Health at Every Size College Course Reduces Dieting Behaviors and Improves Intuitive Eating, Body Esteem, and Anti-Fat Attitudes

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ABSTRACT

Objective: To investigate the effects of a *Health at Every Size* general education course on intuitive eating, body esteem (BES), cognitive behavioral dieting scores, and anti-fat attitudes of college students.

Methods: Quasi-experimental design with 149 students in intervention (45), comparison (66), or control (46) groups. Analysis of variance and *post hoc* Tukey adjusted tests were used.

Results: Mean scores for total general education course on intuitive eating ($P < .001$), unconditional permission to eat ($P < .001$), reliance on hunger ($P < .001$), cognitive behavioral dieting scores ($P < .001$), BES appearance ($P = .006$), BES weight ($P < .001$), and anti-fat attitudes ($P < .001$) significantly improved from pre to post in the intervention group compared with control and comparison groups.

Conclusion and Implications: Students in the *Health at Every Size* class improved intuitive eating, body esteem, and anti-fat attitudes and reduced dieting behaviors compared with students in the control and comparison groups.

Key Words: college students, weight management, intuitive eating, Social Cognitive Theory (*J Nutr Educ Behav*. 2015;47:354-360.)

Accepted January 25, 2015. Published online March 10, 2015.

INTRODUCTION

Dieting, or calorie restriction with the intention of losing weight, often results in a repetitive cycle of self-deprivation followed by binging, anorexia, bulimia, and worsening self-image.[1-3] Dieting rarely results in long-term weight loss.[4-6] Unintended physical and psychological consequences of dieting include feelings of worthlessness, self-hatred, depression, loss of muscular strength and endurance, decreased oxygen use, loss of coordination, dehydration, heart problems, weight regain, and cycling.[4-13] College students are particularly vulnerable to the effects of dieting, body dissatisfaction, eating disorders, and depression.[14-16]

New research has brought into question the efficacy of traditional weight loss methods.[17] The *Health at Every Size* (*HAES*) paradigm is a non-diet approach that aims to shift the focus from weight to health, promoting body acceptance, attention to internal hunger and fullness cues, and the intrinsic benefits of physical activity.[17] In studies in which non-diet programming was implemented, students experienced improvements in diet quality, physical activity, and various physiologic and psychosocial factors.[8,9,18]

Limited research exists on the effects of disseminating *HAES* concepts within a college curriculum.[19] It is unknown how an entire course on the *HAES* tenets, with a theoretical foundation, influences college students.

Social Cognitive Theory (SCT) can serve as a theoretical foundation[20] for health interventions such as college courses, which often result in positive health behavior changes.[21,22] According to SCT, an individual's behavior is influenced by personal factors and environmental cues (reciprocal determinism).[20] When applied to nutrition education, constructs such as observational learning (positive role models sharing their change journeys), behavioral knowledge and skills (information and skill-building activities), and self-efficacy (activities that improve one's confidence in the ability to make a change) can enhance intervention outcomes.[20]

The purpose of this study was to assess changes in intuitive eating, being in tune with the body's natural hunger and satiety cues, body esteem, a person's attitude toward his or her body, as well as the dieting behaviors and anti-fat attitudes of students enrolled in the general education course *Health at Every Size*: A Non-diet Approach to Wellness. The course, which uses constructs of SCT, was compared with a traditionally taught basic nutrition course (control) and a basic nutrition course with some lectures on *HAES* concepts (comparison).

METHODS

Students and Recruitment

This quasi-experimental research design used a convenience sample of college

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Conflict of Interest Disclosure: The authors' conflict of interest disclosures can be found online with this article on www.jneb.org.

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http://dx.doi.org/10.1016/j.jneb.2015.01.008

Table 1. Teachings of Paradigms Taught, by Treatment Group

Intervention and Comparison Group Non-Diet Paradigm	Control Group Diet Paradigm
• The body will seek its natural weight when one eats in response to hunger and satiety cues • Promotes accepting and respecting the diversity of body shapes and sizes • Physical activity and natural movement are encouraged based on what is enjoyable and life-enhancing, regardless of weight status • Food quantity and quality are guided by hunger and fullness cues, cravings, well-being, and enjoyment	• Individuals should aim for a 5% to 10% weight reduction • Weight loss is achieved by reducing calories consumed and increasing calories expended • Physical activity is encouraged to promote weight loss and health • Food quality and quantity are guided by estimated calorie needs to achieve negative energy balance

students attending either California State University, Chico, or Butte Community College. Students enrolled in the *HAES* course during the fall, 2012 and spring, 2013 semesters served as intervention groups. The same curriculum was used each semester but with a different instructor. Students enrolled in a basic nutrition course at California State University, Chico served as the comparison group and students enrolled in a basic nutrition course at Butte Community College served as the control group. Instructors of the comparison and control group courses used a popular introductory nutrition textbook. The control group instructor taught the weight management section in accordance with the textbook. The comparison group instructor taught 3 lectures demonstrating concepts of a non-diet approach during week 13 of the semester, in place of the weight management curriculum. Table 1 describes the differences in the paradigms taught in each of the 3 groups.

Study Design and Protocol

Students in all classes completed a pre-intervention survey in class during the first week of the semester and a post-intervention survey during the last week of classes that included the following instruments: Intuitive Eating Scale–2 (IES-2),[23] the Cognitive Behavioral Dieting Scale (CBDS),[24] the Body-Esteem Scale (BES),[25] and the Anti-fat Attitudes (AFA) questionnaire.[26] Intuitive Eating Scale–2 includes a 23-item, 5-point Likert scale (*strongly disagree* to *strongly agree*) with 4 subscales measuring (1) unconditional permission to eat, (2) eating for physical rather than emotional reasons, (3) reliance on internal hunger/satiety cues, and (4) body–food choice congruence.[23] A higher score indicates that one is more of an intuitive eater. The CBDS assessed current dieting behaviors and includes a 14-item, 5-point scale (*never* to *always*), with scores ranging from 14 to 70.[24] A low score on the CBDS scale indicates that one exhibits fewer dieting behaviors. The BES includes a 23-item, 5-point (*never* to *always*) Likert scale and measures 3 components of body esteem: (1) general feelings about appearance; (2) weight satisfaction; and (3) attribution, or one's perception of how others evaluate one.[25] A higher score on the BES scale indicates that one has a higher body esteem. Crandall's 13-item, 10-point Likert scale (*very strongly disagree* to *very strongly agree*) AFA questionnaire was used to assess explicit anti-fat prejudice.[26] A low score on the AFA questionnaire indicates that one has a better attitude and less prejudice toward people who may be classified as overweight or fat. Demographic information was collected, including sex, academic classification, age, ethnicity, self-reported current height and weight, and students' areas of study. The researchers calculated body mass index (BMI) for each student.[27] The Human Research Subject Committee at California State University, Chico approved all study procedures and informed consent was obtained before data collection. Participation in the research study did not influence students' course grades.

Sample size calculations indicated that 42 students per group had 80% power ($\alpha = .05$) to detect an absolute difference (effect size) of 3.53 among the 3 groups for total IES-2 scores, assuming an SD of 0.53 points.

Intervention

The *HAES* class curriculum addressed the physical, social, psychological, and economic impact of the diet industry on individuals and society. Classroom lectures covered critical analysis of weight loss research, bariatric surgery, eating disorders, intuitive eating, mindful eating, the Satter Eating Competence Model,[28] culture and body image, social justice, and size discrimination. This class satisfied the US Diversity and Writing Intensive general education requirements that aimed to increase critical thinking and writing skills.

Observational learning, reciprocal determinism, behavioral skills, expectations, and expectancies were the primary constructs that guided the intervention. Observational learning was addressed through multiple guest speakers who shared personal histories of overcoming negative body image and disordered eating, and their journey toward becoming intuitive eaters. Through journaling assignments, assigned readings, and class discussions, students were encouraged to assess their environment for barriers and motivators (reciprocal determinism) for improving body image and adopting mindful eating strategies and enjoyable physical activity. Students were taught the benefits and barriers (expectations) of a weight-neutral approach. Students learned