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Weight-Gain Misperceptions and the Third-Person Effect in Black and White College-bound Females: Potential Implications for Healthy Weight Management

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Abstract

Elements of social norm theory and communication theory on the third-person effect may prove useful in efforts to prevent excessive weight gain among emerging adults entering college. The present study explored the associations of race/ethnicity and BMI status with these socio-cognitive factors that may affect first-year weight regulation in a sample of Black (N = 247) and White (N = 94) college-bound females. Participants completed an online survey assessing first-year weight-gain perceived norms along with weight-change expectations and concerns. Results provided evidence of the persistence of the myth of the “Freshman 15”, belief in the typicality of gaining weight during the first year of college, and significant concern about first-year weight gain. Initial findings further revealed a robust third-person effect whereby despite nearly 90% of the sample endorsing that first-year weight gain was common, only 12% expected they would experience weight gain. Main effects of race/ethnicity, BMI status, and their interaction further uncovered distinct patterns of findings. Preliminary results highlight the need for college health officials at both predominantly White as well as minority-serving institutions to adequately address the significant concern over first-year weight gain in conjunction with the desire to lose weight expressed by an appreciable number of incoming college females. Findings also advocate the utility of evaluating social norm theory and the third-person perceptual bias in the context of first-year weight gain to potentially enhance the design and effectiveness of healthy weight management initiatives among ethnically-diverse young women entering college.

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Contributors

Jennifer Webb designed the study, conducted the statistical analyses, interpreted the data, and served as the lead author in preparing the manuscript draft. Phoebe Butler-Ajibade and Seronda Robinson oversaw participant recruitment and data collection at their respective institutions and provided editorial feedback on earlier versions of this paper. Shanique Lee conducted relevant literature searches and contributed to the preparation of the results table as well as to the presentation of portions of these findings at recent scientific meetings. All authors contributed to the interpretation of findings and have approved the final submitted version of the manuscript.

Conflict of Interest

The authors declare no conflict of interest.

Keywords

prospective college females; race/ethnicity; BMI status; the “Freshman 15”; first-year weight-related concerns and expectations; social norm theory; third-person effect

1. Introduction

National public health statistics indicate that the prevalence of overweight (BMI = 25-29.9 kg/m²) and obesity (BMI ≥ 30 kg/m²) has risen dramatically among young college-aged adults (Nelson et al., 2008). Consequently, elucidating the magnitude and determinants of weight gain during the first year of college has received increased attention in the contemporary scientific literature (Vella-Zarb & Elgar, 2009). Findings from a recent meta-analysis estimate the average amount of weight gained during the first-year of college to be roughly 3-4 pounds (Vella-Zarb & Elgar, 2009). Nevertheless, the pervasiveness of the “Freshman 15” as the perceived first-year weight-gain norm persists among entering college students (Graham & Jones, 2002; Delinsky & Wilson, 2008).

In accordance with social norm theory (Hagman et al., 2007), in the absence of corrective feedback, this misperception could result in increased concern about gaining weight in the first year of college, associated body image concerns, and engagement in unhealthy weight control behaviors which ironically could promote excessive weight gain in this population. Indeed, heightened concern about weight gain at the outset of college predicts greater perceived weight gain (Graham & Jones, 2002) in conjunction with greater eating and body image disturbance (Delinsky & Wilson, 2008; Graham & Jones, 2002) in prospective cohort analyses of predominantly White first-year undergraduate student samples. Notably, first-year females may be especially vulnerable to worrying about gaining weight while acclimating to early college life (LaRose et al., 2011).

Scholars in this nascent line of research have yet to also examine in light of this prevailing social norm surrounding first-year weight gain whether incoming college students actually expect to gain weight in this transitional year. Alternatively, communication theory on the third-person effect (Davison, 1983) would predict that although students entering college believe that first-year weight gain is common and may approximate 15 pounds, they consider themselves less vulnerable to this outcome. In other words, “I know the “Freshman 15” exists but it will not happen to me.” Evidence of the third-person effect has emerged in related investigations examining perceptions of the negative influence of media exposure on body image (David & Johnson, 1998) and in the context of the likelihood of engaging in fat talk (Salk & Engeln-Maddox, 2011; Tompkins et al., 2009) relative to female college peers. Remarkably, researchers found that this perceptual bias was associated with reduced intentions to engage in preventive health behaviors (Wei et al., 2008). Therefore, it is plausible that exaggerated perceptions of first-year weight gain coupled with the third-person effect could adversely affect motivation to pursue healthy weight management behaviors and corresponding body composition changes occurring at this developmental juncture.

Accordingly, the present preliminary investigation sought to extend the current literature by examining the perceptions, concerns, and expectations about first-year weight change in a weight diverse sample of Black and White female incoming college students. A secondary aim was to explore whether BMI status in addition to race/ethnicity further moderated these effects. The inclusion of an oversampling of ethnic minority prospective college females represents a unique contribution to this body of research as it is uncertain whether these beliefs and concerns about typical first-year weight gain are also evident in this population.

Arguably, this would be advantageous to clarify given that higher rates of overweight and obesity are prevalent among these ethnic minority women attending college (Nelson et al., 2007). Ostensibly, such information would be beneficial in tailoring college health promotion efforts among ethnically-diverse first-year female students.

2. Methods

2.1 Participants

Three hundred forty-one female high school graduates between the ages of 17-19 years old ($M = 17.8$, $SD = 0.44$) planning to attend either a state-funded predominantly White institution (PWI; $N = 38$ Black/African American and 94 White/European American) or one of two Historically Black Colleges or Universities (HBCUs; $N = 209$ Black/African American) located in the southeastern U.S. participated in this study. The mean BMI for the full sample was 24.7 kg/m^2 ($SD = 5.9$). The average BMI for the Black female participants (25.4 kg/m^2 , $SD = 6.4$) was significantly higher than the mean BMI reported by the White female participants (22.7 kg/m^2 , $SD = 3.8$), $F(1, 335) = 13.7$, $p < .001$.

2.2 Materials and Procedure

Following reception of passive consent, participants completed a brief IRB-approved online survey administered through SurveyShare in the summer of 2011 prior to entering college. The following variables from the survey are reported here for purposes of the present analyses: basic demographics (including age and self-reported height and weight which were used to calculate BMI) and responses to a series of questions related to first-year weight-change expectations, concerns about gaining weight or losing weight in the first year of college, and perceived norms surrounding typical first-year weight gain (see Table 1). Chi-square analyses and ANOVA models were computed to examine the presence of an association between race and/or BMI status with categorical and continuous dependent variables respectively.

3. Results

3.1 Perceived First-Year Weight-Gain Norms

Roughly 88.4% of the entire sample believed gaining weight during the first year of college was typical. Yet, significantly fewer incoming Black female students believed that first-year weight gain was common in comparison to their White female counterparts (see Table 1). Notably, neither BMI status alone or in combination with race was associated with beliefs about the commonality of first-year college weight gain.

Approximately 61% of incoming female students who believed that first-year weight gain was a common occurrence reported that 15 pounds was the perceived first-year weight-gain norm (range = 4-60 pounds). Incoming Black females on average believed a slightly larger amount of weight was normally gained during the first year of college than the incoming White female students (see Table 1). Neither a main effect of BMI status nor an interaction effect of Race x BMI status was detected.

3.2 First-Year Weight-Change Concerns

Across the entire sample the young women were generally more concerned with first-year weight gain versus weight loss, $F(1, 329) = 32.2$, $p < .001$. Nearly half of the sample (42%) expressed at least moderate levels of first-year weight-gain concern, while roughly 30% reported at least moderate concern about losing weight during the first year of college. Incoming White female students expressed greater concern about first-year weight gain than their Black female peers (see Table 1). Overweight/obese (OW/OB) females expressed

greater concern about both losing and gaining weight during the first year of college than the underweight/normal weight (UW/NW) females (see Table 1). Considering the intersection of race and BMI status, OW/OB Black and OW/OB White incoming females expressed greater concerns about weight loss than the UW/NW Black and UW/NW White female participants. Of note, the UW/NW Black females expressed significantly less concern about first-year weight gain than the other three participant groups.

3.3 First-Year Weight-Change Expectations

In the full sample, 29% of prospective college females expected to lose weight, 12.3% expected to gain weight, and 43.4% expected to maintain their current weight during the first year; 15.2% had no specific first-year weight change expectations. There were no significant racial differences in the distributions of first-year weight-change expectations. More OW/OB than UW/NW incoming female students expected to lose weight in the first year of college. They were also less likely to expect to gain or maintain their present weight relative to the UW/NW females (see Table 1). The interaction of race and BMI status revealed unique patterns of associations with first-year weight-change expectations as noted in Table 1.

4. Discussion

Numerous studies have accrued in the last decade identifying the first year of college as a heightened risk period for weight gain (Vella-Zarb & Elgar, 2009). Accordingly, public health scholars have recognized the importance of developing and evaluating the effectiveness of excessive weight gain prevention programs in this population (LaRose et al., 2010). In this context, the present study extended the extant literature by demonstrating the robustness of perceptions of the “Freshman 15” first-year weight-gain norm along with noting the presence of appreciable levels of both concern about gaining weight and expectations to lose weight reported by *both* ethnic majority and minority young women preparing to attend college. We further found evidence of a salient third-person effect with respect to the discrepancy between beliefs in the commonality of first-year weight gain and personal expectations for weight change during this transitional year with the majority of the sample believing first-year weight gain to be typical, while personally expecting to maintain their current weight or to lose weight. Results also suggest that the magnitude of the third-person effect may be relatively smaller for Black young women who are within or below (versus above) the normal body weight range.

In contrast to assumptions of the “cultural tolerance of fatness” (Wolfe, 2000) among members of the Black community, our findings suggest that young ethnic minority women entering college at an elevated body weight are concerned over gaining weight and the majority desire to lose weight during this transitional year. It is possible that greater exposure to positive media images and messages promoting healthy approaches to weight management by prominent Black females who still embody the preferred curvaceous yet thin ideal (Overstreet et al., 2010; e.g., actress/singer Jennifer Hudson and the First Lady Michelle Obama) may be contributing to these observed effects. Weight loss expectations may also reflect greater awareness of the widening disparity between the high prevalence of overweight and obesity among Black women which contrasts the predominantly normal weight models (Dawson-Andoh et al., 2011; Thompson-Brenner et al., 2011) depicted in the mass media outlets marketed to this demographic.

In order to clarify the reasons behind possible differences in the size of the third-person effect found here future research would benefit from integrating qualitative methods to discover which socio-cultural factors are influencing greater perceived vulnerability to (or acceptability of) weight gain and greater weight-gain expectations among some of the

underweight/normal weight prospective Black female college students. Again, their expectations for weight gain may be driven by the desire to attain the curvy-thin ideal (Overstreet et al., 2010) that is preferred by Black men (Freedman et al., 2007) and thus may involve the wish to augment the size and/or shape of specific body parts (e.g., breasts, buttocks, thighs) that are consistent with this ideal rather than desiring a more global increase in body size or weight. Conceivably, regardless of weight status, the motivation to likely want to achieve the curvaceous ideal among the incoming Black female college students either by gaining or losing weight during the first-year transition may be especially pronounced for those young women planning to attend an HBCU (with its greater representation of Black young men) though this speculation is well-suited for subsequent investigations to challenge or confirm.

Finally, the extent to which the observed third-person perception bias translates into actual health behaviors that would negatively affect first-year body composition changes and whether race and/or BMI status would further moderate these effects remains unclear. Thus, prospective cohort analyses evaluating the predictive value of the magnitude of the third-person effect and “Freshman 15” concerns on adaptive and maladaptive body image, eating, and physical activity behaviors and concomitant first-year body composition changes among ethnically-diverse first-year samples are warranted. Similarly, it would be beneficial for later stage investigations to determine whether the size of the discrepancy between student's individual perceived first-year weight-gain norm and the empirically-derived average first-year weight gain serves to explain meaningful variance in changes in weight control behaviors and body composition at this developmental juncture.

Collectively, our novel, albeit preliminary findings may prove useful in informing targeted healthy weight regulation-positive body image promotion initiatives among ethnically-diverse young women during this early college adjustment period. More specifically, results invite consideration of designing prevention research guided by social norm theory and the health belief model (Janz & Becker, 1984) that balances correcting faulty first-year weight gain misperceptions to reduce fear and distress about weight gain (Moore & Williams, 2011) while simultaneously prioritizing enhancing motivation to engage in healthy approaches to regulating weight during the first-year transition.

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RESEARCH HIGHLIGHTS

- The “Freshman 15” persists as the perceived first-year weight-gain norm.
- College-bound females are concerned about first-year weight gain and weight loss.
- 88% believed weight gain was typical; yet only 12% expected first-year weight gain.
- Race and BMI status further illuminated specific effects.
- Implications for promoting healthy approaches to weight management are discussed.

Table 1

Race and BMI Status Comparisons on First-Year Weight-Related Perceived Norms, Concerns, and Expectations among Black and White College-bound Females

Item	Black participants only			White participants only			Total sample (N= 341)			Total sample (N = 335)		
	UW/NW (n= 142)	OW/OB (n= 103)	P value	UW/NW (n= 70)	OW/OB (n= 21)	P value	Black (n= 247)	White (n= 94)	P value	UW/NW (n= 212)	OW/OB (n= 123)	P value
Do you believe that weight gain during the first year of college is common? (% Yes)	85.9%	86.4%	NS	94.3%	95.0%	NS	85.8%	94.6%	< .05	88.7%	87.8%	NS
How much weight do you believe is commonly gained in the freshman year of college? (pounds)	14.8 ± 6.7	15.5 ± 4.5	NS	13.9 ± 3.9	13.4 ± 3.1	NS	15.1 ± 5.8	13.8 ± 3.7	< .05	14.5 ± 5.9	15.1 ± 4.3	NS
How concerned are you about losing weight during your first year of college? (5-point scale: 1= not at all to 5= very)	1.8 ± 1.1 ^b	3.5 ± 1.4 ^c	< .001	2.0 ± 1.3 ^c	3.1 ± 1.6 ^b	< .05	2.5 ± 1.5	2.3 ± 1.4	NS	1.9 ± 1.2	3.5 ± 1.4	< .001
How concerned are you about	2.5 ± 1.4 ^c	3.4 ± 1.5	< .001	3.4 ± 1.4 ^c	3.9 ± 1.4 ^c	NS	2.9 ± 1.6	3.5 ± 1.4	< .001	2.8 ± 1.5	3.5 ± 1.5	< .001

Item	Black participants only			White participants only			Total sample (N= 341)			Total sample (N = 335)		
	UW/NW (n= 142)	OW/OB (n= 103)	P value	UW/NW (n= 70)	OW/OB (n= 21)	P value	Black (n= 247)	White (n= 94)	P value	UW/NW (n= 212)	OW/OB (n= 123)	P value
gaining weight during your first year of college? (5-point scale: 1 = not at all to 5 = very)												
First-year weight-change expectations:												
Lose weight:	7.0% ^{ab}	63.1% ^c	<.001	20.0% ^{ac}	38.1% ^b	NS	30.8%	24.5%	NS	11.3%	58.9%	<.001
Gain weight:	19.7%	3.9%	<.05	10.0%	9.5%	NS	13.0%	10.6%	NS	16.5%	4.8%	<.05
Maintain current weight:	50.7%	24.3% ^b	<.05	60.0% ^b	38.1%	NS	39.7%	53.2%	NS	53.8%	26.6%	<.05
No expectations:	22.5%	8.7%	<.05	10.0%	14.3%	NS	16.6%	11.7%	NS	18.4%	9.7%	NS

Note.

NS = non-significant

^abetween group p < .05

^bbetween group p < .01

^cbetween group p <.001