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Negative weight-based attitudes in treatment-seeking obese monolingual Hispanic patients with and without binge eating disorder

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Abstract

Objective: The aims of this study were to compare weight-based attitudes in obese Latino adults with and without binge eating disorder (BED) and to examine whether these attitudes are related to indices of eating disorder psychopathology and psychological functioning.
Method: Participants were a consecutive series of 79 monolingual Spanish-speaking-only obese Latinos (65 female, 14 male) participating in a randomized placebo-controlled trial performed at a Hispanic community mental health center. Participants were categorized as meeting the criteria for BED (n = 40) or obese non–binge-eating controls (n = 39) based on diagnostic and semistructured interviews administered by fully bilingual research clinicians trained specifically for this study.
Results: Analyses revealed that negative attitudes toward obesity did not differ significantly between the BED and non–binge-eating groups nor were they correlated with the intensity of eating disorder psychopathology (eg, levels of weight and shape concerns). Overall, the levels of negative attitudes toward obesity in this Latino/Latina group are similar to those reported previously for samples of English-speaking primarily white obese persons.
Discussion: These findings suggest that it may be obesity per se—rather than eating disorder psychopathology or body image—that heightens vulnerability to negative weight-based attitudes.

1. Introduction

Obese individuals are vulnerable to considerable weight-based stigma, prejudice, and discrimination [1,2]. Several decades of research have documented weight bias in multiple domains of living, including the workplace, schools, health care facilities, and even in close interpersonal relationships, all of which pose numerous risks for emotional and physical health [2,3]. Despite substantial literature documenting weight bias, several important gaps in the field remain. For example, very little work has examined whether individuals with different ethnic and cultural backgrounds are more or less likely to endorse biased attitudes toward obese individuals [4]. To date, research in North America has primarily studied weight bias among whites, with less attention to African Americans [5,6] and very little (or no) attention to weight bias endorsed among other ethnic minority groups. Given ethnic differences in body image disturbance and its correlates [7] as well as potential ethnic differences in perceptions of body weight and physical attractiveness [5], it seems important to examine weight bias in different ethnic and racial groups.

Another key area that remains unclear is the nature and extent of weight bias expressed by obese individuals themselves. In contrast to other stigmatized groups who often express favorable attitudes toward their in-group [8–11], several recent studies have documented the presence of antifat attitudes among obese persons [12–15]. Some have speculated that the social acceptability of weight bias may

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lead obese persons to internalize negative societal stereotypes and adopt antifat attitudes [12,14]. Importantly, the obese population is a heterogeneous group [16–18], and it is not known whether, or to what extent, negative weight-based attitudes exist in different segments of the obese population.

Examination of negative weight-based attitudes toward and among obese individuals with binge eating disorder (BED) seems indicated, particularly because they are a subgroup of obese persons who are well known to have heightened levels of body image dissatisfaction and evaluative concerns regarding weight/shape relative to their obese non–binge-eating peers [19,20]. A recent experimental study assessed attitudes toward obese persons with and without binge eating and found that obese targets who were described as binge eaters were significantly more likely to be attributed negative characteristics than obese targets without binge eating problems [21]. The authors speculated that the co-occurrence of binge eating might increase stigmatizing attitudes toward obesity [21]. To our knowledge, only one study has systematically assessed negative weight-based attitudes among obese individuals with and without BED [15]. Puhl and colleagues [15] compared attitudes toward obese persons in a matched sample of white obese women (n = 100) with and without BED and found that stigmatizing attitudes did not differ between these 2 groups, suggesting that it may be that obesity itself, rather than psychological features or disordered eating, that heightens vulnerability to negative weight-based attitudes [15].

Collectively, the findings from these 2 preliminary studies [15,21] highlight the importance of examining potential differences in expressions of weight bias between obese persons with and without BED, because the presence of weight bias could have broad implications both for public health messages and for treatment interventions. Such research is especially important to perform with clinical samples of obese persons from ethnic minority groups for several reasons. Ethnic groups vary in attitudes about body image [7] and treatment-seeking behaviors for both general medical and specialty care [22,23] and for disordered eating [24,25]. Moreover, ethnic groups often face overt discrimination due to race/ethnicity [6], which may or may not mitigate their views about obesity.

Hispanics are a particularly neglected group in the study of weight bias. A few preliminary studies have reported body size stigmatization among Hispanic/Latino youth [26,27], but to our knowledge, no published work has examined expressions of weight bias among Latino adults or among Latinos who are obese. This paucity of research is particularly striking for Hispanic groups who have especially high rates of obesity [28] and are the largest and fastest growing minority group in the United States. The dearth of research in the Hispanic minority group may be partly due to the lack of appropriate Spanish measures available to assess antifat attitudes and the features of eating and weight disorders, because many Hispanics in the United States do not speak English well [29]. In addition, many bilingual Hispanics may prefer to be evaluated in Spanish or may be reluctant to be evaluated for either clinical or research purposes by individuals who are not from a Latino background or do not adhere to certain cultural values [30]. Thus, the aims of this study were to examine and compare weight-based attitudes in obese Latino adults with and without BED and to examine whether these attitudes are related to indices of eating disorder psychopathology and psychological functioning.

2. Methods

2.1. Participants

Participants were a consecutive series of 79 monolingual Spanish-speaking obese Latinos (65 female, 14 male) participating in a randomized placebo-controlled trial (RCT) of orlistat administered concurrently with behavioral weight loss (BWL) therapy being performed at a Hispanic community mental health center. In addition to comparing the addition of orlistat vs placebo to BWL, this RCT was designed specifically to test treatment response for obese patients with BED vs obese patients without BED (ie, non–binge-eating obese [NBO] group). Thus, obese patients with and without BED were recruited, and the randomization schedule to either orlistat plus BWL or placebo plus BWL was stratified by BED status. This study enrolled participants from August 2007 through October 2009. This RCT was designed as an "effectiveness" trial with a goal of obtaining a clinically relevant obese patient group (aged 21-65 years with body mass index [BMI] of 30 kg/m^2 or greater), and therefore, few exclusionary criteria were applied. Patients were recruited from clinical teams and referrals at the community mental health center serving economically disadvantaged persons with mental health and substance use disorders. All participants provided written voluntary informed consent after receiving a complete description of all procedures and before commencing the study. The study was approved by the institutional review board at the Yale University School of Medicine, and the study was performed in accordance with all policies.

Participants had a mean (SD) age of 46.32 (9.68) years and a mean (SD) BMI of 37.57 (6.62) kg/m^2. Overall, education attainment was modest; 50% of participants reported a grammar or junior high school education. Participants were diverse in their country of origin, representing Puerto Rico and several countries from both Central and South America.

2.2. Assessments and measures

Assessments were administered in Spanish by experienced bilingual masters- and doctoral-level research clinicians who were specifically trained for this study. This study had full institutional review board approval, and all participants provided written informed consent in Spanish.

The assessment battery comprised Spanish-language versions of the interview and self-report measures (described below). Whenever reading ability was a potential concern, the research clinicians read the self-report questionnaires verbatim to participants. In such cases, participants responses to the self-report questions were coded "as is," that is, without any further clarification questions as in the case when administering the interviews described below.

Participants were categorized as either obese BED or NBO based on findings from the Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* Axis I Psychiatric Disorders [31], the Eating Disorder Examination Interview (EDE Interview) [32], and any additional relevant data from the clinical intake evaluation and the medical record, following "best-estimate" LEAD (Longitudinal, Expert, All Data) Standard [33]. Forty participants met the criteria for BED and 39 met the criteria for NBO.

2.2.1. Weight, height, and BMI

Actual measurements of weight and height were obtained during the initial assessment meeting using a calibrated medical balance beam scale and were used to calculate BMI.

Spanish-language version of the Eating Disorders Examination (S-EDE) [34], like the EDE [32], is a semistructured investigator-based interview that focuses on the past 28 days. The EDE is used widely, including studies of obese patients with disordered eating [35,36], and has demonstrated good test-retest reliability [37]. The S-EDE assesses the frequency of different forms of overeating with and without subjective loss of control, including objective bulimic episodes (ie, binge eating defined as unusually large quantities of food with a subjective sense of loss of control), and subjective bulimic episodes (ie, consumption of quantities of food not deemed to be unusually large but experienced with a subjective sense of loss of control). The S-EDE also assesses the frequency of inappropriate weight compensatory methods (eg, purging, laxative misuse, etc). The S-EDE comprises 4 subscale scores (restraint, eating concern, shape concern, and weight concern) and a global total score. Items are rated on 7-point forced-choice scales (0-6), with higher scores reflecting greater frequency or severity. The S-EDE demonstrated good interrater and test-retest reliability [34].

Spanish-language version of the Beck Depression Inventory [38] (ie, the S-BDI) [39] is a 21-item self-report instrument developed to measure the severity of depression and its features. The S-BDI has received strong psychometric support and has well-documented reliability and validity in diverse Spanish-speaking samples [39,40]. The α reliability of this measure in the present sample was .91.

Spanish-language version of Attitudes Toward Obese People Scale (S-ATOP) is a 20-item Likert rating scale that measures stereotypical attitudes about obese people [41]. Each question asks respondents to indicate the extent of agreement or disagreement to a specific statement, such as "Obese people are usually untidy." The original scale measures agreement on a 6-point scale (−3, strongly disagree; −2, moderately disagree; −1, slightly disagree; 1, slightly agree; 2, moderately agree; 3, strongly agree), and scores range from 0 to 120, where higher scores reflect more positive attitudes toward obese people [41]. In this study, a modified version of the S-ATOP was used in which a 4-point Likert rating scale (1, strongly disagree; 2, slightly disagree; 3, slightly agree; 4, strongly agree) was used instead of the original 6-point rating scale. This modification followed our experience with a pilot test that measures a series of Hispanic patients at this facility and other research indicating that a Likert scale may be culturally biased [42]. The modified anchors were selected based on expert consensus from a pool of experienced research clinicians at the facility. These 4 anchors are identical to the wording of anchors in the original scale. Scores for the modified Spanish version of the scale ranged from 20 to 80, with higher scores reflecting more positive attitudes toward obese people. The α reliability of this modified S-ATOP in the present sample was .67, which is similar to internal reliability for the original scale reported in other adult populations [15,41,43].

3. Results

3.1. Comparison of BED and NBO groups

Table 1 presents the descriptive statistics for the BED and NBO groups for the primary variables of interest. Analyses of variance (ANOVAs) revealed no significant differences between the BED and NBO groups with respect to age, education, BMI, age of obesity onset, depression, or ATOP scores (all requirements and assumptions for ANOVA were met). The means on the BDI were in the moderate clinical range for both groups. The only significant difference that emerged between groups occurred for the eating concern subscale of the EDE and the EDE global total score, both of which were higher in the BED group.

The sex composition in the BED group consisted of 31 women (78%) and 9 men (22%), and the NBO group consisted of 34 women (87%) and 5 men (13%), (x^2 [1, 79] =

Table 1
Descriptive statistics on primary variables for Latino adults with BED and NBO adults

	BED (n = 40)	NBO (n = 39)	ANOVAs		
	Mean (SD)	Mean (SD)	*df*	F	*P*
BMI (kg/m^2)	38.03 (6.18)	37.08 (7.10)	76	0.40	.53
Age (y)	45.73 (8.22)	46.92 (11.05)	77	0.30	.59
S-ATOP	48.00 (8.29)	51.46 (7.31)	61	3.12	.08
S-EDE					
Restraint scale	1.40 (1.26)	1.39 (1.24)	60	0.00	.98
Eating concern	1.96 (1.56)	0.63 (0.81)	60	17.36	.00*
Weight concern	3.32 (0.96)	2.90 (1.49)	60	1.73	.19
Shape concern	3.82 (1.35)	3.24 (1.73)	60	2.21	.14
Global score	2.63 (1.01)	2.04 (1.01)	60	5.18	.03*
BDI	23.97 (12.03)	20.07 (13.13)	58	1.14	.24

* $p < .05$.

1.27, $P = .26$). To explore potential sex effects or confounds, we performed a second set of ANOVA restricted to women only. The same findings were observed, showing no difference between the BED and NBO groups on major outcome variables or in correlations between these variables. Because of the small sample of men in the study (n = 14), meaningful analyses could not be conducted.

3.2. Associations between obesity attitudes and eating/weight and psychological measures

Given that there were no significant differences in mean scores on primary variables between the BED and NBO samples, bivariate correlation analyses were conducted for the total sample to examine associations between attitudes toward obese persons and depression (BDI), EDE subscales, BMI, age, and age of obesity onset (see Table 2). A significant negative correlation emerged between S-ATOP and BDI scores ($r = -0.43$, $P < .01$), indicating that higher levels of depressive symptoms are associated with more negative attitudes toward obese persons. No other significant correlations were observed with the S-ATOP. A partial correlation analysis demonstrated that the negative association between the S-ATOP and BDI remained ($r = -0.40$) even after controlling for BED/NBO status. Beck Depression Inventory scores were significantly positively correlated with EDE subscales including eating concern ($r = 0.54$, $P < .001$), weight concern ($r = 0.27$, $P = .04$), shape concern ($r = 0.42$, $P < .01$), and global ($r = 0.45$, $P < .001$). No other significant correlations emerged.

3.3. Comparison of obesity attitudes in Hispanic participants and previous studies

Finally, to compare the mean score on the modified S-ATOP in the present Latino sample to scores from the original ATOP reported in previous studies with English-speaking samples, the modified 4-point rating scale of the S-ATOP was recoded to compute a comparable mean to the original measure. Because the wording of the response options in the 4-point rating scale of the Spanish version was identical to 4 of the 6 response items in the original ATOP rating scale, the Spanish version (rated from 1 to 4) was converted as closely as possible to the original ATOP scale (−3 to +3). For example, the "slightly disagree" response choice in the Spanish rating scale was recoded from a rating of −2 to a rating of −1.5, which is equal to the arithmetic average of the 2 intermediate "Disagree" anchors on the original scale (moderately disagree [=−2] and slightly disagree [=−1]). Similarly, the "Slightly Agree" response choice in the Spanish version was recoded from a rating of 3 to a rating of 1.5, which is equal to the arithmetic average of the 2 intermediate "Agree" anchors (moderately agree [=2] and slightly agree [=1]) on the original scale. Thus, the recoded response ratings for the modified Spanish scale were as follows: Strongly Disagree (−3), slightly disagree (−1.5), slightly agree (1.5), and strongly agree (+3). This recoded scale was then used to recode all 20 items of the measure and to compute a total score using the scoring procedures for the original ATOP [41]. The α reliability of the recoded scale remained unchanged.

Using this recoded scale, the mean (SD) score on the S-ATOP for the total sample was 59.40 (16.57), which is almost identical to the mean score on the original ATOP recently reported for English-speaking obese women with and without BED (mean ± SD, 59.81 ± 17.75) [15] and to previous research involving a large sample (n = 2449) of overweight and obese women (mean ± SD, 59.68 ± 16.63) and a matched sample (n = 222) of obese women (mean ± SD, 59.41 ± 17.06) and men (mean ± SD, 56.02 ± 19.04) belonging to a national weight loss support group [44]. In contrast, the mean S-ATOP score in the present Latino sample is somewhat more favorable in comparison with ATOP scores previously documented among obese participants in a residential weight loss facility (mean ± SD 54.3 ±15.1) [45], but reflects more negative attitudes compared with obese members of the National Association for the Advancement of Fat Acceptance (ATOP mean ± SD, 67.6 ± 18.6) [41].

Table 2
Bivariate correlations among attitudes toward obese persons, depression, and eating disorder features in the total sample (n = 79)

Measures	Attitudes toward obese persons
Depression (BDI)	−0.43**
EDE	
Restraint	−0.22
Eating concerns	−0.20
Weight concerns	−0.14
Shape concerns	−0.01
Global score	−0.17
BMI	−0.15
Age	0.10
Age of obesity onset	−0.24

*$P < .05$.
** $P < .01$.

4. Discussion

To our knowledge, this study is the first to compare attitudes toward obese persons among obese Latino adults with and without BED. Overall, our findings for a treatment-seeking group of Latino adults parallel a growing number of studies, conducted with study groups that comprised mostly white participants, showing that obese persons lack positive attitudes toward obese persons and are not immune to weight bias [12,13,46]. In addition, we found that levels of expressed attitudes toward obesity do not differ between obese persons with and without BED, which replicates findings from previous research comparing primarily non-Hispanic treatment-seeking obese patients with BED to a matched comparison group of obese individuals who do not

binge eat [15]. Thus, it appears that weight-based attitudes are similar in both white and Latino obese persons and that negative attitudes toward obesity are not heightened in obese individuals with BED.

Our findings that negative attitudes toward obesity are *not* greater in BED than NBO participants and that their levels are *not* correlated with the intensity of eating disorder psychopathology (eg, levels of weight and shape concerns) are at odds with previous speculations that persons with BED might express lower levels of stigma (or more positive attitudes toward obese persons) because of their own body image concerns and awareness of stigma that is often associated with binge eating [21,47]. Collectively, these findings suggest that it may be obesity per se, rather than eating disorder psychopathology or body image, that heightens negative weight-based attitudes.

It is also noteworthy that in this study group of Latinos, ATOP scores were significantly negatively correlated with BDI scores. Thus, more favorable attitudes toward obese persons were associated with lower levels of depression. Similar findings have been reported in studies with white obese adults [15,45]. This relationship could mean that holding favorable attitudes toward obese persons might help to protect a positive self-image despite negative weight-based stereotypes, or as a buffer against additional emotional distress related to binge eating. Alternatively, this correlation could be attributed more to higher levels of depressive symptoms. Persons with heightened depressive features may have negative and self-critical attitudes toward themselves and, in turn, express these negative attitudes toward others who share similar traits (eg, obesity). More research is needed to clarify the association between these 2 variables.

As we have proposed elsewhere [15], negative weight-based attitudes present in obese adults could be a result of internalized societal stereotypes that are often directed toward obese persons and communicated throughout the mass media [2]. Antifat attitudes or negative self-perceptions among obese individuals may be reinforced by widespread cultural perceptions and messages from the diet industry that body weight is easily modifiable [12] and that individuals are at fault, lazy, or lacking in willpower if they are unable to lose weight [48]. In the mass media, antifat messages are also pervasive because overweight persons are often portrayed unfavorably and in ways that reinforce negative stereotypes [49,50]. Unfortunately, research has found that the stigmatization of obesity continues to increase [51] and that many obese persons internalize negative weight-based attitudes [12,47], which may contribute to disordered eating or decreased well-being [14,47]. Among Latino groups, it is possible that such negative weight-based attitudes might represent yet another barrier to seeking health care (see Bender et al [23] and Añez et al [30]). Alternatively, obese persons may hold negative attitudes (or lack positive attitudes) toward other obese persons because of perceptions about the cause of obesity and its malleability. With widespread perceptions that body weight is malleable and within personal control, obese persons may believe that their stigmatized identity is temporary and be less inclined to challenge stereotypes because of beliefs that they can escape their status by losing weight. If obese persons believe that their weight status is a temporary condition, they may perceive themselves to be "apart" from the overweight and obese population, feeling more alike to members of society who endorse normative views [52].

Several potential limitations of the study should be noted as a context for interpreting our findings. The cross-sectional nature of this study prevents assessment of potential causal relationships between attitudes about obese persons and body weight, emotional functioning, and eating disorder psychopathology. Given the lack of research on weight bias in Hispanic populations, it is not known how the current findings compare with weight-based attitudes in nonobese Latinos. Among white samples, previous research has found that attitudes toward obese persons tend to be worse among nonobese than obese individuals [13]. Whether this distinction is also true in Hispanic populations remains to be seen, and more work is needed to assess weight bias in this population using multiple assessment measures. Our participants were economically disadvantaged Latinos/Latinas who were monolingual (ie, Spanish-speaking-only), and our findings may not generalize to broader samples of Latinas/Latinos who are more assimilated to the United States and/or have higher socioeconomic status. Moreover, this treatment study was performed at a community mental health center serving persons with mental health and substance use disorders; thus, our findings may not generalize to obese persons without psychiatric problems who might, for example, seek weight loss treatment in specialty obesity clinics. Given that the participants were seeking BWL treatment, it is also possible that different findings would be observed in non–treatment-seeking groups of obese persons. In addition, participants in the sample were primarily women. Given some previous work documenting sex differences in weight bias [53] and its relationship with depressive symptoms [54], it will be important for additional studies to examine larger samples of men. Finally, our findings suggest that the Spanish adaptation of the ATOP may serve as an adequate and useful instrument to assess weight-based attitudes in Hispanics, but validation of this measure and its reliability are needed in additional Latino samples.

Although several decades of research have documented weight stigma toward obese persons [1–3], few studies have examined whether individuals with different ethnic and cultural backgrounds are more or less likely to endorse biased attitudes or have increased vulnerability to the negative consequences of stigmatization. The present study suggests that, similar to obese white people, obese Latinos may hold negative weight-based attitudes, regardless of whether or not they also have coexisting BED. Given the high prevalence of obesity in Hispanic populations, the

vulnerability of weight bias among obese Latinos suggests that stigma reduction interventions and strategies that can temper internalization of weight bias (and its potential harmful effects) among obese individuals may be useful. It may also be beneficial to address the topic of weight bias as part of treatment for BED or weight modification and to educate health care providers about weight bias and its potential consequences for their obese patients.

References

[1] Puhl RM, Brownell KD. Bias, discrimination, and obesity. Obes Res 2001;9:788-905.

[2] Puhl RM, Heuer CA. The stigma of obesity: a review and update. Obesity 2009;17:941-64.

[3] Brownell KD, Puhl RM, Schwartz MB, Rudd L, editors. Weight bias: nature, consequences, and remedies. New York: The Guilford Press; 2005.

[4] Puhl RM, Latner J. Obesity, stigma, and the health of the nation's children. Psychol Bull 2007;133:557-80.

[5] Hebl MR, King EB, Perkins A. Ethnic differences in the stigma of obesity: identification and engagement with a thin ideal. J Experimental Soc Psychol 2009;45:1165-72.

[6] Puhl RM, Andreyeva T, Brownell KD. Perceptions of weight discrimination: prevalence and comparison to race and gender discrimination in America. Int J Obesity 2008;32:992-1001.

[7] White MA, Grilo CM. Ethnic differences in the prediction of eating and body image disturbances among female adolescent psychiatric inpatients. Int J Eating Disord 2005;38:78-84.

[8] Crocker J, Luhtanen R. Collective self-esteem and ingroup bias. J Pers Soc Psychol 1990;58:60-7.

[9] Crocker J, Luhtanen R, Baline B, Broadnax S. Collective self-esteem and psychological well-being among white, black, and Asian college students. Pers Soc Psychol Bull 1994;20:502-13.

[10] Tajfel H, Turner JC. Social identity theory of intergroup behavior. In: Worchel S, Austin WG, editors. Psychology of intergroup relations. Chicago: Newlson-Hall; 1986. p. 7-24.

[11] Rudman LA, Feinberg J, Fairchild K. Minority members' implicit attitudes: automatic ingroup bias as a function of group status. Soc Cogn 2002;20:294-320.

[12] Wang SS, Brownell KD, Wadden TA. The influence of the stigma of obesity on overweight individuals. Int J Obes 2004;28:1333-7.

[13] Schwartz MB, Vartanian LR, Nosek BA, Brownell KD. The influence of one's own body weight on implicit and explicit anti-fat bias. Obesity 2006;14:440-8.

[14] Puhl RM, Moss-Racusin CA, Schwartz MB. Internalization of weight bias: implications for binge eating and emotional well-being. Obesity 2007;15:19-23.

[15] Puhl RM, Masheb RM, White MA, Grilo CM. Attitudes toward obesity in obese persons: a matched comparison of obese women with and without binge eating. Eat Weight Disord 2010 [Epub ahead of print].

[16] Allison KC, Grilo CM, Masheb RM, Stunkard AJ. Binge eating disorder and night eating syndrome: a comparative study of disordered eating. J Consult Clin Psychol 2005;73:1107-15.

[17] Friedman MA, Brownell KD. Psychological correlates of obesity: moving to the next generation of research. Psychol Bull 1995;117:3-20.

[18] Grilo CM, Pogue-Geile MF. The nature of environmental influences on weight and obesity: a behavior genetic analysis. Psychol Bull 1991;110:520-37.

[19] Grilo CM, Hrabosky JI, White MA, et al. Overvaluation of shape and weight in binge eating disorder and overweight controls: refinement of a diagnostic construct. J Abnorm Psychol 2008;117:414-9.

[20] Grilo CM, Masheb RM, White MA. Significance of overvaluation of shape/weight in binge eating disorder: comparative study with overweight and bulimia. Obesity 2009 [Epub ahead of print] PMID: 19713949.

[21] Bannon KL, Hunter-Reel D, Wilson GT, Karlin RA. The effects of causal beliefs and binge eating on the stigmatization of obesity. Int J Eat Disord 2009;42:118-24.

[22] Gonzalez J.M., Alegria M., Prihoda T.J., Copeland L.A., Zeber J.E. How the relationship of attitudes toward mental health treatment and service use differs by age, gender, ethnicity/race and education. Soc Psychiatry Psychiatr Epidemiol 2009; Epub ahead of print. DOI 10.1007/s00127-009-0168-4.

[23] Bender DS, Skodol AE, Dyck IR, Markowitz JC, Shea MT, Yen S, et al. Ethnicity and mental health treatment utilization by patients with personality disorders. J Consult Clin Psychol 2007;75:992-9.

[24] Grilo CM, Lozano C, Masheb RM. Ethnicity and sampling bias in binge eating disorder: Black women who seek treatment have different characteristics than those who do not. Int J Eating Disorder 2005;38:257-62.

[25] Alegria M, Woo M, Cao Z, Torres M, Meng XL, Striegel-Moore R. Prevalence and correlates of eating disorders in Latinos in the United States. Int J Eat Disord 2007;40:S15-21.

[26] Rich SS, Essery EV, Sanborn CF, DiMarco NM, Morales LK, LeClere SM. Predictors of body size stigmatization in Hispanic preschool children. Obesity 2008;16:S11-7.

[27] van den Berg P, Neumark-Sztainer D, Eisenberg ME, Haines J. Racial/Ethnic differences in weight-related teasing in adolescents. Obesity 2008;16:S3-S10.

[28] Pan L, Galuska DA, Sherry B, Hunter AS, Rutledge GE, Dietz WH, Balluz LS. Differences in prevalence of obesity among Black, White, and Hispanic Adults—United States, 2006-2008. Morbidity and Mortality Weekly Report 2009;58:740-4.

[29] U.S. Bureau of the Census. The Hispanic population in the United States: March 1993. Current Population Reports, Ser. P20, No. 475. Washington, DC: US Government Printing Office; 1995.

[30] Añez L, Paris M, Bedregal L, Davidson L, Grilo CM. Application of cultural constructs in the care of first generation Latina/o clients in a community mental health setting. J Psychiatr Pract 2005;11:221-30.

[31] First MB, Spitzer RL, Gibbon M, Williams JBW. Structured clinical interview for DSM-IV–Patient edition (SCID-I/P), Biometrics' Research Department. New York.: New York State Psychiatric Institute; 1996

[32] Fairburn CG, Cooper Z. The eating disorder examination (12th ed). In: Fairburn CG, Wilson GT, editors. Binge eating: nature, assessment, and treatment. New York: Guilford Press; 1993.

[33] Pilkonis PA, Heape CL, Ruddy J, Serrao P. Validity in the diagnosis of personality disorders: the use of the LEAD standard. Psychol Assess 1991;3:46-54.

[34] Grilo CM, Lozano C, Elder KA. Inter-rater and test-retest reliability of the Spanish Language Version of the Eating Disorder Examination Interview: clinical and research implications. J Psychiatr Prac 2005;11:231-40.

[35] Grilo CM, Masheb RM, Wilson GT. A comparison of different methods for assessing the features of eating disorders with binge eating disorder. J Consult Clin Psychol 2001;69:317-22.

[36] Grilo CM, Masheb RM, Wilson GT. Different methods for assessing the features of eating disorders in patients with binge eating disorder. Obesity Res 2001;9:418-22.

[37] Grilo CM, Masheb RM, Lozano-Blanco C, Barry DT. Reliability of the eating disorder examination in patients with binge eating disorder. Int J Eat Disord 2004;35:80-5.

[38] Beck AT, Steer RA, Brown GK. Manual for the Beck Depression Inventory-II. San Antonio, TX: Psychological Corp; 1996.

[39] Penley JA, Wiebe JS, Nwosu A. Psychometric properties of the Spanish Beck Depression Inventory-II in a medical sample. Psychol Assessment 2003;15:569-77.

[40] Wiebe JS, Penley JA. A psychometric comparison of the Beck Depression Inventory-II in English and Spanish. Psychol Assessment 2005;17:481-5.

[41] Allison DB, Basile VC, Yuker HE. The measurement of attitudes toward and beliefs about obese persons. Int J Eat Disord 1991;10:599-607.
[42] Flaskerud J. Is the Likert scale format culturally biased? Nursing Research 1988;37:185-6.
[43] Harvey EL, Hill AJ. Health professionals' views of overweight people and smokers. Int J Obes 2001;25:1253-61.
[44] Puhl RM, Brownell KD. Confronting and coping with weight stigma: an investigation of overweight and obese adults. Obesity 2006;14: 1802-15.
[45] Friedman KE, Reichmann SK, Costanzo PR, Zelli A, Ashmore JA, Musante GJ. Weight stigmatization and ideological beliefs: Relation to psychological functioning in obese adults. Obes Res 2005;13:907-16.
[46] Crandall CS, Biernat M. The ideology of anti-fat attitudes. J Appl Soc Psychol 1990;20:227-43.
[47] Durso LE, Latner JD. Understanding self-directed stigma: development of the Weight Bias Internalization Scale. Obesity 2008;16(S2): S80-6.
[48] Puhl R, Brownell KD. Psychosocial origins of obesity stigma: toward changing a powerful and pervasive bias. Obesity Reviews 2003;4: 213-27.
[49] Greenberg BS, Eastin M, Hofshire L, Lachlan K, Brownell KD. The portrayal of overweight and obese persons in commercial television. Am J Public Health 2003;93:1342-8.
[50] Himes SM, Thompson JK. Fat stigmatization in television shows and movies: a content analysis. Obesity 2007;15:712-8.
[51] Latner JD, Stunkard AJ. Getting worse: the stigmatization of obese children. Obesity Res 2003;11:452-6.
[52] Puhl R, Brownell K. Ways of coping with obesity stigma: conceptual review and analysis. Eat Behav 2003;4:53-78.
[53] Mukamal KJ, Kawachi I, Miller M, Rimm EB. Body mass index and risk of suicide among men. Arch Intern Med 2007;167: 468-75.
[54] Palinkas LA, Wingard KL, Barrett-Connor E. Depressive symptoms in overweight and obese older adults: a test of the "jolly fat" hypothesis. J Psychosom Res 1996;40:59-66.