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## Research Article

## Nutrition Facts Use in Relation to Eating Behaviors and Healthy and Unhealthy Weight Control Behaviors

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### ABSTRACT

**Objective:** Investigate the relationship between use of Nutrition Facts labels on packaged foods and weight-related behaviors.

Design: Cross-sectional survey in 2015–2016.

**Participants:** Young adult respondents (n = 1,817; 57% women; average age  $31.0 \pm 1.6$  years) to the *Project Eating and Activity in Teens and Young Adults*–IV survey, the fourth wave of a longitudinal cohort study. **Variables Measured:** Use of Nutrition Facts labels on packaged foods; healthy, unhealthy, and extreme weight control behaviors; intuitive eating; binge eating.

Analysis: Linear and logistic regression models were adjusted for age, ethnicity/race, education, income, and weight status.

**Results:** In women, greater Nutrition Facts use was associated with a 23% and 10% greater likelihood of engaging in healthy and unhealthy weight control behaviors, respectively, and a 17% greater chance of engaging in binge eating. In men, greater label use was associated with a 27% and 17% greater likelihood of engaging in healthy and unhealthy weight control behaviors, respectively, and a lower level of intuitive eating.

**Conclusions and Implications:** Professionals advising patients and clients on weight management may consider possible gender differences in response to weight loss and management guidance. Since label use was related to engagement in some unhealthy behaviors in addition to healthy behaviors, it is important to consider how individuals may use labels, particularly those at risk for, or engaging in, disordered eating behaviors. Future research investigating potential relationships between Nutrition Facts use, intuitive eating, and binge eating is needed.

**Key Words:** binge-eating disorder, body weight maintenance, food labeling, intuitive eating, weight control behaviors (*J Nutr Educ Behav.* 2017;

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## INTRODUCTION

Obesity, poor dietary quality, and engaging in unhealthy weight control behaviors are prevalent problems among US young adults. Approximately 34% of young adults (aged 20–39 years) are at a weight classified as having obesity,<sup>1</sup> and unhealthy weight control behaviors are reported by

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approximately 40% of young men and 50% of young women.<sup>2</sup> Dietary quality decreases during the transition from adolescence to young adulthood,<sup>3</sup> and young adults are less likely to be motivated by health than are older adults.<sup>4</sup> Despite the nutritional challenges of this developmental period, there is a lack of interventions targeting the promotion of healthy eating and weight gain prevention for young adults.<sup>5</sup>

To better understand weight behaviors in this age group, it is important to consider how young adults trying to control their weight may use resources such as nutrition information. Nutrition Facts labels have been required on most packaged foods in the US since 1990.<sup>6</sup> Studies found that 52%<sup>7</sup> to 73%<sup>8</sup> of young adults use nutrition labels at least sometimes, and

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that this practice is associated with healthier dietary intake,<sup>7,9</sup> higher involvement in healthy weight control behaviors,<sup>10</sup> and healthy eating behaviors such as breakfast consumption.<sup>11</sup> However, studies also found potentially negative associations. Using Nutrition Facts labels on packaged foods was related to smoking more cigarettes with the intention of controlling weight,<sup>10</sup> and evidence shows that individuals with weight concerns<sup>12</sup> and eating disorders<sup>13</sup> may be particularly influenced by exposure to menu labels.

The relationship between nutrition label use and weight control behaviors in particular, remains poorly understood, and several gaps in scientific understanding remain. The only identified prior study to assess nutrition label use specifically on packaged foods in relation to multiple healthy and unhealthy weight control behaviors was limited by exclusively surveying women recruited from a reproductive health clinic,<sup>10</sup> which left a gap in understanding label use in relation to weight control behaviors in men and the general population. Population-based studies are particularly relevant because Nutrition Facts labels are a population-level intervention with potentially widespread impact.

In addition, it is unknown how use of Nutrition Facts labels relates to behaviors such as intuitive eating. Intuitive eating is a practice in which individuals make choices about food and eating based on physical hunger and satiety cues rather than external cues such as time of day or other people eating.<sup>14</sup> This practice has been associated with lower body mass index (BMI) and better psychological health.<sup>15</sup> Measuring the relationship between intuitive eating and Nutrition Facts labels is interesting because labels are external cues. Therefore, those who use them as prompts for deciding how much to eat in the moment may not be eating intuitively. However, it is also possible that, rather than these 2 behaviors being mutually exclusive, some individuals may use the external cue of a Nutrition Facts label when purchasing food, while considering internal cues and intuitive eating when consuming food. Thus, measuring whether these behaviors are related could fill a gap in understanding how consumers make choices when purchasing and consuming food.

Also understudied is how nutrition label use on packaged foods may relate to binge eating, a form of disordered eating characterized by eating a large amount of food while experiencing the feeling of loss of control.<sup>16</sup> The relationship between menu label exposure and binge eating disorder<sup>13</sup> and binge eating<sup>17</sup> has been considered previously owing to concern that menu label exposure could affect disordered eating, but the relationship between binge eating and use of Nutrition Facts on packaged foods has not been measured. Testing this relationship is important for providing a foundation to better advise individuals who may be at risk for or experiencing binge eating.

The current study investigated the relationship between use of Nutrition Facts labels on packaged foods and weight-related behaviors in a population-based sample of young adults participating in Project Eating and Activity in Teens and Young Adults (EAT)-IV to provide a more informed basis for future nutrition education and messaging. Based on prior research,<sup>10-13</sup> it was hypothesized that Nutrition Facts use would be positively related to both healthy and unhealthy weight control behaviors. Because of the lack of prior studies, no a priori hypotheses were formulated regarding the potential relationships between intuitive eating and binge eating with Nutrition Facts use. Therefore, this study aimed to test whether greater Nutrition Facts use was positively, negatively, or unrelated to engaging in intuitive eating and binge eating.

#### **METHODS**

#### Study Design and Sample

The researchers surveyed young adults (n = 1,817) in *Project EAT*-IV, the fourth wave of a longitudinal cohort study measuring diet, weight, activity, and related factors in adolescents and young adults. Recruitment initially occurred in 31 public middle schools and high schools during 1998–1999 in the Minneapolis–St Paul metropolitan area, MN.<sup>18</sup> The selected schools served diverse populations in terms of gender,

ethnicity/race, and socioeconomic status to allow for comparisons across these characteristics. For the current study, participants who had completed at least 1 of the follow-up surveys were mailed an invitation to participate in Project EAT-IV during 2015–2016. Of initial participants completing EAT-I,<sup>18</sup> 1,830 (66.1% of those with valid contact information) participated in EAT-IV, primarily via online survey. The question concerning Nutrition Facts use was completed by 1,817 respondents (99.3%). The University of Minnesota Institutional Review Board approved the study and participants provided written or online informed consent.

Participants had a mean age of  $31.1 \pm 1.6$  years; 57.1% (n = 1,037) were women and 42.9% (n = 780) were men. The ethnic/racial distribution of the sample was 68.7% white, 14.7% Asian American, 8.3% African American, 3.4% Hispanic, and 4.9% mixed or other race/ethnicity.

## Survey Development and Measures

Surveys assessed Nutrition Facts use, healthy and unhealthy weight control behaviors, intuitive eating, binge eating, sociodemographic characteristics, and height and weight. Testretest reliability estimates were determined for ordinal and continuous variables in a subgroup of 103 participants who completed the EAT-IV survey twice within 1–4 weeks. All test-retest correlations had P < .001. Percent agreement is reported for categorical variables.

Nutrition Facts use was assessed based on a modified National Health and Nutrition Examination Survey question<sup>19</sup>: How often do you use the Nutrition Facts panel (or other part of the food label: ingredient list, serving size information) before buying or choosing to eat a food product for the first time? with a 5-point frequency response in which 1 = never and 5 = always (test-retest)r = .83). For analysis, Nutrition Facts use was dichotomized by categorizing those responding *most of the time* and *always* as label users and all other responses as label nonusers, similar to previous studies.9,11

Weight control behaviors were assessed via previously reported *Project* 

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