale and the Instruments: Empathy Inventory and the Levenson Self-Report Psychopathy Scale

Basic Empathy Scale	Empathy Inventory				Levenson Self-Report Psychopathy Scale	
	Perspective Taking	Interpersonal Flexibility	Altruism	Affective Sensitivity	Primary Psychopathy	Secondary Psychopathy
Affective Empathy	.212**	.100	.345**	.288**	-.349**	-.034
Cognitive Empathy	.460**	.065	.173*	.365**	-.170*	-.227**

**p* <.001; **p* <.05

When performing the bivariate correlation (Pearson's) analysis between the two factors of the Basic Empathy Scale (Cognitive Empathy and Affective Empathy) and the two factors of the Levenson Self-Report Psychopathy Scale (Primary Psychopathy and Secondary Psychopathy), the Cognitive Empathy factor presented significant weak correlations with both Primary Psychopathy (-.179; *p* <.05) and Secondary Psychopathy (-.227; *p* <.001). The Affective Empathy factor showed a significant, although weak, correlation only with the Secondary Psychopathy factor (-.349; *p* <.001). A correlation between the totals of the respective instruments indicated a significantly weak correlation (-.291; *p* <.001).

Discussion

This study aimed to develop a translation and obtain evidence of cross-cultural validity for the Basic Empathy Scale for the Brazilian population. Although this scale is one of the instruments most used to measure empathy worldwide (Basto-Pereira & Farrington, 2020), until now, the instrument has not been translated into Portuguese or validated for use in Brazil.

The results of the study showed satisfactory psychometric indices for evidence of validity. The instrument presented adequate internal consistency, measured through composite reliability (Raykov, 1997) for its 20-item version, and exploratory factor analysis indicated the presence of two factors, as was the case with the original instrument proposed by Jolliffe and Farrington (2006).

The adapted version of the instrument revealed satisfactory levels of agreement between the judges after the evaluation by the experts and the pilot study, with unanimity among the expert judges regarding the instrument's consistency with the evaluated construct and a satisfactory semantic analysis in the pilot study.

As mentioned earlier, several studies have been conducted around the world aiming to translate and culturally adapt this instrument (Jolliffe & Farrington, 2006; Albiero et al., 2009; D'Ambrosio et al., 2009; Topçu et al., 2010; Geng et al., 2012; Čavojová et al., 2012; Carré et al., 2013; Pechorro et al., 2015; Heynen et al., 2016; Herrera-López et al., 2017; Zych et al., 2020). In most of the studies, the instrument presented a relatively high rate of cross-cultural stability (D'Ambrosio et al., 2009), revealing similar results in other countries, even with a variation in the age range of the focus populations.

The instrument showed good internal consistency, suggesting adequacy between the translated items, their subscales, and the assessed construct. The Affective Empathy factor showed a composite reliability (Raykov, 1997) of .76, which is consistent with the findings in the other validation studies, which revealed a variation between .71 (Heynen et al., 2016) and .87 (Pechorro et al., 2015), with .76 as an approximate mean. The Cognitive Empathy factor indicated a composite reliability of .80, while in the other studies, the varied was from .64 (Zych et al., 2020) to .90 (Pechorro et al., 2015), with an approximate mean of .83.

According to the exploratory factor analysis, the instrument was adequate for the two-dimensional nature of the construct, showing that 11 of the 20 items corresponded to the Affective Empathy factor. The other nine items represented the Cognitive Empathy factor. The analysis indicates that the two factors represent the latent trait evaluated and could be replicated in future studies. This result is similar to most studies conducted internationally (Jolliffe & Farrington, 2006; Albiero et al., 2009; D'Ambrosio et al., 2009; Topçu et al., 2010; Geng et al., 2012; Carré et al., 2013; Čavojová et al., 2012; Pechorro et al., 2015; Heynen et al., 2016; Zych et al., 2020), as shown in Table 1. However, a study by Herrera-López et al. (2017) in Spain found three factors – Emotional Contagion, Cognitive Empathy, and Emotional Disengagement – instead of the two suggested in the original version – Cognitive Empathy and Affective Empathy. The difference in the result of the study developed by Herrera-López et al. (2017) can be

accredited to their proposal to analyze the relationship between three-dimensional empathy and social and normative adjustment in schools, using a concept of empathy composed of three components instead of two: Emotional Contagion (Affective Empathy), Cognitive Empathy and Emotional Disengagement.

Another study that aimed to evaluate two and three-dimensional aspects were carried out by Carré et al., 2013. This validation focused on adapting the Basic Empathy Scale to the French adult population, and, for this purpose, they used not only the model of the original two-factor scale (Affective Empathy and Cognitive Empathy) but also one of three factors (Cognitive Empathy, Emotional Contagion, and Emotional Disengagement).

Seeking to assess the evidence of convergent validity for this instrument, a bivariate correlation was generated with the Empathy Inventory (Falcone et al., 2008). The factors focused on the same dimensions of empathy – cognitive and affective – revealed a significant and positive correlation between them.

While the Basic Scale is composed of two factors (Cognitive Empathy and Affective Empathy), the Inventory (Falcone et al., 2008) has four subscales: two focused on the affective aspects of empathy—Altruism and Affective Sensitivity—, and two focused on the cognitive aspects of empathy –Perspective Taking and Interpersonal Flexibility.

Evaluating the correlations individually produced a positive and significant, however weak, correlation between the Affective Empathy and Altruism factors. Altruism is characterized by the ability of an individual to temporarily sacrifice themself for the sake of another or a cause (Falcone et al., 2008), while Affective Empathy represents the ability to sensitize oneself and share the suffering of others. The weak strength of this correlation can be explained since, although both assess affective aspects of empathy, they do not consider the same thing. Altruism appears as a sacrificing behavior, whereas affective empathy would be linked to the emotions of the individuals involved. The altruistic intention would not necessarily be enough to motivate behavior; empathy would emerge as a motivating factor for altruistic action and helping behavior to occur (Falcone et al., 2013).

Regarding the Affective Sensitivity subscale, its correlation with Affective Empathy was positive and significant, although weak. Similar results were found in a study conducted by Falcone et al. (2013), in which a correlation was made between the Empathic Consideration of Davis' Multidimensional Interpersonal Reactivity Scale (MIRS) (Koller et al., 2001) and the Affective Sensitivity of the Empathy Inventory. By definition, Empathic Consideration reflects a concern for other people and a motivation to help them (Koller et al., 2001; Sampaio et al., 2011), which is similar to Affective Sensitivity, defined by Falcone et al. (2008) as concern or consideration for the needs of others, as well as a tendency to act in accordance with these perceived needs. The Affective Empathy subscale proposed in this study, on the other hand, aims to assess the level at which the individual tends to be aware and sensitive to the emotions of others - differing from the previously mentioned subscales that focus on concern and helping behavior, which may explain the result found about the strength of this correlation.

Cognitive Empathy revealed a positive moderate correlation with the IE's Perspective Taking factor, corresponding to expectations. However, the Perspective Taking subscale is not limited to understanding emotion. Still, it assesses a more extraordinary ability to adopt another person's point of view, even when emotions are not involved (Jolliffe & Farrington, 2006), which distances itself a little from what is proposed by the Cognitive Empathy subscale, which is limited to understanding why another person feels a specific emotion.

The Interpersonal Flexibility subscale showed no significant correlation with BES factors. As it represents the "ability to tolerate behaviors, attitudes, and thoughts that are very different or provoke frustration" (Falcone et al., 2008, p. 204), the factor is inserted in the cognitive sphere, which would justify the result of its correlation with Affective Empathy. However, when considering cognitive empathy as the ability to identify and understand the emotions of others, there is also an incongruity between what is being evaluated by this subscale and by the Interpersonal Flexibility subscale since the latter permeates the capacity to tolerate or be resistant to frustration, differing considerably from the proposal of the subscale of the Basic Empathy Scale.

The results of the discriminant validation between the BES and the LSRP revealed significant negative indices. A negative correlation indicates that the factors present an inversely proportional relationship. Therefore, the higher the level of empathy, the lower the LSRP score tends to be. As indicated by the authors of the LSRP, primary psychopathy would have a more significant association with affective deficits, evidenced in this analysis's result. In contrast, secondary psychopathy would be more associated with cognitive empathy. Since the constructs in question are very different –inversely proportional –as verified, this correlation would be expected to be weaker.

The development of cross-culturally valid psychometric measures brings robustness to the knowledge produced in science. The adapted empathy scale with evidence of validity is an instrument that allows Brazilian researchers to investigate the concept and make comparisons with other countries. Research on empathy has increased over the years due to its diverse emotional, cognitive, and social implications. Being within the axis of global research on empathy allows Brazilian research to better understand this characteristic in the country's culture. In addition to research, a scale that can assess the level of empathy in a given population may be used in developing interventions for treating and rehabilitating individuals who have some deficiency in these social skills.

Based on the results found, with adequate psychometric indices identified during the construct and criterion validation process, it can be concluded that the instrument was adequately adapted to the Brazilian population so that it is ready to be used as a measurement instrument for empathy.

However, this study has limitations, and it should be noted that, as it was conducted online through the non-probabilistic sampling strategy (Snowball), it is susceptible to sampling bias. This can lead to less diversity in the sample (majority of women) and, consequently, less

guarantee of representativeness of the population. For this to be resolved, it is suggested that the scale be applied with a larger sample of men. Furthermore, information was not obtained on which region of the country the participant resided in, so it is impossible to know the representativeness of the different areas of the country. As a second limitation, there may be a bias in the responses since the Basic Empathy Scale is a self-report instrument, so there is no way to guarantee the integrity of the information presented. The third limitation is the concentration of the population in a family income above ten thousand Reais (R$10,000.00), which would not represent the majority of the Brazilian people. It is suggested that the instrument be applied with a more significant and socio-demographically diverse sample.

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