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EVALUATING THE INCIDENCE AND PREVALENCE OF DISORDERED EATING  
PATTERNS IN COLLEGIATE ATHLETES TO EMPHASIZE THE SIGNIFICANCE  
OF NUTRITION EDUCATION RESOURCES IN BODY IMAGE-ORIENTED  
SPORTS

by

Kirbie Daily

A Thesis

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Science

Major: Clinical Nutrition

The University of Memphis

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## **Abstract**

The prevalence of eating disorders in the realm of sports and college athletics has increased at an alarmingly rapid rate in the past 20 years. The population with which eating disorder patterns are most commonly seen is the dance discipline; the incidence of eating disorder behaviors and patterns has been found to be anywhere between 15-82% of a given dance population, primarily due to a lack of proper nutrition resources or education. To combat this issue, a 6-week cooking series with embedded nutrition education is proposed to take place with the University of Memphis dance team. Pre and post screening will include taking the participants' anthropometrics, blood work, an EAT-26 screening questionnaire, and a food and cooking confidence survey to analyze changes derived from the 6-week program. Hypothesized outcomes include an increased knowledge of and confidence surrounding fueling for sport, in addition to a reduced prevalence of eating disorder behaviors.

## **Introduction**

### ***Background***

Eating disorders and disordered eating patterns, extreme body image dysmorphia, and a negative overall view of food and the eating experience are only a few of the problems that appear in many body image centered sports. Specifically, the dance discipline can modulate the presence of alterations in body image, which in turn is a factor relationship with eating disorders<sup>1</sup>.

Familiarity with eating disorders has become a more widespread phenomenon, but understanding the difference between the types and causes of eating disorders as well as disordered eating patterns has not necessarily been achieved by those who need to acknowledge it most - i.e. coaches, dance teachers, supervisors, etc. This is primarily due to most college female athletes suffering from eating disorders and disordered eating experiencing symptom levels that are problematic but merely subclinical<sup>2</sup>. Because disordered eating in many of these body-image centered activities has come to a point of being almost normalized, the degree and number of resources available for these participants to counter these behaviors is incredibly limited; this is also due in part to the lack of attention and validity given to these participants in terms of being considered “athletes.”<sup>3</sup> Providing these athletes and body image-centered activity participants with the proper counseling resources to prevent and manage eating disorder behaviors, as well as implementing effective nutrition education programming may be incredibly effective tools for dramatically decreasing the incidence and prevalence of eating disorders and negative thoughts surrounding food within this population<sup>4</sup>.

### *A Review of the Literature*

The prevalence of eating disorders and eating disorder behaviors is a topic that has gained a considerable amount of momentum in recent years. A study developed in Portugal by Francisco and Alarcão in 2012 investigated specific characteristics of dance and gymnastics-based environments making them high-risk conditions for developing eating disorders<sup>5</sup>. They looked at four different focus groups aged 12-17 comprised of thirteen ballet students from a professional ballet school, and nine gymnasts from a gymnastics club; each member was appointed an inductive-deductive analysis procedure, with sources of influence being examined as well - coaches, teachers, and those that have a strong influence on their athletes. The study found that the influence of peers, parents, and characteristics of the environment all play a key role in both the development as well as the prevention of eating disorders and disordered eating.

Another study utilized a cross-sectional design to examine female body image, anthropometric measurements, and eating disorder prevalence in auxiliary unit members. The study, completed by Torres-McGehee et al., included volunteers from four southeastern universities aged 18-25, who were members of their auxiliary unit for at least one year; the unit included dancers, color guard members, and majorette members, looking at uniform types, years of dance experience, education, and self reported weight policy. The data collected found that the prevalence for at risk eating disorder populations within the auxiliary members for eating disorder behaviors and characteristics was 29.7%; the color guard had a prevalence of 31.4% out of all color guard members across the four universities, the dancers 25.5% out of all dance volunteer participants, and the majorette prevalence was 36.8% among all in this group<sup>6</sup>. The study also found that color guard members reported the highest frequency for binge eating, at a percentage of 20%, as well

as vomiting, at a percentage of 14.3%; majorettes were also found to have the highest frequency and percentage of using diet pills and laxatives at 26.3% among all participants<sup>6</sup>. The study concluded that the prevalence of eating disorder behaviors in auxiliary unit members is unacceptably high, which further validates the need to examine and address unhealthy weight-management behaviors, eating disorder status, and the accessibility to a registered dietitian and nutrition education resources<sup>6</sup>.

In a systemic review and meta-analysis of thirty-three relevant studies, the overall prevalence of eating disorders was found to be 12% in dancers of all styles and 16.4% in ballet dancers<sup>7</sup>. Arcleus et al. reviewed studies published from 1966 through July 2013, looking at the prevalence of eating disorders in ballet dancers and dancers of other styles ages 12-38. Other relevant findings in this study portrayed that the prevalence of eating disorders in female dancers can be anywhere from 0%-50% of a specific population, while lifetime prevalence of eating disorders in dancers can range from 15% - 82% of a dance population<sup>7</sup>.

Eating disorders are common in young adolescents and teenagers, especially those who participate in dance and dance-related organizations, but when looking at the prevalence in adults, the incidence rates can be just as elevated. Often in the art of ballet, many of these athletes are not able to comprehend that their behaviors and attitudes towards food and nutrition are disordered until a later point in their life. In a study published by Archinard in June of 1995, the influence of training in classical dance during childhood and adolescent years was examined for its effects on bulimia nervosa in adult patients<sup>8</sup>. The study looked at EDI-scores of two groups of patients - one having either no or a relatively short past of classical ballet training and

the other having an extended history of classical ballet dancing; significantly higher differences were found for emotional deficiency, and performance striving (the drive for thickness and perfectionism) in the patients with a past of extended ballet training<sup>8</sup>. Ackard et al. also found that, when examining women who participated in childhood dance, a higher score on measures of bulimic behaviors were found than nondancers<sup>9</sup>.

Disordered eating in the dance and ballet population may not necessarily be a region specific issue either; this is a phenomenon occurring all around the world, in various different cultures and populations. Kulshreshtha et al. looked at the disordered eating attitudes and body shape concerns among North Indian kathak dancers<sup>10</sup>. Cardosos et al. examined body image dissatisfaction, eating disorders, and associated factors in Brazilian professional ballroom dancers<sup>11</sup>. Kathak dancers had significantly more disordered eating attitudes compared to control groups (12.1% vs. 5.9%), and body dissatisfaction was positively correlated with disordered eating attitudes; dancers with inflated body shape scrutinies were five times more likely to portray behaviors and attitudes similar to those of disordered eating<sup>10</sup>. Similarly, three hundred and twenty Brazilian ballroom dancers participated in a self-reported questionnaire, with the majority of them proving to be dissatisfied with their body image; a significant finding in this study concluded that the increase with age of body mass index (BMI) influenced the dissatisfaction of their body image due to excess weight. Overall, the study concluded that body image is associated with eating disorders, age, and BMI in ballroom dancers<sup>11</sup>.

Eating disorders and their causes are not necessarily always possible to be seen visually. Because dancers are held to such a high standard and are required to have both physical and mental



strength, many of these artists have a perfectionism mindset; this mindset oftentimes is cause for harmfully intrusive thoughts about the ways in which these athletes and artists can aggressively improve and what they are able to control. Since there are so few aspects of life able to be controlled, diet, thinness, and eating attitudes are the safety net this population will turn towards. When looking at risk factors for eating disorders, perfectionism is a major one. Penniment and Egan discovered an association between perfectionism and eating disorder symptoms, which was mediated in part by learning about thinness and the ways accomplishing this are possible<sup>13</sup>. They concluded that future research needs to investigate the prevention programs and their efficacy towards targeting these risk factors in dancers<sup>13</sup>. Goodwin et al. also looked at the associations between conscientious perfectionism, self-evaluated perfectionism, and eating psychopathology among a sample of 244 dancers with a mean age of 20.11 years old<sup>12</sup>; they completed the perfectionism inventory and eating disorder examination questionnaire, with the results finding there to be a positive correlation between self evaluative perfectionism and the prevalence of eating disorder behaviors<sup>12</sup>.

In addition to perfectionism, other main causes of eating disorders and disordered eating development within the dance population ranges from nutrition related knowledge deficits, energy intake vs energy expenditure, selective lifestyle elements, eating behavior developments, and energy status<sup>14-15-16-17-18</sup>. Abraham<sup>14</sup>, Brown et al.<sup>15</sup>, and Szczepańska et al<sup>16</sup>. all examined eating and weight controlling behaviors, frequency of food consumption, and energy intake within their respective studies on young dance students and pre-professional ballet dancers. Their findings demonstrated that many dancers are preoccupied with thoughts of eating, struggled with controlling their body weight, and abused laxatives for weight control<sup>14</sup>; average energy intake of

a population of contemporary dancers was significantly lower than energy expenditure over the course of a 7-day period<sup>15</sup>; eating behaviors and frequency of consumption of a group of 198 young dancers varied, with only 61.1% of the population consuming a recommended 4-5 meals per day, and 87.4% having breakfast regularly<sup>16</sup>. When looking at body mass index (BMI) and body composition of these athletes, student dancers have significantly higher Eating Attitudes Test (EAT-26) scores and a lower BMI than professionals<sup>17</sup>. A lower BMI may also indicate a lower energy status; Robeson et al. examined energy status and disordered eating in female student dancers, and discovered that their energy availability was significantly lower than controls, with their drive for thinness being significantly higher<sup>18</sup>. Each of these studies concluded that more educational resources and counseling options need to be available in order to prevent these at-risk populations from developing eating disorders, disordered eating, poor body image, and inadequate energy intake ideologies.

Knowledge of eating disorders, disordered eating behavior awareness, and implementation of appropriate nutrition interventions are all ways in which eating disorder incidence and prevalence within the dance population can be significantly reduced; in addition, accepting and understanding that dancers are performance athletes who require just as much nutrition support as other athletes is also a vital component. Koutedakis and Jamurtas acknowledged in their study of the dancer as a performing athlete that bodyweight targets in participants are met by low energy intakes; female dance students and professional ballerinas were found to consume below 70% energy intake of the recommended daily allowance<sup>19</sup>. They also examined that the female athlete 'triad' of disordered eating, amenorrhoea, and osteoporosis is seen just as commonly in dancers and is presently well recognized<sup>19</sup>.

Having a better awareness of these factors will support dancers and their instructors with improvements in both training techniques and nutrition support<sup>19</sup>. Torres-McGehee et al. also points out that knowledge of eating disorders among collegiate administrators, coaches, and auxiliary dancers is necessary to reduce risky behaviors in auxiliary unit members in terms of their thoughts and actions around eating<sup>20</sup>. This study was focused around knowledge of eating disorders, confidence in knowledge, and attendance of eating disorder educational programs among NCAA Division I and II university coaches (n=44), dancers (n=53), and administrators (n=61) via a questionnaire assessing etiology, signs and symptoms, management and treatment, risk factors, and prevention and education; the results uncovered that the dancers' knowledge and attendance was significantly lower than that of the coaches and administrators, while also showing inconsistencies in confidence and correctness of participants' answers on the questionnaire<sup>20</sup>.

Relevant to this study was another similar one by Torres-McGehee et al. viewing the attitude and knowledge changes in collegiate dancers following a short-term, team-centered prevention program on eating disorders<sup>21</sup>. Eating knowledge, nutritional knowledge, and psychological changes among female collegiate dancers at two NCAA Division I universities were looked at both before and after a sports nutrition, exercise, and disordered eating consequences team-centered, four week program; the program assessed depression levels, eating disorder knowledge, and overall nutrition and food understanding. The results portrayed a statistically significant increase in scores for nutritional and eating disorder knowledge within the intervention group compared to the control group, with mean scores for the desire for thinness, fear of maturity, and body dissatisfaction decreasing as well<sup>21</sup>.

Disordered eating, although very heavily present within the collegiate spirit programming population, is also evident in the general collegiate athlete population. A common phenomenon in athletics, known as the female athlete triad, includes disordered eating, amenorrhea, and osteoporosis. This triad is a result of sports that emphasize extremely low body weight and body fat percentages in female athletes, causing characteristics of eating disorders to develop<sup>22</sup>. In a study completed on twenty-two different universities and colleges surveying 695 athletes, it was uncovered that 21% of these athlete participants met the medical criteria for bulimia nervosa, 3% met the medical criteria for anorexia nervosa, and as high as 62% of athletes partake in behaviors relating to pathogenic weight control<sup>22</sup>.

### ***Conclusion***

Each of these studies illustrate in detail the incidence and prevalence battle that is disordered eating and the severe struggle with body image in the sport of dance and general college athletics. These studies point out the lack of nutrition and education resources that are available to these athletes, and the dire need for them to be provided. They also evaluated the primary causes for disordered eating and the ways in which prevention is possible, specifically in terms of providing registered dietitians and nutrition education programs to those more susceptible and at risk. It is also important to note that the characteristic roles of dance teachers, coaches, and administrators plays a vital part in shaping their athletes' views and opinions surrounding nutrition and eating.

## **Purpose**

To evaluate the incidence and prevalence of disordered eating patterns and general nutrition knowledge in collegiate athletes and to implement a 6-week cooking nutrition education program to improve nutrition knowledge and reduce eating disorder behavior prevalence. The data from this study will then be compared to athletes partaking in body image centered sports and will ideally portray that, if disordered eating is present in sports that are performance based, they will have a much larger presence in physical appearance-based sports. This will then validate the set up and application of this program to said sports teams, and will provide an effective curriculum to be carried out by future graduate students and nutrition educators.

## **Hypothesis**

Eating disorder patterns and behaviors will be significantly present in the collegiate athlete population that we will be working with, and that their knowledge and general understanding of nutrition will be at a deficit. This will not only confirm the importance of implementing a nutritional education intervention program for this specific group, but will also further emphasize that disordered eating behaviors are likely to be present in an even more substantial amount when looking at a physique-based sport. I also hypothesize that the athlete population being tested will have their overall thoughts and feelings about food as well as their nutrition knowledge improved after the 6-week nutrition education and cooking program, and the prevalence of eating disorder behaviors will be significantly reduced.

## **Objectives**

1. To evaluate and determine the prevalence of eating disorders and disordered eating patterns in the collegiate athlete population based on a food frequency questionnaire, a basic nutrition knowledge and kitchen resources survey, and elements from the EAT-26 eating disorder questionnaire.
2. To evaluate the degree of nutrition knowledge and understanding that collegiate athletes have surrounding healthful eating and disordered eating.
3. To compare the potential prevalence of disordered eating behaviors in athletes participating in non-body image focused sports to sports that are body image focused, including cheerleading and dance; this comparison will ideally portray that, if disordered eating is present in sports that are performance based, they will have a much larger presence in physical appearance based sports.
4. To evaluate the nutritional status of collegiate athletes and assess if counseling from a registered dietitian is necessary.
5. To validate the ongoing implementation of a culinary and nutrition education program for body image focused sports, specifically collegiate dancers, in relation to their risk of developing an eating disorder or the presence of disordered eating.
6. To improve thoughts and emotions around food, eating, and nutrition through a 6-week cooking and nutrition education program.
7. To have an effective nutrition education curriculum in place for future students and institutions to carry out and apply to their respective dance and cheer teams.

## **Methodology**

### ***Participants***

Due to programming being pivoted, along with academic and sports scheduling conflicts, we are unable to work directly with the University of Memphis Dance Team. Participants of the study will consist of the nine men's and four women's golf team members from the University of Memphis for the 2023-2024 season.

### ***Timeline***

This study will take place from the months of October to November 2023. Data will be analyzed prior to the nutrition education program as well as right after the program to evaluate and assess improvements in thoughts and feelings surrounding food, eating behaviors, lab and body composition outcomes, and knowledge gained; both positive and negative outcomes will be looked at via a food, nutrition, and cooking confidence survey in addition to the original surveys they filled out prior to the 6 week course.

### ***Data Collection***

Data collection will be completed via the University of Memphis Tiger Bites Nutrition Education Program, and is made up of two registered dietitians, one graduate clinical nutrition student, and an undergraduate dietetic student volunteer. Each athlete participant will undergo a series of lab tests along with a body composition test. Testing will evaluate changes in body fat and lean muscle mass percentages using a Whole Body Composition DEXA (Dual-energy X-ray absorptiometry) scan, blood testing for physiological biomarkers that include general health, pre-diabetic, oxygen transport, and metabolism markers, dietary intake utilizing a 3-day food

recall and a food frequency questionnaire, and pre/post surveys that will test nutritional knowledge and understanding along with food preparation confidence. Specific blood tests being collected are as follows:

- Iron
- Cholesterol
- Triglycerides
- LDL
- HDL
- Hemoglobin A1C
- Total Thyroxine

#### Initial Lab Visit

The initial lab visit will take place the week prior to the first cooking class and will consist of the athletes completing an informed consent form, a 72 Hour Food Recall, Athlete Approach to Cooking and Wellness questionnaire, and a Food Prep Confidence Survey. Additionally, each athlete will have their heart rate, blood pressure, waist and hip circumference, height, and weight recorded. Each of these values along with the blood work values will be used in order to monitor and evaluate any changes that take place as a result of their involvement in the 6 week cooking and nutrition education series.

#### Independent Variable

A hands-on nutrition and cooking education series will take place over the course of 6 weeks, consisting of 1.5 hour long classes each week to supply the athletes with experiences involving



cooking, engaging with, and experimenting with food. The 6 weeks will contain embedded nutrition education in each weekly session to encourage maximum time spent cooking.

The layout of the 6 weeks are as follows:

o Session 1: Balanced Meal Planning - Chicken and Zucchini Meatballs

- Nutrition Focus Subtopic: kitchen and cooking basics, how to create a balanced plate, and planning your plate for gameday vs. an easy training day.

o Session 2: Fueling Your Day - Omelet Recipes

- Nutrition Focus Subtopic: breakfast of champions Meal prep for the week & batch cooking ingredients with roommates.

o Session 3: Pre and Post Training Fueling – Cottage Cheese Dip and Chocolate Date Bark

- Nutrition Focus Subtopic: creating two component snacks to fuel your day and nutrient timing for optimal training and gameday performance.

o Session 4: Food to Help Injury Prevention - Antioxidant Smoothie and Tart Cherry Juice

“Mocktail”

- Nutrition Focus Subtopic: food first mentality, then supplement with what you are missing, and the role of calcium, antioxidants, and Omega 3s in recovery nutrition.

o Session 5: Fueling While Traveling + Hydration Tips

- Nutrition Focus Subtopic: Learning how to choose balanced choices when eating out and traveling, understanding the importance of hydration, and how to consume adequate liquids for prime performance outcomes.

o Session 6: MasterChef

- Nutrition Focus Subtopic: Team cooking competition to challenge the athletes to prepare a healthy meal incorporating all of the skills they have learned.

Final Lab Visit

Once they have completed the 6 week series, each athlete will participate in a final lab visit that consists of completing a 72 hour food recall, Athlete Approach to Cooking and Nutrition, and Food Preparation Confidence, and measurements of their heart rate, blood pressure, waist and hip circumference, height, and weight, along with a final body composition DEXA scan exam.

Meeting with a Dietitian

During the 6-week series, each athlete will participate in a one-on-one 30 minute individual counseling session with a registered dietitian. During this session, the athlete may receive counseling and nutrition therapy recommendations on their health, nutrition, or performance related goals. This will also provide the athletes with a safe and private space to ask their own unique and individualized questions, including but not limited to questions about their body composition and blood work results, food and nutrition-related behaviors, and eating habits.

**Athlete Approach to Cooking and Nutrition (0-5)**

**Responses indicate the extent to which the athletes agree or disagree with each statement: 0 = Disagree, 5 = Agree**

**Mentality towards Cooking**

I do not like to cook because it takes too much time

Cooking is frustrating

It is too much work to cook

I find cooking tiring

I think cooking at home is too expensive

I think eating healthy is too expensive

**Nutrition Behavior**

Cook or help to cook a meal?

Eat leftovers from home-cooked meals?

Plan meals ahead of time

Go grocery shopping?

Use a nutrition label to help you make food choices

## Athlete Confidence Rating Questions (0-100)

### Cooking Habits

I am solely responsible for procuring and preparing my own food

I eat at least one home cooked meal daily

I can prepare a meal from start to finish

I know how to properly use a knife

I know the importance of food safety and sanitation

I know how to utilize a recipe and cook it based on the intensity of the day's work

### Eating Habits

I primarily eat alone during meal times

My intake of food varies based on my mood

I eat only when hungry

I only eat because I know my body needs the nutrients

I hydrate with water before, during, and after practice

I often feel extreme fatigue or lack of energy during workouts

I eat out more than 3 times per week

I miss or skip meals 3 or more days per week

I eat fresh fruit as part of a meal or snack at least 3 times per week

I eat green vegetables at least 3 days per week

I feel comfortable selecting a healthy snack after a workout

I can make nutritious choices at the grocery store

**Nutrition knowledge**

I can identify lean sources of protein

I can identify food sources of calcium and vitamin D

I can identify heart healthy fat sources

I understand the role of antioxidants in performance and health

I believe my athletic performance is impacted by what I eat

I can tell a difference in my athletic performance based on the foods I eat

**Figures 1 & 2.** *Pre and Post 6 Week Cooking Series Surveys*

***Analysis***

The data will be analyzed using an ANOVA test, with mean and standard deviation being the major component of the data presentation. A statistical significance value of  $p < 0.05$  will be utilized for eating disorder behaviors and a nutrition knowledge deficit before and after the 6 week nutrition education course.

***Limitations***

Limitations of this study include possible inaccuracies and bias in answers given by participants to surveys and questionnaires, as well as statistical analysis inaccuracies from incorrect data input. Another limitation of this study could also be the small sample size of the population being utilized. Additionally, the population being utilized for the initial programming is not the target population of body image focused sports, so results may vary distinctly.

### *Future Planning*

Current problem statement: Inadequate energy intake related to body dysmorphia and nutrition knowledge deficit as evidenced by the presence of eating disorder behaviors and patterns.

A primary nutrition intervention for the previous statement would be to incorporate a nutrition and cooking education program and/or counseling services offered by a certified intuitive eating registered dietitian to improve the patient's ideology surrounding food and eating and prevent further eating disorder behaviors from developing. This research has the potential to discover the need for a new nutrition intervention related to eating disorder prevalence and dancers. There is a significant amount of concrete evidence proving the high incidence and prevalence rates of eating disorders and disordered eating behaviors in dancers, but an insignificant amount on intervention programs or improvements made within this population from interventions. Because the dance population is a very body-image centered sport, the prevalence of disordered eating is alarmingly high, but the necessary resources for these athletes to combat these issues are not provided to the extent that they should be.

The type of culminating activity that is planned involves implementing this 6-week cooking and nutrition series with the University of Memphis Dance Team. Every member of the team would complete an eating disorder behavior questionnaire known as the EAT-26 survey. Data will be provided for the lead investigator to analyze and evaluate the rate of eating disorder behaviors in the athletes after the initial screenings, EAT-26 questionnaires, and food frequency questionnaires are complete, along with the post program survey results. The purpose is to both identify and help further prevent eating disorder behaviors within this population, while also

proving the need for this specific population group to have the necessary resources when it comes to nutrition counseling and learning how to properly fuel their bodies for their sport.

**Eating Attitudes Test (EAT-26)<sup>©</sup>**

Instructions: This is a screening measure to help you determine whether you might have an eating disorder that needs professional attention. This screening measure is not designed to make a diagnosis of an eating disorder or take the place of a professional consultation. Please fill out the below form as accurately, honestly and completely as possible. There are no right or wrong answers. All of your responses are confidential.

**Part A: Complete the following questions:**

1) Birth Date	Month:	Day:	Year:	2) Gender:	Male	Female
3) Height	Feet :	Inches:			<input type="checkbox"/>	<input type="checkbox"/>
4) Current Weight (lbs.):	5) Highest Weight (excluding pregnancy):					
6) Lowest Adult Weight:	7) Ideal Weight:					

**Part B: Check a response for each of the following statements:**

	Always	Usually	Often	Some times	Rarely	Never
1. Am terrified about being overweight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Avoid eating when I am hungry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Find myself preoccupied with food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Have gone on eating binges where I feel that I may not be able to stop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Cut my food into small pieces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Aware of the calorie content of foods that I eat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Feel that others would prefer if I ate more.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Vomit after I have eaten.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Feel extremely guilty after eating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Am preoccupied with a desire to be thinner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Think about burning up calories when I exercise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Other people think that I am too thin.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Am preoccupied with the thought of having fat on my body.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Take longer than others to eat my meals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Avoid foods with sugar in them.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Eat diet foods.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Feel that food controls my life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Display self-control around food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Feel that others pressure me to eat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Give too much time and thought to food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Feel uncomfortable after eating sweets.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Engage in dieting behavior.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Like my stomach to be empty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Have the impulse to vomit after meals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Enjoy trying new rich foods.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Part C: Behavioral Questions:**  
In the past 6 months have you:

	Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
A	Gone on eating binges where you feel that you may not be able to stop? *					
B	Ever made yourself sick (vomited) to control your weight or shape?					
C	Ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?					
D	Exercised more than 60 minutes a day to lose or to control your weight?					
E	Lost 20 pounds or more in the past 6 months		Yes <input type="checkbox"/>	No <input type="checkbox"/>		

\* Defined as eating much more than most people would under the same circumstances and feeling that eating is out of control

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**Figure 3. EAT-26 Questionnaire**

**Budget**

<b><u>Items</u></b>	<b><u>Cost/Unit Price</u></b>	<b><u>Number of Units</u></b>	<b><u>Total</u></b>
<b>Teaching Kitchen Rental + Dietitian Counseling Service</b>	\$250 per session	1 session x 6 weeks	\$1,500
<b>Food Cost Per Athlete:</b>	\$15 per athlete per week	13 athletes x 6 weeks	\$1,170
<b>Blood Testing</b>	\$25 per athlete	13 athletes x two separate testing visits (pre and post)	\$650
<b>Total Cost:</b>			\$3,320



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