

Body image, Dieting and Disordered Eating Behaviors Among College Students

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Abstract:

Objective: To assess and determine whether there was an association between body image satisfaction/dissatisfaction and dieting and disordered eating behaviors among college students.

Method: Cross-sectional study utilizing three validated surveys (EDE-A, SATAQ-3 and SATAQ-4) to collect data. Logistic regression was used to determine whether there was an association between body image perception, dieting and disordered eating behaviors; odds ratio were calculated to compare the relative odds of occurrence between variables. A total of 184 students from a Southwest state university in the USA, actively living on campus, were included in this study.

Results: Statistically significant associations noted between students reported feeling pressure to lose weight and engaging in calorie restriction ($p < 0.001$), exercising ($p = .008$), fasting/staving ($p = .013$) and pressure to be thin and fasting and/or starving ($p = 0.002$). Statistically significant association noted between perceived pressure to diet and calorie restriction ($p = .011$), utilizing liquid formula ($p = .017$) and pressure to change appearance and fasting/starving ($p < .000$), utilizing liquid formula ($p = .043$) and exercising ($p < .000$).

Conclusion: Assessing dieting, disordered eating behaviors and body image perception among college students is important for identifying where additional resources, tools and support staff is needed to promote campus wide adoption of healthy behaviors that minimize the use of disordered eating behaviors. It is important to not just focus on body image dissatisfaction when targeting healthy behaviors, but also the consideration of interdependent health factors.

Keywords: eating behaviors, body image, disordered eating, college students

INTRODUCTION

Body image, which includes an individual's perception about their appearance, how they feel about their body, height, weight and shape and emotional attitudes, can affect eating behaviors. A negative body image, which includes individuals feeling dissatisfied with their body and appearance, may cause an individual to pursue unsafe weight loss habits; however, a positive body image, which includes accepting and appreciating one's body, contributes to enhanced psychological adjustments, such as fewer eating disorders and positive self-worth (National Eating Disorder Association, 2018; Cash, 2004). Body image dissatisfaction is a risk factor for eating disorders and a significant predictor of low self-esteem, depression, and obesity (National Eating Disorder Association, 2018).

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According to the National Center for Education Statistics, almost half of individuals aged 17 to 24 are enrolled in college, university, or post-secondary educational programs. Many college students struggle with body image issues, sometimes, made worse by transitions or a change in weight and/or appearance (Greg, 2016). Maintaining a positive body image can be a challenge for many college students, as they are constantly navigating many life changes that are exciting and stressful; the degree of change that college students must quickly adapt to in the first semester of freshmen year can be exciting but stressful (Rohde, Stice, & Marti, 2015). For many college students, navigating college, which includes a new environment with reduced parental presence and support, increased peer pressure, less structure, unscheduled eating, all-you-can-eat dining hall, and increased workload can be challenging, and sometimes, bring about feelings of poor self-esteem (Goswami, S. Sachdeva, & R. Sachdeva, 2012).

Dieting behaviors and disordered eating, which include self-induced vomiting, laxative and diuretic misuse, fasting and excessive exercise, may be utilized to relieve guilt or discomfort associated with eating or to relieve anxiety that may not be directly related to food or eating, but provides emotional and/or physical relief (Brechan & Kvaem, 2015). Genetic, physiological, behavioral and environmental factors may also contribute to the development of dieting and disordered eating behaviors (Stein et al., 2005). Although many college students do not meet the full criteria for an eating disorder, many may engage in dieting and disordered eating behaviors; dieting and disordered eating behaviors are associated with high rates of morbidity and mortality (Malinauskas et al., 2006). For many college students who are struggling with increased responsibilities, increased demand for time management, different surroundings and relationships at college, changing relationships with family and friends back home, the additional pressures of college life may cause a vulnerable body image. Dieting and disordered eating behaviors may be a way to manage, but dieting and disordered eating have the potential to become harmful. Body image dissatisfaction is a risk factor for dieting and disordered eating and a significant predictor for low self-esteem, depression and obesity; however, body image satisfaction/dissatisfaction and eating-compensatory behavior among college students remain an understudied topic (Brechan & Kvaem, 2015; Goswami, S. Sachdeva, & R. Sachdeva, 2012). Therefore, the aim of this study was to assess dieting and disordered eating behavior among college students and to determine whether there was an association between body image satisfaction or dissatisfaction and dieting and disordered eating behaviors.

METHODOLOGY

Data Collection

Two facilitators aided students in completing the eating disorder examination questionnaire-A (EDE-A), a body image survey comprised of the social attitudes towards appearance scale-3 (SATAQ-3), social attitudes towards appearance-4 (SATAQ-4), and a tri scale assessing body image perception; additional questions were also asked regarding dieting behaviors. The EDE-A provides a measure of the range of and severity of eating disorder features. EDE-A is an investigator-based interview that provides frequency data on key behavioral features of eating disorders in terms of number of episodes of the behavior and number of days in which the behavior has occurred (Mond et al, 2014). The questionnaire also provides subscale scores reflecting the severity of aspects of the psychopathology of eating disorders. The body image questionnaire is comprised of SATAQ-3 and SATAQ-4: SATAQ-3 contains subscales that measures multiple aspects of societal influence, and SATAQ-4 was used to assess internalization of appearance ideals and appearance pressures (Thompson et al., 2004; Schaefer, Harriger, & Heinberg, 2017). Students were recruited via flyers placed around the college campus; students had to be currently enrolled (at least part-time) during the 2019 to 2020 academic year and had to be actively living on campus to be eligible to participate in this study. The surveys were administered in the campus' nutrition lab where each student had the space and opportunity to privately complete the surveys. A total of 184 students from a Southwest state university in the USA, actively living on campus, were included in this study.

Ethical Consideration

All participants completed consent forms prior to taking the survey. The study was also approved by the university's Office of Research Integrity and Ethics. To protect the privacy of the student participants living on campus in this study, the specific college campus where this study occurred is not pinpointed.

Data Analysis

Descriptive statistics was used to quantitatively summarize dieting and disordered eating behaviors (calorie restriction, crash dieting, liquid formula consumption, exercise, diet pills, laxatives, diuretics, fasting/starving, and vomiting) and body image perception. In order to evaluate the relationship between variables, STATA was used (StataCorp, 2021). Logistic regression was employed to determine whether there was a relationship between body image perception (independent variables: pressure to lose weight, pressure to be thin, pressure to diet, pressure to change appearance, satisfaction with body shape, and weight affecting how you feel about yourself) and dieting and disordered eating behaviors (dependent variables: calorie restriction, crash dieting, liquid formula consumption, exercise, diet pills, laxatives, diuretics, fasting/starving, vomiting) among college students (freshmen, sophomore, junior, and senior student's). Odds ratios were also calculated to compare the relative odds of the occurrence between body image perception and dieting and disordered eating behaviors.

RESULTS

Of the 184 participants in this study, 111 were freshmen, 46 were sophomores, 18 were juniors, and 9 were senior students; 78% of the participants were female and 90% were between the ages of 18 to 21. Of all the participants in this study, 9% of freshmen, 6% of sophomores, 6% of juniors, and 22% of seniors felt proud of their bodies; 20% of freshmen, 23% of sophomores, 24% of juniors, and 22% seniors felt dissatisfied with their bodies; and 37% of freshmen, 38% of sophomores, 56% of juniors, and 22% of seniors felt content with their bodies. Of all the student participants, 49% reported sometimes or often restricting their calories, 30% reported sometimes or often fasting and/or starving, 20% reported sometimes or often utilizing liquid formula, 15% reported sometimes or often crash dieting, 6% reported sometimes or often utilizing laxatives, 3% reported sometimes or often vomiting, and 2% reported often or sometimes utilizing diuretics in an effort to control their weight and/or shape (see Figures 1 and 2).

There was a significant association between students reporting feeling pressure to lose weight and engaging in calorie restriction ($p < .001$) (OR=3.82), exercise ($p = .008$) (OR=.57) and fasting/starving ($p = .013$) (OR=2.65) in an effort to control weight and students feeling pressure to be thin and engaging in fasting and/or starving ($p = .002$) (OR=2.29) (see Table 1). There was also a significant association between students reporting feeling pressure to diet and engaging in calorie restriction ($p = .011$) (OR=3.84) and utilizing liquid formula ($p = .017$) (OR=1.72); pressure to change appearance and engaging in fasting and/or starving ($p < .000$) (OR=2.56), liquid formula ($p = .043$) (OR= 1.72) and exercising ($p < .000$) (OR=2.77) (see Table 1). There was a significant association between students being satisfied with their body shape and fasting and/or starving ($p < .000$) (OR=3.40) in an effort to maintain their shape. Finally, there was also a significant association between students being satisfied with their weight and engaging in calorie restriction ($p = .013$) (OR=2.00) and fasting or starving ($p = .005$) (OR=2.94) in an effort to maintain their weight (see Table 1).

DISCUSSION

Body image satisfaction and dissatisfaction have the potential to influence individuals to engage in dieting and disordered eating behaviors. In this study, body image perceptions and its association with dieting and disordered eating behaviors among college students were assessed. There was a significant association between perceived pressure to lose weight and engaging in calorie restriction, fasting and/or starving, pressure to be thin and

fasting or starving and utilizing diuretics; there was also a significant association between students' perceived pressure to diet and calorie restriction and utilizing liquid formula. A significant association was also noted between students being satisfied with their weight and engaging in calorie restriction and fasting or starving and students being satisfied with their body shape and engaging in dieting and disordered eating behaviors, such as fasting or starving or vomiting. Although more research is needed to understand the factors causing students to feel pressure to lose weight and/or be thin in this study, it has previously been noted that media, family, peer pressure, and culture often play a role in individuals feeling pressure to be thin (Schaefer et al., 2011). There are many contributing factors to weight gain, dieting and disordered eating behaviors among college students, such as the nutrition environment, stress, and poor sleeping habits. Additionally, the social element also needs to be considered, as many opportunities for socializing on campus revolve around food and/or alcohol (Bailey et al., 2020). In high school, many students had an established routine with a parent or guardian preparing meals; many students also participated in school meals programs. Upon entering college, many students are now presented with options, such as a freshman meal plan or a mini refrigerator or microwave set-up that only allows for limited meals and snacks. Many students also consume increased amounts of processed foods that are calorically dense with little nutritional value; many also consume majority of meals at campus dining facilities or at restaurants on campus not knowing the sugar, sodium, fat content, and calories of meals (Bailey et al., 2020; Dhillon, Diaz-Rios, & Aldaz, 2019). This change in food intake behavior has the potential to promote weight gain. Research indicates that most college students are not meeting the dietary and physical activity guidelines, with the average student gaining approximately 3.5 to 6.6 pounds during four years at university (Bailey et al., 2020). In response, to limit weight gain or to counteract the effects of weight gain and alleviate guilt associated with eating, many students engage in dieting and/or disordered behaviors.

As highlighted in this study, not every person who engages in disordered eating behaviors is dissatisfied with their body image; body image is a complex construct made up of feelings, perceptions, thoughts, beliefs, and behaviors. Some students may engage in disordered eating behaviors to help maintain their weight and/or shape, but also engage in dieting and disordered eating behaviors due to feeling confused about how to eat healthy; mental health risk factors, environmental factors and stress may also play a role in dieting and disordered eating behaviors. Although limited research exists between body satisfaction, dieting and disordered eating behaviors, previous research has noted that there is increased ease of leading a balanced lifestyle with healthier attitudes and behaviors relating to food and exercise when individuals appropriately respond to the needs of their bodies (Andrew, Tiggerman, & Clark, 2016). Many college students are also unaware of the health risks associated with semi-starvation and other forms of diet that restrict entire categories of food, purging, laxative use, diuretics use, vomiting and fasting, prescription and over-the-counter diet pills (Alvarenga et al., 2013; Kruschitz et al., 2017). Although the immediate weight loss from the successful completion of a diet and/or disordered eating behavior can be encouraging, weight is generally regained in 3 to 5 years once dieting or the disordered eating behavior is no longer utilized. Meal replacement or liquid formulas have been shown to be an effective strategy for robust initial weight loss, as they are portion-controlled and a nutrient rich alternative to a meal; meal replacements may also assist students with navigating the nutrition environment (Davis, Coleman, & Kiel, 2010). However, although the convenience of meal replacements is often appealing, meal replacements may not be the most sustainable option for weight maintenance (Kruschitz et al., 2017). Laxative abuse is an increasingly popular weight-loss method on college campuses because many students believe utilizing laxatives may prevent calorie absorption and weight gain (de Souza et al., 2021). However, laxative abuse has the potential to cause disturbance of electrolytes and mineral balances, dehydration, and internal organ damage. Diet pills use has also increased in popularity among college students. Various diet pills work through different mechanisms, with many promoting the stimulation of sympathetic nerves, but also have the potential to exacerbate stress response and increase the risk of anxiety and depression, since many college students are already at increased risk for mental distress (Begdache et al., 2021). Binge eating and purging behaviors are also common among college students, and sometimes, occur concurrently with a range of mental health problems, which includes internalizing and externalizing emotional problems. Binge eating has the potential to cause a number of serious physical, emotional, and social health complications while purging may cause issues throughout the digestive system and can be disruptive to mental and emotional health (Serra et al., 2020).

Perception is a core determinant of health behavior; availability and affordability of available options has been noted to be a major factor affecting students' food choices (Skelton & Evans, 2020). Perceived higher cost of nutritious foods on campus compared to foods with little nutritional value has been noted to be a hindrance to choosing nutritious foods (fruits and vegetables) on campus (Dhillon et al., 2019; Skelton & Evans, 2020). A college environment that facilitates consistent and affordable access to nutritious food is important for ensuring dietary adequacy among students (Diaz-Rios & Aldaz, 2019). It is also important that all students have access to necessary resources on campus, such as registered dietitians who can provide nutrition counseling and nutrition education and also peer support groups, meditation, and mindfulness classes that will assist students with identifying barriers, actively seek solutions to barriers, support mindfulness, and celebrate successes in an effort to develop long term, healthy behaviors that will support a healthy weight management journey. Providing students with the necessary tools and support to navigate and explore a non-diet approach towards health through appropriate amounts of exercise and healthy eating, rather than yo-yo dieting and students utilizing disordered eating behaviors, is important. Although body image dissatisfaction is a risk factor for disordered eating behaviors, it should not be the only target of promoting overall well-being. Promoting overall well-being via the consideration of interdependent health factors, such as positive body image, a well-balanced diet, maintaining a healthy relationship with food, free of dieting and disordered eating behaviors, self-acceptance, and enjoying physical activity is also important for long-term wellbeing. Promoting a comprehensive approach to health on the college campus has the potential to minimize students' engagement in dieting and risky disordered eating behaviors.

LIMITATIONS

This study is not without limitations. All college students were not represented in this body image, dieting and disordered eating data. Every college campus is not identical to this Southwest state's public university campus; replicating this study on multiple college campuses would improve the generalizability of this study. Conducting this study for multiple semesters would also improve the validity of this study. The cross-sectional nature of this study is also a limitation to consider. Despite these limitations, there are very few studies that address body image perception and its association with dieting and disordered eating behaviors on the college campus.

CONCLUSION

Assessing whether there is an association between perceived body image, dieting and utilizing disordered eating behaviors provides valuable information that has the potential to assist with identifying resources and tools needed on campus to assist students with developing a healthy relationship with food and their bodies. Assessing dieting, disordered eating behaviors, and body image perception among students is also important in determining where additional resources and/or support staff is needed in an effort to promote campus-wide adoption of healthy behaviors that minimize the use of disordered eating behaviors. It is important to not just focus on body image dissatisfaction when targeting healthy behaviors or overall well-being; promoting overall well-being via the consideration of interdependent health factors, such as positive body image, a well-balanced diet and maintaining a healthy relationship with food, free of dieting and disordered eating behaviors, self-acceptance, and enjoying physical activity is important for success not only in college, but for promoting longevity through adulthood.

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APPENDICES

Figure 1. Summary of dieting and disordered eating behavior (diuretics use, exercise, crash dieting, and diet pills)

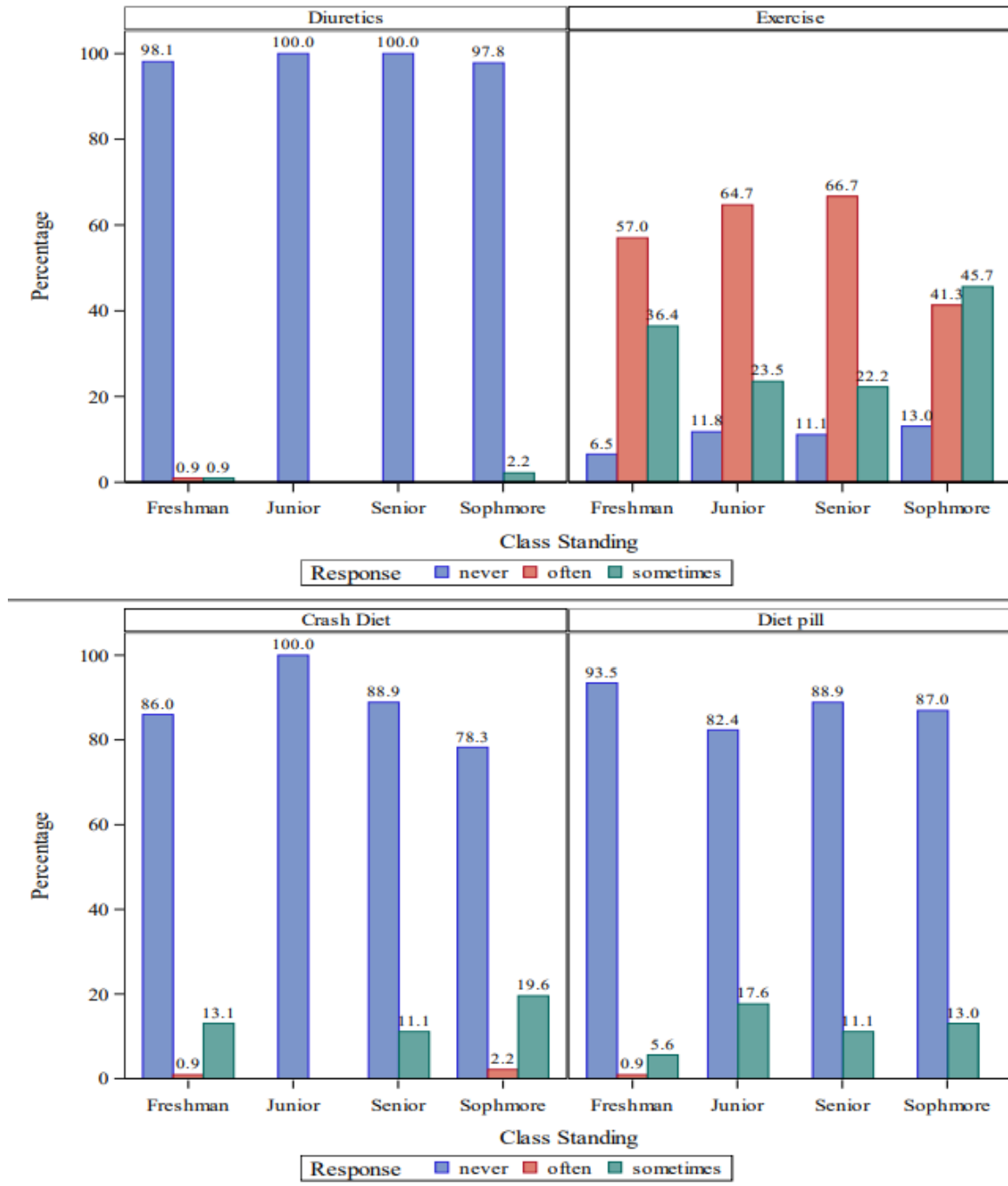


Figure 2. Summary of dieting and disordered eating behaviors (laxative use, liquid formula, fasting or starving, and calorie restriction)

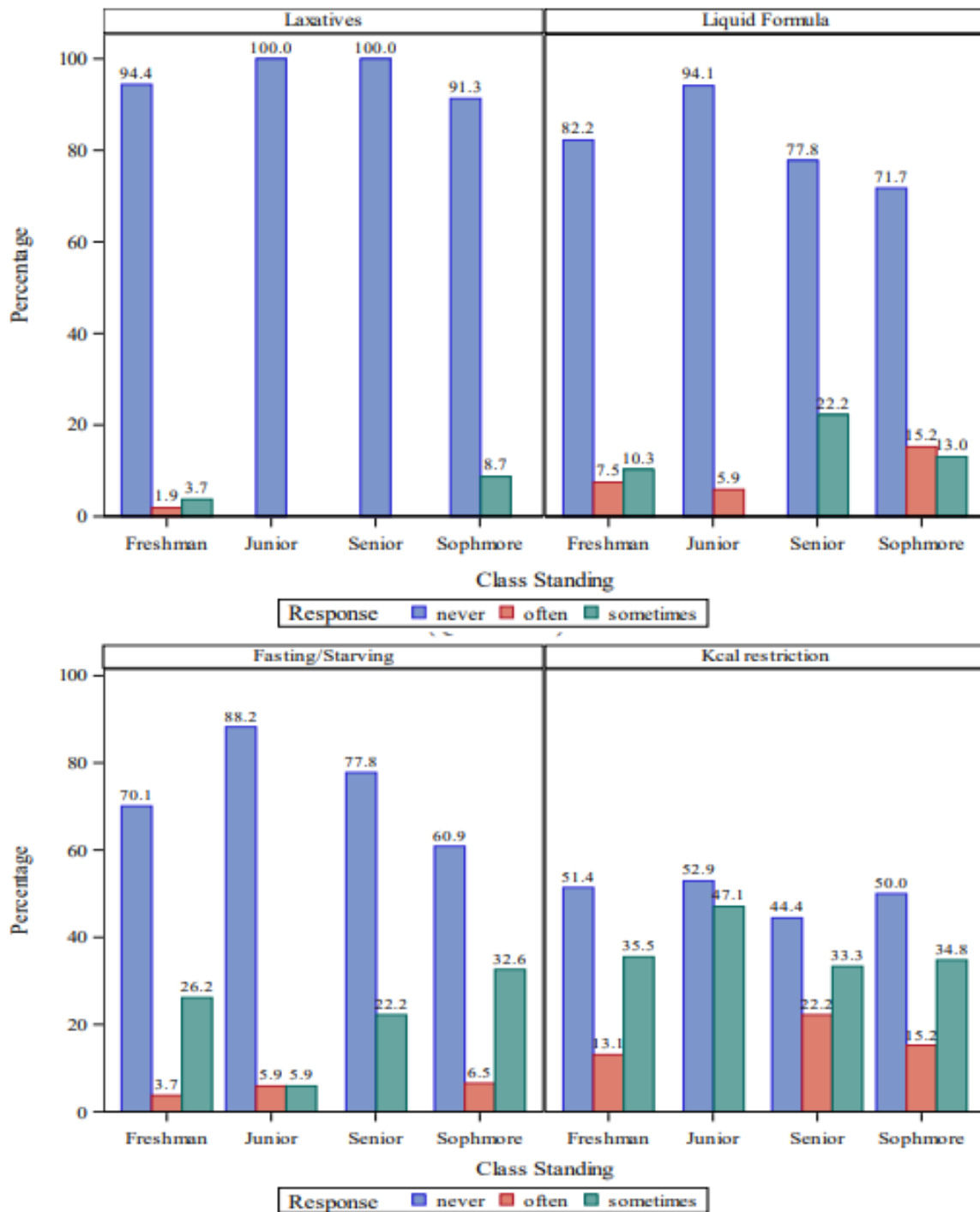


Table 1. Summary of association between body image perception, dieting, and disordered eating behaviors

		Coef.	Std. Error	t	P> t	95% Conf. Interval	
Pressure to change appearance	Liquid Formula	.2876	.1413	2.04	.043	.0087	.5665
	Exercise	-.5571	.1327	-4.20	.000	-.8190	-.2951
	Fasting	.5913	.1650	3.58	.000	.2656	.9169
	starving	No other significant associations were seen between students' perception regarding pressure to change appearance and calorie restriction, crash dieting, diet					
Pressure to diet	Calorie re- striction	.3635	.1413	2.57	.011	.0846	.6424
	Liquid Formula	.3817	.1582	2.41	.017	.0696	.6939
		No other significant associations were seen between students' perceptions regarding pressure to diet and crash dieting, exercising, using diet pills, laxatives,					
Pressure to be thin	Fasting/ Starving	.6294	.1915	3.23	.002	.2442	1.015
	Diuretics	-1.145	.6043	-1.90	.050	-2.338	.0476
Pressure to lose weight	Calorie re-	.5049	.1484	3.41	.001	.2119	.7979
	Exercise	-.4224	.1562	-2.71	.008	-.7307	-.1142
	Fasting/ Starving	.4864	.1935	2.51	.013	-.6313	1.697
		No other significant associations were seen between students' perceptions regarding pressure to change appearance and crash dieting, liquid formula, diet					
Satisfied with weight	Calorie Re-	-.4546	.1805	-2.52	.013	-.8109	-.0983
	Fasting/ Starving	-.6759	.2356	-2.86	.005	-1.142	-.2101
		No significant associations were seen between students being satisfied with their weight and crash diets, liquid formula, exercise, diet pills, laxatives, diu-					

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Satisfied with body shape	Fasting/Starving	-1.057	.2116	-4.99	.000	-1.475	-.6393
	Vomiting	-1.201	.6450	-1.86	.054	-2.474	.0724
		No significant associations were seen between students being satisfied with their body shape and calorie restriction, crash dieting, liquid formula, exercise,					
Weight affects how you feel about yourself	Calorie Restriction	.3326	.0753	4.42	.000	.1840	.4812
	Fasting/Starving	.2710	.0984	2.75	.007	.0768	.4653
		No significant associations were seen between students' perceptions regarding weight affecting themselves and crash dieting, liquid formula, exercise, diet					