



# Weight perceptions, disordered eating behaviors, and emotional self-efficacy among high school adolescents



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## ABSTRACT

Although emotional disorders and disordered eating behaviors are known to be related, the relationship between emotional self-efficacy (ESE) and disordered eating is unknown. This study examined the relationship between ESE and disordered eating in a statewide sample of public high school adolescents ( $n = 2566$ ). The Centers for Disease Control Youth Risk Behavior Survey and an adolescent ESE scale were utilized. Logistic regression adjusted for key covariates explored the relationship between low ESE and disordered eating among selected race and gender groups. Self-perceived weight as underweight or overweight; and dieting, vomiting or taking laxatives, taking diet pills, and fasting to lose weight were each associated ( $p < .05$ ) with lower levels of ESE for certain race/gender groups. Findings provide increased justification for tailoring disordered eating interventions and treatments to accommodate the highest risk groups. Measures of ESE should be considered for adolescent mental health assessments in fieldwork, research, and evaluation efforts.

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## 1. Introduction

Adolescence is characterized by heightened stress (Spear, 2000) and a struggle for independence (Blakemore, 2008; Spear, 2000), which may cause some adolescents difficulty in emotional and behavioral regulation (Compas, Connor-Smith, Saltzman, et al., 2001). As a consequence, maladaptive behaviors, including disordered eating, may result as inappropriate coping mechanisms (Ball & Lee, 2000; Martyn-Nemeth, Penckofer, Gulanick, et al., 2009), and specifically as a means to regulate emotions (Ackard, Croll, & Kearney-Cooke, 2002; Lavender & Anderson, 2010).

Disordered eating, sometimes referred to as extreme weight control practices (Gonsalves, Hawk, & Goodenow, 2014), is posited to occur at higher rates than clinically diagnosed eating disorders (Croll, Neumark-Sztainer, Story, et al., 2002), and can include behaviors such as laxative use, vomiting, fasting or skipping meals, and diet pills with the explicit purpose of controlling or losing weight (Croll et al., 2002; Gonsalves et al., 2014; Matthews, Zullig, Ward, et al., 2012). Among high school adolescents, disordered eating is estimated to occur at rates anywhere from 7.3% to 31% for males and between 15.8% and 57% among females (Croll et al., 2002; Gonsalves et al., 2014), and is thought to be the intermediary step between dieting and the development of clinically diagnosed eating disorders (Forman-Hoffman, 2004).

Whereas disordered eating has been positively associated to feelings of loss of control (Atkins, Sharp, & Watt, 2002), self-efficacy has been negatively associated with perceived loss of control (Sherer, Maddux, Mercandante, et al., 1982). Defined as an individual's perceived confidence in performing a behavior that leads to a desired outcome (Bandura, 1997), self-efficacy has been shown to be predictive of the engagement in a variety of positive behaviors (Bandura, 1997). For example, high school students with positive emotional well-being are less likely to engage in disordered eating behaviors (Croll et al., 2002).

Although the concept of self-efficacy is not new (Bandura, 1977), a specific aspect of self-efficacy, emotional self-efficacy (ESE) (Hessler & Katz, 2010; Muris, 2001), has emerged in explaining why some individuals are better able to cope with aversive life events. ESE is defined as the ability to avoid negative emotions or the ability to reestablish ones usual emotional state (Hessler & Katz, 2010; Muris, 2001). ESE is hypothesized to be a precursor of emotion regulation, or the capacity to engage in appropriate behaviors in response to specific environmental situations (Suveg & Zeman, 2004). Common applications of ESE include a person's belief in their abilities to avoid negative emotional states and to restore normal emotional states (e.g., self-talk to regain a positive attitude, calming yourself once scared or anxious). As such, research suggests that adolescents with increased ESE are less likely to engage in risky sexual behavior (Valois, Zullig, Kammermann, et al., 2013), suicide ideation (Valois, Zullig, & Hunter, 2013), and substance use (Zullig, Teoli, & Valois, 2015), and are more likely to engage in physical activity (Valois, Umstatted, Zullig, et al., 2008). In addition, each of these studies found significant differences by race and gender.

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The current study examined the relationship between disordered eating and ESE in a large sample of high school adolescents from a southern state in the United States (US). If disordered eating is significantly associated with low levels of ESE, these results would extend the current literature on both adolescent ESE and adolescent disordered eating. Consistent with previous adolescent ESE research (Valois, Zullig, Kammermann, et al., 2013; Valois, Zullig, & Hunter, 2013; Valois et al., 2008; Zullig et al., 2015), the current study examines potential associations by four race/gender groups: Black females, Black males, White females, and White males. Past research has indicated that unique patterns of race/gender differences consistently arise in regard to adolescent disordered eating (Chao, Pisetsky, Dierker, et al., 2008; Croll et al., 2002; Neumark-Sztainer, Croll, Story, et al., 2002). However, there has not been a consistent pattern for racial groups (Ricciardelli, McCabe, Williams, et al., 2007). By exploring potential race and gender differences, this study could offer additional justification for the tailoring of disordered eating intervention and treatment programs to accommodate the highest risk groups. The current study hypothesized that associations would exist and vary among the selected race/gender groups, however given the exploratory nature of the study, no additional hypotheses were generated.

## 2. Materials and methods

### 2.1. Participants

Study data were derived from the 3836 participants, with usable data from 3376 students. However, only 2566 valid observations were available for analysis owing to: (a) nonresponse by participants to variables of interest ( $n = 79$ , 2.4%), (b) out-of-range responses or responses that could not be read ( $n = 470$ , 13.9%), and (c) the exclusion of participants that self-reported their race as "Other" [than Black or White] ( $n = 261$ , 7.73%). The final sample contained 1037 (40.4%) females and 1529 (59.6%) males of which 579 (22.6%) were Black females, 809 (31.5%) were Black males, 458 (17.8%) were White females, and 720 (28.1%) were White males. Participants were in grades 9–12 with ages ranging from 12 to 18 years. There were 833 (32.5%) 9th grade students, 741 (28.9%) 10th grade students, 518 (20.2%) 11th grade students, and 474 (18.5%) 12th grade students. Approximately 34% ( $n = 876$ ) of the sample reported being eligible for free or reduced-priced school lunch, 52.5% ( $n = 1348$ ) reported not being eligible, while 13.3% ( $n = 342$ ) reported being unsure of their eligibility.

### 2.2. Procedure

The Center for Disease Control and Prevention's (CDC) Youth Risk Behavior Survey (YRBS) from a southern state was utilized. The YRBS used a sampling methodology specific to obtaining a representative sample of all students (grades 9 through 12) enrolled in the public high schools in one southern US state. These data were chosen for this study because they were the only YRBS data to contain questions on emotional self-efficacy. Special education students were not included in this sample. Brener et al. (Brener, Kann, McManus, et al., 2002) established adequate test-retest reliability for the YRBS. For this study, 215 schools were stratified by enrollment size into three categories: "small" schools had enrollments of 74 to 874 students; "medium" schools had enrollments of 875 to 1278 students; and "large" schools had enrollments greater than 1278 students. Of the 68 eligible schools, 39 participated (57%). Among the participating schools, the student response rate was 89% for an overall response rate of 51% ( $.57 \times .89$ ). These data were treated as a simple random sample since the overall response rate did not meet CDC's criteria for weighted data (60%). Passive parental consent was used with <1% of eligible students opting out via parental refusal. This study was approved by the referent university's Institutional Review Board.

### 2.3. Measures

#### 2.3.1. Emotional self-efficacy

The ESE scale included in the YRBS was originally validated with adolescents in Belgium by Muris (2001) and served as this study's dependent variable. Valois and Zullig (2013) recently demonstrated the validity and the reliability of the scale with adolescents in the US. Consistent with Valois and Zullig (2013) the ESE scale used in this investigation consisted of seven items: "How well do you succeed at cheering yourself up when an unpleasant event has happened;" "How well do you succeed in becoming calm again when you are very scared;" "How well can you prevent becoming nervous;" "How well can you control your feelings;" "How well can you give yourself a pep-talk when you feel low;" "How well do you succeed in suppressing unpleasant thoughts;" and "How well do you succeed in not worrying about things that might happen?" Items were scored on a 5-point Likert-type scale with the following response options: (a) not at all, (b) a little bit, (c) pretty well, (d) well, (e) very well. Internal consistency estimates for the scale in this investigation were acceptable at .85.

#### 2.3.2. Weight perceptions and body mass index (BMI)

Selected YRBS items used to measure weight perceptions served as the independent variables. These included: "How do you describe your weight? (very underweight, slightly underweight, about the right weight, slightly overweight, very overweight)," "Which of the following are you trying to do about your weight?" (lose weight, gain weight, stay the same weight, I am not trying to do anything about my weight). Since weight perceptions among high school students may not always be accurate (Martin, Frisco, & May, 2009), BMI was also calculated from two questions: "How tall are you with your shoes on?" and "How much do you weight without your shoes on?" using metric measures (i.e., meters and kilograms) where weight is divided by height squared. Using standard weight status categories (World Health Organization, 2015), participants were categorized as underweight ( $BMI \leq 18.5 \text{ kg/m}^2$ ), normal weight ( $BMI = 18.6\text{--}24.9 \text{ kg/m}^2$ ), overweight ( $BMI = 25.0\text{--}29.9 \text{ kg/m}^2$ ), or obese ( $BMI \geq 30.0 \text{ kg/m}^2$ ).

#### 2.3.3. Disordered eating

A series of questions on disordered eating behaviors with yes/no response options are standard on the YRBS. Those questions were "During the past 30 days, did you eat less food, fewer calories, or foods low in fat to lose weight or keep from gaining weight?," "During the past 30 days, did you exercise to lose weight or keep from gaining weight?," "During the past 30 days, did you vomit or take laxatives to lose weight or to keep from gaining weight?," "During the past 30 days, did you take any diet pills, powders, or liquids, without a doctor's advice to lose weight or to keep from gaining weight?," and "During the past 30 days, did you go without eating for 24 h or more (also called fasting) to lose weight or keep from gaining weight?"

### 2.4. Statistical analysis

Analyses were conducted using SAS. 9.4. All ESE scale items were pooled to form a pseudo-continuous variable ranging in score from 7 ( $1 \times 7$ ) to 35 ( $5 \times 7$ ), expressed as a mean emotional self-efficacy (MESE) score with lower scores indicative of being less emotionally self-efficacious. Consistent with prior research using the ESE scale (Valois, Zullig, Kammermann, et al., 2013; Valois, Zullig, & Hunter, 2013; Valois et al., 2008; Valois & Zullig, 2013; Zullig et al., 2015), a numeric collapse of the pooled dependent variable was performed owing to adolescents reporting their ESE as "pretty well" was measured with one scale response option, whereas the other two categories were each composed of three response options. As a result, MESE scores of 15 or less were categorized as having lower ESE, scores between 16 and 21 were deemed as having mid-range ESE, while scores of 22 or

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