


Spanish Adaptation of the FACES IV Questionnaire: Psychometric Characteristics

The Family Journal: Counseling and
Therapy for Couples and Families
18(3) 288-296
© 2010 SAGE Publications
DOI: 10.1177/1066480710372084
http://tfj.sagepub.com


Nayeli Rivero¹, Ana Martínez-Pampliega¹, and David H. Olson²

Abstract

The aim of this study was to obtain a culturally adapted Spanish version of the American Family Adaptability and Cohesion Evaluation Scale (FACES IV). For this purpose, rigorous procedures were used in the retro-translation process and in the subsequent empirical study. The sampling consisted of 455 university students and a balanced scale of 13 items ($\alpha = .87$) was obtained; a scale that can be used independently. Moreover, the study was rounded off with a 6-factor model that includes 2 central scales—cohesion and adaptability—and 4 extreme scales—chaotic, rigid, disengaged, and enmeshed—each one with 4 items. All the scales proved to have good psychometric qualities and suitable convergent, concurrent, and content validity, yet it will be necessary to go more deeply into the rigid scale. The construct validity was supported by a confirmatory factorial analysis with sound fit indexes (root mean square error of approximation [RMSEA] = 0.046, normed fit index [NFI] = 0.94, the comparative fit index [CFI] = 0.97, and the goodness-of-fit index [GFI] = 0.92). In its Spanish version, FACES IV is a useful instrument for family assessment, although further studies need to be carried out so as to confirm the results obtained.

Keywords

Family Adaptability and Cohesion Evaluation Scale, Spanish, family assessment

The importance of having suitable instruments at your disposal allowing you to study family functioning is common knowledge. Since the 1970s models explaining family functioning with their respective assessment instruments have appeared, and they are still being used today. One of the most important is the circumplex model developed by Olson, Sprenkle, and Russell (1979), on which the development of Family Adaptability and Cohesion Evaluation Scale (FACES) in 1980 was based. Since then, and after over 20 years of research, four versions have been produced, some of which have been translated and validated into Spanish.

The circumplex model studies family functioning through three variables: family cohesion, flexibility, and communication (Olson et al., 1979). Cohesion is “the emotional bonding that family members have towards one another” (Olson, 2000, p.145). Flexibility is defined as “the amount of change in family leadership, role relationships and relationship rules of a couple or family system” (Olson & Gorall, 2003, p. 519). Both dimensions are curvilinear in this model, which indicates that both extremes are dysfunctional yet moderate levels are not. The basic hypothesis is that families with problems tend to obtain extreme scores in both dimensions and have more relationship problems. The third dimension, communication, refers to positive communication skills used in the couple or family system (Olson & Gorall, 2003); it is a facilitating dimension whose relationship with family functioning is lineal,

that is, the better the family communicates, the better the family functions.

The FACES instrument was created to evaluate the Circumplex Model. The original FACES, devised by Olson, Bell, and Portner in 1978, is a self-report instrument of 111 items that was modified so as to improve its psychometric properties until it became FACES II (Olson, Portner, & Bell, 1982). The number of items was reduced to 30 and it proved to be highly reliable and valid. In 1985, FACES III (Olson, Portner, & Lavee, 1985) was produced with only 20 items, a reliable and valid instrument based on theory and designed for systematic research or clinical work. FACES II and III are still in use today (Hartung, Lewis, May, & Niles, 2002; Mupinga, Garrison, & Pierce, 2002; Rhoden, 2003).

One of the greatest criticisms of FACES is that the assessment carried out is lineal and not curvilinear, which means it can only be used on nonclinical people sample. As a result, the

¹ University of Deusto, Bilbao, Spain

² University of Minnesota, MN, USA

Corresponding Author:

Nayeli Rivero, Psychology and Education Faculty (Facultad de Psicología y Educación), University of Deusto, Av. Universidades, 24, Bilbao, Basque Country, 48007, Spain
Email: nayelirivero@yahoo.com.mx

latest version, FACES IV (Olson, Tiesel, Gorall, & Fitterer, 1996), was developed. There have been two versions of FACES IV. Several studies have been carried out on the first, proving its validity and reliability, as well as its psychometric advantages (Franklin, Streeter, & Springer, 2001; Gorall, 2002). The second version presented the latest modifications of the Circumplex Model and tackled the curvilinearity of the cohesion and flexibility dimensions. It has 6 scales: 2 balanced (cohesion and flexibility) which measure moderate regions and 4 unbalanced (rigid, chaotic, enmeshed and disengaged) which assess the superior and inferior extremes of cohesion and flexibility (Olson, Gorall, & Tiesel, 2006b).

It was proved in the original studies that FACES IV is highly reliable in the six scales, which enables its use in research and family assessment (Olson, Gorall, & Tiesel, 2006a). The six scales developed also demonstrate validity of content, construct, and concurrence (criteria). These modifications have made possible a scoring system for profiles and the creation of ratio scores, which combine the balanced and unbalanced features of family functioning by evaluating the curvilinear aspects of family functioning.

The FACES has been used in Spain. Polaino-Lorente and Martínez (1995) adapted FACES III to Spanish. Later, Forjaz, Martínez, and Cervera-Enguix (2002) compared the previous version of FACES III with the American version. The authors concluded that this version provides a valid and reliable measurement, but the limitations of flexibility should be taken into account. Other research includes that by González-Pienda et al. (2003) on FACES III and by López (2002) on FACES II, yet in neither case was the translation process explained or an empirical study of the instrument carried out in depth.

As regards the first version of FACES IV, an adaptation to Spanish came up against serious difficulties in the attempt to obtain an adapted version (Sanz, Iraurgi, & Martínez-Pampliega, 2002). Data did not converge with the theoretical model and reliability indexes were significantly moderate and even low. The difficulties encountered raised doubts about the instrument's construct validity. This led to a questioning of the conceptual equivalence of the scales used and, due to the lack of adaptability to our culture, it was decided to discard its use and turn to FACES II to obtain a reduced and culturally well-adapted instrument. This aim was achieved through FACES-20esp (reduced Spanish version; Martínez-Pampliega, Iraurgi, Galíndez, & Sanz, 2006), which provided an appropriate degree of reliability, as well as an adaptation to the theoretical construct.

The second version of FACES IV has recently been presented (Olson et al., 2006a), and this version's adaptation and validation to Spanish is precisely the aim of this instrumental study. For this purpose, a rational translation procedure (Behling & McFillen, 2000; Brislin, 1986) was used; two Spaniards bilingual in English independently translated the original items. Both translations were compared until a consensus was reached, assessing conceptual equivalence and clarity of the items, thus obtaining a version accepted by both. Then two bilingual U.S. citizens (one with studies in Spanish language)

with no knowledge of the original version translated the Spanish version back into English. Both retranslated versions were compared to the original so as to collate their conceptual and content equivalence, as well as their syntactic and technical harmony. An empirical process was then carried out with the aim of assessing the psychometric properties of the instrument, that is, its validity (of construct, criteria, and content) and its reliability.

Method

Participants

The subjects chosen for the convenience sample were university students, ensuring the inclusion of students from different years, degrees, and universities in Biscay, Spain, as well as voluntary and confidential participation. The sampling consisted of 455 participants using 2 homogenization criteria: (a) the university age interval, taking into account average age and ± 1 standard deviation; (b) living at home, considering that the participants lived with their parents all week or at least at the weekend. The subjects of the resulting sample were between 18 and 25 years, with an average age of 20.5 and mainly women (73.6%).

Instruments

Apart from the instruments described below, questions on sociodemographic data were included.

FACES IV. It has 42 items divided into 6 scales: 2 balanced (cohesion and flexibility), which include the moderate or healthy regions of both dimensions, and 4 unbalanced scales measuring the superior or inferior extremes of cohesion (enmeshed and disengaged) and flexibility (chaotic and rigid; Olson et al, 2006b). These scales proved to be valid, reliable, and discriminatory among both problematic and nonproblematic families (Tiesel, 1994) and the range of reliability in the six scales is between .77 and .89 (Olson et al., 2006a).

FACES II. The version translated into Spanish was used (Martínez-Pampliega et al., 2006). This scale has 10 items for cohesion and another 10 for flexibility. The instrument proved to have sound psychometric qualities and good theoretical adaptation. Its degree of reliability is suitable in both dimensions (.89 for cohesion and .87 for flexibility)

Family Satisfaction Scale(FSS). This was developed by Olson (Olson, Stewart, & Wilson, 1990) in relation to the circumplex model. The scale assesses the degree of satisfaction with aspects related to family cohesion and flexibility and has been reliable (.92 on Cronbach's α and .81 on test-retest coefficient), and the same goes for its Spanish version (Cronbach's α .92; Sanz et al., 2002)

Strategy for Analysis

The first step was to analyze the construct validity so as to discard the monofactorial structure and give backing to the

structure proposed by the authors. This was done by carrying out a confirmatory factor analysis (CFA). To assess the hypothesized model's degree of goodness of fit, we used several indexes, the chi-square (χ^2) among others. Given that it is very sensitive to variations in the size of the sample, additional measures of goodness of fit were used, such as the root mean square error of approximation (RMSEA), for which values below .08 are considered acceptable. We also used the normed fit index (NFI), the comparative fit index (CFI) and the goodness-of-fit index (GFI), for which values of .90 or over reflect a good fit (Hair, Anderson, Tatham, & Black, 1999). In the case of structural coefficients, the standardized solution whose recommended values are at least .5 or over was used (Hair, Black, Babin, Anderson, & Tatham, 2006). When the monofactorial model and/or the original model resulting from the CFA did not fit satisfactorily, we carried out exploratory factor analyses with varimax rotation in all cases. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity (χ^2) were also calculated to verify the degree of interrelation between the items, and factors with eigenvalues of over 1 were also considered. For interpretation of underlying dimensions, those items with a factorial load of over .30 saturation were considered. The items corresponding to each scale were subjected to a descriptive analysis, thus obtaining their mean and standard deviation, as well as that of the whole scale, to check whether the items fitted appropriately into the scale they corresponded to and, if not, discard their use. We used the following criteria for elimination: (a) that the average was more or less than a standard deviation of the scale average; (b) that the items had a reduced deviation standard ($DT < 0.5$); (c) that the Pearson correlation coefficient between the item and the scale it belonged to was lower than .40; (d) that the Cronbach's α coefficient increased by more than .03 points if the items were deleted; (e) that they had a similar factorial loading in 2 factors; (f) that the scales had a different number of items, so as to homogenize them. A CFA was carried out on the remaining items to assess whether the defined structure fitted well. The interpretation criteria for this test were the same as those previously explained.

To analyze the convergent validity, we performed a Pearson's correlation between FACES II and the cohesion and flexibility scales. To assess the concurrent validity, a correlation with the Family Satisfaction Scale was carried out, due to the fact that this criterion is often related to family functioning (Olson et al., 2006b). Moreover, we carried out a discriminating analysis by means of a K-means cluster analysis (Hair et al., 1999) with the scale's percentiles, following the authors' instructions (Olson & Gorall, 2006), so as to determine whether patterns describing the family throughout that scale existed. To contrast differences between the resulting groups, the F test for analysis of variance was applied to the family satisfaction variable. As the number of subjects per group was different, we used the Scheffe's test for the post hoc contrast of the difference in means between groups. As a final step, we performed a content analysis of the conserved items, contrasting them with the concepts included in each variable, thus guaranteeing that

each test was representative of the content it intended to assess. All analyses were carried out with SPSS v.15, except CFA, which was performed with the LISREL v. 8.8 program (Jöreskog & Sörbom, 2004).

Results

The CFA of the monofactorial model (Table 3/I) does not fit adequately, $\chi^2 (819, N = 455) = 3,567.05$; $RMSEA = .086$; $NFI = .799$; $CFI = .838$; $GFI = .728$. The same occurred with the analysis of the original 6-factor structure, $\chi^2 (804, N = 455) = 2,681.96$; $RMSEA = .072$; $NFI = .850$; $CFI = .889$; $GFI = .781$. (Table 3/II). Therefore, following the authors' instructions (Olson et al., 2006a), we began an exploratory factor analysis with varimax rotation of all items. The scree test produced 5 factors explaining 42.25% of the variant. Nevertheless, the conceptual analysis of the items recommended doing the analysis by grouping them together according to their correspondence to balanced or extreme scales. In all cases the exploratory analyses was carried out in two stages: (a) with all items, and (b) with the items chosen after applying the eliminatory criteria, indicating the KMO test, the Bartlett's Test of Sphericity, and the mean, standard deviation, and Cronbach's α .

Balanced Scales

The factor analysis relating to balanced items produced a single factor in its screeplot explaining 37.7% of variance. Flexibility item 32 was removed as it had a correlation of less than .30 with the factor. The KMO and Bartlett sphericity tests were adequate ($KMO = .91$; $\chi^2 = 1,869.542$; $p < .001$). The factor obtained a mean of 3.82 with a standard deviation of .65, which presented a selection interval of between 4.47 and 3.17. Moreover, the items have a < 0.5 standard deviation, the correlation in all cases is over .40 and in no cases did the removing of an item modify the reliability exceed the proposed limit (0.3).

With the aim of respecting the original model, it was also decided to analyze balanced cohesion and balanced flexibility separately.

Flexibility. The factor analysis presented a bifactorial solution. Three items were removed: 14 and 20 for correlating with both factors and 32 for being the only one correlated with the second factor. The KMO and Bartlett sphericity tests were adequate ($KMO = .80$; $\chi^2 = 519,390$; $p < .001$). It was not necessary to remove any items in the resulting scale as they all accomplished the established criteria (Table 1).

Cohesion. The factor analysis produced a unifactorial solution and correlations over .50. However, following the homogenization of item number criterion, the 3 lowest weighted of the factors were removed (1, 37, and 19). The KMO and Bartlett sphericity tests were adequate ($KMO = .87$; $\chi^2 = 897.897$; $p < .001$). All items are within the selection interval and meet the other selection criteria (Table 1).

Table 1. Descriptive and Discrimination Data of Central Flexibility and Cohesion Items

	M	SD	R	α
Flexibility 26	3.13	1.14	.71	.58
Flexibility 8	3.40	1.33	.74	.59
Flexibility 38	3.78	.94	.66	.58
Flexibility 2	3.35	1.07	.69	.57
	3.42	.79	–	.65
Cohesion 7	3.87	.98	.80	.70
Cohesion 13	4.30	.93	.77	.72
Cohesion 31	3.87	1.03	.78	.72
Cohesion 25	3.70	.99	.74	.74
	3.94	.76	–	.77

Note. M = mean; SD = standard deviation; r = item correlation with the rest of the scale (all are significant); α = alpha if item is deleted.

Unbalanced scales

In this case, the factor analysis produced four factors (40.12% of the variance) but without a satisfactory arrangement of the items, which meant working on the items grouped according to dimension

Unbalanced cohesion. Two steps were needed to obtain an acceptable structure. The first factor analysis of extreme cohesion (enmeshed and disengaged) provided a bifactorial solution explaining 28.6% of the variance and confirmed the 2 scales proposed by the authors. Enmeshed items 10 and 34 were removed from the first factor and disengaged items 39 and 33 from the second for correlating with both factors or for doing so with the factor contrary to the expected. A second factor analysis led to the removing of enmeshed item 22 for having a similar weighting in both factors and also of disengaged item 15 for being the item with the lowest factorial weighting and with a view to balancing the items of both scales. The KMO and Bartlett's sphericity tests were adequate (KMO = .76; $\chi^2 = 699.784$; $p < .001$). As regards the statistical analyses, all items met the previously mentioned selection criteria (Table 2).

Unbalanced flexibility. The exploratory factor analysis of the chaotic and rigid scales produced a bifactorial solution explaining 36.9% of the variance and confirming the authors' two proposed dimensions. Rigid item 23 was removed from the first factor and chaotic items 12 and 30 from the second because they did not fit suitably in their corresponding factor. A second factor analysis of the remaining items recommended the removing of rigid items 41 and 29 due to correlation in both factors, and also chaotic item 24 to balance the number of items. The KMO test was adequate and the Bartlett sphericity test was significant (KMO = .72; $\chi^2 = 779.168$; $p < .001$). In the statistical analyses all items fulfilled the previous selection criteria (Table 2).

The CFA (Figure 1) was performed on the 6-factor model (flexibility, cohesion, rigid, chaotic, enmeshed, and disengaged). Fit indexes were adequate, $\chi^2 (237 N = 455) = 463.337$,

RMSEA = .046, NFI = 0.94, CFI = 0.97, GFI = 0.92 (Table 3/III). In cohesion, all (standardized) structural coefficients were over .60 and .50 in flexibility. They fluctuated between .73 and .54 in the disengaged dimension, between .67 and .57 in rigid, and between .69 and .30 in chaotic. The highest covariances between dimensions were between cohesion and flexibility, disengaged and cohesion, and flexibility and chaotic.

In the assessment of convergent validity, the relationship between the flexibility of FACES IV and FACES II ($r = .64$) should be pointed out, as well as the relationship between cohesion in both versions of FACES ($r = .77$). The global family functioning scale also had a high correlation with the FACES II scales. However, the rigidity scale did not correlate with any of the mentioned variables (Table 4). In the case of concurrent validity, high correlations with the balanced scales were obtained (flexibility, $r = .66$ and cohesion, $r = .71$). The same applied to the global family functioning scale ($r = .79$).

The next step was a discriminating analysis. We decided to keep four family types (Figure 2) that guaranteed a sufficient number of cases in each cluster, so that they would be representative. Each cluster is described below, in accordance with the degree of functionality or nonfunctionality and its similarity to the typology described by Olson and Gorall (2006).

Cluster 1, Balanced. This cluster is characterized by high scores in cohesion and flexibility and low scores in other scales. It could correspond to cluster 2 (Balanced) of Olson and Gorall, which indicates a high level of healthy family functioning. These families can suitably handle the stress factors of everyday life and the tension generated by changes in the family over time.

Cluster 2, Chaotically disengaged. This is characterized by low scores in cohesion, enmeshed, and rigidity, and high scores in disengaged and chaotic. These families can be likened to cluster 5 of the original study (Chaotically Disengaged) and may have many problems based on the lack of emotional intimacy, indicated in the high levels of disengagement, and on the high degree of problematic change observed in the high chaotic and low rigidity scores.

Cluster 3, Rigidly cohesive. This family type is distinguished by high scores in cohesion, flexibility and enmeshed; average scores in rigidity; and low scores in disengaged and chaotic. They probably function well due to the degree of closeness, but at the same time they find making changes difficult, due to their rigidity. It could correspond to cluster 2 (Rigidly Cohesive) of Olson and Gorall.

Cluster 4, Unbalanced. These families would be the most problematic due to their high scores in three of the extreme scales, and they are those that are most similar to the original authors' unbalanced type.

An analysis of variance was carried out on these typologies using satisfaction as a contrast variable. Significant differences were found at a level of $p < .001$ between the four groups,

Table 2. Descriptive and Discriminating Data of Unbalanced Cohesion and Unbalanced Flexibility

Disengaged	M	SD	r	α	Enmeshed	M	SD	r	α
Disengaged 3	2.01	1.07	.77	.67	Enmeshed 4	2.30	1.01	.62	.45
Disengaged 9	1.81	.99	.79	.63	Enmeshed 16	2.43	1.02	.67	.38
Disengaged 21	1.69	.86	.65	.72	Enmeshed 28	2.70	1.06	.68	.38
Disengaged 27	2.23	1.16	.77	.68	Enmeshed 40	2.15	1.06	.58	.52
	1.94	.77	-	.74		2.40	.66	-	.51
Chaotic					Rigid				
Chaotic 6	2.22	1.09	.74	.55	Rigid 5	2.13	1.09	.75	.62
Chaotic 18	1.99	.96	.72	.54	Rigid 11	2.67	1.13	.75	.62
Chaotic 36	2.30	1.12	.60	.71	Rigid 17	2.22	.97	.69	.65
Chaotic 42	1.60	.97	.75	.52	Rigid 35	3.25	.99	.70	.64
	2.03	.73	-	.65		2.57	.76	-	.70

Note. M = mean; SD = standard deviation; r = item correlation with the rest of the scale (all significant); α = alpha if item is deleted.

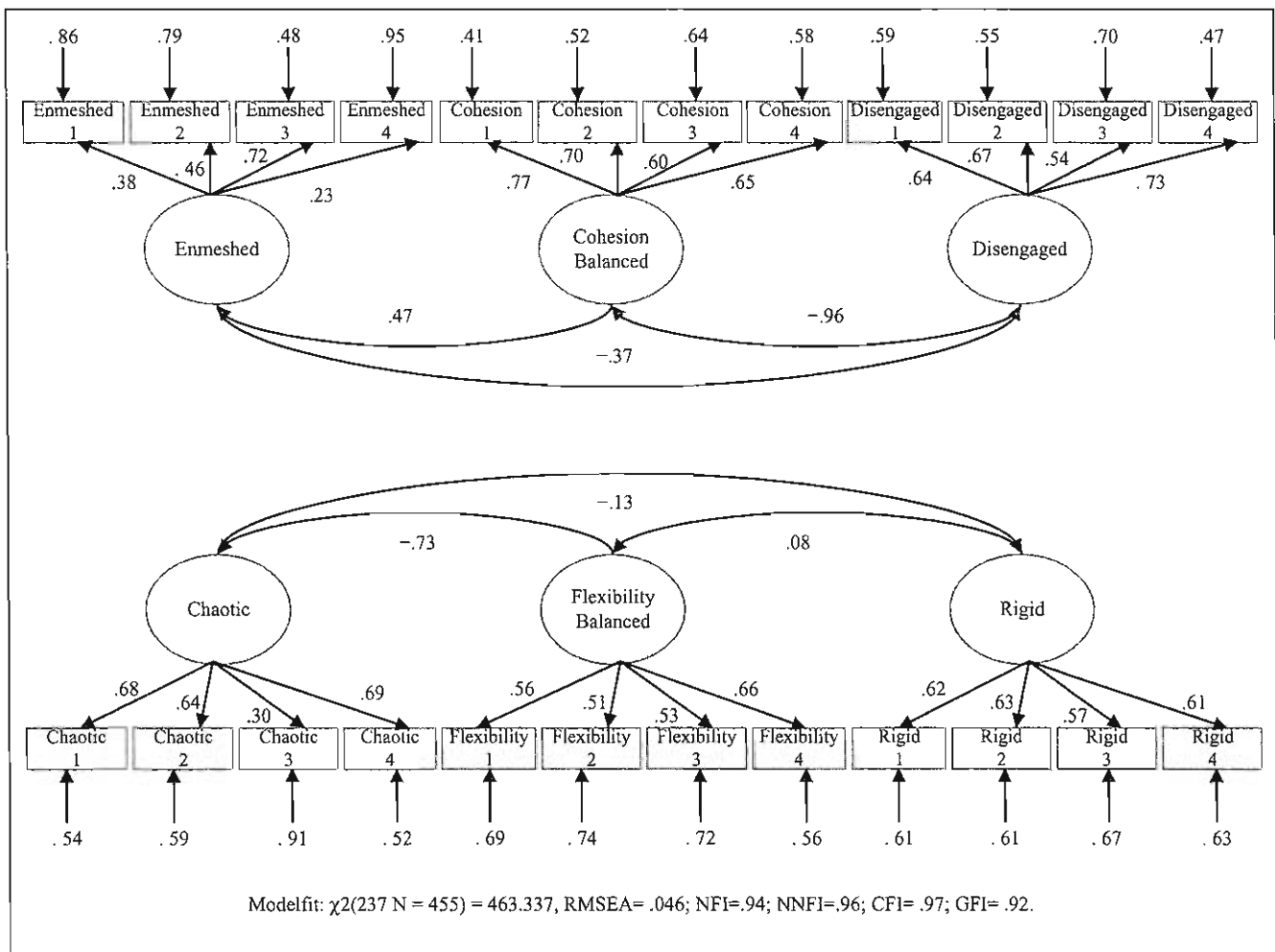


Figure 1. Confirmatory factor analysis results for FACES IV (Spanish version). FACES = Family Adaptability and Cohesion Evaluation Scale.

$F(3, 449) = 96.72$. The effect size, obtained by using eta square, was moderate (.65). The post hoc Scheffe tests indicated that balanced families ($M = 7.82, DT = 1.12$) enjoyed greater satisfaction than both chaotically disengaged ($M = 5.40, DT = 1.92$) and unbalanced families ($M = 5.93, DT = 1.57$). Rigidly cohesive families ($M = 8.05, DT = 1.08$)

are more satisfied than chaotically disengaged and unbalanced families.

The last step was a content analysis of items. This was done taking into account the concepts involved in each dimension, which for cohesion are family ties, emotional bonding, marital relationship, parent-child coalitions, internal and external

Table 3. Summary of Confirmatory Factor Analyses of FACES IV

Step	Removed items	χ^2	RMSEA	NFI	CFI	GFI
I		3,567.0523 $p = .0$	.0859	.7998	.8379	.7277
II		2,681.9635 $p = .0$	.0717	.8495	.8892	.7805
III	Flexibility 14, 20, 32 Cohesion 1, 19, 37 Enmeshed 10, 22, 34 Disengaged 15, 33, 39 Rigid 23, 29, 41 Chaotic 12, 24, 30	463.3370 $p = .0$	.0462	.9360	.9675	.9203

Note. RMSEA = root mean square error of approximation; NFI = normed fit index; CFI = comparative fit index; GFI = goodness-of-fit index; FACES= Family Adaptability and Cohesion Evaluation Scale.

Table 4. Correlation Between FACES IV and FACES II and Family Satisfaction Scale

	Family Functioning	Flexibility	Cohesion	Rigid	Chaotic	Enmeshed	Disengaged
Cohesion (FACES II)	.79**	.63**	.77**	.05	-.48**	.31**	-.74**
Flexibility (FACES II)	.73**	.64**	.62**	-.04	-.42**	.18**	-.62**
Satisfaction	.79**	.66**	.71**	.01	-.51**	.16**	-.74**

Note. FACES = Family Adaptability and Cohesion Evaluation Scale.
** $p < .001$.

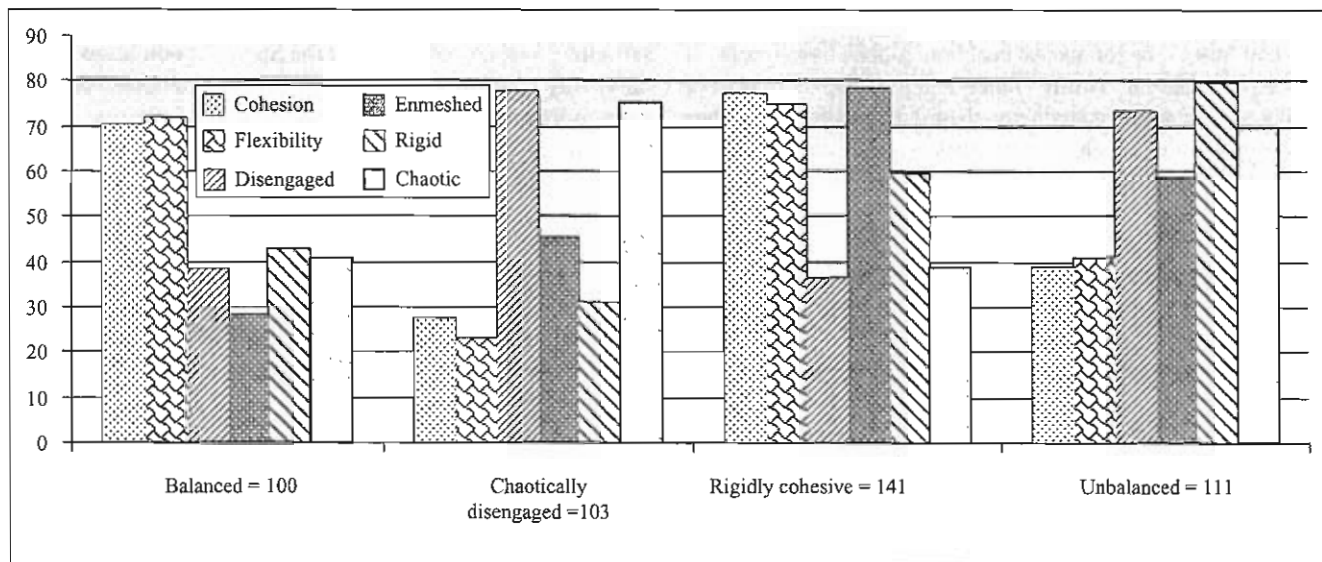


Figure 2. Family typology based on FACES IV.

boundaries. However, the marital relationship and parent-child coalitions do not appear due to the fact that this scale assesses family levels and not dyadic relations. In flexibility, all the concepts are included leadership, discipline, negotiation, roles, and norms. It appears that people perceive chaos mainly as a lack of leadership and control of roles, whereas rigidity is seen as having discipline and norms. Central flexibility is regarded being linked to negotiation and leadership.

Discussion

The aim of this study was to obtain a scale for FACES IV adapted to Spanish, one that suitably includes the proposed dimensions of cohesion and flexibility in the circumplex model of Olson et al. (Olson, 1988). Rigorous procedures were used for all stages of analysis.

In the first place, the construct validity was analyzed. The exploratory factor analysis of central items produced a

balanced scale of 13 items that obtained good indexes of internal consistency ($\alpha = .87$). However, the aim of achieving a theoretical adaptation to the original model and in order to produce family typologies, central flexibility and central cohesion were analyzed separately, thus obtaining two independent scales, each one containing 4 items, theoretically adapted to the circumplex model. The cohesion scale obtained good reliability indexes ($\alpha = .77$), whereas the internal consistency index in the case of flexibility was a little lower though acceptable ($\alpha = .65$).

In the extreme scales, the exploratory factor analysis reflected the need to work separately on extreme flexibility and cohesion. It was possible to obtain two 4-item subscales from each one (extreme flexibility: chaotic and rigidity, extreme cohesion: enmeshed and disengaged). These scales adapted well to the model theoretically and obtained suitable degrees of reliability, with the exception of the "enmeshed" scale, whose scores were moderately low yet acceptable given the significantly reduced number of items (.65 in chaotic, .70 in rigidity, .74 in enmeshed and .51 in disengaged).

The confirmatory analysis performed on 6 factors—including 2 central scales and 4 extreme scales—provided suitable goodness-of-fit indexes and confirmed the structure proposed by the Olson group. However, the covariance index observed between some dimensions raises doubts about the existence of clearly distinguishing constructs, as occurs between the balanced cohesion and flexibility scales ($\gamma = .86$). This was appreciated when obtaining a single scale in a previous step, which makes it clear that just 1 factor exists enabling global assessment of balanced or central family functioning. This had already been detected in previous studies on these 2 dimensions (Martínez-Pampliega et al., 2006). Nevertheless, the magnitude of covariance observed between other dimensions, such as cohesion and disengaged ($\gamma = -.96$), flexibility and disengaged ($\gamma = -.88$), and disengaged and chaotic ($\gamma = .75$), raises doubts about the disengaged construct as a distinguishing dimension, proving the need for an internal study of the instrument to confirm the dimensional structure obtained.

The next analysis was that of convergent validity, valuing the degree of association with the FACES II, previously adapted and validated in Spanish. The results show congruent correlations in all cases, thus proving its convergent validity. The exception is the rigidity scale, in which the correlations were not of significance.

In the case of enmeshed, correlations were positive although rather low, contrary to what was expected, as FACES II measures central family functioning. This makes one wonder whether the enmeshed dimension can be perceived as something positive or at least not as something extreme in the family. That is to say, perhaps the fact of family members feeling too connected to each other or spending too much time together is something commonplace in this context. In this case of concurrent validity, the associations with family satisfaction

were high and significant, except in the case of rigidity, where no significant relation was found either.

Discriminatory validity was analyzed through an analysis of variance with the typology resulting from the 6 scales: balanced, chaotically disengaged, rigidly cohesive, and unbalanced families. The typology enabled the significant discrimination of the degree of satisfaction—contrast variable—between the 4 types of resulting families, explaining 65% of variance.

The final step was a content analysis of the resulting items. In the case of cohesion, only marital relationship and parent-child coalitions were left out (as general family functioning was assessed, not specific relations). In the case of flexibility, all areas of the dimension were included.

The open question about the "rigidity" dimension remains. It appears that people do not perceive this dimension as being negative, which is reflected in the degree of satisfaction of rigidly cohesive families. That is, in the sampling studied, the existence of many norms with strict, clear consequences is regarded positive. This is a reminder that the adaptation and translation of an instrument is more than a translation and that the cultural environment involved has to be taken into consideration. However, Olson, Russell, and Sprenkle (1989) warned of this question by including the consideration of norms and cultural expectations as regards what family functioning should be as a hypothesis of their model. It will be necessary to review this dimension for future assessments.

One limitation of this study is that the characteristics of the sampling used do not represent the Spanish population or of the university population either. In short, more studies are needed using a broader and more representative sampling to reaffirm the findings of this research.

In conclusion, FACES IV represents progress as regards the previous versions due to the fact that it includes the extremes of the cohesion and flexibility dimensions. A balanced scale of 13 items resulting from balanced cohesion and flexibility was obtained, a scale that can be used independently. In addition, a 6-factor model was obtained (flexibility, cohesion, rigid, chaotic, disengaged, and enmeshed), just as the authors had proposed. All these, the adequate theoretical congruence of the instrument, not forgetting the revision of the rigidity scale, as well as its psychometric characteristics, make the Spanish version of FACES IV, a useful instrument for family assessment, remembering that this is just an initial step and more research corroborating the version obtained is still necessary.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

Funding

The author(s) received no financial support for the research and/or authorship of this article.

Appendix

FACES- IV (42 items) y FACES –IV esp (shading items)

A continuación tienes unas frases relativas a tu familia. Por favor, contesta indicando la frecuencia con la que ocurren, rellenando los números correspondientes en la hoja de respuestas que has recibido.

1. Totalmente en desacuerdo
2. Generalmente en desacuerdo
3. Indeciso
4. Generalmente de acuerdo
5. Totalmente de acuerdo

Cada miembro de la familia participa en la vida de los demás. (A)
 Nuestra familia intenta buscar nuevas formas de tratar los problemas. (A)
 Nos llevamos mejor con gente de fuera de la familia que entre nosotros. (D)
 Pasamos demasiado tiempo juntos. (Ap)
 Hay consecuencias estrictas en nuestra familia para quien se salta las normas. (R)
 En nuestra familia nunca parecemos estar organizados. (Ca)
 Nos sentimos muy cercanos unos a otros. (C)
 En nuestra familia los padres comparten por igual el liderazgo. (A)
 Cuando estamos en casa parece que evitamos el contacto unos con otros. (D)
 Nos sentimos presionados para pasar la mayor parte del tiempo libre juntos. (R)
 Hay consecuencias claras si uno hace algo mal. (R)
 Es difícil saber quien es el líder en nuestra familia. (C)
 Nos apoyamos unos a otros en momentos difíciles. (C)
 La disciplina en nuestra familia es justa. (A)
 Sabemos muy poco sobre los amigos de los otros miembros de la familia. (D)
 Dependemos demasiado unos de otros. (Ap)
 Nuestra familia tiene normas prácticamente para cualquier situación. (R)
 En nuestra familia las cosas acaban quedando sin hacerse. (D)
 Los miembros de nuestra familia consultan al resto las decisiones importantes. (C)
 Cuando es necesario, mi familia es capaz de adaptarse a los cambios. (A)
 Cada uno está solo cuando hay un problema a resolver. (D)
 Los miembros de nuestra familia no sienten la necesidad de tener amigos fuera de la familia. (D)
 Nuestra familia está muy organizada. (A)
 No está claro quién es responsable de qué (actividades, tareas...) en nuestra familia. (D)
 Nos gusta pasar algo de nuestro tiempo libre con los otros miembros de la familia. (C)
 Nos intercambiamos las responsabilidades de las tareas de la casa (A)
 Rara vez hacemos cosas juntos. (D)
 Nos sentimos demasiado conectados unos con otros. (Ap)
 Nuestra familia se siente frustrada cuando hay cambios en nuestros planes o actividades rutinarias. (D)

No hay liderazgo en nuestra familia. (D)
 Aunque cada miembro de la familia tiene intereses individuales, también participa en actividades familiares. (C)
 Tenemos unas reglas y unos roles claros en nuestra familia. (A)
 Pocas veces dependemos unos de otros. (D)
 Nos sienta mal que los miembros de la familia realicen actividades con otros fuera de la familia. (D)
 En nuestra familia, es importante seguir las normas. (R)
 Nuestra familia tiene dificultades para controlar quien hace las tareas domésticas acordadas. (Ca)
 En nuestra familia hay un buen equilibrio entre cercanía e independencia. (A)
 Cuando hay problemas, sabemos llegar a un acuerdo. (A)
 En general cada uno funcionamos de forma independiente. (D)
 Nos sentimos culpables cuando queremos pasar tiempo lejos de la familia. (Ap)
 Una vez se toma una decisión es muy difícil cambiarla. (D)
 Nuestra familia es caótica y desorganizada. (Ca)

Note. A = Adaptabilidad; C = Cohesión; D = Desapego; Ap = Apego; R = Rigidez; Ca = Caos.

References

- Behling, O., & McFillen, J. M. (2000). *Translating questionnaires and other research instruments. Problems and solutions*. London, England: SAGE.
- Brislin, R. W. (1986). The wording and translation of research instruments. In W. J. Lonner & W. Berry (Eds.), *Field methods in cross-cultural research* (pp. 137–164). Beverly Hills, CA: SAGE.
- Forjaz, M. J., Martínez Cano, P., & Cervera-Enguix, S. (2002). Confirmatory Factor Analysis, Reliability, and Validity of a Spanish Version of FACES III. *American Journal of Family Therapy, 30*, 439–449.
- Franklin, C., Streeter, C. L., & Springer, D. W. (2001). Validity of the FACES IV Family Assessment Measure. *Research on Social Work Practice, 11*, 576–596.
- González-Pienda, J. A., Núñez, J. C., Álvarez, L., Rocas, C., González-Pumariega, S., González, P., ... Ana Bernardo. (2003). Adaptabilidad y cohesión familiar, implicación parental en conductas autorregulatorias, autoconcepto del estudiante y rendimiento académico. [Familiar cohesion and adaptability, parental self-regulatory inducement, children's self-concept, and academic achievement]. *Psicothema, 15*, 471–477.
- Gorall, D. M. (2002). FACES IV and the Circumplex Model of Marital and Family Systems (University of Michigan). *Dissertation Abstract International, 63*.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1999). *Multivariate data analysis*. Madrid, Spain: Prentice Hall.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Hartung, P. J., Lewis, D. M., May, K., & Niles, S. G. (2002). Family Interaction Patterns and College Student Career Development. *Journal of Career Assessment, 10*, 78–90.

- Jöreskog, K. G., & Sörbom, D. (2001). *LISREL 8 user's reference guide* (2nd ed.). Lincolnwood, IL: Scientific Software International, Inc.
- López, S. (2002). EL FACES II en la evaluación de la cohesión y la adaptabilidad familiar [The FACES II in the evaluation of family cohesion and adaptability]. *Psicothema, 14*, 159-166.
- Martínez-Pampliega, A., Iraurgi, I., Galíndez, E., & Sanz, M. (2006). Family Adaptability and Cohesion Evaluation Scale (FACES). Desarrollo de una versión de 20 ítems en español [Family Adaptability and Cohesion Evaluation Scale (FACES): Development of a Spanish version of 20 items]. *International Journal of Clinical and Health Psychology, 6*, 317-338.
- Mupinga, E. E., Garrison, M. E. B., & Pierce, S. H. (2002). An exploratory study of the relationships between family functioning and parenting styles: The perceptions of mothers of young grade school children. *Family and Consumer Sciences Research Journal, 31*, 112-129.
- Olson, D. H. (1988). Capturing family change: Multi-system level assessment. In L. C. Wynne (ed.), *The state of the art in family therapy research: Controversies and recommendations* (pp. 75-80). New York: Family Process Press.
- Olson, D. H. (2000). Circumplex model of marital and family systems. *Journal of Family Therapy, 22*, 144-167.
- Olson, D. H., Bell, R. Q., & Portner, J. (1978). *FACES: Family Adaptability and Cohesion evaluation Scales*. St. Paul: Family Social Science, University of Minnesota.
- Olson, D. H., & Gorall, D. M. (2003). Circumplex model of marital and family systems. In F. Walsh (ed.), *Normal family processes* (pp. 514-547). New York, NY: Guilford.
- Olson, D. H., & Gorall, D. M. (2006). FACES IV & The Circumplex Model. Retrieved from <http://www.facesiv.com/pdf/3.innovations.pdf>
- Olson, D. H., Gorall, D. M., & Tiesel, J. W. (2006a). FACES IV. Development and Validation. Unpublished manuscript.
- Olson, D. H., Gorall, D. M., & Tiesel, J. W. (2006b). FACES IV. Package. Administration Manual. Unpublished manuscript.
- Olson, D. H., Portner, J., & Bell, R. Q. (1982). *FACES II*. St. Paul: University of Minnesota.
- Olson, D. H., Portner, J., & Lavee, Y. (1985). *FACES III*. St. Paul: University of Minnesota.
- Olson, D. H., Russell, C. S., & Sprenkle, D. H. (1989). *Circumplex model: Systemic assessment and treatment families*. New York, NY: Haworth Press.
- Olson, D. H., Sprenkle, D. H., & Russell, C. S. (1979). Circumplex model of marital and family systems, I: Cohesion and adaptability dimensions, family types, and clinical applications. *Family Process, 18*, 3-28.
- Olson, D. H., Stewart, K. L., & Wilson, L. R. (1990). *Health and stress profile (HSP), revised*. Minneapolis, MN: Profile of Health Systems.
- Olson, D. H., Tiesel, J. W., Gorall, D. M., & Fitterer, C. (1996). Family Assessment Package. Unpublished Manuscript St. Paul: University of Minnesota.
- Polaino-Lorente, A., & Martínez, P. (1995). El índice de fiabilidad de las 'Family Adaptability and Cohesion Evaluation Scales' (3a Versión), en una muestra de población española [The reliability index of the Family Adaptability and Cohesion Evaluation Scales (FACESII) in a Spanish population sample]. *Psiquis: Revista de Psiquiatría, Psicología y Psicopatología, 16*, 29-36.
- Rhoden, J. L. (2003). Marital Cohesion, Flexibility, and Communication in the Marriages of Nontraditional and Traditional Women. *The Family Journal, 11*, 248-256.
- Sanz, M., Iraurgi, I., & Martínez-Pampliega, A. (2002). Evaluación del funcionamiento familiar en toxicomanías: Adaptación española y características de adecuación métrica del FAP-FACES IV. In I. Iraurgi y F. González-Saiz (Eds.), *Instrumentos de evaluación en drogodependencias [Assessment tools for drugs addictions]* (pp. 403-434). Madrid, Spain: Aula Médica.
- Tiesel, J. (1994). Capturing family dynamics: The reliability and validity of FACES IV. (UMI No. 9501137). *Dissertation Abstracts International, 55*, 3006A.