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Body Dissatisfaction from Adolescence to Young Adulthood: Findings from a 10-Year Longitudinal Study

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Abstract

Given mixed findings regarding the unique trajectories of female and male adolescents' body dissatisfaction over time, comprehensive longitudinal examinations are needed. This 10-year longitudinal, population-based study, with 1,902 participants from diverse ethnic/racial and socioeconomic backgrounds in the Minneapolis/St. Paul metropolitan area, examined changes in body dissatisfaction from adolescence to young adulthood. Results revealed that: (a) female and male participants' body dissatisfaction increased between middle and high school, (b) body dissatisfaction increased further during the transition to young adulthood, and (c) this increase was associated with an increase in BMI over time, such that the upward trend in body dissatisfaction became non-significant when BMI was controlled. These results highlight a trend in which diverse female and male youth are increasingly dissatisfied with their bodies as their BMI increases from middle school to young adulthood, and emphasize the need for targeted prevention efforts to intervene in this trajectory and mitigate potential harm.

Body dissatisfaction has emerged as a predictor of a broad range of disordered eating and weight-related outcomes, including frequent dieting (e.g., Ackard, Croll, & Kearney-Cooke, 2002; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006), bulimic symptoms and dietary restraint (e.g., Cooley, & Toray, 2001; Neumark-Sztainer et al., 2006), and weight gain (van den Berg & Neumark-Sztainer, 2007). In addition, body dissatisfaction has been identified as a risk factor in the development of related psychopathology, including symptoms of depression (e.g., Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006), and as a mediator of the relationship between body mass index (BMI) and psychological health outcomes, including self-esteem (e.g., Mond et al., 2011; Wertheim, Koerner, & Paxton, 2001) and depressive mood (Mond et al., 2011). Given its negative health outcomes, it is important to know whether body dissatisfaction tends to dissipate over time, as adolescents transition into young adulthood, or whether body dissatisfaction in fact remains high. Longitudinal examinations are needed to more comprehensively track the course of adolescents' body dissatisfaction over time.

Gender differences in the development of body dissatisfaction are well-established in the literature, with female youth reporting greater dissatisfaction than males, both in cross-

sectional examinations (e.g., Lawler & Nixon, 2011; Meland, Haugland, & Breidablik, 2007) and over the course of adolescence (e.g., Eisenberg, Neumark-Sztainer, & Paxton, 2006; Gardner, Friedman, Stark, & Jackson, 1999; Holsen, Kraft, & Roysamb, 2001; Jones, 2004; Rauste-von Wright, 1989; Rosenblum & Lewis, 1999; von Soest & Wichstrom, 2009). Less is known, however, regarding the unique trajectories of female and male adolescents' body dissatisfaction development across adolescence into young adulthood.

Despite a growing body of work examining changes in body dissatisfaction among adolescents, a clear picture of the unique trajectories of female and male adolescents' body dissatisfaction over time has not yet emerged. Evidence largely has supported the notion that, among girls, body dissatisfaction increases through middle adolescence (Bearman et al., 2006; Holsen, Kraft, & Roysamb, 2001; Gardner et al., 1999; Jones, 2004; Meland, Haugland, & Breidablik, 2007; Eisenberg, Neumark-Sztainer, & Paxton, 2006; Rauste-von Wright, 1989; Rosenblum & Lewis, 1999; Tiggemann, 2005), with notable exceptions citing either no change (von Soest & Wichstrom, 2009) or decreases (Ohring, Graber, & Brooks-Gunn, 2002) over time. However, findings are more mixed regarding patterns of body image development across the transition to young adulthood, with studies yielding varying evidence of further increased dissatisfaction (e.g., Bearman et al., 2006; Gardner et al., 1999; Rosenblum & Lewis, 1999; Tiggemann, 2005), stable levels of dissatisfaction (von Soest & Wichstrom, 2009), or decreased dissatisfaction (e.g., Eisenberg et al., 2006; Holsen et al., 2001; Rauste-von Wright, 1989) from middle adolescence to early young adulthood.

Among boys, disparate patterns of body image development are evident from early adolescence. Whereas results of some studies indicate a pattern of decreased body dissatisfaction over time (Holsen et al., 2001; Rosenblum & Lewis, 1999), others suggest no significant change (Bearman et al., 2006; Gardner et al., 1999; von Soest & Wichstrom, 2009), and still others point to increases in dissatisfaction from early to middle adolescence (Eisenberg et al., 2006; Rauste-von Wright, 1989) and to decreases in dissatisfaction later, during the transition to early young adulthood (Rauste-von Wright, 1989).

An important factor to consider in any examination of body image is BMI, as one's weight status provides a dynamic physical marker which an individual may use to form and develop self-appraisals over time. Whereas evidence seems to point to BMI as a consistent predictor of girls' body dissatisfaction (Barker & Galambos, 2003; Jones, 2004; Lawler & Nixon, 2011; Presnell et al., 2004; Rosenblum & Lewis, 1999; Tiggemann, 2005), results of several studies suggest that BMI also predicts boys' body dissatisfaction (Field et al., 2001; Lawler & Nixon, 2011). However, in one longitudinal study of adolescent boys and girls, the BMI-body dissatisfaction relationship did not bear out among either group (Bearman et al., 2006).

One prior examination of changes in adolescents' body dissatisfaction was conducted over a 5-year period, utilizing the same data set as that being used in the current study, and was comprised of two cohorts of students in middle school and high school, respectively, at baseline. Results of that study revealed that body dissatisfaction tended to increase among participants, although some differences were noted across age transitions and gender (Eisenberg, Neumark-Sztainer, & Paxton, 2006). This increase in dissatisfaction was most pronounced among younger males during the transition from early to middle adolescence, a period during which the ideal male body type shifts toward increased muscularity. Conversely, in the same study, body dissatisfaction among older adolescent females actually decreased slightly through adolescence (Eisenberg et al., 2006)—a finding which also may reflect a shift in the body type idealized at this transitional period, as prior research suggests (Cooley & Toray, 2001). It was concluded that the variation in body dissatisfaction observed at developmental transition periods within the sample illuminates opportunities for targeted prevention efforts that may be relevant at different stages of adolescence. The authors noted,

however, that the inclusion of an additional point of assessment would provide a more nuanced exploration into the process of body dissatisfaction change. Thus, the current study builds upon this previous work to examine trajectories of adolescents' body dissatisfaction into young adulthood—10 years later.

Most longitudinal studies examining trends in body dissatisfaction have relied for the most part on predominantly White samples (Bearman et al., 2006; Gardner et al., 1999; Jones, 2004; Ohring et al., 2002; Rosenblum & Lewis, 1999; Tiggemann, 2005; von Soest & Wichstrom, 2009), and many either have not included the key transitional period that occurs as adolescents reach age 18 (e.g., Bearman et al., 2006; Holsen et al., 2001; Hones, 2004; Rauste-von Wright, 1989; Rosenblum & Lewis, 1999; Tiggemann, 2005) or have not included transitional periods at all (e.g., Gardner et al., 1999; Ohring et al., 2002). A clear understanding of the trajectories of body dissatisfaction among diverse female and male youth will inform prevention efforts aimed at intervening in these trajectories and mitigating harmful outcomes and be suitable for more diverse populations than have been previously studied. Additionally, given the lack of clear evidence regarding the course of body dissatisfaction into and through young adulthood, further examination of key transitional periods across adolescence and emerging adulthood are needed to better inform intervention efforts. The present study, therefore, uses longitudinal data to examine changes in body dissatisfaction among diverse male and female adolescents at baseline and 10-year follow-up, spanning transitional periods between adolescence and young adulthood.

It is hypothesized that: (a) consistent with prior findings, body dissatisfaction will be higher overall among females than among males; (b) although evidence is some what mixed, body dissatisfaction will increase from adolescence to early young adulthood for females and males, leveling off as participants transition to adulthood, as suggested by the majority of prior findings; and (c) body dissatisfaction will be associated with BMI for females and males, such that increases in BMI over time will be associated with increases in body dissatisfaction. The present study addresses the need for clear evidence regarding the course of body dissatisfaction across key transitional periods into and through young adulthood.

Method

Participants and Procedure

Data for this analysis were drawn from Project EAT-III, the third wave of a 10-year longitudinal study designed to examine dietary intake, physical activity, weight control behaviors, weight status, and factors associated with these outcomes among young people. The analytic sample includes 1,902 young adults who responded at all three time points. In Project EAT-I, middle school and high school students at 31 public schools in the Minneapolis/St. Paul metropolitan area of Minnesota completed surveys and anthropometric measures during the 1998–1999 academic year (Neumark-Sztainer, Story, Hannan, & Moe, 2002; Neumark-Sztainer, Story, Hannan, & Croll, 2002). Five years later (2003–2004), for Project EAT-II, original participants were mailed follow-up surveys to examine changes in their eating patterns, weight control behaviors, and weight status as they progressed through adolescence (Neumark-Sztainer et al., 2006; Neumark-Sztainer, Wall, Eisenberg, Story, & Hannan, 2004). Project EAT-III was designed to follow up on participants again in 2008–2009 as they progressed from adolescence into young adulthood. The University of Minnesota's Institutional Review Board Human Subjects Committee approved all protocols used in Project EAT at each of the three time points.

Of the original 4,746 participants, 1,304 (27.5%) were lost to follow-up for various reasons, primarily missing contact information at EAT-I ($n=411$) and no address found at follow-up ($n=712$). For Project EAT-III, letters providing the web address and a unique password for

completing the online version of the Project EAT-III survey and a food frequency questionnaire (FFQ) were mailed to the remaining 3,442 participants (Larson et al., 2011).

A total of 2,287 young adults completed Project EAT-III surveys that were determined valid and adequately complete for inclusion in analyses (via internal checking for unbelievable response patterns; consistency of responses for age, gender, and height; correction of ages that fell outside the expected range based on cohort assignment; and exclusion of surveys with fewer than 25% of presented items completed), representing 66.4% of participants who could be contacted (48.2% of the original school-based sample). There were 819 males (43.0%) and 1,083 females (57.0%), for a total of 1,902 young adults who completed surveys for EAT-I (Time 1), EAT-II (Time 2), and EAT-III (Time 3).

The baseline characteristics of the full EAT-I study population ($N=4746$) are presented in the first column of Table 1. Approximately one-third of participants (29.9%) were in the younger cohort; at baseline they were in early adolescence ($M_{\text{age}} = 12.8$ years, $SD = 0.7$), and at the 10-year follow-up they were in early young adulthood ($M_{\text{age}} = 23.2$ years, $SD = 1.0$). Approximately two-thirds of participants (70.1%) were in the older cohort; at baseline they were in middle adolescence ($M_{\text{age}} = 15.9$ years, $SD = 0.8$), and at follow-up they were in middle young adulthood ($M_{\text{age}} = 26.2$ years, $SD = 0.9$). The sample was ethnically and socioeconomically diverse, and was representative of the population from which it was drawn (U.S. Census Bureau, 2000). The ethnic/racial background of the participants was as follows: 48.5% were White, 19.0% were African American, 5.8% were Hispanic, 19.2% were Asian, and 7.5% were of mixed or other race. More than a third of the sample was of low (17.4%) or low-middle (18.8%) socioeconomic status (based primarily on parental education); the remainder of the sample was comprised of those of middle (26.6%), upper-middle (23.4%), and high (13.8%) socioeconomic status.

Measures

To allow for longitudinal comparisons, key items from earlier study waves (e.g., body dissatisfaction) were retained on the Project EAT-III survey. Decisions to retain or drop items were based on their relevance to the current study aims, their use in earlier analyses, and the performance of represented constructs in the literature. Additional details of the survey development process are described elsewhere (Larson, Neumark-Sztainer, Story, van den Berg, & Hannan, 2011).

Body dissatisfaction—Body dissatisfaction was assessed at all three time points using the Body Shape Satisfaction Scale (Pingitore, Spring, & Garfield, 1997). Participants indicated their degree of satisfaction with 10 body parts or attributes (i.e., height, weight, body shape, waist, hips, thighs, stomach, face, body build, shoulders) via a 5-point response scale ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*). Scores ranged from 10 to 50, and were reverse-coded, such that high scores indicated greater dissatisfaction. Principal components analysis was conducted, separately at EAT-I and EAT-III; a single factor was found to be a good fit for both male and female participants at each time (variance explained ranged from 59% to 62%). The scale has demonstrated discriminant, convergent, and predictive validity in all age groups in prior studies conducted by our group (e.g., Neumark-Sztainer et al., 2006; Paxton et al., 2006). Across the three time points (i.e., for all age groups in the study), this scale had a Cronbach's alpha of .93 for males and .92 for females. In a racially diverse subsample of 252 students in 7th and 10th grade, body satisfaction items also had acceptable 2-week test-retest reliability (Pearson correlations ranging from .68 to .77).

Body mass index (BMI)—Self-reported height and weight were used to determine BMI (i.e., weight in kilograms divided by squared height in meters). Self-report of height and weight has been shown to be highly correlated with objectively measured values in adults (e.g., Kuczmarski, Kuczmarski, & Najjar, 2001; Tehard, van Liere, Com Nougue, & Clavel-Chapelon, 2002). In a validation study among a sub-sample of 123 Project EAT-III participants, the correlations between BMIs calculated from measured and self-reported height and weight values were very high (females: $r=.98$; males: $r=.95$).

Sociodemographic characteristics—Age, ethnicity/race (assessed via a 7-category self-report item), and socioeconomic status (SES; based primarily on defined categories of parental education); Neumark-Sztainer, Story, Hannan, & Croll, 2002) were based on self-report at Time 1.

Statistical Analysis

Analysis was restricted to those with data at all three survey occasions. Because the socio-demographic profile of participants who completed assessments at all three time points differed from that of the total sample at Time 1, sampling weights were applied to approximate the diversity of the original sample using the response propensity method (Little, 1986). Predicted probabilities of response are determined by the use of full logistic models within each gender; weights are then inverse to the probability of response, scaled to add to the numbers in the analytic sample by gender, race, SES and younger/older cohort. For example, because White females in the upper SES group were more likely to respond than Black females in the lower SES group, follow-up data from a White female in upper SES group is down-weighted compared to follow-up data from a Black female in lower SES group which is up-weighted. The characteristics of the analytic sample ($n=1827$), both unweighted and weighted ($n=1815$) are presented in Table 1. The weighting approximately removes the response bias evident (particularly for race) in the unweighted respondent data.

First, the sample is described by giving the gender-specific and weighted race and SES distributions at the baseline survey, and the weighted mean (and range) of ages. Unweighted distributions are also given to show how the weighting approximately removes non-response bias. Consistent with Eisenberg's report on the first two surveys (Eisenberg, Neumark-Sztainer, Paxton, 2006), the analyses give separate estimates for those originally in middle school (younger cohort) and those originally in high school (older cohort). Second, the general linear model for repeated occasions was used to generate weighted and gender-specific predicted mean levels of body dissatisfaction within cohort at each survey, adjusted for current age, race and SES. Slopes (change in body dissatisfaction between surveys) within age cohort and differences between slopes are estimated (with associated p -values) by linear contrasts. Moderation of the trend in body dissatisfaction over the three surveys by race and age cohort was examined separately for females and males (adjusting for SES), and correspondingly, moderation by SES and agecohort within gender, adjusting for race. For presentation purposes, gender-specific graphs are provided of the predicted mean body dissatisfaction adjusted for race and SES at the three stages of development appropriate for each agecohort. Correlations of body dissatisfaction within respondent between surveys were modeled without any imposed structure. All analyses were conducted using the Statistical Analysis System (SAS Institute Inc., Cary, NC, USA, V9.2 2008).

Results

Slope estimates of change in body dissatisfaction within gender group and age cohort are presented in Figures 1 and 2. Among female participants, a significant upward linear trend across the three time points was evident in both the younger, $b(SE) = 3.79(0.62)$, $p < .001$,

and older, $b(SE) = 2.20(0.39)$, $p < .001$, cohorts. Linear trends for the two age cohorts of females differed significantly ($p = .031$), with the younger cohort exhibiting a relatively steady increase in body dissatisfaction over time, and the older cohort exhibiting the most striking increase in body dissatisfaction between early young adulthood and young adulthood. Similarly, among male participants, a significant upward linear trend emerged in both the younger, $b(SE) = 1.89(0.68)$, $p = .006$, and older, $b(SE) = 2.08(0.43)$, $p < .001$, cohorts. However, linear trends between the two male cohorts did not differ significantly ($p = .810$), which suggests no meaningful difference between the trajectories of body dissatisfaction in these two age groups.

BMI and body dissatisfaction scores increased across all three time points for male and female participants in both younger and older cohorts (see Table 2). Given the observed increases in BMI over time, for male and female members of both cohorts, a separate set of slope estimates of change in body dissatisfaction was calculated, adjusting for BMI. With this adjustment, no significant linear trend in body dissatisfaction emerged among females in either the younger, $b(SE) = 0.98(0.63)$, $p = .119$, or older, $b(SE) = 0.01(0.39)$, $p = .988$, cohorts. Similarly, among male participants, when adjusted for BMI, there was no significant linear trend of body dissatisfaction in either the younger, $b(SE) = -0.83(0.71)$, $p = .247$, or older, $b(SE) = -0.50(0.45)$, $p = .266$, cohorts. This suggests that the observed increases in BMI and body dissatisfaction over time were associated with each other.

Moderation of trends in body dissatisfaction within gender by race and cohort adjusting for SES showed a significant moderation by race in females. Examination showed that Asian and Black females increased body dissatisfaction by about 4–5 units over the 10 years for the older and the younger cohorts respectively, whereas White females and females who self-identified their race as “other” increased by about 1–2 units correspondingly ($p < 0.0001$ for difference in slopes between the two collapsed racial groups). Stated differently, as compared to White and other-race females, Asian and Black females exhibited a significantly steeper increase in body dissatisfaction over time. Adjusting for BMI reduced but did not eliminate this moderation effect in females. For males, no moderation of trend in body dissatisfaction by race was observed.

Discussion

Results of the current study indicate that diverse male and female participants became progressively more dissatisfied with their bodies over a 10-year period. Specifically, body dissatisfaction increased between middle school and high school, and increased further during the transition to young adulthood. Importantly, this trend was associated with similar increases in BMI over time such that, when the trajectories of body dissatisfaction were recalculated, adjusting for BMI, no significant linear trends were evident. Thus, body dissatisfaction is closely associated with BMI, and remains so over time, such that as BMI increases across the transition to young adulthood, youth become increasingly dissatisfied with their bodies. Overall, it appears that body dissatisfaction continues to increase as children age and develop, with both female and male youth reporting the greatest dissatisfaction as they reach young adulthood. Even when BMI is controlled, both female and male emerging young adults are reporting sustained levels of body dissatisfaction, without the eventual leveling off of dissatisfaction that is commonly believed to occur.

The observed increases in both BMI and body dissatisfaction over time are of practical significance and underscore the connection between these two variables. In all four subsamples of the present study, participants' average increases in BMI represented a shift from normal to overweight categories. Accordingly, participants in each subsample became progressively dissatisfied with their bodies between Time 1 and Time 3, as reflected in body

dissatisfaction score increases of 5.0% (older female cohort, younger male cohort), 7.5% (older male cohort), and 10.0% (younger female cohort) over 10 years. Thus, whereas the changes in raw scores over time may not appear large—on average, participants across all subsamples not only moved into a higher weight status group, but reported related and substantial increases in body dissatisfaction.

Within the female subsample, different patterns of body dissatisfaction emerged between the younger and older cohorts, most notably at the transition from high school to early young adulthood. Specifically, the younger cohort reported increased body dissatisfaction during this period, whereas the older cohort remained relatively stable. One possible explanation for this difference is the higher rate of increase in BMI among the younger cohort relative to the older cohort. The older cohort reported a modest increase in BMI between high school and early young adulthood; the average BMI of the younger cohort, however, increased by twice the amount of the older cohort, and shifted the average weight status of the younger cohort from normal weight to overweight. Again, however, levels of reported body dissatisfaction remained high even after adjusting for BMI increases.

Although both female and male adolescents exhibited patterns of increased body dissatisfaction over time, different trends were evident between these two subsamples. First, the average levels of body dissatisfaction reported by male participants were notably lower than those reported by female participants, such that even the highest levels of males' dissatisfaction were, on average, lower than the lowest levels of females' dissatisfaction. Second, whereas the younger female cohort reported increased dissatisfaction between high school and early young adulthood (compared to no increase in the older female cohort), the opposite was true among male participants: the younger male cohort displayed no change in dissatisfaction between high school and early young adulthood (compared to a relative increase reported among the older male cohort). This difference may be a product of the secular trend toward increased BMI between Time 1 and Time 3. Specifically, in both the female and male subsamples, the younger cohort members had greater BMI scores in high school and early young adulthood than did members of the older cohort. That this did not translate to corresponding cohort differences in body dissatisfaction is perhaps unsurprising; whereas an increase in BMI during the period between high school and early young adulthood may be a welcome change to male youth who recognize that a bulkier, more muscular body size is prized among adult men, female youth may feel distressed by the increase in BMI, which likely moves them away from the thin ideal of female beauty and, thus, toward a heightened state of body dissatisfaction. Finally, whereas there was no evidence of moderation by race among the male subsample, such moderation was present among females. Asian and Black females' body dissatisfaction increased at a greater rate than that of white and other race females—an effect that was reduced but not eliminated when BMI was adjusted. It may be that, over time, cultural messages regarding weight and shape become more salient for members of some groups and/or more difficult to achieve. Another possibility is that, as young women move across key transitional periods in their development, racial/ethnic differences in availability of and access to opportunities for non-body-related self-appraisals and self-efficacy building become more pronounced.

These 10-year longitudinal findings, for the most part, are consistent with those found at 5-year follow-up in which body dissatisfaction increased through adolescence among both male and female participants (Eisenberg et al., 2006). Contrary to hypotheses, however, is the present finding that body dissatisfaction continued to increase into young adulthood. Although this finding is consistent with results of some previous studies (e.g., Bearman et al., 2006; Gardner et al., 1999; Rosenblum & Lewis, 1999; Tiggemann, 2005), other studies have revealed no change in dissatisfaction (von Soest & Wichstrom, 2009) or suggested that body dissatisfaction decreases among emerging young adult women (e.g., Cooley & Toray,

2001; Eisenberg et al., 2006; Holsen et al., 2001; Ohring et al., 2002; Rauste-von Wright, 1989) and becomes relatively stable beginning in the early 20s (Tiggemann & Lynch, 2001). One possible explanation for this discrepancy may be that, whereas the current study capitalized on a diverse community sample, examinations of young adults' body dissatisfaction predominantly have focused on cross-sectional samples of European American, female college students. Other possible explanations for observed differences across studies include differences in geographic region of the sample, differences in the assessment instruments used, and cohort effects within the population. Finally, the role of BMI cannot be discounted as a potential explanation for the observed discrepancies in body dissatisfaction trajectories across studies. In the present study, a large proportion of participants were classified as overweight; given the central finding that body dissatisfaction was associated with BMI over time, it is important to consider that the relatively high average BMI of this study's participants may have accounted for the greater, more persistent body dissatisfaction reported in this study as compared to others. Future replications and extensions of this work are needed to better understand the dynamic nature of body image, particularly at the transition to young adulthood.

Advantages of this investigation include the diverse sample, longitudinal design, and validated measure of body dissatisfaction. Although measured and self-reported BMI were highly correlated at Time 3 in our sub-study, it is possible that participants may have consistently underreported their weights and over-reported their heights; thus, the use of self-reported BMI is a potential limitation of this study. In addition, because EAT-I was designed as a purely cross-sectional study, lack of good tracking information for following participants to EAT-II led to many non-contactable participants from EAT-I. However, the inverse propensity weighting method has proved quite successful in recapturing the profile of the original diverse population.

These results highlight a trend in which diverse female and male youth are increasingly dissatisfied with their bodies as their BMI increases across the transition from middle school to young adulthood. Findings from this study and previous ones point to the importance of early intervention, as body dissatisfaction is evident early in adolescent development (e.g., during middle school)—for female and male youth. A more nuanced and complete understanding of emerging young adults' body image development will support the advancement of targeted prevention efforts to intervene in this trajectory and mitigate harm.

Results of the present study emphasize the need for intervention efforts tailored specifically to the needs of young adults, as levels of body dissatisfaction are at their highest during this developmental stage. For instance, although the inclusion of BMI eliminated the upward trend observed in body dissatisfaction, it is noteworthy that a decline in body dissatisfaction was not then observed at the transition to young adulthood. In reality, even when accounting for BMI, both female and male emerging young adults are reporting sustained levels of body dissatisfaction, without the eventual reprieve that they are commonly believed to enjoy upon reaching young adulthood. Regardless of weight status, the problem of body dissatisfaction remains a concern, given its association with a number of problematic outcomes (e.g., Ackard, Croll, & Kearney-Cooke, 2002; Neumark-Sztainer et al., 2006). Nonetheless, results of this study highlight the key role of BMI in the development of body dissatisfaction over time. Therefore, a useful interpretation of these findings, in sum, may be that youth are, on average, transitioning to young adulthood at their highest weight status yet, that this overall increase in BMI in turn is associated with high levels of dissatisfaction with their bodies, and that this dissatisfaction does not appear to be ameliorated with the simple passage of time.

Efforts, then, are needed in order to provide appropriate support within this particular developmental group—with special attention to the role of BMI in the development and maintenance of body dissatisfaction. A number of eating disorder prevention programs have yielded positive effects on body image (e.g., Franko et al., 2005; McVey et al., 2003; Neumark-Sztainer et al., 1995; Taylor et al., 2006), with the most consistent results produced by cognitive dissonance prevention programs (e.g., Becker, Smith, & Ciao, 2005; Becker, Smith, & Ciao 2006; Stice, Chase, Stormer, & Appel, 2001; Stice, Mazotti, Weibel, & Agras, 2000; Stice, Shaw, Burton, & Wade, 2006; Stice, Trost, & Chase, 2003). As these programs largely have emphasized the message that cultural ideals of thinness should be actively challenged, however, they are perhaps better suited to the needs of emerging adult women than to those of emerging adult men. Programs designed to address the concerns of male young adults may be enhanced by inclusion of content which focuses not just on the linear thin-overweight dichotomy, but also on the role of muscularity in men's body image development. Moreover, given the significant role that BMI played in the present body dissatisfaction results, it is clear that any prevention effort—for women and men alike—should feature a central body acceptance component (if not an explicit focus on body acceptance), in order to promote a sense of self-appreciation at any body size, and to shift focus toward adopting positive health behaviors regardless of weight status.

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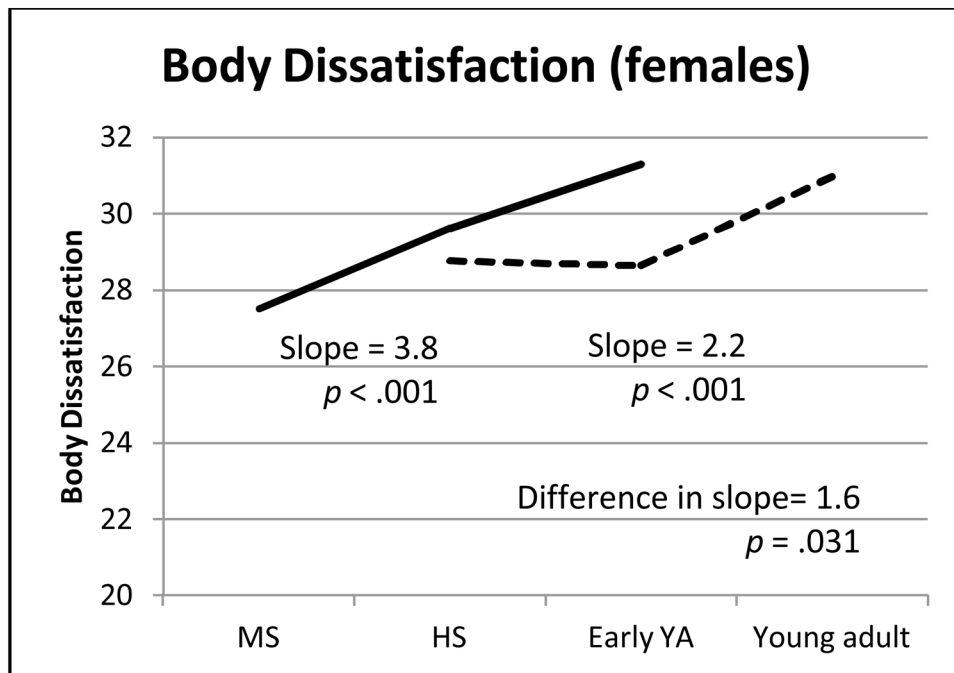


Figure 1. Females' body dissatisfaction over time (weighted, and adjusted for age, race/ethnicity, and SES) in two age cohorts (solid line = younger age cohort, dashed line = older age cohort); MS = middle school, HS = high school, YA = young adult

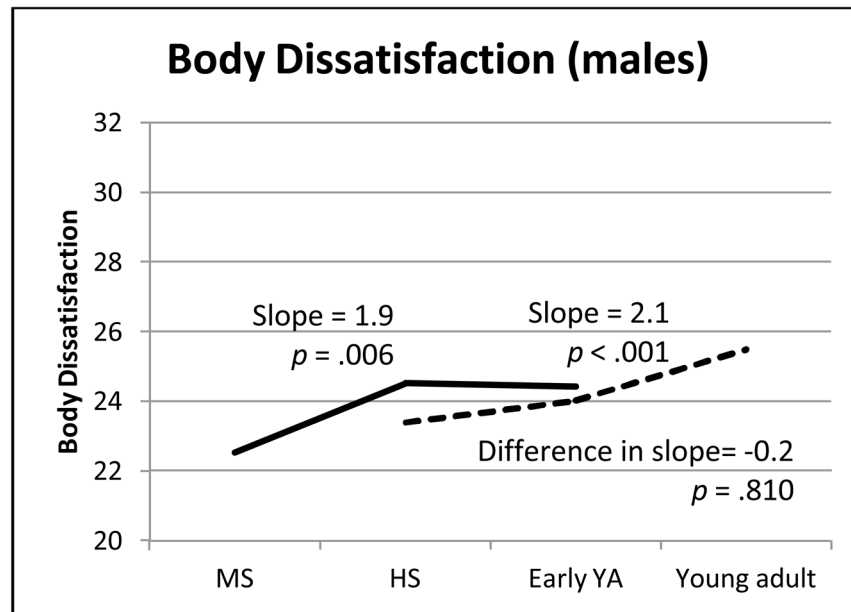


Figure 2. Males' body dissatisfaction over time (weighted, and adjusted for age, race/ethnicity, and SES) in two age cohorts (solid line = younger age cohort, dashed line = older age cohort); MS = middle school, HS = high school, YA = young adult

Table 1
 Socio-demographic and Outcome Characteristics of the Entire Baseline Sample for Comparison with the Baseline Data of Those Who Responded to Follow-up, Unweighted and Weighted,^a to Approximately Remove Response Bias

	EAT-II & III Responders					
	Full EAT-I N = 4746		Unweighted n _{unw} = 1827		Weighted n _{wtd} = 1815	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
<i>Gender</i>						
Female	2357	49.8	1008	55.2	995.7	54.9
Male	2377	50.2	819	44.8	819	45.1
<i>Race</i>						
White	2264	48.5	1221	67.5	877.5	48.9
Black	887	19.0	161	8.9	328.1	18.3
Hispanic	273	5.8	64	3.5	99.5	5.5
Asian	896	19.2	275	15.2	343.5	19.1
Other	351	7.5	89	4.9	146.8	8.2
<i>SES</i>						
Lower	793	17.4	190	10.6	286.9	16.4
Lower-Middle	857	18.8	280	15.7	338.0	19.4
Middle	1209	26.6	452	25.3	462.5	26.5
Upper-Middle	1065	23.4	532	29.8	412.8	23.7
Upper	626	13.8	332	18.6	245.1	14.0
	N	M (SE)	N	M (SE)	N	M (SE)
<i>Body Dissatisfaction</i>	4480	25.6 (0.14)	1793	25.6 (0.22)	1732.4	25.9 (0.22)
<i>BMI</i>	4312	22.3 (0.07)	1724	22.0 (0.10)	1671.2	22.5 (0.11)

^aWeighting by the inverse propensity method (see Method section of the text).

Table 2

Body Dissatisfaction and Self-Reported BMI at Time 1, Time 2, and Time 3 (Unadjusted, Weighted)

		EAT-I	EAT-II	EAT-III
	<i>N</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Females				
Body Dissatisfaction ^a				
Younger Cohort	281	27.3 (9.4)	29.0 (9.9)	30.8 (9.0)
Older Cohort	655	28.6 (9.0)	28.4 (9.0)	30.6 (9.4)
BMI				
Younger Cohort	250	21.7 (4.1)	24.2 (5.0)	26.4 (6.1)
Older Cohort	657	22.6 (4.7)	24.1 (5.3)	26.0 (6.4)
Males				
Body Dissatisfaction ^a				
Younger Cohort	235	23.0 (9.7)	25.1 (10.0)	25.3 (9.2)
Older Cohort	562	23.3 (8.4)	24.0 (8.7)	25.5 (8.9)
BMI				
Younger Cohort	222	20.8 (4.3)	24.4 (4.8)	26.6 (6.5)
Older Cohort	543	23.0 (4.2)	24.8 (4.6)	26.8 (5.2)

^aPossible range: 10–50