

Philadelphia College of Osteopathic Medicine

DigitalCommons@PCOM

PCOM Psychology Dissertations

Student Dissertations, Theses and Papers

2022

The Association Between Neuroticism, Self-esteem, and Peer Interactions and Disordered Eating and Body Checking Behavior in Female College Athletes

Alyssa Hertz

Philadelphia College of Osteopathic Medicine

Follow this and additional works at: https://digitalcommons.pcom.edu/psychology_dissertations



Part of the [Clinical Psychology Commons](#)

Recommended Citation

Hertz, Alyssa, "The Association Between Neuroticism, Self-esteem, and Peer Interactions and Disordered Eating and Body Checking Behavior in Female College Athletes" (2022). *PCOM Psychology Dissertations*. 581.

https://digitalcommons.pcom.edu/psychology_dissertations/581

This Dissertation is brought to you for free and open access by the Student Dissertations, Theses and Papers at DigitalCommons@PCOM. It has been accepted for inclusion in PCOM Psychology Dissertations by an authorized administrator of DigitalCommons@PCOM. For more information, please contact jaclynwe@pcom.edu.

Philadelphia College of Osteopathic Medicine
School of Professional and Applied Psychology
Department of Clinical Psychology

THE ASSOCIATION BETWEEN NEUROTICISM, SELF-ESTEEM, AND
PEER INTERACTIONS AND DISORDERED EATING AND BODY CHECKING
BEHAVIOR IN FEMALE COLLEGE ATHLETES

By Alyssa Hertz, MS

Submitted in Partial Fulfillment of the Requirements for the Degree of

Doctor of Psychology

January 2022

DISSERTATION APPROVAL

This is to certify that the thesis presented to us by Alyssa Hertz
on the 29th day of June, 2021, in partial fulfillment of the
requirements for the degree of Doctor of Psychology, has been examined and is
acceptable in both scholarship and literary quality.

COMMITTEE MEMBERS' SIGNATURES

Michelle Lent, PhD, Chairperson

Dr. David Festinger, Ph. D

Dr. Jenna DiLossi, Psy.D

Dr. Stephanie Felgoise, Ph.D, Chair, Department of (Clinical or School) Psychology

Robert DiTomasso, PhD, ABPP _____, Dean, School of Professional & Applied
Psychology

Acknowledgements

I want to start by thanking my amazing dissertation committee for your guidance and support throughout this process. Dr. Michelle Lent, I would not have been able to complete this without you. I cannot express how grateful I am for your continuous support and encouragement. You have helped challenge and push me to always do and be my best. You have been an amazing teacher, role model, and mentor throughout my education. Next, I would like to thank Dr. David Festinger. You have been so encouraging and supportive of this project. I am thankful for all your insight and feedback throughout this process. To Dr. Jenna DiLossi, I am extremely grateful for your support. You have continued to foster my knowledge and experience with the eating disorder population, which has been instrumental in completing this project. Your sense of humor and ability to ease anxieties has been essential in this process. I would also like to extend a thank you to Dr. Michael Roberts, who helped clean and organize the data, in addition to helping with statistical analyses.

To my family, I would not be here today without your endless love and support. My mother deserves an honorary degree for proofreading all my papers; I am forever grateful. My father's humor and "dad jokes" helped push me through every obstacle. I truly would not be who I am today without either of you. I am also thankful for having the absolute best friends who supported and encouraged my dreams. Lastly, I want to thank my fiancé, Kevin. Your unconditional love and support have been instrumental in my growth and success. Thank you for all of the coffee, buying me a puppy, and always making me laugh.

Table of Contents

Acknowledgements	iii
List of Tables	vii
Abstract	1
Chapter 1: Introduction	2
Statement of the Problem	2
Purpose of the Study	6
Hypotheses	6
Hypothesis 1	6
Hypothesis 2	6
Hypothesis 3	7
Hypothesis 4	7
Chapter 2: Review of the Literature	8
Disordered Eating Continuum	8
Prevalence of Disordered Eating in Female College Athletes	11
Etiology of Disordered Eating	12
Biological Factors	12
Psychosocial Factors	16
Sport-Specific Risk Factors	26
Transdiagnostic Model	37
Clinical Perfectionism	38
Self-Esteem	39

	6
Mood Intolerance	40
Interpersonal Difficulties	41
Social Cognitive Theory	42
Observational Learning	42
Self-Efficacy	43
Outcome Expectancies	44
Chapter 3: Method	45
Participants	45
Inclusion and Exclusion Criteria	45
Recruitment and Screening Procedures	45
Measures	46
Demographic Information	46
Eating Attitude Test-26	46
Rosenberg Self-Esteem Scale	48
Body Checking and Avoidance Questionnaire	48
Inventory of Peer Influence on Eating Concerns	49
Ten Item Personality Inventory	49
Chapter 4: Results	51
Assumptions of Parametric Statistics	58
Analyses for Each Hypothesis	59
Hypothesis 1	59
Hypothesis 2	60

	7
Hypothesis 3	64
Hypothesis 4	68
Chapter 5: Discussion	70
Clinical Implications	75
Theoretical Implications	78
Strengths and Limitations	80
Directions for Future Research	81
Conclusion	82
References	83

List of Tables

Table 1. <i>Descriptive Statistics of Female College Athlete Participants (N = 206)</i>	52
Table 2. <i>Descriptive Statistics for Outcome and Predictor Variables</i>	55
Table 3. <i>Correlations for Age and Study Variables</i>	57
Table 4. <i>Correlations for Weigh-in and Scores on Questionnaires</i>	58
Table 5. <i>Kolmogorov-Smirnov Test of Normality for the Eating Attitude Test-26 and Inventory of Peer Influence on Eating Concerns</i>	59
Table 6. <i>Means and Standard Deviations for Team vs. Individual Sports on the Eating Attitude Test-26 and Body Checking and Avoidance Questionnaire (N = 206)</i>	60
Table 7. <i>Regression Model Analysis of Variance: Neuroticism and Eating Behavior (N = 206)</i>	61
Table 8. <i>Coefficients: Age, Scholarship Status, and Emotional Stability</i>	62
Table 9. <i>Regression Model Analysis of Variance: Neuroticism and Peer Interactions (N = 206)</i>	63
Table 10. <i>Coefficients: Age and Weight Category</i>	63
Table 11. <i>Regression Model Analysis of Variance: Self-Esteem and Disordered Eating (N = 206)</i>	64
Table 12. <i>Coefficients: Age and Scholarship Status</i>	65
Table 13. <i>Regression Model Model Analysis of Variance: Self-Esteem and Peer Interaction (N = 206)</i>	66
Table 14. <i>Coefficients: Age, Weight Category, and Self-Esteem</i>	66

Table 15. <i>Regression Model Model Analysis of Variance: Self-esteem and Body Checking (N = 206)</i>	67
Table 16. <i>Coefficients: Age and Weight Category</i>	68
Table 17. <i>Regression Model Model Analysis of Variance: Mandatory Weigh-ins and Body Checking Behavior</i>	69
Table 18. <i>Coefficients: Scholarship Status</i>	69

Abstract

Numerous studies have investigated whether participation in collegiate sports is a risk or protective factor for disordered eating attitudes and behaviors. The purpose of this study was to evaluate potential psychosocial factors (neuroticism, peer relations, and self-esteem) that may contribute to increased risk for disordered eating or maladaptive body checking behaviors in female college athletes. This anonymous, cross sectional, online study recruited 206 participants. Participants completed screening questions, a demographic questionnaire in addition to the Eating Attitudes Test-26, Rosenberg Self-Esteem Scale, Body Checking and Avoidance Questionnaire, Inventory of Peer Influence, and Ten Item Personality Inventory. There was no significant relationship between participation in team versus individual sports on disordered eating and no significant relationship between mandatory weigh-in and body checking ($p > 0.05$). However, results showed a significant relationship between neuroticism and higher levels of disordered eating ($p < 0.001$) and diminished peer interactions ($p < 0.001$). Further, self-esteem predicted higher levels of disordered eating ($p < 0.001$), poor peer interactions ($p < 0.001$), and body checking ($p = 0.003$). As the number of females participating in competitive sports continues to increase, understanding factors that contribute to disordered eating attitudes and behaviors, including the unique contributions of the sporting environment, may help to inform prevention and screening programs. Clinical implications and future directions are also discussed.

Chapter 1: Introduction

Statement of the Problem

Eating disorders (EDs) are debilitating psychiatric disorders that predominately affect the female population. EDs are a major health concern because of rising prevalence, the potential for severe physical and psychosocial consequences, and alarming premature mortality rates (Micali et al., 2017). Anorexia nervosa, bulimia nervosa, and binge eating disorder occur in 0.4%, 1.0% to 1.5%, and 1.6%, of the population, respectively. EDs are diagnosed using clinical criteria as outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., DSM-5; American Psychiatric Association, 2013). However, a large percentage of women engage in unhealthy eating behaviors, but do not meet the threshold for a diagnosable, clinical ED. These eating behaviors, often referred to as *disordered eating*, are still clinically meaningful and cause significant impairments in functioning and pose significant risks to health (Bryla 2003; Shriver et al., 2016).

Disordered eating can be conceptualized on a continuum of maladaptive behaviors and cognitions, which occur less frequently and are less pathogenic, to extremely frequent and severe requiring hospitalization (Knapp et al., 2014; Scoffier et al., 2010; Seitz, 2019; Sundgot-Borgen & Torstveit, 2010). Regardless of frequency, topography, or intensity of problematic eating and weight-related behavior and cognition, disordered eating shares a common cognition of overevaluation of shape and weight, which is also the cornerstone of cognitive-behavioral clinical ED conceptualization

(Fairburn et al., 2003). Driven by this cognition, disordered eating behaviors across the spectrum of severity and presentation may include dietary restraint, compensatory behaviors (excessive exercise, laxative use, and/or vomiting), as well as maladaptive body checking for signs of weight change (i.e., measuring thigh gaps, waist measurements, etc.). Additionally, disordered eating-related cognitions may include significant concerns about weight gain, body dissatisfaction, and irrational dietary beliefs (Fulton, 2016; Hill et al., 2013).

Disordered eating and related unhealthy behaviors are a significant concern for many females, yet specific populations may be at a higher risk for these behaviors, such as female collegiate athletes (Hudson et al., 2007). Estimates regarding the prevalence of disordered eating among female collegiate athletes vary widely, with studies reporting 15-78% of female athletes engaging in disordered eating (Bryla, 2003) compared to 5-9% in the general population (Bratland-Sanda & Sundgot-Borden, 2013). Disordered eating behaviors are often masked by the athletic environment and training regime. For example, athletes who exercise vigorously and/or for longer durations are viewed as being highly committed and dedicated to their teammates and coaches (Bernstein, 2008). Moreover, Sherman and Thompson (2001) found individuals with disordered eating and successful athletes share core traits such as overworking oneself, need for high achievement, compliance, perfectionism, and willingness to endure physical and mental discomfort for sport.

The etiology of disordered eating in this population is attributed to a complex interplay between biological, psychological, and sociocultural processes; however, the

contribution of these factors to the development of disordered eating is not well understood (Berrettini, 2004). Much of the research on disordered eating has been studied in populations with clinical EDs (anorexia nervosa, bulimia nervosa, and binge-eating disorders), but few studies have focused on disordered eating overall in college athletes. The biological processes that influence the onset and maintenance of disordered eating is highly complex but can be largely linked to heritability (family and twin studies) and neuroanatomical abnormalities. Clinical ED family studies approximate a 7- to 12-fold increase in the prevalence of eating disorders in relatives of eating disorder probands (Berrettini, 2004). Furthermore, clinical ED studies have estimated that genetics are responsible for 58% and 54-83% of the variance in the risk of developing anorexia or bulimia, respectively (Thornton et al., 2011). Furthermore, psychosocial factors are commonly discussed as potential mechanisms for the development and maintenance of EDs. A plethora of psychological traits have been examined, including low self-esteem, neuroticism, and peer interactions.

Low self-esteem, defined as attitudes towards and evaluation of one's own self-worth, is a central risk for disturbances in eating and body image (Kelly et al., 2014). Western culture idolizes the thin female body and equates such thinness to high value, happiness, and success (Bozsik et al., 2018; Fekete et al., 2021). In western culture, greater exposure and pressure to obtain the thin ideal (thin physique with little body fat), internalization (undue influence of the socially defined ideal), and thinness expectancies, place the individual at high risk for an eating disorder (Gordon et al., 2010). Additionally, peers have significant influence on the development of eating disorders (Keel & Forney,

2013; Marcos et al., 2012; Meyer & Gast, 2008). Social reinforcement, through comments (criticism/teasing of weight) and actions (modeling) from peers precipitate and perpetuate the thin ideal body image in females (Marcos et al., 2012). Consequently, failure to achieve the thin ideal, may lead to feelings of shame, worthlessness, failure, and body dissatisfaction (Karpowicz et al., 2009). Studies have investigated the influence of modeling amongst peers and eating disorders. Modeling can consist of dietary restraint, excessive worry and concern over body shape, exercise for weight control, and discussion on dieting (Marcos et al., 2012; Neumark-Sztainer et al., 2008). Lastly, researchers have reliably shown neuroticism as an antecedent for disordered eating attitudes and behaviors (Cervera et al., 2003; Diaz-Marsa et al., 2000; MacLaren & Best, 2009). Such individuals lack the necessary skills to adapt and effectively cope with negative emotional states and as a result may engage in harmful eating practices, which function to provide comfort or distraction (Smyth et al., 2007).

According to Albert Bandura's Social Cognitive Theory (SCT; Bandura, 1986), knowledge of eating disorders can be related to observing others within the environment, social interactions, and experiences (Neumark-Sztainer et al., 2008). Observing others perform behaviors that are rewarded, rather than punished, are more likely to be initiated (Bissell, 2004). For example, Bissell (2004) reported that the thinnest athletes often received the greatest attention and rewards. Bandura states the learning process occurs when the observer attends to the key components of the model. Once this has taken place, the observer stores in memory the model as a symbol, gains motivation to engage in the desired behavior, and then rehearses the behavior (Bandura, 1986). Women often receive

positive feedback for thinness or attempting to lose weight, therefore, such comments can serve as reinforcement of the thin ideal (Levine & Smolak, 2001). Though these disorders are common in females, specific groups, such as female collegiate athletes, may be at an increased risk of developing disordered eating (National Eating Disorder Association, 2012).

Purpose of the Study

The present study investigated the relationship between psychosocial factors (neuroticism, self-esteem, and peer interactions) on disordered eating and body checking in female college athletes between ages 18 to 25 years. The purpose of this study was to gain greater understanding of potential risk and protective factors for disordered eating and body checking behaviors in this population. Additionally, this study evaluated sport-specific qualities (team versus individual, weight check requirements) as they related to disordered eating or body checking behaviors in female college athletes. This study extended existing findings and helped to address gaps in the literature on disordered eating and body checking among female college athletes.

Hypotheses

Hypothesis 1

It was hypothesized that female college athletes competing in individual sports would report significantly higher levels of disordered eating, as measured by the EAT-26 (Garner et al., 1982), and significantly more body checking behaviors, as measured by the BCAQ (Shafran et al., 2004) compared to female college athletes competing in team sports. This hypothesis is supported by findings from Heradstveit et al. (2020), which

found a negative association between eating pathology and team sport participation. This is the first known study to examine type of sport (individual versus team) and body checking behaviors.

Hypothesis 2

It was hypothesized that neuroticism, as measured by the TIPI Emotion Stability subscale (Gosling et al., 2003) would be associated with greater eating pathology, as measured by the EAT-26 (Garner et al., 1982) and associated with poorer peer interactions, as measured by the I-PIEC (Oliver & Thelen, 1996) in female college athletes. Previous researchers found neuroticism as a contributing factor to disordered eating (MacLaren & Best, 2009; Tylka, 2004) and with less satisfying peer relationships (Berry et al., 2000; Doroszuk et al., 2019; Wagner et al., 2014; Wilson et al., 2015) in the general population. There is little research regarding neuroticism and disordered eating and peer interactions in the athletic environment.

Hypothesis 3

It was hypothesized that lower self-esteem levels, as measured by the Rosenberg Self-Esteem Scale (Rosenberg, 1989) would be associated with disordered eating, negative peer interactions, and body checking behaviors. The role of self-esteem and disordered eating in female athletes is mixed; however, this study is supported by previous research, which has found 76% of female athletes reported self-esteem as a contributing factor to disordered eating (Arthur-Cameselle & Quatromoni, 2011). It is believed this is the first study to explore the relationship between self-esteem and negative peer interactions and body checking behaviors in female college athletes.

Hypothesis 4

Lastly, it was hypothesized that female college athletes participating in mandatory weigh-ins would report a higher frequency of body checking behaviors, as measured by the BCAQ (Shafran, 2004), compared to female college athletes who do not participate in mandatory weigh-ins. This is the first study to investigate the effect weigh-ins have on body checking behaviors.

Chapter 2: Review of the Literature

The transition into college is often met with significant stressors such as greater autonomy, potential loss of social support, and increased demands on academic performance (Blair et al., 2017; Howard et al., 2020). College may be a sensitive period that places individuals at risk for the development of weight-related issues including disordered eating (Berg et al., 2009; Delinsky & Wilson, 2008; James et al., 2016). Young college females, compared to males, are at a substantially increased risk of eating disturbances (Fortes et al., 2014; James et al., 2016; Martinsen et al., 2010; Sira & Pawlak, 2010). More specifically, females participating in collegiate sports have even more maladaptive eating patterns than the general female college student population (Blair et al., 2017; Reinking & Alexander, 2005; Wells et al., 2015). Several sports emphasize optimal performance to be contingent upon a desirable body weight and composition (Ackland et al., 2012). Consequently, many athletes experience physical and mental health concerns as they attempt to conform to the athletic ideal that is optimal for their sport (Sundgot-Borgen & Garthe, 2011; Swanson et al., 2011; Torstveit & Sundgot-Borgen, 2013).

Disordered Eating Continuum

The terms *eating disorder* and *disordered eating* are often used interchangeably in research and everyday language (Bryla, 2003); however, eating disorders and disordered eating are distinguishable by severity of symptoms and level of impairment (Bryla, 2003; Seitz, 2019). Although disordered eating is a core feature of all eating disorders, not all disordered eating transpires to meet the specific clinical criteria for eating disorders

(Linardon et al., 2019; Mitchison et al., 2012). Eating pathology, therefore, is best conceptualized as a spectrum of eating patterns, and related maladaptive cognitions and behaviors, that range from mild to extreme clinical eating disorders (de Oliveira Coelho et al., 2014; Jalali-Farahani et al., 2014; McArdle et al., 2016).

Eating disorders are diagnosable clinical mental health conditions, which affect approximately 7.8% of the population, globally (American Psychiatric Association, 2013; Lantzouni & Grady, 2021). Eating disorders are diagnosed only upon meeting specific diagnostic criteria outlined by the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., *DSM-5*; American Psychiatric Association, 2013; Foreich et al., 2017; Smink et al., 2012). The most commonly diagnosed eating disorders include anorexia nervosa, bulimia nervosa, and binge-eating disorder (Currie, 2010; McArdle et al., 2016; Sundgot-Borgen & Torstveit, 2010). Anorexia and bulimia are characterized by distorted cognitions regarding food, body shape, and weight gain, and can lead to disruptive and rigid eating patterns and/or compensatory behaviors (American Psychiatric Association, 2013; de Oliveira Coelho et al., 2014; Sundgot-Borgen & Torstveit, 2010; Bratland-Sanda & Sundgot-Borgen, 2013). More specifically, anorexia nervosa, which affects nearly 4% of females, is defined as an intense fear of gaining weight (although significantly underweight), disturbance in one's perception of body image, calorie restriction, and compensatory behaviors including bingeing/purging and excessive exercise (American Psychiatric Association, 2013; Karr et al., 2017). Bulimia nervosa and binge-eating disorder, which affect approximately 1.0% to 1.5% and 1.6% of the population, respectively, share a core feature of binge eating (American Psychiatric

Association, 2013). However, binge eating episodes occurring within the context of bulimia nervosa are accompanied by compensatory behaviors, such as self-induced vomiting, laxative misuse, and excessive exercise to prevent weight gain (American Psychiatric Association, 2013; Sundgot-Borgen & Torstveit, 2010; Sundgot-Borgen et al., 2013). In addition to the 7.8% of the population that meet clinical criteria for an eating disorder, a much greater percentage of the population endorse abnormal eating behaviors but do not meet the diagnostic criteria for an ED (Reba-Harrelson et al., 2009; Shriver et al., 2016). These subclinical eating patterns and behaviors, known as disordered eating, are an important and understudied phenomenon.

Disordered eating encompasses the distorted cognitions and related behaviors about eating and weight control that mirror ED symptoms; however, individuals with disordered eating are below the diagnostic ED criteria threshold (Bryla, 2003; Fulton, 2016; Jalali-Farahani et al., 2014; Reba-Harrelson et al., 2009; Scoffier et al., 2010). Specifically, like EDs, disordered eating is maintained and reinforced through the adoption and maintenance of maladaptive behaviors and cognitions (Fulton, 2016; Masuda et al., 2018). Disordered eating behaviors may include periods of self-starvation/fasting, inflexible diet regimes, excessive exercise, loss of control over food intake, purging, and laxative misuse (Fulton, 2016; Loth et al., 2014; Sengor & Gezer, 2020). These behaviors are driven by eating and weight-related cognitions, which can include rigid beliefs about regulating weight, intolerable concern about weight and size, body dissatisfaction, distorted beliefs about control as the basis of self-worth, and irrational beliefs about food (Fulton, 2016; Masuda et al., 2018; Stice, 2016). Although

disordered eating behaviors are less pathogenic than EDs, estimates suggest that as many as 65% of women have aspects of disordered eating (Reba-Harrelson et al., 2009).

Prevalence of Disordered Eating in Female College Athletes

The National College Athletic Association (NCAA) has been collecting data over the past decade to determine an approximation of disordered eating among female collegiate athletes (Clifford & Blyth, 2018; Gomes et al., 2011; Power et al., 2020). Female student athletes are a distinctive subgroup of women who are more vulnerable to pathogenic weight control behaviors than women who are not athletes (Beckner & Record, 2016; Sabiston et al., 2014, 2019, 2020). However, determining a true prevalence of disordered eating is complicated by a lack of diagnostic criteria, which may be further convoluted by differences in target population, methodology, and statistical analysis (DiPasquale & Petrie, 2013; Petrie & Greenleaf, 2007; Wells et al., 2015). For example, Bratland-Sanda and Sundgot-Borgen (2013) found 6% to 45% of female were on the spectrum of disordered eating, whereas Smolak et al. (2000) and Bryne and McLean (2001) found between 1% and 62% and 15% and 78%, respectively, endorsed harmful eating practices. Female athletes are faced with the daunting task of adhering to body ideals that aesthetically meets societal norms while functionally supporting the demands for optimal performance (Abbott & Barber, 2011; Lunde & Gattario, 2017; Sabiston et al., 2020). The paradoxical messages that athletes receive about their appearance can lead to heightened body surveillance, which further contributes to body dissatisfaction and unhealthy behaviors (Cosh et al., 2015; Haase et al., 2011). In a study of 204 female college athletes, only 2% met diagnostic criteria for an ED. Yet, 25% reported endorsed

disordered eating symptoms, 54% were dissatisfied with their current weight, and 88% perceived themselves as overweight (Greenleaf et al., 2009). Furthermore, among these athletes, 38% reported binge eating at least once per week, 15% engaged in binge eating for 3 months or longer, 25% exercised for 2 hours per day, 15% fasted, 3% purged within the past month, and 1% used laxatives within a one-week period (Greenleaf et al., 2009). Lastly, in a sample of 414 NCAA, Division I, female gymnasts and swimmers, 26.8% reported maladaptive eating behaviors, over 50% engaged in 1 or more hours of physical activity per day to burn calories and lose weight, and 14.2% to 28.2% dieted or fasted two or more times within the past year (Anderson & Petrie, 2012).

Etiology of Disordered Eating

Identification of factors that contribute to the onset and maintenance of disordered eating has gained significant attention in recent years (Brown et al., 2012). Like clinical eating disorders, evidence suggests that the onset of disordered eating is attributed to a complex interplay between biological, psychological, and sociocultural factors (Rikani et al., 2013; Tabler & Utz, 2015).

Biological Factors

Genetics. Disordered eating aggregates within families; thus, relatives of an individual with disordered eating will also develop symptoms (Thornton et al., 2011; Zerwas & Bulik, 2011). Heritability estimates of female relatives in families with anorexia nervosa are 11 times more likely to also develop anorexia nervosa (Bulik et al., 2019; Strober et al., 2000). The incidence of bulimia nervosa is between approximately 4.4 and 9.6 in first degree relatives (Kassett et al., 1989; Strober et al., 2000; Thornton et

al., 2011), whereas binge eating disorder is estimated at 1.9 and 2.2 (Fowler & Bulik, 1997; Javaras et al., 2008; Lee et al., 1999; Thornton et al., 2011). Despite an increased incidence of disordered eating among families, this is not sufficient to conclude that genes alone account for disordered eating; rather, resemblance within families is often attributed to the contribution of both genetics and environment (Cerniglia et al., 2017; Rikani et al., 2013; Trace et al., 2013). Therefore, twin studies have become an effective tool to differentiate the influence of genes and environment on behavioral characteristics and psychopathology (Rikani et al., 2013; Thornton et al., 2011; Zerwas & Bulik, 2011). In twin studies, monozygotic (identical) twins share nearly matching DNA, whereas dizygotic (fraternal) twins share approximately half of their genetic variants (Hinney & Volckmar, 2013; Klump et al., 2009; Levine & Smolak, 2006; Thornton et al., 2011). Twin studies provide insight into the estimation of the genetic as well as the shared and unshared environmental contributions on a specific phenotype/trait (Bulik et al., 2000; Rikani et al., 2013; Thornton et al., 2011). There is substantial growth in research analyzing twin samples' heritable influence on the expression of disordered eating traits, estimated at about 52% (Culbert et al., 2015; Fairweather-Schmidt & Wade, 2017). Five twin studies have specifically addressed the genetic-environment interaction related to disordered eating. These studies showed parental divorce, puberty, and dietary restraints are moderated by genetic susceptibility to body dissatisfaction (Klump et al., 2009; Libbey et al., 2008; Racine et al., 2011; Suisman et al., 2012; Suisman et al., 2014).

Serotonin Dysregulation. Serotonin (5-hydroxytryptophan or 5-HT) is an important monoamine neurotransmitter in the body that plays an integral role various

functions such as feeding, satiety, dieting/fasting, mood regulation, and anxiety (Brewerton & Steiger, 2004; Patrick, 2002). 5-HT has also been linked to psychopathological characteristics such as perfectionism, impulsivity, and obsessive behaviors (Bailer & Kaye, 2011; Fineberg et al., 2010; Kaye et al., 2009; Sjogren, 2017). Several lines of research have postulated that dysregulation and disturbances in serotonin function contribute to the pathophysiology and neuropsychopharmacology of disordered eating behaviors (Compan et al., 2012).

Endorsement of binge eating and restriction are both associated with significantly diminished serotonin levels (Akkermann et al., 2010; Kaye et al., 2009). In healthy controls, meal consumption is followed by synthesis of serotonin, which influences appetite regulation (Kaye et al., 2009). Data collected from several studies indicated that increases in serotonin exacerbate core anorexic symptoms such as obsessiveness, harm avoidance, and anxiety; therefore, self-starvation may contribute to reductions in serotonin levels and reduced dysphoria (Compan et al., 2012; Duvvuri et al., 2010; Kaye et al., 2009; Riva, 2016). Consequently, the brain is then forced to seek homeostasis by increasing serotonin receptor availability, which promotes self-starvation, thus creating a harmful and enduring cycle (Burke & Heisler, 2015; Compan et al., 2012; Kaye et al., 2009; Riva, 2016; Yokokura et al., 2019). Conversely, low levels of serotonin may contribute to impulsivity and compulsive behaviors, which are often hallmark features in binge eating behaviors (Claes et al., 2002; Dalley & Roiser, 2012; Racine et al., 2009).

Dopamine. Dopamine is a neurotransmitter that is associated with food motivation and rewarding, pleasant feelings through positive reinforcement (Avena &

Bocarsly, 2012; Bromberg-Martin et al., 2010; Kontis & Theochari, 2012). In healthy individuals, food is perceived as a reward when it satisfies a hunger state compared to satiety (Black et al., 2002; Bragulat et al., 2010; Cawley et al., 2013; Singh, 2014). Small amounts of dopamine are released in response to food consumption, which leads to a consistent and appropriate motivation to eat, whereas consumption of high fat and high sugar foods triggers larger releases dopamine (Baik, 2013; de Macedo et al., 2016; Volkow et al., 2011). Conversely, individuals with disordered eating have altered dopamine pathways, which hinder the ability to respond appropriately to pleasurable things (Baik, 2013; de Macedo et al., 2016; Volkow et al., 2011). Repeated exposure to food, such as when an individual engages in binge eating, causes dopamine release to habituate and the individual to develop a conditioned response to stimuli associated with food (e.g. sight or smell of food; Epstein et al., 2009; Schultz, 2010; Volkow et al., 2011). Consequently, this habituation may then elicit a desire to eat when satiated. As a result, dopamine in individuals with disordered eating is significantly associated with a motivation of wanting versus liking of food (Berridge, 2009).

Starvation, on the other hand, alters the dopamine-striatal system to reward restraint as a positive and rewarding experience, leading to pleasurable and desirable feelings from self-starvation (Frank et al., 2019; Monteleone et al., 2018; Zink & Weinberger, 2010). A study using fMRI imaging examined 14 women with acute anorexia nervosa and 14 health controls viewing images of people who were underweight, normal, and overweight. Women with acute anorexia nervosa had greater

activation in the reward system when presented with images of underweight figures (Fladung et al., 2010), which may suggest a strong affinity towards the thin ideal.

Insula. Dysregulation of the insula appears to be prominent in the underlying neural pathophysiology of individuals with disordered eating, which mirrors findings from studies of individuals with diagnosed anorexia (Kim et al., 2012; Brooks et al., 2011). In healthy controls, the insula plays a role in the control of taste, satiety/appetite, and energy balance, in addition to processing external sensory information and linking it to the reward processing system (Berthoud, 2011; Frank et al., 2013; Watkins et al., 2016). The insula is also responsible for interoceptive awareness, or experiencing and responding to body cues (Frank et al., 2016; Mohr et al., 2010; Scharner & Stengel, 2019). In both bulimia and anorexia nervosa, individuals had an increase in insula activation (Bohon & Stice, 2011; Frank et al. 2013; Kim et al., 2012). In a quasi-experimental study by Schienle et al. (2009), 67 females (overweight binge eating disorder overweight healthy, normal-weight healthy, normal weight-bulimia) were asked to fast overnight. Using fMRI scans to monitor brain activity, participants were presented with images depicting high-caloric food (e.g., French fries), disgust-induced images (e.g., maggots), and neutral items (e.g., chair). Patients with binge-eating behaviors had increased insula activation when presented with high-caloric food when compared to overweight and normal weight controls (Schienle et al., 2009).

Psychosocial Factors

Self-Esteem. Global self-esteem is a multidimensional construct that captures positive or negative appraisals of self-evaluation and self-worth (Brausch & Decker,

2013; Espinoza et al., 2019; Hansson et al., 2016; Loth et al., 2014; Rodgers et al., 2011). Low self-esteem, a hypothesized contributing factor to the onset and maintenance of disordered eating attitudes and behaviors is associated with feelings of inadequacy, worthlessness, and failure (Adamson et al., 2019; Arcelus et al., 2013; Gomes et al., 2011; Petisco-Rodriguez et al., 2020; Petrie et al., 2009, Rosenberg, 1965). This is further validated by Fairburn's transdiagnostic model which posits low self-esteem as a core characteristic across EDs (Fairburn et al., 2003). For example, in a sample of 143 female college students, results indicated low self-esteem predicted greater body dissatisfaction (Gilbert & Meyer, 2005). Furthermore, in a sample of 500 participants, results revealed a 9% increase in EAT-26 scores for every 1-point decrease in the RSES. This study strongly suggested low self-esteem as a catalyst for disordered eating (Mora et al., 2020). Despite a clear link between low self-esteem and disordered eating in the general population, this relationship is less conclusive in female college athletes.

The influence of sport participation and self-esteem yields mixed results in previous research. Some studies suggest that physical activity through playing sports has a positive influence on self-esteem (Bowker, 2006). For example, in a study by Perry-Burney and Takya (2002), 90% of females stated playing a sport increased their self-esteem. However, self-esteem does not serve as a protective factor for all athletes; therefore, it is essential to understand how self-esteem can contribute to disordered eating in female college athletes. For example, Arthur-Cameselle and Quatromoni (2011) interviewed 17 NCAA female student athletes to gather data about internal and external factors that contributed to the onset of disordered eating. Low self-esteem, which

included general evaluation of self-worth and body image, was endorsed by 76% of participations. Further, low self-esteem was correlated with concern and focus on weight, body shape, and food, which for some female athletes can become obsessional and harmful (Arthur-Cameselle and Quatromoni, 2011). Additionally, in a sample of 99, Division I, female collegiate athletes, low self-esteem was one of three commonly cited reasons for disordered eating behaviors (Milligan & Pritchard, 2006). Lastly, Johnson et al. (2004) recruited 562 female athletes from Division I colleges/universities and found self-esteem to be significantly related to disordered eating behaviors and attitudes, particularly in White females.

Neuroticism. McCrae and Costa (1990)'s Big Five Model, the most widely accepted model of personality, encompasses five distinct factors that are central to personality (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience). Individuals with high neuroticism are more likely to experience negative affect (Borghuis et al., 2020; Suls & Martin, 2005); however, intolerance of negative affect is another proposed maintaining mechanism of disordered eating. These five factors have often been used to examine disordered eating attitudes and behaviors; specifically, many studies have evaluated neuroticism in relation to problematic eating behaviors (Costa & McCrae, 1992; Dalley et al., 2009; MacNeill et al., 2017; Roberts & Good, 2011). It is hypothesized that disordered eating may stem, at least in part, from the experience of negative emotions associated with neurotic personality and dissatisfaction with one's body and appearance (Lee-Win et al., 2016; Munsch et al., 2012; Reshadat et al., 2017).

Furthermore, neuroticism has also been associated with the cycle of binge eating and compensatory behaviors (Dougherty et al., 2019; Izydorczyk, 2012; Lobera et al., 2009). Consumption of large quantities of food leads to a nearly automatic improvement in mood as it serves as an escape from unwanted emotions; however, engagement in binge eating triggers dissatisfaction with body image and fear of weight gain, which activates unpleasant emotional states (Izydorczyk, 2012). In a study by Miller et al. (2006), 196 female undergraduate students were administered The Eysenck Personality Questionnaire (EPQ), Eating Disorders Inventory (EDI), and Eating Attitudes Test (EAT-26). Results found that high neuroticism scales were positively correlated with EDI subscales, bulimia and drive for thinness, and high scores on the EAT-26 (Miller et al., 2006). It has also been proposed that neuroticism predisposes the appraisal of stressful events as more threatening, which may act as precipitant to bulimic behaviors (Dougherty et al., 2019; Goldschmidt et al., 2014). Lobera et al. (2009) conducted a study with 93 individuals attending outpatient treatment for either anorexia or bulimia nervosa. Results confirmed those engaging in binge-eating and/or purging behaviors perceived themselves as less capable of regulating negative emotions and coping with stress. Overall, it is theorized that bulimic symptoms function as an attempt to modulate neurotic personality traits (Dougherty et al., 2019; Goldschmidt et al., 2014). Although the association between neuroticism and clinical EDs is well established, it is plausible that neuroticism may drive subclinical disordered eating as well and requires further study, especially within female college athletes.

Body Dissatisfaction. Body image is a construct that encapsulates an individual's thoughts, perceptions, and attitudes towards their physical appearance (Fiske et al., 2014; Holland & Tiggemann, 2016). Body dissatisfaction, a component of body image, is the discrepancy of one's body size in comparison to the perceived ideal body (Brechan & Kvaalem, 2015; Fiske et al., 2014; Menzel et al., 2010). Body dissatisfaction is particularly salient among females, with collegiate female athletes at a heightened risk (Berg et al., 2009; Taniguchi, 2019). Howard et al. (2020) reported 80% of college women experienced dissatisfaction with their physical appearance. In fact, body dissatisfaction may be the single most important predictor of eating pathology (Ferreira et al., 2013; Fitzsimmons-Craft et al., 2012; Menzel et al., 2010; Stice et al., 2011). Body dissatisfaction has been positively correlated with drive for thinness, dieting, disordered eating, and development of clinical eating disorders (Kong & Harris, 2015; Stice et al., 2011). Additionally, body mass index (BMI) may play a critical role in body dissatisfaction in both non-athletic and athletic populations (DeBate et al., 2002; Kantanista et al., 2017, 2018; Karr et al., 2013). Studies have found females with a higher BMI experienced greater body dissatisfaction (Kantanista et al., 2018; Karr et al., 2013; Swami et al., 2009). A complex set of interconnecting factors have been identified in relation to body dissatisfaction and disordered eating such as exposure to sociocultural messages about thinness, internalization of the thin-ideal, and personality traits such as perfectionism and neuroticism (Culbert et al., 2015; Pedersen et al., 2018; Taniguchi, 2019).

A substantial body of literature has focused on mass media as one of the most influential and contributing factors to Western beauty ideals, which may contribute to body dissatisfaction and disturbed eating pathology (Dakanalis et al., 2014; Homan, 2010; Slater et al., 2019). Exposure to media's portrayal of unrealistic standards can be detrimental to body image, yet researchers have consistently demonstrated internalization of the thin ideal, rather than just exposure, as the most potent risk factor for body dissatisfaction and disordered eating (de Vries et al., 2018; Pedersen et al., 2018; Ramme et al., 2016). Internalization refers to cognitive conformity and endorsement of the socially prescribed ideas of attractiveness in addition to actions to achieve such ideal (Homan, 2010; Schaefer et al., 2019). Subsequently, sociocultural messages valued and portrayed by the media become internal guidelines, which often lead to psychological distress and harmful eating practices (Pidgeon & Harker, 2013; Thompson & Stice, 2001). For several decades, media propaganda has promoted extreme thinness as the desired body ideal (Homan, 2010). However, scholars have noted a cultural shift of physical attractiveness, with preference towards a more a fit and toned body composition; this has been referred to as the athletic ideal (Bell et al., 2016; Homan, 2010). Media platforms such as fitness and health magazines and television shows insinuate the athletic ideal is achievable through weight training, dietary regime, and cardiovascular exercises, yet failure to meet this standard may lead to body dissatisfaction, shame, and guilt (Benton & Karazsia, 2015; Garvin & Damson, 2008; Homan, 2010; Homan et al., 2012).

In sport psychology, researchers have explored the impact of the thin ideal and the athletic-ideal on body satisfaction among female college athletes (Bell et al., 2016;

Scoffier-Meriaux et al., 2015; Sherman & Thompson, 2009). Female athletes are vulnerable to the societal and sport environment pressures to achieve a specific body type (Kantanista et al., 2018; Reel et al., 2013; Thompson & Sherman, 2010). For example, athletes typically strive towards a body composition that will enhance performance; however, this may or may not be valued within a social context (De Bruin et al., 2011; Kantanista et al., 2018; Torstveit et al., 2008). Research suggests that involvement in certain types of sports is an increased risk for body dissatisfaction (Kosteli et al., 2014). A study by Kosteli et al (2014) investigated the paradox regarding the impact sport has on thin and athletic body ideals among 39 female collegiate track and field student-athletes (distance running and throwers). Results indicated that runners reported greater satisfaction with their bodies than throwers. However, regarding the ideal body type for sport, runners were less satisfied with their physique despite matching societal body standards (Kosteli et al., 2014). These findings suggest individuals participating in aesthetic sports may face strong-sport related pressures to achieve a slender and physically fit body image and may experience dissatisfaction with their bodies (Anderson et al., 2011; Kosteli et al., 2014). Moreover, aesthetic athletes typically wear form-fitting or revealing uniforms that have contributed to a heightened awareness of shape and body concerns (Steinfeldt et al., 2012; Thompson & Sherman, 2010). A cross-sectional study conducted by Torres-McGehee et al. (2012) examined the risk of pathogenic weight control behaviors and variation in uniforms among collegiate cheerleaders. Body dissatisfaction was examined from the perspective of clothing type (daily clothing,

midriff uniform, full uniform), with cheerleaders reporting greatest concern with the midriff uniform (Torres-McGehee et al., 2012).

Fat Talk. Nichter and Vuckovic (1994) originally coined the phrase “fat talk” as ritualistic statements and conversations with family and friends involving shame over one’s body shape and weight, dieting techniques, and appearance. These negative self-statements focus on being fat or overweight, even if not grounded in reality, and followed by strategies to change their body size (i.e. dieting and/or exercise; Clarke et al., 2010; Jones et al., 2014). Consequently, females report pressure to engage in fat talk despite level of body satisfaction; however, fat talk is more common among those with higher levels of body dissatisfaction, such as individuals with disordered eating (Britton et al., 2006; Jones et al., 2014; Ousley et al., 2007). Exposure to and engagement in fat talk are correlated with increases in body checking, deleterious weight control methods, and disordered eating (Cruwys et al., 2016; Jones et al., 2014). Cruwys et al. (2016) investigated a causal relationship between fat talk engagement and facets of disordered eating, such as thin ideal, body dissatisfaction, negative affect, and dieting behaviors. The study included 85 females between the ages of 17-25 who were randomly assigned into one of three conditions which entailed have a conversation via instant messenger (fat talk, positive body talk, or neutral talk). Results from this study revealed participants assigned to the fat talk condition endorsed greater eating pathology (Cruwys et al., 2016).

Peer Interactions. Peers also have a significant influence on maladaptive eating patterns and attitudes (Al-sheyab et al., 2018; Creedon et al., 2009; Zalta & Keel, 2006). In particular, females are likely to adopt disordered eating attitudes and behaviors if the

peer group provides a subculture that promotes the thin ideal and weight-loss methods (Eisenberg et al., 2005; Meyer & Gast, 2008). O'Connor et al. (2016) suggests a relationship between peer groups' importance on body weight and weight control, dieting, and body dissatisfaction. Additionally, body image concerns, rigid dietary plans, excessive and inappropriate weight loss behaviors, and binge eating were similar within friendship groups (Goldschmidt et al., 2014; O'Connor et al., 2016). Unfortunately, the underlying mechanisms of peer influence on disordered eating attitudes and behavior remain largely unknown (O'Connor et al., 2016; Zalta & Keel, 2006). Researchers have argued two non-mutually exclusive processes, selection and socialization, account for the relationship between peer relationships and body image and eating disturbances (O'Connor et al., 2016; Rayner et al., 2013; VanHuysse et al., 2016). Selection is the tendency for friendships to develop due to preexisting similarities, whereas socialization, often referred to as peer influence, refers to similarities developing over time (Brown et al., 2008; O'Connor et al., 2016; Rayner et al., 2013). The latter is most often cited as a contributing factor to disordered eating attitudes and behaviors.

Socialization. A significant body of evidence has proposed socialization has effects on disordered eating (Goldschmidt et al., 2014; Keel et al., 2013; O'Connor et al., 2016). Kandel (1978) posits friends' attitudes and behaviors become similar over time and this similarity can be understood as a function of reflecting on social norms to identify acceptable and desirable behaviors. Moreover, this aims to reduce differences and discrepancies between oneself and the friendship group (Kandel, 1978; Rancourt et al., 2013). Reinforcement and modeling help explain the role of socialization on social

reinforcement of disordered eating (Al-sheyab et al., 2018; Bandura, 1986; Meyer & Gast, 2008). The process of socialization may help to explain why female athletes are at a greater risk for disordered eating attitudes and behaviors. Disordered eating can be modeling by peers through means such as weight teasing/bullying (Meyer & Gast, 2008; Vartanian & Porter, 2016) over the course of one's athletic career.

Weight Teasing/Bullying. Weight teasing is defined as social aggressions such as critical and negative remarks, made by others, regarding one's weight and shape (Lampard et al., 2014; Quick et al., 2013; Valois et al. 2019). The experience of weight teasing has been identified as a risk factor for body dissatisfaction, lower self-esteem, bulimic behaviors, and extreme weight loss methods, irrespective of actual body size (Lampard et al., 2014; O'Hara et al., 2016; Puhl & Luedicke, 2012; Valois et al., 2019). For example, the Eating Among Teens Study (EAT) performed a longitudinal study of adolescents in the United States which found weight teasing in adolescence predicted pathological eating behaviors and attitudes at a 5-year follow up (Haines et al., 2006; Valois et al., 2019). Historically, weight teasing is prevalent amongst individuals who were overweight or obese; however, recent research has found high rates among underweight persons (O'Hara et al., 2016). In a cross-sectional study by Libbey et al. (2008), 130 individuals (84 female) completed surveys regarding experience with weight teasing, weight control behaviors, and disordered eating thoughts and behaviors. Results revealed disordered eating thoughts and behaviors, anxiety, and decreased self-esteem were elevated among those who reported more frequent weight teasing. Moreover, the degree to which one was bothered by the teasing heightened the value on thinness. The

combination of both frequency and being bothered by teasing were related to a heightened risk of binge eating behaviors (Libbey et al., 2008).

Social Rejection. Research has shown social rejection occurs when an individual is intentionally excluded from a social interaction and can have significant physical and mental health complications (Abrams et al., 2005; Baumeister et al., 2005; Beekman et al., 2017; Leary, 2001; Pascoe et al., 2009). It has been suggested that negative interactions with peers, such as rejection, play a role in the onset and maintenance of disordered eating (Beekman et al., 2017). Several researchers posit disordered eating develops as a coping skill that affords individuals with the ability to deal with negative reactions and feedback from others (Arcelus et al., 2013; Beekman et al., 2017; Goss & Gilbert, 2002; Rieger et al., 2010; Treasure & Schmidt, 2013). In a study by Salvy et al. (2011), participants were randomly assigned to a control/inclusion or ostracism group and played a ball-toss game. Participants completed an operant computerized task to earn points towards food or socialization time. Results found individuals in the ostracized group were more likely to exchange points for food compared to the control/inclusion group (Salvy et al., 2011). This is further supported by Beekman et al (2017) who recruited 121 women to complete online diaries for a week. Women reported greater restrictive eating following a period of actual or perceived rejection (Beekman et al., 2017).

Sport-Specific Risk Factors

Team vs. Individual Sports. To date, the influence of type of sport (individual vs. team) on athlete's disordered eating behaviors and attitudes is understudied. Previous

research has presumed that athletes competing individually are at higher risk for disordered eating than athletes on a team (Constantz & Mason, 2010). However, Bonci et al. (2008) argued that female athletes are vulnerable to disordered eating regardless of sport. The lack of conclusive support on the relationship between type of sport and disordered eating behaviors and attitudes warrants further investigation in female college athletes. Further investigating into this relationship will provide greater insight into risk factors that place athletes at greater risk for disordered eating.

Team sports are defined as two or more players who interact, cooperate, and are behaviorally interdependent on one another to achieve a common goal (Czyz et al. 2016; Kampouri et al., 2019). The context of cooperation and behavioral interdependence occur exclusively during performance (Landkammer et al., 2020). Previous literature is scarce and inconclusive regarding the influence of team sports on athlete's disordered eating behaviors and attitudes. Traditionally, team sports do not place a heavy emphasis on body weight and size as a predictor of athletic success (Rice et al., 2016). Furthermore, research suggests team sports provide a buffer against social evaluation as the attention of spectators and other essential persons (i.e., judges) is divided amongst the group, rather than on the individual (Haase, 2009). Consequently, participation in team sports is presumed to be correlated with a lower risk of developing disordered eating behaviors and cognitions (Giel et al., 2016; Kampouri et al., 2019; Werner et al., 2013). However, individuals participating in team sports are not immune from developing disordered eating behaviors and attitudes (Abbott et al., 2020; Bernstein, 2008; Giel et al., 2016; Rice et al., 2016). For example, some studies have found that maladaptive eating

pathology can be spread throughout teams who eat, travel, and train together (Arthur-Cameselle et al., 2017; Kampouri et al., 2019; Keel et al., 2013). It is hypothesized that teammates often encourage and share pathogenic weight loss methods in addition to facilitating weight loss competitions that reinforce disordered eating (Heradstveit et al., 2020).

Individual sports have lower levels of behavioral interdependence as the athlete does not rely on the actions of others to perform a task (Evans, 2014). Individual sports also encompass individual performances that are accumulated into a team score (e.g. gymnastics, swimming; Evans, 2014). According to the National Eating Disorder Association (2018), sports that emphasize individual performance and appearance are at a higher risk for disordered eating. However, although studies have not identified a direct link between individual sports and disordered eating, such athletes may have increased levels of anxiety, perfectionism, and body dissatisfaction, which are key risk factors for disordered eating (Nixdorf et al., 2013; Pluhar et al., 2019; Schaal et al., 2011). Kajbafnezhad et al. (2011) purported individual sport athletes set high standards for themselves during training and competition, increasing one's own sense of accountability to be successful. This can lead to a greater internal attribution of shame, guilt, and failure (Hanrahan & Cerin, 2009; Nixdorf et al., 2016; Pluhar et al., 2019). Furthermore, individual sport athletes tend to train year-round for a single spot, thus dedicating significant time focusing on perfecting and succeeding in sport (Nixdorf et al., 2016; Pluhar et al., 2019). Athletes may have increased levels of anxiety due to intense pressures to outperform competition and achieve approval from judges and/or spectators

(Pluhar et al., 2019; Schaal et al., 2011). Moreover, individual sports tend to have an aesthetic or judgement aspect which may heighten weight and shape concerns (Haase, 2009; Kato et al., 2011). For example, researchers have suggested that judged sports, such as gymnastics and diving, place greater importance on appearance, which may lead to an overfocus on perceived body image flaws (Kato et al., 2011; Prnjak et al., 2019; Somasundaram & Burgess, 2018).

Lean vs. Non-Lean Sports. The value of body shape and size in sports is contingent upon the emphasis on aesthetics, endurance, weight-class, or ball sports (Krentz & Warschburger, 2011; Rousselet et al., 2017; Stoyel et al., 2019; Thiemann et al., 2015), leading sports to be classified as either “lean” or “non-lean.” Female athletes participating in lean or aesthetic sports, such as gymnastics, figure skating, swimming, and dancing are most susceptible to disordered eating (Kong & Harris, 2015; Krentz & Warschburger, 2011; Sundgot-Borgen & Torstveit, 2004; Torstveit et al., 2008; Whitehead et al., 2020). Conversely, non-lean sports, such as basketball, soccer, volleyball, are those that place less value on leanness as it is not considered pertinent to competitiveness or success, do not require weigh-ins, and are not judged by aesthetics (Clifford & Blyth, 2018; Sanford-Martens, 2005). Thompson and Sherman (2010) have found that participation in lean sports predicated a greater risk for developing disordered eating due to the importance placed on low body weight.

Lean sports place an extreme emphasis on body mass and shape which is believed to provide the athlete with a competitive advantage (Goldfield, 2009; Kong & Harris, 2015; Krentz & Warschburger, 2011). Females participating in lean sports, compared to

sports that do not have strict body weight or shape requirements, reported higher rates of disordered eating and subclinical eating disorder symptomatology (46.7% to 19.8%, respectively; Bryne & McLean, 2002; Kong & Harris, 2015; Torstveit et al., 2008).

Athletes have the tendency to their bodies more critically and have rigid ideals about an athletic body type (de Bruin et al., 2011; Kong & Harris, 2015). Reinking and Alexander (2005) conducted a study on 84 female collegiate athletes to evaluate disordered eating in lean vs. non-lean sports. Results found 2.9% of non-lean athletes, compared to 25% of athletes, endorsed disordered eating, as measured by the Eating Disorder Inventory -2 (Reinking & Alexander, 2005). This belief about leanness, which is often reinforced by teammates and coaches, may lead to detrimental weight control practices such as dietary restriction, binge eating, laxative misuse, and self-induced vomiting (Sundgot-Borgen et al., 2013; Whitehead et al., 2020). Another study conducted by Krentz and Warschburger (2011) examined 96 elite athletes from lean sports and found these athletes endorsed greater eating pathology and a stronger desire for a leaner figure to improve performance.

Weigh-Ins. Body weight and composition are critical elements for many sports; however, it serves as an additional pressure to achieve an ideal weight (Khodae et al., 2015; Sundgot-Borgen et al., 2013). Coaches and athletic trainers utilize team weigh-ins to monitor physical progress, which oftentimes may lead to drastic changes in eating, increased body checking, and exercise routines (Galli et al., 2017; Galli & Reel, 2009). In a study that examined weight monitoring practices employed by over 600 coaches within the U.S. collegiate sport system, findings revealed that a significant proportion of coaches monitored athlete eating patterns, weight and body fat, and/or encouraged weight loss

(Heffner et al., 2003). Additionally, Khodaei et al. (2015) examined the most common weight-loss methods endorsed by athletes in weight-sensitive: food and fluid intake reduction, diet pills, increasing body secretion (sweating), and dehydration. Being weighed as a requirement of sport participation may be perceived a chronic stressor which encourages athletes to obsessively monitor calorie intake and weigh oneself frequently (Petrie & Greenleaf, 2012; Reel, 2011; Reel et al., 2013; Thompson & Sherman, 2010). Moreover, Reel & Galli (2012) found athletes engaged in harmful behaviors to “make weight” and avoid negative consequences. Disordered eating behaviors and cognitions are validated and normalized in sports that require weigh-ins (Reel & Galli, 2012). In a study analyzing weigh-in frequency and weight intentionality and management of 414 female college athletes, 41% were required to participate in mandatory weighing and 18% had weight recorded in front of teammates (Tackett et al., 2016). Furthermore, if athletes are weighed on a weekly basis, instead of quarterly, they absorb and internalize the message that weight, rather than health, is important and may engage in harmful weight regulations (Kerr et al., 2006; Tackett et al., 2016). In addition to pressures by coaches, athletic trainers, and teammates to achieve or maintain a certain body weight, individuals may also engage in self-weighing to monitor progress (Friend et al., 2012; Galli et al., 2017; Mintz et al., 2013).

Body Checking. To date, there have been no studies exploring a potential connection between weigh-ins and body checking in female college athletes. Body checking encompasses behaviors that involve repeatedly and critically evaluating one’s general appearance and targeting specific body parts to assess for weight and shape

(Bailey & Waller, 2016; Haase et al., 2011; Linardon & Mitchell, 2017; Reas et al., 2002). Typical behaviors may consist of pinching skin, use of weighing scales, analyzing oneself in mirrors, measuring thigh gaps and clavicle bone indentations, and putting on clothes to identify body size changes (Bailey & Waller, 2016; Kraus et al., 2015; Reas et al., 2002; Shafran et al., 2007). Body checking reinforces distorted beliefs that one's body has changed, thus intensifying feelings of failure to control shape and weight (Fairburn et al., 2003; Linardon et al., 2019). Additionally, body checking serves as a safety behavior that reduces anxiety in the immediate, short term, yet chronic and frequent checking can result in heightened anxiety and exacerbation of distorted shape/weight cognitions (Bailey & Waller, 2016; Haase et al., 2011). For example, Nikodijevic et al. (2018) performed a meta-analysis that examined body checking between individuals diagnosed with an ED and healthy controls. Findings from this study found ED individuals endorsed more body checking than healthy controls (Nikodijevic et al., 2018). Furthermore, body checking is strongly associated with negative body image and mood in several correlational and experimental studies (Kraus et al., 2015; Shafran et al., 2007). In a study by Wilhelm et al. (2018), normal-weight females were asked to check their most and least-liked body parts and rate levels of negative emotion and arousal before, during, immediately after, and 15 minutes after the checking episode. Regarding least-like body parts, negative affect significantly increased during the checking episode but subsided shortly after (Wilhelm et al., 2018). This suggests that body checking, although aversive, serves to reduce negative affect, thus reinforcing a cyclical pattern.

Self-Weighing. Self-weighing is described as body monitoring or checking that directs the individuals' attention towards their bodies and allows them to determine if progress towards their weight goal has been made (Galli et al., 2017; Quick et al., 2012). As athletes begin to associate performance with body satisfaction, it is possible that body checking increases. If weight expectations are not met, this may result in the development of negative affect and desperate attempts to achieve an ideal body composition through dieting, exercising, and various pathogenic weight control behaviors (Friend et al., 2012; Galli et al., 2017; Mintz et al., 2013; Quick et al., 2012; Quick et al., 2013). In a study that analyzed the effects of self-weighing on approximately 2,000 adolescents, results found that frequency of self-weighing predicted endorsement of binge-eating, maladaptive weight control behaviors, and weight gain (Neumark-Sztainer et al., 2006). Additionally, Carrigan et al. (2015) examined the relationship between required weigh-ins or self-weighing and disordered eating. Although results found team weigh-ins to be unrelated to disordered eating, self-weighing was associated with body dissatisfaction, dietary restraint, negative affect, and bulimia (Carrigan et al., 2015). These findings suggest that forms of body checking, such as self-weighing, can have deleterious effects on disordered eating behaviors and attitudes.

Social Physique Anxiety. Social physique anxiety (SPA) is a fear that others are evaluating and judging one's appearance negatively (Fitzsimmons-Craft et al., 2012; Gay et al., 2011; Hart et al., 1989; Mulazimoglu-Balli et al., 2010; Robinson & Lewis, 2016). Physique refers to the form and structure of the body, specifically concerning body fat, muscle tone, and overall body proportions (Mulazimoglu-Balli et al., 2010; Robinson &

Lewis, 2016). Consequently, SPA has been associated with an increased risk of body dissatisfaction, maladaptive eating pathology, and lower global self-esteem (Grieve et al., 2008; Hagger & Stevenson, 2010; Koyuncu et al., 2010; Mulazimoglu-Balli et al., 2010; Strelan & Hargreaves, 2005). Typically, individuals who report high levels of SPA avoid situations in which their physique is central to the activity such as athletics (Altan-Atalay & Gencoz, 2008; Robinson & Lewis, 2016). However, recent research suggests participating in competitive sports, in which significant pressures to attain and maintain a specific weight and shape may facilitate SPA (Altan-Atalay & Gencoz, 2008; Galli et al., 2011; Krane et al., 2001; Robinson & Lewis, 2016). Research has found a strong correlation between high levels of SPA and body dissatisfaction among female collegiate athletes. Robinson and Lewis (2016) analyzed the relationship of SPA, body image, and sport participation in 93 female athletes. Individuals high on SPA scales also reported greater body dissatisfaction than those with lower SPA scores (Robinson & Lewis, 2016). Excessive exercise and unhealthy dieting may also serve as a means for coping with body dissatisfaction (Altan-Atalay & Gencoz, 2008; Krane et al., 2001; Robinson & Lewis, 2016).

In sport settings, coaches, teammates, and physical activity are common risk factors that heighten risk of SPA and body dissatisfaction (Robinson & Lewis, 2016). Furthermore, research has shown a positive relationship between SPA and disordered eating attitudes and behavior (Brunet & Sabiston, 2010; Lanfranchi et al., 2015). Coaches and teammates may directly or indirectly place immense pressure on athletes to achieve a body image that is suitable to optimal performance which has been linked to an increase

SPA, resulting in body dissatisfaction and weight control behaviors (Altan-Atalay & Gencoz, 2008; Galli et al., 2011; Koyuncu et al., 2010). Additionally, athletes engaging in exercise for weight control, body tone, and enhancing physical appearance are likely to have higher levels of SPA (Mulazimoglu-Balli et al., 2010; Robinson & Lewis, 2016). Females participating in aesthetic/individual sports report higher levels of SPA, dieting, and bulimia behavior (Haase, 2009; Ioannidou & Venetsanou, 2019). In a study by Haase (2009), 137 female collegiate athletes participating in either team or individual sports completed questionnaires pertaining to SPA, disordered eating, and BMI. Results revealed significant differences between sport type and SPA, with athletes participating in individual sports displaying higher level of SPA (Haase, 2009). Female individual-sport athletes who likely to train and compete in settings and/or wear form-fitting uniforms had higher SPA scores, dieting, and bulimic behaviors (Haase, 2009).

Coach-Athlete Relationship. Athletic coaches are viewed as critical social agents within the interpersonal sport environment as they adopt various roles such as coach, teacher, disciplinarian, parent, and psychologist (Beckner & Record, 2016; Sabiston et al., 2020). Coaches play a critical and significant role in the development of physical skills, self-confidence, self-perception, self-efficacy, and motivation (Beckner & Record, 2016; Petrie & Greenleaf, 2012; Sabiston et al., 2020). Additionally, their influence may extend to matters concerning weight management, body image, and dieting behaviors (Beckner & Record, 2016; Petrie & Greenleaf, 2012; Slater & Tiggemann, 2011).

Currently, the National Collegiate Athletic Association (NCAA) has no mandated regulations on how involved a coach can or should be with the health, nutrition, or dieting of student-athletes (Beckner & Record, 2016). Yet, coaches often advertently or inadvertently discuss weight, body composition, and dieting in a manner that can have a potentially positive or negative impact on an athlete's behaviors (Anderson & Petrie, 2012; Coker-Cranney & Reel, 2014; Beckner & Record, 2016; Heffner et al., 2003). Bratland-Sanda and Sundgot-Borgen (2013) posited that discussion of weight can serve as a precipitating (i.e. trigger disordered eating) and perpetuating factor (i.e. maintaining the disorder). Female athletes who perceive weight-related comments as critical and offensive and as negatively impacting performance are more likely to express body dissatisfaction, engage in harmful eating practices, and experience feelings of guilt, anxiety, and shame (Arthur-Cameselle & Quatromoni, 2011; Muscat & Long, 2008). Furthermore, researchers suggest if athletes undoubtedly accept coach recommendations about weight loss and performance enhancement, they are at an increased risk for disordered eating (Coker-Cranney & Reel, 2014; Reel et al., 2010).

In a quantitative study by Beckner and Record (2016), 28 Division I female athletes were asked to share personal feelings towards their own body image in addition to perspectives on how coach communication influences health behavior. Based on the analysis of the clinical interviewers, coaches lacked appropriate ways to communicate healthy weight loss to athletes and often resorted to simply telling athletes to lose weight (Beckner & Record, 2016). Moreover, several athletes reported inadequate guidance, even when referred to a nutritionist, leading to feelings of confusion and uncertainty

about how to properly lose weight. For most, this led to the adoption of maladaptive eating behaviors and deleterious exercise regimens. Furthermore, athletes felt that coaches evaluated weight versus performance as predictors of success. Overall findings showed that coaches can negatively influence the ways in which athletes view their body/shape and alter health choices (Beckner & Record, 2016).

Similarly, Coker-Cranney and Reel (2015) investigated weight-related pressures from athletic coaches, the quality of the coach-athlete relationship, and disordered eating among 244 varsity collegiate female athletes. Based on the results from the Weight Pressures in Sport for Females Questionnaire (WPS-F), Coach-Athlete Relationship Questionnaire (CART-Q), and the Eating Attitude Test-26 (EAT-26), 13% of the sample endorsed clinical or subclinical eating pathology (Coker-Cranney & Reel, 2015). Additionally, a positive relationship was found between the WPS-F and EAT-26, suggesting that athletes who reported more weight-related pressures endorsed disordered eating behaviors more often than those who reported less weight-related pressure. For example, 28% believed “body weight and appearance are important to my coach,” 25% felt their “coach noticed if they lost weight,” and approximately 25% reported “coach encouraged weight loss.” The study also confirmed a negative relationship between coach-athlete relationship and disordered eating. Athletes who indicated a poor relationship with their coach (i.e. conflict, lack of support) reported more disordered eating behaviors and attitudes (Coker-Cranney & Reel, 2015).

Teammate-Athlete Relationship. Research suggests that as athletes mature, teammates replace parents as the primary source of social influence and support (Chan et

al., 2012; Scott et al., 2019). Teammates may have a negative influence on an athlete's eating attitudes and behavior (Arthur-Cameselle & Quatromoni, 2011; Scott et al., 2019). The development of disordered eating can be a consequence of social modeling (imitation of attitudes and behaviors towards food), social facilitation (altering food intake as a result of eating with others), impression management (modifying attitudes and behaviors towards food to make a good impression), or adherence to perceived social norms pertaining to food (Cruwys et al., 2016; Herman, 2015; Higgs, 2015; Scott et al., 2019; Stoeber et al., 2017; Vartanian & Porter, 2016). For example, Scott et al. (2019) explored the relationship between teammate influence and disordered eating and exercise attitudes in 727 female collegiate athletes. Results indicated that perceived pressure from and beliefs that teammates engaged in disordered eating predicted higher eating and exercise pathology. Additionally, teammates have been found to normalize unhealthy or harmful eating and exercise practices, make critical comments pertaining to weight/shape, and promote body size comparisons through competition (Arthur-Cameselle & Quatromoni, 2011; Muscat & Long, 2008; Thompson & Sherman, 2010). Muscat and Long (2008) investigated the influence of critical comments about weight and shape and disordered eating in 157 female athletes and 63 sport participants. Results revealed that both groups who recalled receiving criticism about their weight or shape endorsed maladaptive eating pathology (Muscat and Long, 2008). Thompson and Sherman (2010) argue that athletic teams can create their own social norms towards eating attitudes and behavior, which may help to illuminate the influence teammates have on each other. Additionally, athletes may be aware of the covert behaviors and attitudes of teammates. For example, sports

that involve weigh-ins or revealing uniforms may lead to body shape comparisons, which may lead to disordered eating behaviors and attitudes (Galli et al., 2017; Muscat and Long, 2008; Scott et al., 2019; Voelker et al., 2018).

Transdiagnostic Model

The transdiagnostic model, developed by Fairburn et al. (2003), posits that eating pathology is conceptualized as dysfunctional cognitive schema of self-evaluation (Dudek et al., 2014; Fairburn et al., 2003). Fairburn (2003) theorized that the core psychopathology of eating disorders is a dysfunctional belief about weight and shape, and control over weight and shape. Subsequently, self-worth is determined by body weight, appearance, and ability to control weight and eating. Consequently, this core cognition drives maladaptive behaviors, including rigid and inflexible dietary rules, caloric restraint, body checking, and compensatory behaviors following binges (Dudek et al., 2014; Lampard et al., 2013). Specifically, regarding binges, when a dietary rule is perceived to be broken, individuals with disordered eating temporarily suspend dietary rules and engage in a binge episode. Binges are then typically followed by greater attempts to maintain control and feelings of guilt, beginning again the cycle of restraint and maintaining this restraint to binge/purge process (Dudek et al., 2014; Fairburn et al., 2003; Lampard et al., 2013). Furthermore, Fairburn's model proposes four additional mechanisms that may significantly contribute to the maintenance of disturbed eating pathology: clinical perfectionism, low self-esteem, interpersonal problems, and mood intolerance (Fairburn et al., 2003; Dudek et al., 2014; Lampard et al., 2013; Shanmugam

et al., 2011). Several of these maintaining factors, including self-esteem and interpersonal problems, are of particular relevance for female college athletes.

Clinical Perfectionism

Researchers have demonstrated a strong relationship between perfectionism and disordered eating (Bardone-Cone et al., 2007; Brown et al., 2012; Reilly et al., 2016). Perfectionism is defined as holding idealistic and unattainable personal expectations and critically evaluating oneself when such standards are not met (Brown et al., 2012; Hopkinson & Lock, 2013; Levinson et al., 2017; Stoeber & Yang, 2015). Perfectionism is a significant risk factor that precedes the onset and aids in the maintenance of disordered eating (Bardone-Cone et al., 2007; Peck & Lightsey, 2008). The transdiagnostic model refers specifically to clinical perfectionism, an extreme and dysfunctional form of perfectionism (Prnjak et al., 2019; Shafran et al., 2002; Shanmugam et al., 2011). Shafran et al. (2002) defined clinical perfectionism as “the overdependence of self-evaluation on the determined pursuit of personally demanding, self-imposed standards in at least one highly salient domain, despite adverse consequences.” Individuals who endorse higher levels of clinical perfectionism have been found to apply perfectionistic tendencies to regulate eating, shape, and weight (Fairburn et al., 2003; Holland et al., 2013; Shafran et al., 2002; Shanmugam et al., 2011). This often leads to exacerbation of self-evaluation and encouragement of deleterious eating patterns (i.e., rigid dietary rules or extreme exercise regimes; Fairburn, 2008; Fairburn et al., 2003; Shanmugam et al., 2011). Unyielding efforts to achieve such unattainable standards become the individuals’ sole

focus, with other domains of life minimized or neglected (Dudek et al., 2014; Fairburn et al., 2003; Shanmugam & Davies, 2015; Shanmugam et al., 2011).

Self-Esteem

Self-esteem is a ubiquitous risk factor that is most often considered in the development and maintenance of eating pathology (Brechan & Kvalem, 2015; Dudek et al., 2014; Fairburn et al., 2003; Naeimi et al., 2016; Puttevils et al., 2019; Shanmugam et al., 2011). Self-esteem is characterized as a subjective appraisal of one's own worth (Dudek et al., 2014; Fairburn et al., 2003; Fernandez & Pritchard, 2012; Shanmugam et al., 2011). Individuals with disruptive eating behaviors possess enduring and pervasive negative views of themselves, which become entangled within their permanent identity (Cooper & Fairburn, 2011; Fairburn et al., 2003; Shanmugam et al., 2011). Fairburn et al. (2003) further suggests that low self-esteem is relatively stable over the course of the illness and typically resistant to improvements in eating pathology (Shanmugam et al., 2011).

According to the transdiagnostic model, low self-esteem directly influences the overevaluation of weight and shape, and eating patterns (Dakanalis et al., 2016; Lampard et al., 2011; Lampard et al., 2013). Specifically, low self-esteem has found to predict a greater drive for thinness, bulimic symptoms, and heightened body dissatisfaction (Gilbert & Meyer, 2005; Shanmugam et al., 2011; Shea & Pritchard, 2007). Evidence suggests low self-esteem interacts with clinical perfectionism, resulting in an unremitting pursuit to effectively control weight and shape; perceived failures may further exacerbate negative self-worth (Dunkley & Grilo, 2007; Fairburn et al., 2003; Steele et al., 2007).

Mood Intolerance

Mood intolerance is the sensitivity towards or the inability to endure negative or intense emotions, such as anger, anxiety, and depression (Cooper & Dalle Grave, 2017; Cooper & Fairburn, 2011; Fairburn et al., 2003; Shanmugam et al., 2011). Rather than effectively coping with aversive emotions, disordered eating individuals engage in dysfunctional mood regulatory behaviors, such as bingeing, purging, and excessive exercise (Aldao et al., 2010; Danner et al., 2014; Shanmugam et al., 2011; Svaldi et al., 2012). Although there is little evidence of a link between mood intolerance and purging and excessive exercise, it is well documented that mood intolerance is a precipitating factor for binge eating (Chua et al., 2004; Haedt-Matt & Keel, 2011). For example, risk for binge eating was heightened on days on which affect was predominately negative compared to non-binge eating days (Haedt-Matt & Keel, 2011; Lampard et al., 2011; Lampard et al., 2013). According to the model, compensatory behaviors serve to maintain dysregulated eating patterns by diminishing the connection between negative mood states and distorted cognitions (Byrne et al., 2011; Fairburn, 2008; Fairburn et al., 2003; Lampard et al., 2013; Shanmugam et al., 2011). Reinforcement of harmful mood regulation methods often leads the individual to believe they are incapable of coping with negative thoughts and feeling (Fairburn et al., 2003).

Interpersonal Difficulties

Interpersonal interactions include interaction patterns between an individual and significant other, in addition to how interactions are processed and internalized to form part of one's self-image (Arcelus et al., 2013; Fairburn et al., 2003; Lampard et al., 2011;

Rieger et al., 2010). Difficulties with interpersonal relationships have been documented as a core component in the onset and maintenance of disordered eating (Arcelus et al., 2013; Fairburn et al., 2003; Ung et al., 2017). For example, individuals who endorse disordered eating have greater difficulties with forming close connections with others, asserting themselves, and fear of negative evaluation (Lampard et al., 2011; Rieger et al., 2010). The model describes four ways in which interpersonal issues sustain disordered eating: family interpersonal dynamics, long-term interpersonal difficulties, interpersonal environments, and adverse interpersonal events. Fairburn et al. (2003) theorized that tension and conflict within the family trigger a strong desire for control, which is commonly displaced onto dietary restrictions (Fairburn et al., 1999). Long-term interpersonal difficulties become integrated into ones' self-esteem, resulting in a relentless pursuit to meet desired goals, such as successfully controlling eating, shape, and weight (Fairburn et al., 2003; Shanmugam et al., 2011). Interpersonal environments, such as family members/peers who endorse dysregulated eating patterns or occupations that promote thinness, reinforce the core psychopathology of disordered eating (Fairburn et al., 2003; Shanmugam et al., 2011). Lastly, adverse interpersonal events, such as a trauma, often precipitate the onset of disordered eating behaviors (Fairburn et al., 2003; Shanmugam et al., 2011).

Social Cognitive Theory

Social cognitive theory (SCT), the cognitive adaptation of social learning theory developed by Albert Bandura (1986), posits that a significant amount of human learning and behavior occurs within a social environment (Bandura, 1986; Luszczynska &

Schwarzer, 2005; Schunk & Usher, 2019). Through observation and interaction with others, individuals obtain feedback about the appropriateness, usefulness, and consequences of specific behaviors (Bandura, 1986; Luszczynska & Schwarzer, 2005; Schunk & Usher, 2019). Moreover, Bandura (1986) stated that social modeling is not a simple response of imitation; rather, learning processes and execution of behaviors are extensively governed by forethought (Bandura, 1986; Luszczynska & Schwarzer, 2005). Of particular importance is the concept of triadic reciprocal determinism, a major tenant of SCT (Bandura, 1986) Triadic reciprocal determinism theorizes that human behavior operates within a dynamic interaction between the person, environment, and behavior (Bandura, 1986, Bandura, 1989). Furthermore, SCT outlines additional crucial factors that influence behavior: observational learning, perceived self-efficacy, and outcome expectancies. Currently, there is little research applying SCT to athletes with disordered eating.

Observational Learning

Observational learning a process that occurs through observing an individuals' actions and consequences and reproducing those actions (Anstiss et al., 2018; Bandura, 1986; Bruton et al., 2019; Shearer et al., 2009). Furthermore, Bandura (1986) proposed the more similar traits that are shared between the model and the individual, the greater influence the model has on the individual's perceptions. It may be theorized that athletes who spend significant amounts of time together and share similar values, learn new skills and strategies through observation of teammates. Repeated demonstration of adaptive or

maladaptive strategies coupled with perceived or real success communicate to the individual that such behaviors will impact performance (Samson & Solmon, 2011).

Self-Efficacy

Self-efficacy is described as one's perceived ability to successfully execute a specific behavior that will result in a desired outcome, foster a sense of personal agency, and provide continual motivation (Bandura, 1986; Glasofer et al., 2013). Originally used for the treatment of anxiety disorders, the concept of self-efficacy has been recognized to permeate throughout other domains of psychosocial functioning such as health and exercise behavior, and sport and motor performance (Dewar et al., 2012; Doerksen & McAuley, 2014; Feltz & Lirgg, 2001; Glasofer et al., 2013; Lombardo et al., 2020). In a competitive environment such as the college athletic environment, multiple factors can influence perceived abilities to succeed or fail. Bandura (1986) hypothesizes that past performances are the most influential source of self-efficacy for athletes. An athlete who perceives past performances as successful will likely experience heightened self-efficacy beliefs, whereas failures tend to decrease self-efficacy (Bandura, 1986). Furthermore, athletes who possess higher levels of self-efficacy are likely to continually set and strive for more challenging goals and invest greater efforts into the task (Anstiss et al., 2018; Bandura & Locke, 2003).

Outcome Expectancies

Outcome expectations are subjective beliefs about the likelihood a particular consequence will result from performing a desired behavior (Bandura, 1986; Fasbender, 2020). Individuals form outcome expectations based on personal experiences and/or

observing significant others in physical, social, and self-evaluative domains (Bandura, 1986). Outcome expectations are important agents in behavioral change, particularly when positive expectancies outweigh negative expectancies (Lippke, 2017; Schwarzer et al., 2011). Observing an individual achieve desired goals can foster outcome expectancies that function as positive motivation (Bandura, 2001; Simpson & Mazzeo, 2017). For example, Bissell (2004) reported athletes who are lean and physically fit often receive positive rewards such as winning in competition and praise from others. This may suggest that teammates viewing this behavior may postulate achieving a thinner body will result in similar outcomes, thus resulting in disordered eating behavior and attitudes.

Chapter 3: Method

The purpose of the present study was to examine risk factors (neuroticism, self-esteem, and peer interactions) and disordered eating and body checking in female collegiate athletes. The study utilized an anonymous, cross-sectional method.

Participants

Female collegiate athletes who were currently enrolled in a 4-year college or university were recruited to participate in this study. Athletes were between the ages of 18 and 25 and participated in an intercollegiate individual or team sport. Athletes competed in NCAA Divisions I, II, or III or at the intramural level.

Inclusion and Exclusion Criteria

Participants were required to be biologically female between the ages of 18 and 25, attend a 4-year college or university, and fluent in English. Participants were currently or within the past year participating in at least one sport at the varsity or intramural level. Lastly, participants were eligible regardless of current or past eating disorder diagnoses. The only exclusion criteria included those who are non-English speaking.

Recruitment and Screening Procedures

Participants were recruited via email to athletic directors, head coaches, and sport psychologists, and posts on the social media platform, Facebook, and ResearchMatch.com. The screening procedure consisted of answering ‘yes’ to four questions, which would allow participants to start the surveys. If a participant answered “no” to any of the questions, they were informed they were not be eligible to participate in the study. Participants who met inclusion criteria received information about the study

in addition to the purpose of the study. Participants were informed that participation in the study was voluntary and were permitted to leave the study at any time. Each participant completed a series of self-report measures in a uniform fashion: demographic questionnaire, Eating Attitude Test- 26, Rosenberg Self-Esteem Scale, Body Checking and Avoidance Questionnaire, Inventory of Peer Influence on Eating Concerns, and the Ten Item Personality Inventory. Those who scored higher than 20 on the EAT-26 were promoted to an additional screen with eating disorder resources. Upon completion of the surveys, participants were promoted to enter their email for the chance to enter a raffle for a \$50 gift card.

Measures

Demographic Information

A demographics questionnaire was created to collect information on several topics through a choice of categories or an open-ended format. Questions included age, race, scholarship status, and self-reported weight category (underweight, health, overweight), participation in weigh-ins, and type and name of sport. Participants were also asked to answer if they currently or previously had an eating disorder.

Eating Attitude Test-26

The Eating Attitude Test-26 (EAT-26) is a 26 item self-report measure that assesses and identifies eating disorder symptoms and characteristics such as attitudes, beliefs, and behaviors that are related to body weight/shape and food (Boschi et al., 2010; Garner et al., 1982). The EAT-26 has a three-factor structure: dieting, bulimia and food preoccupation, and oral control. The dieting factor assesses an individuals' pathological

avoidance of caloric intake and drive for thinness, for example, “I am terrified about being overweight.” The second factor, bulimia and food preoccupation, target thoughts about and behaviors towards food such as “I find myself preoccupied with food” or “I have the impulse to vomit after meals.” Finally, oral control measures self-control over food intake in addition to the environmental and societal pressures surrounding weight by presenting items such as “I avoid eating when I am hungry.” Items are scored on a 4-point Likert scale, ranging from 0 (*never*) to 3 (*always*), with item 26 reverse scored. Additionally, the EAT-26 has four yes/no behavioral questions that aid in appropriate diagnosis (Garner & Garfinkel, 1979). Total scores can range from 0 to 78, with a score at or above 20 warranting clinical attention and indicative of a possible eating disorder (Kong & Harris, 2015).

The EAT-26 was derived from the original 40-item inventory (Garner et al., 1982; Lane et al., 2004) and is highly correlated ($r = 0.98$). The EAT-26 has good internal consistency with Cronbach’s alphas ranging from .79 to .94 (Garner et al., 1982; Gleaves et al., 2014). Additionally, the mean estimates of internal consistency for the three factors were .80, .67, and .56 for the Dieting, Bulimia and Food Preoccupation, and Oral Control factors, respectively (Gleaves et al., 2014). This EAT-26 has been shown to discriminate between individuals with bulimia nervosa and disordered eating with controls in addition to binge eating from those with anorexia or bulimia nervosa (Gleaves et al., 2014; Gross et al., 1986; Williamson et al., 1996). Further, studies examining test-retest reliability have been reported ranges between .84 and .89 (Banasiak et al., 2001). Moreover, the

EAT-26 has been used in college samples with internal consistencies ranging from 0.79 to 0.94 (Forestell et al., 2012; Shouse & Nilsson, 2011).

Rosenberg Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSES) is a 10-item measure that assesses an individual's self-esteem (Rosenberg, 1989; Garcia et al., 2019). The scale is equally divided into five positively and five negatively worded items as indicators of positive self-esteem/image and negative self-esteem/image, respectively (Garcia et al., 2019; Sinclair et al., 2010). Designed as a 4-point Likert scale, subjects respond by selecting strongly agree, agree, disagree, or strongly disagree (Rosenberg, 1965; Sinclair et al., 2010). A total score is calculated by summing the 10 items. The RSES has high reliability, with internal consistency (Cronbach's alpha) ranging between 0.77 and 0.88 and test-retest ranging between 0.82 and 0.85 (Blascovich & Tomaka, 1993; Rosenberg, 1965). The criterion validity is 0.55 (Rosenberg, 1965). The RSES has good convergent validity with the Health Self-Image Questionnaire ($r = 0.83$) and construct validity with the Lerner Self-Esteem Scale ($r = 0.72$; Mintz & Kashubeck, 1999). Finally, this scale has been tested on college populations, with a Cronbach alpha of 0.81 (Schmitt & Allik, 2005).

Body Checking and Avoidance Questionnaire

The Body Checking and Avoidance Questionnaire (BCAQ) is a 23-item self-report measure designed to assess the frequency of checking and avoidance behaviors of different body parts such as pinching, measuring, and touching (Shafran et al. 2004). Furthermore, one item assesses regularity of weighing (Shafran et al., 2004;

Shafran et al., 2007). The BCAQ is a 6-point forced-choice Likert scale ranging from 0 (*not at all/not interested*) to 5 (*avoided doing so because of possible distress*). Scores are calculated by obtaining the mean across all items, except for the item which addresses weighing (Shafran et al., 2004; Shafran et al., 2007). The BCAQ has high internal consistency (Cronbach's alpha = .9).

Inventory of Peer Influence on Eating Concerns

The Inventory of Peer Influence on Eating Concerns (I-PIEC) a 30-item, self-report measure which evaluates peer influence on children's eating and body concerns (Oliver & Thelen, 1996). This measure has been modified to reflect a college sample. The I-PIEC is based on three constructs: Messages, Interactions, and Likability. The Message scale measures the frequency of experienced negative message from peers about their bodies or eating patterns such as "Girls say I am fat" or "Girls say I should go on a diet." Interaction items reflect the frequency of communicate with peers about body image and eating habits; "Girls and I compare how our bodies look in our clothes." Lastly, the Likability items assess the degree to which one believes achieving a thin body frame would increase likability with peers such as "If I were thinner, I think girls would want to sit next to me more often." Items are rated using a 5-point Likert scale, with responses ranging from 1 (*never*) to 5 (*a lot*). The coefficient alphas for each scale are messages ($r = 0.92$), interactions ($r = 0.80$), and likability ($r = 0.88$). The I-PIEC was modified for a college population and only included items pertaining to females.

Ten Item Personality Inventory

The Ten Item Personality Inventory (TIPI) is a brief measure developed to assess the five personality dimensions of the Five Factor Model in general population samples (Gosling et al., 2003; Myszkowski et al., 2018). The TIPI is a 10-item inventory and represents each personality dimension: E- Extraversion, A-Agreeableness, C-Conscientiousness, ES-Emotional Stability, and O-Openness. Each dimension is represented by a positive and negative trait (Gosling et al., 2003). All items are scored using a 7-point Likert scale which ranges from (1) *Disagree Strongly* to (7) *Agree Strongly* (Gosling, 2003; Myszkowski et al., 2018). Scores on the TIPI are calculated by reverse scoring and recoding the negative or even-numbered items then taking the average of the items that make up each scale (Gosling et al., 2003). Many scholars use *emotional stability* as the inverse of neuroticism (Goldberg, 1990; McCrae & Costa, 1987). It has been strongly argued that emotional variability is a core foundational conceptualization of neuroticism (Goldberg, 1990; McCrae & Costa, 1987).

Research has shown that the TIPI as a reliable and valid measure in predicting Big Five personality traits (Gosling et al., 2003; Romero et al., 2012). However, given the brevity of the TIPI, psychometric studies suggest inferior reliability estimates and thus have emphasized validity (Gosling et al., 2003; Jonason et al., 2011). Internal consistency results show (E, $r = .68$; A, $r = .40$; C, $r = .50$; ES, $r = .73$; O, $r = .45$). The TIPI was tested against the Big Five Inventory (BFI; E, $r = .87$; A, $r = .70$; C, $r = .75$; ES, $r = .81$; O, $r = .65$) and the NEO Personality Inventory- Revised (NEO-PI-R; .56 to .68) to determine convergent validity (Gosling et al, 2003). Discriminate validity amongst these

measures has a mean of $r = .20$. Furthermore, test-retest was examined over a six-week period, with a mean correlation of $r = .72$ (Gosling et al., 2003). Overall, the TIPI has been identified as a reasonable proxy for longer Big-Five instruments (Gosling et al., 2003).

Chapter 4: Results

A total of 252 female athletes were recruited for participation in this study; however, 46 prospective participants were not included in analyses because of missing survey values (18.3%). The final study participant sample consisted of 206 athletes between the ages of 18 to 25 years old (Table 1). Participants were recruited from four-year colleges or universities within the United States and were required to have competed within the past year at the varsity or intramural level. The mean age was 20.17 ($M = 20.17$, $SD = 1.50$) and 77.2% self-identified as European Origin/White ($n = 159$). Furthermore, the sample was made up largely of athletes participating in a team sport, (73.8% total, $n = 152$), received a partial scholarship (55.8%) and did not require a mandatory weigh-in (87.9%). Athletes reported a healthy weight category, totaling 87.4% ($n = 180$). Sample characteristics are reported in Table 1.

Table 1*Descriptive Statistics of Female College Athlete Participants (N = 206)*

Characteristic	<i>n</i> (%)	<i>M</i> (<i>SD</i>)
Age (years)		20.18 (1.51)
Race/Ethnicity		
European origin/White	159 (77.2)	-
African American/Black	7 (3.4)	-
Asian American/Asian	9 (4.4)	-
Latina/Hispanic	9 (4.4)	-
American Indian/Alaska Native	2 (1)	-
Biracial/Multiracial	12 (5.8)	-
Other	8 (3.9)	-
Scholarship status		
Full	11 (5.3)	-
Partial	115 (55.8)	-
None	80 (38.8)	-
Weight category		
Overweight	20 (9.7)	-
Healthy	180 (87.4)	-
Underweight	6 (2.9)	-
Participation in weigh-ins		
Yes	25 (12.1)	-

Characteristic	<i>n</i> (%)	<i>M</i> (<i>SD</i>)
No	181 (87.9)	-
Type of sport		
Team sport	152 (73.8)	-
Individual sport	54 (26.2)	-
Name of sport		
Swimming	29 (14.1)	-
Aerobic exercise	1 (0.5)	-
Basketball	2 (0.9)	-
Bowling	4 (1.9)	-
Cheerleading	6 (2.9)	-
Track/cross country	19 (9.2)	-
Equestrian	5 (2.4)	-
Field hockey	25 (12.1)	-
Football	1 (0.5)	-
Ice hockey	4 (1.9)	-
Lacrosse	5 (2.4)	-
Rowing	1 (0.5)	-
Sailing	1 (0.5)	-
Skiing	1 (0.5)	-
Soccer	46 (22.3)	-
Softball	30 (14.6)	-

Characteristic	<i>n</i> (%)	<i>M</i> (<i>SD</i>)
Synchronized skating	1 (0.5)	-
Tennis	3 (1.5)	-
Volleyball	21 (10.2)	-
Wrestling	1 (0.5)	-
Current or Past Eating disorder Diagnosis		
Current	13 (6.3)	-
Previous	14 (6.8)	-
No	179 (86.9)	-
Type of eating disorder		
Anorexia nervosa	14 (53.8)	-
Bulimia nervosa	7 (26.9)	-
Binge eating disorder	2 (7.7)	-
Other	3 (11.5)	-

The mean EAT-26 score was a 45.8, \pm 21.3, which is above the cutoff for screening for disordered eating for this instrument (Table 2). Minimums, maximums, means and standard deviations for all the study variables (disordered eating, body checking, self-esteem, peer interactions, and personality factors) are in Table 2.

Table 2*Descriptive Statistics for Outcome and Predictor Variables*

Measure	<i>N</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>
Eating Attitude Test-26	206	3	118	45.89	21.34
Body Checking and Avoidance Questionnaire	206	0.14	3.82	1.68	0.8
Rosenberg Self-Esteem Scale	206	11	22	16.94	2.1
Inventory of Peer Influence on Eating Concerns	206	1	4.32	2.02	0.79
Ten Item Personality Inventory	206				
Extraversion		1	7	4.61	1.57
Agreeableness		2	7	4.9	1.05
Conscientiousness		1.5	7	5.75	1.17
Emotional Stability		1	7	4.1	1.41
Openness		2	7	5.4	1.11

Correlations were conducted to determine if demographic variables significantly related to outcome variables. Age significantly correlated with eating behaviors ($r = 0.167$; $p = 0.016$), peer interactions ($r = 0.193$; $p = 0.005$), and extraversion ($r = -0.167$; $p = 0.016$).

= 0.016); therefore, age was included in relevant regression analyses. Scholarship status significantly correlated with eating behaviors ($r = -0.224$; $p = 0.001$), body checking ($r = -0.163$; $p = 0.019$), and peer interactions ($r = -0.143$; $p = 0.04$) and therefore was included in relevant analyses. Lastly, weight category significantly correlated with peer interactions ($r = 0.215$; $p = 0.002$). Complete correlations matrices are provided in Tables 3 and 4.

Table 3*Correlations for Age and Study Variables*

Demographic Variable	Age	Type of Sport	Race/Ethnicity	Scholarship Status	Weight Category
Age (years)	-				
Type of sport	0.039	-			
Race/ethnicity	-0.19	-0.026	-		
Scholarship status	-0.114	0.209	-0.027	-	
Weight category	-0.079	-0.085	0.076	-0.053	-
Weigh-ins	0.222	-0.019	-0.188	-0.12	-0.03
EAT-26	0.167	-0.8	-0.028	-0.224	-0.096
BCAQ	-0.026	-0.109	-0.027	-0.163	0.037
RSES	-0.016	-0.071	-0.018	-0.027	-0.027
I-PIEC	0.193	-0.109	-0.077	-0.143	0.215
TIPI-E	-0.167	-0.115	0.099	-0.019	0.071
TIPI-A	0.01	0.049	-0.09	-0.018	0.066
TIPI-C	-0.134	-0.044	0.075	0.077	0.012
TIPI-ES	0.038	-0.112	-0.053	0.02	-0.078
TIPI-O	-0.069	-0.057	0.098	-0.002	-0.095

Note. EAT-26 = Eating Attitude Test-26; BCAQ = Body Checking and Avoidance Questionnaire; RSES = Rosenberg Self-Esteem Scale; I-PIEC = Inventory of Peer Influence on Eating Concerns; TIPI-E = Ten Item Personality Inventory - Extraversion; TIPI-A = Ten Item Personality Inventory - Agreeableness; TIPI-C = TIPI-E = Ten Item Personality Inventory Conscientiousness; TIPI-ES = TIPI-E = Ten Item Personality Inventory - Emotional Stability; TIPI-O = TIPI-E = Ten Item Personality Inventory – Openness.

Table 4*Correlations for Weigh-in and Scores on Questionnaires*

Demographic Variable	Weigh-in	EAT-26	BCAQ	RSES	I-PIEC	TIPI-E	TIPI-A	TIPI-C	TIPI-ES	TIPI-O
Weigh-in	-									
EAT-26	0.239	-								
BCAQ	0.077	0.674	-							
RSES	0.096	0.17	0.207	-						
I-PIEC	0.079	0.522	0.54	0.241	-					
TIPI-E	-0.078	-0.102	-0.133	-0.104	-0.093	-				
TIPI-A	0.002	-0.149	-0.221	0.018	-0.077	0.072	-			
TIPI-C	-0.087	-0.178	-0.237	-0.152	-0.269	0.108	0.087	-		
TIPI-ES	-0.1	-0.25	-0.29	-0.292	-0.2	0.224	0.212	0.305	-	
TIPI-O	-0.168	-0.001	-0.086	-0.05	-0.205	0.245	0.117	0.041	0.112	-

Note. EAT-26 = Eating Attitude Test-26; BCAQ = Body Checking and Avoidance Questionnaire; RSES = Rosenberg Self-Esteem Scale; I-PIEC = Inventory of Peer Influence on Eating Concerns; TIPI-E = Ten Item Personality Inventory - Extraversion; TIPI-A = Ten Item Personality Inventory - Agreeableness; TIPI-C = TIPI-E = Ten Item Personality Inventory Conscientiousness; TIPI-ES = TIPI-E = Ten Item Personality Inventory - Emotional Stability; TIPI-O = TIPI-E = Ten Item Personality Inventory – Openness.

Assumptions of Parametric Statistics

The statistical analyses used for this study required the data to be normally distributed. A Kolmogorov-Smirnov test was performed to test the assumption of normality (Table 5). Given that the measure of eating behaviors and peer interactions

deviated from a normal distribution ($p < 0.05$), log transformations were attempted; however, for the EAT-26 and I-PIEC, transformations did not successfully normalize the data. Therefore, any significant findings using parametric statistics were confirmed with non-parametric equivalents. For hypothesis one, the number of participants in each group (team vs. individual sport) were uneven, therefore, non-parametric comparisons were performed.

Table 5

Kolmogorov-Smirnov Test of Normality for the Eating Attitude Test-26 and Inventory of Peer Influence on Eating Concerns

Measure	Statistic	<i>df</i>	<i>p</i>
EAT-26	0.063	206	0.042
BCAQ	0.055	206	0.2
I-PIEC	0.121	206	0.001

Note. EAT-26 = Eating Attitude Test-26; BCAQ = Body Checking and Avoidance Questionnaire; RSES = Rosenberg Self-Esteem Scale; I-PIEC = Inventory of Peer Influence on Eating Concerns

Analyses for Each Hypothesis

Hypothesis 1

The first hypothesis was that athletes participating in individual sports would endorse significantly higher levels of disordered eating and body-checking behaviors than those participating in team sports. An independent samples Mann-Whitney U test indicated no significant difference in EAT-26 scores between participants in individual sports versus group sports ($p = 0.182$). Furthermore, an additional independent samples Mann-Whitney U test indicated no significant differences in BCAQ scores between participants in individual sports versus group sports ($p = 0.176$). The means for each group on these measures are in Table 6.

Table 6

Means and Standard Deviations for Team vs. Individual Sports on the Eating Attitude Test-26 and Body Checking and Avoidance Questionnaire (N = 206)

Variable	<i>M</i>	<i>SD</i>
Team sport		
EAT-26	46.91	20.3
BCAQ	1.73	0.82
Individual sport		
EAT-26	43.04	24.01
BCAQ	1.53	0.69

Note. EAT-26 = Eating Attitude Test-26; BCAQ = Body Checking and Avoidance Questionnaire

Hypothesis 2

It was hypothesized that neuroticism (as measured by the TIPI Emotional Stability subscale) would be associated with higher levels of disordered eating and poorer peer interactions.

A hierarchical linear regression was conducted (Enter method) to evaluate the relationship between neuroticism and eating behaviors. As discussed, age and scholarship status, were first entered into the regression model, followed by eating behaviors in the second step. Overall, the regression model was significant ($F = 10.1$; $p < 0.001$, Table 7).

Table 7

Regression Model Analysis of Variance: Neuroticism and Eating Behavior (N = 206)

Model	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Regression	10589.73	3	3529.91	10.12	< 0.001
Residual	51634.98	148	348.89		
Total	62224.71	151			

Of the predictors included, scholarship status was significantly associated with eating behaviors ($p = 0.018$) as well as neuroticism ($p < 0.001$). To confirm regression

findings, a non-parametric Spearman correlation was utilized for neuroticism and eating behaviors (Spearman's $\rho = -0.24$, $p < 0.001$, Table 8).

Table 8*Coefficients: Age, Scholarship Status, and Emotional Stability*

Variable	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	Coefficients				
	<i>B</i>	<i>SE</i>	Coefficients β		
(Constant)	59.29	20.92	-	2.83	0.005
Age	0.76	1.01	0.057	0.76	0.451
Scholarship status	-3.92	1.64	-0.18	-2.4	0.018
TIPI Emotional Stability	-5.008	1.071	0.352	-4.677	<0.001

Note. TIPI = Ten Item Personality Inventory

Next, a linear regression was performed (Enter method) to evaluate the relationship between neuroticism and peer interactions after accounting for age and weight status. The overall regression model was significant ($F = 9.8$; $p < 0.001$, Table 9).

Table 9*Regression Model Analysis of Variance: Neuroticism and Peer Interactions (N = 206)*

Model	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Regression	16.18	3	5.4	9.8	< 0.001
Residual	111.14	202	0.55	-	-
Total	127.31	205	-	-	-

Of the predictors included, age ($p = 0.001$), weight category ($p = 0.001$), and neuroticism ($p = 0.004$) were significantly associated with peer interactions (Table 10).

Table 10*Coefficients: Age and Weight Category*

Variable	Unstandardized		Standard	<i>t</i>	<i>p</i>
	Coefficients				
	B	<i>SE</i>			
(Constant)	-0.85	0.8	-	-1.06	0.29
Age	0.14	0.03	0.22	3.3	0.001
Weight category	0.49	0.15	0.22	3.29	0.001
TUPI Emotional	-0.11	0.04	-0.19	-2.89	0.004
Stability					

Note. TIPI = Ten Item Personality Inventory

To confirm regression findings, a non-parametric Spearman correlation was utilized for neuroticism and peers (Spearman's $\rho = -0.20$, $p = 0.004$).

Hypothesis 3

Hypothesis 3 examined the association between self-esteem and disordered eating, negative peer interactions, and body checking behaviors. A linear regression (Enter method) evaluated the relationship between self-esteem and eating behaviors, after accounting for age and scholarship status. The overall regression model was found to be significant ($F = 7.35$; $p < 0.001$, Table 11).

Table 11

Regression Model Analysis of Variance: Self-Esteem and Disordered Eating (N = 206)

Model	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Regression	9191.53	3	3063.84	7.35	< 0.001
Residual	84192.12	202	416.79	-	-
Total	93383.65	205	-	-	-

Of the predictor variables included into the model, age ($p = 0.03$), scholarship status ($p = 0.003$), and self-esteem ($p = 0.013$) were associated with eating pathology (Table 12). To confirm regression findings, a non-parametric Spearman correlation was utilized (Spearman's $\rho = 0.199$, $p = 0.004$).

Table 12*Coefficients: Age and Scholarship Status*

Variable	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	Coefficients				
	<i>B</i>	<i>SE</i>	Coefficients β		
(Constant)	-16.39	23.08	-	-0.71	0.49
Age	2.08	0.95	0.15	2.18	0.03
Scholarship status	-4.52	1.5	-0.2	-3.021	0.003
RSES	1.69	0.68	0.17	2.49	0.013

Note. RSES = Rosenberg Self-Esteem Scale

A second linear regression (Enter method) assessed the relationship between self-esteem and peer interactions, after accounting for age and weight category. Overall, the regression model was significant ($F = 12.2$; $p < 0.001$, Table 13).

Table 13

Regression Model Model Analysis of Variance: Self-Esteem and Peer Interaction (N = 206)

Model	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Regression	19.57	3	6.52	12.23	<0.001
Residual	107.74	202	0.533	-	-
Total	127.32	205	-	-	-

Of the predictors included, age ($p = 0.001$), weight category ($p < 0.001$), and self-esteem ($p < 0.001$) significantly related to peer interactions (Table 14). To confirm regression findings, a non-parametric Spearman correlation was utilized for self-esteem and peer interactions (Spearman's rho = 0.269, $p < 0.001$).

Table 14

Coefficients: Age, Weight Category, and Self-Esteem

Variable	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	<i>B</i>	<i>SE</i>			
	Coefficients		Coefficients β		
(Constant)	-2.96	0.88	-	-1.62	0.11
Age	0.11	0.03	0.22	3.33	0.001
Weight category	0.54	0.15	0.24	3.68	<0.001
RSES	0.09	0.02	0.25	3.87	<0.001

Note. RSES = Rosenberg Self-Esteem Scale

Lastly, a linear regression (Enter method) assessed the relationship between self-esteem and body checking, after accounting for age and weight category. Overall, the regression model was significant ($F = 3.2$; $p = 0.025$, Table 15).

Table 15

Regression Model Model Analysis of Variance: Self-esteem and Body Checking (N = 206)

Model	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Regression	5.78	3	1.93	3.18	0.025
Residual	122.26	202	0.61	-	-
Total	128.04	205	-	-	-

Of the variables included in the model, only self-esteem was significantly associated with body checking ($p = 0.003$, Table 16).

Table 16*Coefficients: Age and Weight Category*

Variable	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	Coefficients				
	<i>B</i>	<i>SE</i>	Coefficients β		
(Constant)	0.37	0.94	-	0.39	0.69
Age	0.09	0.16	0.04	0.59	0.55
Weight category	-0.01	0.03	-0.02	-0.29	0.77
RSES	0.08	0.03	0.21	3.02	0.003

Note. RSES = Rosenberg Self-Esteem Scale

Hypothesis 4

It was hypothesized that female athletes participating in mandatory weigh-ins would endorse a higher frequency of body checking behaviors than those who do not weigh-in for sport. A linear regression (Enter method) evaluated the relationship between mandatory weigh-ins (yes/no) and body checking behaviors, after accounting for scholarship status. The overall regression model was significant ($F = 3.14$; $p = 0.004$, Table 17).

Table 17

Regression Model Model Analysis of Variance: Mandatory Weigh-ins and Body Checking Behavior

Model	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Regression	3.8	2	1.92	3.14	0.04
Residual	124.19	203	0.612	-	-
Total	128.04	205	-	-	-

However, mandatory weigh-ins were not significantly associated with body checking ($p = 0.40$, Table 18). Model significance was driven by scholarship status ($p = 0.026$).

Table 18

Coefficients: Scholarship Status

Variable	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	<i>B</i>	<i>SE</i>			
Coefficients β					
(Constant)	1.89	0.12	-	12.52	< 0.001
Scholarship Status	-0.13	0.06	-0.16	-2.21	0.26
Weigh-in	0.14	0.17	0.06	0.84	0.4

Chapter 5: Discussion

The overarching goal of this research study was to better understand how neuroticism, self-esteem, and peer interactions relate to disordered eating and body checking in female collegiate athletes. The hypothesis that athletes participating in individual sports would report greater levels of disordered eating and body checking behaviors when compared to athletes in team sports was not supported. A plethora of research studies have examined disordered eating in relation to lean versus non-lean sports (Kong & Harris, 2015; Krentz & Warschburger, 2011; Sundgot-Borgen & Torstveit, 2004; Torstveit et al., 2008; Whitehead et al., 2020), yet less is known about the relationship between disordered eating and sport participation at the collegiate level. Athletes participating in individual sports typically have an aesthetic component to their sport, in addition to greater social evaluation, judgement of body type, and self-objectification (Gurung & Chrouser, 2007; Haase, 2009; Melbye et al., 2008). This may place the athlete at greater risk for engaging in harmful weight loss behaviors. Conversely, athletes participating in team sports may endorse fewer disordered eating symptoms due to diffusion of social evaluation and judgement, in addition to less emphasis placed on body type (Hausenblas & Carron, 1999; Haase, 2009; Hausenblas & Carron, 1999). Further, Heradstveit et al. (2020), found a negative association between disordered eating symptoms and team sport participation. Similarly, Rodriguez et al (1999) found participation in individual sports was associated with dieting, binge eating, and compensatory behaviors. Contrary to these studies, the present study did not find a significant relationship between disordered eating and type of sport. This may be

attributed to the relatively few numbers of participants who played individual sports ($n = 54$) than team sports ($n = 152$).

In the present study, type of sport was also not significantly related to body checking behaviors. A significant body of literature supports higher body dissatisfaction among individual sports due to relevance of body weight and focus on leanness (Dyremyhr et al., 2014; Morano et al., 2011). However, research on body checking behaviors and type of sport is scant. Body checking, which is oftentimes brief and repeated frequently, may go undetected by others (Fairburn et al., 2008; Lavendar et al., 2013). Furthermore, excessive body checking behaviors in Western cultures may be considered a normative experience (Tantleff-Dunn et al., 2011; Stapleton et al., 2014). These behaviors may be further exacerbated by a sporting environment that promotes other checking behaviors such as weigh-ins. Although this study did not find a significant relationship between type of sport and body checking, participants in this study nonetheless reported notable body checking behaviors overall. In studies that have examined the BCAQ, individuals with anorexia nervosa, bulimia nervosa, and atypical eating behaviors had comparable BCAQ to this study's population (Shafran et al., 2004). This suggests that body checking in athletes may be slightly higher than in non-athletes. Further investigation factors that may promote body checking in female college athletes is warranted.

Female college athletes with higher levels of reported greater eating pathology and poorer peer interactions. In the general population, neuroticism is strongly associated with an eating disorders diagnosis (Cassin & von Ranson, 2005; Diaz-Marza et al., 2000;

Ellickson-Larew et al., 2013; Ghaderi & Scott, 2000); however, neuroticism in the context of sport is understudied (Reshadat et al., 2017; Scoffier-Meriaux et al., 2015). Congruent with previous research, MacLaren and Best (2009) and Tylka (2004) found individuals who score higher on the EAT-26 also report high levels of neuroticism. Additionally, Scoffier-Meriaux et al. (2015) found neuroticism to be directly related to maladaptive eating behaviors in elite dancers. The findings of this hypothesis support further investigation into this relationship to better understand the role neuroticism plays in athletes with disordered eating. Furthermore, this is one of the first studies to examine the impact neuroticism has on peer interaction in female college athletes. Findings from this study found athletes who scored high on the neuroticism scale had better peer interactions. This is incongruent with previous research, which showed that people high in neuroticism tend to experience more interpersonal conflict in friendships, are less emotionally close to others, and seek out reassurance (Berry et al., 2000; Doroszuk et al., 2019; Wagner et al., 2014; Wilson et al., 2015). These results may be due to adapting the I-PIEC measure to be more appropriate for college populations and including items only relevant to females. It has also been found that individuals with eating disorders experience high sensitivity to rejection, social anxiety, and poor quality of relationships (Aime et al., 2006; Bohn et al., 2008; Cardi et al., 2012; Turner et al., 2010). These findings suggest that neuroticism may be a mediating variable between disordered eating and peer relationships, which is exacerbated by athletic pressures. Considering the lack of research on neuroticism and disordered eating and peer interactions in the athletic environment, these findings emphasize the value in better understanding this dynamic.

Self-esteem was associated with disordered eating, negative peer interactions, and body checking behaviors. However, previous literature regarding the relationship between self-esteem and disordered eating in athletes is mixed. Some studies have argued that sport participation increases one's self-esteem in addition to other physical and mental health benefits (Costarelli et al, 2009; Michou & Costarelli, 2011; Tiggemann, 2001). For example, McLester et al (2014) found 90% of female athletes had normal to high self-esteem and few were susceptible to eating disorders. Contrary to these findings, this study found low self-esteem is predictive of disordered eating. In a qualitative study by Arthur-Cameselle and Quatromoni (2011), 17 collegiate students diagnosed with an eating disorder reported low self-esteem as one of three major contributors to the onset of their disorders. Moreover, research has shown that 76% of female athletes identified low self-esteem as a contributing factor to disordered eating (Arthur-Cameselle & Quatromoni, 2011). The present findings, however, suggest that higher self-esteem related to greater eating pathology. These results are surprising as it is not in line with the transdiagnostic model (Fairburn, 2003), which may be a reflection of this unique study population of only athlete. Self-esteem in female athletes may be different than the greater female population; alternatively, a future study may benefit from comparing the self-esteem in athletes with the general population. These findings suggest the need to further examine the impact self-esteem has on disordered eating in female athletes in addition to the need for coaches, athletic trainers, and teammates to promote a general healthy self-esteem.

This is the first known study to examine the relationship between self-esteem and peer interactions or body checking in female athletes. Given the significance of these relationships, further exploration is warranted. In the general population, a plethora of research has suggested that one's self-esteem shapes success in initiating and maintaining social relationships (Erol & Orth, 2013; Harris & Ulrich, 2019; Murray et al., 2000; Murray et al., 2006). Furthermore, the relationship between self-esteem and body dissatisfaction has been strongly supported by research studies (Brechan & Kvalem, 2015; van den Berg et al., 2011). Body checking has been argued to maintain overall body dissatisfaction (Stefano et al., 2016), thus it may be assumed this reciprocal relationship maintains one's low levels of self-esteem. The present study found higher levels of self-esteem related to greater body checking, which also is not in line with the transdiagnostic model, but again, may be a reflection of the unique population of athletes and the potential positive effects of athletic participation on self-esteem (Ouyang et al., 2020; Peng et al., 2017). Future studies could also evaluate these relationships in male athletes or younger female athletes, and programs to enhance and sustain self-esteem in female athletes could be developed, administered and evaluated. These novel findings can be understood and supported through Bandura's (1986) social cognitive learning theory, which postulates that learning occurs within a social context. Specifically, the role of self-esteem and peer interactions or body checking may be maintained through observational learning, reinforcements, and expectations.

Contrary to hypothesis 4, athletes who participated in team weigh-ins did not report a higher frequency of body checking behaviors than athletes who did not weigh-in

for sport. Notably, this may have been affected by only a few athletes stating their sport requires a weigh-in. Opposing research has found mandated weigh-ins become a constant pressure for athletes to monitor their weight and can lead to disordered eating behaviors, such as body checking (Carrigan et al., 2015; Morandi, 2011; Tackett et al., 2016). The extant relationship between mandatory and body checking behaviors in female athletes appears to be scant. Mandatory weigh-ins allow coaches and athletes to monitor athletes' bodies and determine how closely they match the ideal body type for their sport. Negative feelings about weigh-ins may reciprocally increase body-checking behaviors, which may exacerbate feelings of failure and frustration (Carrigan et al., 2015). Despite not finding support for this hypothesis, future research should continue to examine this relationship as weighing in for sport may cause greater damage to the athlete's physical and mental health.

Clinical Implications

The current study findings offer several implications for the screening and treatment of female athletes. In a study conducted by Flatt et al. (2020), 75% of athletes who endorsed eating disorder symptoms had no intention of seeking treatment. Generally, approximately half of individuals meeting criteria for an eating disorder lack awareness into the severity of symptoms (Flatt et al., 2020; Gratwick-Sarll et al., 2013; Mond et al., 2006). However, athletes face greater challenges to seeking treatment due to demanding academic and training schedules, stigma pertaining to mental health, and normalization of disordered eating behaviors (Alwan et al., 2019; Currie, 2010; Flatt et al., 2020; Gulliver et al., 2012; Thompson & Sherman, 2012). Female athletes further believe achieving and

maintaining a low body weight will enhance athletic performance (Flatt et al., 2020; Martinsen et al., 2010; Werner et al., 2013). Thus, early detection and treatment for disordered eating among athletes should become a high priority for athletic departments.

Notably, the present study also found female college athletes to be at a potential risk for disordered eating behaviors. The measure used in this study, the EAT-26, is not designed to diagnose eating disorders, but to identify those who are at risk (Garner et al., 1982). Scores greater than 20 are indicative of serious eating pathology and warrant clinical attention (Garner et al., 1982). In the present sample, the mean EAT-26 score was 45.9 ($SD = 21.34$), which is two times greater than the cutoff score. These findings corroborate previous research suggesting that female collegiate athletes are vulnerable to the development of disordered eating. Given the nature of the athletic environment where disordered eating behaviors, such as excessive exercise and restrictive diets are normalized, athletes and coaches alike may be unaware of the true extent of symptom severity. It is crucial that athletes, coaches, and athletic personnel are cognizant of such risk factors and how to guide athletes towards appropriate treatment options.

Enhanced cognitive-behavioral therapy (CBT-E) is based on the transdiagnostic model and is designed to treat core eating pathology, rather than a specific eating disorders diagnosis (Carter et al., 2009; Murphy et al., 2010). CBT-E addresses core maintaining mechanisms such as low self-esteem and interpersonal difficulties, by utilizing a series of strategies target distorted cognitions and maladaptive behaviors. Individual CBT-E has been researched in several different populations (Cooper & Stewart, 2008; Dalle Grave et al., 2008; Murphy et al., 2010); however, less is known

about the application of CBT-E to female college athletes. One study by Cakmakci et al (2020) randomly assigned 16 athletes with bulimia nervosa to a CBT or control group. Results found that athletes who received CBT significantly decreased symptoms and increased weight. However, given the unique pressures and risk factors faced by athletes, CBT may need to be modified to meet the needs of the athlete. It may be difficult for others to detect disordered eating and body checking behaviors due to significant overlap between training and dieting regimes often required of athletes (Sundgot-Borgen & Torstveit, 2010). Mental health clinicians should work closely with medical teams (i.e. team physician), athletic trainers, and coaches to effectively treat the athlete.

Along with providing psychotherapy for athletes, many coaches and athletic administration lack the knowledge and understanding of disordered eating and body checking. Coaches spend a significant time with athletes and therefore can play a critical role in the early detection of these symptoms and behaviors. Several studies have documented coaches lack knowledge of and confidence in eating disorders. Additionally, coaches have reported feeling uncomfortable addressing concerns pertaining to disordered eating (Nowicka et al., 2013). As part of athletic participation, it may be suggested for coaches, athletic administration, and athletes to receive education from nutritionists about healthy eating patterns that are appropriate for sport in addition to receiving information about mental health resources at the college/university.

Additionally, coaches have also reported secrecy and/or minimization of symptoms hindered the abilities to appropriately and effectively intervene (Selby & Reel, 2011). This may be further exacerbated by engagement in behaviors that are reinforced

by the athletic environment (i.e. excessive exercise, rigid diets) that may not be easily identified. Therefore, the use of screening tools may illuminate the detection of maladaptive eating patterns (Bonci et al., 2008; McLester et al., 2014; Power et al., 2020). For example, the American Medical Society for Sports Medicine and the American College of Sports Medicine have collaborated to develop a screening tool, Preparticipation Physical Examination, that aids in the identification of disordered eating (Bernhardt & Roberts, 2010; Joy et al, 2016). Consequently, a recent study found that across all NCAA divisions, 44% of athletic departments screened for disordered eating. Therefore, the use of screening tools should be mandated as part of routine physicals that are required before the start of the season.

Lastly, team physicians and athletic trainers may experience external pressures to return athletes back to sport before being mentally or physically cleared. Returning players before cleared can worsen physical and mental health. In 2014, the Female Athlete Triad Coalition Consensus Statement on Treatment and Return to Play of the Female Athlete Triad released a comprehensive guideline for team physicians to clear players (Joy et al., 2015). This measure assesses for dietary restriction, BMI, menstrual history, bone mineral density, and history of stress reaction or fracture. However, this does not ask about other behaviors such as purging and compensatory behaviors, which are known to be damaging to physical health. Decided to return an athlete back to sport should be evaluated by a multidisciplinary team that includes the coach, athletic trainer, and clinician. Furthermore, athletes who are ineligible to compete due to serious physical and mental health risks should be required to seek out professional help as part of the

return to play protocol. It is unclear how many colleges and universities implement and adhere to these policies and it is recommended governing bodies such as the NCAA mandates these guidelines.

Theoretical Implications

Social cognitive theory (SCT) explains how behavior is learned through observational and interactions with others as well as active cognitive processes (Bandura, 1986; Luszczynska & Schwarzer, 2005; Schunk & Usher, 2019). This theory aims to support the major findings in this study. Self-efficacy, a major component of SCT, is an individual's belief in his/her abilities to perform a specific behavior (Bandura, 1986). In this sample, hypothesis 2 showed that neuroticism predicted maladaptive eating behaviors and poor peer interactions. With regards to SCT, individuals with high levels of neuroticism are more likely to have lower levels of self-efficacy. In sport, high self-efficacy is related to better performance (Vancouver et al., 2002; Zhang et al., 2019); however, in the athletic environment enhanced performance is conflated with an ideal body image. This may suggest why neurotic individuals endorsed greater levels of eating pathology. Reciprocal determinism, on the other hand, refers to the interaction between the person, environment, and behavior (Bandura, 1986). This may be because athletes with higher levels of neuroticism are more likely to isolate themselves from others (Rainey & Petkari, 2019; Swickert et al., 2010). Additionally, they may be seen as less cooperative, more irritated, and having lower commitment to their team (Macht & Nembhard, 2015; Rainey & Petkari, 2019; Swickert et al., 2015), which may result in less satisfying relationships.

Self-esteem was found to predict disordered eating, poor peer interactions, and body checking behaviors. SCT posits observational learning as a means of learning behaviors (Bandura, 1986). Athletes with low self-esteem may observe and take in messages about their bodies and dieting behaviors. Athletes may believe this will enhance self-esteem; however, engaging in disordered eating is believed to maintain low self-esteem, thus creating a vicious cycle. Similarly, those with low self-esteem may avoid interactions with others, which reinforce low self-esteem. Finally, body checking may serve as a purpose of providing feedback about one's body and weight which may influence self-esteem. With regards to SCT, outcome expectancies refer to anticipated consequences of one's behavior (Bandura, 1986). Thus, if one expects to see positive changes in one's body when engaging in body checking behaviors and the outcome expectancy is not met, this may foster further lower self-esteem.

Strengths and Limitations

The current study has several strengths. Several measures validated in previous studies examining disordered eating in both general and athletic populations were used. Moreover, the study recruited an adequate sample size for regression analyses and utilized a variety of sports across the United States.

There are also notable limitations that should be addressed. The study utilized a convenience sampling method which increases the possibility of selection bias. The sample population for this study consisted only of female collegiate athletes between the ages of 18 and 25. Of the 206 eligible participants, 77.2% identified as European Origin/White, with the average age of approximately 20. Such a homogeneous sample

poses a threat to external validity as these findings may not be representative across gender, age, and ethnicity. Additionally, the groups in this study (team vs. individual; weigh-in vs. no weigh-in) were unevenly distributed. Perhaps a larger sample size could have allowed more equivalent group sizes. Additionally, the use of self-report measures may threaten the study's reliability and validity. Research has documented athletes are susceptible to underreporting eating pathology to protect themselves from adverse consequences such as negative reactions from others or losing the ability to continue competing (Sundgot-Borgen & Torstveit, 2010; Thompson & Sherman, 2010). Although participants were guaranteed confidentiality before participating in this study, it is possible athletes minimized their symptoms due to such fears.

Directions for Future Research

Based on the study's current findings, several recommendations for future research can be made. Several studies have documented the influence lean vs. lean sport has on disordered eating, yet few have examined team versus sport. Additionally, body checking in female college athletes is understudied. Future research would benefit from continuing to understand how type of sport influences disordered eating and body checking. It may also be beneficial to examine these relationships over time to determine if time spent playing sport serves a mediating role.

Although not a part of the original hypothesis, scholarship status was found to be related to eating behaviors. A scholarship provides full or partial financial benefits in return for athletic participation; however, scholarships are a one-year agreement and may be terminated at any time, for any reason (Johnson & Acquaviva, 2012). It is possible

collegiate athletes may feel additional pressures to conform to ideal body types that will enhance performance to maintain a scholarship. To spearhead further investigation on scholarship status and disordered eating, the use of qualitative research would permit athletes to discuss in detail how scholarships have affected their eating behaviors.

Additionally, behaviors such as disordered eating and body checking are easily missed by coaches, teammates, and other athletic personnel due to overlap with training and dieting encouraged by the sport. Future research may benefit from examining the role of mandatory psychoeducation trainings at the beginning and throughout the training session on disordered eating behavior and body checking. By utilizing a control and experimental group, researchers would be able to emphasize the benefits of increases coach, teammate, and athletic personnel awareness of risk factors, signs, and symptoms of disordered eating.

Conclusion

Continued investigation into disordered eating and body checking behaviors in female college athletes is warranted. Although variables such as self-esteem, neuroticism, and peer interactions have been studied extensively in the general population, little research has looked at these factors in an athletic population. This study also began to address critical gaps in the literature such as investigating type of sport on disordered eating and body checking in addition to influence on mandatory weigh-ins on body checking. Disordered eating in athletes has been studied extensively, however, there are still many risk factors and sport-specific variables that remain largely unknown. It

remains critical for coach, athletic personnel, teammates, and athletes alike to remain vigilant and aware of signs and symptoms in order to provide early intervention.

The findings from this study support previous research regarding risk factors that contribute to the onset and maintenance of disordered eating in the athletic environment. Additionally, this study examined relationships that have apparently not been explored before within athletic populations. These study findings continued investigation as well as provide guidance for future research.

References

Abbott, B. D., & Barber, B. L. (2011). Differences in functional and aesthetic body image between sedentary girls and girls involved in sports and physical activity: Does sport type make a difference? *Psychology of Sport and Exercise, 12*, 333-342. doi:10.1016/j.psychsport.2010.10.005

Abbott, W., Brett, A., Brownless, T. E., Hammond, K. M., Harper, L. D., Naughton, R. J., Anderson, L., Munson, E. H., Sharkey, J. V., Randell, R. K., & Clifford, T. (2020). Prevalence of disordered eating in elite male and female soccer players. *Eating and Weight Disorders – Studies on Anorexia, Bulimia, and Obesity, 26*, 491-498. doi:10.1007/s40519-020-00872-0

Abrams, D., Hogg, M. A., & Marques, J. M. (Eds.), (2005). *Social psychology of inclusion and exclusion*. Psychology Press.

Ackland, T. R., Lohman, T. G., Sundgot-Borgen, J., Maughan, R. J., Meyer, N. L., Stewart, A. D., & Muller, W. (2012). Current status of body composition assessment in sport. *Sports Medicine, 42*, 227-249. doi:10.2165.11597140-000000000-00000

Adamson, J., Ozenc, C., Baillie C., & Tchanturia, K. (2019). Self-esteem group: Useful intervention for inpatients with anorexia nervosa? *Brain Sciences, 9*, 1-11. doi:10.3390/brainsci9010012

Akkermann, K., Nordquist, N., Oreland, L., & Harro, J. (2010). Serotonin transporter gene promoter polymorphism affects the severity of binge eating in general population. *Progress in Neuropsychopharmacology and Biological Psychiatry, 34*, 111-114. doi:10.1016/j.pnpbp.2009.10.008

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review, 30*, 217-237. doi:10.1016/j.cpr.2009.11.004

Al-sheyab, N. A., Gharaibeh, T., & Kheirallah, K. (2018). Relationship between peer pressure and risk of eating disorders among adolescents in Jordan. *Journal of Obesity, 2018*, 1-8. doi:10.1155/2018/7309878

Altan-Atalay, A., & Gencoz, T. (2008). Critical factors of social physique anxiety: Exercising and body image satisfaction. *Behaviour Change, 25*, 178-188. <https://doi.org/10.1375/beh.25.3.178>

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author

Anderson, C., & Petrie, T. A. (2012). Prevalence of disordered eating and pathogenic weight control behaviors among NCAA Division I female collegiate gymnasts and swimmers. *Research Quarterly for Exercise and Sport, 83*, 120-124. doi:10.1080/02701367.2012.10599833

Anderson, C. M., Petrie, T. A., & Neumann, C. S. (2011). Psychosocial correlates of bulimic symptoms among NCAA Division-I female collegiate gymnasts and swimmers/divers. *Journal of Sport and Exercise Psychology, 33*, 483-505. doi:10.1123/jsep.33.4.483

Anstiss, P. A., Meijen, C., & Marcora, S. M. (2018). The sources of self-efficacy in experienced and competitive endurance athletes. *International Journal of Sport and Exercise Psychology, 5*, 622-638. doi:10.1080/1612197X.2018.1549584

Arcelus, J., Witcomb, G. L., & Mitchell, A. (2013). Prevalence of eating disorders amongst dancers: A systematic review and analysis. *European Eating Disorders Review*, 22, 92-101. doi:10.1002/erv.2271

Arthur-Cameselle, J., & Quatromoni, P. (2011). Factor related to the onset of eating disorders reported by female collegiate athletes. *Sports Psychologist*, 25, 1-17. doi:10.1123/tsp.25.11

Arthur-Cameselle, J., Sossin, K., & Quatromoni, P. (2017). A qualitative analysis of factors related to eating disorder onset in female collegiate athletes and non-athletes. *Eating Disorders*, 25, 199-215. doi:10.1080/10640266.2016.1258940

Avena, N. M., & Bocarsly, M. E. (2012). Dysregulation of brain reward system in eating disorders: Neurochemical information from animal models of binge eating, bulimia nervosa, and anorexia nervosa. *Neuropharmacology*, 63, 87-96, doi:10.1016/j.neuropharm.2011.11.010

Baik, J. (2013). Dopamine signaling in food addiction: Role of dopamine d2 receptors. *BMB Reports*, 46, 519-526. doi:10.5483/BMBRep.2013.46.11.207

Bailer, U. F., & Kaye, W. H. (2011). Serotonin: Imaging findings in eating disorders. *Current Topics in Behavioral Neurosciences*, 6, 59-79. doi:10.1007/7854_2010_78

Bailey, N., & Waller, G. (2016). Body checking in non-clinical women: Experimental evidence of a specific impact on a fear of uncontrollable weight gain. *International Journal of Eating Disorders*, 50, 693-697. doi:10.1002/eat.22676

Banasiak, S. J., Wertheim, E. H., Koerner, J., & Voudouris, N. J. (2001). Test-retest reliability and internal consistency of a variety of measures of dietary restraints and body concerns in a sample of adolescent girls. *International Journal of Eating Disorders, 29*, 85-89.

doi:10.1002.1098-108X(200101)29:1<85::AID-EAT14>3.0.CO;2-G

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Bandura, A., & Locke, E. A. (2003). Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology, 88*, 87-99. doi:10.1037/0021-9010.88.1.87

Bardone-Come, A. M., Sturm, K., Lawson, M. A., Robinson, D. P., & Smith, R. (2010). Perfectionism across stages of recovery from eating disorders. *International Journal of Eating Disorders, 43*, 139-148. doi:10.1002/eat.20674

Bardone-Cone, A. M., Wonderlich, S. A., Frost, R. O., Bulik, C. M., Mitchell, J. E., Uppala, S., & Simonich, H. (2007). Perfectionism and eating disorders: Current status and future directions. *Clinical Psychology Review, 27*, 384-405.

doi:10.1016/j.cpr.2006.12.005

Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Twenge, J. M. (2005). Social exclusion impairs self-regulation. *Journal of Personality and Social Psychology, 88*, 589-604. doi:10.1037/0022-3514.88.4.589

Beckner, B. N., & Record, R. A. (2016). Navigating the thin-ideal in an athletic world: Influence of coach communication on female athletes' body image and health choices. *Health Communication, 31*, 364-373. doi:10.1080/10410236.2014.957998

Beekman, J. B., Stock, M. L., & Howe, G. W. (2017). Stomaching rejection: Self-compassion and self-esteem moderate the impact of daily social rejection on restrictive eating behaviours among college women, *Psychology & Health, 32*, 1348-1370. doi:10.1080/08870446.2017.1324972

Bell, H., Donovan, C. L., & Ramme, R. A. (2016). Is athletic really ideal? An examination of the medicating role of body dissatisfaction in predicting disordered eating and compulsive exercise. *Eating Behaviors, 21*, 24-29. doi:10.1016/j.eatbeh.2015.12.012

Berg, K. C., Frazier, P., & Sherr, L. (2009). Change in eating disorder attitudes and behavior in college women: Prevalence and predictors. *Eating Behaviors, 10*, 137-142. doi:10.1016/j.eatbeh.2009.03.003

Bernstein, S. J. (2008). Starving to win: An exploration of eating disorders in female athletes. *Graduate Student Journal of Psychology, 10*, 64-69.
https://www.tc.columbia.edu/publications/gsjp/gsjp-volumes-archive/gsjp-volume-10-2008/8251_Vol10_Bernstein.pdf

Berry, D. S., Willingham, J. K., & Thayer, C. A. (2000). Affect and personality as predictors of conflict and closeness in young adults' friendships. *Journal of Research in Personality, 34*, 84-107. doi:10.1006/jrpe.1999.2271

Benton, C., & Karazsia, B. T. (2015). The effect of thin and muscular images of women's body satisfaction. *Body Image, 13*, 22-27. doi:10.1016/j.bodyim.2014.11.001

Berrettini, W. (2004). The genetics of eating disorders. *Psychiatry, 1*, 18-25.
doi:10.1146/annure-clinpsy-050212-185546

Berridge, K. C. (2009). 'Liking' and 'wanting' food rewards: Brain substrates and roles in eating disorders. *Physiology & Behavior*, *97*, 537-550.

<https://doi.org/10.1016/j.physbeh.2009.02.044>

Berthoud, H. R. (2011). Metabolic and hedonic drives in the neural control of appetite: Who is the boss? *Current Opinion in Neurobiology*, *21*, 888-896.

doi:10.1016/j.conb.2011.09.004

Bissell, K. (2004). Sports model/sports mind: The relationship between entertainment and sports media exposure, sports participation, and body image distortion in Division I female athletes. *Mass Communication and Society*, *4*, 453-473.

doi:10.1207/s15327825mcs0704_5

Bissell, K., & Zhou, P. (2004). Must-see TV or ESPN: Entertainment and sports media exposure and body-image distortion in college women. *Journal of Communication*, *54*, 5-21. doi:10.1111/j.1460-2466.2004.tb02610.x

Black, K. J., Hershey, T., Koller, J. M., Videen, T. O., Mintun, M. A., Price, J. L., & Perlmutter, J. S. (2002). A possible substrate for dopamine-related changes in mood and behavior: Prefrontal and limbic effects of d3-preferring dopamine agonist.

Proceedings of the National Academy of Sciences of the United States, *24*, 17113-17118.

doi:10.1073/pnas.012260599

Blair, L., Aloia, C. R., Valliant, M. W., Knight, K. B., Garner, J. C., & Nahar, V. K. (2017). Association between athletic participation and the risk of eating disorder and body dissatisfaction in college students. *International Journal of Health Sciences*, *11*,

8-12. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5654186/>

Bohon, C., & Stice, E. (2011). Reward abnormalities among women with full and subthreshold bulimia nervosa: A functional magnetic resonance imaging study.

International Journal of Eating Disorders, 44, 585-595. doi:10.1002/eat.20869

Bonci, C. M., Bonci, L. J., Granger, L. R., Johnson, C. L., Malina, R. M., Milne, L. W., Ryan, R. R., & Vanderbunt, E. M. (2008). National athletic trainers' association position statement: Preventing, detecting, and managing disordered eating in athletes.

Journal of Athletic Training, 43, 80-108. doi:10.4085/1062-6050-43.1.80

Boschi, V., Muscariello, E., Maresca, I., Lo Schiavo, F., Tranchese, V., Bellini, O., & Colantuoni, A. (2010). Assessment of eating behaviour in young women requesting nutritional counselling and their mothers. *Eating and Weight Disorders, 15*, 60-67.

doi:10.1007/BF03325281

Borghuis, J., Bleidorn, W., Sijtsma, K., Branje, S., Meeus, W. H. J., & Denissen, J. J. A. (2020). Longitudinal associations between trait neuroticism and negative daily experiences in adolescence. *Journal of Personality and Social Psychology: Personality Processes and Individual Differences, 118*, 348-363. doi:10.1037/pspp0000233

Processes and Individual Differences, 118, 348-363. doi:10.1037/pspp0000233

Bowker, A. (2006). The relationship between sports participation and self-esteem during early adolescence. *Canadian Journal of Behavioural Science, 38*, 214-229.

doi:10.1037/cjbs2006009

Bozsik, F., Whisenhunt, B. L., Hudson, D. L., Bennett, B., & Lundgren, J. D. (2018). Thin is in? Think again: The rising importance of muscularity in the thin ideal female body. *Sex Role, 79*, 609-615. doi:10.1007/s11199-017-0886-0

Bragulat, V., Dzemic, M., Bruno, C., Coz, C. A., Talavage, T., Considine, R. V., & Kareken, D. A. (2010). Food-related odor probes of brain reward circuits during hunger: A pilot fMRI study. *Obesity, 18*, 1566-1571. doi:10.1038/oby.2010.57

Bratland-Sanda, S. & Sundgot-Borgen, J. (2013). Eating disorders in athletes: Overview of the prevalence, risk factors and recommendations for prevention and treatment. *European Journal of Sport Science, 13*, 499-508. doi:10.1080/17461391.2012.740504

Brausch, A. M., & Decker, K. M. (2014). Self-esteem and social support as moderators of depression, body image, and disordered eating for suicidal ideation in adolescents. *Journal of Abnormal Child Psychology, 42*, 779-789. doi:10.1007/s10802-013-9822-0

Brechan, I., & Kvalem, I. L. (2015). Relationship between body dissatisfaction and disordered eating: Mediating role of self-esteem and depression. *Eating Behaviors, 17*, 49-58. doi:10.1016/j.eatbeh.2014.12.008

Brewerton, T. D., & Steiger, H. (2004). Neurotransmitter dysregulation in anorexia nervosa, bulimia nervosa and binge-eating disorder. In T. D. Brewerton (Eds.), *Clinical handbook of eating disorders: An integrated approach* (pp. 257-281). Marcel Dekker.

Britton, L. E., Martz, D. M., Bazzini, D. G., Curtin, L. A., & LeaShomb, A. (2006). Fat talk and self-presentation of body image: Is there a social norm for women to self-degrade? *Body Image, 3*, 247-254. doi:10.1016/j.bodyim.2006.05.006

Bromberg-Martin, E. S., Matsumoto, M., & Hikosaka, O. (2010). Dopamine in motivational control: Rewarding, aversive, and alerting. *Neuron*, *68*, 815-834.

doi:10.1016/j.neuron.2010.11.022

Brooks, S. J., O'Daly, O. G., Uher, R., Friederich, H., Giampietro, V., Brammer, M., Williams, S. C. R., Schiöth, H. B., Treasure, J., & Campbell, I. C. (2011). Differential neural responses to food images in women with bulimia versus anorexia nervosa. *PLoS One*, *6*, 1-8.

doi:10.1371/journal.pone.0022259

Brown, B. B., Bakken, J. P., Ameringer, S. W., & Mahon, S. D. (2008). A comprehensive conceptualization of the peer influence process in adolescence. In M. J. Prinstein & K. A. Dodge (Eds.), *Understanding peer influence in children and adolescents* (pp. 17–44). Guilford Press.

Brown, A. J., Parman, K. M., Rudat, D. A., & Craighead, L. W. (2012). Disordered eating, perfectionism, and food rules. *Eating Behaviors*, *13*, 347-353.

doi:10.1016/j.eatbeh.2012.05.011

Brunet, J., Sabiston, C. M., Dorsch, K. D., & McCreary, D. R. (2010). Exploring a model linking social physique anxiety drive for muscularity, drive for thinness, and self-esteem among adolescent boys and girls. *Body Image*, *7*, 137-142.

doi:10.1016/j.bodyim.2009.11.004

Bruton, A. M., Shearer, D. A., & Mellalieu, S. D. (2019). Who said “there is no ‘I’ in team”? The effects of observational learning content level on efficacy beliefs in groups. *Psychology of Sport and Exercise*, *45*, 1-11.

doi:10.1016/j.psychsport.2019.101563

Bryla, K. Y. (2003). Disordered eating among female adolescents: Prevalence, risk factors, and consequences. *Child Psychiatry and Human Development, 46*, 25-29. doi:10.1007/s10578-014-0489-8

Bryne, S., McLean, N. (2002). Elite athletes: Effects of the pressure to be thin. *Journal of Science and Medicine, 5*, 80-94. doi:10.1016/s1440-2440(02)80029-9

Bryne, S., & McLean, N. (2001). Eating disorders in athletes: A review of the literature. *Journal of Science and Medicine in Sport, 4*, 145-159. doi:10.1016/s1440-2440(01)80025-6

Bulik, C. M., Blake, L., & Austin, J. (2019). Genetics of eating disorders: What the clinician needs to know. *Psychiatric Clinics, 42*, 59-73. doi:10.1016/j.psc.2018.10.007

Bulik, C. M., Sullivan, P. F., Wade, T. D., & Kendler, K. S. (2000). Twin studies of eating disorders: A review. *International Journal of Eating Disorders, 27* 1-20. doi:10.1002(sici)1098-108x(200001)27<1::aid-eat1>3.0.co;2-q

Burke, L. K., & Heisler, L. K. (2015). 5-hydroxytryptamine medications for the treatment of obesity. *Journal of Neuroendocrinology, 27*, 389-398. doi:10.1111/jne.12287

Byrne, S. M., Fursland, A., Allen, K. L., & Watson, H. (2011). The effectiveness of enhanced cognitive behavioural therapy for eating disorders: An open trial. *Behaviour Research and Therapy, 49*, 219-226. doi:10.1016/j.brat.2011.01.006

Carrigan, K. W., Petrie, T. A., & Anderson, C. M. (2015). To weigh or not to weigh? Relation to disordered eating attitudes and behaviors among female collegiate

athletes. *Journal of Sport and Exercise Psychology*, *37*, 659-665.

doi:10.1123/jsep.2015-0046

Cawley, E. I., Park, S., aan het Rot, M., Sancton, K., Benkelfat, C., Young, S. N., Boivin, D. B., & Leyton, M. (2013). Dopamine and light: Dissecting effects on mood and motivational states in women with subsyndromal seasonal affective disorder. *Journal of Psychiatry and Neuroscience*, *38*, 388-397. doi:10.1503/jpn,120181

Cerniglia, L., Cimino, S., Tafa, M., Marzilli, E., Ballarotto, G., & Bracaglia, F. (2017). Family profiles in eating disorders: Family functioning and psychopathology. *Psychology Research and Behavior Management*, *10*, 305-312.

doi:10.2147/PRBM.S145463

Cervera, S., Lahortiga, F., Martinez-Gonzalez, M. A., Gual, P., de Irala-Estevez, J., & Alonso, Y. (2003). Neuroticism and low self-esteem as risk factors for incident eating disorders in a prospective cohort study. *International Journal of Eating Disorders*, *33*, 271-280. doi:10.1002/eat,10147

Chan, D. K., Lonsdale, C., & Fung, H. H. (2012). Influences of coaches, parents, and peers on the motivational patterns of child and adolescent athletes. *Scandinavian Journal of Medicine & Science in Sports*, *22*, 558-568.

doi:10.1111/j.1600-0838.2010.01277.s

Chua, J. L., Touyz, S., & Hill, A. J. (2004). Negative mood-induced overeating in obese binge eaters: An experimental study. *International Journal of Obesity and Related Metabolic Disorders*, *28*, 606-610. doi:10.1038/sj.ijo.0802595

Claes, L., Vandereycken, W., & Vertommen, H. (2002). Impulsive and compulsive traits in eating disordered patients compared with controls. *Personality and Individual Differences, 32*, 707-714. doi:10.1016/S0191-8869(01)00071-X

Clarke, P. M., Murnen, S. K., & Smolak, L. (2010). Development and psychometric evaluation of a quantitative measure of “fat talk.” *Body Image, 7*, 1-7. doi:10.1016/j.bodyim.2009.09.006

Clifford, T., & Blyth, C. (2018). A pilot study comparing the prevalence of orthorexia nervosa in regular students and those in university sports teams. *Eating and Weight Disorders – Studies on Anorexia, Bulimia, and Obesity, 24*, 473-480. doi:10.1007/s40519-018-0584-0

Coker-Cranney, A., & Reel, J. J. (2014). Coach pressure and disordered eating in female collegiate athletes: Is the coach-athlete relationship a mediating factor? *Journal of Clinical Sport Psychology, 9*, 213-231. doi:10.1123/jcsp.2014.0052

Compan, V., Laurent, L., Jean, A., Macary, C., Bockaert, J., & Dumis, A. (2012). Serotonin signaling in eating disorders. *Wiley Interdisciplinary Reviews: Membrane Transport and Signaling, 1*, 715-729. doi:10.1002/wmts.45

Constantz, J. L., & Mason, S. E. (2010). Is there a relationship between participation in athletics and eating disorders? *Modern Psychological Studies, 15*, 37- 44. <https://scholar.utc.edu/mps/vol15/iss2/5>

Cooper, Z., & Dalle Grave, R. (2017). Eating disorders: Transdiagnostic theory and treatment. In S. G. Hoffman & G. J. Asmundson (Eds.), *Eating disorders:*

Transdiagnostic theory and treatment (pp. 337-357). Academic Press Elsevier.

doi:10.1016/B978-0-12-803457-6.00014-3

Cooper, Z., & Fairburn, C. G. (2011). The evolution of “enhanced” cognitive behavior therapy for eating disorders: Learning from treatment nonresponses. *Cognitive and Behavioral Practice, 18*, 394-402. doi:10.1016/j.cbpra.2010.07.007

Cooper Z., Stewart A. (2008). CBT-E and the younger patient. In C. G. Fairburn (Ed.), *Cognitive behavior therapy and eating disorders* (pp.221-230). Guilford Press.

Cosh, S., Crabb, S. Kettler, L., LeCouteur, A., & Tully, P. J. (2015). The normalisation of body regulation and monitoring practiced in elite sport: A discursive analysis of news delivery sequences during skinfold testing. *Qualitative Research in Sport, Exercise, and Health, 7*, 338-360. doi:10.1080/2159676X.2014.949833

Costa, P. T., & McCrae, R. R. (1992). The five-factor model of personality and its relevance to personality disorders. *Journal of Personality Disorders, 6*, 343-356. doi:10.1521/pedi,1992.6.4.343

Creedon, M. T., Ray, S., & Harkins, D. A. (2009). Peer teasing, body-image and eating problems among women. *American Journal of Psychological Research, 5*, 111-130.

https://www.researchgate.net/publication/253329005_Peer_teasing_body-image_and_eating_problems_among_women

Cruwys, T., Leverington, C. T., & Sheldon, A. M. (2016). An experimental investigation of the consequences and social functions of fat talk in friendship groups. *International Journal of Eating Disorders, 49*, 84-91. doi:10.1002/eat.22446

Culbert, K. M., Racine, S. E., & Klump, K. L. (2015). Research review: What we have learned about the causes of eating disorders- a synthesis of sociocultural, psychological, and biological research. *Journal of Child Psychology and Psychiatry*, *56*, 1141-1164. doi:10.1111/jcpp.12441

Currie, A. (2010). Sport and Eating Disorders – understanding and manage the risks. *Asian Journal of Sports Medicine*, *1*, 63-68. doi:10.5812/asjms.34864

Czyz, S. H., Szmajke, A., Kruger, A., & Kubler, M. (2016). Participation in team sports can eliminate the effect of social loafing. *Perceptual and Motor Skills*, *123*, 754-768. doi:10.1177/0031512516664938

de Bruin, A. P., Oudejans, R. R., Bakker, F. C., & Woertman, L. (2011). Contextual body image and athletes' disordered eating: The contribution of athletic body image to disordered eating in high performance women athletes. *European Eating Disorders Review*, *19*, 201-215. doi:10.1002/erv.1112

de Macedo, I. C., de Freitas, J. S., & da Silva Torres, I. L. (2016). The influence of palatable diets in reward system activation: A mini review. *Advances in Pharmacological Sciences*, *2016*, 1-6. doi:10.1155/2016/7238679

de Oliveira Coelho, G. M., da Silva Gomes, A. I., Ribeiro, B. G., & de Abreu Soares, E. (2014). Prevention of eating disorders in female athletes. *Open Access Journal of Sports Medicine*, *5*, 105-113. doi:10.2147/OAJSM.S36528

de Vries, D. A., Vossen, H. G. M., & van der Kolk-van der Boom, P. (2018). Social media and body dissatisfaction: Investigating the attenuating role of positive

parent-adolescent relationship. *Journal of Youth and Adolescence*, 48, 527-536.

doi:10.1007/s10964-018-0956-9

DiPasquale, L. D., & Petrie, T. A. (2013). Prevalence of disordered eating: a comparison of male and female collegiate athletes and nonathletes. *Journal of Clinical Sport Psychology*, 7, 186-197. doi:10.1123/JCSP.7.3.186

Dakanalis, A., Timko, C. A., Favagrossa, L., Riva, G., Zanetti, M. A., & Clerici, M. (2014). Why do only a minority of men report severe levels of eating disorder symptomatology, when so many report substantial body dissatisfaction? Examination of exacerbating factors. *Eating Disorders*, 22, 292-305. doi:10.1080/10640266.2014.898980

Dakanalis, A., Timko, A., Serino, S., Riva, G., Clerici, M., & Carra, G. (2016). Prospective psychosocial predictors of onset and cessation of eating pathology amongst college women. *European Eating Disorders Review*, 24, 251-256. doi:10.1002/erv.2433

Dalle Grave R., Bohn K., Hawker D. (2008). Inpatient, day patient, and two forms of outpatient CBT-E. In C. G. Fairburn (Ed.), *Cognitive behavior therapy and eating disorders* (pp.231-244). Guilford Press.

Dalley, S. E., Buunk, A. P., & Umit, T. (2009). Female body dissatisfaction after exposure to overweight and thin media images: The role of body mass index and neuroticism. *Personality and Individual Differences*, 47, 47-51.

doi:10.1016/j.paid.2009.01.004

Dalley, J. W., & Roiser, J. P. (2012). Dopamine, serotonin and impulsivity. *Neuroscience*, 215, 42-58. doi:10.1016/j.neuroscience.2012.03.065

Danner, U. N., Sternheim, L., & Evers, C. (2014). The importance of distinguishing between the different eating disorder (sub)types when assessing emotion regulation strategies. *Psychiatric Research, 215*, 727-732.

doi:10.1016/j.psychres.2014.01.005

DeBate, R. D., Wethington, H., & Sargent, R. (2002). Subclinical eating disorder characteristics among male and female triathletes. *Eating and Weight Disorders, 7*, 210-220. doi:10.1007/BF03327459

Delinsky, S. S., & Wilson, T. G. (2008). Weight gain, dietary restraints, and disordered eating in the freshman year of college. *Eating Behavior, 9*, 82-90.

doi:10.1016/j.eatbeh.2007.06.001

Dewar, D. L., Lubans, D. R., Plotnikoff, R. C., & Morgan, P. J. (2012). Development and evaluation of social cognitive measures related to adolescent dietary behaviors. *International Journal of Behavioral Nutrition and Physical Activity, 9*, 1-10.

doi:10.1186/1479-5868-9-36

Diaz-Marsa, M., Carrasco, J. L., & Saiz, J. (2000). A study of temperament and personality in anorexia nervosa and bulimia nervosa. *Journal of Personality Disorders, 14*, 352-359. doi:10.1521/pedi.2000.14.4.342

Doerksen, S. E., & McAuley, E. (2014). Social cognitive determinants of dietary behavior change in university employees. *Frontiers in Public Health, 2*, 1-7.

doi:10.3389/fpubh.2014.00023

Doroszuk, M., Kupis, M., & Czarna, A. (2019). Personality and friendships. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *Encyclopedia of personality and individual*

differences. Springer Nature Switzerland (pp 1-9).

doi:10.1007/978-3-319-28099-8_712-1

Dougherty, E. N., Badillo, K., Johnson, N. K., & Haedt-Matt, A. A. (2019).

Threat appraisal partially mediates the relation between neuroticism and bulimic symptoms. *Eating Disorders*, *61*, 1-15. <https://doi.org/10.1080/10640266.2019.1632590>

Dudek, J., Ostaszewski, P., & Malicki, S. (2014). Transdiagnostic models of eating disorders and therapeutic methods: The example of Fairburn's cognitive behavior therapy and acceptance and commitment therapy. *Annals of Psychology*, *1*, 25-39.

https://dlibra.kul.pl/Content/20717/RPsych2014nr1pp025-039_Dudek_Ostaszewski_MalickiEN.pdf

Dunkley, D. M., & Grilo, C. M. (2007). Self-criticism, low self-esteem, depressive symptoms, and over-evaluation of shape and weight in binge eating disorder patients. *Behaviour Research and Therapy*, *45*, 139-149. doi:10.1016/j.brat.2006.01.017

Duvvuri, V., Bailer, U. F., & Kaye, W. H. (2010). Altered serotonin function in anorexia and bulimia nervosa. *Handbook of Behavioral Neuroscience*, *21*, 715-729. doi:10.1016/S1569-7330(10)70107-7

Eisenberg, M. E., Neumark-Sztainer, D., Story, M., & Perry, C. (2005). The role of social norms and friends' influences on unhealthy weight-control behaviors among adolescent girls. *Social Science and Medicine*, *60*, 1165-1173.

doi:10.1016/j.socscimed.2004.06.055

- Epstein, L. H., Temple, J. L., Roemmich, J. N., & Bouton, M. E. (2009). Habituation as a determinant of human food intake. *Psychological Review*, *116*, 384-407. <https://doi.org/10.1037/a0015074>
- Espinoza, P., Penelo, E., Mora, M., Francisco, R., Gonzalez, M. L., & Raich, R. M. (2019). Bidirectional relations between disordered eating, internalization of beauty ideals, and self-esteem: A longitudinal study with adolescents. *Journal of Early Adolescence*, *39*, 1244-1260. doi:10.1177/0272431618812734
- Evans, M. B. (2014). *Interdependence and interpersonal influence among individual sport teammates*. [Doctoral Dissertation, Wilfrid Laurier University]. <https://scholars.wlu.ca/etd/1641>
- Fairburn, C. G. (2008). *Cognitive behavior therapy and eating disorders*. New York: Guilford Press.
- Fairburn, C. G., Cooper, Z., & Shafran, R. (2003). Cognitive behaviour therapy for eating disorders: A “transdiagnostic” theory and treatment. *Behaviour Research and Therapy*, *41*, 509-528. doi:10.1016/s0005-7967(02)0088-8
- Fairburn, C. G., Shafran, R., & Cooper, Z. (1999). A cognitive behavioral theory of anorexia nervosa. *Behavior Research and Therapy*, *37*, 1-13. doi:10.1016/S0005-7967(98)00102-8
- Fairweather-Schmidt, A. K., & Wade, T. D. (2017). Weight-related peer-teasing moderates genetic and environmental risk and disordered eating: Twin studies. *The British Journal of Psychiatry*, *210*, 350-355. doi:10.1192/bjp.bp.116.184648

Fasbender, U. (2020). Outcome expectancies. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *Encyclopedia of personality and individual differences*. Springer Nature Switzerland. doi:10.1007/978-3-319-28099-8_1802-1

Feltz, D., & Lirgg, C. D. (2001). Self-efficacy beliefs of athletes, teams, and coaches. In R. N. Singer, H. A. Hausenblas, & C. Janelle (Eds.), *Handbook of sport psychology* (2nd ed, pp. 340-361). John Wiley & Sons.

Fekete, E. M., Herndier, R. E., & Sander, A. C. (2021). Self-compassion, internalized weight stigma, psychological well-being and eating behaviors in women. *Mindfulness, 12*, 1262-1271. doi:10.1007/s12671-021-01597-6

Fernandez, S., & Pritchard, M. (2012). Relationships between self-esteem, media influence and drive for thinness. *Eating Behaviors, 13*, 321-325.

doi:10.1016/j.eatbeh.2012.05.004

Psychology, 2

nd

ed. (pp. 340-361). New York: John Wiley & Sons.

Ferreira, C., Pinto-Gouveia, J., & Duarte, C. (2013). Self-compassion in the face of shame and body image dissatisfaction: Implications for eating disorders. *Eating Behaviors, 14*, 207-210. doi:10.1016/j.eatbeh.2013.01.005

Fineberg, N. A., Potenza, M. N., Chamberlain, S. R., Berlin, H. A., Menzies, L., Bechara, A., Sahakian, B. J., Robbins, T. W., Bullmore, E. T., & Hollander, E. (2010). Probing compulsive and impulsive behaviors, from animal models to endophenotypes: A narrative review. *Neuropsychopharmacology, 35*, 591-604. doi:10.1038/npp.2009.185

Fiske, L., Fallon, E. A., Blissmer, B., & Redding, C. A. (2014). Prevalence of body dissatisfaction among United States adults: Review and recommendations for future research. *Eating Behaviors, 15*, 357-365. doi:10.1016/j.eatbeh.2014.04.010

Fitzsimmons-Craft, E. E., Harney, M. B., Koehler, L. G., Danzi, L. E., Riddell, M. K., & Bardone-Cone, A. M. (2012). Explaining the relation between thin ideal internalization and body dissatisfaction among college women: The roles of social comparison and body surveillance. *Body Image, 9*, 43-49. doi:10.1016/j.bodyim.2011.09.002

Fladung, A. K., Gron, G., Grammer, K., Herrnberger, B., Schilly, E., Grasteit, S., Wolf, R. C., Walter, H. & von Wietersheim, J. (2010). *American Journal of Psychiatry, 167*, 206-212. doi:10.1176/appi.ajp.2009.09010071

Flatt, R. E., Thornton, L. M., Fitzsimmons-Craft, E. E., Balantekin, K. N., Smolar, L., Mysko, C., Wilfley, D. E., Taylor, C. B., DeFreese, J. D., Bardone-Cone, A. M., & Bulik, C. M. (2020). Comparing eating disorder characteristics and treatment in self-identified competitive athletes and non-athletes from the national eating disorder association online screening tool. *International Journal of Eating Disorders, 54*, 365-375. doi:10.1002/eat.23415

Forestell, C. A., Spaeth, A. M., & Kane, S. A. (2012). To eat or not to eat red meat. A closer look at the relationship between restrained eating and vegetarianism in college females. *Appetite, 58*, 319-325. doi:10.1016/j.appet.2011.10.015

Fortes, L. S., Kakeshita, I. S., Almeida, S. S., & Ferreira, M. E. C. (2014). Eating behaviors in youths: A comparison between female and male athletes and non-athletes.

Scandinavian Journal of Medicine & Science in Sports, 24, e62-268.

doi:10.1111/sms.12098

Fowler, S. J. & Bulik, C. M. (1997). Family environment and psychiatric history in women with binge-eating disorder and obese controls. *Behaviour Change*, 14, 106-112. doi:10.1017/S0813483900003569

Frank, K. W., DeGuzman, M. C. & Shott, M. E. (2019). Motivation to eat and not to eat: The psycho-biological conflict in anorexia nervosa. *Physiology & Behavior*, 206, 185-190. <https://doi.org/10.1016/j.physbeh.2019.04.007>

Frank, S., Kullmann, S., & Veit, R. (2013). Food related processes in the insular cortex. *Frontiers in Human Neuroscience*, 7, 1-6. doi:10.3389/fnhum.2013.00499

Frank, K. W., Shott, M. E., Keffler, C., & Cornier, M. (2016). Extremes of eating are associated with reduced neural taste discrimination. *International Journal of Eating Disorders*, 49, 603-612. doi:10.1002/eat.22538

Friend, S., Bauer, K. W., Madden, T. C., & Neumark-Sztainer, D. (2012). Self-weighing among adolescents: Associations with body mass index, body satisfaction, weight control behaviors, and binge eating. *Journal of the Academy of Nutrition and Dietetics*, 112, 99-103. doi:10.1016/j.jada.2011.08.036

Freireich, F. V., Vartanian, L. R., Zawadzki, M. J., Grishman, J. R., & Touyz, S. W. (2017). Psychological need satisfaction, control, and disordered eating. *British Journal of Clinical Psychology*, 56, 53-68. doi:10.1111/bjc12120

Fulton, C. L. (2016). Disordered eating across the lifespan on women.

<https://pdfs.semanticscholar.org/1da8/4f92b4972fcbdd7f0ba274aaed8fdfad126e.pdf>

Galli, N., Petrie, T., & Chatterton, J. (2017). Team weigh-ins and self-weighing: Relations to body-related perceptions and disordered eating in collegiate male athletes. *Psychology of Sport and Exercise, 29*, 51-55.

doi:<http://dx.doi.org/10.1016/j.psychsport.2016.12.004>

Galli, N., Reel, J. J., Trent, P., Greenleaf, C. & Carter, J. (2011). Preliminary development of the weight pressures in sport scale for male athletes. *Journal of Sport Behavior, 34*, 47-68. doi:10.1037/t59825-000

Galli, N., & Reel, J. J. (2009). Adonis or Hephaestus? Exploring body image in male athletes. *Psychology of Men and Masculinity, 10*, 95-108. doi:10.1037/s0014005

Garcia, J. A., Checa y Olmos, F., Matheu, M. L., & Carreno, T. P. (2019). Self-esteem levels vs global scores on the Rosenberg self-esteem scale. *Heliyon, 5*. doi:10.1016/j.heliyon.2019.e01378

Garner, D. M., & Garfinkel, P. E. (1979). Eating attitude test: An index of symptoms of anorexia nervosa. *Psychological Medicine, 9*, 273-279. doi:10.1017/s0033291700030762

Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The eating attitudes test: Psychometric features and clinical correlates. *Psychological Medicine, 12*, 871-878. doi:10.1017/s0033291700049163

Garvin, A. W., & Damson, C. (2008). The effects of idealized fitness images on anxiety, depression, and global mood states in college age males and females. *Journal of Health Psychology, 13*, 433-437. doi:10.1177/1359105307088146

Gay, J. L., Monsma, E. V., & Torres-McGehee, T. M. (2011). Developmental and contextual risks of social physique anxiety among female athletes. *Research Quarterly for Exercise and Sport, 82*, 168-177. <https://doi.org/10.1080/02701367.2011.10599744>

Giel, K. E., Hermann-Werner, A., Mayer, J., Diehl, K., Schneider, S., Thiel, A., & Zipfel, S. (2016). Eating disorder pathology in elite adolescent athletes. *International Journal of Eating Disorders, 49*, 553-562. doi:10.1002/eat.22511

Gilbert, N., & Meyer, C. (2005). Fear of negative evaluation and the development of eating psychopathology: A longitudinal study among nonclinical women. *International Journal of Eating Disorders, 37*, 307-312. doi:10.1002/eat.20105

Glasofer, D. R., Haaga, D. F., Hannallah, L., Field, S. E., Kozlosky, M., Reynolds, J., Yanovski, J. A., & Tanofsky-Kraff, M. (2013). Self-efficacy beliefs and eating behavior in adolescent girls at risk for excess weight gain and binge eating disorder. *International Journal of Eating Disorders, 46*, 663-638. doi:10.1002/eat.22160.

Gleaves, D. H., Pearson, C. A., Ambwani, S., & Morey, L. C. (2014). Measuring eating disorder attitudes and behaviors: A reliability generalization study. *Journal of Eating Disorders, 6*. doi:10.1186/2050-2974-2-6

Goldberg, L. R. (1990). An alternative “description of personality”: The big-five factor structure. *Personality processes and individual differences, 59*, 1216-1229. doi:10.1037/002-3514.59.6.12.16

Goldfield, G. S. (2009). Body image, disordered eating and anabolic steroid use in female bodybuilders. *Eating Disorders, 17*, 200-210. doi:10.1080/10640260902848485

Goldschmidt, A. B., Wonderlich, S. A., Crosby, R. D., Engel, S. G., Lavender, J. M., Peterson, C. B., Crow, S. J., Cao, L., & Mitchell, J. E. (2014). Ecological momentary assessment of stressful events and negative affect in bulimia nervosa. *Journal of Consulting and Clinical Psychology, 82*, 30–39. doi:10.1037/a0034974

Gomes, A. R., Martins, C., & Silva, L. (2011). Eating disordered behaviours in Portuguese athletes: the influence of personal, sport, and psychological variables. *European Eating Disorders Review, 19*, 190-200. doi:10.1002/erv.1113

Gordon, K. H., Castro, Y., Sitnikov, L., & Holm-Denoma, J. M. (2010). Cultural body shape ideals and eating disorder symptoms among white, Latina, and black college women. *Cultural Diversity and Ethnic Minority Psychology, 16*, 135-143. doi:10.1037/a0018671

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*, 504-528. doi:10.1016/S0092-6566(03)00046-1

Goss, K. P., & Gilbert, P. (2002). Eating disorders, shame and pride: A cognitive-behavioural functional analysis. In P. Gilbert, & J. Miles (Eds.), *Body shame: Conceptualization, research & treatment* (pp. 219–255). Brunner-Routledge.

Greenleaf, C., Petrie, T. A., Carter, J., & Reel, J. J. (2009). Female collegiate athletes: prevalence of eating disorders and disordered eating behaviors. *Journal of American College Health, 57*, 489-496. doi:10.3200/JACH.57.5.489-496

Grieve, F. G., Jackson, L., Reece, T., Marklin, L., & Delaney, A. (2008).

Correlates of social physique anxiety in men. *Journal of Sport Behavior*, *31*, 329-337.

https://www.researchgate.net/publication/288941084_Correlates_of_social_physique_anxiety_in_men

Gross, J., Rosen, J. C., Leitenberg, H., & Willmuth, M. E. (1986). Validity of the eating attitudes test and the eating disorders inventory in bulimia nervosa. *Journal of Consulting and Clinical Psychology*, *54*(6), 875–876. doi:10.1037.0022-006X.54.6.876

Gurung, R. A. R., & Chrouser, C. J. (2007). Predicting objectification: Do provocative clothing and observer characteristics matter? *Sex Roles*, *57*, 91-99. doi:10.1007/s11199-007-9219-z

Haase, A. M. (2009). Physique anxiety and disordered eating correlates in female athletes: Differences in team and individual sports. *Journal of Clinical Sport Psychology*, *3*, 218-231. doi:10.1123/jcsp.3.3.218

Haase, A. M., Mountford, V., & Waller, G. (2011). Associations between body checking and disordered eating behaviors in nonclinical women. *International Journal of Eating Disorders*, *44*, 465-468. doi:10.1002/eat.20837

Haedt-Matt, A. A., & Keel, P. K. (2011). Revisiting the affect regulation model of binge eating: A meta-analysis of studies using ecological momentary assessment. *Psychological Bulletin Journal*, *137*, 660-681. doi:10.1037/a0023660

Hagger, M. S., & Stevenson, A. (2010). Social physique anxiety and physical self-esteem: Gender and age effects. *Psychology & Health*, *25*, 89-110. <https://doi.org.10.1080/08870440903160990>

Haines, J., Neumark-Sztainer, D., Eisenberg, M. E., & Hannan, P. J. (2006). Weight teasing and disordered eating behaviors in adolescents: Longitudinal findings from project eat (eating among teens). *Pediatrics, 117*, 209-215.

doi:10.1542/peds.2005.1242

Hanrahan, S. J., & Cerin, E. (2009). Gender, level of participation, and type of sport: Differences in achievement goal orientation and attributional style. *Journal of Science and Medicine in Sport, 12*, 508-521. doi:10.1016/jsams.2008.01.005

Hansson, E., Daukantaite, D., & Johnsson, P. (2016). Typical patterns of disordered eating among Swedish adolescents: Associations with emotion dysregulation, depression, and self-esteem. *Journal of Eating Disorders, 4*, 1-14.

doi:10.1186/s40337-016-0122-2

Hart, E. A., Leary, M., & Rejeski, W. (1989). The measurement of social physique anxiety. *Journal of Sport & Exercise Psychology, 11*, 94-104. doi:10.1123/jsep.11.1.94

Hausenblas, H. A., & Carron, A. V. (1999). Eating disorder indices and athletes: An integration. *Journal of Sport and Exercise Psychology, 21*, 230-258.

doi:10.1123/jsep.21.3.230

Heffner, J. L., Ogles, B. M., Gold, E., & Marsden, K. (2003). Nutrition and eating in female college athletes: A survey of coaches. *Eating Disorders, 11*, 209-220.

doi:10.1080/10640260390218666

Heradstveit, O., Hysing, M., Nilsen, S. A., Boe, T. (2020). Symptoms of disordered eating and participation in individual- and team sports: A population-based study of adolescents. *Eating Behavior, 39*, 1-7. doi:10.1016/j.eatbeh.2020.101434

Herman, C. P. (2015). The social facilitation of eating: A review. *Appetite, 86*, 61-73. doi:10.1016/j.appet.2014.09.016

Higgs, S. (2015). Social norms and their influence on eating behaviours. *Appetite, 86*, 38-44. doi:10.1016/j.appet.2014.10.021

Hill, M. L., Masuda, A., & Latzman, R. D. (2013). Body image flexibility as a protective factor against disordered eating behavior for women with lower body mass index. *Eating Behaviors, 14*, 336-341. doi:10.1016/j.eatbeh.2013.06.003

Hinney, A., & Volckmar, A. L. (2013). Genetics of eating disorders. *Current Psychiatry Reports, 15*, 1-9. doi:10.1007/s11920-013-0423-y

Holland, L. A., Bodell, L. P., & Keel, P. K. (2013). Psychological factors predict eating disorder onset and maintenance at 10-year follow-up. *European Eating Disorder Review, 21*, 405-410. doi:10.1002/erv.2241

Holland, G., & Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image, 17*, 100-110. doi:10.1016/j.bodyim.2016.02.008

Homan, K. (2010). Athletic-ideal and thin-ideal internalization as prospective predictors of body dissatisfaction, dieting, and compulsive exercise. *Body Image, 7*, 240-245. doi:10.1016/j.bodyim.2010.02.004

Homan, K., McHugh, E., & Wells, D. (2012). The effects of viewing ultra-fit images on college women's body dissatisfaction. *Body Image, 9*, 50-56. doi:10.1016/j.bodyim.2011.07.006

Hopkinson, R. A., & Lock, J. (2013). Athletics, perfectionism, and disordered eating. *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*, *9*, 11-106. doi:10.1007/bf03325052

Howard, L. M., Romano, K. A., & Heron, K. E. (2020). Prospective changes in disordered eating and body dissatisfaction across women's first year of college: The relative contributions of sociocultural and college adjustment risk factors. *Eating Behaviors*, *36*, 1-5. doi:10.1016/j.eatbeg.2019.101357

Hudson, J. I., Hirip, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the national comorbidity survey replication. *Biological Psychiatry*, *61*, 348-358. doi:10.1016/j.biopsych.2006.03.040

Ioannidou, C., & Venetsanou, F. (2019). Social physique anxiety, disturbed eating attitudes, and behaviors, and perceived pressure for thin boys in competitive rhythmic and aerobic gymnasts. *Science of Gymnastics Journal*, *11*, 331-342.

https://www.researchgate.net/publication/336852702_SOCIAL_PHYSIQUE_ANXIETY_DISTURBED_EATING_ATTITUDES_AND_BEHAVIORS_AND_PERCEIVED_PRESSURE_FOR_THIN_BODY_IN_COMPETITIVE_RHYTHMIC_AND_AEROBIC_GYMNASTS

Izydorczyk, B. (2012). Neuroticism and compulsive overeating (a comparative analysis of the level of neuroticism and anxiety in group of females suffering from psychogenic binge eating, and in individuals exhibiting no mental or eating disorders). *Archives of Psychiatry and Psychotherapy*, *3*, 5-13.

http://www.strona.app.nazwa.pl/uploads/images/2012_14_3/Izydorczyk5_ArchivesPP_3_2012.pdf

Jalali-Farahani, S., Chin, Y. S., Nasir, M. T., & Amiri, P. (2014). Disordered eating and its associations with overweight and health-related quality of life among adolescents in selected high schools of Tehran. *Child Psychiatry & Human Development*, *46*, 485-492. doi:10.1007/s10578-014-0489-8

James, D., Sebren, A., DerAnanian, C., Bruening, M., Rooney, L., Araas, T., & Swan, P. D. (2016). Associations among self-compassion, eating behaviors, and stress in college freshman. *Journal of Basic & Applied Sciences*, *12*, 92-97. doi:<http://dx.doi.org/10.6000/1927-5129.2016.12.14>

Javaras, K. N., Pope, H. G., Lalonde, J. K., Roberts, J. L., Nillni, Y. I., Laird, N. M., Bulik, C. M., Crow, S. J., McElroy, S. L., Walsh, B. T., Tsuang, M. T., Rosenthal, N. R., & Hudson, J. I. (2008). Co-occurrence of binge eating disorder with psychiatric and medical disorders. *Journal of Clinical Psychiatry*, *69*, 266-273. doi:10.4088/jcp.v69n0213

Johnson, C., Crosby, R., Engel, S., Mitchell, J., Powers, P., Wittrock, D., & Wonderlich, S. (2004). Gender, ethnicity, self-esteem and disordered eating among college athletes. *Eating Behaviors*, *5*, 147-156. doi:10.1016.j.eatbeh,2004.01.004

Jonason, P. K., Teicher, E. A., & Schmitt, D. P. (2011). The tipi's validity confirmed: associations with sociosexuality and self-esteem. *Individual Differences Research*, *9*, 52-60.

https://www.researchgate.net/profile/Peter-Jonason/publication/285775277_The_TIPI%2

7s_validity_confirmed_Associations_with_sociosexuality_and_self-esteem/links/5afd1decaca272b5d8708124/The-TIPs-validity-confirmed-Associations-with-sociosexuality-and-self-esteem.pdf

Jones, M. D., Crowther, J. H., & Ciesla, J. A. (2014). A naturalistic study of fat talk and its behavioral and affective consequences. *Body Image, 11*, 337-345.

doi:10.1016/j.bodyim.2014.05.007

Kajbafnezhad, H., Ahadi, H., Heidarie, A. R., Askari, P., & Enayati, M. (2011). Differences between team and individual sports with respect to psychological skills, overall emotional intelligence and athletic success motivation in shiraz city athletes.

Journal of Physical Education and Sport, 39, 249-254.

[https://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%201\(11\)1904-1909,%202011.pdf](https://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%201(11)1904-1909,%202011.pdf)

Kandel, D. B. (1978), Homophily, selection, and socialization in adolescent friendships. *American Journal of Sociology, 84*, 427-436. doi:10.1086/226792

Kampouri, D., Nikolaidi, M. K., Daskou, S., & Giannopoulou, I. (2019).

Prevalence of disordered eating in elite female athletes in team sports in Greece.

European Journal of Sport Science, 19, 1-9. doi:10.1080/17461391.2019.1587520

Kantanista, A., Glapa, A., Banio, A., Firek, W., Ingarden, A., Malchrowicz-Mosko, E., Markiewicz, P., Ptoszaj, K., Ingarden, M., & Mackowiak, Z.

(2018). Body image of highly trained female athletes engaged in different types of sport.

Biomed Research International, 2018. doi:10.1155/2018/6835751

Kantanista, A., Krol-Zielinska, M., Borowiec, J., & Osinski, W. (2017). Is underweight associated with more positive body image? Results of a cross-sectional study in adolescent girls and boys. *Spanish Journal of Psychology, 20*.

doi:10.1017/sjp.2017.4

Karpowicz, E., Skarsater, I., & Nevonen, L. (2009). Self-esteem in patients treated for anorexia nervosa. *International Journal of Mental Health Nursing, 18*, 318-325. doi:10.1111/j.1447-0349.2009.00621.x

Karr, T. M., Cook, B., Zunker, C., Cao, L., Crosby, R. D., Wonderlich, S. A., & Mitchell, J. E. (2017). Examining physical activity and affect using objective measures: A pilot study of anorexia nervosa. *The Sport Journal, 20*.

Karr, T. M., Davidson, D., Bryant, F. B., Balague, G., & Bohnert, A. M. (2013). Sport type and interpersonal and intrapersonal predictors of body dissatisfaction in high school female sport participants. *Body Image, 10*, 210-219.

doi:10.1016/j.bodyim.2012.11.001

Kassett, J. A., Gershon, E. S., Maxwell, M. E., Guroff, J. J., Kazuba, D. M., Smith, A. L., Brandt, H. A., & Jimerson, D. C. (1989). Psychiatric disorders in the first-degree relative probands with bulimia nervosa. *American Journal of Psychiatry, 146*, 1468-1471. doi:10.1176/ajp.146.11.1468

Kato, K., Jervas, S., & Culpepper, D. (2011). Body image disturbances in NCAA Division I and III female athletes. *Sports Journal*.
<https://thesportjournal.org/article/body-image-disturbances-in-ncaa-division-i-and-iii-female-athletes/>

Kaye, W. H., Fudge, J. L., & Paulus, M. (2009). New insights into symptoms and neurocircuit function of anorexia nervosa. *Nature Reviews Neuroscience, 10*, 573-584.

doi:10.1038/ntn2682

Keel, P. K., & Forney, K. J. (2013). Psychosocial risk factors for eating disorders. *International Journal of Eating Disorders, 46*, 433-439. doi:10.1002/eat.22094

Kelly, A. C., Vimalakanthan, K., & Miller, K. E. (2014). Self-compassion moderates the relationship between body mass index and both eating disorder pathology and body image flexibility. *Body Image, 11*, 446-453. doi:10.1016/j.bodyim.2014.07.005

Kerr, G., Berman, E., De Souza, M. (2006). Disordered eating in women's gymnastics: Perspectives of athletes, coaches, parents, and judges. *Journal of Applied Sport Psychology, 18*, 28-43. <https://doi.org/10.1080/104132005004711301>

Khodae, M., Olewinski, L., Shadgan, B., & Kinningham, R. R. (2015). Rapid weight loss in sports with weight classes. *Current Sports Medicine Reports, 14*, 435-441. doi:10.1249/JSR.0000000000000206

Kim, K. R., Ku, J., Lee, J., Lee, H., & Jung, Y. (2012). Functional and effective connectivity of anterior insula in anorexia nervosa and bulimia nervosa. *Neuroscience Letters, 521*, 152-157. doi:10.1016/j.neulet.2012.05.075

Klump, K. L., Suisman, J. L., Burt, S. A., McGue, M., & Iacono, W. G. (2009). Genetic and environmental influences on disordered eating: An adoption study. *Journal of Abnormal Psychology, 118*, 797-805. doi:10.1037/a0017204

Knapp, J., Aerni, G., & Anderson, J. (2014). Eating disorders in female athletes: Use of screening tools. *Current Sports Medicine Reports*, 13, 214-218.

doi:10.1249/JSR.0000000000000074

Kong, P., & Harris, L. M. (2015). The sporting body: Body image and eating disorder symptomatology among female athletes from leanness focused and nonleanness focused sports. *The Journal of Psychology*, 149, 141-160.

doi:10.1080/00223980.2013.846291

Kontis, D., & Theochari, E. (2012). Dopamine in anorexia nervosa: A systematic review. *Behavioural Pharmacology*, 23, 495-515. doi:10.1097/FBP.0b013e328357e115

Kosteli, M. C., Vanraalte, J. L., Brewer, B., & Cornelius, A. E. (2014). Relationship between sport type and body image of female athletes. *TRENDS in Sport Sciences*, 2, 65-72. http://www.tss.awf.poznan.pl/files/TRENDS_1_2014_2.pdf

Koyuncu, M., Tok, S., Canpolat, M., & Catikkas, F. (2010). Body image satisfaction and dissatisfaction, social physique anxiety, self-esteem, and body fat ratio in female exercisers and nonexercisers. *Social Behavior and Personality*, 38, 561-570.

doi:10.2224/sbp.2010.38.4.561

Krane, V., Waldron, J., Stiles-Shipley, J. A., & Michalenok, J. (2001). *Journal of Sport Behavior*, 24, 247-264.

<https://www.proquest.com/docview/215885089?pq-origsite=gscholar&fromopenview=true>

Kraus, N., Lindenberg, J., Zeeck, A., Kosfelder, J., & Vocks, S. (2015). Immediate effects of body checking behavior on negative and positive emotions in women with

eating disorders: An ecological momentary assessment approach. *European Eating Disorders Review*, 23, 399-407. doi:<http://dx.doi.org/10.1002/erv.2380>

Krentz, E. M., & Warschburger, P. (2011). Sports-related correlates of disordered eating in aesthetic sports. *Psychology of Sport and Exercise*, 12, 375-382. doi:10.1016/j.psychsport.2011.03.004

Lampard, A. M., Byrne, S. M., & McLean, N. (2011). Does self-esteem mediate the relationship between interpersonal problems and symptoms on disordered eating? *European Eating Disorders Review*, 19, 454-458. doi:10.1002/erv.1120

Lampard, A. M., MacLehose, R. F., Eisenberg, M. E., Neumark-Sztainer, D., & Davison, K. K. (2014). Weight-related teasing in the school environment: Associations with psychosocial health and weight control practices among adolescent boys and girls. *Journal of Youth and Adolescence*, 43, 1770-1780. doi:10.1007/s10964-013-0086-3

Lampard, A. M., Tasca, G. A., Balfour, L., & Bissada, H. (2013). An evaluation of the transdiagnostic cognitive-behavioural model of eating disorders. *European Eating Disorder Review*, 21, 99-107. doi:10.1002/erv.2214

Landkammer, F., Winter, K., Theil, A., & Sassenberg, K. (2020). Team sports off the field: Competing excludes cooperating for individual but not for team athletes. *Frontiers in Psychology*, 10, 1-12. doi:10.3389/fpsyg.2019.02470

Lane, H. J., Lane, A. M., & Matheson, H. (2004). Validity of eating attitude test among exercisers. *Journal of Sports Science & Medicine*, 3, 244-253. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3938063/>

Lanfranchi, M., Maiano, C., Morin, A. J. S., & Therme, P. (2015). Social physique anxiety and disturbed eating attitudes and behaviors in adolescents: Moderating effects of sport, sport-related characteristics, and gender. *International Journal of Behavioral Medicine, 22*, 149-160. doi:10.1007/s12529-014-9406-6

Lantzouni, E., & Grady, R. (2021). Eating disorders in children and adolescents: A practical review and update in pediatric gynecologists. *Journal of Pediatric and Adolescent Gynecology, 34*, 281-287. doi:10.1016/j.jpag.2021.01.010

Leary, M. R. (2001). Towards a conceptualization of interpersonal rejection. In M. R. Leary (Ed.), *Interpersonal rejection* (pp. 4–20). Oxford University Press.

Lee, Y. H., Abbott, D. W., Seim, H., Crosby, R. D., Monson, N., Burgard, M., & Mitchell, J. E. (1999). Eating disorders and psychiatric disorders in the first-degree relatives of obese probands with binge eating disorder and obese non-binge eating disorder controls. *International Journal of Eating Disorders, 26*, 322-332. doi:10.1002/(SICI)1098-108X(199911)26:3<322::AID-EAT10>3.0.CO;2-K

Lee-Win, A. E., Townsend, L., Reinblatt, S. P., & Mendelson, T. (2016). Associations of neuroticism and impulsivity with binge eating in a nationally representative sample of adolescents in the United States. *Personality and Individual Differences, 90*, 66-72. doi:http://dx.doi.org/10.1016/j.paid.2015.10.042

Levine, M. P., & Smolak, L. (2006). *The prevention of eating problems and eating disorders: Theory, research, and practice*. Lawrence Erlbaum Associates Publishers.

Levine, M. P., & Smolak, L. (2001). Prevention of body image disturbance and disordered eating: A review of the research. In M. P. Levine & L. Smolak (Eds.), *The*

prevention of eating problems and eating disorders: Theory, research, and practice.

Erlbaum.

Levinson, C. A., Brosf, L. C., Vanzhula, I. A., Bumberry, L., Zerwas, S., & Bulik, C. M. (2017). Perfectionism group treatment for eating disorders in an inpatient, partial hospitalization, and outpatient setting. *European Eating Disorders Review, 25*, 579-585. doi:10.1002/erv.2557

Libbey, H. P., Story, M. T., Neumark-Sztainer, D. R., & Boutelle, K. N. (2008). Teasing, disordered eating behaviors, and psychological morbidities among overweight adolescents. *Obesity, 16*, S24-S29. doi:10.1038/oby.2009.455

Linardon, J., Gleeson, J., Yap, K., Murphy, K., & Brennan, L. (2019). Meta-analysis of the effects of third-wave behavioural interventions on disordered eating and body image concerns: Implications for eating disorder prevention. *Cognitive Behaviour Therapy, 48*, 15-38. doi:10.1080/16506073.2018.1517389

Linardon, J., & Mitchell, S. (2017). Rigid dietary control, flexible dietary control, and intuitive eating: Evidence for their differential relationship to disordered eating and body image concerns. *Eating Behaviors, 26*, 16-22.
<https://doi.org/10.1016/j.eatbeh.2017.01.008>

Lippke, S. (2017). Outcome expectation. In V. Zeigler-Hill & T. K. Shackelford (Eds.), *Encyclopedia of personality and individual differences*. Springer International Publishing. doi:10.1007/978-3-319-28099-8_1145-1

Lobera, I. J., Estebanez, S., Santiago Fernandez, M. J., Bautista, E. A., & Garrido, O. (2009). Coping strategies in eating disorders. *European Eating Disorders Review, 17*, 220-226. doi:10.1002/erv.902

Lombardo, C., Cerolini, S., Alivernini, F., Ballesio, A., Violani, C., Fernandes, M., & Lucidi, F. (2020). Eating self-efficacy: Validation of a new brief scale. *Eating and Weight Disorders – Studies on Anorexia, Bulimia, and Obesity, 26*, 295-303. doi:10.1007/s40519-020-00854-2

Loth, K. A., MacLehose, R., Bucchianeri, M., Crow, S., & Neumark-Sztainer, D. (2014). Predictors of dieting and disordered eating behaviors from adolescence to young adulthood. *Journal of Adolescent Health, 55*, 705-712. doi:10.1016/j.jadohealth.2014.04.016

Lunde, C., & Gattario, K. H. (2017). Performance or appearance? Young female sport participants' body negotiations. *Body Image, 21*, 81-89. doi:10.1016/j.bodyim.2017.03.001

Luszczynska, A., & Schwarzer, R. (2005). The role of self-efficacy in health self-regulation. In W. Greve, K. Rothermund, & D. Wentura (Eds.), *The adaptive self: Personal continuity and intentional self-development* (p. 137–152). Hogrefe & Huber Publishers.

MacLaren, V. V. & Best, L. A. (2009). Female students' disordered eating and big five personality facets. *Eating Behaviors, 10*, 192-195. doi:10.1016/j.eatbeh.2009.04.001

MacNeill, L. P., Best, L. A., & Davis, L. L. (2017). The role of personality in body image dissatisfaction and disordered eating: Discrepancies between men and women. *Journal of Eating Disorders, 44*. doi:10.1186/s40337-017-0177-8

McArdle, S., Meade, M. M., & Moore, P. (2016). Exploring attitudes towards eating disorders among elite athletes support personnel. *Scandinavian Journal of Medicine & Science in Sports, 26*, 1117-1127. doi:10.1111/sms12515

McCrae, R. R., & Costa, P. T. (1990). *Personality in adulthood* (2nd ed.). New York: The Guilford Press.

McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*, 81-90. doi:10.1037/0022-3514.52.1.81

Marcos, Y. Q., Sebastian, M. J. Q., Aubalat, L. P., Ausina, J. B., & Treasure, J. (2012). Peer and family influence in eating disorders: A meta-analysis. *European Psychiatry, 28*, 199-206. doi:10.1016/j.eurpsy.2012.03.005

Masuda, A., Marshall, R. D., & Latner, J. D. (2018). Mindfulness as a moderator of the association between eating disorder cognition and eating disorder behavior among a non-clinical sample of female college students: A role of ethnicity. *Frontiers in Psychology, 9*, 1-9. doi:10.3389/fpsyg.2018.00700

Martinsen, M., Bratland-Sanda, S., Eriksson, A. K., & Sundgot-Borgen, J. (2010). Dieting to win or to be thin? A study of dieting and disordered eating among adolescent elite athletes and non-athlete controls. *British Journal of Sports Medicine, 44*, 70-76. doi:10.1136/bjism.2009.068668

Melbye, L., Tenenbaum, G., Eklund, R. (2008), Self-objectification and exercise behaviors: The mediating role of social physique anxiety. *Journal of Applied Biobehavioral Research*, 12, 196-220. doi:10.1111/j.1751-9861.2008.00021.x

Menzel, J. E., Schaefer, L. M., Burke, N. L., Mayhew, L. L., Brannick, M. T., & Thompson, J. K. (2010). Appearance-related teasing, body dissatisfaction and disordered eating: A meta-analysis. *Body Image*, 7, 261-270. doi:10.1016/j.bodyim.2010.05.004

Meyer, T. A., & Gast, J. (2008). The effects of peer influence on disordered eating behavior. *Journal of School Nursing*, 24, 36-42. doi:10.1177/10598405080240010601

Micali, N., Martini, M. G., Thomas, J. J., Eddy, K. T., Kothari, R., Russell, E., . . . Treasure, J. (2017). Lifetime and 12-month prevalence of eating disorders amongst women in mid-life: A population-based study of diagnoses and risk factors. doi:10.1186/s12916-016-0766-4

Miller, J. L., Schmidt, L. A., Vaillancourt, T., McDougall, P., & Laliberte, M. (2006). Neuroticism and introversion: A risky combination for disordered eating among a non-clinical sample of undergraduate women. *Eating Behaviors*, 7, 69-78. doi:10.1016/j.eatbeh.2005.07.003

Milligan, B., & Pritchard, M. (2006). The relationship between gender, type of sport, body dissatisfaction, self-esteem, and disordered eating behaviours in Division I athletes. *The Online Journal of Sport Psychology*, 8, 32-46. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.508.7810&rep=rep1&type=pdf>

Mintz, L. B., Awad, G. H., Stinson, R. D., Bledman, R. A., Coker, A. D., Kashubeck-West, S., & Connelly, K. (2013). Weighing and body monitoring among college women: The scale number as an emotional barometer. *Journal of College Student Psychotherapy, 27*, 78-91. doi:10.1080/87568225.2013.739039

Mintz, L. B., & Kashubeck, S. (1999). Body image and disordered eating among Asian American and Caucasian college students. *Psychology of Women Quarterly, 23*, 781-796.
https://journals.sagepub.com/doi/pdf/10.1111/j.1471-6402.1999.tb00397.x?casa_token=pTXMCmlHeFgAAAAA:4BzOCYfSNFR-LB50IvnLqonpxPI9bfpZaAiXbJKc09dfcAfmZLPUNR3aZLq3P7zEj2-DUzidxKFoVA

Mitchison, D., Hay, P. J., Slewa-Tounan, S., & Mond, J. (2012). Time trends in population prevalence of eating disorder behaviors and their relationship to quality of life. *PloS One, 7*, 1-7. doi:10.1371/journal.pone.0048450

Mohr, H. M., Zimmerman, J., Roder, C., Lenz, C., Overbeck, G., & Grabhorn, R. (2010). Separating two components of body image in anorexia nervosa. *Psychological Medicine, 40*, 1519-1529. <https://doi.org/10.1017/S0033291709991826>

Monteleone, A. M., Castellini, G., Volpe, U., Ricca, V., Lelli, L., Monteleone, P., & Maj, M. (2018). Neuroendocrinology and brain imaging of reward in eating disorders: A possible key to the treatment of anorexia nervosa and bulimia nervosa. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 80*, 132-142.
<https://doi.org/10.1016/j.pnpbp.2017.02.020>

Mora, F., Rojo, S. F., Banzo, C., & Quintero, J. (2020). The impact of self-esteem on eating disorders. *European Psychiatry, 41*. doi:10.1016/j.eurpsy.2017.01.802

Mulazimoglu-Balli, O., Koca, C., & Asci, F. H. (2010). An examination of social physique anxiety with regard to sex and level of sport involvement. *Journal of Human Kinetics, 26*, 115-122. doi:10.2478/v10078-010-0055-9

Munsch, S., Meyer, A. H., Quartier, V., & Wilhelm, F. H. (2012). Binge eating in binge eating disorder: A breakdown of emotion regulatory processes? *Psychiatric Research, 195*, 118-124. <https://dx.doi.org/10.1016/j.psychres.2011.07.016>

Muscat, A. C., & Long, B. C. (2008). Critical comments about body shape and weight: Disordered eating of female athletes and sport participants. *Journal of Applied Sport Psychology, 20*, 1-24. doi:10.1080/10413200701784833

Myszkowski, N., Storme, M., & Tavani, J. (2018). Are reflective models appropriate for very short scales? Proofs of concept of formative models using the ten-item personality inventory. *Journal of Personality, 87*, 363-372.
doi:10.1111/jopy.12395

Naeimi, A. F., Haghigian, H. K., Gargari, B. P., Alizadeh, M., & Rouzitalab, T. (2016). Eating disorder risk and its relation to self-esteem and image in Iranian university students of medical sciences. *Eating and Weight Disorders, 21*, 597-605.
doi:10.1007/s40519-016-0283-7

National Eating Disorder Association. (2012). *Athletes and eating disorders: What coaches, trainers, parents, and teammates need to know*.

<https://www.nationaleatingdisorders.org/sites/default/files/ResourceHandouts/AthletesandEatingDisorders.pdf>

Neumark-Sztainer, D., Eisenberg, M. E., Fulkerson, J. A., Story, M., & Larson, N. I. (2008). Family meals and disordered eating in adolescents: Longitudinal findings from project eat. *Archives of Pediatrics and Adolescent Medicine, 162*, 17-22.

doi:10.1001/archpediatrics.2007.9

Neumark-Sztainer, D., van den Berg, P., Stat, H. M., & Story, M. (2006). Self-weighing in adolescents: Helpful or harmful? Longitudinal associations with body weight changes and disordered eating. *Journal of Adolescent Health, 39*, 811-818.

doi:10.1016/j.adohealth.2006.07.002

Nichter, M., & Vuckovic, N. (1994). Fat talk: Body image among adolescent girls. In N. Sault (Ed.), *Many mirrors: Body image and social relations*. Rutgers University Press.

Nikodijevic, A., Buck, K., Fuller-Tyszkiewicz, M., & De Paoli, T. (2018). Body checking and body avoidance in eating disorders: Systematic review and meta-analysis. *European Eating Disorders Review, 26*, 159-185. doi:10.1002/erv.2585

Nixdorf, I., Frank, R., & Beckmann, J. (2016). Comparison of athletes' proneness to depressive symptoms in individual and team sports: Research on psychological mediators in junior elite athletes. *Frontiers in Psychology, 7*, 1-8.

doi:10.3389/fpsyg.2016.00893

O'Connor, S. M., Burt, S. A., VanHuyse, J. L., & Klump, K. L. (2016). What drives the association between weight conscious peer groups and disordered eating?

Disentangling genetic and environmental selection from pure socialization effects.

Journal of Abnormal Psychology, 125, 356-368. doi:10.1037/abn0000132

O'Hara, L., Tahboub-Schulte, S., & Thomas, J. (2016). Weight-related teasing and internalized weight stigma predict abnormal eating attitudes and behaviours in Emirati female university students. *Appetite*, 102, 44-50. doi:10.1016/j.appet.2016.01.019

Oliver, K. K., & Thelen, M. H. (1996). Children's perceptions of peer influence on eating concerns. *Behavior Therapy*, 27, 25-39. doi:10.1016/S0005/7894(96)80033-5

Ousley, L., Cordero, E. D., & White, S. (2007). Fat talk among college students: How undergraduates communicate regarding food and body weight, shape & appearance. *Eating Disorders*, 16, 73-84. doi:10.10180/10640260701773546

Ouyang, Y., Wang, K., Zhang, T., Peng, L., Song, G., & Lou, J. (2020). The influence of sports participation on body image, self-efficacy, and self-esteem in college students. *Frontiers in Psychology*, 10, 1-10. doi:10.3389/fpsyg.2019.03039

Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, 135, 531-554. doi:10.1037/a0016059

Patrick, L. (2002). Eating disorders: A review of the literature with emphasis on medical complications and clinical nutrition. *Alternative Medicine*, 7, 184-202.

<https://pdfs.semanticscholar.org/e4f2/a9602c48ca8bb6fc0882a0391f7b68c9bebc.pdf>

Peck, L. D., & Lightsey, O. R. (2008). The eating disorder continuum, self-esteem, and perfectionism. *Journal of Counseling & Development*, 86, 184-192. doi:10.1002/j.1556-6678.2008.tb00496.x

Pedersen, L., Hicks, R. E., Rosenrauch, S., & Brockmann, J. (2018). Sociocultural pressure as a mediator of eating disorder symptoms in a non-clinical Australian sample.

Cogent Psychology, 5, 1-15. doi:10.1080/23311908.2018.1523347

Peng, X. T., Chen, Y. J., & Zhu, X. W. (2017). Effect of social network site appearance comparison on depression: The chain mediating role of body image

satisfaction and self-esteem. *Chinese Journal of Clinical Psychology*, 25, 959-962.

doi:10.1007/s12144-020-01114-3

Perry-Burney, G. D., & Takyi, B. K. (2002). Self-esteem, academic achievement, and moral development among adolescent girls. *Journal of Human Behavior in the Social*

Environment, 5, 15-27. doi:10.1300/j137v05n02_02

Petisco-Rodriguez, C., Sanchez-Sanchez, L. C., Fernandez-Garcia, R., Sanchez-Sanchez, J., & Garcia-Montes, J. M. (2020). Disordered eating attitudes, anxiety, self-esteem, and perfectionism in young athletes and non-athletes. *International Journal of Environmental Research and Public Health*, 17, 1-17.

doi:10.3390/ijerph17186754

Petrie, T. A., & Greenleaf, C. A. (2007). *Eating disorders in sport: From theory to research to intervention*. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of sport psychology* (p. 352–378). John Wiley & Sons, Inc.

Petrie, T. A., & Greenleaf, C. (2012). *Eating disorders in sport*. In S. M. Murphy (Ed.), *The Oxford handbook of sport and performance psychology* (p. 635–659). Oxford University Press. <https://doi.org/10.1002/9781118270011.ch16>

Petrie T. A., & Greenleaf, C., Reel, J. J., & Carter, J. E. (2009). An examination of psychosocial correlates of eating disorders among female collegiate athletes. *Quarterly for Exercise and Sport, 80*, 621-632. doi:10.1080/02701367.2009.10599601

Pidgeon, A., & Harker, R. A. (2013). Body-focused anxiety in women: Associations with internalization of the thin-ideal, dieting frequency, body mass index and media effects. *Open Journal of Medical Psychology, 2*, 17-24.
doi:10.4236/ojmp.2013.24B004

Pluhar, E., McCracken, C., Griffith, K. L., Christino, M. A., Sugimoto, D., & Meehan, W. P. (2019). Team sport athletes may be less likely to suffer from anxiety or depression than individual sport athletes. *Journal of Sports Science and Medicine, 18*, 490-496. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6683619/>

Power, K., Kovacs, S., Butcher-Poffley, L., Jingwei, W., & Sarwer, D. (2020). *Disordered Eating and Compulsive Exercise in Collegiate Athletes*. [Doctoral Dissertation, Temple University, PhD]. doi:10.34944/dspace/3404

Prnjak, K., Jukic, I., & Tufano, J. J. (2019). Perfectionism, body satisfaction and dieting in athletes: The role of gender and sport type. *Sports Basel Monatsabo, 7*, 1-10.
doi:10.3390/sports7080181

Puhl, R. M., & Luedicke, J. (2012). Weight-based victimization among adolescents in the school setting: Emotional reactions and coping behavior. *Journal of Youth and Adolescence, 41* 27-40. doi:10.1007/s10964-011-9713

Puttevils, L., Vanderhasselt, M., & Vervaet, M. (2019). Investigating transdiagnostic factors in eating disorders: Does self-esteem moderate the relationship

between perfectionism and eating disorder symptoms? *European Eating Disorders Review*, 27, 381-390. doi:10.1002/erv.2666

Quick, V., Larson, N., Eisenberg, M. E., Hannan, P. J., & Neumark-Sztainer, D. (2012). Self-weighing behaviors in young adults: Tipping the scale toward unhealthy eating behaviors? *Journal of Adolescent Health*, 51, 468-474. doi:10.1016/j.jadohealth.2012.02.008

Quick, V. M., McWilliams, R., & Bryd-Bredbenner, C. (2013). Fatty, fatty, two-by-four: Weight teasing history and disturbed eating in young adult women. *American Journal of Public Health*, 103, 508-516. doi:10.2105/AJPH.2012.300898

Racine, S. E., Burt, S. A., Iacano, W. G., McGue, M., & Klump, K. L. (2011). Dietary restraint moderates genetic risk for binge eating. *Journal of Abnormal Psychology*, 120, 119-128. doi:10.1037/a0020895

Racine, S. E., Culbert, K. M., Larson, C. L., & Klump, K. L. (2009). The possible influence of impulsivity and dietary restraint on associations between serotonin and associations between serotonin genes and binge eating. *Journal of Psychiatric Research*, 43, 1278-1286. doi:10.1016/j.jpsychires.2009.05.002

Ramme, R. A., Donovan, C. L., & Bell, H. S. (2016). A test of athletic internalisation as a mediator in the relationship between sociocultural influences and body dissatisfaction in women. *Body Image*, 16, 126-132. doi:10.1016/j.bodyim.2016.01.002

Rancourt, D., Burk, W. J., Conway, C. C., & Prinstein, M. J. (2013). Gender composition of preadolescents' friendship group moderates peer socialization of body change behaviors. *Health Psychology, 32*, 283-292. doi:10.1037/a0027980

Rayner, K. E., Schniering, C. A., Rapee, R. M., Taylor, A., & Hutchinson, D. M. (2013). Adolescent girls' friendship networks, body dissatisfaction, and disordered eating: Examining selection and socialization processes. *Journal of Abnormal Psychology, 122*, 93-104. doi:10.1037/a0029304

Reas, D. L., Whisenhunt, B. L., Netemeyer, R., & Williamson, D. A. (2002). Development of the Body Checking Questionnaire: A self-report measure of body checking behaviors. *International Journal of Eating Disorders, 3*, 324-333. doi:10.1002/eat.10012

Reba-Harrelson, L., Von Holle, A., Hammer R. M., Swan, R., Ryes, M. L., & Bulik, C. M. (2009). Patterns and prevalence of disordered eating and weight control behaviors in women ages 25-45. *Eating and Weight Disorders- Students of Anorexia, Bulimia, and Obesity, 14*, E190-E198. doi:10.1007/bf03325116

Reel, J. J., (2011). Identification and prevention of weight pressures and body image concerns among athletes. *Latin American Journal of Sport Psychology, 6*, 203-216. <http://hdl.handle.net/10553/7846>

Reel, J. J., & Galli, N, G. (2012). Eating disorders in sport. In D. Tod & D. Lavallee (Eds.), *Psychology of strength and conditioning*. Routledge.

Reel, J. J., Petrie, T. A., SooHoo, S., & Anderson, C. M. (2013). Weight pressures in sport: Examining the factor structure and incremental validity of the weight pressures

in sports – females. *Eating Behaviors*, *14*, 137-144.

<http://dx.doi.org/10.1016/j.eatbeh.2013.01.033>

Reel, J. J., SooHoo, S., Petrie, T. A., & Greenleaf, C. (2010). Slimming down for sport: Developing a weight pressures in sport measures for female athletes. *Journal of Clinical Sport Psychology*, *4*, 99-111. doi:10.1123/jcsp.4.2.99

Reilly, E. E., Stey, P., & Lapsley, D. K. (2016). A new look at the links between perceived parenting, socially-prescribed perfectionism, and disordered eating. *Personality and Individual Differences*, *88*, 17-20. doi:10.1016/j.paid.2015.08.038

Reinking, M. F., & Alexander, L. E. (2005). Prevalence of disordered-eating behaviors in undergraduate female collegiate athletes and nonathletes. *Journal of Athletic Training*, *40*, 47-51. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1088345/>

Reshadat, S., Zakiei, A., Hatamin, P., Bagheri, A., Rostami, S., & Komasi, S. (2017). A study of the correlation of personality traits (neuroticism and psychoticism) and self-efficacy in weight control with unhealthy eating behaviors and attitudes. *Annals of Medical and Health Sciences Research*, *7*, 32-38.

<https://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=5&sid=e92bb2c3-c32a-4d32-87df-572d6b5a3c9d%40pdc-v-sessmgr03>

Rice, S. M., Purcell, R., De Silva, S., Mawren, D., McGorry, P. D., & Parker, A. G. (2016) The mental health of elite athletes: A narrative systematic review. *Sports Medicine*, *46*, 1333-1353. doi:10.1007/s40279-016-0492-2

Rieger, E., Van Buren, D. J., Bishop, M. E., & Tanofsky-Kraff, M. (2010). An eating disorder-specific model of interpersonal psychotherapy (ipt-ed): Causal pathways

and treatment implications. *Clinical Psychology Review*, 30, 400-410.

doi:10.1016/j.cpr.2010.02.001

Rikani, A. A., Choudhry, Z., Choudhry, A. M., Ikram, H., Asghar, M. W., Kajal, D., Waheed, A., & Mobassarrah, N. J. (2013). A critique of the literature on etiology of eating disorders. *Annals of Neurosciences*, 20, 157-161.

doi:10.5214/ans.0972.7531.200409

Riva, G. (2016). Neurobiology of anorexia nervosa: Serotonin dysfunction link self-starvation with body image disturbances through an impaired body memory.

Frontiers in Human Neuroscience, 10, 1-9. doi:10.3389/fnhum.2016.00600

Roberts, A., & Good, E. (2011). Media images and female body dissatisfaction: The moderating effects of the five-factor traits. *Eating Behaviors*, 11, 211-216.

doi:10.1016/j.eat.beh.2010.04.002

Robinson, A., & Lewis, V. (2016). Social physique anxiety: An exploration of influence on sporting confidence and participation. *Journal of Applied Biobehavioral Research*, 21, 46-59. doi:10.1111/jabr.12046

Rodgers, R., Chabrol, H., & Paxton, S. J. (2011). An exploration of the tripartite influence model of body dissatisfaction and disordered eating among Australian and French college women, *Body Image*, 8, 208-215. doi:10.1016/j.bodyim.2011.04.009

Rodriguez, M. A., Martinez Nieto, J. M., Novalbos Ruiz, J. P., Ruiz Jimenez, M. A., & Benitez, J. (1999). Physical exercise and food habits: A study of adolescents in Cadiz. *Revista Espanola de Salud Publica*, 73, 81-87.

<https://europepmc.org/article/med/10224883>

Romero, E., Villar, P., Gomez-Fraguela, A., & Lopez-Romero, L. (2012).

Measuring personality traits with ultra-short scales: A study of the Ten Item Personality Inventory (TIPI) in a Spanish sample. *Personality and Individual Differences, 53*, 289-293. doi:10.1016/j.paid.2012.03.035

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ:

Princeton University Press.

Rosenberg, M. (1989). *Society and the adolescent self-image*. Revised edition.

Middletown, CT: Wesleyan University Press.

Rousselet, M., Guerineau, B., Paruit, M. C., Guinot, M., Lise, S., Destrube, B.,

Ruffio-Thery, S., Dominguez, N., Brisseau-Gimenez, S., Dubois, V., Mora, C., Trolonge, S., Lambert, S., Grall-Bronnec, M., & Pretagut, S. (2017). Disordered eating in French high-level athletes: Association with type of sport, doping behavior, and psychological features. *Eating and Weight Disorders, 22*, 61-68. doi:10.1007/s40519-016-0342-0

Sabiston, C. M., Lucibello, K., Kuzmochka-Wilks, D., & Koulanova, A. (2020).

What's a coach to do? Exploring coaches' perspectives of body image in girls sport. *Psychology of Sport and Exercise, 48*, 1-9. doi:10.1016/j.psychsport.2020.101669

Sabiston, C. M., Pila, E., Pinsonnault-Bilodeau, G., & Cox, A. E. (2014). Social

physique anxiety experiences in physical activity: A comprehensive synthesis of research studies focused on measurement, theory, and predictors and outcomes. *International Review of Sport and exercise Psychology, 7*, 158-183.

doi:10.1080/1750984X.2014.904392

Sabiston, C. M., Pila, E., Vani, M. F., & Thogersen-Ntoumani, C. (2019). Body image, physical activity, and sport: A scoping review. *Psychology of Sport and Exercise, 42*, 48-57. doi:10.1016/j.psychsport.2018.12.010

Salvy, S. J., Bowker, J. C., Nitecki, L. A., Kluczynski, M. A., Germeroth, L. J., & Roemmich, J. N. (2011). Impact of simulated ostracism on overweight and normal-weight youths' motivation to eat and food intake. *Appetite, 56*, 39–45. doi:10.1016/j.appet.2010.11.140

Sanford-Martens, T. C., Davidson, M. M., Yakushko, O. F., Martens, M. P., & Hinton, P. (2005). Clinical and subclinical eating disorders: An examination of collegiate athletes. *Journal of Applied Sport Psychology, 17*, 79-86. doi:10.1080/10413200590907586

Schaal, K., Tafflet, M., Nassif, H., Thibault, V., Pichard, C., Alcotte, M., Guillet, T., El Helou, N., Berthelot, G., Simon, S., & Toussaint, J. (2011). Psychological balance in high level athletes: Gender-based differences and sport-specific patterns. *PLoS One, 6*, 1-9. doi:10.1371/journal.pone.0019007

Schaefer, L. M., Burke, N. L., Anderson, L. M., Thompson, J. K., Heinberg, L. J., Bardone-Cone, A. M., Higgins Neyland, M. K., Frederick, D. A., Anderson, D. A., Schaumberg, K., Nerini, A., Stefanile, C., Dittmar, H., Klump, K. L., Vercellone, A. C., & Paxton, S. J. (2019). Comparing internalization of appearance ideals and appearance-related pressures among women from the United States, Italy, England, and Australia. *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity, 24*, 947-951. doi:10.1007/s40519-018-0544-8

Scharner, S., & Stengel, A. (2019). Alterations of brain structure and functions in anorexia nervosa. *Clinical Nutrition Experimental*, 28, 22-32.

doi:<https://doi.org/10.1016/j.yclnex.2019.02.001>

Schienle, A., Schafer, A., Hermann, A., & Vaitl, D. (2009). Binge-eating disorder: Reward sensitivity and brain activation to images of food. *Biological Psychiatry*, 65, 654-661. doi:10.1016/j.biopsych.2008.09.028

Schmitt, D. P., & Allik, J. (2005). Simultaneous administration of the Rosenberg self-esteem scale in 53 nations: Exploring the universal and culture-specific features of global self-esteem. *Journal of Personality and Social Psychology*, 89, 623-642. doi:10.1037/0022-3514.89.4.623

Scott, C. L., Haycraft, E., & Plateau, C. R. (2019). Teammate influence and relationship quality are associated with eating and exercise psychopathology in athletes. *Appetite*, 143, PAGE #. <https://doi.org/10.1016/j.appet.2019.104404>

Schultz, W. (2010). Dopamine signals for reward value and risk: Basic and recent data. *Behavioral and Brain Functions*, 6, 1-9. doi:10.1186/1744-9081-6-24

Schunk, D. H., & Usher, E. L. (2012). *Social cognitive theory and motivation*. In R. M. Ryan (Ed.), *The Oxford handbook of human motivation* (p. 13–27). Oxford University Press. doi:10.1093/oxfordhb/9780190666453.013.2

Schwarzer, R., Lippke, S., & Luszczynska, A. (2011). Mechanisms of health behavior change in persons with chronic illness or disability: The Health Action Process Approach (HAPA). *Rehabilitation Psychology*, 56, 161-170. doi:10.1037/a0024509

Scoffier-Meriaux, S., Falzon, C., Lewton-Brain, P., Filaire, E., & d'Arripe-Longueville, F. (2015). Big five personality traits and eating attitudes in intensively training dancers: The mediating role of internalized thinness norms. *Journal of Sports Science & Medicine, 14*, 627-633.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4541128/>

Scoffier, S., Paquet, Y., & d'Arripe-Longueville, F. (2010). Effect of locus of control on disordered eating in athletes: The mediational role of self-regulation of eating attitudes. *Eating Behaviors, 11*, 164-169. doi:10.1016/j.eatbeh.2010.02.002

Seitz, S (2019). *Disordered eating as a precursor to eating disorders: Understanding eating disorders*. National Eating Disorder Association.

<https://www.nationaleatingdisorders.org/blog/disordered-eating-precursor-eating-disorder>

s

Selby, C. L., & Reel, J. J. (2011). A coach's guide to identifying and helping athletes with eating disorders. *Journal of Sport Psychology in Action, 2*, 100-112.

doi:10.1080/215/20704.2011.585701

Sengor, G., & Gezer, C. (2020). The association between food addiction, disordered eating behaviors, and food intake. *Revista de Nutricao, 33*, 1-10.

doi:10.1590/1678-9865202033e190039

Shafran, R., Cooper, Z., & Fairburn, C. G. (2002). Clinical perfectionism: A cognitive-behavioural analysis. *Behaviour Research and Therapy, 40*, 773-791.

doi:10.1016/S0005-7967(01)00059-6

Shafran, R., Fairburn, C. G., Robinson, P., & Lask, B. (2004). Body checking and its avoidance in eating disorders. *International Journal of Eating Disorders, 35*, 93-101.

doi:10.1002/eat.10228

Shafran, R., Lee, M., Payne, E., & Fairburn C. G. (2007). An experimental analysis of body checking. *Behaviour Research and Therapy, 45*, 113-121.

doi:10.1016/j.brat.2006.01.015

Shanmugam, V., Jowett, S., & Meyer, C. (2011). Application of the transdiagnostic cognitive-behavioral model of eating disorders to the athletic population.

Journal of Clinical Sport Psychology, 5, 166-191. <https://doi.org/10.1123/jesp.5.2166>

Shea, M. E., & Pritchard, M. E. (2007). Is self-esteem the primary predictor of disordered eating? *Personality and Individual Differences, 42*, 1527-1537

Shearer, D., Mellalieu, S. D., Shearer, C., & Roderique, D. (2009). The effects of a video-aided imagery intervention upon collective efficacy in an international

Paralympic wheelchair basketball team. *Journal of Imagery Research in Sport and*

Physical Activity, 4. doi:10.2202/1932-0190-1039

Sherman, R. T., & Thompson, R. A. (2001). Athletes and disordered eating: Four major issues for the professional psychologist. *Professional Psychology: Research and*

Practice, 31, 27-33. doi:10.1037/0735-7028.32.1.27

Sherman, R. T., & Thompson, R. A. (2009). Body image and eating disturbance in athletes: Competing to win or to be thin? In J. J. Reels & K. A. Beals (Eds.), *The*

hidden faces of eating disorders and body image (1st ed., pp. 9–38). American Alliance

for Health, Physical Education, Recreation and Dance.

Shouse, S. H., & Nilsson, J. (2011). Self-silencing, emotional awareness, and eating behaviors in college women. *Psychology of Women Quarterly, 35*, 451-457.

doi:10.1177/0361684310388785

Shriver, L. H., Wollenberg, G., & Gates, G. E. (2016). Prevalence of disordered eating and its association with emotion regulation in female college athletes.

International Journal of Sport Nutrition and Exercise Metabolism, 26, 240-248.

doi:10.1123/ijsnem.2015.0166

Simpson, C. C., & Mazzeo, S. E. (2017). Skinny is not enough: A content analysis of fitspiration on Pinterest. *Health Communication, 32*, 560-567.

doi:10.1080/10410236.2016.1140273

Sinclair, S. J., Blais, M. A., Gansler, D. A., Sandberg, E., Bistis, K., & LoCicero, A. (2019). Properties of the Rosenberg self-esteem scale: Overall and across demographic groups within the United States. *Evaluation & the Health Professions, 33*, 56-80.

doi:10.1177/0163278709356187

Singh, M. (2014). Mood, food, obesity. *Frontiers in Psychology, 5*, 1-20.

doi:10.3389/fpsyg.2014.00925

Sira, N., & Pawlak, R. (2010). Prevalence of overweight and obesity, and dieting attitudes among Caucasian and African American college students in eastern north Carolina: A cross-sectional survey. *Nutrition Research and Practice, 4*, 36-42.

doi:10.4162/nrp.2010.4.1.36

Sjogren, M. (2017). An update on genetic and serotonergic biomarker findings in bulimia nervosa. *EC Neurology, 7*, 107-116.

<https://www.econicon.com/ecne/pdf/ECNE-07-00203.pdf>

Slater, A., Cole, N., & Fardouly, J. (2019). The effect of exposure to parodies of thin-ideal images on young women's body image and mood. *Body Image, 29*, 82-89.

doi:10.1016/j.bodyim.2019.03.001

Slater, A., & Tiggemann, M. (2011). Gender differences in adolescent sport participation, teasing, self-objectification and body image concerns. *Journal of Adolescence, 34*, 455-463. doi:10.1016/j.adolescence.2010.06.007

Adolescence, 34, 455-463. doi:10.1016/j.adolescence.2010.06.007

Smink, F. R., Van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Reports, 14*,

406-414. doi:10.1007/s11920-012-0282-y

Smolak, L., Murnen, S. K., & Ruble, A. E. (2000). Female athletes and eating problems: A meta-analysis. *International Journal of Eating Disorders, 27*, 371-380.

doi:10.1002/(sici)1098-108x(200005)27:4<371::aid0eat1>3.0.co;2-y

Smyth, J. M., Wonderlich, S. A., Heron, K. E., Sliwinski, M. J., Crosby, R. D., Mitchell, J. E., & Engel, S. G. (2007). Daily and momentary mood and stress are

associated with binge eating and vomiting in bulimia nervosa patients in the natural environment. *Journal of Consulting and Clinical Psychology, 75*, 629-638.

doi:10.1037/0022-006X.75.4.629

Somasundaram, P., & Burgess, A. M. (2018). The role of Division III sports participation in the relationship between perfectionism and disordered eating

symptomology. *Journal of Clinical Sport Psychology*, *12*, 57-74.

doi:10.1123/jcsp.2017-0013

Steele, A., Corsini, N., & Wade, T. D. (2007). The interaction of perfectionism, perceived weight status, and self-esteem to predict bulimic symptoms: The role of 'benign' perfectionism. *Behaviour Research and Therapy*, *45*, 1647-1655.

doi:10.1016/j.brat.2006.08.007

Steinfeldt, J. A., Zakrajsek, R. A., Bodey, K. J., Middendorf, K. G., & Martin, S. B. (2012). Role of uniforms in the body image of female college volleyball players. *The Counseling Psychologist*, *41*, 791-819. doi:10.1177/0011000012457218

Strelan, P., & Hargreaves, D. (2005). Women who objectify other women: The vicious circle of objectification? *Sex Roles: A Journal of Research*, *52*, 707-712.

doi:10.1007/s11199-005-3737-3

Stice, E. (2016). Interactive and mediational etiological models of eating disorder onset: Evidence from prospective studies. *Annual Review of Clinical Psychology*, *12*, 359-381. doi:10.1146/annurev-clinpsy-021815-093317

Stice, E., Marti, C. N., & Durant, S. (2011). Risk Factors for onset of eating disorders: Evidence of multiple risk pathways from an 8-year prospective study. *Behaviour Research and Therapy*, *49*, 622-627. doi:10.1016/j.brat.2011.06.009

Stoeber, J., Madigan, D. J., Damian, L. E., Esposito, R. M., & Lombardo, C. (2017). Perfectionism and eating disorder symptoms in female university students: The central role of perfectionistic self-presentation. *Eating and Weight Disorders – Studies on Anorexia, Bulimia, and Obesity*, *22*, 641-648. doi:10.1007/s40519-016-0297-1

Stoeber, J., & Yang, H. (2015). Physical appearance perfectionism explains variance in eating disorder symptoms above general perfectionism. *Personality and Individual Differences, 86*, 303-307. <https://doi.org/10.1016/j.paid.2015.06.032>

Stoyel, H., Slee, A., Meyer, C., & Serpell, L. (2019). Systematic review of risk factors for eating psychopathology in athletes: A critique of an etiological model. *European Eating Disorders Review, 28*, 3-25. doi:10.1002/erv.2711

Strober, M., Freeman, R., Lampert, C., Diamond, J., & Kaye, W. (2000). Controlled family studies of anorexia nervosa and bulimia nervosa: Evidence of shared liability and transmission of partial syndromes. *American Journal of Psychiatry, 157*, 393-401. doi:10.1176/appi.ajp.157.3.393

Suisman, J. L., O'Connor, S. M., Sperry, S., Thompson, K., Keel, P. K., Burt, A., Neale, M., Boker, S., Sisk, C., & Klump, K. L. (2012). Genetic and environmental influence on the thin-ideal internalization. *International Journal of Eating Disorders, 45*, 942-928. doi:10.1002/eat.22056

Suisman, J. L., Thompson, J. K., Keel, P. K., Burt, S. A., Neale, M., Boker, S., Sisk, C., & Klump, K. L. (2014). Genetic and environmental influence on the thin ideal internalization across puberty and pre-adolescent, adolescent, and young adult development. *International Journal of Eating Disorders, 47*, 773-783. doi:10.1002/eat.22321

Suls, J., & Martin, R. (2005). The daily life of the garden-variety neurotic: Reactivity, stress exposure, mood spillover, and maladaptive coping. *Journal of Personality, 73*, 1485-1510. doi:10.1111/j.1467-6494.2005.00356.x

Sundgot-Borgen, J., & Garthe, I. (2011). Elite athletes in aesthetic and Olympic weight-class sports and the challenge of body weight and body compositions. *Journal of Sports Sciences, 29*, S101-S114. doi:10.1080/02640414.2011.565783

Sundgot-Borgen, J., Meyer, N. L., Lohman, T. G., Ackland, T. R., Maughan, R. J., Stewart, A. D., & Muller, W. (2013). How to minimise the health risks to athletes who compete in weight-sensitive sports review and position statement on behalf of the ad hoc research working group on body composition, health and performance, under the auspices of the IOC Medical Commission. *British Journal of Sports Medicine, 47*, 1012-1022. doi:10.1136/bjsports-2013-092966

Sundgot-Borgen, J., & Torstveit, M. K. (2010). Aspects of disordered eating continuum in elite high-intensity sports. *Scandinavian Journal of Medicine & Science in Sports, 2*, 112-121. doi:10.1111/j.1600-0838.2010.01190.x

Sundgot-Borgen, J., & Torstveit, M. K. (2004). Prevalence of eating disorders in elite athletes is higher than in the general population. *Clinical Journal of Sport Medicine, 14*, 25-32. doi:10.1097/00042752-200401000-00005

Svaldi, J., Griepstroh, J., Tuschen-Caffier, T., & Ehring, T. (2012). Emotion regulation deficits in eating disorders: A marker of eating pathology or general psychopathology? *Psychiatry Research, 197*, 103-111. doi:10.1016/j.psychres.2011.11.009

Swami, V., Steadman, L., & Tovee, M. J. (2009). A comparison of body size ideals, body dissatisfaction, and media influence between female track athletes, martial

arts, and non-athletes. *Psychology of Sport and Exercise*, *10*, 609-614.

doi:10.1016/j.psychsport.2009.03.003

Swanson, S. A., Crow, S. J., Le Grange, D. (2011). Prevalence and correlates of eating disorders in adolescents. *Archives of General Psychiatry*, *68*, 714-723.

doi:10.1001/archgenpsychiatry.2011.22

Tabler, J., & Utz, R. L. (2015). The influence of adolescent eating disorders or disordered eating behaviors on socioeconomic achievement in early adulthood.

International Journal of Eating Disorders, *48*, 622-632. doi:10.1002/eat.22395

Tackett, B. P., Petrie, T. A., & Anderson, C. M. (2016). The frequency of weigh-ins, weight intentionality and management, and eating among female collegiate athletes. *Eating Behaviors*, *23*, 82-85. <https://doi.org/10.1016/j.eatbeh.2016.08.007>

Taniguchi, E. (2019). Parental confirmation, body dissatisfaction, and disordered eating behaviors among female college students. *Family Relations*, *68*, 624-637.

doi:10.1111/fare.12389

Thiemann, P., Legenbauer, T., Vocks, S., Platen, P., Auyeung, B., & Herpertz, S. (2015). Eating disorders and their putative risk factors among female German professional athletes. *European Eating Disorders Review*, *23*(4), 269–276.

doi.org/10.1002/erv.2360

Thompson, R. A., & Sherman, R. T. (2010). *Eating disorders in sport*. New York, NY: Routledge

Thompson, J. K., & Stice, E. (2001). Thin-ideal internalization: Mounting evidence for a new risk factor for body-image disturbance and eating pathology. *Current Directions in Psychological Science, 10*, 181-183. doi:10.1111/1467-8721.00144

Thornton, L. M., Mazzeo, S. E., & Bulik, C. M. (2011). The heritability of eating disorders: Methods and current findings. *Current Topics in Behavioral Neurosciences, 6*, 141-156. doi:10.1007/7854.2010.91

Torres-McGehee, T. M., Pritchett, K. L., Zippel, D., Minton, D. M., Cellamre, A., & Sibilio, M. (2012). Sports nutrition knowledge among collegiate athletes, coaches, athletic trainers, and strength and conditioning specialists. *Journal of Athletic Training, 47*, 205-211. doi:10.4085/1062-6050-47.2.205

Torstveit, M. K., Rosenvinge, J. H., & Sundgot-Borgen, J. (2008). Prevalence of eating disorders and the predictive power of risk models in female elite athletes: A controlled study. *Scandinavian Journal of Medicine & Science, 18*, 108-118. doi:10.1111/j.1600-0838.2007.00657.x

Torstveit, M. K., & Sundgot-Borgen, J. (2013). Eating disorders in male and female athletes. In R. J. Maughan (Eds.), *The encyclopaedia of sports medicine: An IOC Medical Commission publication* (pp. 513-525). doi:10.1002/9781118692318

Trace, S. E., Baker, J. H., Penas-Lledo, E., & Bulik, C. M. (2013). The genetics of eating disorders. *Annual Review of Clinical Psychology, 9*, 589-620. doi:10.1146/annurev-clinpsy-050212-185546

Treasure, J., Schmidt, U. (2013). Cognitive-interpersonal maintenance model of anorexia nervosa revisited: A summary of the evidence for cognitive, emotional and

interpersonal predisposing and perpetuating factors. *Journal of Eating Disorders*, 13.
doi:10.1186/2050-2974-1-13

Tylka, T. L. (2004). The relation between body dissatisfaction and eating disorder symptomatology: An analysis of moderating variables. *Journal of Counseling Psychology*, 51, 178-191. doi:10.1037/0022-0167.51.2.178

Ung, E. M., Erichsen, C. B., Poulsen, S., Lau, M. E., Simonsen, S., Davidsen, A. H. (2017). Association between interpersonal problems and treatment outcome in patients with eating disorders. *Journal of Eating Disorders*, 5, 1-9.
doi:10.1186/s40337-017-0179-6

VanHuyse, J. L., Burt, S. A., O'Connor, S., Thompson, J. K., & Klump, K. L. (2016). Socialization and selection effects in the association between weight conscious peer groups and thin-ideal internalization: A co-twin control study. *Body Image*, 17, 1-9.
doi:10.1016/j.bodyim.2016.01.005

Valois, D. D., Davis, C. G., Buchholz, A., Obeid, N., Henderson, K., Flament, M., & Goldfield, G. S. (2019). Effects of weight teasing and gender on body esteem in youth: A longitudinal analysis from the real study. *Body Image*, 29, 65-73.
doi:10.1016/j.bodyim.2019.02.009

Vartanian, L. R., & Porter, A. M. (2016). Weight stigma and eating behavior: A review of the literature. *Appetite*, 1, 3-14. doi:10.1016/j.appet.2016.01.034

Voelker, D. K., Petrie, T. A., Reel, J. J. & Gould, D. (2018). Frequency and psychosocial correlated of eating disorder symptomatology in male figure skaters. *Journal of Applied Sport Psychology*, 30, 119-126. doi:10.1080/10413200.2017.1325416

Volkow, N. D., Wang, G., & Baler, R. D. (2011). Reward, dopamine and the control of food intake: Implications for obesity. *Trends in Cognitive Sciences, 15*, 37-46. doi:10.1016/j.tics.2010.11.001

Wagner, J., Ludtke, O., Roberts, B. W. & Ulrich, T. (2014). Who belongs to me? Social relationships and personality characteristics in the transition to young adulthood. *European Journal of Personality, 28*, 586-603. doi:10.1002/per.1974

Watkins, T. J., Di Iorio, C. R., Olatunji, B. O., Benningfield, M. M., Blackford, J. U., Dietrich, M. S., Bhatia, M., Theiss, J. D., Salomon, R. M., Niswender, K., & Cowan, R. L. (2016). Disgust proneness and associated neural substrates in obesity. *Social Cognitive and Affective Neuroscience, 11*, 458-465. doi:10.1093/scan/nsv129

Wells, E. K., Chin, A. D., Tacke, J. A., & Bunn, J. A. (2015). Risk of disordered eating among Division I female college athletes. *International Journal of Exercise Science, 8*, 256-264. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4882473/#b1-ijes-8-3-256>

Werner, A., Theil, A., Schneider, S., Mayer, J., Giel, K. E., & Zipfel, S. (2013). Weight-control behaviour and weight-concerns in young elite athletes – a systematic review. *Journal of Eating Disorders, 1*, 1-13. doi:10.1186/2050-2974-1-18

Whitehead, J., Slater, G., Wright, H., Martin, L., O'Connor, H., & Mitchell, L. (2020). Disordered eating behaviours in female physique athletes. *European Journal of Sport Science, 20*, 1206-1214. doi:10.1080/17461391.2019.1698659

Wilhelm, L., Hartmann, A. S., Cordes, M., Waldorf, M., & Vocks, S. (2018). How do you feel when you check your body? Emotional states during a body-checking episode

in normal-weight females. *Eating and Weight Disorders – Studies on Anorexia, Bulimia and Obesity*, 25, 309-319. doi:10.1007/s40519-018-0589-8

Williamson, D. A., Anderson, D. A., & Gleaves, D. G. (1996). Anorexia and bulimia: Structured interview methodologies and psychological assessment. In K. Thompson (Ed.), *Body image, eating disorders, and obesity: An integrative guide for assessment and treatment* (pp. 205- 223). American Psychological Association.

Wilson, R. E., Harris, K., & Vazire, S. (2015). Personality and friendship satisfaction in daily life: Do everyday social interactions account for individual differences in friendship satisfaction? *European Journal of Personality*, 29, 173-186. doi:10.1002/per,1996

Yokokura, M., Terada, T., Bunai, T., Nakaizumi, K., Kato, Y., Yoshikawa, E., Futatsubashi, M., Suzuki, K., Yamasue, H., & Ouchi, Y. (2019). Alterations in serotonin transporters and body image-related cognition in anorexia nervosa. *Neuroimage: Clinical*, 23, 1-11. doi:10.1016/j.nicl.2019.101928

Zalta A., & Keel, P. K. (2006). Peer influence on bulimia symptoms in college students. *Journal of Abnormal Psychology*, 115, 185-189. doi:10.1037/0021-843X.115.1.185

Zerwas, S., & Bulik, C. M. (2011). Genetics and epigenetics of eating disorders. *Psychiatric Annals*, 41, 532-538. doi:10.3928/00485713-20111017-06

Zink, C. F. & Weinberge, D. R. (2010). Cracking the moody brain: The rewards of self-starvation. *Nature Medicine*, 16, 1382-1383. doi:10.1038/nm1210-1382