



Original / *Obesidad*

Self-perceived weight status, dieting and unhealthy weight-control behaviors among Spanish male adolescents

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Abstract

Introduction: Self-perceived weight status among adolescents has been associated with weight-control behaviors. However, this relationship varies across weight status.

Objectives: The aim of this study was to examine the effect of self-perceived weight status on dieting and unhealthy weight-control behaviors among Spanish male adolescents, across weight status.

Method: Participants were 597 Spanish male adolescents (M = 13.94 years old, SD = 0.60). Body weight and height were measured in situ. Self-perceived weight status, dieting, and unhealthy weight-control behaviors were evaluated.

Results: The adolescents were inaccurate on estimating their weight status. Those who were overweight or obese, or who perceived themselves to be so, were more likely to report dieting and unhealthy weight-control behaviors.

Discussion: There is a need to promote healthier eating behaviors among adolescents, and to take into account the fact that self-perceived weight status may hinder the adoption of such behaviors.

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Key words: *Body image. Body weight. Adolescent. Sex factors. Weight loss. Self-perceived weight status.*

ESTATUS DE PESO PERCIBIDO, DIETA Y CONDUCTAS NO SALUDABLES DE CONTROL DEL PESO EN ADOLESCENTES VARONES ESPAÑOLES

Resumen

Introducción: El estatus de peso percibido se ha asociado a conductas de control del peso en adolescentes. Esta relación varía de acuerdo al estatus de peso corporal.

Objetivos: Explorar el efecto del estatus de peso percibido sobre la práctica de dieta y conductas no saludables de control del peso en adolescentes varones españoles, considerando su estatus de peso.

Método: Participaron 597 adolescentes (M = 13,94 años, DS = 0,60). Se registró in situ la talla y peso corporal. Se evaluó el peso percibido, la práctica de dieta y conductas no saludables de control del peso.

Resultados: Los adolescentes fueron inexactos al estimar su estatus de peso. Aquellos con sobrepeso, obesidad o los que se percibían como tales, fueron los que más informaron hacer dieta y conductas no saludables de control del peso.

Discusión: Es necesario promover conductas alimentarias saludables entre los adolescentes y considerar que el estatus de peso percibido puede limitar la adopción de estos comportamientos.

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Palabras clave: *Imagen corporal. Peso corporal. Adolescente. Factores de sexo. Pérdida de peso. Peso percibido.*

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Abbreviations

UWCB: Unhealthy weight-control behaviors.

SD: Standard deviation.

MABIC: Medios de comunicació, alimentació alterada, burlas relacionadas con el peso e insatisfacción corporal.

CSPT: Corporació Sanitària Parc Taulí.

BMI: Body Mass Index.

EAT: Eating Among Teens.

Introduction

Dieting and unhealthy weight-control behaviors (UWCB), such as fasting, eating very little and skipping meals are common behaviors among adolescents trying to lose weight.¹ Unfortunately, these behaviors tend to take place in a naturalistic way (ie without professional advice), increasing the risk of unhealthy eating patterns and weight gain over time.¹ Several external factors may contribute to promoting these UWCB among adolescents. For instance, the multi-billion dollar weight-loss industry, public health campaigns for tackling the so-called “obesity epidemic” or pressure from peers and parents may, directly or indirectly, encourage adolescents to adopt UWCB so as to lose weight. Even so, other, more individual factors can also facilitate the adoption of UWCB.

A significant individual factor is self-perceived body weight (ie how we perceive our own body weight). However, few studies have taken into account that this self-perception may vary by weight status, and may influence the adoption of eating and weight-related behaviors in different ways. In particular, an inaccurate self-perception of body weight can promote the adoption of unhealthy eating patterns and behaviors among the overweight and obese,² and increase the risk of weight preoccupations and weight control among normal-weight adolescents.³

In addition, recent studies have revealed secular trends over time in relation to self-perceived body weight among Spanish adolescents.⁴ Specifically, such research found a pattern of change toward the underestimation of overweight status, suggesting that the steady increase of the overweight population may make weight misperception more likely, especially among overweight men. Thus, it is important in this context to examine the role of self-perceived body weight in relation to the adoption of dieting and UWCB.

Accordingly, the aim of the present study was to examine the role of self-perceived weight status in dieting and UWCB among Spanish male adolescents of different weight status.

Method

Sample and procedure

The sample comprised 597 boys (13 to 16 years old; $M = 13.94$, $SD = 0.60$), predominantly middle-class

(79.5%).⁶ Self-reported origin was typically Spanish (73.8%), followed by Latin-American (12.2%), mixed parentage (5.4%), North African (3.2%), European (2.5%), Sub-Saharan (1.2%), and other (1.7%). Participants were part of the MABIC project, a longitudinal research project on the prevention of eating- and weight-related problems among adolescents of both sexes from Barcelona (Spain).⁵ The study followed the ethical guidelines of the Helsinki Declaration (as revised in Edinburgh, 2000). The protocol was approved by the Clinical Research Ethics Committee of the “Parc Taulí” Health Corporation (CSPT). A detailed description of the methodology has been reported previously.⁵

Materials

Measured weight status. Height and weight were measured *in situ*. Body mass index ($BMI = kg/m^2$), was calculated and used to obtain weight-status categories (underweight, normal weight, overweight, obese), using international cut-off points for age and sex.^{7,8}

Self-perceived weight status. Participants were asked “What do you think is your current weight level?” Response options were: underweight, normal weight, slightly overweight, very overweight.

Dieting. Based on Project EAT,⁹ participants were asked “How often have you gone on a diet during the last year?” Next to the question the term diet was defined as “changing the way you eat so you can lose weight”. Response options were: “never”, “one to four times”, “five to 10 times”, “more than 10 times”, and “I am always dieting”. Following previously-reported criteria,¹⁰ respondents who reported having dieted at least once were classified as dieters.

Unhealthy weight-control behaviors (UWCB). Also based on Project EAT, participants were asked “Have you done any of the following things in order to lose weight or keep from gaining weight in the past year?” Response options were: “skipped meals”, “fasted”, “ate very little food”, “smoked more cigarettes”, “used a food substitute”, “made myself vomit”, “took diet pills”, “used laxatives”, and “used diuretics”. Response format was dichotomous (‘yes’, one point; ‘no’, zero points). As in previous studies,¹⁰ respondents reporting at least one behavior were classified as engaging in UWCB.

Data Analyses

First, descriptive analyses were performed to examine the sample in terms of weight status (measured, self-perceived), and behaviors (dieting, UWCB). Second, logistic regression analysis was used to obtain the odds of dieting and then of UWCB. Each logistic regression was controlled for age, ethnicity, and socioeconomic status. Predictors were measured weight status and self-perceived weight status.

Table I
Self-perceived weight status by measured weight status*

	Measured weight status				Total
	UW [†]	NW [‡]	OW [§]	OB [¶]	
N	49	384	116	44	
<i>Self-perceived weight status</i>					
Underweight	55.1	9.9	0	0	10.9
Normal weight	42.9	85.1	40.5	9.1	66.9
Slightly overweight	0	5.0	58.6	77.3	20.6
Very overweight	2.0	0	0.9	13.6	1.5
Total	8.3	64.8	19.6	7.4	100

*Data is given as percentage. Total n values may differ because of incidental missingness.

[†]UW = underweight.

[‡]NW = normal weight.

[§]OW = overweight.

[¶]OB = obese.

Results

Mean BMI was 20.94 (*SD* = 4.18); 44 boys were obese (7.4%), 116 overweight (19.6%), 384 normal weight (64.8%) and 49 underweight (8.3%).

Self-perceived weight status

Comparing measured weight status with self-perceived weight status (table I), only 13.6% of obese adolescents self-perceived as very overweight, 40.5% of overweight adolescents self-perceived as normal weight, and 42.9% of underweight adolescents self-perceived as normal weight. These results indicate that a substantial number of adolescents were inaccurate on estimating their weight status.

Dieting and unhealthy weight-control behaviors

In descriptive terms, a total of 25.6% of adolescents were classified as dieters (8.2% of underweight, 12.5% of normal weight, 55.2% of overweight, and 77.3% of obese). Regarding UWCB, 25% of adolescents reported at least one UWCB (20.4% of underweight, 17.4% of normal weight, 38.8% of overweight, and 56.8% of obese). These results indicate that a high percentage of overweight and obese adolescents reported being engaged in dieting and UWCB. Notably, some already underweight boys also reported dieting and UWCB.

Dieting and unhealthy weight-control behaviors by measured weight status and by self-perceived weight status

The underweight group (*n* = 49), was removed from subsequent analyses because of the small number of cases reporting dieting and UWCB in each category.

Next, and before carrying out the logistic regression analyses, measured weight status and self-perceived weight status were reduced to two categories each. Thus, measured weight-status categories were reduced to (1) normal weight and (2) overweight, including obese; self-perceived weight-status categories were reduced to (1) self-perceived normal weight and (2) self-perceived slightly overweight or very overweight.

Table II shows the odds of dieting and UWCB from the logistic regression analyses.

The odds of dieting and UWCB were statistically significant on comparing those who were either overweight or obese (or self-perceived as such), with those who were normal weight (or self-perceived as such). These results indicate that, in general, either being or self-perceiving as overweight or obese increases the

Table II
Odds Ratio (OR) indicating the effect of weight status on dieting and unhealthy weight-control behaviors (UWCB)*

Variables	OR	Wald	95% CI
<i>Dieting</i>			
MWS [†]	10.74	108.95	6.88-16.77
SPWS [‡]	11.15	103.61	7.01-17.73
MWS × SPWS [§]	12.71	105.55	7.83-20.65
<i>UWCB</i>			
MWS	3.47	34.38	2.29-5.27
SPWS	2.74	21.19	1.78-4.22
MWS × SPWS	2.79	20.31	1.79-4.37

*Analyses were adjusted by ethnicity, age, and socioeconomic status. Weight status categories (measured, self-perceived) were: normal weight and overweight including obese. Reference group was normal weight. Results in bold were significant (*p* < 0.001).

[†]MWS = measured weight status.

[‡]SPWS = self-perceived weight status.

[§]MWS × SPWS = interaction between these two variables.

risk of dieting and UWCB. It is noteworthy that the risk of dieting was slightly higher among those who self-perceived as overweight or obese. In contrast, the risk of UWCB was slightly higher among those who were actually overweight or obese.

Discussion

The aim of the present study was to examine the effect of self-perceived weight status on dieting and UWCB among Spanish male adolescents of different weight status.

We found that overweight and obese adolescents tended to underestimate their weight status, whereas underweight adolescents tended to overestimate it. This finding has been reported previously,³ and merits further attention. For example, weight-related norms (eg what is perceived as a normal body weight in a given context) may influence how adolescents perceive and estimate their body size.¹¹ These social norms are commonly linked to an ideal of beauty or attractiveness in a given context.¹² In Western countries such as Spain, boys may be aware of a male beauty/attractiveness ideal (eg a lean and muscular body), and may perceive sociocultural pressure (eg messages from peers and the media) to attain this ideal.¹³ Thus, overweight and obese adolescents might underestimate their weight because of the double burden of sociocultural pressure and the stigma of obesity.¹⁴ This could have a strong influence on how they perceive and estimate their body size,¹⁵ to the extent that they may reject referring to themselves as overweight or obese. Alternatively, it may be that these overweight and obese adolescents perceive their weight as “normal” given the steady increase in the proportion of overweight and obese adolescents in Spain.⁴ However, these ideas remain speculative, and further research is recommended. Furthermore, given the frequency of weight underestimation among overweight and obese adolescents, future studies should use caution on considering obesity prevalence based on self-reported data. In addition, the finding whereby underweight boys overestimate their weight could be explained by their having perceived their body size as closer to the ideal, so that they estimate their weight as “normal”. Notably, few studies have examined weight overestimation among underweight boys.³ Most probably, boys in this group have a body image disturbance, an eating disorder, or a higher risk of developing an eating disorder.³ Nevertheless, this cannot be supported by our findings. Therefore, future studies evaluating body image attitudes and behaviors among underweight boys who overestimate their weight are recommended. Finally, professionals in the public health field must bear in mind that weight misperceptions among adolescents, either underestimation or overestimation, can interfere with the implementation of strategies for promoting healthy eating- and weight-related behaviors.²

As regards the prevalence of dieting and UWCB by weight status, the highest prevalence was found among obese adolescents. However, it should be noted that some already underweight boys also reported these behaviors. This finding is consistent with those of previous studies,^{1,10,16} and highlights once more the importance of examining eating- and weight-related behaviors separately by weight status, as well as the need to further evaluate the risk of disordered eating among those in the extreme categories.

We also examined the effect of measured weight status and self-perceived weight status on the risk of dieting and UWCB. Our results suggest that either being or perceiving oneself as overweight or obese substantially increases the risk of dieting and UWCB, compared to being or self-perceiving normal weight. Notably, the risk of dieting was slightly higher if boys self-perceived as overweight or obese. This finding is consistent with the previous literature, including a large cross-national study.¹⁶ However, it is also noteworthy that the risk of UWCB in our sample was slightly higher if boys were actually overweight or obese. Thus, our results may again suggest that other factors, such as weight-related norms,¹¹ may influence the risk of dieting and UWCB. For instance, it may be commonly accepted among these boys to engage in dieting if they are or self-perceive as overweight or obese. However, this idea remains speculative, and future studies should assess the role of social norms in relation to dieting and UWCB on comparing measured and self-perceived weight-status categories. In any case, these adolescents may be engaging in dieting behaviors without professional advice, and this can increase their risk of unhealthy eating patterns.¹ Consequently, health professionals should be aware of these behaviors and how self-perceived weight might influence eating patterns and behaviors of adolescents. Finally, and with a view to avoiding unintended potentially harmful effects such as promoting weight stigmatization and weight concerns, health professionals should help adolescents to adopt healthy eating- and weight-related behaviors focusing more on their overall wellness than exclusively on weight loss.¹⁷

This study has some limitations, and its results should be interpreted with caution. First, this is a cross-sectional study, so that the inferences that can be made are limited; more longitudinal studies are necessary. Second, our sample is not representative of the entire population of Spanish male adolescents, and few participants were in the extreme weight-status categories (underweight, obese). For these reasons, any generalizations should be made with care. Finally, we used some self-report measures that could bias the results due to under-reporting or over-reporting of behaviors. However, our study has some important strengths and implications. Few studies have examined the effect of self-perceived weight status on dieting and UWCB by including an objective measure of body weight and height, and by controlling for recognized

confounding variables. Objective measures of weight and height generate more accurate data than self-reported measures. Additionally, we used international cut-off points to establish weight status, and these are recommended so as to allow comparability among surveys.¹⁸ Furthermore, logistic regression analyses were done by controlling for ethnicity and socioeconomic status, variables widely acknowledged to influence self-perceived weight.¹¹ Finally, our results on weight misperception are of great importance for future research. Weight misperception may be associated with weight-related norms referring to a normative perceptual threshold for overweight in specific populations,¹¹ or to the trends in body weight misperception observed over the last decades,⁴ and this is a clear hint for professionals in the obesity field to give greater attention to self-perceived weight status.

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References

1. Field AE, Austin SB, Taylor CB, Malspeis S, Rosner B, Rockett HR, Gillman MW, Colditz GA. Relation between dieting and weight change among preadolescents and adolescents. *Pediatrics* 2003; 112 (4): 900-6. PubMed PMID: 14523184.
2. Duncan DT, Wolin KY, Scharoun-Lee M, Ding EL, Warner ET, Bennett GG. Does perception equal reality? Weight misperception in relation to weight-related attitudes and behaviors among overweight and obese US adults. *Int J Behav Nutr Phys Act* 2011; 8: 20. PubMed PMID: 21426567.
3. Deschamps V, Salanave B, Chan-Chee C, Vernay M, Castetbon K. Body-weight perception and related preoccupations in a large national sample of adolescents. *Pediatr Obes Epub* 2014 Jan 23; PubMed PMID: 24453118.
4. Salcedo V, Gutiérrez-Fisac JL, Guallar-Castillón P, Rodríguez-Artalejo F. Trends in overweight and misperceived overweight in Spain from 1987 to 2007. *Int J Obes* 2010; 34 (12): 1759-65. PubMed PMID: 20498661.
5. Sánchez-Carracedo D, López-Guimerà G, Fauquet J, Barrada JR, Pàmias M, Puntí J, Querol M, Trepát E. A school-based program implemented by community providers previously trained for the prevention of eating and weight-related problems in secondary-school adolescents: the MABIC study protocol. *BMC Public Health* 2013; 13 (1): 955. PubMed PMID: 24118981.
6. Hollingshead A de B. Two factor index of social position. New Haven, CT: Yale Station; 1957.
7. Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. Establishing a standard definition for child overweight and obesity worldwide: International survey. *BMJ* 2000; 320 (7244): 1240-1240. PubMed PMID: 10797032.
8. Cole TJ, Flegal KM, Nicholls D, Jackson AA. Body mass index cut offs to define thinness in children and adolescents: International survey. *BMJ* 2007; 335 (7612):194. PubMed PMID: 17591624.
9. Neumark-Sztainer DR, Story M, Hannan PJ, Perry CL, Irving LM. Weight-related concerns and behaviors among overweight and nonoverweight adolescents: Implications for preventing weight-related disorders. *Arch Pediatr Adolesc Med* 2002; 156 (2): 171-8. PubMed PMID: 11814380.
10. López-Guimerà G, Neumark-Sztainer DR, Hannan PJ, Fauquet J, Loth K, Sánchez-Carracedo D. Unhealthy weight-control behaviours, dieting and weight status: A cross-cultural comparison between North American and Spanish adolescents. *Eur Eat Disord Rev* 2013; 21 (4): 276-83. PubMed PMID: 23055262.
11. Johnson WG, Stewart R, Pussner AT. The perceptual threshold for overweight. *Eat Behav* 2012; 13 (3): 188-93. PubMed PMID: 22664395.
12. Mills JS, Jadd R, Key BL. Wanting a body that's better than average: The effect of manipulated body norms on ideal body size perception. *Body Image* 2012; 9 (3): 365-72. PubMed PMID: 22494959.
13. McCabe MP, Ricciardelli LA, Sitaram G, Mikhail K. Accuracy of body size estimation: Role of biopsychosocial variables. *Body Image* 2006; 3 (2): 163-71. PubMed PMID: 18089219.
14. Puhl RM, Latner JD. Stigma, obesity, and the health of the nation's children. *Psychol Bull* 2007; 133 (4): 557-80. PubMed PMID: 17592956.
15. Sand L, Lask B, Høie K, Stormark KM. Body size estimation in early adolescence: Factors associated with perceptual accuracy in a nonclinical sample. *Body Image* 2011; 8 (3): 275-81. PubMed PMID: 21570368.
16. Ojala K, Vereecken CA, Välimaa R, Currie C, Villberg J, Tynjälä J, Kannas L. Attempts to lose weight among overweight and non-overweight adolescents: A cross-national survey. *Int J Behav Nutr Phys Act* 2007; 4 (50). PubMed PMID: 17935629.
17. Pinhas L, McVey GL, Walker KS, Norris M, Katzman D, Collier S. Trading health for a healthy weight: The uncharted side of healthy weights initiatives. *Eat Disord* 2013; 21 (2): 109-16. PubMed PMID: 23421694.
18. De Onis M, Lobstein T. Defining obesity risk status in the general childhood population: Which cut-offs should we use? *Int J Pediatr Obes* 2010; 5 (6): 458-60. PubMed PMID: 20233144.