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Validation of the English version of the Five-Factor Self-Concept Questionnaire

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Abstract

Background: The Spanish Five-Factor Self-Concept Questionnaire (AF5) is one of the most widely used instruments assessing self-concept with Spanish-speaking samples. It is also one of the few psychometrically sound instruments assessing self-concept from a multidimensional perspective. The availability of the AF5 in both languages (Spanish and English) would expand its potential, and would facilitate cross-cultural research. **Method:** To validate the English version of the AF5, we used multi-sample confirmatory factor analysis. The sample was 624 USA respondents, 301 males (48%) and 323 females, ranging in age from 14 to 18 (M = 16.21, SD = 1.08). **Results:** The English version of the AF5 does not change the original factor weights, the variances and covariances of the factors, or the error variances of items, with regard to the original Spanish five-factor model. The five factors proposed –academic, social, emotional, family, and physical– satisfactorily reproduce the inter-item relationships of the original Spanish version. The reliability for all items and dimensions of the English version was also good, with similar results as the original version. **Conclusions:** This preliminary validation study of the English version of the AF5 showed that it is an acceptable measure to be used with English-speaking adolescents.

Keywords: Questionnaire, self-concept, Spanish, translation, validation.

Resumen

Validación de la versión inglesa del Cuestionario de Autoconcepto AF5. **Antecedentes:** la escala multidimensional de autoconcepto —Forma 5— (AF5) es uno de los instrumentos de evaluación del autoconcepto más ampliamente utilizados con muestras de habla española. Es uno de los pocos instrumentos que miden multidimensionalmente el autoconcepto con sólidos fundamentos psicométricos. La disponibilidad del AF5 en ambos lenguajes (español e inglés) ampliaría su potencial, y facilitaría la investigación intercultural. **Método:** para validar la versión inglesa del AF5 se utilizó el análisis factorial confirmatorio multimuestra. La muestra fue de 624 norteamericanos, 301 hombres (48%) y 323 mujeres, de 14 a 18 años (M = 16.21, DT = 1.08). **Resultados:** la versión en inglés del AF5 no cambia los pesos factoriales originales, las varianzas o covarianzas de los factores, o los errores de la varianza de los ítems, comparados con el modelo de cinco factores del original. Los cinco factores propuestos –académico, social, emocional, familiar y físico– reproducen satisfactoriamente las relaciones inter-ítem de la versión original española. La fiabilidad de todos los ítems y dimensiones de la versión inglesa fue también adecuada, con resultados similares a los de la versión original. **Conclusiones:** esta validación preliminar de la versión inglesa del AF5 muestra que es una medida aceptable para su uso con adolescentes de habla inglesa.

Palabras clave: autoconcepto, cuestionario, español, traducción, validación.

The AF5, Five-Factor Self-Concept Questionnaire (García & Musitu, 1999), was originally validated and normed in Spain on a large sample of almost 6,500 participants between the ages of 10 and 62 years old, providing Spanish national norms for sex and age. The AF5 consists of five subscales (academic, social, emotional, family, and physical self-concept) of six items each (a total of 30 items, with response choices ranging from 1 to 99). The five-dimensional structure of the questionnaire was defined theoretically based on the hierarchical and multidimensional theoretical model of the self-concept proposed by Shavelson and colleagues (Byrne & Shavelson, 1996; Shavelson, Hubner, & Stanton 1976).

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Structural validity evidence for the AF5 is supportive. In addition to the initial scale development study, other studies, using exploratory (e.g., Cerrato, Sallent, Aznar, Pérez, & Carrasco, 2011; Martínez, Musitu, García, & Camino, 2003), and confirmatory factor analysis (García, Musitu, & Veiga, 2006; Murgui, García, García, & García, 2012) supported the correlated five-factor model of the AF5, and showed no method effects associated with negatively worded items (García, Musitu, Riquelme, & Riquelme, 2011; Tomás & Oliver, 2004). Two studies analyzing the structure invariance of a Basque language version showed the same results (see Elosua & Muñiz, 2010). All these studies reported that all AF5 items loaded on their assigned subscales and that there were no complex items. Additionally, reliability estimates for the AF5 subscale scores in the literature are in the .71 to .88 range, providing adequate evidence for the internal consistency of the subscales (García & Gracia, 2009; Fuentes, García, Gracia, & Lila, 2011ab; Martínez et al., 2003).

Available evidence also shows adequate convergent validity of the AF5. For example, statistically significant and

meaningful relationships have been found between AF5 scales and psychosocial adjustment in adolescence (García & Gracia, 2010), depression and anxiety (Garaigordobil & Pérez, 2007), peer perceived popularity (Košir & Pečjak, 2005), emotional intelligence (Gorostiaga, Balluerka, Aritzeta, Haranburu, & Alonso-Arbiol, 2011), the improvement of the physical resistance in teenagers (Bernal, 2006), and family functioning (Martínez & García, 2007, 2008; Martínez, García, & Yubero, 2007). With respect to the relationships between the AF5 and other theoretically relevant variables, numerous empirical studies have also reported results generally in line with theoretical predictions. For example, relationships have been observed between scores on the AF5 and adolescent eating disorders (Guarnido, Cabrera, & Osuna, 2012); victimization (Estévez, Inglés, Emler, Martínez-Monteagudo, & Torregrosa, 2012), school violence (Garay, Ávila, & Martínez, 2013) and victimization at school (Jiménez, Musitu, Ramos, & Murgui, 2009); prejudices toward immigrants (del Barco, Castaño, & Carroza, 2010) and sexist prejudices (Garaigordobil & Aliri, 2011); substance use (Fuentes et al., 2011b); suicidal behavior (Pérez-Amezcua, Rivera-Rivera, Atienzo, Castro, Leyva-López, & Chávez-Ayala, 2010) and suicidal ideation (Sánchez-Sosa, Villarreal-González, Musitu, & Martínez Ferrer, 2010); perceived social support (Rodríguez-Fernández, Droguett, & Revuelta, 2012) and pro-social behavior (Inglés, Martínez-González, García-Fernández, Torregrosa, & Ruiz-Esteban, 2012).

Additionally, AF5 scales have been used as criteria to validate self-concept (Goñi, Madariaga, Axpe, & Goñi, 2011; Garaigordobil & Aliri, 2011) and self-esteem measures (Martín-Albo, Núñez, Navarro, & Grijalvo, 2007), as well as criteria to validate scales of related measures. For example, effective personality (Pellerano, Trigo, del Buey, Palacio, & Zapico, 2006), sport motivation (Martín-Albo, Núñez, Navarro, Leite, Almiron, & Glavinich, 2007), peer mentoring (Alonso, Castaño, Calles, & Sánchez-Herrero, 2010) and academic motivation (Núñez, Martín-Albo, Navarro & Suárez, 2010).

The aim of this paper is to validate the English translation of the Spanish Five-Factor Self-Concept Questionnaire (AF5, García & Musitu, 1999). The AF5 is one of the most widely used instruments assessing self-concept with Spanish-speaking samples, both in Spain (e.g., Fuentes et al., 2011a; García & Gracia, 2009), and other Spanish-speaking countries (e.g., Villareal-González, Sánchez-Sosa, Veiga, & Del Moral, 2011). It has been translated to Portuguese (e.g., Rodrigues, Veiga, Fuentes, & García, 2013) and other languages (Basque, Elosua & Muñiz, 2010; Catalan, Cerrato et al., 2011; and Italian, Marchetti, 1997). In addition, the AF5 is one of the few psychometrically sound instruments available in Spanish assessing self-concept from a multidimensional perspective (García & Musitu, 1999; García et al., 2011; Tomás & Oliver, 2004). The English and Spanish languages are two of the most widely used languages in the world. The availability of the AF5 in both languages (as well as in other languages where it is already available) would expand its potential, and would facilitate cross-cultural research. For the validation process, we applied a multi-sample confirmatory factor analysis following two steps. First, we examined the fit of the correlated five-factor model of the AF5 factor structure (García & Musitu, 1999) versus one-dimensional and five-dimensional orthogonal alternative models. Second, we tested the factorial invariance of the English translation of AF5 respect to the original Spanish version.

Method

Participants

The English sample was comprised of 624 students, 301 men (48%) and 323 women, with age ranging from 14 to 18 years (M = 16.21, SD = 1.08). Each age group had the following number of participants (in parentheses): 14 (33), 15 (136), 16 (211), 17 (165), and 18 (79). The participants identified themselves according to their background as follows: 62.6% were White/Caucasian; 11.3%, Black/African American; 9.3%, Hispanic/Latino; and 2.7%, Asian. The remaining participants, 14.1%, were from other ethnic groups. The Spanish sample was larger, 7,320 students, 3,228 men (44%) and 4,092 women, ranged in age from 14 to 18 years (M = 16.25, SD = 1.11). Each age group had the following number of participants (in parentheses): 14 (360), 15 (1584), 16 (2385), 17 (1847), and 18 (1144).

Instrument

The Five-Factor Self-Concept Questionnaire (AF5, García & Musitu, 1999) was designed to measure five self-concept dimensions: *Academic* (e.g. "I do my homework well"), *Social* (e.g. "I make friends easily"), *Emotional* (e.g., reverse scored, "I am afraid of some things"), *Family* (e.g., "I feel that my parents love me"), and *Physical* (e.g. "I take good care of my physical health"). The 30 items are answered on a 99-point scale, ranging from 1: complete disagreement, to 99: complete agreement.

Procedure

Sample selection. To obtain the English-speaking students we contacted the heads of three High Schools of United States of America. Trained groups of undergraduate psychology students administered the psychometric tests in northwestern (Walla Walla, Washington), southwestern (Angwin, California) and northeastern (South River, New Jersey) states of the United States of America. Note that thousands of kilometers separate these United States regions, so the total sample is not restricted to a particular geographical area (Reise et al., 2000). All students who participated in this study (89% response rate): (a) were English-speaking, as were their parents and four grandparents; (b) were students from 9th through 12th grades and ranged in age from 14 to 18; (c) had received their parents' approval; and (d) attended the designated classroom where the research was conducted. Spanish-speaking students was obtained from previous studies using the Spanish version of the AF5 (previously published data, n = 6,852, 94%; unpublished data, n = 468, 6%).

Sample-size. An *a priori* analysis was computed for estimating the minimum sample size required to accurately recover a population factor pattern (Guadagnoli & Velicer, 1988). We fixed the average of discrepancy at least as small as .05 between the population parameters values and the estimated samples values of factor loadings, with a cautious average target loading of .5 on a factor (García & Musitu, 1999), determining a sample size of at least 625. At the end of the sampling process, there were 624 English participants (only one less than we had planned). From a sample size of 7,320, Spanish participants with an average target loading of .5 on a factor, we obtained that the average discrepancy between the population parameter values and the estimated sample

values of factor loadings should be only .018 (Guadagnoli & Velicer, 1988).

Translation of the AF5. To translate the AF5 from Spanish to English, we followed the back-translation method proposed by Brislin (1970). With this procedure, the original version is translated into the target language and then is translated back to the original language by different translators. This method is considered particularly appropriate for identifying translation errors and achieving concept equivalence. We followed two steps. In the first step, ten bilingual individuals, selected for their proficiency in English and the Spanish language, translated the scale from Spanish to English. Then, four judges discussed and decided on the best translation for each item. In the second step, the selected English items were then translated back into Spanish by four bilingual individuals who did not know the original Spanish text. The judges once again discussed and compared the translations to the original Spanish scale. The English version was finalized by including the translations that most closely matched the original scale. The English version of the AF5 was distributed to ten English students of Psychology for comments on understanding and clarity of the items. It was ascertained that they had no previous knowledge of the AF5 items. The scale was considered ready for use when the students showed no difficulty comprehending and completing the questionnaire (Muñiz, Elosua, & Hambleton, 2013).

Data analysis

We compared the fit of the five-factor correlated model of five AF5 dimensions with four alternative models. First, we tested a one-factor model. This model represented a view of self-concept as a one-dimensional construct. Second, we tested an orthogonal five-factor model. This model specified self-concept as a multidimensional construct, consisting of five AF5 dimensions —academic, social, emotional, family, and physical structure— but as orthogonal (separate) dimensions underlying self-concept. Third, we tested the correlated five-factor model based on the AF5. This is the same model as the previous one, with the five dimensions correlated. Finally, and fourth, we freed error covariances for the strongly correlated pairs of items in each factor of the third model (Byrne & Shavelson, 1986). We used maximum likelihood (ML) as the estimation method in the confirmatory factor analyses.

To prove the negative effect of long standard errors on confirmatory fit indexes, we followed the variance reduction method used in a previous study (García et al., 2006). We repeated all analyses for the four models after transforming the 99 points scale item into a shortest dichotomous response scale (< median or ≥ median). This would correspond to employing a dichotomous (Yes/No) response format, but making sure to obtain a precise symmetric distribution (i.e., the long 99 points scale item of the AF5 allows splitting into two equal groups; García et al., 2006). As the new scale was dichotomous, tetrachoric correlations were estimated from the data. The Satorra-Bentler chi-squared statistic (Satorra & Bentler, 2001) and associated robust confirmatory fit index provided by EQS6.1 (Byrne, 2006) were examined to evaluate model fit. The rest of analysis was provided by AMOS7. Also, as large sample size errors decrease as the degree that sample size increase (Bentler & Yuan, 1999), we expected systematically a better fit for the Spanish sample than for the English sample.

Finally, we compared four nested models among samples of both countries. All the analyses described in this study were conducted separately for the Spanish and English versions. However, once the baseline model was established with each version, to test if CFA model fit both versions well, they were also fitted simultaneously for both Spanish and English samples. We conducted the following sequence of increasingly restrictive tests of invariance across both samples via AMOS7: (a) unconstrained, without any restrictions across parameters, (b) factor pattern coefficients, (c) factor variances and covariances, and (d) the equality of the error variances.

Results

Preliminary item analyses

The skew and kurtosis indexed of each of AF5 items were examined and found to be in Spanish sample between |2.163| and |.005| and between |4.433| and |.192|, respectively; only two items (19 and 29) had a skew index higher than |2.0|, the rest were always lower than |1.5|. In the English sample, between |2.338| and |.005| and between |4.852| and |.095|, respectively; only two items (9 and 27) had a skew index higher than |2.0|, the rest were always lower than |1.7|.

Previous confirmatory factor analysis

Fit indexes for the four alternative models of the AF5 are reported in Table 1. As expected, when models were applied on the transformed dichotomous scales, all indexes systematically achieved better fit. The negatively skewed pattern greatly increases the error variance, reducing model fit. As expected, when models were applied on the large Spanish sample, all indexes systematically achieved better fit.

In the first step, we constrained both samples data to be consistent with the single one-factor model (see Table 1). Statistics generally fail to meet conventional standards, indicating a bad fit. In the second step, we constrained both samples data to the five factors model proposed by AF5-structure, but as orthogonal dimensions. This model provided a considerable increase of fit with respect to the one-factor model. In the third step, the same five factors model was analyzed but with correlated five dimensions. The correlated model produced an improved fit over the orthogonal model. Finally, in the fourth step, we freed error covariances for the strongly correlated item pairs in each factor of third model. This model provided a new increase of fit with respect to Model 3. Overall, the results conducted separately for the Spanish and English versions indicated that the AF5 model was supported and resulted in a better fit than all alternative models.

Multi-sample confirmatory factor analysis of invariance across both samples

The unconstrained model (consisting of the baseline Model 4 for both samples) showed a good fit, suggesting a common factor structure across the two samples (see end of Table 2). Constraining the pattern coefficients across the two groups resulted in continued good fit, |ΔCFI| = .002, suggesting that factor weights were invariant across the two samples. Constraining structural variances and covariances yielded non-significant changes in fit, |ΔCFI| = .002, suggesting no difference in structural variances and covariances across the two samples. Finally, constraining the error variances resulted in no changes in goodness-of-fit, |ΔCFI| = .006.

Table 1
Confirmatory factor analysis and multi-sample analysis for the invariance between the Spanish original version and the English adaptation

Model	χ^2	df	RMSEA [90% CI]	GFI	AGFI	CFI	ΔCFI	AIC
Spanish, original 1-99 scale								
Model 4: Theoretical + r_{error} [$]	8070.0	390	.052 [.051 - .053]	.93	.91	.900	.056	7290
Model 3: Theoretical - 5 Fact. obliq.	12359.1	395	.064 [.063 - .065]	.89	.87	.844	.038	11569
Model 2: 5 Factors orthogonal	15263.8	405	.071 [.070 - .072]	.86	.84	.806	.420	14454
Model 1: One-dimensional	47484.3	405	.126 [.125 - .127]	.59	.53	.386		46674
Spanish, dichotomous scale								
Model 4: Theoretical + r_{error} [$]	3360.0[#]	390	.032 [.031 - .033]	—	—	.933	.033	2580
Model 3: Theoretical - 5 Fact. obliq.	4849.6[#]	395	.039 [.038 - .040]	—	—	.900	.021	4060
Model 2: 5 Factors orthogonal	5810.1[#]	405	.043 [.042 - .044]	—	—	.879	.372	5000
Model 1: One-dimensional	22405.4[#]	405	.086 [.085 - .087]	—	—	.507		21595
English, original 1-99 scale								
Model 4: Theoretical + r_{error} [$]	1729.4	390	.074 [.071 - .078]	.84	.80	.826	.073	949
Model 3: Theoretical - 5 Fact. obliq.	2298.1	395	.088 [.085 - .091]	.78	.75	.753	.077	1508
Model 2: 5 Factors orthogonal	2899.0	405	.099 [.096 - .103]	.72	.67	.676	.229	2089
Model 1: One-dimensional	4658.2	405	.130 [.126 - .133]	.57	.51	.447		2848
English, dichotomous scale								
Model 4: Theoretical + r_{error} [$]	1007.3[#]	390	.050 [.047 - .054]	—	—	.888	.038	227
Model 3: Theoretical - 5 Fact. obliq.	1222.1[#]	395	.058 [.054 - .062]	—	—	.850	.041	432
Model 2: 5 Factors orthogonal	1456.6[#]	405	.065 [.061 - .068]	—	—	.809	.207	647
Model 1: One-dimensional	2593.9[#]	405	.093 [.090 - .096]	—	—	.602		1784
Multi-sample, baseline Model 4[$]								
Model A: Theo.+r_{error}# multisamples	9800.8	780	.038 [.037 - .039]	.92	.90	.893		8241
Model B: Equal loading in the fact.	9957.1	805	.038 [.037 - .039]	.92	.90	.891	.002	8347
Model C: Equal var./cov. factors	10161.0	820	.038 [.037 - .039]	.92	.90	.889	.002	8521
Model D: Equal variance of errors	10670.2	850	.038 [.037 - .039]	.91	.90	.884	.006	8970

Note: Chi-square tests statistically significant ($p<.01$). χ^2 = chi-squared; *df* = degrees of freedom; RMSEA = root mean squared error of approximation; GFI = goodness of fit index; AGFI = adjusted goodness of fit index; CFI = comparative fit index; AIC = Akaike information criterion.
[#] Testing used a matrix of tetrachoric correlations and the Satorra-Bentler chi-square statistic. Goodness of fit index (GFI) and adjusted goodness-of-fit index (AGFI) are not available in EQS output.
[$] Freed error covariances: 16-26, 2-12, 3-13, 4-14, and 10-25

Table 2 gives an overview of the parameters of the final model. Invariance testing across the two speaking-versions suggested that the correlated five-factor model of the AF5 factor structure operates in a similar way for these both versions.

Reliability

Alpha reliability coefficients for the total scale were .84 in the Spanish sample and .88 in English sample; for Academic, .88 and .86; for Social, .76 and .74; for Emotional, .74 and .78; for Family, .83 and .87; and, for Physical, .76 and .73.

Discussion

The aim of this paper was the validation of the English version of the AF5 measure with a multi-sample confirmatory factor analysis. First, results of this study confirmed that the five-factor model of the AF5 consisting of academic, social, emotional, family, and physical self-concept, is preferable to the one-dimensional and five-dimensional orthogonal alternative models in both Spanish and English versions. These results corroborate previous studies that supported the five-factor model of the AF5, using both exploratory (Cerrato et al., 2011; Martínez et al., 2003) and confirmatory factorial analyses (Elosua & Muñiz, 2010; García et al., 2006; García et al., 2011; Murgui et al., 2012). The results of this study also support the hierarchical and multidimensional theoretical model on which the AF5 is based (Shavelson et al., 1976). Second, in this study, the English version of the AF5 has successfully met the four invariance tests (García et al., 2011; García et al., 2006; Tomás & Oliver, 2004). The results showed that the English version of the AF5 does not change the original factor weights, the variances and covariances of the factors, or the error variances of items with respect to the original Spanish five-factor model of the AF5 factor structure. These results support the equivalence of AF5-factor ratings across the English version and the Spanish original AF5 factor structure. The five factors proposed —Academic, Social, Emotional, Family, and Physical— satisfactorily reproduce the inter-item relationships of the original Spanish version. This invariant pattern supports the notion of self-concept (and their multidimensional components) as fully equivalent between both versions. Results also met the stringent test of equal error variances (Byrne, 2006). The reliability for all items and dimensions of the English version was also good, with similar results to the original version, and similar to those obtained in other studies (Elosua & Muñiz, 2010; Fuentes et al., 2011ab; García et al., 2006).

Table 2
Summary of parameter estimates (and standard errors) for multi-sample confirmatory factor analysis model

	AC	SO	EM	FA	PH	
Item	**Factor loading**					**Errors**
1	.72					219.8 (04.0)
6	.83					193.1 (04.3)
11	.75					276.0 (05.2)
16	.57					405.3 (06.9)
21	.81					205.2 (04.4)
26	.74					244.1 (04.6)
2		.74				205.0 (04.8)
7		.68				170.6 (03.5)
12		.46				522.7 (09.2)
17		.60				248.6 (04.7)
22		.25				811.4 (13.1)
27		.70				220.2 (04.7)
3			.43			629.2 (11.0)
8			.64			480.4 (10.3)
13			.52			567.2 (10.5)
18			.57			532.6 (10.3)
23			.51			690.0 (12.6)
28			.68			475.2 (10.9)
4				.48		603.5 (10.1)
9				.75		240.6 (04.9)
14				.51		494.0 (08.3)
19				.70		226.0 (04.3)
24				.76		251.5 (05.2)
29				.80		144.9 (03.3)
5					.49	508.5 (09.1)
10					.43	888.7 (15.3)
15					.52	532.3 (09.6)
20					.69	428.9 (09.5)
25					.52	617.0 (11.2)
30					.73	359.3 (08.9)

	AC	SO	EM	FA	PH
	Factor variances, covariances, and [correlations$^{\$}$]				
AC	238.3 (6.7)	[.15]	[-.03]	[.35]	[.30]
SO	59.2 (3.4)	243.5 (7.3)	[.21]	[.22]	[.33]
EM	-7.3 (2.6)	24.0 (2.9)	141.0 (8.4)	[.09]	[.15]
FA	84.1 (3.5)	73.2 (3.4)	10.3 (2.3)	183.6 (8.6)	[.19]
PH	64.5 (3.3)	92.8 (4.0)	25.5 (2.4)	49.3 (2.9)	158.1 (8.0)

	Error [correlations]				
Pairs	$E_{16\text{-}26}$	$E_{2\text{-}12}$	$E_{3\text{-}13}$	$E_{4\text{-}14}$	$E_{10\text{-}25}$
Spain	[.21]	[.25]	[.26]	[.36]	[.59]
USA	[.30]	[.29]	[.26]	[.66]	[.53]

Note: AC = Academic; SO = Social; EM = Emotional; FA = Family; PH = Physical. All estimated parameters were statistically significant for α = .001, except the covariance between EM and AC (p = .008). Negatively worded items (3, 4, 8, 12, 13, 14, 18, 22, 23, and 28) were inverted.
$^{\$}$These correlations between factors were calculated on raw scores (García & Musitu, 1999)

Thus, the general picture that emerges from these studies is that the AF5-structure holds well across international contexts. When conducting international research, measures of psychological constructs cannot simply be translated into another language with the assumption that they can be interpreted in the same way across groups (García & Gracia, 2009; Lila & Gracia, 2005; Lila, García, & Gracia, 2007). Evidence for measurement invariance must be provided; without it, the basis for comparison is weak, and the conclusions drawn from differences among groups cannot be easily interpreted (Balluerka & Gorostiaga, 2012; Gracia, Fuentes, García, & Lila, 2012; Yin & Fan, 2003). The AF5-structure showed a satisfactory evidence of invariance when the samples from the two countries were compared simultaneously. In spite of the significant differences in the hierarchical chi-square tests, there was support for multigroup invariance (factor forms, factor loadings, factor variances and covariances, and error variances) from the tests using ΔCFI, which has been recommended as preferable to the use of $\Delta\chi^2$ as a test of measurement invariance when conducting multigroup confirmatory factor analysis (Cheung & Rensvold, 2002).

This preliminary validation of the English version of the AF5 showed that it is an acceptable measure to be used with English-speaking adolescents. In this regard, the AF5 provides scholars who favour a multidimensional approach to assess self-concept with a measure for comparative studies that displays a strong conceptual and theoretical foundation, coupled with sound psychometric properties. However, this study, like all scientific work, is not without limitations. First, the English-speaking sample was recruited from a single country (United States), which has its own cultural characteristics, which are different from those of the United Kingdom or Australia, for example. It would be of great interest to carry out more cross-cultural or cross-national studies to verify whether the results of our work are equivalent for other English-speaking countries. Second, the questionnaire was applied to a sample of adolescents; in subsequent studies we suggest applying this validation process to more divergent samples as well as to representative samples of the general population. And third, as in any measure regarding the self, there are limitations related to the difficulty for some subjects to self-report their own behaviors, cognitions and affects.

To conclude, this study is the first step to validate the English version of the Spanish Five-Factor Self-Concept Questionnaire. The psychometric properties of the English version of the AF5 found in the present study clearly replicated those reported by García and Musitu (1999) for the normed Spanish sample and also those presented by other numerous studies. The questionnaire is useful for assessing five different domains of self-concept (academic, social, emotional, family, and physical) when applied to persons from different cultures and contexts (Muñiz et al., 2013). Additional research should focus on using and testing the psychometric characteristics of the English version of the AF5 with a more divergent sample and in the general population. However, our results showed that the instrument is comprehensive, psychometrically sound, brief, easy to complete, and adequate for the multidimensional assessment of self-concept.

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