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Psychometrical properties of the Dyadic Adjustment Scale for Measurement of Marital Quality with Italian Couples

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Abstract

Developed by Spanier in 1976, the Dyadic Adjustment Scale (DAS), a 32 items self-report tool, to assess couple satisfaction and to evaluate how each partner within the couple perceives his or her relationship. The aim of the study is to evaluate the psychometric properties of the DAS in the Italian context. The total sample size was 896 participants ($M = 44.54$; $SD = 10$). Exploratory and confirmatory factor analyses were performed in order to test the dimensionality of the analysis tool and these demonstrated the reliability of the four factors. The model, representing four dimensions of dyadic adjustment, was confirmed.

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1. Introduction

Close relationships are a key component for an individual's development (Noller, 2006) because they promote social competence (Laursen & Bukowski, 1997) and contribute to the overall mental and physical wellbeing (Cohen, Gottlieb, & Underwood, 2000; Noller, Feeney, & Peterson, 2001; Noller, 2006). The quality of these relations is a powerful predictor of overall life satisfaction (Heller, Watson, & Ilies, 2004; Noller, 2006) and of health (Burman & Margolin, 1992). Spanier (1976, 1979) worked on the concept of dyadic adjustment, or general relationship quality,

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that can be defined as both a individual property (perception of the individual's feeling) and a dyadic index (perception of the couple's feeling).

On the premise that assessing relationships for their complexities required specific indices that would provide information not only on the general state but on the particular areas of the relationship, the need arose to find a theoretically well-founded, relevant, valid and sufficiently reliable method for measuring dyadic satisfaction. So Spanier (1976) developed a multidimensional analysis tool for the assessment of couple satisfaction: the Dyadic Adjustment Scale (DAS), the most widely used measure for assessing the "quality" of the relationship (Spanier & Thompson, 1982; Trief, Wade, Britton, & Weinstock, 2002; Barnes, Sutcliffe, Kristoffersen, Loft, Wennerholm, Tarlatzis et al., 2004; Whisman, Uebelacker, & Weinstock, 2004; Bogat, DeJonghe, Levendosky, Davidson & von Eye, 2006). It is designed as an individual tool, but is reported as useful in providing overall information on how each partner considers the relationship. The DAS was created on the basis of the studies of Locke (1951) and of Locke and Wallace (1959) and designed to evaluate couples' adjustment and the relationship quality in married or cohabiting couples. The factor analysis confirms the presence of these components in the overall adjustment dimension. The final version of the DAS scale is composed of 32 items that identify four factors and their relative subscales, made up as follows: the first, labelled Dyadic consensus (DC) has thirteen items and assesses the level of agreement and disagreement between partners on topics such as free time management and finances or religion, friendships, and home organisation; the second, Affective expression (AE), has four items and assesses how the couple expresses their inner feelings, love, and sexuality; the third, Dyadic cohesion (DH) has five items and assesses the amount of time spent by the partners on mutually enjoyable activities such as social interests, dialogue, or having common goals. The last subscale, Dyadic satisfaction (DS), has ten items and assesses the happiness or unhappiness perception in a couple's relationship, such as the frequency of quarrels, the pleasure of spending time together or otherwise, and the contemplation of separation or divorce. The sum of these four scales provides a total index that expresses the Dyadic Adjustment. This self-report questionnaire is simple and quick to complete (about 6-7 minutes). In the literature, there are several validations of the DAS presented in various countries around the world, including Korea (Lee & Kim, 1996), Turkey (Fisilöglü & Demir, 2000), China (Shek, 1994) and France (Vandeleur, Fenton, Ferrero, & Preisig, 2003). Several studies (Sharpley and Cross, 1982; Kazak, Jarmas, & Snitzer, 1988; Sabourin, Lussier, Laplante, & Wright, 1990; Shek, 1995; Vandeleur, Fenton, Ferrero, & Preisig, 2003) have demonstrated the reliability, validity, and stability of the factorial structure of both the total scale and subscales. The results of the confirmatory factor analysis reported by Vandeleur, Fenton, Ferrero, and Preisig (2003) showed that the DAS has a single factor that explains most of the items and three other secondary factors. Using the data highlighted by the authors as a starting point, the intention of this work is to study the applicability of the DAS according to the agreed criteria for the adjustments and validations.

2. Materials and Methods

Procedure Participants were recruited from every region in Italy during the early months of 2011. Networking was used for generating a purposeful group. The method of soliciting participants was the snowball technique. Regarding the inclusion criteria, all people involved in the survey had to be of age, married or cohabiting for at least two years, and it was necessary that both members of the couple completed the questionnaire.

Participants On the total of 1,124 participants contacted, the number of participants eligible to be included in this study was 896 (448 females). The response rate was 80%. They were aged between 22 and 71 ($M = 44.54$; $SD = 10$) and from every Italian region; 86.2% of the participants were married while 13.8% were living with a partner. On average, the sample participants had been married or cohabiting for about 17 years ($SD = 11$); 63% of the participants had children. The survey sites were evenly distributed between the regions of Northern Italy (39.6%), Central Italy (25.2%), Southern Italy and the Italian islands (35.2%). Regarding level of education, the majority of participants had a high school degree (52%), while 28% a university degree. 78% of them was employed, 3% unemployed (19% was student, homemaker, etc.).

Instruments The questionnaire was made up of a Personal Information sheet, in order to collect information about socio-anagraphic characteristics of participants, and the DAS. For the translation of the 32 DAS items into Italian language, we used the "translation/back-translation" procedure (Van de Vijver & Poortinga, 1997).

Data analysis In order to assess the internal validity of the scale, a dual analysis strategy was followed: one was exploratory, while the other was confirmatory. The participants were split into two subgroups by means of a simple random sampling-calibration and validation sample. We used the data of single participants in a completely independent way: we created two groups so that the members of the same couple were not in the same group. This was done in order to have no bias due to high intra-pair correlations. The two groups were comparable with regard to socio-demographic characteristics. As regards the Exploratory Factor Analysis (EFA), the factor extraction method we used was the ML with oblique rotation (Oblimin technique) method (Spanier, 1976; Sharpley & Cross, 1982; Spanier, 1989; Vandeleur, Fenton, Ferrero, & Preisig, 2003). For the interpretation, we consider appropriate those variables with a main saturation greater than $|\cdot 30|$ and no secondary saturation greater than $|\cdot 30|$. Items with a saturation ratio between the main and secondary saturation greater than 2 are considered pure markers of the factor measured component; items with a ratio included between 1.5 and 2 are taken into account for the interpretation of the factor, although they are not pure markers. Items with a secondary saturation very close to the main saturation were considered ambiguous and were not taken into account if not for theoretical reasons (Barbaranelli, 2006). The reliability of the emerged dimensions was assessed using Cronbach's α . The assessment of the goodness-of-fit of the models was investigated on the second subsample through the Confirmatory Factor Analysis (CFA) following criteria: RMSEA $< \cdot 08$, CFI $> \cdot 90$, and TLI $> \cdot 90$ (Browne & Cudeck, 1993; Hu & Bentler, 1995). The analysis was carried out using Statistical Package for Social Science (SPSS) Version 18 and SPSS Amos for Windows as regards the CFA.

3. Results

As regards the specific indices of Asymmetry and Kurtosis, the majority of items are within the limits of acceptability with the exception of items 17 (Skewness= -2.78; Kurtosis= 8.36) and 21 (Skewness= -2.77; Kurtosis= 4.58). As regards the EFA, at first, we did not require any predefined number of factors to be extracted. Results show that there are seven factors that together have a saturation of 56.6% of the total variance. Nevertheless, the presence of a preponderant factor stands out compared to the others with 29.8% saturation of the total variance. Analysing the scree plot of eigenvalues, it was possible to deduce that the first factor is the one which differs more from all the others (eigenvalue of the first factor was 9.517; the other six ranged between 1.939 and 1.078). The same results have been reported by Sharpley & Cross (1982), Vandeleur et al. (2003), and Sabourin, Valois & Lussier (2005). The obtained pattern matrix with the saturations of the items on factors showed that all main saturations were greater than $|\cdot 30|$, but some items were not pure markers because of their double loadings on factors (items 8, 9, 13, 22, 24). For this reason, we performed a second EFA following the same previous procedures with the only difference that we impose four factors to be extract according to the theoretical model underlying the DAS (Spanier, 1989). Taken together, the four factors have a 45.473% saturation of the total variance. The main saturations of the items on factors were all greater than the cut off parameter, with the exception of the values referring to item 18. Many items (4, 6, 18, 19, 21, 22, 29, 31, 32) had double loadings. We compare the factors identified by the Spanier's model and those from the present study. Regarding the first factor, we find an exact correspondence with the first factor of the research; for the second factor, we find the same correspondence with the exception of items 19 and 23. For the third and fourth factors, it seems to be a low concordance, with the exception of few items. The correlation matrix of factors indicates good indices between the first and the second factor ($r = \cdot 52$; $p < \cdot 001$), between the first and the fourth factor ($r = -\cdot 50$; $p < \cdot 001$), even though inversely proportional, and between the second and the fourth again inversely proportional ($r = -\cdot 34$; $p < \cdot 01$). Other correlations did not result to be significant. Cronbach's alphas of the four factors showed good reliability values: alpha of the DC factor was $\cdot 85$, of the DH factor $\cdot 67$, of the AE factor $\cdot 76$ and of the DS factor $\cdot 82$. The same index for the total scale was $\cdot 92$. The aim of this second analysis was to test the fit of Spanier's four factor model to our data. We conducted a CFA, following the original model proposed by Spanier and Thompson (1982). It is clear from Table 1 that the validity of the indices is incomplete. This led us to examine which items interfere negatively with the success of the model. As such, we examined items 17 and 21 more carefully, since these had already displayed out-of-range values for the Asymmetry and Kurtosis indices. Moreover, item 17 had the lowest score in the estimated values of regression ($\cdot 309$). The model is improved considerably with the removal of these two items (see Table 1). The correlation

between the factors was confirmed. This analysis enables us to confirm the four-factor DAS model, albeit with the removal of two items (DAS-30). While there is an improvement in the fit of the model by removing items 17 and 21, this possibility should be investigated by further studies.

Table 1. Confirmatory factor analysis. Fit indices

Model	χ^2	df	χ^2/df	RMSEA	TLI	CFI
1. Four oblique factors	1070.2	458	2.34	0.06	0.86	0.87
2. Four oblique factors excluding items 17 and 21	884.3	399	2.12	0.05	0.89	0.90

4. Discussion

Our results are in line with several published studies (Sharpley & Cross, 1982; Kazak, Jarmas, & Snitzer, 1988; Sabourin, Lussier, Laplante, & Wright, 1990; Shek, 1995; Vandeleur, Fenton, Ferrero, & Preisig, 2003) which have demonstrated the reliability, validity, and stable factor structure of both the total scale and subscales, although some difficulties remain.

The reliability, measured by using Cronbach's alpha, allows us to state, given the high values of the indices that were obtained, that there is an internal cohesion in each of the subscales of the total scale. All of our data are in line with the scores obtained by Spanier (1976), so we tested the DAS using the confirmatory factor analyses. As seen previously our scree test shows one dominant factor for the DAS: the exploratory analyses brought to light how most of the items of the DAS are revealed in the first factor. This confirms the analysis carried out by Sharpley and Cross (1982), who had underlined how this scale mainly measures perception in terms of the satisfaction that each spouse or cohabitant has of his/her relationship in general terms. However, when we carried out the analysis with four factors, we observed how, even though the first factor was always the high one, the other three factors showed high correlations with dimension evidenced by Spanier. Our results are nevertheless in line with the French validation (Vandeleur et al., 2003). The confirmatory factor analysis is in line with the original model proposed by Spanier (1976), although the results are not entirely convincing, since we detected some items that interfered negatively with the model. These items concern the second factor (SD) and, in addition to presenting some statistical anomalies, have a common denominator in terms of content: quarrelsomeness. This led us to reflect on the psychological significance of the concept of quarrelsomeness in the Italian culture, and to consider how it can be incorporated into the dynamics of the couple. It seems that straightforward quarrelsomeness is not necessarily a component of low adjustment. Well-being within the context of a couple or family is not so much determined by the absence of conflict, but by the way in which conflict is handled (Scabini, 1985; Walsh, 1993). This could justify further studies, in the direction of analysing a new version of the DAS, that could not include these two items.

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