



## A mindful eating intervention: A theory-guided randomized anti-obesity feasibility study with adolescent Latino females



Patricia Daly (PhD, FNP-BC)\*, Thaddeus Pace (PhD), Judith Berg (PhD, WHNP, FAANP), Usha Menon (PhD, RN, FAAN), Laura A. Szalacha (EdD)

University of Arizona College of Nursing, United States

### ARTICLE INFO

#### Article history:

Received 5 March 2016

Received in revised form 26 July 2016

Accepted 30 July 2016

Available online 1 August 2016

#### Keywords:

Mindfulness

Obesity

Mindful eating

Adolescents

Female

Latino

### ABSTRACT

While pediatric anti-obesity lifestyle interventions have received considerable attention, few show sustained impact on body mass index (BMI). Using the Information-Motivation-Behavioral Skills Theory as a framework, we examined the effects of a satiety-focused mindful eating intervention (MEI) on BMI, weight and mindful awareness.

**Method: Design and Setting:** Utilizing a two-group, repeated measures design, 37 adolescent females with a BMI >90th percentile, recruited from a public high school in a Latino community in the Southwestern United States, were randomized 2:1, one third to the group receiving a 6-week MEI and two thirds to the comparison group (CG) receiving the usual care (nutrition and exercise information). **Intervention:** During six weekly 90-min after school MEI group sessions, the behavioral skills of slow intentional eating were practiced with foci on satiety cues and triggers to overeat. **Outcomes:** Feasibility and acceptability were measured as participant retention (goal  $\geq 55\%$ ) and evaluative comments from those in the MEI group, respectively. BMI and mindful awareness were measured on site at baseline, immediately post intervention, and at 4-week follow-up (week 10).

**Results:** Fifty-seven and 65% of those in the MEI and CG were retained throughout the study, respectively. MEI participants showed significantly lowered BMI compared with CG participants, whose weight increased ( $p < 0.001$ ). At six weeks, the MEI group BMI decreased by  $1.1 \text{ kg/m}^2$  (BMI continued to decline to  $1.4 \text{ kg/m}^2$  by week 10); while CG BMI increased by  $0.7 \text{ kg/m}^2$  (consistent with BMI >90th percentile standard growth projections).

**Conclusions:** Initial and sustained decline of BMI in the MEI group supports further study of this theory-guided approach, and the value of practicing satiety-focused mindful eating behavioral skills to facilitate health behavior change.

© 2016 Elsevier Ltd. All rights reserved.

### 1. Introduction

Adolescent obesity rates have tripled in the past 20 years and are associated with an 80% risk of adult hypertension, diabetes and obesity.<sup>1–3</sup> Left unchecked, this rise in obesity is anticipated to decrease U.S. life expectancy<sup>4</sup> and will cost an estimated \$956 billion, or one in every six dollars spent on health care.<sup>5</sup> Despite this adverse impact, no reduction is in sight for U.S. pediatric obesity prevalence rates. At highest risk, with the most significant increase in U.S. prevalence rates of overweight (and Class 2 Obesity) are Latino adolescent females (Latinas), representing a critical

target population for Pediatric Lifestyle Anti-Obesity Interventions (PLAOIs).<sup>6</sup>

Obesity is classified according to Body Mass Index (BMI) values of body weight in relation to height ( $\text{kg/m}^2$ ). BMI below 18.5 is underweight, 18.5–24.9 is normal, 25.0–29.9 is overweight, 30.0–34.9 is Class 1 Obesity, 35.0–39.9 is Class 2 Obesity, and 40 and above is Class 3 obesity.<sup>7</sup> In pediatrics, this calculation is further interpreted by examining BMI in relationship to normal growth curves by age; a BMI in the 50th percentile represents normal weight for height and age.<sup>1</sup> Participants were not included in our study unless their BMI was in the 90th percentile or higher for height and age, which is considered overweight/obese.<sup>1,8</sup>

In the literature, the three major categories of pediatric anti-obesity interventions are: (1) surgical (gastric bypass and banding), (2) pharmaceutical (appetite suppressants), and (3) lifestyle (behavioral, nutrition information, and physical activity).<sup>9–11</sup>

\* Corresponding author at: University of Arizona, 1305 N Martin Ave., Tucson, AZ 85721, United States.

E-mail address: [pdaly@email.arizona.edu](mailto:pdaly@email.arizona.edu) (P. Daly).

Surgical and pharmaceutical interventions align with the current adolescent anti-obesity recommendations of the American Endocrine Society.<sup>12</sup> Although such interventions artificially induce satiety and thereby lower BMI through less food intake, they pose serious health risks including nutrient malabsorption, sepsis and hypertension.<sup>13</sup> Meta-analyses of PLAIOI studies have determined that lifestyle interventions promote positive health attitudes, but have little impact on BMI.<sup>14–16</sup>

Meta-analysis of existing PLAIOI studies show inconsistent approaches across studies, outcomes show small effect sizes and little impact on BMI.<sup>14–16</sup> In prior PLAIOI studies sustainability of weight-loss as measured by decreased BMI is documented in only 25–30% of participants. In an outcome study of children receiving weekly caloric restriction and behavioral modifications treatments, after 10 years only 30% percent of the participants were not obese.<sup>17</sup> Kamath and colleagues' meta-analyses of 29 eligible randomized controlled trials demonstrated that PLAIOI studies produced only small changes in target behaviors and did not result in significant decreases in BMI.<sup>16</sup> McGovern and fellow researchers conducted a meta-analysis of 61 randomized nonsurgical pediatric anti-obesity trials including PLAIOI and found only pharmacotherapy consistently and effectively lowered BMI.<sup>15</sup> Ho and colleagues' 2012 systematic review of 41 randomized clinical trials of PLAIOI concluded that study heterogeneity, lack of detail, and attrition rates, all resulted in inconclusive recommendations regarding the effectiveness of lifestyle interventions.<sup>9</sup>

School-based PLAIOI studies, in particular, have shown marginal results in lowering BMI. In a 2006 review of PLAIOI studies, only four of the 25 school-based interventional studies were found to lower BMI.<sup>18</sup> Conducting a meta-analysis with 19 of 41 school-based nutrition and exercise intervention studies meeting criteria of data sufficient to calculate odds ratios or standardized mean differences and 95% CIs, Gonzalez-Suarez and colleagues found nutrition and activity-focused interventions were not effective in decreasing BMI.<sup>14</sup> Of note is that most studies have been conducted only with motivated, middle class, Caucasian, obese pediatric patients, severely limiting generalizability.<sup>9</sup> What is needed is a safe, effective adolescent anti-obesity intervention designed to promote healthy eating in diverse populations of youth and achieve substantial and sustained BMI reductions.

To date, most investigators have yet to use a theory-guided approach to address this challenge. Behavioral intervention studies have instead been based on traditional approaches of eating reduced caloric diets, with or without exercise programs to increase caloric expenditure. However, weight gain due to calorie-laden overeating is difficult to counteract with enough exercise-driven calorie expenditure (e.g., fifty minutes of treadmill running only burns approximately 350 cal and cannot negate the ingestion fast-food meal which may contain >2,000 cal).<sup>19</sup> In most studies, interventions have been comprised of disseminating nutrition information and promoting exercise to lower BMI without examining the mechanisms underlying therapeutic health behavior changes, including important mediators. Therefore, a focus on sensitizing obese individuals to perceptions of satiety and what motivates overeating behavior holds promise.

### 1.1. Study framework – Information-Motivation-Behavioral Skills Theory (IMB)

To guide creation of the 6-week PLAIOI we tested, we utilized the Information-Motivation-Behavioral-Skills Theory (IMBT), within which three major constructs are seen to influence health behavior change: information, motivation, and practicing desired behavioral skills. In the six weekly didactic sessions, we operationalized these concepts as nutrition and exercise information handouts,

motivation cueing related to personal eating behaviors, and practicing mindful eating behavioral skills.

Conceptualized in the 1990s, when health care providers were promoting condom use behavior for gay men at risk for HIV infection,<sup>20,21</sup> evidence emerged that information and motivation alone were not sufficient for health behavior change.<sup>22</sup> In response to this puzzling observation that informed, highly motivated people at risk for infection with HIV failed to use condoms, Fisher et al. found that practicing a behavioral skill, e.g., role playing conversations to introduce condom use during sexual encounters, was the element that significantly increased condom use.<sup>23</sup> We applied the IMBT to design our mindful eating intervention (MEI) program, where hunger for food is seen as an innate human drive and the specific relevant behavioral skill of mindful eating (slow intentional eating while focusing to sensations of satiety and triggers for overeating) is practiced in each of six MEI sessions.

Although not yet widely studied, mindful eating (initially developed to treat anorexics struggling with differentiating hunger from satiation) has demonstrated potential. A small pilot study of obese adults showed mindful eating, focused upon normalizing relationships with food, could also reduce body weight.<sup>24</sup> We are unaware of any studies of mindful eating per se with adolescents. However, a review of fifteen pediatric mindfulness intervention studies focused differently and proven effective for other primary outcomes concluded mindfulness interventions were both appropriate and effective for pediatric/adolescent participants.<sup>25</sup>

### 1.2. Purpose

The purpose of this school-based, 6-week pilot study in obese Latinas, aged 14–17 years, was to test the feasibility and efficacy of MEI on BMI and mindful awareness. Our comparison group received what would be viewed as *usual care in a clinic setting* – i.e., a one-time receipt of vetted, high quality diet and exercise information appropriate for adolescents. Encompassing the IMBT constructs of information, motivation, and behavioral skills, the MEI group sessions included: providing information on nutrition, cueing into the motivations related to personal eating behaviors and, rehearsal of slow intentional eating skills with Mexican cuisine focused on attention to satiety cues. In each session, we addressed mindful eating within a context of eating at a buffet, a scenario when one is highly vulnerable to overeating. We hypothesized this intervention with repeated practice of mindful eating behavioral skills would ingrain healthy eating behaviors and result in decreased BMI.

## 2. Methods

### 2.1. Design and randomization

We utilized a two-group (MEI or usual care CG), 1:2 randomized design with repeated measures before and immediately after the 6-week intervention period, and measures for the MEI group again at 4-weeks follow-up after the 6-week intervention (i.e., 10-weeks). As recommended by the UC San Diego Mindful-Eating Certification Course,<sup>26</sup> uneven randomization was used in order to achieve an appropriate MEI group size (8–14 participants). Prior to recruitment, obtaining parental assent/participant consent, and determination of meeting study enrollment criteria, the PI used SPSS' random selection procedures to determine group assignments to either the MEI or CG. Group assignments (concealed from the recruiting promotor, see below) were printed on index cards according to the sequence generated by SPSS and were placed inside sequentially numbered opaque folders. Following assent/parental consent and meeting study enrollment criteria,

Download English Version:

<https://daneshyari.com/en/article/2629093>

Download Persian Version:

<https://daneshyari.com/article/2629093>

[Daneshyari.com](https://daneshyari.com)