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Sources of perceived sociocultural pressure on physical self-concept

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Abstract

Background: The aim of this study is to analyze the four-factor structure (advertising, information, family environment and friendship setting) of the Cuestionario de Influjos Socioculturales sobre el Autoconcepto Físico (CIAF) [Sociocultural Influences on Physical Self-concept Questionnaire] and its invariance in relation to sex, age and physical activity. **Method:** Participants were 579 students (339 men and 240 women) aged between 12 and 23, divided into three groups (137 under 14 years, 338 aged between 15 and 18 and 104 over 18 years). All completed the CIAF. **Results:** Both the confirmatory factor analyses and the factor invariance tests support the four-factor structure of the CIAF and, therefore, the identification of four different types of sociocultural perceived influence. **Conclusions:** These results allow us to apply the abundant data found by previous studies on sociocultural pressure on body image to our understanding of physical self-concept.

Keywords: Physical self-concept, sociocultural pressure, body image, factor invariance.

Resumen

Fuentes de la presión sociocultural percibida sobre el autoconcepto físico. **Antecedentes:** el objetivo de este trabajo es estudiar la estructura tetrafactorial (publicidad, información, entorno familiar y entorno de las amistades) del Cuestionario de Influjos Socioculturales sobre el Autoconcepto Físico (CIAF) y su invarianza en función del sexo, edad y de la actividad física. **Método:** participaron en la investigación un total de 579 estudiantes (339 hombres y 240 mujeres), de entre 12 y 23 años de edad, divididos en tres grupos (137 menores de 14 años, 338 de entre 15 y 18 años y 104 mayores de 18 años), quienes cumplimentaron el Cuestionario de Influjos Socioculturales sobre el Autoconcepto Físico (CIAF). **Resultados:** tanto los análisis factoriales confirmatorios como las pruebas de invarianza factorial refrendan la estructura tetrafactorial del CIAF y por tanto la diferenciación de cuatro tipos de influjos socioculturales autopercibidos. **Conclusiones:** estos resultados permiten aproximar a la comprensión del autoconcepto físico la abundante información previa acerca de la presión sociocultural sobre la imagen corporal.

Palabras clave: autoconcepto físico, presión sociocultural, imagen corporal, invarianza factorial.

Body dissatisfaction plays an important role in the emergence of different disorders, including eating disorders (Rodríguez-Fernández & Goñi, 2012). The etiology of this phenomenon includes numerous biological, developmental, psychological, social and cultural factors (Kaplan & Sadock, 2001), although the foremost of these is sociocultural pressure to conform to an aesthetic model of thinness (Grabe, Ward, & Hyde, 2008). Much of the increase observed in the incidence and prevalence indexes of the diverse pathologies associated with body image distortions and alterations has been attributed to this pressure (Esnaola, Rodríguez, & Goñi, 2010). Hence, the importance of identifying the nature of these sociocultural influences and assessing the power of their effect on body image distortions.

Three broad types of factors are usually identified in relation to sociocultural pressure on body image (Cash & Pruzinsky, 2004): family context, circle of friends and the media. From a very early age, families teach their new members aesthetic models through modeling (Raich, 2000), playing a key role in the global self-acceptance of adolescents (Pons & Pinazo, 2000). Peers, friends or, in general, the people in an individual's most immediate social environment provide feedback, along with social comparison and modeling effects (Neumark-Sztainer, Bauer, Friend, Hannan, Story, & Berge, 2010) which influence physical self-perceptions (Tantleff-Dunn & Gokke, 2004). Finally, it should also be pointed out that intense social pressure from the media, which effects girls earlier in life than boys, also has an impact on self-esteem (Ricciardelli & McCabe, 2003): iconic advertising contributes powerfully to dominant aesthetic models, and it has been proven, for example, that the projection of images featuring thin women is the single most influential factor in body dissatisfaction and EDs (Tiggemann, 2003).

However, the media do not only offer iconic information; they also tend to provide information and advice about how to achieve the ideal figure through articles on diets, lifestyle habits and physical exercise. Tiggemann (2003) found that reading this type of information influences body dissatisfaction differently from watching television, and proposed that written information and iconic information be considered separate factors of sociocultural pressure on body image.

Although much research has been conducted on body image, the influence of sociocultural pressure on physical self-perceptions in general has been little explored. Physical self-concept is a broader

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construct than body image, as it encompasses self-perceptions of both physical appearance and other aspects of the physical self (physical ability, fitness and strength) and is directly related to many psychosocial variables, such as physical activity, healthy lifestyle habits, psychological wellbeing and satisfaction with life (Goñi, Rodríguez, & Esnaola, 2010). It is therefore logical to assume that physical self-concept enables a better understanding of social-personal development, similarly to recent findings related to academic self-concept (Rodríguez, Droguett, & Revuelta, 2012) and social self-concept (Inglés, Martínez, García, Torregrosa, & Ruiz, 2012). As no prior research studies exist regarding how sociocultural influences on physical self-concept are perceived, the study of this question is both meaningful and relevant, with the hypothesis being that individuals significantly discriminate (from pre-adolescence onwards) between family context, peer group, iconic advertising and written information as important, and different, factors that influence physical self-perceptions.

In this sense, the data obtained from studies using preliminary versions of a questionnaire designed to measure sociocultural influences on physical self-concept, the "Cuestionario de Influjos Socioculturales sobre el Autoconcepto Físico" (CIAF; in English, the Sociocultural Influences on Physical Self-concept Questionnaire) indicated that the pressure exerted by *iconic information* and that exerted by *written information* were clearly perceived as different; the influence of *family* and that of *peer group*, on the other hand, tended to be considered as a single factor. This information helped with the drafting of the current CIAF, which is presented in this study.

The aim of this study is to analyze the four-factor structure of the CIAF, in order to verify whether perceived sociocultural influences on physical self-concept respond to a fourfold grouping (iconic advertising, written advertising, family pressure and pressure from one's immediate social environment). The aim was also to verify the questionnaire's invariance in relation to sex, age and sporting activity.

To this end, different comparison models were proposed in accordance with the possible groupings of the influence of sociocultural pressure. The groupings had different levels of complexity (broader or narrower factors). Thus, in addition to the model which defends dividing sociocultural pressure into four factors, in accordance with the theoretical review outlined above, a three-dimensional model was also tested. This model responds to the traditionally-defended idea that sociocultural pressure on physical self-concept is divided into three factors: *written information, iconic information* and *pressure from the social environment* (without any distinction being made between family and friendship group). The third model tested was two-dimensional, and assumed that sociocultural pressure on the physical self is divided into two factors: pressure from the media (iconic information along with written information) and social pressure from the environment (including pressure from both the family and the friendship group or those in the individual's immediate environment). Finally, a fourth alternative model was also included. This model had one single dimension, and postulated that sociocultural influences make up a single factor that cannot be subdivided in accordance with origin.

Method

Participants

For reasons of convenience, participants were all students from public and private schools located in the Spanish autonomous regions of Cantabria and the Basque Country, with a mid-level sociocultural background. Although the initial sample comprised 594 students, after eliminating outliers, the final sample comprised 579 subjects (240 girls and 339 boys). All were aged between 12 and 23 (M= 16.11, SD= 3.41). The age groups were as follows: 137 individuals aged 14 and under, 338 aged between 15 and 18 and 104 aged 18 and over. 366 regularly engaged in physical activity, whereas 213 did not.

Instruments

In this study, sociocultural pressure on physical self-concept was measured using the newly-created Cuestionario de Influjos Socioculturales sobre el Autoconcepto Físico (CIAF) [Sociocultural Influences on Physical Self-concept Questionnaire], which consists of 17 items to which participants respond on a 5-point Likert-type scale. Initially, as interrelated factors were found, an exploratory factor analysis with oblique rotation was conducted (Ferrando & Anguiano-Carrasco, 2010). A four-factor structure was obtained with clear correspondence with the hypothesized scales (pressure from advertising, pressure from information, family pressure and peer pressure), which explained 61.74% of the variability found in all the measures observed (17 items).

While *Pressure from advertising* referred to the sensations and thoughts related to the physical self and its improvement triggered by advertising models, *Pressure from information* assessed the interest generated by reading information about improving one's physical self in relation to putting the advice given into practice. *Family pressure* referred to the feedback and modeling provided by the subject's family, and *Peer pressure* assessed the feedback and modeling provided by the subject's immediate social environment (friends and acquaintances).

Both the internal consistency of the questionnaire, calculated here using Cronbach's alpha (α= .872), and its global reliability, extracted from the saturations of the items in the confirmatory factor analysis of this paper (McDonald's omega reliability= .931 and average variance extracted= .465) were found to be adequate.

Procedure

The questionnaire was administered to the group of participants in class time, in a session lasting between 20 and 30 minutes. To avoid possible threats to the validity of the conclusions, we opted to use a single blind procedure (in order to minimize possible responses influenced by the researchers' hypotheses) and both the anonymity and voluntary nature of participation in the trial were guaranteed in order to reduce, as far as possible, the social desirability bias.

Data analysis

To process the missing data (1%), we opted to use multiple imputation based on the expectation maximization algorithm and the Monte Carlo Marlov Chain (MCMC, random generation of probability distribution using Markov chains), which provide approximate scores for this item based on all the responses given by the subject.

As indicated above, the aim was to study the factorial structure of the CIAF and its invariance in relation to sex, age and physical activity. Initially, we used a confirmatory factor analysis to analyze

the factorial structure underlying the global responses of our sample to the CIAF. To this end, we carried out a goodness-of-fit analysis for alternative models. Within confirmatory factor analyses, the comparison of nested models is a procedure which enables an approach to different multidimensional alternatives for the same measure (Bentler & Dudgeon, 1996; Tomás & Oliver, 1998). This was the method chosen here, using the LISREL 8.8 program (Jöreskog & Sörbom, 2006).

Just like any other analysis circumscribed to the structural model method, confirmatory factor analyses adopt the assumptions of a multivariate normal distribution. Hence, the outliers were examined using the SAS program for Windows (with the calculated Mahalanobis distance being taken as a reference) and the univariate and multivariate normality were tested using Mardia's test, with the results enabling us to accept the hypothesis of multivariate normal distribution.

Subsequently, four factorial models were tested, with correlations between latent variables (factors) being found in all four. Moreover, a fifth model was also included, with the only difference being the freeing up of the covariances between some items. The fit of the hypothesized four-dimensional factorial model was therefore analyzed in comparison with that of three theoretically alternative models: a one-dimensional model, in which sociocultural influences formed a single, indivisible factor; a two-dimensional model, based on two factors: pressure from the media (iconic and written information) and pressure from the subject's social environment (family and friends); a three-dimensional model which contemplated written information, iconic information and pressure from the social environment (without distinguishing between family and friends); and finally, a modified version of the four-dimensional model, with six liberations of covariances between items.

These models were compared in accordance with the maximum likelihood method, taking the covariance matrix as the input for the data analysis. The fit of each model was assessed using the most common combination of absolute and relative goodness-of-fit indexes: the ratio of chi-squared (χ^2) to the number of corresponding degrees of freedom, the root mean square (RMSEA), the standardized root mean square residual (SRMR), the non-normed fit index (NNFI) and the comparative fit index (CFI).

Finally, multi-group analyses were conducted to verify whether the selected structure was invariant in relation to sex, age group and physical activity in the four alternative models.

Results

Preliminary analyses

Prior to the analyses of the different factorial models, the means and standard deviations of the observed variables (items) were extracted. The results are presented in table 1.

In the responses to the majority of items, scores were located within the mean response range (between 2 and 3); only in items i6, i8, i10 and i17 did they deviate slightly from this interval. The

Table 1
Means and standard deviations of the observed variables

	M	SD	Statement
i1	3.05	1.18	Llaman mi atención los anuncios en los que aparecen personas con un cuerpo atractivo [My attention is drawn by advertisements featuring people with attractive figures]
i2	2.48	1.23	Cuando veo un anuncio en el que el/la modelo tiene un buen cuerpo, pienso en cómo lograr alcanzar ese físico [When I see an advertisement in which the model has a nice figure, I think about how I could make myself look like that]
i3	2.01	1.18	Envidio el cuerpo de los/as modelos que aparecen en desfiles de moda [I envy fashion models their figure]
i4	2.34	1.25	Cuando veo un/a modelo con un cuerpo atractivo, siento deseos de conseguir un cuerpo como el suyo [When I see a model with an attractive figure, I want to look like them]
i5	2.69	1.27	Llaman mi atención las informaciones que tratan sobre cómo aumentar la habilidad física [My attention is drawn by articles which talk about how to increase your physical abilities]
i6	1.84	1.04	Envidio a los/as amigos/as que están en mejor forma física que yo [I envy my friends who are physically fitter than I am]
i7	2.43	1.22	Me gusta leer o escuchar información que habla sobre fuerza muscular [I like to read or listen to information about muscular strength]
i8	1.90	1.09	Llaman mi atención los anuncios en los que la gente está en buena forma física [My attention is drawn by advertisements which feature people who are physically fit]
i9	2.14	1.19	Llaman mi atención los reportajes que tratan sobre cómo aumentar la fuerza [My attention is drawn by articles which talk about how to increase your strength]
i10	1.86	1.12	Envidio a las personas en buena forma física que aparecen en la televisión [I envy people who appear on television and who are in good physical shape]
i11	2.24	1.16	Me atrae leer sobre métodos especialmente diseñados para aumentar o potenciar la fuerza [I like reading about methods specially designed to increase or enhance your strength]
i12	2.98	1.13	Cuando veo en un anuncio a una persona en una buena forma física, pienso en cómo alcanzar esa forma [When I see someone who is very fit in an advertisement, I think about how I could get that fit]
i13	2.45	1.18	Me gusta hablar con mis amigos/as sobre la imagen corporal de la gente [I enjoy talking to my friends about other people's physical appearance]
i14	2.55	1.07	Familiares míos toman medidas para mejorar su condición física [Members of my family take steps to improve their physical fitness]
i15	2.36	1.04	Familiares míos siguen algún método (dietas especiales, ejercicio...) para alcanzar mayor atractivo físico [Members of my family use some kind of method (special diets, exercise, etc.) to increase their physical attractiveness]
i16	2.13	1.27	En mi casa me ayudan a mejorar mi forma física [My family encourages me to keep fit]
i17	1.78	0.93	Familiares míos se angustian o preocupan por su baja condición física [Members of my family worry or are concerned about being physically unfit]

standard deviation data are adequate, given that the only item under 1 (i17) is very near the established acceptable limit.

Table 2 contains the correlation matrix. With only a few exceptions (i17 with i5 and i6; and i16 with i11), all correlations between the items of the scale were significant, oscillating between r= .114 and r= .739 (p<.001, except in three cases in which significance was lower than p<.05). Also, no correlation was higher than r= .90, thus ruling out a possible multicollinearity between items.

Given the low correlations observed between some of the items in the questionnaire, we decided to test the need for a factor analysis of the correlation matrix using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. The results in both cases were acceptable and enabled us to continue with the confirmatory factor analysis: KMO index= .879; Bartlett's test (χ^2(136)= 4225.69, p<.000) rejected the hypothesis of a diagonal correlation matrix, indicating the existence of significant relationships between the observed variables.

Confirmatory factor analyses

The results of the confirmatory factor analyses for each of the proposed models are presented in Table 3.

The first, single-factor model (M_1) was found to have a poor fit (χ^2/df= 11.99; RMSEA= .158; NNFI= .82; CFI= .85; RSMR= .100); we can therefore conclude that a one-dimensional structure of sociocultural pressure on physical self-concept does not adequately represent the data. The results for the two-dimensional model were not notably better (χ^2/df= 10.54; RMSEA= .148; NNFI= .85; CFI= .87; RSMR= .094), since none of the goodness-of-fit indexes

Table 2
Matrix of correlations between observed variables

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	1																
2	.484**	1															
3	.379**	.566**	1														
4	.443**	.739**	.719**	1													
5	.210**	.290**	.164**	.288**	1												
6	.200**	.267**	.221**	.222**	.502**	1											
7	.503**	.495**	.436**	.507**	.409**	.331**	1										
8	.247**	.287**	.264**	.305**	.575**	.622**	.429**	1									
9	.378**	.575**	.542**	.613**	.389**	.301**	.625**	.484**	1								
10	.237**	.250**	.210**	.271**	.547**	.592**	.342**	.727**	.433**	1							
11	.369**	.656**	.499**	.632**	.458**	.340**	.573**	.436**	.683**	.392**	1						
12	.268**	.229**	.175**	.223**	.146**	.139**	.182**	.109*	.156**	.138**	.169**	1					
13	.348**	.354**	.268**	.327**	.134**	.135**	.276**	.157**	.301**	.135**	.272**	.319**	1				
14	.155**	.215**	.143**	.212**	.155**	.092*	.159**	.136**	.125**	.097*	.187**	.179**	.202**	1			
15	.236**	.306**	.218**	.317**	.153**	.127**	.219**	.166**	.223**	.159**	.266**	.219**	.270**	.507**	1		
16	.123**	.197**	.160**	.185**	.164**	.197**	.195**	.175**	.165**	.167**	.231**	.074	.163**	.262**	.271**	1	
17	.165**	.195**	.160**	.207**	.077	.071	.117**	.114**	.161**	.126**	.131**	.200**	.145**	.209**	.235**	.173**	1

* p<.05; ** p<.01

Table 3
Goodness-of-fit parameters of the hypothesized model of sociocultural influences on physical self-concept

Model	χ^2	df	p	χ^2/gl	RMSEA [90% confidence interval]	NNFI	CFI	RSMR
M_1	1427.61	119	.000	11.99	.158 [.15 - .16]	.82	.85	.100
M_2	1244.50	118	.000	10.54	.148 [.14 - .15]	.85	.87	.094
M_3	551.36	116	.000	4.75	.084 [.078 - .091]	.94	.95	.062
M_4	491.04	113	.000	4.34	.079 [.073 - .086]	.95	.96	.054
M_{4L}	268.72	107	.000	2.51	.050 [.044 - .059]	.98	.98	.049
Min. established			<.05	<3	< .08 / < .05	>.95	>.95	<.05

M_1= one-dimensional model; M_2= two-dimensional model; M_3= three-dimensional model; M_4 = four-dimensional model; M_{4L}= four-dimensional model with liberation of six covariances

reached the established minimum. Although the three-dimensional model was found to have a better fit than the two-dimensional one ($\Delta\chi^2_{M2\text{-}M3}$= 693.14; p<.001), some of the indexes showed a certain lack of fit (χ^2/ df= 4.75; RMSEA= .084; NNFI= .94; CFI= .95; RSMR= .062).

Finally, the values estimated for the fit of the four-dimensional model hypothesized in this study indicated that this model was the one which best accounted for the factorial structure of the CIAF (χ^2/ df= 4.34; RMSEA= .079; NNFI= .95; CFI= .96; RSMR= .054; $\Delta\chi^2_{M3\text{-}M4}$= 60.32; p<.001). Nevertheless, the fit of this model improved considerably (χ^2/ df= 2.51; RMSEA= .050; NNFI= .98; CFI = .98; RSMR= .049; $\Delta\chi^2_{M4\text{-}M4L}$= 222.32; p<.001) following the progressive liberation of the correlations between the measurement errors of those six pairs of items whose modification indexes for the Theta-Delta matrix were over 20, and which were, moreover, due to artifacts external to the instrument. Specifically, the correlations between Items i1-i2, i1-i11, i2-i3, i2-i4, i3-i4 and i2-i15 were liberated due to the formulation of the items. The saturations of the items in the confirmatory factor analysis are presented in Table 4.

Analysis of factorial invariance

The analysis of invariance was conducted to determine whether any or all of the dimensions of the questionnaire were invariant for different groups. In this study, for the reasons outlined earlier, the invariance of the CIAF was analyzed in relation to sex, age group and physical activity. The results obtained are presented in Table 5.

The first step in the progressive estimation of the invariance of any model (Sierra, Santos-Iglesias, & Vallejo-Medina, 2012) is to test configural invariance, constraining the factorial structure to equality across samples.

The results provided by the multi-group analysis confirm the equivalence of the measurement models in the three sample groups: sex (RMSEA= .076; NNFI= .947; CFI= .952), age (RMSEA= .071; NNFI= .958; CFI= .960) and physical activity (RMSEA= .061; NNFI= .962; CFI= .966). This conclusion is further supported by the ratio between the chi-squared value and the degrees of freedom, being between 2 and 3 in all three cases (p<.001). Therefore, the basic models for the invariance test fit the data and can be accepted.

The second step consists of testing the metric (or weak) invariance, adding to the basic model constraints on the regressor coefficients in order to force the saturations of the items on their factor to be equal for all samples. The values of the parameters presented in Table 5 confirm metric invariance regardless of sex and physical activity. Both the root mean square ($RMSEA_{sex}$= .076; $RMSEA_{activity}$= .061) and Bentler-Bonett's non-normed fit index ($NNFI_{sex}$= .948; $NNFI_{activity}$= .963) remain within acceptance ranges, thus providing further support for this conclusion. Moreover, the Akaike information criterion for invariance in relation to sex ($AIC_{configural\text{-}weak}$= -310.95) and physical activity ($AIC_{configural\text{-}weak}$= 1.01) hardly increased at all and even decreased when the restrictions typical of weak invariance were included. In relation to the second comparison parameter between models (CFI), the increase observed was minimal in relation to the previous invariance (sex: $CFI_{configural\text{-}weak}$= .002; physical activity: $CFI_{configural\text{-}weak}$= .001). The same cannot be said for the age variable, in which despite the fact that the RMSEA and the NNFI had

Table 4
Completely standardized solution of the model

Item	FI	FII	FIII	FIV
i1	.50			
i2	.71			
i3	.62			
i4	.74			
i8	.72			
i10	.84			
i12	.81			
i5		.68		
i7		.71		
i9		.87		
i11		.82		
i6			.47	
i13			.68	
i14				.65
i15				.75
i16				.40
i17				.34
FII	.60			
FIII	.55	.28		
FIV	.42	.28	.55	

Table 5
Goodness-of-fit indexes of the models of invariance

Invariance	χ^2	df	p	RMSEA	NNFI	CFI	AIC
			Sex				
Configural	667.96	247	.000	.076	.947	.952	1091.83
Weak	701.02	260	.000	.076	.948	.950	780.88
Strong	1224.55	290	.000	.108	.901	.894	1369.91
			Age				
Configural	892.02	388	.000	.071	.958	.960	1059.51
Weak	916.03	413	.000	.080	.939	.938	1016.61
Strong	1351.03	460	.000	.104	.902	.890	1512.01
			Physical activity				
Configural	540.28	247	.000	.061	.962	.966	632.46
Weak	564.22	260	.000	.061	.963	.965	631.45
Strong	969.92	290	.000	.095	.926	.921	1142.10

acceptable goodness-of-fit values (.080 and .939 respectively) and the value of the AIC parameter remained practically unchanged ($AIC_{configural\text{-}weak}$= 42.9), Bentler's comparative fit index ($CFI_{configural\text{-}weak}$= .022) exceeded the stipulated .01 differential, a result which is considered sufficient to warrant the rejection of this invariance.

Having accepted the metric invariance for sex and physical activity, we then assessed strong invariance, imposing another new restriction on the model, consisting of constraining the intercept values. The measurement model for strong invariance once again constrains the configuration of the model and the factor saturations to be equal across groups, but here, in addition to this, the measures in the groups must also be identical.

In none of the three strong invariances examined did the root mean square manage to reduce the critical value of RMSEA≤ .080, except in the case of the age variable. The ratio between the chi-squared value and the degrees of freedom was above the 2-3 interval, and the Bentler-Bonett non-normed index value was either within the accepted limit (NNFI= .90) or slightly above it (NNFI= .92). We can therefore confirm that the model does not fit, a conclusion that is further supported by the analysis of the model nesting: the difference between Bentler's comparative indexes is considerably higher than the established limit for the variables sex ($CFI_{weak\text{-}strong}$= .058), age ($CFI_{weak\text{-}strong}$= .07) and physical activity ($CFI_{weak\text{-}strong}$= .045), and the increment in the Akaike index is considerable for all three variables ($AIC_{strong\text{-}weak}$= 278.08; $AIC_{strong\text{-}weak}$= 452.5; $AIC_{strong\text{-}weak}$= 509.64, respectively). Taken globally, these results indicate insufficient empirical support for accepting the strong invariance model.

Given that the fourth and last step in the factorial invariance test is strict invariance, which involves adding another constraint to those used to test strong invariance, and bearing in mind that the previous model with fewer constraints failed to remain invariant, it can be concluded that the model also fails to maintain strict invariance in any of the subsamples analyzed.

In sum, the data extracted in relation to invariance enable us to state that the four-dimensional factorial configuration with liberation of covariances between items, and therefore the factorial structure of the CIAF questionnaire, remains stable regardless of age, sex and physical activity. Also, the saturation of each item on its own factor is equivalent, regardless of sex and physical activity (although not age). Thus, in addition to the factorial structure, the stability of the loading of each item in the scale for which it was constructed is also confirmed. However, although both the factorial structure of the questionnaire and the factor loadings of the items remain stable in different samples, the same cannot be said of the group means, since they vary in accordance with the three variables analyzed.

Discussion

That all human behavior is the result of a wide range of multiple causes is a basic assumption in the field of social science, which is why, in the interests of parsimoniousness, it is important to try to identify groups of causes or factors which share a common base. Hence the relevance, in this case, of trying to identify which different types of sociocultural influence on physical self-concept are perceived by individuals, given that this identification will determine the strategies used for both diagnosis and clinical and educational intervention.

The results of the study indicate that people feel vulnerable to four types of sociocultural factors which influence their physical self-perceptions. Both an individual's social environment (in which we can distinguish between the influence of the family and peer group) and the media (with iconic and written information having different impacts) affect their perception of their physical self. In other words, people are affected to differing degrees by one or more of these four influences, and from hereon, the Cuestionario de Influjos Socioculturales sobre el Autoconcepto Físico (CIAF) [Sociocultural Influences on Physical Self-Concept Questionnaire] provides an instrument for carrying out an initial assessment of subjects' differing degrees of vulnerability to the influence of each factor.

The results confirm that the CIAF is a valid instrument for both male and female subjects aged between 12 and 23, even though the stability of the theoretical model is not invariant in accordance with age in relation to the contribution of each item to its own scale. This lack of invariance indicates that people distinguish between the four types of sociocultural influence, although the importance attached to each varies during different stages of adolescence. This finding prompts an analysis of what this study clarifies and what yet remains to be resolved.

The main finding is that, as proposed by Tiggemann (2003), in a revision of three-factor models (Cash & Pruzinsky, 2004; Raich, 2000; Paxton, Schutz, Wertheimer, & Muir, 1999), the four types of sociocultural factors that affect body image also influence a subject's own construction of their physical self-perceptions. Much research has already been conducted into the nature and psychological mechanisms of both family and peer group-related influence, and the influence of written information and the iconic format of advertising.

However, this large body of research into body image cannot be directly transferred to physical self-concept. In the first case, the basic conclusion is that the more people let themselves be influenced by sociocultural factors, the greater the risk of suffering from body dissatisfaction and subsequent psychosomatic disorders; in the second case, however, it is important to verify whether or not these factors influence the construction of physical self-concept in the same way and with the same intensity. It may be assumed that a greater degree of sensitivity to advertisements featuring dominant aesthetic models does little to help establish a good perception and acceptance of the physical self, but it may also be that the intentional search for written information does not correlate negatively with physical self-concept, and indeed it may be logical to propose that this correlation would depend on the quality of the individual's family context, and that their friendship/peer group may positively or negatively influence physical self-perceptions. The CIAF presented in this study is a necessary and adequate tool for clarifying questions of this nature.

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