Family Satisfaction by Adjectives Scale (FSAS) in mexican children and adolescents: normative data

Gabriela Tercero Quintanilla,[1] María del Pilar Deyanira Lavielle Sotomayor,[2] Onofre Muñoz Hernández,[3] Patricia Clark Peralta,[4] Mara Medeiros Domingo,[5] Alejandra Hernández Roque,[6] Mercedes Luque Coqui[6]

Original article

SUMMARY

Introduction

Family satisfaction results from the continuous interplay of verbal and/or physical interactions between subjects and the other members of their family. This satisfaction maintains relations to the coherence, fairness, fun, support, lack of conflict, affective proximity, confidence, cohesion, adaptation, allocation and acceptance of roles and tasks, open communication and acceptance in general of one's family. The use of developed psychological tests constructed in other countries is a frequent practice worldwide. The validation and standardization of the test intends to establish measurement rules and scales of qualification for a determined population, when it is different from the original population for which it was created or where the instrument is used habitually. The objective of this study was to collect the normative data of the Family Satisfaction by Adjectives Scale (FSAS) in children and adolescents of Mexico City.

Material and methods

A cross-sectional study was performed in 476 males and females from 8 year to 15 years 11 months of age. The family satisfaction by adjectives scale (FSAS) survey by Barraca and López-Yarto was applied. The data was analyzed with the Statistical Package for Social Sciences (SPSS v.17).

Results

The sample was made up of 226 males (47.5%) and 250 females(52.5%). Of these, 237 were children (8 year to 11 years 11 months of age) and 239 were adolescents (12 year to 15 years and 11 months of age). It was found that the Family Satisfaction by Adjectives Scale (FSAS) has very good reliability (α=.89), construct (50% total variance), content and discriminant validity among children and adolescents (p.000).

Key words: Family Satisfaction by Adjectives Scale (FSAS), test validation, test validity, test reliability, normative data.

RESUMEN

Introducción

La satisfacción familiar es el resultado del continuo juego de interacciones verbales y/o físicas que mantiene un sujeto con los otros miembros de su familia y guarda relación con la coherencia, la equidad en el hogar, la diversión, el apoyo, la falta de conflictos, la cercanía afectiva, la confianza, la cohesión, la adaptación, la asignación y aceptación de roles y tareas, la comunicación abierta y la aceptación en general de la propia familia. La utilización de pruebas psicológicas construidas en otros países es una práctica frecuente no sólo en nuestro país sino en todo el mundo. La validación y estandarización de las mismas implica establecer reglas de medición y escalas de calificación para una población determinada, cuando es diferente de la población original en la que se creó o se utiliza habitualmente el instrumento.
El objetivo de este estudio fue obtener los datos normativos de la Escala de Satisfacción Familiar por Adjetivos (ESFA) en escolares y adolescentes mexicanos de la Ciudad de México.

Material y métodos

Se realizó una encuesta transversal a 476 hombres y mujeres, de 8 a 15 años 11 meses, a quienes se les aplicó la escala de satisfacción familiar por adjetivos (ESFA) de Barraca y López-Yarto. Los datos se analizaron con el Paquete Estadístico para las Ciencias Sociales (SPSS v.17).

Resultados

La muestra se conformó por 226 hombres (47.5%) y 250 mujeres (52.5%). De éstos, 237 fueron escolares de 8 a 11 años 11 meses y 239 adolescentes de 12 a 15 años 11 meses. Se encontró que la escala posee muy buena confiabilidad (α=.89), validez de constructo (varianza total de 50%), de contenido y discriminante entre escolares y adolescentes (p.000).

Palabras clave: Escala de Satisfacción Familiar por Adjetivos (ESFA), validación, validez, confiabilidad, datos normativos.

[1] Department of Adolescent Psychiatry and Medicine. Hospital Infantil de México Federico Gómez.
[2] Clinical Epidemiology Research Unit. Specialty Hospital. Centro Médico Nacional Siglo XXI. IMSS.
[3] Research Management. Hospital Infantil de México Federico Gómez.
[4] Clinical Epidemiology Unit. Hospital Infantil de México Federico Gómez.
[5] Nephrology Research Laboratory. Hospital Infantil de México Federico Gómez.
[6] Department of Adolescent Psychiatry and Medicine. Hospital Infantil de México Federico Gómez.

Correspondence: M en C. Gabriela Tercero Quintanilla. Departamento de Psiquiatría y Medicina del Adolescente. Hospital Infantil de México Federico Gómez. Dr. Márquez 162, Col. Doctores, Deleg. Cuauhtémoc. 06720, México DF. Tel: 5228 - 9917, ext. 2038. E-mal: terceroq@yahoo.com

INTRODUCTION

Research into family has been tackled by different scientific disciplines such as sociology, anthropology, psychology, medicine, and pedagogy. Within their fields, each one has attempted to analyze and study the positive and negative aspects that influence the process of development for each family member.[1]

The assessment of family satisfaction began in the 1970s within the sphere of psychology and sociology. However, there are few instruments that assess family function and are backed up by consolidated theoretical models, and few efforts made by psychology to define construct as a fundamental aspect of family relationships.[1-3]

In terms of family function, Olson, Portner, and Lavee[2] developed the *Family Adaptability and Cohesion Evaluation Scales* (FACES) in the United States in 1978, the object of which was to measure family satisfaction with respect to the real and the ideal family. However, due to the inability to obtain empirical validity, in 1982 Olson and Wilson[2] published the *Family Satisfaction Scale*, one of the instruments most widely used to study wellbeing and family adjustment in two dimensions; cohesion and the family's capacity to adapt to various circumstances.[2] Its reliability obtained through Cronbach's alpha is .92 and the total variance explained in a single factor is 57.9%.[4]

Another instrument used to assess family function is the *Kansas Family Life Satisfaction Scale*, (*KFLS*) by Schumm et al. (1986). This instrument was designed to assess the satisfaction of family relationships between parents, parents and children (at least two), and siblings.2

The *Family Satisfaction Scale* by Carver and Jones (1992) is an instrument that is responded to in a Likert-type scale and which assesses an individual's satisfaction with their own family. The authors reported acceptable levels of reliability (Cronbach's alpha coefficient .95) and temporal stability of the scores.[2]

Barraca and López-Yarto's Family Satisfaction by Adjectives Scale (FSAS) (1996) arose due to nearly all authors considering that family satisfaction is a cognitive judgment; that is, a valuation made by the subject of different (not explicit) aspects of their family life compared with an ideal.[2]

Family satisfaction is the result of the continuous interplay of verbal and/or physical interactions that a subject maintains with the other members of their family. It is the sum of various emotions awakened in the subject upon being with their family, which can result in every family member experiencing a completely different satisfaction;[2,3] in other words, family satisfaction is an assessment of the state of mind caused by the family, based on the number of positive and negative experiences lived within it.[5]

When these interactions are positive for the subject, they will tend to be satisfied and formulate a positive judgment of their family, whereas when they are negative, they will tend to be dissatisfied.[2,5]

This condition of dissatisfaction has been associated with family environments with raised levels of frustration, resentment, aggression, and anger; less cohesion and more conflict; difficulties with communication (which may be unclear or confused); isolation, lack of support networks; use of dysfunctional coping strategies to try and resolve problems encountered;[2,6-8] and ambiguity around limits; that is, family members often do not know how to relate to one another and what their roles and tasks are.[2,6,9] A consequence of this is that the individual does not feel integrated into their family.[2,10]

The use of psychological tests constructed in other countries is a frequent practice not only in Mexico, but all over the world. However, the use of an instrument in a different cultural context to that for which it was created can affect the efficacy of the assessment and produce erroneous results.[11-14]

The validity and standardization of the psychological tests implies establishing rules for measurement and scoring scales for a determined population.[13,15] Adapting the instrument becomes necessary when the target population differs from the original population for which it is commonly used or created[16] and this involves the transformation, addition, or elimination of certain reactives from the original scale, which can change its significance in terms of characteristics such as culture, country, or language.[11-13]

The primary criteria to describe the psychometric properties of any test (that is, its mathematic and statistical characteristics) are reliability and validity.[11,15]

Reliability refers to the consistency of scores obtained by the same individuals when they are examined with the same test on different occasions.[15,17,18] It is determined by a coefficient of correlation the value of which goes from 0 to 1. The closer it is to 1, the more reliable the test.[17,18]

The procedures to obtain the reliability of an instrument are the *test-retest*, parallel-forms, split halves, internal consistency (Cronbach's or Kuder-Richardson's alpha), and inter-assessor reliability.[13,17-19]

Validity, that is, the level of accuracy with which a test effectively measures what it is supposed to measure in a determined population and in normal conditions of application, can be predictive, of content, or in relation to a criterion or construct.[11,13,15,17-19]

When the conditions for validation and standardization of the test are well-defined and its use is identical in all examined subjects, the next step is the interpretation of scores obtained by the subjects assessed.[15,17-19] This interpretation is made by comparing the score obtained by the subject with the scores contained in the tables of standards or scales.[17-20] These standards are obtained by: chronological scales, percentiles (derived score that transforms the direct score into a scale from 1 to 100), and typical scores (those that have as a unit fractions of standard deviation as standards or normalized data).[17,18,20]

The aim of this study was to obtain the standard (percentile) data of the Family Satisfaction by Adjectives Scale (FSAS) in Mexican school children and adolescents in Mexico City.

MATERIAL AND METHODS

A transversal survey was made of 476 males and females from 8 year through 15 years 11 months of age. The sample was divided into two groups: 237 school-aged children (students in the 3rd to 6th grade of elementary school) and 239 adolescents (students in the 1st to 3rd grade of middle school); both groups were public school children. The schools were chosen because of their nearby location to the Hospital Infantil de México Federico Gómez, and in accordance with the facilities they provided for carrying out the study. The questionnaires were applied by qualified psychologists who supervised the subjects' manner of response and resolved queries regarding the meaning of the antonyms.

The Family Satisfaction by Adjectives Scale (FSAS) by Barraca and López-Yarto (1996)[2] is and brief and simple instrument designed in Spain to assess family satisfaction expressed by subjects by means of different adjectives. It constitutes a measurement of the global perception held by the subject of their family situation.

It is made up of some 27 reactives, each one formed by a pair of antonymous adjectives which aim to evoke affective responses in the subject and which are based on the verbal and/or physical interactions produced between the subject and the other members of their family. It can be applied both individually and collectively from the age of 16, and serves clinical and research purposes as well as other fields of psychology and pedagogy where it is necessary or convenient to study family situation (specialists, trials, etc). Due to its simplicity, it takes no more than ten minutes to complete.

Possible scores for each one of the antonyms range from 1 (negative aspect) to 6 (positive aspect), called direct scores, which are added up to obtain the total score on the scale (maximum 162 points). The percentiles are obtained from the total score, according to which family satisfaction is determined as follows: 10-20 very low, 21-39 low, 40-60 medium, 61-79 high, and 80-90 very high; however, in general, scores above the 50th percentile indicate a satisfactory experience of one's family.

The higher the score, the more gratifying family interactions can be understood to be, and the more the subject assesses their family relationships as positive, pleasant, supportive, calm, and valuing wellbeing, respect, and understanding among its members.

The internal consistency of the FSAS was obtained by Cronbach's alpha (α=.97 for the total sample) and by the split halves method (α=.96 for the total sample). Temporal stability was obtained by the *test-retest* at four weeks with a coefficient of correlation of .75.

Construct validity was confirmed through a factor analysis of primary components and the Kaiser criterion for the appreciation of the factors. Three factors were obtained with eiganvalues greater than one that explain 70.8% of the variance; however, due to the fact that the prime factor itself explains 62.3%, Barraca and López-Yarto[1] considered that the scale has a single dimension.

To estimate the criteria validity of the FSAS, two scales were selected: the Family Satisfaction Scale by Olson and Wilson (r=.79) and the Family Satisfaction Scale by Carver and Jones (r=.65). A discriminant validity was also maintained that allows a distinction to be made between a general sample and a clinical group in family therapy (U=68.5; p.003).[2]

To obtain the standardized data (scales) of the FSAS in school children and adolescents, the Statistical Package for Social Sciences was used (SPSS v.17).

Measures were taken of central tendency and dispersion of the variables of sex and age group. The χ^2 was utilized to determine if there were statistically significant differences in the variables with respect to the total score obtained by the subjects on the scale. Determining the psychometric properties of the FSAS was completed by factor analysis for validity, and Cronbach's alpha coefficient of reliability and split halves were obtained. Finally, the percentiles of family satisfaction for school children and adolescents were obtained.

RESULTS

A total of 538 questionnaires were applied, however, 62 (12%) were eliminated for analysis because they were answered incorrectly by the children.

Two determinants were considered for the 476 remaining subjects: sex (male or female) and age group (school-age or adolescent). It was found that the two variables were freely distributed, for which the central tendency and dispersion measures were reported for non-parametric data.

Sex: The sample was comprised of 226 males (47.5%) and 250 females (52.5%). The χ^2 value obtained to determine whether differences existed between males and females in terms of total score obtained in the questionnaire was not statistically significant (p-0.51).

Age group: Some 237 school children aged between 8 years and 11 years 11 months (49.8%) and 239 adolescents from 12 years to 15 years 11 months of age (50.2%) were taken into account. The median age of the total sample was 11 years 11 months; 10 years 6 months for the school age group, and 14 for the adolescent group. There were statistically significant differences in the median of total score obtained on the scale by age group (χ^2=108.491; p=0.002), being 140 points for school children and 134 for adolescents.

Table 1. Psychometric properties of the FSAS

	Value		
	Total sample N=476	School age N=237	Adolescent N=239
Sample size	.91	.83	.90
Variance	50%	58%	57%
Number of factors	6	8	6
Reliability:			
• Cronbach's alpha	.89	.86	.91
• Split halves	.85	.80	.87

Table 2. Data from the factorial analysis of the FSAS in school children and adolescents

Factor	Eigenvalue	% Variance	% accumulated variance
I	7.265	26.906	29.906
II	1.626	6.022	32.954
III	1.299	4.813	37.766
IV	1.138	4.217	41.969
V	1.060	3.926	45.895
VI	1.031	3.818	49.708

Table 3. FSAS factors in school children and adolescents

Factor	Antonyms
I	13, 15, 16, 18, 19, 21, 23, 24, 25, 27
II	1, 2, 3, 4, 5, 7, 8, 12
III	9, 17, 20
IV	6, 22, 26
V	10, 14
VI	11

Table 4. Internal consistency of the FSAS

Antonym	r value*	Antonym	r value*	Antonym	r value*
1	.884	10	.889	19	.884
2	.883	11	.890	20	.883
3	.884	12	.883	21	.882
4	.884	13	.883	22	.885
5	.883	14	.884	23	.885
6	.890	15	.883	24	.883
7	.884	16	.883	25	.882
8	.885	17	.883	26	.883
9	.884	18	.882	27	.883

r value*: Cronbach's alpha coefficient.

To estimate the sample size necessary to obtain the standardized data, the KMO (Kaiser-Meyer-Olkin) measure was considered on sample sufficiency, which was .92 for the total sample, .84 for the school children, and .91 for the adolescents. This measure is outstanding in three cases (Table 1).

Table 5. Percentiles of family satisfaction (FS) for school children and adolescents

Percentile	FS Interpretation	School age value	Adolescent value
10	Very low	<114	<105
20	Very low	123	115
30	Low	130	125
40	Medium	136	129
50	Medium	140	134
60	Medium	144	138
70	High	148	144
80	Very high	151	148
90	Very high	155>	154>

By means of factorial analysis with primary components, *eigenvalues* greater than one, and varimax rotation (Tables 1, 2, and 3), variance of 49.7% was explained in six factors for the total sample; variance of 57.5% in eight factors for the group of school children and variance of 56.5% in six factors for the group of adolescents (Table 1).

Reliability was obtained by two methods as follows: 0.88 (Cronbach's alpha) and 0.84 (split halves) for the total sample; 0.85 (Cronbach's alpha) and 0.80 (split halves) for the school children; and 0.91 (Cronbach's alpha) and 0.87 (split halves) for the adolescents (Table 1).

An analysis was made of the antonyms in order to determine the value contributed by each one to total reliability. Very good internal consistency was found on the scale (Table 4). Furthermore, a factor analysis was attempted with a varimax solution obligated to three factors (those found by Barraca and López-Yarto);[1] however, the Cronbach's alpha reliability in the third factor falls to 0.68.

By means of the percentiles obtained, it is possible to obtain family satisfaction of school children and adolescents (Table 5).

Table 6 shows the level of family satisfaction of the subjects who participated in this study. The median of the scores obtained by school children was 140 (medium family satisfaction), while that of the adolescents was 134 (also medium family satisfaction).

Table 6. Interpretation of Family satisfaction (FS) of school children (n=237) and adolescents (n=239)

Interpretation	School children		Adolescents	
FS	Fr	%	Fr	%
Very low	48	20.4	48	20.0
Low	25	10.5	25	10.5
Medium	75	31.6	76	31.8
High	24	10.1	20	8.4
Very high	65	27.4	70	29.3

FS: Family satisfaction, Fr: Frequency.

DISCUSSION

Assessing the type of interactions of school children and adolescents (satisfactory or otherwise) is useful, given that these are individuals who are still growing and developing their emotional and social skills.

In the original Spanish version,[2] statistically significant differences were found in the manner of perceiving family satisfaction among males and females; however, in our sample this was not the case, possibly due to the uses and customs of the language and the age group being different to that considered in the Spanish study.

Taking the 50th percentile of the questionnaire as a cut-off point to indicate a satisfactory or dissatisfactory experience of one's family explains the fact that the school children reported greater family satisfaction than the adolescents (140 *vs.* 134 points respectively). Given their current developmental period, the former have a more stable perception of their family and their life within it than the adolescents, who find themselves in a period of relative dissatisfaction with themselves and their family unit. Furthermore, this statistically significant difference (p=.002) indicates that the instrument is capable of discriminating between school children and adolescents in terms of family satisfaction.

Factor analysis is the most suitable method for checking the construct validity of an instrument.[1] Barraca and López-Yarto describe an accumulated variance for the FSAS of 70.8% explained in three factors with *eigenvalues* greater than one. In this study, the variance fell to 49.7% and was explained in six factors, possibly due to both the school children and the adolescents having difficulty in understanding the meaning of certain antonyms. However, if a separate analysis is made of school children and adolescents, greater stability and internal consistency can be observed in the group of adolescents (α=.91) than in the school children (α=.86).

One of the primary limitations of the study is such because the sample was obtained from a single geographical zone of Mexico City, with subjects whose socio-economic condition was middle to low. This could possibly have determined the difficulty in understanding the meaning of certain antonyms. Precaution should be taken with antonym number six (placid/anxious), given that at the time of application, more than 90% of the subjects did not understand its meaning. Furthermore, it is suggested that five of the antonyms are substituted by synonyms for clearer comprehension of the scale by these age groups. The following changes to antonyms are suggested: 3 (replace 'jovial' with 'cheerful'), 11 (replace 'inhibited' with 'limited'), 15 (replace 'harassed' with 'annoyed'), 18 (replace 'marginalized' with 'separate'), and 23 (replace 'inundated' with 'overwhelmed').

It can be concluded that the Family Satisfaction by Adjectives Scale (FSAS) has very good internal consistency, reliability, construct validity, content validity, and discriminant validity, and that it can be used on Mexican school children and adolescents.

REFERENCES

1. Guijarro EA. Estructura y funcionamiento familiar de niños con cáncer desde la perspectiva de las madres. Tesis doctoral. Universidad de la Laguna. España 2010. ISBN: 978-84-7756-971-8.
2. Barraca MJ, López-Yarto EL. ESFA. Escala de satisfacción familiar por adjetivos. Madrid, España: Segunda edición. TEA, Publicaciones de Psicología Aplicada; 1999.
3. Rollan GC, García-Bermejo M, Villarrubia I. Relación entre la satisfacción familiar, el bienestar psicológico y el sentido de la vida. www.cesdonbosco.com. Accesado en abril de 2011.
4. Martínez-Pampliega A, Iraurrgi I, Galíndez E, Sanz M. Family adaptability and cohesion evaluation scale (FACES): Desarrollo de una versión de 20 ítems en español. International J Clinical Health Psychology 2006;6(2):317-338.
5. Luengo RT, Román SJM. Estructura familiar y satisfacción parental: propuestas para la intervención. Acciones e investigaciones sociales, ISSN 1132-192X N° extra 1, 2006:455.
6. Berge JM, Holm KE. Boundary ambiguity in parents with chronically ill children: Integrating theory and research. Family Relations 2007;56(2):123-134.
7. Christians LA. Fathers of chronically ill children: Assessment and perceived effectiveness of their coping methods. ProQuest Information and Learning Company. 2004, UMI Microfilm: 1421655.
8. Vulic-Prtoric A, Macuka I. Family and coping factors in the differentiation of childhood anxiety and depression. Psychology Psychotherapy 2006;79:199-214.
9. Grossman LK, Rich LN, Michelson S, Hagerty G. Managed care of children with special health care needs: The ABC program. Clinical Pediatrics 1999;38(3):153-160.
10. Mahat G, Scoloveno MA, Barnette DC. Written educational materials for families of chronically ill children. J American Academy Nurse Practitioners 2007;19(9):471-476.
11. Mikulic IM. Construcción y adaptación de pruebas psicológicas. Universidad de Buenos Aires. Facultad de Psicología. www.psi.uba.ar/academica/carrerasdegrado/.../059.../f2.pdf. Recuperado 29 mayo 2011.
12. Malo-Salvatierra DA. La medición en psicología como herramienta y como reflexión ética en el ejercicio del psicólogo. Psicogente 2008;11(19):46-51.
13. Sánchez R, Echeverry J. Validación de escalas de medición en salud. Rev Salud Pública 2004;6(3):302-318.
14. Fernández AL, Marino JC, Alderete AM. Estandarización y validez conceptual del test del trazo en una muestra de adultos argentinos. Revista Neurológica Argentina 2002;27:83-88.
15. Botía SML, Orozco PLH. Validación preliminar de una batería de solución de problemas. Cognición Revista Científica de FLEAD. http://cognicion.net. Recuperado 29 mayo 2011.
16. Isasi BX, Balluerka LN, Gorostiaga MA. La utilización de instrumentos de medida en situaciones de contacto de lenguas y de culturas: una reflexión metodológica. Psicothema 2002;12(sup 2):305-310.

17. Nunnally JC, Bernstein IH. Teoría psicométrica. México: Tercera edición. Mc Graw Hill; 1994: pp. 37-43, 92-127, 277-378.

18. Aliaga TJ. Psicometría: tests psicométricos, confiabilidad y validez. En: www.unmsm.edu.pe/psicologia/.../05Libro EAPAliaga.pdf. Recuperado 29 mayo 2011.

19. Villagómez DG. Adaptación mediante análisis factorial del (CTI) para población ecuatoriana de la Ciudad de Quito. Pontificia Universidad Católica del Ecuador; Facultad de Psicología; 2007.

20. Espinoza MJC. Validación y estandarización de instrumentos. Universidad Nacional de Colombia. Colombia: Convenio Interadministrativo de Cooperación Académico-Científico; 2008; 29: 1-16.

Declaration of conflict interest: None