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The Experiences in Close Relationships – Relationship Structures Questionnaire (ECR-RS): validity evidence and reliability

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Abstract

The ECR-RS assesses attachment in close relationships: father, mother, romantic partners and friends. Each relationship is assessed by a scale that theoretically comprises two factors: anxious and avoidant attachment. The main goals of this research was to estimate the first evidences of internal structure validity and reliability of the ECR-RS Brazilian version, and describe the item parameters and participants' characteristics. The sample comprised 251 participants (mean age: 28.21 ± 10.29 ; 81.95% women). The categorical Exploratory Factor Analysis revealed two-dimensional structure of the scales, as theoretically hypothesized, with desirable internal consistency indexes. The Rasch-Masters Partial Credit Mode indicated that the instrument items have a level of difficulty close to the mean and suitable adjustments indexes (Infit/Outfit), and summarized description of participants' theta levels. The results suggest that the instrument is an appropriate measure of attachment in adults.

Keywords: attachment behavior, psychotherapy, psychological, assessment, scale, item response theory.

Questionário de Estruturas Relacionais (ECR-RS): Evidências de Validade de Construto e Precisão

Resumo

O ECR-RS avalia os estilos de vínculo estabelecidos em relacionamentos com pessoas próximas: pai, mãe, companheiro(a) e amigo(a). Cada relacionamento é avaliado por uma escala que teoricamente compreende dois fatores: apego ansioso e evitativo. Essa pesquisa teve como principais objetivos estimar as primeiras evidências de validade da estrutura interna e precisão da versão brasileira do ECR-RS e descrever os parâmetros dos itens e características dos participantes. A amostra foi composta por 251 participantes (idade média: $28,21 \pm 10,29$; 81,95% mulheres). Análise Fatorial Exploratória categórica revelou estrutura bidimensional das escalas, conforme hipótese teórica, com índices desejáveis de consistência interna. O Modelo de Créditos Parciais demonstrou índices de dificuldade próximos da média e ajustes adequados (*Infit/Outfit*) para os itens do ECR-RS, bem como descrição sumarizada dos níveis de theta dos participantes. Os resultados sugerem que o instrumento é uma medida adequada de apego em adultos.

Palavras-chave: comportamento de apego, psicoterapia, avaliação psicológica, escala, teoria de resposta ao item

Cuestionario de Estructuras Relacionales (ECR-RS): Evidencias de Validez de Constructo y Precisión

Resumen

El ECR-RS evalúa los estilos de vínculo establecidos en las relaciones con personas cercanas: padre, madre, compañero(a) y amigo(a). Cada relación es evaluada por una escala que teóricamente comprende dos factores: vínculo ansioso y vínculo evitativo. Esta investigación tuvo como principales objetivos estimar las primeras evidencias de validez de la estructura interna y precisión de la versión brasileña del ECR-RS, y describir los parámetros de los ítems y características de los participantes. La muestra fue realizada por 251 participantes (edad promedio: $28,21 \pm 10,29$; 81,95% mujeres). El Análisis Factorial Exploratorio categórico reveló estructura bidimensional de las escalas, conforme a la hipótesis teórica, con índices de consistencia interna deseables. El Modelo de Créditos Parciales indicó que los ítems del instrumento tienen índices de dificultad promedio y ajustes adecuados (*Infit/outfit*) para los ítems del EC-RS, así como una descripción resumida de los niveles theta de los participantes. Los resultados sugieren que el instrumento es una medida adecuada para evaluar el vínculo en adultos.

Palabras-clave: conducta de apego, psicoterapia, evaluación psicológica, Escala, Teoría de Respuesta al Ítem.

One of the most influential contributions to the understanding of how the affective bonds develop and the implications of this process in clinical practice has been the work of John Bowlby in developing the Attachment Theory (1969, 1973, 1980). The core ideas of the Attachment Theory are in the basis of the understanding of some disorders, such as, for example,

those of personality (Clarkin, Fonagy & Gabbard, 2010) and can be found as a guide to different forms of psychotherapy (see example in, Abreu, 2005; Bateman & Fonagy, 2012; Stuart & Robertson, 2013). As far the psychotherapy research is a concern, in the last ten years, there is a clear interest on the part of researchers about the influence of the styles of attachment (of

both patients and psychotherapists) on the results of psychotherapy, as for example in the study of Mar-marosh, Gelso, Markin, Majors and Choi (2009) and on the possibility of changing the functional internal model during psychotherapy, as in Levy, Meehan, Kelly, Reynoso, Weber, Clarkin and Kernberg (2006).

For Bowlby (1969), as soon as they are born, babies show attachment behaviors that are intended to achieve or maintain the closeness of another differentiated and preferred person (attachment figure). A central premise in this theory is that natural selection favored children who became attached to their caregivers, because this encouraged a protective response on their part in dangerous situations and against predators. Possibly the attachment system has evolved from the need that vulnerable children had of a strong and wise caregiver (Rholes & Simpson, 2004). From the experience with the attachment figure, the child develops internalized models of beliefs about the self and other people who are important to him/her, depending on how these people respond to their needs.

These internalized beliefs about himself/herself and the others become internal working models or relationship patterns, quite evident in early childhood, and characterize human beings throughout their lives having emotional involvement as one of their traits (Fraley, Waller & Brennan, 2000; Coan, 2010). Rholes and Simpson (2004) pointed out that perhaps the most important intrapersonal construct in Bowlby's theory is the internal working model. In order to obtain a conceptual deepening on the internal working model, it is suggested to read Ramires and Schneider (2011) in which the authors discuss the importance of the representational dimension and its role as a regulator of emotions, an organizer of the self and the implications of these roles for Clinical Psychology.

In adulthood, this internal functional model has an important function in the way the individual interprets and acts in various social contexts such as, for example, with friends, with their romantic partner in adulthood (Fraley, Waller & Brennan, 2000, Fraley, Hef-ferman, Vicary & Brumbaugh, 2011) and also with the psychotherapist (Luborsky & Crits-Christoph, 1998; Tolmacz, 2009; Smith, Msetfi & Golding, 2010; Saypol & Farber, 2012).

In the 1990's, Bartholomew & Shaver (1998) described two major trends in the research on attachment in adults - one with focus on parenting and another on romantic relationships. The first, derived from Mary Ainsworth's work when observing the child-mother

pair in an experimental situation (Strange Situation) and associated with the clinical psychodynamically oriented, culminating in the preparation of the standardized interview Adult Attachment Interview (AAI) (George, Kaplan & Main, 1984, 1985, 1996; George & West, 2001), which classifies the attachment styles in secure-autonomous, ambivalent and preoccupied, dismissing, unresolved/disorganized and provided the development of qualitative studies with small samples and a focus on the quality of the experience in the parents-child relationship, from the point of view of the adult (Hesse, 2008). Also in this first line, two other procedures stand out: a system of content analysis obtained by the AAI, the Reflective Functioning Scoring System (Fonagy, Steele, Steele, Moran & Higgitt, 1991), which evaluates the capacity of the adult to understand the intentions, motivations and emotions, of his own and of others. At least, there is the Adult Attachment Projective Picture System (APP) created by Carol George and Malcom West in the 2000, a projective technique developed to measure the attachment system in adults based on the analysis of individuals' responses to a set of seven attachment-related drawings (Crowel, Fraley & Shaver, 2008).

The second trend is associated with the work of Hazan and Shaver (1987, 1990) and focus on the study of personality traits and social interactions. The interest is geared to large non-clinical groups for the relationships among adults, including friendship, romantic relationship and marriage. To do so, they created a self-report questionnaire on romantic attachment, from which participants were classified into three types of attachment: secure, anxious and avoidant.

In 1990, Bartholomew questioned the intended correspondence between the two classification systems, the AAI and the Hazan and Shaver questionnaire, and said that the two instruments assessed attachment in different ways, which led to different concepts of what would be anxious or preoccupied attachment, for example. In that same decade, Bartholomew codified the concept of internal working model classifying the types of attachment in four categories (secure, preoccupied, dismissing and fearful) and two dimensions (model of self and model of others) and prepared standardized interviews and self-report questionnaires to evaluate the parental attachment and between pairs (Bartholomew & Shaver, 1998). From Bartholomew's proposition, the idea of working with two dimensions became stronger and more recent systems have proposed that attachment patterns follow this line, from

which they are described in terms of differences of degree and not of categories: 1) *anxious*, defined as the absence of security in relation to the affective bonds, strong need to be close to the significant persons, concerns about the relationships and fear of being rejected; 2) *avoidant*, defined as the absence of security in relation to the affective bonds; compulsive self-confidence and preference for keeping their distance from other people. In this two-dimensional space, the secure attachment would be located in a region in which anxious and avoidant attachment are low.

Toward the end of the 1990s, Brennan, Clark and Shaver (1998) created the Experiences in Close Relationships (ECR), self-report questionnaire, based on the two-dimensional system. The purpose of which is to evaluate the attachment in romantic relationships, and in 2000, Fraley, Waller and Brennan published the revised version (ECR-R). Also in the years 2000, Fraley, Heferman, Vicary and Brumbaugh (2011) published the first evidences of validity and reliability of a new version of ECR, the Experiences in Close Relationships - Questionnaire of Relational Structures (ECR-RS) that aims to contextualize the assessment of attachment, since the ECR evaluates only the attachment in the romantic relationship. This new instrument considered 1) the need to distinguish different types of relationship; 2) the use of the same items to assess different relationship types and compare them; 3) the concern in not overloading the respondent with a large number of items; 4) the need to evaluate the different internal working models related to different types of relationship. Therefore, unlike the ECR, the ECR-RS evaluates the style of attachment in different relationships (Mother, Father, Friend and Romantic Relationship), also in the two-dimensional system. The first studies that assessed the psychometric properties of the ECR-RS presented results that corroborated the theoretical expectations regarding the two-dimensional structure of the instrument in a sample of 14,781 Americans, 1,852 Londoners and 1,232 Canadians who answered the instrument online (Fraley et al, 2011). The internal structure was confirmed by Moreira, Martins, Gouveia and Canavarro (2015) in a sample of 236 Portuguese individuals. In relation to the evidence of the ECR-RS reliability, of internal consistency indices, Cronbach's alpha coefficient, estimated in studies by Fraley et al. (2011) and Moreira et al. (2015) varied between 0.75 and 0.91 for anxious attachment factor and between 0.87 and 0.92 for avoidant attachment factor, suggesting appropriate accuracy of both subscales.

Other evidences of validity were assessed by Fraley et al (2011) by correlating the scores of ECR-RS with the Scale of Investment in the Romantic Relationship (Investment Model Scale) indicating that the avoidant factor correlated negative and significantly, to commitment ($r=-0.53$), satisfaction ($r=-0.49$) and investment ($r=-0.28$) and positively, to the desire to seek other partners ($r=0.38$). In relation to the symptoms of depression, assessed by the Center of Epidemiological Studies - Depression Scale (CES-D), positive correlations were found between the insecure styles and number of depressive symptoms. Finally, Moreira et al. (2015) evaluated the correlation between factors of ECR-RS with relationship quality (Relationship quality), Shame (External shame) and symptoms of anxiety and depression (Anxiety and depression symptoms). As theoretically expected, moderate and significant negative associations were obtained, with quality of relationships (r between -0.17 and 0.52); positive and moderate with shame (r between 0.21 and 0.39); and positive, weak and moderate with depression (r between 0.19 and 0.33) and anxiety (r between 0.17 and 0.33).

Notably, the theme attachment has received attention from different areas in the field of Psychology, and this is evidenced by the efforts made by international researchers in developing measures that provide evidence of validity and accuracy for the evaluation of this construct. With respect to the research in psychotherapy, the styles of attachment guide some of the most innovative of them, some already quoted above, for which an instrument for the assessment of the styles of attachment is fundamental for the carrying out research in outcome and psychotherapy process. However, none of the instruments previously referred to has been the object of Brazilian studies to assess its psychometric properties. The lack of such information hinders the development of researches that aim to assess this construct in the Brazilian population, especially those that seek to rely on representative samples. In order to contribute to fill this gap, this research is based on the following objectives: a) to estimate the first evidences of validity based on the internal structure and accuracy of the ECR-RS, b) to describe the properties of the items (difficulty and adjustment) and characteristics of the study participants (level of intensity in the latent trait assessed - theta) through the Item Response Theory (TRI), and c) estimate possible patterns of correlation amongst the different relational domains evaluated through the ECR-RS: father, mother, partner and friend.

Method

Participants

The convenience sample was composed of 251 adult participants, with ages ranging between 18 and 63 years (Mean=28.21; DP = 10.29), of which 81.95% were women. As to education, 63.28% had incomplete higher education level, and 22.41% complete high school education. As to the origin of the participants, those with higher education level (63.28%) were students of the Psychology program from an institution of higher education located in the central area of the city of São Paulo, while the others (37.72%) were part of the project named «Research in psychodynamic psychotherapy for adults», held at the same institution.

Instruments

Experiences in Close Relationships - Questionnaire of Relational Structures - ECR-RS (Fraley et al, 2011), was adapted to the Brazilian Portuguese by Senhorini and Rocha (2012). It is a self-report instrument composed of nine items (that can be answered through a likert scale of seven points, ranging from 1= strongly disagree to 7= strongly agree), used to assess the styles of bonds in relationships with people close to them: Mother, Father, Partner and Friend (examples: “I usually talk about my problems and my concerns with this person”, and “I am frequently concerned by the fact that this person does not care about me”). It should be emphasized that the assessment of each of the relationships is considered as an independent scale that comprises two factors: a) anxious attachment; b) avoidant attachment. It is also possible to obtain global measurement of anxious attachment and avoidant attachment; in order to do this calculate the average of the scores presented in face of the four relational domains.

Procedures

Data collect was carried out collectively, in the classroom, among the Psychology students, and individually for the other participants. In both sampling extracts, the average response time to the instrument was 20 minutes.

Ethical considerations. The project was approved by the Research Ethics Committee of the university in which it was performed under the protocol (CAAE 0118.0.272.000-11). It is worth mentioning that the participation in this research had as prerequisite formal

consent of the participants through their signing of the Informed Consent Form (TCLE).

Statistical analysis. Considering the goals of this research, that is, to get the first evidences of validity of the internal structure and reliability of the ECR-RS for a Brazilian sample, the data collected was submitted to different statistical procedures. To estimate the internal structure an Exploratory Factorial Analyses (AFE) was performed with the estimation method Unweighted Least Squares (ULS) and oblique Promax rotation; such analysis were based on matrices of polychoric correlations; see adequacy of these methods at the level of ordinal measurement (*Likert* scale) for the estimation of latent variables (Bourque, Paulin & Cleaver, 2006; Holgado-Tello, Chacón-Moscoso, Barbero-Garcia & Vila-Abad, 2010). The use of oblique rotation, was based on the questioning of Osborne (2015) that the use of orthogonal rotation may lead to factorial solutions that are inadequate when the factors are correlated, unlike oblique revolutions that can provide adequate solutions even when the factors are not correlated, since this method does not force correlations between the factors in case they do not exist.

To estimate the number of factors extracted in each of the scales, the parallel analysis (AP) based on the *Minimum Rank Factor Analysis* (Timmerman & Lorenzo-Seva, 2011) was used. This procedure consists in comparing the explained variance of the factors extracted from the matrix of data observed with the explained variance allocated in the 95 percentile, extracted from a series of matrices generated randomly, that have the same characteristics of the observed data: number of variables and number of participants. For this research, 500 matrices of polychoric correlation were randomly generated by the *Permutation of the raw data* method (Buja & Eyuboglu, 1992). Therefore, the number of factors retained in each of the scales corresponds to the number of factors that present higher indices of explained variance, in the observed data, when compared to those obtained by means of random data. Once the internal structure of the scales that comprise the ECR-RS were estimated, the reliability of each instrument was assessed by means of the Cronbach's alpha coefficient of the factors. All analyzes concerning the AFE, AP and reliability of the scales were carried out with the support of the statistical software *Factor 9.2* (Lorenzo-Seva, & Ferrando, (2006).

To estimate the parameters of the items we used the Item Response Theory (IRT) for polytomous items:

Rasch-Masters Partial Credit Model with the maximum likelihood estimation method. This method allows you to check the parameters of the items and the respondents. In this study the intensity level in the construct (*theta*) of the participants was checked, as well as the indices of difficulty (parameter *b*) and indices of adjustment of the items (infit, outfit). In this scenario, the adjustment indices refer to the summary of the residues between the responses expected by the model and the responses empirically observed. Infit is understood as the level of adjustment to response patterns, when values of difficulty of the items are close to the values of *theta* of the person. On the other hand, outfit is the level of adjustment to responses patterns when the difference between the difficulty of the item and the *theta* of the person is large (Primi, Carvalho, Miguel, Muniz & Nunes, 2010). According to Linacre (2015) these values can vary from 0 to infinity, and values close to 1 indicate good adjustment. In this direction, values between 0.5 and 1.5 are considered adequate. According to the assumption of unidimensionality required by TRI, each of the factors of scales that comprise the ECR-RS was considered as an independent dimension. All analyzes concerning the TRI were conducted with the support of the statistical software *WINSTEPS* (Linacre, 2015).

Finally, we sought to estimate possible correlation patterns among the different relational domains evaluated through the ECR-RS. The Pearson correlations were estimated among the scores presented by the participants in the factors (Anxious and Avoidant) of the different scales that comprise the ECR-RS (different relational domains). The choice of a parametric technique of correlation was based on the normal pattern assumed by the variables, values of skewness and kurtosis between -2 and 2. In accordance with the posed development of the ECR-RS to measure the type of attachment established in different close relationships, the psychometric properties of the scales were assessed

separately, taking each one as a different instrument. This procedure has been adopted in the original study (Fraley et al, 2011) and in the adapted Portuguese version from Portugal (Moreira et al, 2015).

Results and Discussion

The AFE was preceded by the evaluation of the adequacy indicators of the correlation matrix that are: Kaiser-Meyer-Olkin (KMO) and Test of Sphericity of Bartlett. The results obtained for each of the scales that comprise the ECR-RS are shown in Table 1, in which the results that support the accomplishment of the AFE, i.e., KMO exceeding 0.7 are observed, which indicates that the proportion of variance of items can be explained by latent variables (Lorenzo-Seva, Timmerman & Kiers, 2011), and values of the test of sphericity of Bartlett with significance levels lower than 0.05, results that reject the null hypothesis that the data matrix is similar to an identity-matrix (Tabachnick & Fidell, 2012).

Once the factoration indicators of the correlation matrices were obtained, the data was submitted to the AFE, from which the solution with two factors for both scales was obtained through the Guttman-Kaiser criterion. In order to avoid a possible overestimation or underestimation of the factors, Parallel Analyses was used, which also demonstrated the pertinence of extracting two factors for each scale. The results are presented in Table 2, where the Eigenvalues can be observed. Each one of these corresponds to a potential factor and, usually, the factors whose *eigenvalues* are great, due to the capacity of the factorial solution indicated to explain data variance (Tabachnick & Fidell, 2012) are retained. The percentage of variance explained by factors, accumulated percentage of variance and results of the parallel analyses: comparison between the explained estimated variance for real data and explained variance

Table 1

Indicators of adequacy of the matrix correlation produced for each scale (relational domains)

Scales	KMO	Bartlett χ^2	Gl	P
Mother	0.714	987.9	36	<0.01
Father	0.727	1006,8	36	<0.01
Partner	0.732	760.6	36	<0.01
Friends	0.727	907.5	36	<0.01

Notes. KMO= Kaiser-Meyer-Olkin.

obtained through random data. According to the factorial solution suggested by the analyses, the first two factors of each scale present from 54.82% to 59.39% of accumulated variance, which corroborates the findings of Fraley et al. (2011) and Moreira et al. (2015), regarding the good capacity of this factorial solution to explain the total variance of the items.

The factor loads obtained for the solution with two factors in each of the scales are presented in Table 3 same as the accuracy indices, the Cronbach alpha coefficients of the factor and estimated correlations between the factors of the same scale. As to the theoretical interpretation of factors, it can be seen that the set of items comprising the first factor in both scales correspond to items theoretically developed for evaluation of avoidant attachment type; these are the items 1, 2, 3, 4, 5 and 6. It can be noticed that items 5 and 6 show negative factor loads on all scales, which can be understood through the contents of the items. While items 1, 2, 3 and 4 assess how much the individual depends on the other to cope with everyday problems, items 5 and 6 assess how much an individual is willing to give

up these people and no longer talk of their feelings to them. It should be noted that the factor solutions presented no major double saturation with factor load higher than 0.30 in more than one factor. These results satisfactorily respond to the first goal of this research: obtaining the first evidences of validity based on the internal structure of the ECR-RS in its Brazilian version (AERA, APA & NCME, 2014). Consider that the factors are structured according to the theoretical proposal that served as basis for the construction of the instrument, and corroborate the results found internationally (Fraley et al, 2011; Moreira et al, 2015).

Table 3 also shows the accuracy indicators of the factors that made up the scales, the Cronbach alpha coefficients ranging between 0.78 and 0.91. Such results partially respond to the second goal of this research: estimate the first evidence of accuracy of ECR-RS. As indicated by Tabachnick & Fidell (2012), values higher than 0.7 can be considered accurate indicators of psychological assessment scales. Thus, it is confirmed that the instrument has potential to integrate research studies aimed to evaluate the attachment construct in the

Table 2

Eigenvalues, percentage of variance explained, percentage of accumulated variance and results of the Parallel Analysis obtained in each scale (relational domains)

Mother				
<i>Eigenvalues</i>	% of explained variance	% of accumulated variance	Parallel Analysis	
			Real Data	95 Percentil
2.77	35.71	35.71	39.4*	27.8
1.58	21.19	57.55	23.7*	22.5
0.59	14.87		23.7	18.8
Father				
2.75	35.44	35.44	40.1*	26.8
1.81	23.94	59.39	26.9*	22.7
0.48	14.15		16.6	18.8
Partner				
2.39	32.13	32.13	37.0*	27.6
1.57	22.69	54.82	98.05*	22.8
0.40	12.04		11.8	18.6
Friend				
2.65	34.38	34.38	38.4*	27.9
1.79	18.25	59.18	27.4*	22.5
0.48	12.49		13.1	18.7

Notes. %= percentage, *= factors retained from the parallel analysis.

Table 3

Distribution of factor loadings, indices of internal consistency and correlation amongst the factors in each of the relational domains

Items	Mother		Father		Partner		Friend	
	Avoidant	Eager	Avoidant	Eager	Avoidant	Eager	Avoidant	Eager
1	0,719		0,750		0,631		0,762	
2	0,901		0,871		0,786		0,848	
3	0,792		0,760		0,652		0,667	
4	0,449		0,600		0,330		0,355	
5	-0,450		-0,359		-0,344		-0,310	
6	-0,488		-0,304		-0,509		-0,421	
7		0,773		0,789		0,793		0,835
8		0,629		0,795		0,750		0,774
9		0,929		0,862		0,840		0,844
Precision	0.87	0.91	0.86	0.91	0.78	0.89	0.85	0.88
Correlation between factors	-0.246		-0.153		-0.212		-0.199	

Brazilian population, and compose the set of instruments used by practical professionals, especially those who develop psychotherapies guided by styles of attachment of their patients (Abreu, 2005; Bateman & Fonagy, 2012; Stuart & Robertson, 2013).

Through the MCP, parameters have been estimated for the following items: difficulty (parameter b) and adjustment indices (*infit and outfit*), as well as the latent trait level presented by the research participants (identified in the TRI with the Greek letter Θ); Such results are presented by means of descriptive statistics in Table 4. The results are presented separately for each of the factors that make up each of the domains evaluated by ECR-RS. It should be noted that in the anchoring procedure it was decided to set the difficulty averages for the items at zero, which enabled the identification of the metrics and the comparison between parameters of individuals and items.

With regard to the parameter for individuals, in Table 4 there are slight differences in response patterns, according to different types of relationships. In this respect, the highest *theta* average presented by the respondents for the Avoidant factor in the relationship with the father, accompanied by the relationship with the mother. Moreover, in the relationships with the partner and friend, the averages for the Avoidant factor present negative values, suggesting that the items tended to be less endorsed by the sample. The same pattern can be observed through the maximum

and minimum descriptive statistics. In short, these data suggest that, on the one hand, respondents tend to agree more with the items when the evaluations are about the relationships with father and mother, and on the other hand, they tend to disagree with the items when the evaluations are about the relationships with partner and friend.

For the Anxious factor, the averages show a greater homogeneity in the response pattern regarding the types of relationships evaluated. Moreover, in general higher values of averages (*theta*) are observed when compared to those obtained versus the Avoidant factor, suggesting that these factors have been more endorsed by the participants. It was also observed through the minimum and maximum statistics, variability in the *theta* level of all factors, suggesting that the sample is made up of people with distinct latent trait levels in relation to the characteristics evaluated by the instrument.

Regarding the parameters of the items that composed the factors for each scale of the instrument ECR-RS, means and standard deviations presented for parameter b in Table 4 indicate small dispersion of these values around the mean, indicating that the items do not vary much in terms of difficulty. Such results are confirmed by minimum and maximum statistics, which show that even individually none of the items was too hard or too easy to be endorsed. Therefore, one can infer that the different types of responses given by the participants were determined primarily by people's

Table 4

Descriptive statistics for the parameters of the subjects and items estimated from the MCP in each of the relational domains

Scales	Mother				Father				Partner				Friend			
Items	<i>Q</i>	<i>B</i>	<i>Infit</i>	<i>Outfit</i>	<i>Q</i>	<i>B</i>	<i>Infit</i>	<i>Outfit</i>	<i>Q</i>	<i>B</i>	<i>Infit</i>	<i>Outfit</i>	<i>Q</i>	<i>B</i>	<i>Infit</i>	<i>Outfit</i>
Avoidant																
Average	0.02	0	0.99	0.91	0.08	0	1.01	1.01	-0.57	0	1.01	0.98	-0.5	0	1.01	1.01
DP	0.99	0.38	0.26	0.29	0.79	0.2	0.2	0.24	0.75	0.35	0.26	0.28	0.66	0.33	0.3	0.37
Maximum	3.01	0.42	0.41	1.47	2.63	0.21	1.24	1.43	1.6	0.28	1.37	1.42	1.54	0.36	1.43	1.48
Minimum	-3,44	-0.5	0.68	0.66	-1,87	0.29	0.67	0.64	-2,63	-0.72	0.7	0.62	-2,43	-0,67	0.7	0.55
Anxious																
Average	0.52	0	1.01	0.92	0.56	0	1.01	0.92	0.16	0	1.01	0.95	0.60	00	1.01	0.99
DP	1.48	0.14	0.27	0.22	1.84	0.06	0.21	0.16	2.10	0.10	0.15	0.13	2.32	0.07	0.19	0.17
Minimum	2.49	0.19	1.25	1.10	2.98	0.08	1.23	1.05	3.96	0.09	1.15	1.08	4.29	0.09	1.27	1.21
Minimum	-2,82	0.12	0.65	0.61	-3,34	-0.06	0.73	0.70	-4,11	-0.13	0.8	0.76	-4,20	0.07	0.83	0.81

Notes. Θ = Level in the latent trait presented by subject; b = level of difficulty of the items.

characteristics (latent trait level), since the difficulty of the items was not high enough to prevent the individuals from endorsing them. However, it is worth noting the items' ability to recover the *theta* level of the individuals, since these indices are correlated with magnitudes ranging from moderate to high (between 0.51 and 0.73).

For the adjustment indices (*infit*) of the items, it is possible to check through the median, minimum and maximum statistics shown in Table 4, the adequacy of all the items which compose the different evaluation domains of ECR-RS, i.e., they all showed indices allocated in the expected range, between 0.5 and 1.5. The same pattern can be observed for the adjustment indices *outfit*.

While the Classical Test Theory (CTT) provided information about the factor as a whole, the MCP enabled the knowledge about the functioning of particular items. One can therefore consider that the study in question satisfactorily responded to the objectives of estimating the first evidences of accuracy of ECR-RS in its Brazilian version, as well as the description of the parameters of the items (difficulty/adjustment) and characteristics of the participants (*theta*).

The ultimate goal of this research was to estimate possible correlation patterns between different relational domains assessed by the ECR-RS. For this, the correlations between different scales that composed the ECR-RS were checked; through this procedure it is possible to empirically test the theoretical hypothesis that people tend to repeat the patterns of relationships

with different relational objects (Fraley et al., 2011). The results are shown in Table 5.

On the upper left part of Table 5 one can observe the correlations between the avoidant factors for scores obtained from the evaluation of different relational domains evaluated by ECR-RS. Notably these are positive correlations of low magnitude. The lower left part shows correlations between the scores of the participants in the Anxious and Avoidant factors, in which it is possible to observe negative correlations ranging from low magnitude to the absence of correlation. Finally, on the lower right part there are indices of correlations between the scores in Anxious factors of the different domains. Notably these are positive correlations of moderate magnitude. These results partially corroborate the theoretical prepositions to indicate that people with higher levels of attachment of the Anxious type tend to indiscriminate relational objects, establishing insecure relationships in which they experience the imminent risk of abandonment. However, the same correlation pattern is not seen regarding the avoidant factor, which justifies the need for evaluation of attachment for different relational domains. It is suggested that such results satisfactorily respond to the ultimate goal of this research, since the initial assumptions about the relevance of attachment evaluation in different relational domains were confirmed. Notably, this is not a redundant evaluation, and therefore provides a better compression of the construct assessed (Brennan et al, 1998; Fraley et al, 2011; Moreira et al,

Table 5
Correlations amongst scores presented in different relational domains

Variable	Avoidant				Anxious			
	Mother	Father	Partner	Friend	Mother	Father	Partner	Friend
Avoidant								
Mother	--							
Father	,021	--						
Partner	,039	.222*	--					
Friend	.046	,008	.170*					
Anxious								
Mother	-,092	,033	,073	,020	--			
Father	,027	-,180*	-,026	-,007	.502*	--		
Partner	.046	,030	,038	,099	.320*	.317*	--	
Friend	,006	-,038	,066	,034	.428*	.430*	.489*	--

Notes. * significant correlation $p < 0.05$.

2015). Such procedures allowed the evaluation of the characteristics of a sample composed of Brazilians, the type of relationship established with people that are close. It is understood that this research contributes to accumulation of evidence of the validity and reliability of the Brazilian version of ECR-RS providing the first scientific basis for interpretation of the scores of this instrument versus this population. Furthermore, it contributes to the scientific advancement in the field, since, by providing an instrument internationally recognized it promotes the accumulation of research results and the possibility of cross-cultural studies.

Final Considerations

This research enabled the assessment of the first evidences of validity based on the internal structure and accuracy of the ECR-RS for a Brazilian sample. The results show that the instrument is an adequate measurement of attachment in adults, confirming the theoretical hypothesis about the two-dimensional structure of scales: Anxious factor and Avoidant factor in each of the four relational domains: father, mother, romantic partner and friend (Fraley et al, 2011; Moreira et al, 2015). It is worth noting that the use of the TRI enabled an assessment of the scale characteristics not verified in previous studies (level of difficulty and adjustment of items), as well as the traits of the subjects evaluated (*theta*). In addition, it estimated different patterns of correlation between relational domains and

types of attachment: anxious and avoidant, which justifies the need for evaluation of this construct against the different relationships established by the person being evaluated. Thus, it is concluded that the objectives initially established were satisfactorily achieved.

Finally, it is necessary to state some of the limits of this research that is based on a sample composed by convenience, originated in a specific region of the country, the southeast region. In future studies, efforts should be made to include more heterogeneous and representative samples. Therefore, caution is recommended in the generalization of the results obtained, as well as the execution of new studies with the purpose of evaluating other evidences of the validity of the instrument.

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