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Dieting, exercise, and intuitive eating among early adolescents

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ABSTRACT

Dieting to lose weight, with its focus on restriction of caloric intake, may disrupt intuitive eating processes, though other forms of weight loss, such as exercising, which do not emphasize food may not. In a sample of 669 middle school boys and 708 girls, regardless of sex or exercising, dieting was related to feeling less free to eat what was wanted and to eating more to soothe emotions than to satisfy actual physical hunger. Exercising, independent of dieting, was associated with feeling less permission to eat what was wanted, but also eating to satisfy physical hunger as opposed to coping with emotional distress. Overall, girls were more aware and trusting of their bodily hunger and satiety cues than boys, but when boys were exercising, they scored similarly to girls on this dimension. These findings suggest that different weight loss approaches – dieting vs. exercising – have unique relationships to young adolescents' intuitive eating and these associations tend to be stable across sex. Longitudinal studies now are needed to examine how dieting that begins in childhood or early adolescence might have long-term effects on the progression of intuitive eating.

1. Introduction

Intuitive eating is based on physiological hunger and satiety cues rather than situational and emotional cues, thus its central premise is that individuals innately are able to stay in tune with their bodies' natural signals about hunger and fullness (Tylka, 2006). From this perspective, individuals are thought to be able to regulate their food intake in a healthy manner, eating what they want, when they want it, beginning when they become hungry, and stopping when they feel full. When individuals eat intuitively, they generally consume more nutritious foods and are able to maintain a weight that is healthy for their height and sex (Eneli, Crum, & Tylka, 2008).

Dieting, which may include unhealthy eating practices such as an extreme restriction of overall caloric intake and/or eating only certain types of food (such as those deemed "good" foods by the dieter), may disrupt intuitive eating processes and has been associated with long-term weight gain (Neumark-Sztainer, Wall, Story, & Standish, 2012). When individuals "diet" they generally have to (a) exert cognitive control over their internal signals about hunger and satiety, often overriding their physiology, and (b) limit what, when, and how much they eat. That is, dieters may forbid consumption of certain "bad" (nondiet) foods and allow themselves to eat only those foods that are considered "good" and align with their dietary restrictions (Polivy & Herman, 1985). Over time, such rigid cognitive and behavioral controls may undermine individuals' understanding of their bodies' signals, disrupt their ability to know what they want to eat (and the permission they give themselves to eat it), and lead them to eat more in response to emotions than physical hunger, which often encompasses a binge.

The controls that are associated with dieting can cause problems for all age groups, but may be particularly difficult for children and early adolescents because of food- and eating-related pressures within the family environment and their relationship to emotional eating (e.g., Galloway, Farrow, & Martz, 2010; Kroon Van Diest & Tylka, 2010). Two types of controlling feeding behaviors have been identified – food restriction and pressure-to-eat (Eneli et al., 2008). Parents and other caregivers may restrict children's eating, ranging from what to how much they are allowed to consume, particularly when it comes to what are considered to be unhealthy (or "bad") foods. Parents/caregivers also may pressure children to eat what they consider to be healthy (or "good") foods, such as fruits and vegetables. Both of these controlling approaches to food and eating require constant monitoring on the part of parents/caregivers, and can interfere with children's intuitive awareness of and trust in their physical responses to hunger and fullness (Eneli et al., 2008). In many cases parents/caregivers may be unaware of their controlling behaviors and how their involvement may lead to dysfunctional eating in their children. For example, Carper, Fisher, and Birch (2000) found that (a) only 26% of parents believed they pressured their daughters about feeding, whereas 61% of the girls felt pressured, and (b) 51% of parents reported restricting certain foods from their daughters, though 63% of the girls thought this occurred. Girls who reported that their parents restricted what they could eat were three times more likely to experience high levels of disinhibited emotional eating

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(i.e., lack of restraint in relation to food) than girls who were able to eat with fewer dietary restrictions.

Although parents/caregivers can play a positive role in helping children develop healthy eating patterns, many (intentionally or unintentionally) pressure their children about their food choices, often restricting access to food considered to be unhealthy and pressuring them to eat foods that they believe "should" be eaten (e.g., fruits, vegetables, whole grains). Such pressures and behaviors can interfere with adaptive eating processes (Eneli et al., 2008), and ultimately lead to unhealthy beliefs about food and eating that are carried forward and transformed into self-imposed rules about what foods are acceptable, how much one should eat, and whether or not food can serve as an emotional salve. In fact, it is the consistent use of dieting behaviors (e.g., eating very little, skipping meals, diet pills), as opposed to other unhealthy weight control behaviors (e.g., vomiting, laxatives), which are associated with long-term weight gain (Neumark-Sztainer et al., 2012). And, healthy forms of weight management, specifically exercising, would not be expected to lead to disruptions in intuitive eating because increased levels of physical activity are not related directly to food, do not involve pressures about what (or how much) to eat, and actually can increase individuals' satiety responses to meals (King et al., 2009). Thus, in the current study, the relations between dieting (i.e., decreasing caloric intake), exercising (i.e., increasing cardiorespiratory activity levels), and intuitive eating were examined. Specifically, we expected that early adolescents who were dieting to manage their weight would report more disruptions in their intuitive eating than those who were not. Even though the purpose of increasing physical activity levels also is to manage weight, we expected that there would be no differences in level of intuitive eating between those early adolescents who were exercising compared to those who were not. Because participants' sex has been associated with intuitive eating in adolescents (Dockendorff, Petrie, Greenleaf, & Martin, 2012) and girls have been found to diet more frequently than boys (Neumark-Sztainer, Wall, Larson, & Eisenberg, 2011), we considered it in relation to dieting and exercise as well.

2. Method

2.1. Participants

Participants were 669 boys (M_{age} = 12.31 years, $SD = \pm 0.98$) and 708 girls (M_{age} = 12.09 years, $SD = \pm 0.92$) drawn from six middle schools in a suburban school district located in the Southwestern U.S. Although race/ethnicity data were not provided on 448 students in the sample, of the remaining, 65.3% were White/Non-Hispanic, 22.6% White/Hispanic, 9.5% Black/NonHispanic, 3.7% Asian American/Pacific Islander, and 0.8% Native American, which was consistent with the overall racial/ethnic make-up of the school district; 44.1% were in sixth grade, 32% in seventh grade, and 23.8% in eighth grade.

2.2. Measures

2.2.1. Demographics

During each school's annual physical fitness testing, height and weight were objectively measured by physical education teachers and converted to body mass index (BMI; kg/m^2). BMI, as well as the participants' age, grade, and race/ethnicity, were provided by the school district following approval from their internal research committee. All data provided by the school district were coded solely by the students' school identification numbers; neither names nor other identifying information were used.

2.2.2. Intuitive eating

The 16-item Intuitive Eating Scale for Adolescents-Revised (IESA-R) is a revision of the 17-item Intuitive Eating Scale for Adolescent (Dockendorff et al., 2012; Tylka, 2006) and comprised of three factors: Unconditional Permission to Eat (5 items; i.e., eating when hungry and eating what food is desired; "I let myself eat 'junk food' when I want to"); Eating for Physical Rather Than Emotional Reasons (5 items, i.e., using food to satisfy physiological hunger drives rather than as a coping mechanism for emotional distress; "I eat when I am feeling sad or stressed, even when I am not physically hungry" – reversed scored item); and Reliance on Cues of Hunger and Satiety (6 items, i.e., awareness of physiological hunger and satiety cues and trusting these cues to manage eating; "I trust my body to let me know how much to eat"). For each item, participants respond using a 5-point scale that ranges from 1, *strongly disagree*, to 5, *strongly agree*. Total factor scores are the mean; higher scores indicate more positive intuitive eating. Internal consistency reliabilities (i.e., Cronbach's alphas) for the three factors were: 0.78 (Unconditional Permission), 0.89 (Eating for Physical Reasons), and 0.88 (Reliance on Physiological Cues). Dockendorff et al. provided extensive information about the factors' validity.

2.2.3. Disordered eating

The 26-item Children's Eating Attitudes Test (ChEAT; Garner, Olmsted, Bohr, & Garfinkel, 1982; Smolak & Levine, 1994) is the children's version of the EAT and assesses a variety of attitudes and behaviors associated with anorexia nervosa and bulimia nervosa. On items such as "I think a lot about having fat on my body," the adolescents responded on a 6-point scale, ranging from 0, *always*, to 6, *never*. For each item, the most symptomatic response is scored as a 3, the next most symptomatic as a 2, the next most symptomatic as a 1, and the remaining three responses are scored as 0. Total score is the sum of the items, and can range from 0, *no symptoms*, to 78, *high level of symptoms*. Smolak and Levine reported internal consistency reliability (Cronbach's alpha) of .87; alpha for the current study was .73. Smolak and Levine provided extensive information about the scale's validity. In the current study, the ChEAT was used screen out adolescents who might have an eating disorder because dieting and intuitive eating have been strongly related to disordered eating as measured by the EAT (Tylka & Wilcox, 2006). Based on a score of 20 or highter on the ChEAT, 4.1% of the boys and 6% of the girls from the initial sample were eliminated from all analyses.

2.2.4. Dieting

Consistent with how dieting has been assessed and classified in adolescents (e.g., Neumark-Sztainer et al., 2011; Neumark-Sztainer et al., 2012), participants responded to a single item question, indicating whether they had, during the last three months, dieted (i.e., "Eaten fewer calories [example – eat less food"]) specifically to manage their weight. Response options were never, seldom, sometimes, often, and always, and were dichotomized into nondieters (never or seldom, n = 862) and dieters (other responses, n = 515).

2.2.5. Exercising

Consistent with how exercising has been measured and classified in adolescents (e.g., Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006), the boys and girls indicated, through a single item question, whether they had, during the last three months, exercised (i.e., "Increased cardiorespiratory physical activity, such as running") specifically to manage their weight. Response options were never, seldom, sometimes, often, and always, and were dichotomized into nonexercisers (never or seldom, n = 186) and exercisers (other responses, n = 1191).

2.3. Procedure

The university's Institutional Review Board for Human Subjects Research granted approval for the study as did the school district's internal research committee and the principals at each school. Parental consent forms were completed during fall registration (just prior to