Body Image 11 (2014) 68–71

Contents lists available at ScienceDirect

Body Image

journal homepage: www.elsevier.com/locate/bodyimage

Brief research report

A longitudinal study of body dissatisfaction and pubertal timing in an ethnically diverse adolescent sample

Natalie S. de Guzman[a,*], Adrienne Nishina[b]

[a] Human Development Graduate Group, University of California, Davis, Davis, CA, United States
[b] Department of Human Ecology, University of California, Davis, Davis, CA, United States

ARTICLE INFO

Article history:
Received 3 May 2013
Received in revised form 2 November 2013
Accepted 3 November 2013

Keywords:
Body dissatisfaction
Adolescence
Puberty
Ethnicity
Gender
Peer context
Longitudinal

ABSTRACT

In a 7-year study, adolescents' body dissatisfaction ($N = 1370$) was examined across four high school years as a function of pubertal development (*perceived* timing relative to peers and self-reported physical changes measured during Grades 6–10) in the context of the high school transition. Boys and girls who, during early high school, *perceived* themselves to be late relative to peers were at risk for body dissatisfaction across the high school years. Boys who *were* late in pubertal development reported more body dissatisfaction in early high school than on-time boys, but then decreased over time. African-American girls reported less body dissatisfaction across the high school years relative to other girls. Asian girls reported more dissatisfaction in early high school than African-American, Latina, and Multiethnic girls, and increased over time. Results highlight the importance of considering late development within context as a risk factor in body dissatisfaction research.

Introduction

Body dissatisfaction, the subjective negative evaluation of one's figure and body parts, contributes to psychological maladjustment across the lifespan (Markowitz, Friedman, & Arent, 2008) and is important to adolescent development (Markey, 2010). Puberty, with its associated physical changes (McCabe & Ricciardelli, 2009; Mitchell, Petrie, Greenleaf, & Martin, 2012), may move youth toward or away from the physical ideal (generally thin for Western-culture girls and mesomorphic build for boys; Bearman, Martinez, Stice, & Presnell, 2006). Previous research assessing changes in body dissatisfaction across adolescence has produced inconsistent findings (Bucchianeri, Arikian, Hannan, Eisenberg, & Neumark-Sztainer, 2013; Holson, Jones, & Birkeland, 2012; Jones, 2004). However, the when (i.e., timing) and where (i.e., peer context) of these changes may occur at different ages for different youth in different contexts (e.g., Currie, Ahluwalia, Godeau, Gabhainn, Due, & Currie, 2012). In the present study, we consider individual differences in puberty in concert with the peer context change of a school transition to examine body dissatisfaction over time.

We propose a context-change hypothesis suggesting that being discrepant from peers during middle school—when puberty starts for most youth—does not necessarily mean continued discrepancy within the new high school context. Specifically, transitioning to a context with older schoolmates who are further through puberty should serve to accentuate the deviant timing of late-developing adolescents, resulting in more body dissatisfaction than their early/on-time counterparts. Because girls generally develop earlier than boys (Roenneberg et al., 2004), late-developing boys are expected to be at particular risk. And, because peer comparisons have been found to affect body dissatisfaction to a greater degree than media portrayals of women (Cash, Cash, & Butters, 1983), late-developing girls are expected to only be partially protected—if at all—by the thin ideal. At the same time, the known risks (for girls; McCabe & Ricciardelli, 2009) or benefits (for boys; Siegel, Yancey, Aneshensel, & Schuler, 1999) of early development could be mitigated because early developers are not as likely to stand out from their new schoolmates. We also expect a decrease in body dissatisfaction for youth who *feel* they are developing later than their peers as their physical appearance becomes concordant with peers.

Though few body image studies use diverse samples, culture may protect certain girls by providing more realistic and attainable (i.e., not thin) physical ideals (Smolak, 2004). This advantage has been most strongly supported for African-American girls (Nishina, Ammon, Bellmore, & Graham, 2006; Siegel et al., 1999) and may persist across development, as puberty moves them toward their cultural ideal (Paxton, Eisenberg, & Neumark-Sztainer, 2006). In contrast, Asian girls may be at risk, like White girls (Grabe & Hyde, 2006), with a historical sociocultural desire for thin women

* Corresponding author at: Human Development Graduate Group, University of California, Davis, Davis, CA 95616, United States.
E-mail address: nsadler@ucdavis.edu (N.S. de Guzman).

1740-1445/$ – see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.bodyim.2013.11.001

(Mukai, Crago, & Shisslak, 1994). Differences in body dissatisfaction between Latina and White girls have been mixed (Grabe & Hyde, 2006; Nishina et al., 2006; Siegel et al., 1999). For boys and men, much research finds no ethnic group differences in body dissatisfaction (e.g., Jones, Fries, & Danish, 2007), which is consistent with fewer cultural variations in ideal male body types (e.g., taller, muscular, V-shaped build).

The present study examines girls' and boys' body dissatisfaction across the high school years as a function of puberty (both perceived timing and physical changes) and a context change in an ethnically diverse sample. The proposed context-change hypothesis predicts that late-developing adolescents (especially boys) will have more body dissatisfaction at the beginning of high school than those who are early or on-time. However, if late maturing girls are partially protected due to congruity with the thin ideal, they may only experience dissatisfaction if they *feel* later than peers. Early and on-time youth are not expected to differ. Body dissatisfaction may decrease for late (actual or perceived) adolescents over time. Finally, we predict that African-Americans girls will have less body dissatisfaction than White, Latina, and Asian girls. The inclusion of Multiethnic girls (i.e., those identifying with more than one ethnicity) is exploratory, however, their exposure to multiple cultural views may allow for flexibility in body ideals, suggesting partial protection. No ethnic group differences are expected for boys.

Method

Participants

Participants were 1370 adolescents (55% girls, 45% boys; 48.2% Latino/a, 20.2% African-American, 11.3% Asian/Pacific Islander, 9.6% White/Caucasian, and 9.6% multiethnic) from a larger longitudinal sample originally recruited from 11 low-income, public middle schools in the Los Angeles, CA area (Bellmore, Nishina, You, & Ma, 2012). From 2000 to 2008, 12 waves of data were collected: once per semester in Grades 6–10 and once per year in Grades 11–12 (*N*s = 1086–1287 across waves). The subsample for this study participated in both middle and high school.

Measures

Body dissatisfaction (collected Grades 9–12). Adolescents responded to 12 items describing how often they were dissatisfied their bodies and specific body parts (two were gender-specific) on a 6-point scale (1 = *never*, 6 = *always*; Jones, 2001) with an average across years of 2.93 (*SD* = 1.09) for girls and 2.61 (*SD* = 0.98) for boys. The composite measure was reliable across time points, gender, and ethnic groups (M_{alpha} = .85; range = .82–.88) with magnitudes similar to Jones (2001; girls: α = .88; boys: α = .82).

Perceived pubertal timing relative to peers (collected Grades 6–10). Two scores were computed by averaging responses to a single item (*Do you think you are developing [looking more like a man/woman] faster or slower than most other boys/girls your age?*; 1 = *much faster*, 3 = *about the same*, 5 = *much slower*) across middle school (Grades 6–8) and early high school (Grades 9–10).

Girls were categorized as early (<2), on-time (≥2 and ≤4), or late (>4). Because boys had a narrower distribution and were later to develop than girls, boys' categories were slightly modified: early (<2.25), on-time (≥2.25 and ≤3.75), or late (>3.75). Middle school and high school classifications were only moderately correlated for girls (r = .32, p < .001) and boys (r = .33, p < .001).

Actual (physical) pubertal timing (collected Grades 6–10). The Pubertal Development Scale (Petersen, Crockett, Richards, & Boxer, 1988) measures physical pubertal timing with 5 averaged items (e.g., *Have you noticed any skin changes, especially pimples?*) on a 4-point scale (1 = *not yet started showing changes*, 4 = *skin changes seem completed*), with some gender-specific items.

Girls were classified as early (≥3 in 6th grade; 17.9%), late (≤3 in 9th grade; 18.9%), or as on-time if they fell between (63.2%). To account for the narrower distribution and later pubertal onset, boys were considered early (≥2.5 in 6th grade; 12.3%), late (≤2.5 in 9th grade; 17.5%), or on-time if they fell between (70.2%).

Procedure

After receiving parental consent, students completed paper (middle school) or computerized (high school) surveys at school. Items were read aloud while adolescents recorded their responses. During high school, some participants (e.g., frequently absent; *M* across Waves 7–12 = 17%) were mailed a paper survey and read the items by phone. In 6th grade, classrooms received $5 per student for a classroom-oriented purchase. Subsequently, individual students received $5–20 per survey, depending on wave.

Data Analysis

Hierarchical linear modeling was used because it provides the ability to examine both Level 1 (within-individual change over time) and Level 2 (between-individual—e.g., pubertal timing) components simultaneously, accounting for the nested nature of the data (Singer & Willett, 2003). The intraclass correlation coefficients for girls (ρ = .76) and boys (ρ = .72), suggest that most of the body dissatisfaction variability is between individuals. Models were run separately by pubertal timing measure (i.e., one model for actual pubertal timing and one for perceived timing) and gender, as some measure items differed by gender. Post hoc planned contrasts further assessed pubertal timing and ethnic group differences. The following equations illustrate the model for girls' pubertal development:

Level 1:

$$\mathrm{GBODY}_{ti} = \pi_{0i} + \pi_{1i} * (\mathrm{AGE}_{ti}) + e_{ti}$$

Level 2:

$$\pi_{0i} = \beta_{00} + \beta_{01} * \mathrm{AFAM}_i + \beta_{02} * \mathrm{LATI}_i + \beta_{03} * \mathrm{ASIA}_i + \beta_{04} * \mathrm{MULTI}_i + \beta_{05} * \mathrm{GEARLY}_i + \beta_{06} * \mathrm{GLATE}_i + r_{0i}$$

$$\pi_{1i} = \beta_{10} + \beta_{11} * \mathrm{AFAM}_i + \beta_{12} * \mathrm{LATI}_i + \beta_{13} * \mathrm{ASIA}_i + \beta_{14} * \mathrm{MULTI}_i + \beta_{15} * \mathrm{GEARLY}_i + \beta_{16} * \mathrm{GLATE}_i + r_{1i}$$

GBODY is girls' body dissatisfaction for person *i* at time *t*. AGE is centered at 14 years (i.e., beginning of 9th grade) such that 0 equals age 14. At Level 2, AFAM, LATI, ASIA, and MULTI indicate African-American, Latina, Asian, and Multiethnic respectively, each dummy-coded 0 or 1, with White girls as the comparison group. GEARLY and GLATE indicate being early or late respectively, dummy-coded such that on-time girls are the comparison group. The *perceived* pubertal timing model is similar, except that the middle school and early high school perceived pubertal timing group variables were entered in the equations simultaneously, with on-time developers as the comparison group.

Results

Girls' Perceived Pubertal Timing Compared to Peers

The baseline coefficient (B_{00} = 2.98) in the left half of Table 1 indicates that White girls' at age 14 who reported being on-time in