



Article

Weight Concern and Body Image Dissatisfaction among Hispanic and African American Women

Norma Olvera ^{1,*}, Molly Matthews-Ewald ², Rongfang Zhang ¹, Rhonda Scherer ³, Weihua Fan ¹ and Consuelo Arbona ¹

¹ Department of Psychological, Health & Learning Sciences, University of Houston, Houston, TX 77204, USA; rzhang26@central.uh.edu (R.Z.); wfan@central.uh.edu (W.F.); consueloa@central.uh.edu (C.A.)

² Creative Research Solutions, LLC., Snellville, GA 30078, USA; mmatthewsewald@gmail.com

³ College of Humanities and Social Sciences, University of Houston-Downtown, Houston, TX 77002, USA; scherrerr@uhd.edu

* Correspondence: nolvera@central.uh.edu

Abstract: Weight concern and body image dissatisfaction continue to be understudied among African American and Hispanic women. To address the gap in the extant literature, this study examined a sample of Hispanic and African American women ($N = 477$, $Mean_{age} = 43.7$ years) and explored (a) differences in weight concern and body image dissatisfaction; (b) the contribution of perceived weight status and body image dissatisfaction to weight concern; and (c) the extent to which the association between body image dissatisfaction and weight concern was moderated by ethnicity. Participants completed a health survey and a figure rating scale. The findings indicated that Hispanic women compared to African American women endorsed smaller silhouettes as an ideal body size ($\chi^2(7, n = 436) = 22.36, p = 0.002$, Cramer's $V = 0.23$). More Hispanic women (77%) than African American women (62%) had a discrepancy between their perceived actual and ideal body size. The relationship between body image dissatisfaction and weight concern varied by ethnicity. That is, the relationship between body image dissatisfaction and weight concern was statistically significant among African American women ($\beta = 0.21, p = 0.008$) but was insignificant among Hispanic women ($\beta = 0.11, p = 0.135$). This study has implications regarding the identification of risk factors associated with weight concern.

Keywords: body image; Hispanic; African American; women; weight concern; body shape



Citation: Olvera, N.; Matthews-Ewald, M.; Zhang, R.; Scherer, R.; Fan, W.; Arbona, C. Weight Concern and Body Image Dissatisfaction among Hispanic and African American Women. *Women* **2023**, *3*, 486–496. <https://doi.org/10.3390/women3040037>

Academic Editors: Philip D. Chilibeck and Mary V. Seeman

Received: 29 July 2023

Revised: 5 October 2023

Accepted: 7 October 2023

Published: 16 October 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

The persistently high rates of obesity among Hispanic and African American women constitute a major public health concern in the United States. National data indicate that nearly half of African American (57%) and Hispanic (44%) women in the United States experience obesity [1]. By 2030, the prevalence of obesity among women is expected to increase between 15% and 20% with continued higher estimated obesity rates in African American (68%) and Hispanic women (65%) compared to White women (46%) [2]. Paradoxically, as obesity rates continue to rise, so does pressure in mainstream American culture for women to achieve and maintain an ideal thin body size [3]. Consequently, women with overweight and obesity are more likely to report being dissatisfied with their body size than their healthy-weight counterparts [4].

The discrepancy between perceived body size and one's ideal body size can be indicative of body image dissatisfaction (BID) and may even be an impetus for weight concern [5]. Bouzas and colleagues [6] suggest that the association among BID, weight concern, and weight control behaviors can be explained by the Regulatory Focus Theory (RFT) [7]. The RFT focuses on the connection between a person's motivation and goal—in the case of BID, motivation for weight loss. Although weight concern can be a motivator to lose weight, failure to attain mainstream American society's prescribed thin ideal may result in

BID (e.g., Olson et al. [8]). Both weight concern and BID are positively associated with a myriad of adverse comorbidities across age groups including, but not limited to, eating disorders [9,10], low self-esteem [10], unhealthy attitudes about eating [11], anxiety [12], and depression [13].

Unfortunately, most of the studies of BID remain focused on White women [14], and research that includes African American and Hispanic women utilize White women as the referent comparison group, discounting individuals' unique intersectional identities [15]. A review of the literature revealed that some studies have found that differences in BID between Hispanic and White women were either small [16] or nonexistent [17]. However, other studies indicated that Hispanic and African American women tend to report lower BID levels compared to their White counterparts. That is, Hispanic and African American women endorsed curvier bodies as ideal compared to White women [18–22]. Fitzgibbon and colleagues [23] found that among a sample of White, Hispanic, and Black women, BID was strongly associated with women's body mass index (BMI). Few studies have explicitly explored BID only among Hispanic and African American women from a community-based sample. In one of the few studies that has, Mama et al. [24] reported that Hispanic women from a community sample tended to endorse an ideal body size of smaller figures than African American women.

Furthermore, there is little research examining the relationship between BID and weight concern among Hispanic and African American women, which may be critically important to understanding unique cultural nuances. Understanding this relationship has important implications for tailoring community-based healthy lifestyle behavioral interventions to promote healthy weight among Hispanic and African American women.

Therefore, the objectives of the current study were to examine the following three research questions. Objective 1: Are there differences in endorsed body size ideal, BID, and weight concern among Hispanic and African American women? It was hypothesized that Hispanic women would endorse smaller body sizes as ideal and report greater BID and weight concern than African American women. Objective 2: To what extent are self-labeled weight status and BID associated with weight concern among Hispanic and African American women? It was hypothesized that controlling for women's age, BMI, ethnicity, self-labeled weight status, and BID would be positively associated with increased weight concern. Objective 3: To what extent does ethnicity moderate the association between BID and weight concern? Because of a relative dearth of previous research in this area, no hypothesis was proposed regarding the third research question.

2. Materials and Methods

2.1. Participants

A total of 477 women (366 Hispanic, 111 African American) participated in this study. Participating Hispanic women's mean age was 40.3 years ($SD = 13.2$ years), and African American women's mean age was 54.7 years ($SD = 19.0$ years). The study sample inclusion criteria consisted of women who (1) self-identified as Hispanic or African American and (2) were at least 18 years of age. Participants were recruited during four large community health fairs, which provided health screenings, vaccinations, and health information to attendees. These health fairs were open to the public and were held in predominantly Hispanic and African American neighborhoods during 2017 and 2019. The University of Houston's Institutional Review Board approved the study's protocol.

2.2. Procedures

During the health fairs, we had a nutritional exhibit. Individuals who approached our exhibit received nutrition information and health resources. Afterward, they were informed about the study's purpose, procedures, assessments, time commitment (10–15 min), and any potential risks. In addition, participants were also informed that their participation was voluntary. If participants accepted to participate in this study, they were asked to read and sign a consent form before completing a health survey and a figure rating scale in their

preferred language (e.g., English or Spanish). In addition, bilingual research assistants were available to answer any questions about the study to ensure a clear understanding of the research, procedures, and potential risks of the study. Study participants were asked to complete surveys anonymously and were told that individual responses would not be shared with anyone who was not involved in the research team. Participants received a T-shirt as compensation for their time.

2.3. Measures

2.3.1. Health Survey

Health survey questions used for this study included participants' (1) demographic characteristics (e.g., age, ethnicity); (2) self-reported weight in pounds and height in inches; and (3) self-labeled weight status determined by the question "Do you consider yourself to be?" using the following choice responses: *underweight*, *healthy weight*, *overweight*, and *obese*. Weight concern was assessed by asking respondents "How concerned are you about your weight?" Response options for this question were on a 5-point Likert choice scale (0 = *not at all concerned* to 4 = *extremely concerned*).

2.3.2. Stunkard Figure Rating Scale (SFRS) [25]

The SFRS was used to assess participants' body image dissatisfaction (BID) scores. The SFRS includes nine women silhouettes that increase in body size from *very thin* (a value of 1) to *obese* (a value of 9). Participants were asked to select the silhouette that best resembled "how you think you look?" and the silhouette that represented "the way you would like to look" to assess perceived and ideal body size, respectively. BID was determined by subtracting the rating for ideal body size from the perceived body size rating. Studies have demonstrated that the SFRS is a valid measure to assess perceived body size, ideal body size, and BID in adults [26,27]. Specifically, the SFRS has been shown to have good test-retest reliability, and its ratings have been positively correlated with a drive for thinness ($r = 0.85$), BID ($r = 0.91$) [26], and BMI ($r = 0.76$) [27]. In this study, BMI was correlated with SFRS perceived body size ($r = 0.72$) and BID ($r = 0.53$).

2.4. Statistical Analysis

Prior to conducting any inferential statistics, we assessed the data for missingness and potential outliers. We did not detect outliers, but we detected missing data across some variables. Using Little's MCAR test, we concluded that the missing data were randomly missing. As a result, we used listwise deletion to address missing data in the hierarchical linear multiple regression to ensure unbiased estimations. Means and standard deviations for continuous variables and percentages for categorical variables were used to describe study participants. Pearson's chi-square and *t*-tests were run to assess ethnic differences in descriptive characteristics (e.g., age and income). Weight status classification was determined by researchers calculating participants' BMI (using the weight (in kgs)/height² (in meters) formula) from participants' self-reported weight and height. Following the Centers for Disease Control and Prevention's [28] obesity status classification for adults, participants with a BMI < 18.5 kg/m² were classified as underweight, participants with a BMI of ≥ 18.5 kg/m² to ≤ 24.9 kg/m² were classified as having a healthy weight, participants with a BMI of ≥ 25.0 kg/m² to ≤ 29.9 kg/m² were classified as overweight, and participants with a BMI ≥ 30 kg/m² were classified as obese. In addition, participants were also asked to self-report their weight status as either underweight, healthy weight, overweight, or obese.

To address hypothesis 1, Pearson's chi-square test of independence was used to analyze ethnic differences in weight concern. An independent sample *t*-test was used to analyze ethnic differences in BID. To address hypothesis 2 and the moderation question, a four-step hierarchical multiple linear regression analysis was conducted to assess the unique and collective contribution of factors associated with women's weight concern and assess the interaction effect of ethnicity in the relation of BID to weight concern after controlling for

women’s age, BMI, and ethnicity. Descriptive variables (e.g., age, ethnicity) and BMI were entered in Step 1, self-labeled weight status in Step 2, BID was entered in Step 3, and the interaction term of BID and ethnicity (African American or Hispanic) was entered in Step 4. Analyses were conducted using IBM SPSS Statistics version 23.0, and statistical significance was set at $p < 0.05$.

3. Results

3.1. Sample Descriptive Characteristics

There were differences in age, income, and weight concern between Hispanic and African American women. As shown in Table 1, on average, African American women were older $t(144) = -7.44, p < 0.001$ and had a higher household income than Hispanic women ($\chi^2(2, n = 412) = 36.13, p < 0.001$, Cramer’s $V = 0.30$). Specifically, 36.9% of African American women reported a monthly household income of more than USD 2500 compared to 12.6% of Hispanic women. In terms of weight status, 61% of Hispanic and 64% of African American women were classified as either overweight or obese based on their self-reported height and weight. In addition, 88.3% of women labeled themselves as either having a healthy weight (36.1%) or overweight (52.2%), and fewer than 5% of women reported themselves as being obese (Table 1). No significant ethnic differences were observed in women’s BMI ($t(151) = -0.95, p = 0.344$), weight status based on BMI ($\chi^2(3, n = 388) = 4.01, p = 0.26$, Cramer’s $V = 0.10$), or self-labeled weight status ($\chi^2(3, n = 446) = 6.89, p = 0.075$, Cramer’s $V = 0.12$).

Table 1. Sample descriptive characteristics.

Variable	Total Sample N = 477	Hispanic Women N = 366	African American Women N = 111	df	t	χ^2	p	Cramer’s V
Age M (SD)	43.7 (15.9)	40.3 (13.2)	54.7 (19.0)	144	-7.44		<0.001	
Household income n (%)				2		36.13	<0.001	0.30
≤USD 2500/month	212 (44.4)	178 (48.6)	34 (30.6)					
>USD 2500/month	87 (18.2)	46 (12.6)	41 (36.9)					
Not sure	113 (23.7)	93 (25.4)	20 (18.0)					
Did not answer	65 (13.6)	49 (13.4)	16 (14.4)					
Perceived weight status n (%)				3		4.01	0.26	0.10
Underweight	2 (0.4)	2 (0.5)	0 (0.0)					
Healthy weight	93 (19.5)	64 (17.5)	29 (26.1)					
Overweight	122 (25.6)	97 (26.5)	25 (22.5)					
Obese	171 (35.8)	125 (34.2)	46 (41.4)					
Did not answer	89 (18.7)	78 (21.3)	11 (9.9)					
BMI ^a M (SD)	29.9 (6.6)	29.7 (6.3)	30.5 (7.5)	151	-0.95		0.344	
Underweight	3 (0.6)	3 (0.8)	0 (0.0)					
Healthy weight	172 (36.1)	122 (33.3)	50 (45.0)					
Overweight	249(52.2)	202 (55.2)	47 (42.3)					
Obese	22 (4.6)	17 (4.6)	5 (4.5)					
Did not answer	31 (6.5)	22 (6.0)	9 (8.1)					
Weight concern n (%)				4		26.69	<0.001	0.25
Not at all	74 (15.5)	55 (15.0)	19 (17.1)					
Slightly	111 (23.3)	96 (26.2)	15 (13.5)					
Somewhat	77 (16.1)	69 (18.9)	8 (7.2)					
Moderately	67 (14.0)	43 (11.7)	24 (21.6)					
Extremely	100 (21.0)	65 (17.8)	35 (31.5)					

^a BMI calculated based on participant-reported height and weight.

3.2. Ethnic Differences in Body Size Ideal, BID, and Weight Concern

A significantly higher proportion of Hispanic women compared to African American women endorsed smaller silhouettes as an ideal body size ($\chi^2(7, n = 436) = 22.36, p = 0.002$, Cramer’s $V = 0.23$). In terms of BID, 77% of Hispanic women and 62% of African American women had a discrepancy between their perceived actual and ideal body size, likely

indicating some high degree of BID. Ninety-five percent of Hispanic women and 91% of African American women desired to be thinner, and very few (5% Hispanic, 9% African American) women wished to have a larger body size than their current perceived body size. An independent sample *t*-test revealed that Hispanic women ($M = 1.78, SD = 1.47$) reported a greater BID (or body size discrepancy) than African American women ($M = 1.37, SD = 1.32; t(419) = 2.4, p = 0.017$). As shown in Table 1, a greater percentage of African American women (total 53.1%; moderately, 21.6%; extremely, 31.5%) compared to Hispanic women (total = 29.5%; moderately, 11.7%; extremely, 17.8%) reported being moderately/extremely concerned about their weight ($\chi^2(4, n = 429) = 26.69, p < 0.001, \text{Cramer's } V = 0.25$).

3.3. Contribution of Key Variables to Weight Concern and Interaction Effect

As shown in Table 2, the results of the hierarchical multiple regression analysis indicated that age, ethnicity, and BMI explained 13% of the variance in weight concern, $F(3, 299) = 16.21, p < 0.001$. Only ethnicity ($\beta = 0.18, p = 0.001$) and BMI ($\beta = 0.33, p < 0.001$) contributed unique variance to weight concern. African American women and women with a higher BMI were more concerned about their weight than Hispanic women and women with a lower BMI, respectively. In Step 2, the addition of self-labeled body size explained an additional 5% of the variance in women's weight concern, and this change in R^2 was statistically significant, $F(1, 298) = 18.38, p < 0.001$. Controlling for age, ethnicity, and BMI ($\beta = 0.31, p < 0.001$), women who labeled themselves as heavier tended to be more concerned about their weight than women who labeled themselves as normal weight. Similarly, BID entered in Step 3 explained an additional 2% of the variance in weight concern, and the R^2 change was statistically significant, $F(1, 297) = 7.19, p = 0.008$. When considering all the variables in the model in Step 3, ethnicity ($\beta = 0.21, p < 0.001$), self-labeled body size ($\beta = 0.25, p = 0.001$), and BID ($\beta = 0.18, p = 0.008$) contributed unique variance to weight concern. The interaction effect of BID \times ethnicity, entered in Step 4, explained an additional 2% of the variance in women's weight concern, and this change in R^2 was statistically significant, $F(1, 296) = 7.22, p = 0.008$. In addition, the coefficient of the interaction term between ethnicity and BID was significant ($\beta = 0.21, p = 0.008$). That is, the relationship between women's BID and weight concern varied significantly by ethnicity.

Figure 1 shows that the relationship between BID and weight concern was statistically significant among African American women ($\beta = 0.21, p = 0.008$), whereas the relationship was not significant among Hispanic women ($\beta = 0.11, p = 0.135$).

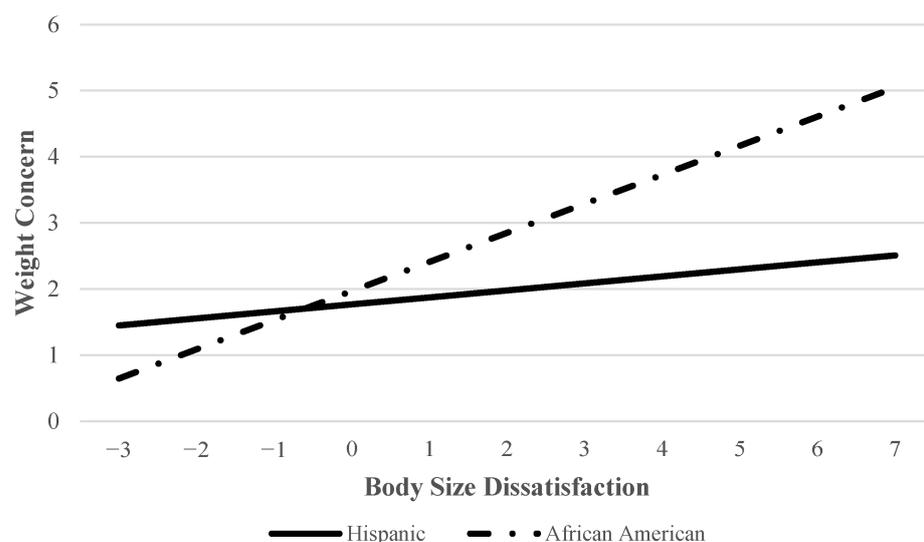


Figure 1. Effect of body image dissatisfaction on weight concern as a function of ethnicity.

Table 2. Hierarchical multiple linear regression analysis used to predict weight concern (N = 477).

Variable	Step 1					Step 2					Step 3					Step 4				
	B	SE B	β	t	p	B	SE B	B	t	p	B	SE B	β	t	p	B	SE B	β	t	p
Age	0.00	0.01	0.00	−0.05	0.964	0.00	0.01	0.01	0.19	0.853	0.00	0.01	0.00	0.03	0.978	0.00	0.01	0.00	−0.02	0.981
Ethnicity ^a	0.60	0.19	0.18	3.24	0.001	0.63	0.18	0.19	3.47	0.001	0.69	0.18	0.21	3.83	0.001	0.20	0.25	0.06	0.79	0.43
BMI ^b	0.57	0.09	0.33	6.07	<0.001	0.20	0.13	0.12	1.58	0.116	0.10	0.13	0.05	0.72	0.471	0.10	0.13	0.06	0.75	0.457
Self-labeled weight status						0.75	0.17	0.31	4.29	<0.001	0.61	0.18	0.25	3.39	0.001	0.6	0.18	0.25	3.36	0.001
BID ^c											0.18	0.07	0.18	2.68	0.008	0.11	0.07	0.11	1.5	0.135
Ethnicity × BID ^c																0.33	0.12	0.21	2.69	0.008
Overall model adjusted R ²	0.13					0.18					0.20					0.21				
F for change in R ²	16.21 ***					18.38 ***					7.19 **					7.22 **				

^a Ethnicity was coded as 0 = Hispanic, 1 = African American. ^b BMI represents researcher-calculated BMI based on participant self-reported height and weight. ^c BID represents body image dissatisfaction. ** $p < 0.01$, *** $p < 0.001$

More specifically, ethnicity was found to moderate the association between body image dissatisfaction and women's weight concern after controlling for the covariates of age, weight status, and self-labeled body size, $\beta = 0.21$ and $p = 0.008$. For Hispanic women (ethnicity = 0), the relationship between body image dissatisfaction and weight concern was not significant, $\beta = 0.11$ and $p = 0.135$, after controlling for age, BMI, and self-labeled body size.

4. Discussion

Research has shown that weight concern is associated with BID, particularly among women with higher BMIs [29]. To our knowledge, this study is one of the first to examine the association of weight status and BID to weight concern in an ethnically diverse community sample when not using White women as the referent comparison. A descriptive analysis of the study participants' characteristics indicated that African American women tended to be older and reported a greater household income than Hispanic women. No ethnic differences were observed regarding participants' weight status based on either their self-reported height and weight or self-labeled body size.

Regarding the first research question and first hypothesis, results from this study indicated there are ethnic differences in body size ideal, BID, and weight concern. Consistent with previous research [30], Hispanic women endorsed smaller body sizes as ideal and reported higher levels of BID compared to their African American counterparts in this study. Furthermore, our findings also revealed that most women reported that their ideal body size was thinner than their current body size. However, for a few participants (5% Hispanic, 9% African American), their ideal weight was larger than they currently perceived themselves to be. This is a critical issue when assessing BID. That is, the directionality of the discrepancy between perceived and ideal body size should be considered for developing interventions to promote a healthy body size. This study's first hypothesis also proposed that Hispanic women would be more concerned about their weight than African American women. Contrary to our hypothesis, the findings indicated that African American women were more likely to be moderately to extremely concerned about their weight than their Hispanic counterparts, regardless of their weight status (based on BMI or self-rated weight status). It is possible that the potential ethnic differences in ideal body size, BID, and weight concern may instead be attributed to the age differences in participating Hispanic and African American women. More specifically, Hispanic participants were, on average, 14 years younger than African American women. It is plausible that young Hispanic women feel more confident that they can change their body size, and thus they have less concern about their weight. In addition, older African American women might have been more concerned about their weight due to its impact on their overall health status or medical history [31]. Future research should examine these hypotheses with additional age groups to further explore and understand potential differences.

The results provided support for the study's second research question and second hypothesis. In particular, the findings revealed that both self-labeled weight status and BID were significantly associated with weight concern in this community-based sample of Hispanic and African American women after controlling for age, ethnicity, and BMI. Fitzgibbon and colleagues [23] noted that an individual's BID or differences between current and ideal body image is not necessarily akin to perceiving oneself as overweight. For example, in some cases, an individual may perceive themselves as underweight. However, in the current study, both BID and self-labeled weight status were positively associated with higher levels of weight concern. Once we determined that both BID and self-labeled weight status were significant predictors of weight concern, it was important to explore to what extent these associations were moderated by ethnicity.

The results of moderation analyses indicated that while ethnicity did not moderate the relation of weight status to weight concern, BID was positively associated with weight concern among African American women. These findings suggest that African American women who selected their ideal body size as further away from their perceived body

size were more likely to be concerned about their weight. Such results are consistent with the Regulatory Focus Theory [7], which examines factors that motivate a person to achieve a goal. In this case, weight concern and BID might motivate a person to lose weight. As Almenara and colleagues [5] found, concern about one's weight may provide a motivation for improving overall health or engaging in maladaptive eating behaviors to lose weight [32]. However, failure to attain one's personal body weight goal might result in increased BID [8]. Thus, along with an understanding of whether (a) an individual is concerned about her weight and (b) determining whether the ideal body size is realistic, other associated factors (such as obesity family history) should also be assessed and considered when determining appropriate healthy lifestyle interventions. In terms of medical interventions, it may be important for healthcare practitioners to pay attention not only to BMI but also individuals' weight concern and BID.

Finally, it may be important to explore assets that Hispanic and African American women have that may be protective factors against the development of BID. For example, several researchers [33] have found that peer relationships tend to have a protective effect—that is, they reduce the incidence of BID among Hispanic and African American women. As such, not only simply assessing but also leaning on protective factors may be particularly salient during medical interventions. In sum, the results of this study demonstrate that BID does not uniformly affect women identifying as either Hispanic or African American. Thus, this study underscores the importance of tailored BID interventions, medical interventions, and more, to the individual, rather than taking a one-size-fits-all approach.

5. Limitations

This study has some methodological limitations. First, no objective measures of height and weight were taken to determine the accuracy of weight status and its correlation with weight status assessments included in this study. In addition, the use of BMI as a measure of body weight status does not incorporate body fat distribution or body muscle mass, which may be differentially associated with BID or dissatisfaction by ethnicity. Also, the low correlation between the Stunkard measure and BMI observed in this study is a limitation. Second, it is also possible that participants were not aware of the weight/height ranges that characterize overweight and obese status, which would suggest a need for health professionals to provide patients with specific parameters of what constitutes healthy weight, overweight, and obese. However, it is not possible to determine the attribution of these findings with certainty because information regarding weight status was self-reported in this study. Further research should examine the validity of various approaches to objectively assess marginalized women's weight and height relative to their perceived weight status (self-reported weight/height, BMI, and global perceptions of body size). Third, data were collected during health fairs. It is possible that the women who were interested in participating in this study were already more concerned about their health and weight, given the setting. Thus, it is conceivable that women who participated in the current study may be more concerned about their health, weight, or risk for obesity than Hispanic and African American women from the general population. Fourth, we were unable to assess other known correlates that are associated with BID, such as negative feelings about one's body [34], which can have deleterious impacts on health and well-being (e.g., anxiety, preoccupation with weight, disordered eating behaviors). Fifth, this study lacks a comprehensive women's weight concern measure that involves various aspects related to weight concern, such as shape and its impact on BID. For example, Thoma et al. [35] found that in addition to assessing perceived body size, self-reported body shape (e.g., rectangle/straight; hourglass) may also be a useful proxy measure to assess body size. Future studies should employ comprehensive weight concern measures (e.g., including body shape) to assess a wide spectrum of weight concern aspects among Hispanic and African American women. Lastly, the generalizability of the findings may be limited due to the study's specific sample and its focus on only two ethnic groups. Therefore, future

research could benefit from including a more diverse range of ethnicities to provide a broader understanding of the factors associated with weight concern.

6. Conclusions

Despite its limitations, to our knowledge, this study is one of the first to examine factors associated with weight concern in a large, ethnically diverse community sample of women of color. This is especially important, given that women from all ethnic groups continue to attach great importance to their body image. However, current studies have primarily examined differences in BDI and ideal body size between women from ethnic minority groups compared to White women [17,18,22]. In contrast, this study focused on the association of perceived weight status and BDI to weight concern within Hispanic and African women separately and the extent to which ethnicity moderated those associations. The findings indicated that while there were no ethnic differences in the association of perceived weight status to weight concerns, BID was positively associated with weight concern only among African American women. Differences in the factors that contribute to weight concerns among women from specific ethnic groups may have implications regarding ways to identify and appropriately address risk factors associated with unhealthy weight status. Importantly, risk factors should be addressed in a way that supports individuals' health while still honoring cultural norms, which may vary across diverse ethnic minority groups. Finally, given the variability among the participants, understanding the relationship between BID and weight concern among Hispanic and African American women separately is important to appropriately tailor interventions that do not reinforce nor provide the impetus for unhealthy eating or other adverse effects associated with BID and weight concern (e.g., self-esteem and anxiety).

Author Contributions: N.O., M.M.-E., R.Z., R.S., W.F. and C.A. drafted the original manuscript. R.Z. and W.F. conducted the formal analysis and interpreted the data. N.O. supervised all statistical analysis. N.O. led the recruitment and data collection protocols. N.O., M.M.-E., R.Z., R.S., W.F. and C.A. reviewed the manuscript and contributed to the final manuscript's development and formatting. N.O. developed all study protocols. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the United Healthcare Foundation (grant #112159). Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the funding agency.

Institutional Review Board Statement: This study was conducted according to the guidelines of the Declaration of Helsinki and was approved by the Institutional Review Board (IRB) of the University of Houston (protocol #00000671; approval date 12 July 2017) for studies involving humans. The IRB reviewed study protocols annually. In addition, this study followed the American Psychological Association's ethical guidelines for conducting research with human subjects (e.g., seek participant voluntary participation, obtain informed consent, and maintain participant confidentiality). That is, study participants, as indicated in the Procedure section of this manuscript, were told their participation in this study was voluntary and were offered the choice to participate in this study. Study participants were also informed about the procedures and any potential risks. Participants were told that individual responses would not be shared with anyone who was not involved in the study.

Informed Consent Statement: Participants read and signed a written informed consent prior to their participation in any study protocols.

Data Availability Statement: The data presented in this study are available upon request from the corresponding author after five years upon completion of the grant. The data are not publicly available due to concerns regarding privacy.

Acknowledgments: The authors acknowledge the participants who made this study possible. In addition, the authors recognize the significant contribution of the undergraduate and graduate research assistants, interns, and volunteers who assisted with data collection and data management. Finally, we would like to acknowledge Gail Hudson-Gillan for her valuable editing of this manuscript.

Conflicts of Interest: M.M.-E. is an employee of Creative Research Solutions, LLC. The authors declare no conflict of interest.

References

- Hales, C.M.; Carroll, M.D.; Fryar, C.D.; Ogden, C.L. Prevalence of obesity and severe obesity among adults: United States, 2017–2018. *NCHS Data Brief* **2020**, *360*, 1–8.
- Wang, Y.; Beydoun, M.A.; Min, J.; Xue, H.; Kaminsky, L.A.; Cheskin, L.J. Has the prevalence of overweight, obesity, and central obesity leveled off in the United States? Trends, patterns, disparities, and future projections for the obesity epidemic. *Int. J. Epidemiol.* **2020**, *49*, 810–823. [[CrossRef](#)] [[PubMed](#)]
- Schaefer, L.M.; Burke, N.L.; Anderson, L.M.; Thompson, J.K.; Heinberg, L.J.; Bardone-Cone, A.M.; Higgins Neyland, M.K.; Frederick, D.A.; Anderson, D.A.; Schaumberg, K.; et al. Comparing internalization of appearance ideals and appearance-related pressures among women from the United States, Italy, England, and Australia. *Eat. Weight Disord.* **2019**, *24*, 947–951. [[CrossRef](#)]
- Bibiloni, M.D.M.; Coll, J.L.; Pich, J.; Pons, A.; Tur, J.A. Body image satisfaction and weight concern among a Mediterranean adult population. *BMC Public Health* **2017**, *17*, 39. [[CrossRef](#)] [[PubMed](#)]
- Almenara, C.A.; Machackova, H.; Smahel, D. Sociodemographic, attitudinal, and behavioral correlates of using nutrition, weight loss, and fitness websites: An online survey. *J. Med. Internet Res.* **2019**, *21*, e10189. [[CrossRef](#)]
- Bouzas, C.; Bibiloni, M.D.M.; Tur, J.A. Relationship between body image and body weight control in overweight \geq 55-year-old adults: A systematic review. *Int. J. Environ. Res. Public Health* **2019**, *16*, 1622. [[CrossRef](#)]
- Higgins, E.T. Beyond pleasure and pain. *Am. Psychol.* **1997**, *52*, 1280–1300. [[CrossRef](#)] [[PubMed](#)]
- Olson, K.L.; Lillis, J.; Panza, E.; Wing, R.R.; Quinn, D.M.; Puhl, R.R. Body shape concerns across racial and ethnic groups among adults in the United States: More similarities than differences. *Body Image* **2020**, *35*, 108–113. [[CrossRef](#)]
- Chen, J.Y.; Berner, L.A.; Brown, T.A.; Wierenga, C.E.; Kaye, W.H. Associations of elevated weight status with symptom severity and treatment outcomes in binge/purge eating disorders. *Int. J. Eat. Disord.* **2021**, *54*, 621–626. [[CrossRef](#)]
- Nightingale, B.A.; Cassin, S.E. Disordered eating among individuals with excess weight: A review of recent research. *Curr. Obes. Rep.* **2019**, *8*, 112–127. [[CrossRef](#)]
- Ahmed, M.S.; Anee, K.F.; Abid, M.T.; Hridoy, M.O.; Hasan, A.R.; Marufa, M.T.; Hassan, T.; Munmun, S. Prevalence of obesity and dietary habits of university students: A cross-sectional study. *Asian J. Med. Biol. Res.* **2019**, *5*, 180–185. [[CrossRef](#)]
- Vannucci, A.; Ohannessian, C.M. Body image dissatisfaction and anxiety trajectories during adolescence. *J. Clin. Child Adolesc. Psychol.* **2017**, *47*, 785–795. [[CrossRef](#)] [[PubMed](#)]
- Flores-Comejo, F.; Kamego-Tome, M.; Zapata-Pachas, M.A.; Alvarado, G.F. Association between body image dissatisfaction and depressive symptoms in adolescents. *Braz. J. Psychiatry* **2017**, *39*, 316–322. [[CrossRef](#)] [[PubMed](#)]
- Awad, G.H.; Kashubeck-West, S.; Bledman, R.A.; Coker, A.D.; Stinson, R.D.; Mintz, L.B. The role of enculturation, racial identity, and body mass index in the prediction of body dissatisfaction in African American women. *J. Black Psychol.* **2020**, *46*, 3–28. [[CrossRef](#)]
- Watson, L.B.; Lewis, J.A.; Moody, A.T. A sociocultural examination of body image among black women. *Body Image* **2019**, *31*, 280–287. [[CrossRef](#)] [[PubMed](#)]
- Markova, I.; Azocar, C. The influence of social media and fashion magazines on body image of culturally and racially diverse young women. In *International Textile and Apparel Association Annual Conference Proceedings*; Iowa State University Digital Press: Ames, IA, USA, 2018; Volume 75, Available online: https://lib.dr.iastate.edu/itaa_proceedings/2018/posters/.15 (accessed on 2 June 2022).
- Grabe, S.; Hyde, J.S. Ethnicity and body dissatisfaction among women in the United States: A meta-analysis. *Psychol. Bull.* **2006**, *132*, 622–640. [[CrossRef](#)]
- Brandsma, L.; Smith, G.; Barney, J.; Wolinsky, A.; Juarascio, A.S. Do I really look like that? Racial differences in the discrepancy between self and objective observer ratings of body size. *J. Cult. Divers.* **2019**, *26*, 49–53.
- Baruth, M.; Sharpe, P.A.; Magwood, G.; Wilcox, S.; Schlaff, R.A. Body size perceptions among overweight and obese African American women. *Ethn. Dis.* **2015**, *25*, 391–398. [[CrossRef](#)]
- Choi, J.; Bender, M.S.; Arai, S.; Fukuoka, Y. Factors associated with underestimation of weight status among Caucasian, Latino, Filipino, and Korean Americans—DiLH Survey. *Ethn. Dis.* **2015**, *25*, 200–207.
- Hughes, E. “I’m supposed to be thick”: Managing body image anxieties among Black American women. *J. Black Stud.* **2021**, *52*, 310–330. [[CrossRef](#)]
- Lewis, K.H.; Gudzone, K.A.; Fischer, H.; Yamamoto, A.; Young, D.R. Racial and ethnic minority patients report different weight-related care experiences than non-Hispanic Whites. *Prev. Med. Rep.* **2016**, *4*, 296–302. [[CrossRef](#)] [[PubMed](#)]
- Fitzgibbon, M.L.; Blackman, L.R.; Avellone, M.E. The relationship between body image discrepancy and body mass index across ethnic groups. *Obes. Res.* **2000**, *8*, 582–589. [[CrossRef](#)] [[PubMed](#)]
- Mama, S.K.; Quill, B.E.; Fernandez-Esquer, M.E.; Reese-Smith, J.Y.; Banda, J.A.; Lee, R.E. Body image and physical activity among Latina and African American women. *Ethn. Dis.* **2011**, *21*, 281–287. [[PubMed](#)]
- Stunkard, A.J.; Sørensen, T.; Schulzinger, F. Use of the Danish Adoption Register for the study of obesity and thinness. *J. Nerv. Ment. Dis.* **1983**, *60*, 115–120.
- Thompson, J.K.; Altabe, M.N. Psychometric qualities of the figure rating scale. *Int. J. Eat. Disord.* **1991**, *10*, 615–619. [[CrossRef](#)]

27. Scagliusi, F.B.; Alvarenga, M.; Polacow, V.O.; Cordás, T.A.; de Oliveira Queiroz, G.K.; Coelho, D.; Philippi, S.T.; Lancha, A.H., Jr. Concurrent and discriminant validity of the Stunkard's figure rating scale adapted into Portuguese. *Appetite* **2006**, *47*, 77–82. [[CrossRef](#)]
28. Centers for Disease Control and Prevention. Obesity Basics. Defining Adult Overweight & Obesity. Available online: <https://www.cdc.gov/obesity/basics/adult-defining.html> (accessed on 9 June 2022).
29. Okop, K.J.; Mukumbang, F.C.; Mathole, T.; Levitt, N.; Puoane, T. Perceptions of body size, obesity threat and the willingness to lose weight among Black South African adults: A qualitative study. *BMC Public Health* **2016**, *16*, 365. [[CrossRef](#)]
30. Sánchez-Johnsen, L.A.P.; Fitzgibbon, M.L.; Martinovich, Z.; Stolley, M.R.; Dyer, A.R.; Van Horn, L. Ethnic differences in correlates of obesity between Latin-American and Black women. *Obes. Res.* **2004**, *12*, 652–660. [[CrossRef](#)]
31. Greaney, M.L.; Cohen, S.A.; Xu, F.; Ward-Ritacco, C.L.; Riebe, D. Healthcare provider counselling for weight management behaviours among adults with overweight or obesity: A cross-sectional analysis of National Health and Nutrition Examination Survey, 2011–2018. *BMJ Open* **2020**, *10*, e039295. [[CrossRef](#)]
32. Gowers, S.G.; Shore, A. Development of weight and shape concerns in the aetiology of eating disorders. *Br. J. Psychiatry* **2001**, *179*, 236–242. [[CrossRef](#)]
33. Menon, C.V.; Harter, S.L. Examining the impact of acculturative stress on body image disturbance among Hispanic college students. *Cult. Divers. Ethn. Minor. Psychol.* **2012**, *18*, 239–246. [[CrossRef](#)] [[PubMed](#)]
34. Kops, N.L.; Bessel, M.; Knauth, D.R.; Caleffi, M.; Wendland, E.M. Body image (dis)satisfaction among low-income adult women. *Clin. Nutr.* **2019**, *38*, 1317–1323. [[CrossRef](#)] [[PubMed](#)]
35. Thoma, M.E.; Hediger, M.L.; Sunadram, R.; Stanford, J.B.; Peterson, C.M.; Croughan, M.S.; Chen, Z.; Buck Louis, G.M.; ENDO Study Working Group. Comparing apples and pears: Women's perceptions of their body size and shape. *J. Women's Health* **2012**, *21*, 1074–1081. [[CrossRef](#)] [[PubMed](#)]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.