Reliability and validity of the Relationship Assessment Scale in Puerto Rican women[1]

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Abstract

The objective of this study is to examine the reliability and validity of the Spanish version of the Relationship Assessment Scale (RAS) in a sample of Puerto Rican women. Relationship satisfaction can be defined as the global position towards partnered love relationships and the actual couple. The sample consisted of 1,009 women whom were involved in some type of couple relationship including marriage or a cohabiting relationship. The confirmatory factor analysis was used to examine the data, as well as item discrimination analysis and internal consistency reliability. The results obtained confirmed the one-dimensional structure of the RAS with an adequate internal consistency (Alpha = .91; Split-half = .93). The seven items of the scale complied with the discrimination criteria. The results demonstrated that the validity and reliability of the scale are appropriate, and therefore a useful and valid tool to measure the level of satisfaction of Puerto Rican women in amorous relationships.

Palabras clave

Couple satisfaction, marital satisfaction, satisfaction in the relationship, psychometric properties, validation

Fiabilidad y validez de la Escala de Evaluación de Relaciones en mujeres puertorriqueñas

Resumen

El objetivo de este estudio fue examinar la fiabilidad y validez de la versión en español del Relationship Assessment Scale (RAS) en una muestra de mujeres puertorriqueñas. La satisfacción con la relación se puede definir como la actitud global hacia la relación y la pareja. Colaboraron un total de 1,009 mujeres que se encontraban en algún tipo de relación de convivencia con su pareja (matrimonio o unión libre). Los datos se analizaron mediante análisis factorial confirmatorio, análisis de discriminación de ítems y análisis de consistencia interna. Los resultados confirmaron la estructura unidimensional del RAS con una consistencia interna adecuada (Alfa = .91; División en mitades = .93). Los siete ítems de la escala cumplieron con los criterios de discriminación. Los resultados muestran que la validez y confiabilidad de la escala son apropiadas. Se concluye que es una medida útil y válida para medir satisfacción en la relación en mujeres puertorriqueñas.

Keywords

Confiabilidade e validade da escala de avaliação de relacionamento em mulheres porto-riquenhas

Resumo

O objetivo deste estudo é examinar a confiabilidade e validade da versão em espanhol da escala de avaliação de relacionamento em uma amostra composta por mulheres porto-riquenhas. A satisfação pode ser entendida como a postura global em relação aos relacionamentos amorosos em parceria e os que correspondem a um casal conformado. A amostra foi composta por 1009 mulheres as quais estiveram envolvidas em algum tipo de relacionamento de casal incluindo matrimônio ou uma relação de convivência. A análise fatorial confirmatória foi usada para avaliar os dados, assim como uma análise de discriminação de itens e confiabilidade da consistência interna. Os resultados obtidos confirmaram a estrutura unidimensional da escala de avaliação de relacionamento com consistência interna adequada (Alpha = .91; Split-half = .93). Os sete itens da escala atenderam aos critérios de discriminação. Os resultados demonstraram que a validade e a confiabilidade da escala são adequadas e, portanto, é uma ferramenta útil e válida para medir o nível de satisfação das mulheres porto-riquenhas em relacionamentos amorosos.

Palavras chave

Introduction

Researchers around the world have demonstrated that one of the most important factors that contribute to the breakup of a couple is the satisfaction or dissatisfaction in a relationship (Armenta, Sánchez-Aragón & Diaz Loving, 2014; González-Rivera, & Veray-Alicea, (2018); Hirschberger, Srivastava, Marsh, Cowan, & Cowan 2009; Moral, 2008). It has also been confirmed that the lack of satisfaction in a couple has adverse consequences in the people's quality of life, such as financial, social, personal, and family hardships (Arias, 2003; Oropeza, Armenta, García, Padilla, & Díaz, 2010). Interestingly, González-Rivera, Segura-Abreu, and Urbistondo-Rodríguez (2018) indicate that women usually are more prone to feeling unsatisfied than men in their couple relationships.

Satisfaction in a relationship can be defined as the overall attitude towards the relationship itself and towards the couple (Moral, 2015). Other authors have defined it as a favorable or unfavorable attitude towards (solely) the relationship itself (Roach, Frazier, & Bowden, 1981). The tool that is most utilized to measure this construct, whether with engaged or dating couples, and/or married or cohabiting couples, is the Relationship Assessment Scale (RAS; Hendrick, 1988; Cassepp & Pasquali, 2011; Graham, Diebels, & Barnow, 2011; Maroufizadeha et al., 2018; Moral, 2008, 2015; Oropeza et al., 2010; Rask et al., 2010; Sáenz, 2014). The RAS is a one-dimensional measurement substantiated in the social exchange theory (Hendrick, Dicke, & Hendrick, 1998). From this perspective, satisfaction can be defined as the emotional state that results from a positive cost-based judgement. The social exchange theory presupposes that individuals analyze their relationships in terms of cost/benefit or give-and-take. The more people realize the relationship is equilibrated, the more satisfaction they may feel; when both subjects receive mutual benefits, there will be a sense of prosperity and stability in the relationship with a happy outcome (Li & Fung, 2011).

The RAS has so far been used in many research settings and several psychometric studies have shown that the scale possesses satisfactory reliability and validity (Dinkel & Balck, 2005; Çelik, 2014; Moral, 2015; Oropeza et al., 2010; Rask et al., 2010;). It has high internal consistency and satisfactory test-retest reliability (Renshaw, McKnight, Caska, & Blais, 2011). Concerning psychometric properties, Graham et al. (2011) indicate that the RAS is an adequate tool with internal consistency, but it affects the outcome estimate depending of the sociodemographic characteristics of the sample. This finding makes it necessary for the RAS to be evaluated in different populations and cultural contexts. Providing that there are no available studies to validate this scale in Puerto Rico, the aim of this study is to analyze the psychometric properties of the RAS in a sample of Puerto Rican women. Thus, three specific objectives have been developed: (1) analyzing the factorial structure of the instrument through confirmatory factorial analysis, (2) examining the discriminatory capacity of the items, and (3) evaluating the reliability of the instrument.

Methods

Design

To achieve the objective of this research, a non-experimental, transversal, instrumental type design was used (Ato, López, & Benavente, 2013).

Participants

The sample consisted of 1,009 Puerto Rican women whom were involved in some type of couple cohabiting relationship (marriage or living together) and were recruited upon availability via internet. The sample average age was 34.54 (DE = 8.91). Sociodemographic data of the participants are shown in Table 1.

Table 1
Sociodemographic information of participants

Variables	f	%
Annual Income		
25,000 or less	571	56.59
26,000 – 50,000	297	29.44
51,000 – 100,000	118	11.69
101,000 or more	23	2.28
Type of Relationship		
Marriage	587	58.18
Cohabiting (free union)	422	41.82
Academic Preparation		
High School or less	50	4.96
Associate degree/ technical	247	24.48
Bachelor's Degree	395	39.15
Master's Degree	244	24.18
Ph.D.	73	7.23

Note: n = 1,009.

Measures

Relationship Assessment Scale (RAS; Hendrick, 1988). The RAS is a seven-item generic measure of relationship satisfaction. The answers are rated on a 5-point Likert scale, ranging from 1 (poor) to 5 (excellent); items 4 and 7 are reverse scored. In the present study, the Spanish version of the RAS was adapted for the feminine gender. Average scores range from 1 to 5; total scores range from 7 to 35. The higher the score, the more satisfaction and value is attributed to the relationship by the person and towards its partner.

Procedure

The data compilation was carried out through an online questionnaire using the application PsychData. For recruiting purposes, an ad was placed on the most popular social networks: Facebook, Twitter, Google+, WhatsApp, among others. Once the data was compiled, the psychometric properties of the RAS were examined using the statistical application STATA, version 15.1. Different analyses were made, such as item discrimination analysis, reliability analysis, and a confirmatory factorial analysis using the maximum likelihood method and the corrections of Satorra and Bentler (2001).

Results

Structure Validity

Confirmatory Factor Analysis. An analysis of confirmatory factors using structural equations was carried out. To evaluate the

model adjustment, the following goodness of fit indicators were utilized (Byrne, 2010): Chi Square Test ($\chi 2$), Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI). For a good adjustment of the model, the values of CFI and TLI should be $\geq$ .95 and the value of the RMSEA should be $\leq$ .08 (Byrne, 2010). The tested model was conformed by only one latent factor which gathered the seven items of the RAS (see Figure 1). The results cast a good adjustment for the model with the corresponding releases between errors and the corrections of Satorra and Bentler (2001), $\chi 2$ = 49.265 (12) p < .001, RMSEA = .06, CFI = .99, TLI = .99, $\chi 2$-SB = 42.312 (12) p < .001, RMSEA-SB = .05, CFI-SB = .99, TLI-SB = .99. The regression coefficients of each item surpassed the .65 as recommended by Chin (1995); these fluctuated between .65 and .91.
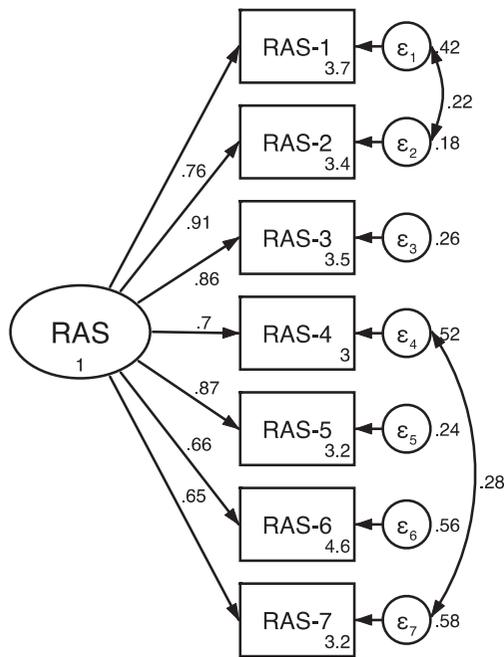
Item Analysis

The discrimination of the RAS seven items was analyzed utilizing Corrected item-total correlations. The seven items discrimination indexes ranged between .62 and .86, surpassing the recommended minimum value of .30 (Kline, 2005). Table 2 displays the discrimination indexes, the explained variance, and the regression coefficients in the confirmatory factorial analysis and the corresponding confidence intervals.

Table 2
Descriptive and statistical analysis of the items

Items	M	SD	r_{bis}	R^2	β	p	C.I. 95%
RAS-1	3.52	.95	.72	.60	.76	.00	[.73 - .80]
RAS-2	3.43	1.01	.86	.77	.91	.00	[.89 - .92]
RAS-3	3.65	1.04	.81	.67	.86	.00	[.84 - .88]
RAS-4	3.65	1.22	.69	.52	.70	.00	[.64 - .75]
RAS-5	3.38	1.05	.82	.70	.87	.00	[.85 - .90]
RAS-6	4.31	.93	.62	.42	.66	.00	[.62 - .70]
RAS-7	3.04	.94	.64	.46	.65	.00	[.60 - .70]

Note: M = Mean; SD = Standard Deviation; r_{bis} = Discrimination Index; R^2 = Explained variance; β = Standardized regression coefficients; p = significance; C.I. 95% = confidence intervals of the regression coefficients.

Reliability

Finally, the seven items were submitted to an internal consistency analysis to determine the scale reliability index, for which two methods were used: Cronbach's Alpha coefficient and Spearman-Brown split half. The results illustrate an Alpha coefficient of .91 and .93 for the Spearman-Brown test. Table 3 illustrates Cronbach's Alpha, Cronbach's standardized Alpha, and the coefficient of the Spearman-Brown split half, as well as the average and the standard deviation of the RAS.

Figure 1. Unidimensional Model of the RAS.

Table 3
Mean, standard deviation, and reliability indexes

	M	SD	α	α_{stand}	Spearman-Brown
RAS (7-item scale)	24.99	5.814	.91	.91	.93

Note: M = Mean; SD = Standard Deviation; α = Cronbach's Alpha coefficient; α_{stand} = Cronbach's standardized alpha. (n = 350).

Discussion

According to the findings, it can be established that the RAS has appropriate psychometrics properties for examining the global attitude towards the relationship in Puerto Rican women who live with their partners, either married or consensual relationship. The obtained reliability indexes suggest, as established by Kline (2000), that the RAS is fairly consistent to be utilized as an instrument of scientific measurement in future researches in Puerto Rico, including as a general appraisal instrument for psychotherapy and counseling. Furthermore, the RAS demonstrated adequate construct validity proven through the confirmatory factorial analysis.

Theoretically, the psychometric findings validate the one-dimensionality of the RAS, as demonstrated in other studies carried out in Latin American countries (Moral, 2008; Moral, 2015; Oropeza et al., 2010; Sáenz, 2014). From this perspective, couple satisfaction is derived from a balance between positive and negative aspects of the relationship (Moral, 2008). High yielding scores of the RAS could signify that the individual has made a subjective positive evaluation about her love relationship, while low scores may imply the opposite. This assertion encompasses several assessments about necessities satisfaction (item 1), global

satisfaction (item 2), comparison of the relationship with others (item 3), longing to break up the relationship (item 4), relationship expectations (item 5), affectivity (item 6), and conflicts in the relationship (item 7). The study validated that these seven aspects are fairly effective to address the most important aspects of the relationship in a systematic way and to attain a general satisfaction index, as explained by Hendrick (1988).

It has been demonstrated in practical terms that the RAS can be used to develop new studies concerning couple satisfaction in Puerto Rico and the possible correlations with other psychosocial variables. These studies could contribute valuable information for the development of effective involvement in couple psychotherapy, as well as for the research of predictive and precedent factors. Additionally, the briefness and simple language of the RAS makes this tool an excellent assessment and appraisal mean in psychotherapeutic and clinical processes.

In summary, psychometric properties allow us to conclude that the RAS has satisfactory validity and reliability indicators. The analyses confirmed that the sum of the items in the scale could be considered a global satisfaction index in couple relationships. As in all research, this study has its limitations. First, the sample gathered was a convenience one, so it was no random. Second, the reliability of the instrument could not be established throughout time, but only through its components. Finally, the data collection procedure was not standard, which could affect the study's average and increase the standard error.

References

Arias, L. (2003). La Escala de Satisfacción Marital: Análisis de su confiabilidad y validez en una muestra de supervisores mexicanos. *Revista Interamericana de Psicología*, *37*(1), 67-92.

Armenta, C., Sánchez-Aragón, R., & Díaz Loving, R. (2014). Efectos de la cultura sobre las estrategias de mantenimiento y satisfacción marital. *Acta de Investigación Psicológica*, *4*(2), 1572-1584. doi:10.1016/S2007-4719(14)70394-1

Ato, M., López, J. J., & Benavente, A. (2013). Un sistema de clasificación de los diseños de investigación en psicología. *Anales de Psicología*, *29*(3), 1038-1059.

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York: Psychology Press.

Cassepp, V., & Pasquali, L. (2011). Características psicométricas da Relationship Assessment Scale. *Psico-USF*, *16*, 255-264. doi:10.1590/S1413-82712011000300002.

Çelik, E. (2014). Adaptation of relationship assessment scale to Turkish culture: study of validity and reliability. *International Journal of Psychology and Educational Studies*, *1*(1), 1-7.

Chin, W. W. (1995). Partial least squares is to LISREL as principal components analysis is to common factor analysis. *Technology Studies*, *2*(2), 315-319.

Dinkel, A., & Balck, F. (2005). An evaluation of the german relationship assessment scale. *Swiss Journal of Psychology, 64*(4), 259-263. doi:10.1024/1421-0185.64.4.259

González-Rivera, J. A., & Veray-Alicea, J. (2018). Propiedades psicométricas de la Escala de Satisfacción en la Pareja (ESP-10) en una muestra de adultos puertorriqueños. *Revista Electrónica de Psicología Iztacala, 21*(1), 100-120.

González-Rivera, J.A., Segura-Abreu, L., & Urbistondo-Rodríguez, V. (2018). Phubbing en las relaciones románticas: Uso del celular, satisfacción en la pareja, bienestar psicológico y salud mental. *Interacciones*, *4*(2), 81-91. doi:10.24016/2018.v4n2.117

Graham, J. M., Diebels, K. J., & Barnow, Z. B. (2011). The reliability of relationship satisfaction: A reliability generalization meta-analysis. *Journal of Family Psychology, 25*(1), 39-48. doi:10.1037/a0022441

Hendrick, S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family*, *50*(1), 93-98. doi:10.2307/352430

Hendrick, S. S., Dicke, A., & Hendrick, C. (1998). The relationship assessment scale. *Journal of Social and Personal Relationships*, *15*(1), 137-142. doi:10.1177/0265407598151009

Hirschberger, G., Srivastava, S., Marsh, P., Cowan, C. P., & Cowan, P. A. (2009). Attachment, marital satisfaction, and divorce during the first fifteen years of parenthood. *Personality Relationship, 16*(3), 401-420. doi:10.1111/j.1475- 6811.2009.01230.x

Kline, P. (2000). *The Handbook of psychometric testing*. New York: Routledge.

Kline, T. J. (2005). *Psychological testing: A practical approach to design and evaluation.* Thousand Oaks: Sage. doi:10.4135/9781483385693

Li, T., & Fung, H. H. (2011). The dynamic goal theory of marital satisfaction. *Review of General Psychology, 15*(3), 246-254. doi:10.1037/a0024694

Maroufizadeha, S., Omani-Samania, R., Almasi-Hashiania, A., Navida, B., Sobatib, B., & Payam Amini (2018). The Relationship Assessment Scale (RAS) in infertile patients: A reliability and validity study. *Middle East Fertility Society Journal, 23*(4), 471-475. doi:10.1016/j.mefs.2018.04.001

Moral, J. (2008). Validación de la Escala de Valoración de la Relación en una muestra mexicana. *Revista Electrónica de Metodología Aplicada*, *13*(1), 1-12.

Moral, J. (2015). Validación del Modelo Unidimensional de la Escala de Valoración de la Relación en Personas Casadas y en Unión Libre de Monterrey, México. *Revista Internacional de Psicología*, *14*(2), 1-71.

Oropeza, R.E., Armenta, C., García, A.; Padilla, N., Díaz, R. (2010). Validación de la Escala de Evaluación de Relaciones en la Población Mexicana. *Psicología Iberoamericana, 18*(1) 56-65.

Rask, M., Malm, D., Kristofferzon, M. L., Roxberg, A., Svedberg, P., Arenhall, E., ... SAMMI-Study Group (2010). Validity and reliability of a Swedish version of the Relationship Assessment Scale (RAS): A pilot study. *Canadian Journal of Cardiovascular Nursing, 20*(1), 16-21.

Renshaw, K. D., McKnight, P., Caska, C. M., & Blais, R. K. (2011). The utility of the relationship assessment scale in multiple types of relationships. *Journal of Social and Personal Relationships*, *28*(4), 435-447. doi:10.1177/0265407510377850

Roach, J. A., Frazier, P. L., y Bowden, R. S. (1981). The marital satisfaction scale: Development of measure for intervention research. *Journal of Marriage and the Family, 43*(3), 537-546. doi:10.2307/351755

Sáenz, N. E. (2014). *Modelo para la promoción del sexo seguro en parejas estables* (Disertacion doctoral). Universidad Autónoma de Nuevo León, México. Recuperada de http://eprints.uanl.mx/3983/1/1080253625.pdf

Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, *66*(4), 507-514. doi:10.1007/BF02296192