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EFFECT OF BODY IMAGE AWARENESS PROGRAM ON WEIGHT SATISFACTION IN NCAA
DIVISION I FEMALE ATHLETES

A Thesis Presented to the Graduate Faculty
University of Mississippi

In partial fulfillment of the requirement for the degree of Master's in Food and Nutrition
Services

by
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ABSTRACT

Body image and body satisfaction are consistently cited as the main causes for disordered eating patterns and clinical eating disorders. While there has been sufficient research regarding the causes leading to disordered eating behaviors, research regarding intervention and prevention programs for at-risk populations has been lacking. The purpose of this study is to investigate the efficacy of a body image awareness program on weight satisfaction in National Collegiate Athletic Association Division I female athletes. Sixteen athletes (age 19 ± 1.01 years) from five sporting teams were randomly assigned to a control group or intervention group, participated in a 6-week body awareness program. Surveys were administered at the beginning and end of the intervention period, and data was analyzed measure any differences in body satisfaction using a paired sample T-test. The percentage of athletes in the intervention group who indicated that they were satisfied with their current weight increased from 44% at the beginning of the intervention to 78% after completing the body image awareness program while the control group's satisfaction percentage decreased from 71% to 57%. On a scale of 1-6 (1=Extremely Dissatisfied; 6=Extremely Satisfied), participants in the intervention program reported an increase in weight satisfaction from 3.89 to 4.33 at the completion of the program while the control group showed no statistically significant changes. Using another rating scale for dissatisfaction (0=Not at all dissatisfied; 6=Markedly), participants in the intervention group reported a decrease in weight dissatisfaction from 1.11 to 0.67, while this number increased in the control group from 1.86 to 2.43 over the span of the intervention period.

These results provided some support of the efficacy of this program on weight satisfaction in NCAA Division I athletes, though not statistically significant.

TABLE OF CONTENTS

Abstract.....ii

Table of Contents.....iII

List of Tables.....iv

Chapter 1: Introduction.....1

Chapter 2: Literature Review.....3

 Eating Disorders.....3

 Body Image.....4

 Implications for Athletes.....7

 Conclusion.....13

Chapter 3: Methods.....16

Chapter 4: Results.....18

Chapter 5: Discussion.....24

List of References.....27

LIST OF TABLES

4.1 Comparison of mean weight satisfaction at the beginning and end of six-week intervention period.....19

4.2 Comparison of mean weight satisfaction rating at beginning and end of six-week intervention period.....20

4.3 Comparison of mean weight dissatisfaction rating at beginning and end of six-week intervention period.....21

4.4 Results of paired samples t-test for weight satisfaction and dissatisfaction before and after six-week intervention period.....22

4.5 Results of paired samples t test for weight satisfaction and dissatisfaction before and after six-week intervention period.....23

CHAPTER ONE: INTRODUCTION

According to the World Health Organization, health can be defined as “the complete state of physical, social, and mental well-being; not merely the absence of disease or infirmity” (McLester, Hardin, and Hope, 2014). Eating disorders and disordered eating have been identified as the mental health illnesses with the highest mortality rate and one of the biggest threats to overall health (Kato, Jervas, and Culpepper, 2011). As of 2008, it was estimated that seven million women in the United States had been diagnosed with an eating disorder, with a significant number of this group being female athletes (Gaines and Burnett, 2014). Participation in competitive sports and recreational exercise is widely encouraged due to its many benefits, primarily those concerning health. This includes physiological benefits, such as improved cardiovascular fitness, as well as psychological benefits affecting mood and self-esteem (Kong and Harris, 2000). Recently, research has turned its attention to the role of sports in the development of disordered eating (Petrie, Greenleaf, Reel, and Carter, 2009). According to the NCAA, in 2008, 64% of schools reported having at least one female athlete with a diagnosed eating disorder (Gaines and Burnett, 2014). This number could potentially be higher when taken into account athletes with disordered eating or subclinical symptoms that go undiagnosed such as emotional distress, low self-esteem, and body image issues. While these symptoms aren’t always as evident as a sprained ankle or physical injury, they have large implications for the overall health of the athlete (McLester, Hardin, and Hope, 2014). Undetected subclinical eating

disorders can result in symptoms such as dysfunctional social interaction, decreased physical performance, and an increase in athletic injury (Kato, Jervas, and Culpepper, 2011).

CHAPTER TWO: LITERATURE REVIEW

EATING DISORDERS

Due to the fact that many people who suffer from eating disorders do not report their behaviors or seek treatment, it is difficult to accurately predict the prevalence of eating disorders. However, research consistently finds that college aged people, females, and athletes are the most susceptible groups. Females are three times more likely to develop anorexia nervosa and bulimia nervosa than males, and eating disorders are usually diagnosed between the ages of 14 and 25 (Kong and Harris, 2000). It is hypothesized that during the transition from high school to college, females change their perception of their body as a result of differences in norms in the new setting. Evidence shows that behaviors such as binge eating and body image disturbances increased after moving away from home for college (Vohs, Heatherton, and Herrin, 1999). Recent studies estimate that the prevalence of eating disorders in college-aged females is between 4% and 22% (McLester, Hardin, and Hoppe, 2014). However, as stated previously, the prevalence of eating disorders is difficult to estimate due to underreporting and the presence of subclinical symptoms that complicate diagnoses.

Personality traits and psychological characteristics have been hypothesized to have an effect on a person's susceptibility to developing eating disorders (McLester et al., 2014). A study by Petrie et al., (2009) found that patients with diagnosed eating disorders and subclinical symptoms reported more sadness, depression, anxiety, guilt, shame, and stress than the asymptomatic control group. These findings support the thought that underlying

variables such as perfectionism, body surveillance, and self-esteem influence the likelihood of one developing an eating disorder (Petrie et al., 2009).

BODY IMAGE

Multiple sources have cited body image as the most important factor in the development of clinical eating disorders, with influence in the development of disordered eating, depression, anxiety, and poor self-esteem (Gaines and Burnett, 2014). Body image is defined as “the subjective personal interpretation of an individual’s body” (Kong and Harris, 2015), while McLester et al., (2014) defined body image as “the degree of satisfaction and dissatisfaction with the various parts or processes of the body”. Negative thoughts about body image have been identified as the leading contributing factor for eating disorders, and have a larger impact on females than males. Self esteem has also been named as a factor in the development of eating disorders and can be defined as “how much one value’s one’s self as a person ... and represents a global sense of self-worth and self-acceptance” (Gaines and Burnett, 2014). Self-esteem is closely tied to body image, and research specifically targeting female college students has found that negative body image can predict self-esteem. Furthermore, negative body image and low self-esteem positively predicts disordered eating and can lead to a clinical eating disorder and other psychological issues.

While there has been a consensus on the definition of body image, measuring this concept in research has proved difficult. Various tools have been tested and used throughout the years, making it difficult to compare results across studies. Some of the more recently developed tools include the Objectified Body Consciousness Scale, Self-

Objectification Questionnaire, Drive for Leanness Scale, and the Sociocultural Attitudes Towards Appearance Scale-3 (Varnes et al., 2013).

The most critical influence on the development of body image is that of the cultural ideals and expectations that a person adheres to (Gaines and Burnett, 2014). Social norms influence behaviors, ideologies, and even physical appearance for some. More specifically, gender norms provide guidance for males and females as to how they are expected to act, feel, think, and look (Steinfeldt, Zakrajsek, Carter, and Seinfeldt, 2011). In America, our culture perpetuates the image of thin bodies as the “norm” or standard for females. This influences females to attempt to change themselves to fit into this “unrealistic model of beauty and perfection” instead of encouraging women to embrace their own unique appearance (Christensen and Deutsch, 2015). In addition to being unrealistic, these norms change often, expecting women to change with them. Research over the years has shown that these changes are increasing the prevalence of body image dissatisfaction in women. The original study in 1973, 23% of the participants reported being dissatisfied with certain parts of their body, including their abdomen, hips, thighs, and overall weight. When replicated in the 1980’s, the number had increased to 38% and 56% in 1997. (Kato, Jervas, and Culpepper, 2011). As a result of this pressure to adhere to norms, research has shown that conformity to feminine norms is related to an increase in eating disorder symptoms to lose unwanted weight in an attempt to conform to the culturally-defined ideal body size (Gaines and Burnett, 2014) This cultural pressure has also been tied to increased prevalence of substance abuse, depression, and decreased self-esteem (Steinfeldt et al., 2011; Varnes et al., 2013). This relationship is due to the presence of body image concerns and body dissatisfaction, which are created when there are discrepancies between the ideal

body and one's current body (Kato, Jervas, and Culpepper, 2011; Kong and Harris, 2015). It is estimated that today, 50% of all females express dissatisfaction with at least one part of their body (Gaines and Burnett, 2014).

A study conducted by Torres-McGehee et al. (2011) used the Figural Stimuli Survey to illustrate the difference in college-aged females' perceived body image and desired body image. This method allowed participants to rate their own body against one of 9 female silhouettes based on BMI ranging from 18.3 to 45.4 kg/m². The results showed that most of these females perceived themselves to be heavier than their actual size, proving them to have a body image disturbance. Furthermore, the larger discrepancy between the actual and perceived sizes, the more likely the woman was to be practicing dieting behavior.

In Western society, media, including but not limited to television, radio, magazines, the internet, and expanding social media plays a huge role in the perpetuation of cultural norms and expectations. It is almost impossible to not be exposed to any of these mediums, and as a result, we are all exposed to these messages. As cultural norms change, the media messages change with them. Today, this is evidenced by the many photographs of thin models, advertisements for weight loss products, and television shows that focus on weight loss such as "The Biggest Loser". Through media, our culture sends a message that emphasizes fast weight loss, and uses highly publicized celebrities as motivation to push celebrity workout plans to motivate people to achieve an unrealistic goal for someone else's body (Kong and Harris, 2015). By using the images of these celebrities, there is a notion that they achieved their body type through exercise, which is not always accurate.

While these messages may seem subliminal to some, those who internalize the norms tend to strive to fit into these "ideal" body types. There are several theories to

explain the effects of media influence on body image. One is the sociocultural theory, which states that “societal factors strongly influence the development and maintenance of body image through the construction of an appearance-oriented culture that values, emphasizes, and displays cultural ideals of beauty and body shape” (Christensen and Deutsch, 2015). It is this theory that explains the motto “sex sells”, where the emphasis is on performance over the function or abilities of the person or product you may be advertising. Another theory is the objectification theory, which states that women tend to view themselves from a third-party perspective, making them their own biggest critic, and subjecting themselves to the stress of fitting into societal ideals in the quest for acceptance (Christensen and Deutsch, 2015).

Petrie et al. (2009) studied the internalization of sociocultural pressures in females with and without eating disorder symptoms. Overall, both groups reported that they felt more pressure to be thin from the media than the people close to them (e.g. family and friends), even though they consistently reported only low to moderate levels of internalization of the importance of attractiveness and being thin. . It was concluded that increased exposure to electronic and print media is associated with more internalization and body dissatisfaction in females with and without a history of eating disorder symptoms, thus increasing their risk of developing disordered eating patterns and/or clinical eating disorders (Petrie et al., 2009).

IMPLICATIONS FOR ATHLETES

Surprisingly, research has somewhat ignored the collegiate female athlete population regarding the topics of body satisfaction and self-esteem (McLester et al., 2014). Some literature does focus on the athletic population, however there is some discrepancy

on their definition of an “athlete”. Some studies regarding body image and eating behaviors focused on high school and college students who had a history of sports performance while others targeted recreational athletes or females who attended a gym regularly (Kong and Harris, 2015). The discrepancy in the targeted population likely explains the variability in the conclusions drawn with some researchers finding that female athletes are less likely to develop body image disturbances and eating disorders while others found this population to be more susceptible. Kong and Harris (2015) examined the potential difference in elite and recreational athletes’ risk for eating disorder and body dissatisfaction using an online questionnaire adapted from the EAT-26 eating disorder questionnaire and the Figure Rating Scale to determine possible body image disturbances. Based on the participants’ responses, it was concluded that elite competitive athletes experience more disordered eating behaviors and have more negative feelings regarding their body image than recreational athletes. Participants in the elite athlete sample stated that they were motivated to maintain leaner physiques in order to win, and 60% reported that it was pressure from their coaches that led them to maintain a lean physique (Kong and Harris, 2015).

College aged females are constantly identified as the most at-risk population for body image disturbances and eating disorders due to the pressure of being in a new environment and susceptibility to cultural norms regarding the way female bodies should look. Collegiate female athletes are under the same amount of sociocultural pressure, if not more, than their non-athletic counterparts, and are at more of a risk of developing body image disturbances and eating disorder behaviors due to the increased demand of their sport responsibilities (Kato, Jevan, and Culpepper, 2011). Over seven million females in the

United States have been diagnosed with an eating disorder, and a significant number of these cases were collegiate female athletes (Gaines and Burnett, 2014). It is estimated that 12%-57% of the collegiate athletic population has experienced disordered eating, unhealthy dieting, and distorted body image, with one third of female NCAA Division I athletes reporting attitudes and symptoms that place them at risk for an eating disorder (Kato, Jervas, and Culpepper, 2011). Kato, Jervas, and Culpepper (2011) conducted a study to determine the prevalence of disordered eating and body image dissatisfaction in NCAA female athletes. Using the EAT-26 eating attitudes questionnaire and the Multidimensional Body-Self Relations Questionnaire, the responses of 118 athletes were analyzed. Results showed that 49% of participants were in a subclinical eating disorder range based on their scores on the EAT-26, and 24.2% of participants were very dissatisfied or mostly dissatisfied with their overall appearance (Kato, Jervas, and Culpepper, 2011). In a similar study by Johnson et al., (1999), 13% of the female collegiate athletes they surveyed stated that they had been clinically diagnosed with an eating disorder in the past, 35% were labeled as at risk for anorexia nervosa, and 38% were at risk for bulimia nervosa.

Studies have named sociocultural pressures, gender norms, and the media as sources of the increased pressures placed on female collegiate athletes. As evidenced in the previous section, cultural pressures to be thin affect female athletes in the same way they do their nonathletic counterparts. However, female athletes are also pressured to be strong and athletic in order to handle the physical demands placed upon them by their respective sport. This causes an internal conflict in female athletes where they are forced to distinguish between their “social” body and their “sporting” body to fit the standards of different environments. There may be times when an athlete is satisfied with their sporting

body in an athletic setting, but dissatisfied with their social body in the same setting. On the other hand, there may be times when the athlete is satisfied with their social body in social settings, but dissatisfied with their athletic body in this same setting (Kong and Harris, 2015). Incompatibility between these two bodies results in body image dissatisfaction that puts athletes at risk for developing thoughts and behaviors that can lead to disordered eating and eating disorders (Steinfeldt et al., 2011). With this view, it is hypothesized that athletes who engage in disordered eating behaviors are motivated by the goal of attaining a body type that is deemed attractive and associated with optimal sporting performance. This is evidenced by the results of a study conducted by Petrie et al. (2009), which reported that the majority of eating disorder problems that were reported by athletes were attributed to bingeing and purging rather than focused on severe weight loss. In an athletic population, this makes sense because severe weight loss attributed to anorexia is counterproductive to the physical demands of sport. In an attempt to fit into sociocultural norms, many athletes subconsciously restrict their intake in fear that they will gain weight, and no longer have an acceptable body shape. As a result, 70% of athletes surveyed by Stewart, Plasencia, Han, Jackson, and Becker (2014) reported caloric intakes under the recommended amount required to maintain an athletic lifestyle. This puts them at risk for various nutrient deficiencies and the female athlete triad, which consists of inadequate energy intake, menstrual disorders, and decreased bone health.

Gender norms also play a large role in the pressure that leads athletes to engage in disordered eating behaviors and negative attitudes about body image. Historically, participation in sports has been viewed as masculine, while “feminine” sports were labeled as less physical, lower risk, and non-strength based (Varnes et al., 2013). When a female

expresses interest in a “masculine” sport, her heterosexuality is questioned and she is subject to being labeled a “tomboy” or lesbian (Christensen and Deutsch, 2015). Masculine traits such as aggressiveness, competitiveness, individualism, strength, and toughness are necessary to succeed in sports, however, these traits are not always accepted for females in contexts outside of athletics. As a result, female athletes are once again faced with a choice to follow the accepted norm for femininity, or be successful in athletics by internalizing masculine traits. While developing their “athletic identity”, females use male standards, while also trying to manage cultural standards for females such as attractiveness (Steinfeldt et al., 2011). Aside from personality traits, female athletes also tow the line in regard to appearance, because athletes are expected to have toned bodies, but as females, they must avoid appearing too muscular so as to not appear too masculine. Female collegiate student athletes have reported feeling more masculine than their non-athletic counterparts, and engage in compensatory behaviors such as wearing makeup and hair ribbons in an attempt to appear more feminine.

Prior to 2001, the majority of studies focused on body image in athletes concluded that athletes had more positive body image than non-athletes. However, since then, the sexual objectification of female athletes in the media has increased dramatically, fueling athlete’s internalization of sociocultural pressures to be thin and feminine (Varnes et al., 2013). While the introduction of Title IX pushed for more representation of female athletes and media coverage, this increase in visibility has turned into an increase in the sexual objectification of female sports (Kong and Harris, 2015). Publications such as the Sports Illustrated Swimsuit Edition and coverage of the 2012 Olympic Games where Leryn Franco was highly publicized despite not making the finals in her event have sent the message that

appearance is just as important, if not more, than performance and athletic ability. In an attempt to prove their athletic abilities and defend their femininity to the world, some women have risked their credibility as athletes. For example, Danika Patrick broke barriers to become the most successful female NASCAR driver, however, in her quest to be marketable and prove her femininity in a male-dominated sport, many of her advertisements are highly sexualized. As a result, she succeeded in proving her femininity, but many began to perceive her as a mediocre driver and ignored her athletic accomplishments (Christensen and Deutsch, 2015). A writer for BleacherReport.com wrote, "...it seems as though no matter how successful she may be on the track, the public cannot look past her sexualized image." Olympic gold medalist Gabby Douglas was also a victim of the media and sociocultural expectations for females throughout her performance in the 2012 Olympics. Despite winning the all-around gold medal for gymnastics, spectators constantly focused on her "nappy hair" rather than her outstanding performance proving that perceived attractiveness supersedes athletic accomplishments to some in today's society (Christensen and Deutsch, 2015). Professional tennis player Anna Kournikova is also an example of the sexualization of female athletes. It is reported that she is worth over ten million dollars in endorsements and advertisements, even though she has never won a major tournament. Ironically, her entire athletic career has been based on her looks rather than her accomplishments in her sport. Daniels (2009) conducted a study proving that these actions have negative effects on the way female athletes are viewed, and the athletes themselves. When showed photographs of sexualized female athletes and models, both athletes and non-athletes described themselves with negative statements regarding beauty rather than athletic ability or function. On the other hand, when viewing

photographs of performance athletes, females described themselves using a more positive tone and used physicality statements (Daniels, 2009). It is evident that the sexualization of female athletes in the media is detrimental to the athletes that work so hard to be the best in their sport, just to be judged on their appearance rather than their abilities. This exhibit of objectification theory causes female athletes to concentrate on their appearance and physique, rather than their talent and performance and has negative effects on their body image. Limiting the sexualization of athletes and focusing media coverage on their performance would be beneficial to the confidence and self-esteem of these athletes, and allow women to be empowered by seeing these successful athletes be praised for their talent rather than objectified (Christensen and Deutsch, 2015).

CONCLUSION

It is the responsibility of the athletic departments of NCAA institutions to promote the overall health of the athletes that represent their school. With the prevalence of disordered eating and body image concerns among collegiate female athletes on the rise, it is evident that there must be an intervention to protect the well-being of the student-athletes. Many schools use eating disorder risk assessments that are fee-based and can be time consuming and impractical (Torres-McGehee et al., 2011). A recent survey of 439 female collegiate student athletes found that while 25% reported that their athletic department provided some sort of eating disorder prevention class, only 3.9% were required to attend the program. While this is a step in the right direction, the focus should be shifted. The majority of studies before 2012 comparing athletes to non-athletes solely focused on eating disorder behaviors, not body image, which is a strong indicator for disordered eating (Varnes et. al., 2013). Torres-McGehee's (2011) study on the perceived

body image of NCAA female athletes found that many athletes reported the desire to be 10-15 pounds lighter, resulting in dissatisfaction with their current weight. A focus on programs to assess and improve body image in female student athletes would be more effective in identifying and correcting risk factors for eating disorders before they develop, and provide coping strategies for athletes who may be suffering from subclinical disorders.

Research surrounding prevention programs indicates that interactive programs are more effective in reducing risk factors associated with eating disorders such as negative body image. In these programs, participants engage in activities where they actively reject societies ideals regarding the standards of physical appearance for females. This leads to a decrease in internalization of these ideals and a decrease in body dissatisfaction and eating disorder diagnoses. These results seem promising, with athletes who participated reporting less use of diet pills and performance enhancing substances (Petrie et al., 2009; Stewart et al., 2014). As more of these prevention programs are developed, research needs to be continued to determine their effectiveness, especially in specialized populations such as collegiate female athletes (McLester et al., 2014; Stewart et al., 2014). Ultimately, these programs could be implemented in NCAA athletic departments to promote positive self-esteem and strategies to avoid eating disorders.

The purpose of this study was to determine the effect of a body image awareness program on weight satisfaction in female athletes at a NCAA Division I University. Previous research has explored the effectiveness of similar programs on the general population and female college students, but this program was specifically modified to target NCAA Division I female athletes. It is hypothesized that participation in a body image awareness program will increase weight satisfaction among NCAA Division I female student-athletes. Findings

from this study will give us information about a target population that lacks specific research about prevention programs, and may be expanded for use across the collegiate athletic population to decrease body image disturbances in female athletes, subsequently decreasing the risk of developing an eating disorder.

CHAPTER THREE: METHODS

Sixteen female student-athletes enrolled at a NCAA Division I university voluntarily participated in this study. Approval from the institutional review board was granted, and participants were recruited via handouts (flyers) and informational meetings with athletic teams at the institution. All current female athletes at the NCAA Division I university were invited to participate in the study. Participants signed an informed consent detailing the nature of the program they would be completing, and were offered up to twenty dollars in compensation for their time (\$10 for each survey completed).

Instrumentation used included a survey that had been previously validated and pilot tested in a group of female collegiate athletes. The survey included a questionnaire section to collect demographic information about age, race, living arrangements, sport participation, academic year, and self-reported anthropometric measures such as weight, height, and ideal weight. The survey also included questions about eating habits, attitudes about food, weight satisfaction, and overall body satisfaction. Responses were measured in a combination of true/false, and scaled response for questions regarding eating attitudes and level of body satisfaction.

Surveys were administered by a trained research assistant and completed in two groups (intervention and control) to which participants were randomly assigned at two separate time periods. The control group completed one survey at the beginning of the 5-week study period, and another at the end of the 5-week study period. This group did not receive any information about the program other than the general overview explained in

the recruiting meeting, and did not attend any of the program's sessions. The intervention group completed a survey at the beginning of the 5-week intervention period, followed by a 60-75- minute group meeting once a week for a total of 5 weeks, and then the survey was re-administered at the end of the intervention period. Over the course of the study period, participants in the intervention group attended and participated in informational sessions with activities to complete in-session and on their own regarding body image, self-esteem, and media pressures for females. Group meetings were held in a private room on campus to ensure confidentiality and increase group cohesion. Additionally, participants in the intervention group were invited to join a private Facebook group, where they were encouraged to view articles and media that related the topics discussed in the weekly session along with posting their own thoughts and experiences to share with the group in the time in between meetings.

Data were analyzed using a paired sample T-test to compare individual's responses to survey questions regarding weight satisfaction at the beginning and end of the study period. SPSS version 23 was used to analyze data with significance set at $\alpha=.05$.

CHAPTER FOUR: RESULTS

A total of sixteen female collegiate student athletes (age 19 ± 1.01 years) participating in one of 5 Division I National Collegiate Athletic Association sports (Rifle, Softball, Cheerleading, Women's Tennis, Track & Field) were randomly assigned to a control group ($n=7$) or intervention group ($n=9$). All participants completed a previously validated survey including questions regarding body image and body satisfaction. Responses to three questions related to weight satisfaction were analyzed for the purposes of this study.

In response to item 11 in the final section of the survey, participants responded "yes" or "no" to the question "Are you satisfied with your current weight". A paired sample t-test was performed to compare the mean response at time 1 (1 week prior to intervention period) and time 2 (1 week after intervention period). Based on the results, 56% of all participants indicated that they were satisfied with their current weight at the time of the Time 1 data collection. At the time of the Time 2 data collection, 69% of all participants indicated that they were satisfied with their current weight. Though there was a small increase in responses, no statistical difference was found in weight satisfaction from Time 1 data collection ($M=0.56$, $SD=0.51$) to Time 2 data collection ($M=0.69$, $SD=0.47$); $t(15)=-1.00$, $p=0.33$. When data was divided into intervention and control groups, 44% of participants in the intervention group indicated that they were satisfied with their current weight at survey time 1, compared to 78% at survey time 2. This increase was not found to be statistically significant from Time 1 ($M=0.44$, $SD=0.53$) to

Time 2 ((M=0.78, SD=.44); $t(8)=-2, p=0.08$), though this result is nearing significance. In the control group, 71% of participants indicated that they were satisfied with their weight at survey time 1 compared to 57% at survey time 2. A decrease in satisfaction responses was noted, but no statistical difference was found from Time 1 data collection (M=0.71, SD=0.49) to Time 2 data collection (M=.57, SD=.53); $t(6)=1, p=0.36$.

	Mean	Standard Deviation		Mean	Standard Deviation
Intervention Group	.4444	.52705	Intervention Group	.7778	.44096
Control	.7143	.48795	Control	.5714	.53452
Total	.5625	.51235	Total	.6875	.47871
(a) Time 1			(b) Time 2		

Table 4.1. Comparison of mean weight satisfaction at the beginning and end of six-week intervention period. Data are shown for the control group, intervention group, and total participants. Participants responded “yes” or “no” to the survey question “Are you satisfied with your current weight?”

In response to the item #1, Part E, participants used a 6-point Likert scale to express the degree that they were satisfied with their weight with “1” being Extremely Dissatisfied and 6 being Extremely Satisfied. At Time 1 collection, the mean response for all participants was 4 on a scale of 1 to 6. At Time 2 collection, the mean response for all participants was 3.7 out of 6. No statistical difference was found from Time 1 data collection (M=4, SD=1.37) to Time 2 data collection (M=3.67, SD=1.14); $t(15)=0, p=1$. When data was divided into intervention and control groups, the mean response for the intervention group was 3.89 out of 6 at survey collection time 1, and 4.33 out of 6 at survey

collection time 2. No statistically significant difference was found from Time 1 data collection (M=4.3, SD=1.12) to Time 2 data collection (M=3.89, SD=0.93); $t(8)=1.84$, $p=0.10$. For the control group, mean response at time 1 was 3.42 out of 6, while the mean response at time 2 was 3.57 out of 6. No statistically significant difference was observed from Time 1 data collection (M=3.42, SD=1.40) to Time 2 data collection (M=3.57, SD=1.62); $t(6)=-1.33$, $p=.23$.

	Mean	Standard Deviation		Mean	Standard Deviation
Intervention Group	3.8889	.92796	Intervention Group	4.3333	1.11803
Control	3.4286	1.39728	Control	3.5714	1.61835
Total	3.6875	1.13835	Total	4.0000	1.36626

Table 4.2. Comparison of mean weight satisfaction rating at beginning and end of six-week intervention period. Data are shown for the control group, intervention group, and total participants. Participants rated their weight satisfaction from 1 (Extremely Dissatisfied) to 6 (Extremely Satisfied).

(a) Time 1

(b) Time 2

In response to item 25, part D, participants used a 6-point Likert scale to express the frequency in which they were dissatisfied with their weight over the prior 28-day period. Answer choices ranged from 0 (Not at all dissatisfied) to 6 (Markedly). The overall mean response for Time 1 data collection was 1.4 out of 6. This remained constant for Time 2 data collection. No significant difference was found from Time 1 data collection (M=1.44, SD=2.0) to Time 2 data collection (M=1.44, SD=1.71); $t(15)=1.43$, $p=.17$. When data was divided into intervention and control groups, the mean response for the intervention group at time 1 data collection was 1.11 out of 6, while this number decreased to 0.67 out of 6 at

		Mean	Std. Dev.	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1	Weight Satisfaction (Time 1 vs Time 2)	-.125	.500	-.391	.141	-1.00	15	.333
Pair 2	Degree Dissatisfaction with Weight (Time 1 vs Time 2)	.000	1.033	-.550	.550	.000	15	1.000
Pair 3	Degree Satisfied with Weight (Time 1 vs Time 2)	.313	.873	-.153	.778	1.431	15	.173

Table 4.4. Results of paired samples t-test for weight satisfaction and dissatisfaction before and after six-week intervention period. Data are shown for all 16 participants and is not separated into control and intervention groups.

		Mean	Std. Dev.	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)	
				Lower	Upper				
Intervention	Pair 1	Weight Satisfaction (Time 1 vs Time 2)	-.333	.500	-.718	.051	-2.000	8	.081
	Pair 2	Degree of Dissatisfaction with Weight (Time 1 vs Time 2)	.444	.726	-.114	1.00	1.835	8	.104
	Pair 3	Degree Satisfied with Weight (Time 1 vs Time 2)	-.444	.726	-1.003	.114	-1.835	8	.104
Control	Pair 1	Weight Satisfaction (Time 1 vs Time 2)	.143	.378	-.207	.492	1.000	6	.356
	Pair 2	Degree of Dissatisfaction with Weight (Time 1 vs Time 2)	-.571	1.134	-1.620	.477	-1.333	6	.231
	Pair 3	Degree Satisfied with Weight (Time 1 vs Time 2)	-.143	1.069	-1.131	.846	-.354	6	.736

Table 4.5. Results of paired samples t test for weight satisfaction and dissatisfaction before and after six-week intervention period. Data are shown for all 16 participants and is separated into control and intervention groups.

CHAPTER FIVE: DISCUSSION

EFFECTIVENESS OF BODY IMAGE AWARENESS PROGRAM

Though the results showed no statistically significant changes over the six-week intervention period, slight changes were noted leaning toward suggesting the efficacy of this program in improving weight satisfaction and body image. The percentage of participants who indicated that they were satisfied with their current weight increased by 30% during the intervention period for those who completed the body image awareness program, while this percentage decreased by 15% in the control group who did not participate. The p-value for the data collected for the first survey question “Are you satisfied with your weight?” was determined to be 0.08 with the alpha value set at 0.05. It is to be noted that while this value may be interpreted as too high to be considered statistically significant, this value is extremely close to the point of significance. Additionally, the 6-point satisfaction rating for the intervention group increased by .5 point for the intervention group, while there was no change in the control group. These findings suggest that participation in a body image awareness program may be effective in increasing body image and weight satisfaction in Division I National Collegiate Athletic Association female athletes with some modification to the recruiting process and program delivery to increase statistical significance.

CLINICAL IMPLICATIONS

As stated previously, college aged females and competitive athletes have consistently been named as high-risk populations for eating disorders. While assessment

tools such as the EAT-26 and Multidimensional Body-Self Relations Questionnaire have been researched and proven effective in identifying eating disorder risk, minimal research has been published assessing the effectiveness of intervention programs to decrease eating disorder risk. With body image being a large contributor to eating disorder risk, intervention strategies that focus on improving body image and decreasing body image disturbances would be hypothesized to be more effective in decreasing the prevalence of disordered eating and clinical eating disorders in at-risk populations.

The purpose of this study was to examine the efficacy of a body image awareness program on weight satisfaction in Division I collegiate female athletes. We hypothesized that participation in a six-week intervention program focusing on body image awareness and body positivity for female athletes would increase weight satisfaction in this population and indirectly decrease eating disorder symptoms and risk. Results did not fully support this hypothesis, however, there are some trends in the data that suggest that this hypothesis could be proven with some changes to the research design. Data showed some increases in weight satisfaction and weight satisfaction rating in the group of athletes who participated in the intervention program while these factors decreased in the control group who received no treatment. Additionally, results showed decreases in weight dissatisfaction in the intervention group while there was a small increase in weight dissatisfaction among participants who did not receive any treatment. We hypothesize that the small number of participants that were recruited could be responsible for the lack of statistically significant findings.

LIMITATIONS

One of the major limitations of this study was the small size. Since the study focused on female athletes, considerations had to be made for the number of female athletes enrolled at the university, along with time constraints associated with which sports were in season and which sports were out of season. This limited the recruiting pool to only about 33% of the total number of female athletes. Additionally, time was a concern among potential participants who were interested. Practice schedules, class schedules, and other extra-curricular commitments (sorority involvement, religious groups, etc.) were reasons cited by interested athletes for their non-involvement.

Another potential limitation was the short intervention time of the program. Over six weeks, participants spent nine hours of time involved in the body image awareness intervention program. This design was due to the time constraints of participants and availability of participants and program leaders. The lack of statistically significant data could be due to the small amount of time participants spent actively involved in the intervention group. It is hypothesized that statistically significant changes would be recorded should the intervention program time be increased to 12+ weeks.

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