





Construct Validity of the Brazilian Version of the Dyadic Adjustment Scale

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Validação de Construto da Versão Brasileira da Dyadic Adjustment Scale

ABSTRACT – This study sought evidence of construct validity for the Brazilian versions of the Dyadic Adjustment Scale and Revised Dyadic Adjustment Scale. A total of 448 individuals participated in the research, 253 women and 195 men from several regions of Brazil who had been cohabiting with their marital partners for an average of 14.7 years. Several proposed models for the measure were tested in Structural Equation Modeling. In the Confirmatory Factor Analysis, the four-factor and hierarchical models of the Revised Dyadic Adjustment Scale showed good overall adjustments. Evidence of factor, convergent, and discriminant validity were also found. Composite reliability revealed adequate levels of internal consistency. The Multigroup Confirmatory Factor Analysis demonstrated a strong measurement invariance model for men and women.

KEYWORDS: dyadic adjustment, marital satisfaction, marital quality, psychometrics

RESUMO – Este estudo verificou evidências de validade de construto para as versões brasileiras da Dyadic Adjustment Scale e da Revised Dyadic Adjustment Scale. Participaram da pesquisa 448 indivíduos, 253 mulheres e 195 homens de diversas regiões nacionais que coabitavam com seus parceiros conjugais há 14,7 anos, em média. Na Análise Fatorial Confirmatória, foram testados seis modelos anteriormente propostos para a medida. Entre eles, quatro fatores correlacionados e hierárquico multidimensional da Revised Dyadic Adjustment Scale apresentaram os melhores ajustes gerais. Foram encontradas evidências de validades fatorial, convergente e discriminante e níveis adequados de consistência interna por meio da confiabilidade composta. Também foi demonstrada a invariância de medida forte do modelo da RDAS entre homens e mulheres.

PALAVRAS-CHAVE: ajustamento diádico, satisfação conjugal, qualidade conjugal, psicometria

Spanier's (1976) Dyadic Adjustment Scale (DAS) was constructed from the perspective of improving existing measures of marital adjustment at the time by integrating nominal, operational, and measurement definitions. It was a pioneer instrument in the inclusion of cohabiting couples regardless of the formalization of the marital union. Since its creation, DAS has become the most widely used scale in family research (Villeneuve et al., 2015).

Spanier (1976) reduced his initial theoretical proposal of Dyadic Adjustment from five to four dimensions of Dyadic

Adjustment, described as follows: Dyadic Consensus, addressed to the individual's perception of aspects of the relationship and the couple's level of agreement on a number of basic issues (financial, leisure, religious, friendships, conventions, philosophy of life, dealings with relatives, goals and objectives, allocated time, participation in decision making, participation in household chores, and career decision issues); Dyadic Satisfaction, which examines individual perceptions about the possibility of divorce/separation, leaving home, regretting, quarrels, bickering with each other,

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getting along, trusting, kissing, happiness, and commitment to the relationship; Dyadic Cohesion, which assesses the degree of emotional sharing between the couple, individual perceptions regarding mutual engagement in outside interests, stimulation of ideas, having fun together, quiet discussion, and working together on projects; and Affectional Expression, which measures the couple's perceived agreement on the presence/absence and absence/refusal of displays of affection and sexual relations.

For Spanier (1976), DAS could be used as a global measure and its four specific subscales could be used independently without loss of validity and reliability. Spanier and Thompson (1982) analyzed the DAS in several alternative factor structures that were compared to the original and found that the most appropriate solution was the four-factor one. However, the Dyadic Consensus, Dyadic Satisfaction and Dyadic Cohesion subscales were replicated reasonably well. But the negative and positive items on the Dyadic Satisfaction did not cluster as expected and, on the Affectional Expression, two of the four items showed factor loadings < 0.30 . Similar results were found by Sharpley and Cross (1982) and Crane et al. (1991).

Spanier and Thompson (1982) concluded that the four specific dimensions of the DAS were not created with the intention of developing measures of distinct facets (subscales). But they also stated that the subscales were robust and had different meanings, according to the evidence of Thompson and Spanier (1983).

As a result of these initial controversial studies, a discussion began about the dimensionality of the DAS, which has not yet been completely finalized. Some authors have classified the instrument as unidimensional (Crane et al., 1991; Kazak et al., 1988; Lim & Ivey, 2000; Sharpley & Cross, 1982; Spanier, 1988; Thompson, 1988; Vandeleur et al., 2003). Vajda et al. (2019) found the best fit, with strong reliability, for the overall factor (0.86); acceptable, for Dyadic Consensus (0.60) and Cohesion (0.57); and weak, for Dyadic Satisfaction (0.22) and Affectional Expression (0.36), while other researchers classified the instrument as multidimensional (Cano-Prous et al., 2014; Chiara et al., 2014; Gomez & Leal, 2008; Hernandez, 2008; Montesino et al., 2013; Sabourin et al., 1990; Shek & Cheung, 2008; South et al., 2009; Villeneuve et al., 2015).

Kazak et al. (1988) reported weak support for the presence of four subscales in the DAS. Particular problems were found in the Dyadic Consensus and Satisfaction subscales, as items showed cross-factor loadings on both. However, the items in the Affectional Expression subscale received better support than in previous studies. Spanier (1988) and Thompson (1988) reiterated that the DAS worked best as an overall measure and recommended that it should not be used for the assessment of specific dimensions.

However, there appears to be little practical use if the DAS is used only globally, as this could be adequately done by other shorter unidimensional instruments. The multidimensional potential is the primary distinction of

the DAS, providing more information for clinicians and researchers. Sabourin et al. (1990) proposed a solution to this issue; by means of Confirmatory Factor Analysis they tested a hierarchical multidimensional model for the DAS in which the four first-order factors would combine to form an overall second-order factor. The results revealed that this structure more adequately represented the data than the one-dimensional and multidimensional models. Still, some items in Affectional Expression and Dyadic Consensus had factor loadings < 0.30 .

The Principal Component Analysis of the scores of the Brazilian adaptation of the DAS (Hernandez, 2008) revealed, with reasonable clarity, the four factors predicted in the original model. But, also in this study, five items did not perform as expected, presenting their factor loadings in factors different from those to which they were originally assigned. The Cronbach's Alpha coefficient of the Affectional Expression subscale was below the recommended one (< 0.70).

In the analyses by Busby et al. (1995), similar problems were found, as some DAS items were homogeneous, and others were more heterogeneous. Busby et al. (1995) proposed a revision of the proposed DAS models, safeguarding the definition of Marital Adjustment proposed by Spanier (1976). The researchers selected the homogeneous items and adjusted a hierarchical model with three factors: Dyadic Consensus, Cohesion, and Satisfaction. The Affectional Expression factor was excluded, but some of its items were preserved and relocated. The results of the Confirmatory Factor Analyses revealed a reliable, valid and short 14-item instrument. The Revised Dyadic Adjustment Scale (RDAS) was then defined.

Hollist et al. (2012) translated and submitted a Brazilian version of the RDAS to a content validity procedure. After that, they tested the construct validity of the RDAS by comparing the participants' responses to the instrument with the assessments of the interviewers, who are family therapists. This clinical assessment was done using a five-point Likert scale, the highest score indicating higher marital quality. Correlations between the RDAS and clinical assessments were significant ($r = 0.52$, $p < 0.001$). According to the researchers, this evidence suggested that the instrument showed adequate construct validity. Furthermore, evidence of reliability was generated by the test-retest results and Cronbach's alpha coefficient, considering the instrument as a global measure of marital adjustment. In this study, the scores on the RDAS were not submitted to any type of factor analysis to verify its structure.

Several studies have recognized the importance of RDAS for clinical research and couples therapy (Blow et al., 2013; Bridgett et al., 2013; Bülbül et al., 2021; Costa & Mosmann, 2021; Farero et al., 2019; Frye-Cox & Hesse, 2013; Gangamma et al., 2012; Hamid et al., 2020; Li et al., 2022; Maroufizadeh et al., 2020; McLean et al., 2013; Naeem et al., 2021). The RDAS has been used to assess marital adjustment of stressed and non-stressed people and can determine whether these scores change significantly from one assessment to the next. However, the measure does not

pinpoint whether these changes are clinically significant. Anderson et al. (2014) determined a reliable cutoff point and change index for the RDAS that can classify an individual as experiencing clinically significant change.

The current study verified the nature of the constructs of the Brazilian version of the DAS by examining the relative

fits to the most common models proposed in the history of this instrument. We tested the unidimensional (Sharples & Cross, 1982), four-factor oblique (Spanier, 1976) and hierarchical (Sabourin et al., 1990) models of the DAS and of the RDAS (Busby et al., 1995) by means of Structural Equation Modeling.

METHOD

Participants

A total of 448 individuals were examined, 253 (56.5%) women and 195 (43.5%) men, aged 19 to 69 ($M = 39.5$; $SD = 9.7$) years, who were married ($n = 395$) or in a civil partnership ($n = 53$) and cohabiting with their partners. The average length of relationship was 14.7 years ($SD = 9.4$). Regarding the number of children: 133 (29.7%) had no children; 106 (23.7%) had one child; 138 (30.8%), two children; 57 (12.7%), three children; six (1.3%), four children; three (0.7%), five children; and five (1.1%) did not provide this information. As for education: nine (2.0%) concluded primary school; 49 (10.9%) concluded secondary school; 386 (86.2%) have a higher education degree; and four (0.9%) did not declare this information. The non-probabilistic sample was approached in the different regions of Brazil: 162 (36.2%) from the Southeast, 51 (11.4%) from the Northeast, 203 (45.3%) from the South, 24 (5.4%) from the North and seven (1.6%) from the central part of the country, and one person (0.2%) did not provide this information.

Instruments

The Brazilian version of Spanier's DAS (1976), adapted by Hernandez (2008), was used to assess Marital Adjustment in the perception of the members of the couple. The main feature of this scale is that it assesses four different dimensions of Marital Adjustment: Dyadic Consensus, Dyadic Cohesion, Dyadic Satisfaction, and Affectional Expression. DAS has 32 items, distributed in the four subscales, which were answered by means of Likert scales ranging, in general, from *always agree* to *always disagree* about a series of daily situations. Cronbach's alphas calculated for the subscales and total DAS ranged from 0.62 to 0.93 (Hernandez, 2008).

RDAS was also examined (Busby et al., 1995), which is a version of DAS with 14 items distributed into three factors (Dyadic Consensus, Cohesion, and Satisfaction). The internal consistency indices obtained by Busby et al. (1995) showed that the RDAS was reliable, Cronbach's alphas ranging from 0.81 to 0.90 and Guttman split-half coefficients, from 0.79 to 0.94.

Procedures

The project was submitted to the Research Ethics Committee of the institution to which it is linked and was approved according to opinion report 728.594/15. The subjects were invited to participate in the research, were informed about its objectives, and filled out and signed an Informed Consent Form, according to the ethical guidelines for research involving human beings. Data were collected directly from the participants in various public and private places, such as higher education institutions, technical course facilities, and in the participants' homes.

Data Analysis

Initially, descriptive analyses were performed in order to verify data distribution. In order to verify the construct validity of DAS (Spanier, 1976) and RDAS (Busby et al., 1995), Confirmatory Factor Analyses (CFAs) were used with the Maximum Likelihood estimation method, in the Analysis of Moment Structures (AMOS, Arbuckle, 2019) software, which proves to be robust even in the presence of a non-normal data distribution (Marôco, 2021). In order to evaluate the fits of the factorial models, the following indices were considered:

- Chi-square (χ^2), which assesses the magnitude of the discrepancy between the population covariance matrix and the sample covariance matrix. The χ^2 is a conservative estimate of model fit when the sample size is > 200 (Byrne, 2016). In this case, the χ^2/df ratio should be used and results less than 2-3 are considered good (Arbuckle, 2019).
- Root Mean Square Residual (RMSR), which is a ratio of the square root of the error matrix to the degrees of freedom. The lower the RMSR value, the better fit the tested model will exhibit; values < 0.08 indicate a good fit (Hu & Bentler, 1999).
- Comparative Fit Index (CFI), a relative index that compares the fit of the evaluated model to the baseline model, values > 0.90 indicate a good fit.

- Root Mean Square Error of Approximation (RMSEA), which measures the discrepancy by degrees of freedom between the sample and population estimates. Values < 0.05 are considered very good.
- Expected Cross-Validation Index (ECVI), which, from the sample used in the study, estimates the theoretical fit of the model in other similar samples.

As the estimation method was Maximum Likelihood, the ECVI was used. From the Modification Indices (> 11; $p < 0.001$) model re-specifications were made based on theoretical justifications (Marôco, 2021).

Also, to estimate construct validity, in the context of Structural Equation Modeling (SEM), factor validity was assessed by standardized weights and individual item reliability. Convergent validity was assessed by means of the Average Variance Extracted (AVE) and the Composite Reliability (CR) for each of the specific and global dimensions of DAS (Fornell & Larcker, 1981). Discriminant validity was determined by comparing AVE of the factors with the square of the correlation between the measure factors. A Multigroup Confirmatory Factor Analysis (MGCF) was also performed to verify the invariance of RDAS fit for men and women (Hair et al., 2019).

RESULTS

In the initial analysis of the data collected, we computed the absence of 47 scores (0.3% of the total) and replaced them by the mean. Multivariate abnormality of the data distribution was evident, Mardia's coefficient was 56.17 (normalized = 28.09). However, in the univariate statistics, the asymmetry was < |2| and the kurtosis < |2|, which is not an extreme violation of normality (Tabachnick & Fidell, 2018).

According to Marôco's (2021) criteria, the CFA for the one-dimensional DAS and RDAS models revealed an overall inadequate fit quality (Table 1) with some items showing standardized factor loadings < 0.50 (Figure 1). For the four-factor oblique and hierarchical models of the DAS, the fit quality indices were nearly equal and ranged from "sufferable to acceptable" (Table 1). Also, several items showed standardized factor weights < 0.50 and, consequently, explained variances < 0.25 (Figure 2). In these multifactor models of the DAS, the Affectional Expression factor had the lowest AVE and CR values (Table 2).

CFA revealed nearly equal indices that represented good overall fit for the scores to the four-factor oblique and hierarchical RDAS models. In addition, analysis of the modification indices indicated the possibility of performing

re-specifications on them that improved the fit (Table 1). Measurement errors were detected for three pairs of observed variables that were correlated with each other and these shared an underlying factor not contemplated in the model (Figure 3). These re-specifications, which were theoretically justified, produced improvements in the estimated indices for the condition of "very good" fit as classified by Marôco (2021).

Using the χ^2 statistics of the hierarchical (χ^2_o) and re-specified hierarchical ($\chi^2_{resep.}$) models of RDAS with their corresponding degrees of freedom, the following test statistic was performed: $\Delta\chi^2 = \chi^2_o - \chi^2_{resep.} = 267.073 - 156.978 = 110.095$, with $75 - 72 = 3$ degrees of freedom. In the Chi-Square Distribution Table for $\alpha = 0.05$, a $\chi^2_{0.95(3)} = 7.815 < \Delta\chi^2 = 110.095$ was found, evidencing that the re-specified hierarchical model of the RDAS had a better fit than the same non-re-specified model and MECVI indicated that it will also have better validity in the population investigated (Table 1).

After the re-specifications, the items showed standardized factor weights (λ) ≥ 0.50 . Consequently, all items showed $\lambda^2 \geq 0.25$ (Figures 2 and 3), which represented an appropriate individual reliability for them.

Table 1
Estimated Fit Indices for the DAS and RDAS Models

Model	χ^2/df	RMSR	GFI	CFI	RMSEA(LO-HI)90	AIC	CAIC	MECVI
DAS _{unidimens.}	4.03	0.086	0.76	0.81	0.08(0.08-0.09)	1,999.32	2,326.32	4.50
DAS _{4 factors}	2.72	0.067	0.84	0.90	0.06(0.06-0.07)	1,386.10	1,743.43	3.13
DAS _{hierarchical}	2.72	0.068	0.84	0.89	0.06(0.06-0.07)	1,387.69	1,734.82	3.13
RDAS _{unidimens.}	7.50	0.064	0.83	0.84	0.12(0.11-0.13)	633.25	776.18	1.42
RDAS _{4 factors}	3.50	0.061	0.92	0.94	0.07(0.06-0.08)	321.26	479.51	0.72
RDAS _{hierarchical}	3.56	0.065	0.92	0.94	0.08(0.07-0.09)	327.07	480.22	0.74
RDAS _{4 factors} *	2.16	0.034	0.95	0.97	0.05(0.04-0.06)	221.07	394.64	0.50
RDAS _{hierarchical} *	2.18	0.061	0.95	0.97	0.05(0.04-0.06)	222.97	391.44	0.50

Note. * Re-specified models.

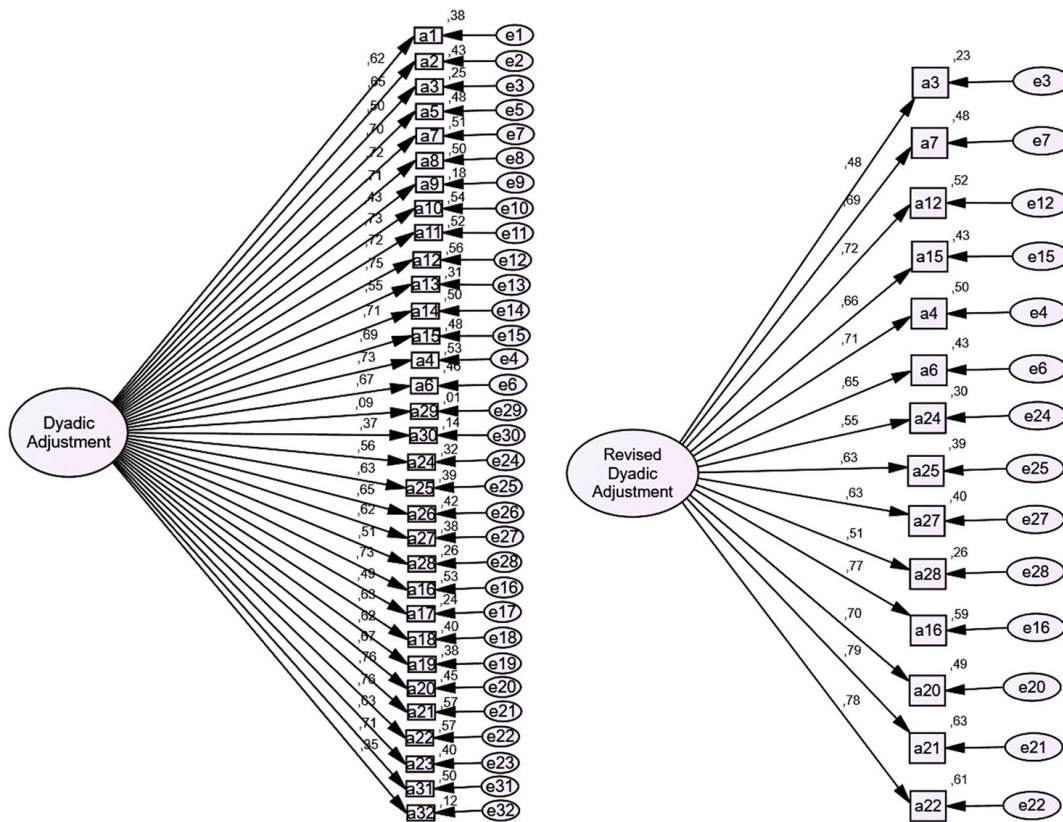


Figure 1. Diagrams of the One-Dimensional Models of DAS and RDAS, Respectively, with Estimated Standardized Factor Loadings and Explained Variances

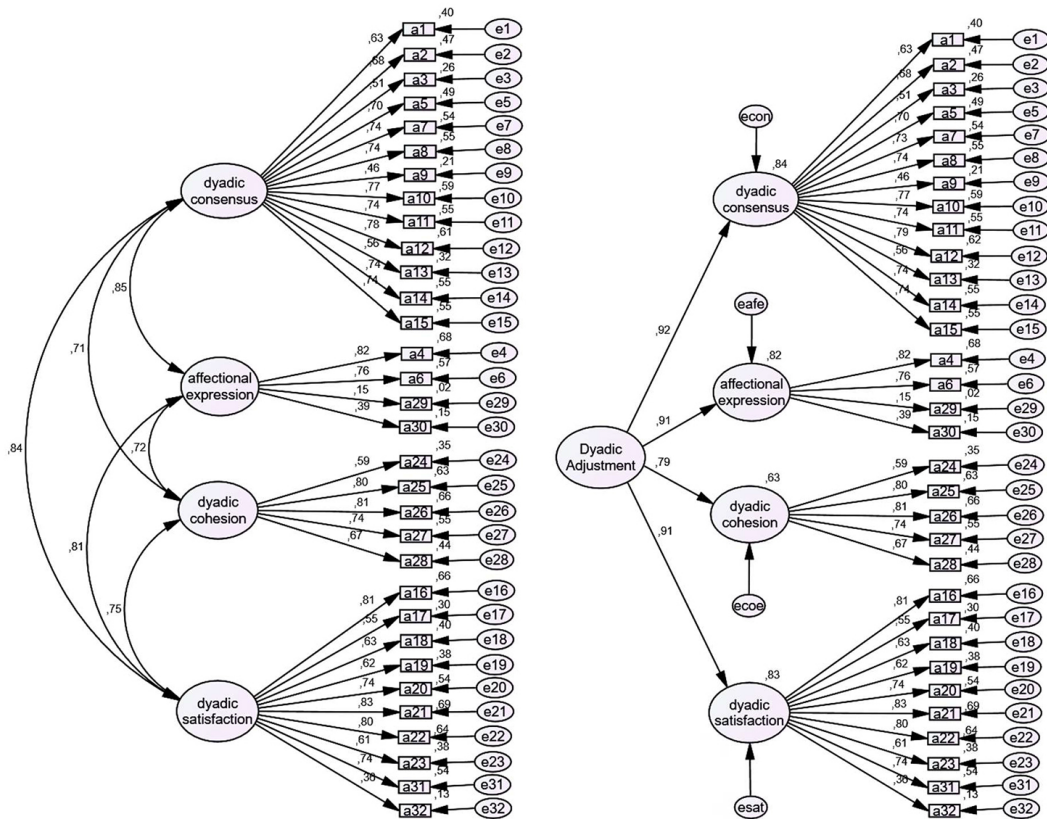


Figure 2. Diagrams of the Four-Factor Oblique and Hierarchical Models of DAS, Respectively, with Estimated Standardized Factor Loadings and Explained Variances

Table 2

Composite Reliability (CR) and Average Variance Extracted (AVE) of the Dimensions of the DAS and RDAS Models

Factor	DAS _{4factors}		DAS _{hierarchical}		RDAS _{4factors}		RDAS _{hierarchical}	
	CR	AVE	CR	AVE	CR	AVE	CR	AVE
Dyadic Consensus	0.92	0.47	0.92	0.47	0.84	0.47	0.83	0.46
Affectional Expression	0.63	0.36	0.63	0.36	—	—	—	—
Dyadic Cohesion	0.85	0.53	0.85	0.53	0.79	0.49	0.79	0.49
Dyadic Satisfaction	0.89	0.47	0.89	0.47	0.88	0.64	0.88	0.64
Global RDAS (Fit)	—	—	0.93	0.78	0.90	0.76	0.91	0.77

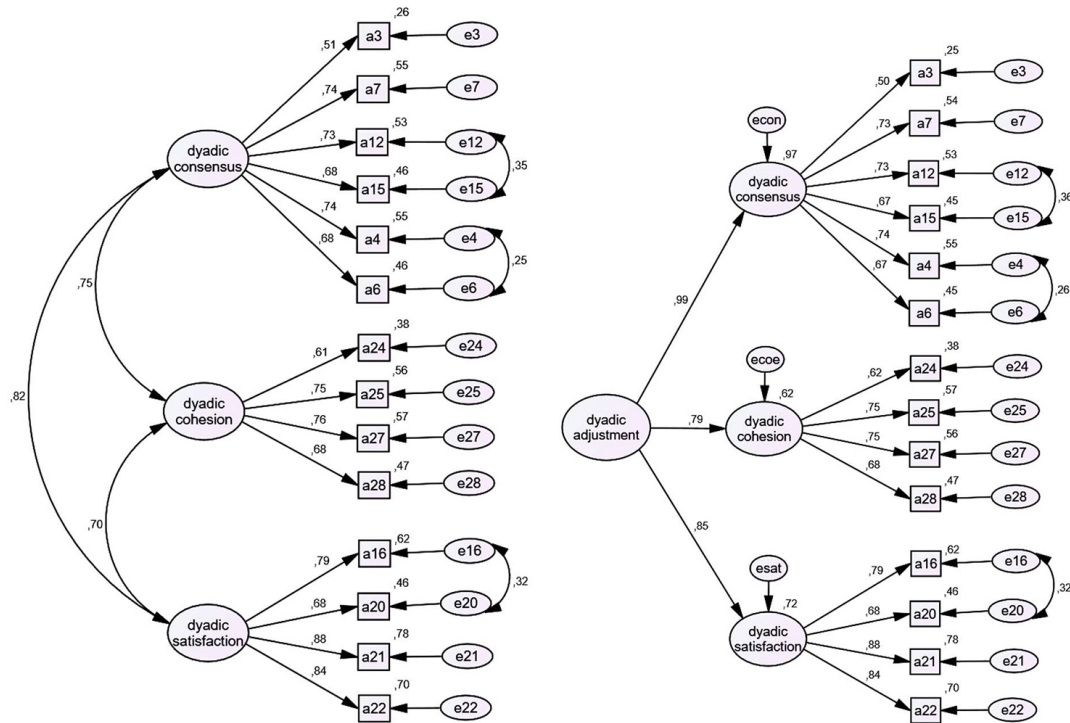


Figure 3. Diagrams of the Re-Specified Four-Factor Oblique and Hierarchical RDAS Models, Respectively, With Estimated Standardized Factor Loadings and Explained Variances

As the hierarchical model of the RDAS presented the best overall fit compared to the others, we proceeded to verify the convergent and discriminant validity, the CR and the invariance of participants' gender in it. Convergent validity was measured by the total amount of variances of the observed variables explained by the latent factors, represented by AVE, which ranged from 0.46 to 0.64 among the factors: Dyadic Consensus, Cohesion and Satisfaction, and 0.77 for the overall dimension, Dyadic Adjustment (Table 2). In SEM, discriminant validity is defined by not showing considerable correlations between the constructs in the model. In this study, discriminant validity was verified by the method of comparing the square of the correlations between the three factors of the re-specified RDAS with AVEs of the same factors (Fornell & Larcker, 1981). In all comparisons, AVE values of the factors were greater than the square of the correlations between them, indicating

discrimination, except for the correlation between the factors Dyadic Consensus and Satisfaction (Table 3).

The reliability of the factors and overall RDAS dimension was calculated using CR. Internal consistency values that represent appropriate conditions for all specific and global dimensions of the measure were estimated, since the indices ranged from 0.79 to 0.91 (Table 2).

MGCFA revealed, according to the indices ($\chi^2/df = 1.74$; $CFI = 0.966$; $PCFI = 0.76$; $RMSEA = 0.041$; $C.I. 90\% [0.032; 0.049]$), that the free model showed very good fit for men and women simultaneously, indicating the configurational invariance of the factor model (Marôco, 2021). The metric invariance test that checks whether the factor loadings of the items are equivalent for both groups obtained the following fit indices: ($\chi^2/df = 1.69$; $CFI = 0.966$; $PCFI = 0.82$; $RMSEA = 0.039$; $C.I. 90\% [0.031; 0.048]$). In comparing the free model with the one with fixed factor weights, the result

Table 3
Discriminant Validity Matrix with the Squares of the Correlation
Coefficients of the RDAS Dimensions and the AVEs

	F1	F2	F3
F1 - Dyadic Consensus	0.46		
F2 - Dyadic Cohesion	0.36	0.49	
F3 - Dyadic Satisfaction	0.50	0.35	0.64

Note. Find diagonally, in bold letters, the values of the AVEs.

showed that there are no significant differences between them, $DF = 11$, $CMIN = 11.437$; $p = 0.407$. Therefore, it can be assumed that the model has weak measurement invariance, i.e., all factor loadings of the RDAS items are equivalent in the groups evaluated, which would be sufficient

to demonstrate the construct's factor validity (Hair et al., 2019; Marôco, 2021). Moving forward, the test of the items' intercepts (means) showed the following fit for men and women: ($\chi^2/df = 1.64$; $CFI = 0.966$; $PCFI = 0.90$; $RMSEA = 0.038$; $C.I. 90\% [0.030; 0.046]$). The free and intercepted models also did not differ, $DF = 25$, $CMIN = 25.717$; $p = 0.423$. The comparison between the factor weights model and the intercepts' models also found no difference, $DF = 14$, $CMIN = 14.280$; $p = 0.429$. Furthermore, the difference in the CFI fit index (ΔCFI) between one model and the other was verified. As it may be seen from the CFI indices obtained, all differences found were < 0.01 , which corroborated the equivalences for the instrument parameters. These results supported strong measurement invariance for the RDAS between men and women (Marôco, 2021).

DISCUSSION

Considering Marôco's criteria (2021), in this study, the one-dimensional, multidimensional, and hierarchical models of the DAS presented fits to the empirical data that ranged from "poor to sufferable". In the multidimensional and hierarchical models, the most evident problem was with the subscale Affectional Expression, which had two items with low estimated standardized factor loadings (Figures 1 and 2, respectively) and insufficient CR indices (Table 2). The same problems with this factor were reported in the studies by Sharpley and Cross (1982), Spanier and Thompson (1982), Sabourin et al. (1990), Crane et al. (1991), and in the meta-analysis by Graham et al. (2006) of 91 published studies.

The indices estimated for the Brazilian version of the RDAS were also not good for the one-dimensional model but revealed a good fit of the data to the four-factor oblique and hierarchical multidimensional models, which started to display very good fits after the re-specifications. By means of the modification indices, correlations were found between the measurement errors of three pairs of items of RDAS: of the Dyadic Consensus factor, items 4 ("Demonstrations of Affection") and 6 ("Sexual Relationships") and items 12 ("Making important decisions") and 15 ("Professional decisions"); of the Dyadic Satisfaction factor, items 16 ("How often have you discussed or considered divorce, separation, or ending the relationship?") and 20 ("Do you regret getting married or moving in together?"). For Busby et al. (1995), the pair of items 4-6 assesses Consensus on matters of affection, rather than belonging to the original Affectional Expression construct, from which it was taken; in item pair 12-15 both items represent the Consensus facet of major decision-making; and the pair of items 16-20 measures an aspect of Satisfaction related to relationship stability. Each of these pairs of items was assigned by Busby et al. (1995) to represent a specific aspect of the same-content construct, which may explain the correlations found between their errors and the inclusion of the additional trajectories to the RDAS model (Figures 2 and 3).

Convergent validity was measured by AVE, which reveals the total amount of variance of the observed variables explained by the latent variable; recommended values for a construct should be equal to or above 0.50 (Fornell & Larcker, 1981). In Table 2, the values of the factor and overall AVEs of the RDAS found were above or very close to this point, but the CRs, which are also indicative of convergent validity, presented values that fully met the recommendations (Hair et al., 2019).

In general, the measurements of the AVEs were greater than the squares of the correlations between the latent factors of the RDAS. In this case, the exception was the Dyadic Consensus factor (Table 3). These results suggest that the modeled factor represented a specific value, which was adjusted into the model adequately and discriminated from the values of the other factors that make up the revised dyadic adjustment model (RDAS). In the case of the Dyadic Consensus factor, the value of the correlation between them was higher than the AVE, not indicating sufficient discriminant validity.

Isanezhad et al. (2012) found evidence of validity and reliability for the hierarchical RDAS with scores of Iranians. Turliuc and Muraru's (2013) Confirmatory Factor Analysis also indicated an acceptable statistical fit for the model, and in multi-group testing, the result showed invariance of the model between men and women. Furthermore, these researchers concluded that the measurement can be used in psychological practice and research.

On the other hand, Vandeleur et al. (2003) did not find an adequate fit for the hierarchical RDAS with data from French-speaking Swiss. On the other hand, different from the present results, the analysis of these scores revealed excellent fits for the one-dimensional solutions of the DAS and RDAS, and a good fit for the hierarchical DAS model.

Based on the results obtained in the current study, we concluded that the data from the Brazilian participants represented well the multidimensional and hierarchical models of the RDAS. In addition to the overall model evaluation, examination of individual parameter estimates

fit, convergent and discriminant validity, and internal consistency estimates were satisfactory. The invariance of the hierarchical model was also demonstrated, which indicated that the Brazilian version of the RDAS could be useful for both genders. The current results revealed overall fits of the RDAS model close to those obtained in the original study (Busby et al., 1995) and later studies (Isanezhad et al., 2012; Turluc & Muraru, 2013), which is also evident contributing to the validity of this RDAS adaptation.

However, although the data from this study come from several regions of Brazil, they were not sufficiently comprehensive to cover the entire territory. It should also be considered that more than 80% of the participants in this research had a college degree, which does not equitably represent the school profile of the Brazilian population. It is suggested that future studies should equalize the sample in several socio-demographic aspects and include clinical samples to verify criterion validity.

REFERENCES

- Anderson, S. R., Tambling, R. B., Huff, S. C., Heafner, J., Johnson, L. N., & Ketring, S. A. (2014). The development of a reliable change index and cutoff for the Revised Dyadic Adjustment Scale. *Journal of Marital and Family Therapy*, 40(4), 525-534. <https://doi.org/10.1111/jmft.12095>
- Arbuckle, J. L. (2019). *IBM® SPSS® Amos™ 22 user's guide*. Amos Development Corporation.
- Blow, A. J., Gorman, L., Ganoczy, D., Kees, M., Kashy, D. A., Valenstein, M., Marcus, S. M., Fitzgerald, H. E., & Chermack, S. (2013). Hazardous drinking and family functioning in National Guard veterans and spouses postdeployment. *Journal of Family Psychology*, 27, 303-313. <https://doi.org/10.1037/a0031881>
- Bridgett, D. J., Burt, N. M., Laake, L. M., & Oddi, K. B. (2013). Maternal self-regulation, relationship adjustment, and home chaos: Contributions to infant negative emotionality. *Infant Behavior and Development*, 36(4), 534-547. <https://doi.org/10.1016/j.infbeh.2013.04.004>
- Bülbül, T., Mucuk, S., Dolanbay, M., & Turhan, I. (2021). Do complaints related to menopause affect sexuality and marital adjustment? *Sexual and Relationship Therapy*, 36(4), 465-479. <https://doi.org/10.1080/14681994.2020.1813886>
- Busby, D. M., Christensen, C., Crane, D. R., & Larson, J. H. (1995). A revision of the Dyadic Adjustment Scale for use with distressed and nondistressed couples: Construct hierarchy and multidimensional scales. *Journal of Marital and Family Therapy*, 21(3), 289-308. <https://doi.org/10.1111/j.1752-0606.1995.tb00163.x>
- Byrne, B. (2016). *Structural Equation Modeling With AMOS: Basic Concepts, Applications, and Programming*. Routledge.
- Cano-Prous, A., Martín-Lanas, R., Moyá-Querejeta, J., Beunza-Nuin, M. I., Lahortiga-Ramos, F., & García-Granero, M. (2014). Psychometric properties of a Spanish version of the Dyadic Adjustment Scale. *International Journal of Clinical and Health Psychology*, 14(2), 137-144. <https://www.redalyc.org/articulo.oa?id=33730456003>
- Chiara, G., Eva, G., Elisa, M., Luca, R., & Piera, B. (2014). Psychometrical properties of the Dyadic Adjustment Scale for measurement of marital quality with Italian couples. *Procedia - Social and Behavioral Sciences*, 127, 499-503. <https://doi.org/10.1016/j.sbspro.2014.03.298>
- Costa, C. B. da, & Mosmann, C. P. (2021). Personality traits and marital adjustment: Interaction between intra and interpersonal aspects. *Paidéia*, 31, e3107. <https://doi.org/10.1590/1982-4327e3107>
- Crane, D. R., Busby, D. M., & Larson, J. H. (1991). A factor analysis of the Dyadic Adjustment Scale with distressed and nondistressed couples. *The American Journal of Family Therapy*, 19(1), 60-66. <https://doi.org/10.1080/01926189108250835>
- Farero, A., Bowles, R., Blow, A., Ufer, L., Kees, M., & Guty, D. (2019). Rasch analysis of the Revised Dyadic Adjustment Scale (RDAS) with military couples. *Contemporary Family Therapy*, 41, 125-134. <https://doi.org/10.1007/s10591-018-09486-2>
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.2307/3151312>
- Frye-Cox, N. E., & Hesse, C. R. (2013). Alexithymia and marital quality: The mediating roles of loneliness and intimate communication. *Journal of Family Psychology*, 27(2), 203-211. <https://doi.org/10.1037/a0031961>
- Gangamma, R., Bartle-Haring, S., & Glebova, T. (2012). A study of contextual therapy theory's relational ethics in couples in therapy. *Family Relations*, 61(5), 825-835. <https://doi.org/10.1111/j.1741-3729.2012.00732.x>
- Gomez, R., & Leal, I. (2008). Ajustamento conjugal: Características psicométricas da versão portuguesa da Dyadic Adjustment Scale [Marital adjustment: Psychometric characteristics of the Portuguese version of the Dyadic Adjustment Scale]. *Análise Psicológica*, 26(4), 625-638. <http://doi.org/10.14417/ap.522>
- Graham, J. M., Liu, Y. J., & Jezierski, J. L. (2006). The Dyadic Adjustment Scale: A reliability generalization meta-analysis. *Journal of Marriage and Family*, 68(3), 701-717. <https://doi.org/10.1111/j.1741-3737.2006.00284.x>
- Hair, J. F., Jr., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2019). *Multivariate Data Analysis* (8th ed.). Cengage.
- Hamid, N., Muhamad, R., Kueh, Y. C., Zahari, Z., Mohamad Nor, N., Abdullah, N., Wong, M. S., Meor Zul Kefli'Auni, S. A., Ma, Z. F., & Lee, Y. Y. (2020). Translation of the Revised Dyadic Adjustment Scale (RDAS) into the Malay language and its psychometric qualities among healthy married Malay women. *Journal of pharmacy & bioallied sciences*, 12(4), 444-448. https://doi.org/10.4103/jpbs.JPBS_265_19
- Hernandez, J. A. E. (2008). Avaliação estrutural da Escala de Ajustamento Diádico [Structural evaluation of the Dyadic Adjustment Scale]. *Psicologia em Estudo*, 13(3), 593-601. <https://doi.org/10.1590/S1413-73722008000300021>
- Hollist, C. S., Falceto, O. G., Ferreira, L. M., Miller, R. B., Springer, P. R., Fernandes, C. L. C., Nunes, N. A. (2012). Portuguese translation and validation of the revised Dyadic Adjustment Scale. *Journal of Marital and Family Therapy*, 38(s1), 348-358. <https://doi.org/10.1111/j.1752-0606.2012.00296.x>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>

- Isanezhad, O., Ahmadi, S. A., Bahrami, F., Baghban-Cichani, I., Farajzadegan, Z., & Etemadi, O. (2012). Factor structure and reliability of the revised Dyadic Adjustment Scale (RDAS) in Iranian population. *Iranian Journal of Psychiatry Behavior Science*, 6(2), 55-61.
- Kazak, A. E., Jarmas, A., & Snitzer, L. (1988). The assessment of marital satisfaction: An evaluation of the Dyadic Adjustment Scale. *Journal of Family Psychology*, 2, 82-91. <https://doi.org/10.1037/h0080475>
- Li, M., Chan, C. W. H., Choi, K. C., Zhang, H., Ng, S. N., Huang, L., Zhang, M., & Zhao, W. (2022). The Chinese version of the Revised Dyadic Adjustment Scale for gynaecological cancer patients and their partners: Translation and psychometric evaluation. *Asia-Pacific Journal of Oncology Nursing*, 9(1), 48-54. <https://doi.org/10.1016/j.apjon.2021.12.004>
- Lim, B. K., & Ivey, D. (2000). The assessment of marital adjustment with Chinese populations: A study of the psychometric properties of the Dyadic Adjustment Scale. *Contemporary Family Therapy*, 22(4), 453-465. <https://doi.org/10.1023/A:1007801018478>
- Marôco, J. (2021). *Análise de equações estruturais: Fundamentos teóricos, software & aplicações [Analysis of structural equations: Theoretical foundations, software & applications]*. ReportNumber.
- Maroufizadeh, S., Omani-Samani, R., Hosseini, M., Almasi-Hashiani, A., Sepidarkish, M., & Amini, P. (2020). The Persian version of the Revised Dyadic Adjustment Scale (RDAS): A validation study in infertile patients. *BMC Psychology*, 8(6). <https://doi.org/10.1186/s40359-020-0375-z>
- McLean, L. M., Walton, T., Rodin, G., Esplen, M. J., & Jones, J. M. (2013). A couple-based intervention for patients and caregivers facing end-stage cancer: Outcomes of a randomized controlled trial. *Psychooncology*, 22(1), 28-38. <https://doi.org/10.1002/pon.2046>
- Montesino, M. L. C., Gómez, J. L. G., Fernández, M. E. P., & Rodríguez, J. M. A. (2013). Psychometric properties of the Dyadic Adjustment Scale (DAS) in a community sample of couples. *Psicothema*, 25(4), 536-541. <https://doi.org/10.7334/psicothema2013.85>
- Naeem, B., Aqeel, M., Maqsood, A., Yousaf, I., & Ehsan, S. (2021). Psychometric properties of the revised Urdu version Dyadic Adjustment Scale for evaluating marital relationship quality between Madrassa and non-Madrassa married women. *International Journal of Human Rights in Healthcare*, 14(4), 1-20. <https://doi.org/10.1108/IJHRH-01-2020-0004>
- Sabourin, S., Lussier, Y., Laplante, B., & Wright, J. (1990). Unidimensional and multidimensional models of dyadic adjustment: A hierarchical reconciliation. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 2(3), 333-337. <https://doi.org/10.1037/1040-3590.2.3.333>
- Sharples, C. F., & Cross, D. G. (1982). A psychometric evaluation of the Spanier Dyadic Adjustment Scale. *Journal of Marriage and the Family*, 44, 739-741. <https://doi.org/10.2307/351594>
- Shek, D. T. L., & Cheung, C. K. (2008). Dimensionality of the Chinese Dyadic Adjustment Scale based on confirmatory factor analyses. *Social Indicators Research*, 86(2), 201-212. <https://doi.org/10.1007/s11205-007-9108-4>
- South, S. C., Krueger, R. F., & Iacono, W. G. (2009). Factorial invariance of the Dyadic Adjustment Scale across gender. *Psychological Assessment*, 21(4), 622-628. <https://doi.org/10.1037/a0017572>
- Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family*, 38, 15-28. <https://doi.org/10.2307/350547>
- Spanier, G. B. (1988). Assessing the strengths of the Dyadic Adjustment Scale. *Journal of Family Psychology*, 2(1), 92-94. <https://doi.org/10.1037/h0080477>
- Spanier, G. B., & Thompson, L. (1982). A confirmatory analysis of the Dyadic Adjustment Scale. *Journal of Marriage and the Family*, 44(3), 731-738. <https://doi.org/10.2307/351593>
- Tabachnick, B. G., & Fidell, L. S. (2018). *Using multivariate statistics* (7th ed.). Pearson.
- Thompson, L. (1988). Women, men, and marital quality. *Journal of Family Psychology*, 2(1), 95-100. <http://dx.doi.org/10.1037/h0080478>
- Thompson, L., & Spanier, G. B. (1983). The end of marriage and acceptance of marital termination. *Journal of Marriage and the Family*, 45, 103-113. <https://doi.org/10.2307/351299>
- Turliuc, M. N., & Muraru, A. A. (2013). Psychometric properties of the Revised Dyadic Adjustment Scale on a sample of married adults. *Journal of Psychological and Educational Research*, 21(1), 49-76.
- Vajda, D., Thege, B. K., & Rózsa, S. (2019). Factor structure of the Dyadic Adjustment Scale: A bifactor exploratory structural equation modeling approach. *European Journal of Psychological Assessment*, 35(3), 326-334. <https://doi.org/10.1027/1015-5759/a000405>
- Vandeleur, C. L., Fenton, B. T., Ferrero, F., & Preisig, M. (2003). Construct validity of the French version of the Dyadic Adjustment Scale. *Swiss Journal of Psychology*, 62(3), 167-175. <https://doi.org/10.1024//1421-0185.62.3.167>
- Villeneuve, L., Trudel, G., Prévaille, M., Dargis, L., Boyer, R., & Bégin, J. (2015). Dyadic Adjustment Scale: A validation study among older French-Canadians living in relationships. *Canadian Journal on Aging*, 34(1), 26-35. <https://doi.org/10.1017/S0714980814000269>