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# Analysis of Sociocultural Stereotypes Towards Thin Body and Muscular Body: Differences According to Gender and Weight Discrepancy☆

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ABSTRACT

The purpose of this study is twofold. First, to adapt and validate a two-factor model of Body Change Inventory to the Spanish context, in order to measure the *orientation towards thin body* and *orientation towards muscular body*. The second aim is to analyse the sociocultural stereotypes towards thinness and muscular body according to the sex variable combined with the discrepancy with the current weight. The sample consisted of 1022 students (488 girls and 534 boys) between 9 and 12 years old (female: mean = 10.41, *SD* = .66, males: mean = 10.47, *SD* = .68). An analysis was performed on the psychometric properties of the scale using different tests that enabled it to be considered as a valid and reliable tool. The results of variance analysis showed that both girls and boys intend to lose weight in the search for the thin body ideal, while more boys are pursuing a muscular body, regardless of whether they intend to lose, gain, or maintain weight.



## Análisis de los estereotipos socioculturales hacia cuerpo delgado y cuerpo musculoso: Diferencias en función del sexo y discrepancia con el peso

*Palabras clave:*
Imagen corporal
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Cuerpo ideal

RESUMEN

Este estudio tiene un doble objetivo. En primer lugar, adaptar y validar al contexto español un modelo bifactorial del Body Change Inventory para medir la *orientación hacia cuerpo delgado* y *orientación hacia cuerpo musculoso*. Un segundo objetivo es analizar los estereotipos socioculturales hacia la delgadez y el cuerpo musculoso según la variable sexo combinada con la discrepancia con el peso. La muestra está compuesta por 1022 estudiantes (488 chicas y 534 chicos) de entre 9 y 12 años (mujeres: *M* = 10.41, *DT* = .66; varones: *M* = 10.47, *DT* = .68). Se analizan las propiedades psicométricas de la escala mediante diferentes análisis que permiten considerarla instrumento válido y fiable. Los resultados del análisis de varianza indican que tanto chicas como chicos pretenden perder peso en la búsqueda del ideal de cuerpo delgado, mientras que son más los varones quienes persiguen un cuerpo musculoso, independientemente de si pretenden perder, ganar o mantener peso.



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## Introduction

With the objective of achieving the sociocultural patterns of an ideal body, both men and women adopt behavioural changes such as non-healthy diets, the use of supplements and steroids, or excessive physical exercise (Blashill, 2011); which can pose a risk to health (McCabe et al., 2015). Amongst women, thinness is associated with beauty while feminine appeal is identified with extremely thin bodies (Jackson, Jiang, & Chen, 2016). In contrast, the literature reports that the ideal male body varies to that of women (Pope, Phillips, & Olivardia, 2000). The male usually pursues an ideal of a mesomorphic-type muscular body (Muris, Meesters, van de Blom, & Mayer, 2005); an ideal closely linked to the culture of masculinity and the role associated to the figure of the male as being powerful, strong and efficient (e.g., Edwards, Tod, Molnar, & Markland, 2016). What is interesting about these studies is that, as with women, the social and cultural pressure to achieve a body ideal can lead to body dissatisfaction (Pope et al., 2000).

To measure the desire that women and men show towards the ideals of a thin body and the ideals of a muscular body, two main instruments are used. In the case of thin body orientation, the *Drive for Thinness* (DT) is employed, a subscale of the *Eating Disorder Inventory* (EDI; Garner, 2004), although this is mainly in female populations. Of the instruments available to measure muscular body orientation, the most used (Tod & Edwards, 2013) is the *Drive for Muscularity Scale* (DMS; McCreary & Sasse, 2000). Nonetheless, both instruments have limitations. For example, they define the orientation towards the ideal body in relation to pathological consequences (e.g., eating disorders, protein ingestion and anabolic agents), which can limit their use in a non-clinical population. Furthermore, different studies report that the reagents do not measure equally in men and women, given the different orientation of each instrument (see for example, McCreary & Sasse, 2000).

To overcome these limitations, in the present work we opted to adapt the *Body Change Inventory* (BCI) of Ricciardelli and McCabe (2002) since this instrument can measure the ideals for thin bodies and muscular bodies in both men and women using the same conceptual base. The BCI measures the strategies related to feeding and physical exercise aimed at changing the body. Although initially counting on three factors of six items each, in the present work a two-factor model was employed – composed of strategies to lose weight (*Strategies to Decrease Body*) and strategies to augment muscular mass (*Strategies to Increase Muscle Size*) – as used by most prior validation studies (e.g., McCabe & Ricciardelli, 2004; Mellor, McCabe, Ricciardelli, & Merino, 2008). Moreover, two-factor model for the BCI is the same as has been adapted to other contexts such as the Malaysian (Mellor et al., 2009), Chilean (Mellor et al., 2008) and Chinese (Xu et al., 2010). The overlap of two of the original factors, as reported by Ricciardelli and McCabe (2002), has led to the use of this two-factor model.

On the basis of the above, the first objective of our study was to adapt and validate a two-factor model for the BCI to measure *orientation towards thin body and orientation towards muscular body*. Thus, in Spain, we have an instrument that has the same conceptual base, which can measure the attitudes and behaviour towards body change. This instrument allows us to compare the two ideal stereotypes predominantly defined in the literature for both men and women, and to study if each ideal is associated with different attitudinal, cognitive and behavioural consequences.

Nevertheless, orientations towards an ideal thin body and an ideal muscular body usually differ in the ways girls and boys perceive their weight; that is to say, the way in which each group perceives their weight; and this variance can reflect the internalisation of social norms with respect to different body ideals and the pressures that men and women perceive in achieving a particular ideal (e.g., a thin body ideal for women and a muscular body ideal for men). In both cases, any discrepancy with current weight reflects dissatisfaction, in such a way that the person usually presents changes in attitudes and behaviour towards gaining or losing weight (McKinley, 2006). Although weight discrepancy is a commonly used variable in studies on women (e.g., Castonguay, Brunet, Ferguson, & Sabiston, 2012; Lin, McCormack, Kruczkowski, & Berg, 2015), it is also included in certain research on both sexes (Ambwani & Chmielewski, 2013; McKinley, 1998). In general, the studies show that the people who reflect greater weight discrepancy present more negative psychological, affective and behavioural consequences on health (feeding behaviour disorders, low self-esteem, body dissatisfaction, etc.) (see for example, Arciszewski, Berjot, & Finez, 2012; Castonguay et al., 2012). In spite of this evidence, until now there has been no research relating weight discrepancy with orientations towards thin body and muscular body ideals within the same work.

In general, the research shows that women tend to report a lower weight than their real weight (Ambwani & Chmielewski, 2013), at the same time as manifesting more than men their desire to have less weight than they actually do (McKinley, 1998). This proves relevant because it could explain the tendencies of men and women towards different body ideals. However, even though research over recent decades suggest that women seem more orientated to thin body and men to muscular body, this does not exclude the possibility that both body ideals can be found in both groups (Ricciardelli & McCabe, 2004; Ryan & Morrison, 2013). Therefore, analysing thin body and muscular body orientations in relation to weight discrepancy can help to explain the effects that social body norms have nowadays on men and women. Indeed, it could transpire that thin body and muscular body orientations are not only affected by the person's sex but also by the type of discrepancy that the person shows with regard to their weight. For example, Lin et al. (2015) showed that orientation towards thin body in women is associated to the weight discrepancy that they perceive with respect to their partners. In particular, women who perceive a partner's preference for thinness (even when the partner does not report such a preference) show greater orientation towards thin body form than women that do not manifest such discrepancies. These data suggest that weight discrepancy could indicate the internalisation of particular body ideals, independent of the person's sex. Therefore, to investigate this relationship, a second objective of the study was to analyse sociocultural stereotypes towards thin and muscular body combining the variables, sex and weight discrepancy.

## Method

### *Participants*

The sample selection was probabilistic and, for convenience, based on the students available. In total, 1022 students participated (488 girls and 534 boys) from eleven education centres and aged between 9 and 12 years (girls: $M = 10.41$, $SD = .66$; boys: $M = 10.47$, $SD = .68$) from two Spanish provinces – Granada (76.4%) and Almeria (23.6%). The students were in the fifth (47%) and sixth grade (53%) of primary school. Of the girls, 61.8% reported that they wished to lose weight, 18% to maintain their weight and 20.1% to put on weight. Of the boys, 52.2% reported that they wished to lose weight, 21.9% to maintain their weight and 25.9% to put on weight. Likewise, to analyse the scale's temporal stability, an independent sample of 52 primary students (26 boys and 26 girls) was used, with ages between 12 and 13 years ($M = 12.77$, $SD = .83$).

*Measures*

A Spanish adaptation (see Appendix) of the *Body Change Inventory* of Ricciardelli and McCabe (2002) was used - the *Orientation towards Thin Body Scale* (OTBS) and the *Orientation towards Muscular Body Scale* (OMBS). This instrument is comprised of 12 items that measure *orientation towards thin body* (six items) (e.g., "Cambias el tipo de alimentos que comes para perder peso") and *orientation towards muscular body* (six items) (e.g., "Piensas en hacer más ejercicio para aumentar el tamaño de tus músculos"). The answers were collated in a Likert-type scale from 1 (*never*) to 5 (*always*). The original instrument achieved some adequate internal consistency indexes with Cronbach alpha values > .90.

*Weight discrepancy*. Participants were required to report their present weight and, subsequently, were asked to indicate if any discrepancy existed with regard to their ideal weight, conveying if they should lose weight, maintain their weight or gain weight to achieve this ideal.

*Procedure*

A group of two translators, with prior experience translating psychometric instruments, translated into Spanish the items of the two subscales, OTBS and OMBS, from the original instrument (the BCI of Ricciardelli & McCabe, 2002). Subsequently, a second group of two translators, independent of the first, translated the scale back into its original language (*retro translation*). To judge the trueness of the translation, the coincidence level and the contents' cultural equivalence were taken into consideration with respect to the original version. To guarantee that the items conformed to the construct that they attempted to measure, the obtained version was analysed by three experts (Muñiz, Elosua, & Hambleton, 2013); to be precise, two doctors in Physical Education and one in Psychology.

After this, management teams and Physical Education teachers from various primary education centres were contacted to ask for their collaboration in the study. As the students are minors, prior authorisation was required from their parents.

To verify correct understanding of the instrument prior to developing the research, the scale was administered to a small group of students aged between 10 and 12 years to confirm that they perfectly understood all the items. The final administration of the scale was developed in class in the presence of the principal researcher. The participants were informed of the study objective, its voluntary nature, and the confidentiality of the answers and data management. The instruments were collected individually, according to when the students finished, in such a way that any errors could be detected and that no item was left blank. The entire procedure was carried out in accordance with the ethical guidelines suggested by the APA and the research received a favourable report from the Bioethics Committee of the University of Almeria.

*Data analysis*

After checking for missing values, a descriptive analysis was carried out. Then, a confirmatory factorial analysis (CFA) was conducted using the robust Weighted Least Squares Estimation mean and variance adjusted estimation method (WLSMV), as recommended by Schmitt (2011). Owing to the possible nesting of students, violating the observation independence principle (Stapleton, 2006), the "cluster" option based on the centre and the COMPLEX function were used. Additionally, to check measurement invariance as a function of sex, three nesting models were established (configural, metric and scalar) (Coenders, Batista, & Saris, 2005). With the objective of comparing these nesting models, two criteria were used. The first tested the difference in the estimated $\chi^2$ using the DIFFTEST in the MPLUS option. However, given $\chi^2$ sensitivity to the sample size and the non-normality, the increment in the Comparative Fit Index, CFI ($\Delta$CFI), was also employed as recommended by Cheung and Rensvold (2002).

A combination of indexes was used to evaluate model fit (Muthén & Muthén, 2014): the $\chi^2$/degrees of freedom (*df*), the comparative fit index (CFI), the Tucker–Lewis index (TLI) and the Root Mean Square Error of Approximation (RMSEA) and its confidence interval. To obtain discriminant validity evidence, the heterotrait-monotrait (HTMT) ratio of correlation between factors was calculated, estimating that evidence existed supporting this type of validity in the presence of values below .85 (Henseler, Ringle, & Sarstedt, 2015). Furthermore, an internal consistency analysis for each scale as well as its temporal stability was carried out, in this last case, through a test–retest analysis using an independent sample of students. The different analyses were conducted using the IBM-SPSS v.22 (IBM Corp., 2013) and MPLUS v.7 (Muthén & Muthén, 1998–2010) statistical packages.

Finally, to analyse any possible differences in *orientation towards thin body and muscular body*, considering both sex and weight discrepancy, we combined the data for these two last variables. The two sex variable groups (boys and girls) were combined with the three weight discrepancy groups (lose weight, maintain weight and gain weight), thus obtaining six groups. Following this, an ANOVA was carried out to determine if differences existed between these six groups in the means reported both for OTBS and OMBS. Moreover, in those cases in which statistically significant differences were found, a multiple a posteriori (post hoc) contrast of comparisons test was performed applying the Bonferroni correction to determine between which groups the differences existed.

## Results

*Preliminary analyses*

None of the participants showed more than 5% of lost cases, the total number of said cases being less than 1%. Following the recommendation of Tabachnick and Fidell (2007), the lost values were allocated using the answer value closest to the average of the respective factors.

The average of the items showed values between 2 and 3; that is to say, moderately low (see Table 1). No asymmetrical or elevated score values were observed. Even though the K–S test showed lack of normal distribution (*Z*, between .20 and .32; $p < .001$), one also has to bear in mind the homoscedasticity and independence of the observations. It is important to highlight that all correlations were positive and significant ($p < .01$) even though the highest correlations were between items from the same factor (e.g., items 1–6, which are part of *thin body factor*, related more strongly amongst themselves that with items 7–12, which are part of the *muscular body factor*).

In order to determine the scale's factorial structure, a Confirmatory Factor Analysis (CFA) was carried out and two factorial solutions were tested: a single-factor model and a two-factor correlated model. The single-factor model solution did not show good fit indexes ($\chi^2/df = 25.41$, $p < .01$, IC90% RMSEA = .16 [.15; .16], CFI = .85, TLI = .82). All of the parameters were positive and significant. The two-factor correlated model solution, however, showed good fit indexes ($\chi^2/df = 3.33$, $p < .01$, IC90% RMSEA = .05 [.04; .06], CFI = .99, TLI = .98). All of the parameters were positive and significant; likewise, all the factorial saturations were elevated, none lower than .85 (see Table 2).

The fit indexes for men and women were similar both between themselves and with regard to the entire sample (TOTAL) model (see Table 3).

**Table 1**
Items descriptive statistics

| | Item1 | Item2 | Item3 | Item4 | Item5 | Item6 | Item7 | Item8 | Item9 | Item10 | Item11 | Item12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item1 | 1.00 | | | | | | | | | | | |
| Item2 | .80 | 1.00 | | | | | | | | | | |
| Item3 | .62 | .65 | 1.00 | | | | | | | | | |
| Item4 | .61 | .66 | .67 | 1.00 | | | | | | | | |
| Item5 | .62 | .65 | .67 | .68 | 1.00 | | | | | | | |
| Item6 | .65 | .71 | .55 | .67 | .63 | 1.00 | | | | | | |
| Item7 | .28 | .25 | .21 | .28 | .24 | .30 | 1.00 | | | | | |
| Item8 | .32 | .31 | .24 | .29 | .25 | .29 | .76 | 1.00 | | | | |
| Item9 | .40 | .34 | .33 | .34 | .33 | .36 | .70 | .76 | 1.00 | | | |
| Item10 | .32 | .31 | .24 | .31 | .27 | .37 | .77 | .79 | .77 | 1.00 | | |
| Item11 | .36 | .32 | .33 | .31 | .33 | .33 | .65 | .70 | .77 | .73 | 1.00 | |
| Item12 | .33 | .31 | .27 | .29 | .27 | .34 | .72 | .72 | .73 | .78 | .77 | 1.00 |
| Mean | 2.34 | 2.22 | 2.01 | 2.31 | 2.20 | 2.69 | 2.70 | 2.54 | 2.31 | 2.59 | 2.24 | 2.53 |
| SD | 1.42 | 1.43 | 1.37 | 1.50 | 1.42 | 1.59 | 1.55 | 1.54 | 1.50 | 1.56 | 1.49 | 1.55 |
| $g_1$ | .78 | .87 | 1.13 | .74 | .88 | .33 | .32 | .50 | .73 | .43 | .85 | .50 |
| $g_2$ | −.75 | −.66 | −.12 | −.96 | −.64 | −1.46 | −1.41 | −1.27 | −.98 | −1.37 | −.76 | −1.29 |

*Note.* Items 1–6 belong to *orientation towards thin body*. Items 7–12 belong to *orientation towards muscular body*. $g_1$: skewness, $g_2$: kurtosis. All correlations are statistically significant ($p < .01$).

**Table 2**
Two-factor correlated model parameters

| Factor | Item | *B* (standardised) | SE (standardised) |
|---|---|---|---|
| Factor 1 Orientation towards thin body | Item1 | 1.00 (.90)* | .00 (.01) |
| | Item2 | 1.01 (.91)* | .01 (.01) |
| | Item3 | .92 (.83)* | .02 (.02) |
| | Item4 | .96 (.87)* | .02 (.02) |
| | Item5 | .93 (.84)* | .02 (.03) |
| | Item6 | .97 (.87)* | .01 (.02) |
| Factor 2 Orientation towards muscular body | Item7 | 1.00 (.85)* | .00 (.02) |
| | Item8 | 1.05 (.89)* | .02 (.02) |
| | Item9 | 1.10 (.93)* | .02 (.01) |
| | Item10 | 1.10 (.93)* | .02 (.01) |
| | Item11 | 1.09 (.92)* | .01 (.02) |
| | Item12 | 1.06 (.90)* | .02 (.01) |
| Factor 1 with Factor 2 | | .36 (.47)* | .02 (.03) |

*Note.*
* $p < .01$.

**Table 3**
Fit indexes for the two-factor model for the entire sample and according to sex

| | $\chi^2$ | *df* | $\chi^2/df$ | CI90% RMSEA | CFI |
|---|---|---|---|---|---|
| Total | 176.88 | 53 | 3.33 | .05(.04;.06) | .99 |
| Boys | 133.54 | 53 | 2.52 | .05(.04;.06) | .99 |
| Girls | 116.68 | 53 | 2.20 | .05(.04;.06) | .99 |

**Table 4**
Invariance by sex

| | $\chi^2$ | *df* | *p* | RMSEA | CFI |
|---|---|---|---|---|---|
| Model 1: CONFIGURAL | 268.93 | 120 | .00 | .05 | .99 |
| Model 2: METRIC | 274.22 | 128 | .00 | .05 | .99 |
| Model 3: SCALAR | 296.46 | 150 | .00 | .05 | .99 |
| 2 versus 1 | 10.75[a] | 8 | .22 | | |
| 3 versus 1 | 39.96[a] | 30 | .11 | | |
| 3 versus 2 | 33.10[a] | 22 | .06 | | |

*Note.*
[a] $=\Delta\chi^2$.

On the other hand, regarding the restricted models (see Table 4), all showed good fit indexes, providing also evidence of invariance according to sex by showing no significant differences in the two criteria used ($\Delta\chi^2$ and $\Delta$CFI contrast test).

To determine the instrument's reliability, an internal consistency analysis and a temporal stability analysis were performed. With regard to the internal consistency, Cronbach alpha values of .92 were obtained for the OTBS and .95 for the OMBS. Moreover, the composite reliability and the Average Variance Extracted (AVE) achieved acceptable values: OTBS .95 and .76 respectively; OMBS .96 and .82, respectively. High values in the intra-class correlation coefficient (ICC) used in the temporal stability analysis within a four-week period were found. The averages for the OTBS subscale were 1.84 (*SD* = 1.14) and 1.91 (*SD* = 1.15), with an ICC of .96 (IC = .94–.98); for OMBS, they were 1.60 (*SD* = .83) and 1.74 (*SD* = .93), with an ICC of .96 (IC = .88–.98). Finally, the value obtained for the HTMT proportion of the correlation between the OTBS and OMBS factors was .45, thus supporting the factors' discriminant character.

### *Principal analyses*

The differences between the *orientation towards thin body and orientation towards muscular body* were analysed according to the sex variable combined with the weight discrepancy. The ANOVA reflected that the groups showed statistically significant differences both in the OTBS ($p < .001$) and the OMBS ($p < .001$) (see Table 5).

With regard to the OTBS, the post hoc test (see Table 5) showed statistically significant differences between the two groups (boys and girls) that wanted to lose weight and the rest of the other four groups ($p < .001$). However, statistically significant differences were not found between the two groups who had the intention of losing weight ($p = 1.000$), between the two groups who had the intention of maintaining their weight ($p = 1.000$), or the two groups who had the intention of gaining weight ($p < .001$). These results suggest that the *orientation towards thin body* is more associated to the intention of losing weight than to the sex of the participant. In fact, the OTBS average in the groups that wanted to lose weight was higher (girls, 2.63; boys, 2.72) compared to the average for the groups that wanted to maintain their weight (girls, 1.77; boys, 1.99) and the groups that wished to gain weight (girls, 1.48; boys, 1.72).

Regarding the OMBS, the main statistically significant differences were found between the boy and girl groups (see Table 5). Indeed, the OMBS averages were higher, and more statistically significant, in the boys than in the girls, as much for the groups that wanted to lose weight (boys, 2.94; girls, 2.07), as those that wished to maintain their weight (boys, 2.57; girls, 2.01), and gain weight (boys, 3.10; girls, 2.07).

**Table 5**
One-factor variance analysis, differences in the body orientation between the six groups formed by the sex and weight discrepancy variables

| Factors | Groups[a] | Mean | *SD* | *F* | Partial $\eta^2$ | Statistic power | Post hoc multiple comparisons[b] |
|---|---|---|---|---|---|---|---|
| OTBS | 1 | 2.64 | 1.26 | 21.12*** | .15 | 1.00 | 3***, 4**, 5***, 6*** |
| | 2 | 2.72 | 1.23 | | | | 3***, 4***, 5***, 6*** |
| | 3 | 1.77 | 1.02 | | | | 1***, 2*** |
| | 4 | 2.00 | 1.19 | | | | 1**, 2*** |
| | 5 | 1.49 | .68 | | | | 1***, 2*** |
| | 6 | 1.73 | .84 | | | | 1***, 2*** |
| OMBS | 1 | 2.08 | 1.16 | 14.22*** | .11 | 1.00 | 2***, 6*** |
| | 2 | 2.94 | 1.37 | | | | 1***, 3***, 5*** |
| | 3 | 2.01 | 1.24 | | | | 2***, 6*** |
| | 4 | 2.57 | 1.37 | | | | |
| | 5 | 2.08 | 1.30 | | | | 2***, 6*** |
| | 6 | 3.11 | 1.32 | | | | 1***, 3***, 5*** |

*Note*.
[a] Groups – 1: girl lose weight, 2: boy lose weight, 3: girl maintain weight, 4: boy maintain weight, 5: girl gain weight, 6: boy gain weight.
[b] Multiple comparisons contrast test with the Bonferroni correction. To simplify the data presentation, only the groups with statistically significant differences are shown.
** $p < .01$.
*** $p < .001$.

## Discussion

This research had a double objective. On the one hand, the study attempts to analyse the factorial validity and the invariance by sex of the *orientation towards thin body and towards muscular body* subscales of the *Body Change Inventory* (Ricciardelli & McCabe, 2002), as well as the internal consistency and temporal stability of both subscales. A second objective is to analyse the sociocultural stereotypes towards thinness and muscular bodies based on the sex variable combined with the weight discrepancy variable. The study results allow us to consider the Spanish version of this scale to be a valid and reliable instrument in studying the orientation of the changes that the schoolchildren report in search of the ideal body. Furthermore, the results show that the boys orient themselves towards the muscular body ideal in greater measure than the girls, independent of the weight discrepancy they reported. On the other hand, the groups that showed a weight discrepancy and a desire to lose weight showed a higher OTBS score, independent of their sex. These results suggest that, while the girls feel more pressurised by the thin body ideal, boys can be pressurised as much by the muscular body ideal as by the thin body ideal.

Regarding the first of the objectives, it should be pointed out that, although thin body and muscular body BCI subscales have been utilised in other contexts such as in Chile (Mellor et al., 2008), Holland (Muris et al., 2005) and China (Xu et al., 2010), until now only the original BCI validation work (Ricciardelli & McCabe, 2002) analysed the factorial structure through the CFA. The results of the present study of Spanish school pupils provide support to the factorial validity of the BCI two-factor model. Moreover, given the positive correlation (.47) found between both subscales, an alternative single-factor model was checked, although as with the Ricciardelli and McCabe (2002) results, the single-factor model for BCI did not present an adequate fit to the data. These results suggest that, even though orientation towards thin body and orientation towards the muscular body are different constructs, both can be presented jointly. Indeed, Ricciardelli and McCabe (2001) pointed out that, although women wish to achieve a thin body ideal more than men, this does not exclude the possibility that men can also pursue this orientation. Accordingly, research over the last decade suggests that men as much as women can pursue thinness and muscularity, and that these ideals can go together given that one might wish to lose weight in one part of the body and gain musculature in another (Ricciardelli & McCabe, 2004; Ryan & Morrison, 2013).

Furthermore, one contribution of this study is to check the instrument's invariance as a function of sex in the OTBS and OMBS subscales. Until now, previous research reported differences according to sex (e.g., Mellor et al., 2009; Xu et al., 2010); however, no evidence has been presented that the measurement structure functions for men and women. On the other hand, the results of this study show adequate internal consistency for the two subscales, OTBS and OMBS, as did the previous works (McCabe & Ricciardelli, 2004; Mellor et al., 2008, 2009; Xu et al., 2010), which is further supported with adequate compound reliability values and AVE. In addition, the present work shows evidence of temporal stability for the two subscales with ICC values of .96; the first to provide evidence of the temporal stability of the BCI subscales through ICC analysis.

With regard to the second objective, the present study combines the sex variable with the weight discrepancy variable to analyse tendencies in the social stereotypes of boys and girls. The results show that orientation towards thin body is more associated with the intention to lose weight than the participant's sex. Indeed, the results show that girls as much as boys reporting a desire to lose weight show a higher average score in the thin body ideal compared to any of the groups reporting a desire to maintain or gain weight. In previous studies which used the BCI, no statistically significant differences were reported between girls and boys in orientation towards thin body (Mellor et al., 2008; Xu et al., 2010) although other works did present differences and showed that girls orientated themselves towards thin body (Mellor et al., 2009). Bearing these studies in mind, the results of the present study suggest that the thin body social model might also be internalised by the males when they present dissatisfaction with their bodies and a desire to lose weight. In fact, although the proportion of girls (61.8%) that wanted to lose weight is greater than for the boys in this study, the percentage of males is also high (52.2%), which could reinforce the idea that the internalisation of the thin body ideal might also be pressurising the boys. These data are in line with those expounded in the McKinley (2006) longitudinal study, which reported an increase in the percentage of males that wished to lose weight in the period from 1993 (42%) to 2004 (67%).

Moreover, the data from this study shows statistically significant differences between boys and girls with respect to the averages reported in orientation towards the muscular body, independent of whether there is a desire to lose, gain or maintain weight. These results are in line with previous research which reflected the importance of the muscular body in males (Mellor et al., 2008, 2009; Muris et al., 2005; Xu et al., 2010) and indicated a greater orientation in men compared to women towards an athletic and muscular body (Edwards, Tod, & Molnar, 2014; Mellor et al., 2008, 2009).

The results of the present work contribute to the literature by presenting evidence of validity for using the OTBS and OMBS

subscales together for young people in Spain. This allows us to compare the orientation towards the body ideals between both groups. Furthermore, previous research did not take into account the weight discrepancy reported when comparing the different body ideals in men and women. In this respect, the results of the present work suggest that weight discrepancy does not seem to be associated with the muscular body ideal in boys or in girls.

Until now, the research has shown that women manifest more dissatisfaction with their bodies than men do, they desire to lose weight more and show a greater orientation towards the thin body ideal (Bucchianeri, Arikian, Hannan, Eisenberg, & Neumark-Sztainer, 2013). This characteristic is also associated with a greater risk of behaviour related to eating disorders (e.g., anorexia, bulimia) (see e.g. Blashill, 2011). In the present study, adolescent boys and girls participated and the results are worrying in that they suggest an extension of the thin body ideal, which appears to pressurise not only girl but boys as well. Although future studies are needed to confirm these results, they might indicate that the effect of social pressure exerted by the media towards certain body ideals is increasing. Strategies directed at reducing this pressure, especially on young people, could prevent excessive preoccupation about body size and weight. One possible strategy would be to reduce the distance that young people perceive between their own body image and the images they receive as to the ideal body. Accordingly, parents and also professional educators (e.g., teachers, monitors and social assistants) could initiate conversations with young people and offer educational activities in which the images and themes pushed by the media are critically analysed. In such activities, young people could be made aware of the negative consequences of pursuing ideal body models, which do not represent the population in general; as well as analysing who the beneficiaries are of these body models that are reinforced and perpetuated in society. These activities could help to precociously detect certain illnesses associated with body image (Ramos, Pérez de Eulate, Liberal, & Latorre, 2003) and help young people to resist more the internalisation of body ideals that might negatively affect their health.

Despite the interesting nature of the results provided by this study and their pedagogical implications, one should bear in mind certain limitations. Firstly, the study sample was composed of primary school pupils; consequently, future studies should evaluate the scale in other populations (e.g., adults, sportsmen and women, people of different sexual orientation, etc.). Moreover, the sample is not probabilistic so the results cannot be generalised, not even in the student population. More studies should be carried out with students of different ages and evolving characteristics. Secondly, considering weight discrepancy helps to understand the internalisation of the thin and muscular body ideals in boys and girls; nonetheless, future studies should encompass other variables to see how one can measure and moderate these body ideals amongst boys and girls. Finally, future research should extend the relationship of these body ideals with third-party psychological, affective and behavioural variables (e.g. personality characteristics, socio-physical anxiety and eating disorders). The model validation requires future steps where the construct's nomological network can be studied. Nevertheless, advances in this direction require an instrument with a solid internal structure, to which this study has contributed.

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## Appendix A. Orientation Towards Thin Body and Muscular Body Scale (OTBS and OMBS)

*Orientation towards thin body* (items):
- Cambias el tipo de alimentos que comes para perder peso.
- Cambias tu alimentación para disminuir el tamaño de tu cuerpo (adelgazar).
- Cambias la cantidad de ejercicio que realizas para disminuir el tamaño de tu cuerpo.
- Piensas en hacer más ejercicio para disminuir el tamaño de tu cuerpo.
- Te preocupas por cambiar tu forma de comer para disminuir el tamaño de tu cuerpo.
- Piensas en hacer más ejercicio para perder peso.

*Orientation towards muscular body* (items):
- Haces más ejercicio para aumentar el tamaño de tus músculos.
- Comes alimentos que piensas que te pueden ayudar a aumentar el tamaño de tus músculos.
- Piensas en cambiar tu alimentación para aumentar el tamaño de tus músculos.
- Piensas en hacer más ejercicio para aumentar el tamaño de tus músculos.
- Te preocupas por cambiar tu forma de comer para aumentar el tamaño de tus músculos.
- Te preocupas en hacer más ejercicio para aumentar el tamaño de tus músculos.

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