



MSU Graduate Theses

Fall 2021

Body Image Among High School and College Female Athletes

Mercedes A. Robinson

Missouri State University, Mercedes146@live.missouristate.edu

As with any intellectual project, the content and views expressed in this thesis may be considered objectionable by some readers. However, this student-scholar's work has been judged to have academic value by the student's thesis committee members trained in the discipline. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

Follow this and additional works at: <https://bearworks.missouristate.edu/theses>



Part of the [Clinical Psychology Commons](#), and the [Health Psychology Commons](#)

Recommended Citation

Robinson, Mercedes A., "Body Image Among High School and College Female Athletes" (2021). *MSU Graduate Theses*. 3701.

<https://bearworks.missouristate.edu/theses/3701>

This article or document was made available through BearWorks, the institutional repository of Missouri State University. The work contained in it may be protected by copyright and require permission of the copyright holder for reuse or redistribution.

For more information, please contact [BearWorks@library.missouristate.edu](mailto: BearWorks@library.missouristate.edu).

BODY IMAGE AMONG HIGH SCHOOL AND COLLEGE FEMALE ATHLETES

A Master's Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Psychology, Clinical

By

Mercedes A. Robinson

December 2021

BODY IMAGE AMONG HIGH SCHOOL AND COLLEGE FEMALE ATHLETES

Psychology, Clinical

Missouri State University, December 2021

Master of Science

Mercedes A. Robinson

ABSTRACT

This study examined body image among female high school athletes and college athletes across different sports. Athletes participating in track and field, tennis, cross country, dance, cheer, softball, golf, basketball, soccer, and volleyball completed self-report questionnaires assessing various components of body image including the Body Shape Questionnaire (BSQ), Sociocultural Attitudes Towards Appearances Questionnaire (SATAQ-4), and an edited version of the CHEER Survey. Responses on the questionnaires were analyzed to evaluate differences between high school and college athletes. No differences were found between high school and college athletes on measures of shape/weight concerns, sociocultural pressures for thinness, or internalization of the thin ideal. However, college female athletes reported that they experience more weight-related pressures from their sport.

KEYWORDS: athletes, body image, females, high school, college

BODY IMAGE AMONG HIGH SCHOOL AND COLLEGE FEMALE ATHLETES

By

Mercedes A. Robinson

A Master's Thesis
Submitted to the Graduate College
Of Missouri State University
In Partial Fulfillment of the Requirements
For the Degree of Master of Science, Psychology, Clinical

December 2021

Approved:

Brooke Whisenhunt, Ph.D., Thesis Committee Chair

Danae Hudson, Ph.D., Committee Member

Ann Rost, Ph.D., Committee Member

Julie Masterson, Ph.D., Dean of the Graduate College

In the interest of academic freedom and the principle of free speech, approval of this thesis indicates the format is acceptable and meets the academic criteria for the discipline as determined by the faculty that constitute the thesis committee. The content and views expressed in this thesis are those of the student-scholar and are not endorsed by Missouri State University, its Graduate College, or its employees.

TABLE OF CONTENTS

Introduction	Page 1
Literature Review	Page 2
Body Dissatisfaction in Women	Page 2
Developmental Changes in Body Image	Page 2
Body Image in Female Athletes	Page 3
Hypothesis	Page 5
Methods	Page 7
Participants	Page 7
Measures	Page 8
Body Shape Questionnaire	Page 8
Social Attitudes Towards Appearance Questionnaire-4	Page 9
CHEER-Revised	Page 9
Procedure	Page 10
Results	Page 11
Descriptive Information	Page 11
Differences Between High School and College Athletes	Page 11
Discussion	Page 13
Conclusion	Page 13
Limitations	Page 14
References	Page 16
Appendix: IRB Approval	Page 19

LIST OF TABLES

Table 1. Distribution of Sport Participation Among College and High School Athletes	Page 8
Table 2. Mean Values for Survey Questionnaires	Page 12

INTRODUCTION

Body image is defined as the thoughts, feelings, and perception of one's body (Grogan, 2006). The majority of body image research has been conducted with females, in large part due to the higher rates of eating disorder symptoms among women. Women are more likely to report weight dissatisfaction, dieting for weight control, and the use of purging than boys or men (Striegel-Moore et al., 2009). Although male body image has also been studied, there appear to be gender differences in ideal body size/shape (Feingold & Mazzella, 1998), with women experiencing more pressures for thinness and men experiencing more pressures for muscularity (Silberstein, Striegel-Moore, Timko, & Rodin, 1988). Certain groups of women have been identified as being more at-risk for possible body image disturbances, including female athletes (Reel, Jones, Ramirez, & Waxman, 2010). However, little is known about the progression of body image concerns among female athletes over time. The purpose of the current study was to evaluate differences in body image between high school and college female athletes.

LITERATURE REVIEW

Body Dissatisfaction in Women

Body image is comprised of cognitive, affective, and behavioral components. Body dissatisfaction is one cognitive component that has been widely studied (Feingold & Mazzella 1998). Body dissatisfaction has been defined as the discrepancy between perceived body size/shape and actual body size/shape (Fortes, Neves, Filgueiras, Almeida, & Ferreira, 2013). Body dissatisfaction among women in the United States is found across all ages, although there may be a decrease in dissatisfaction among women after they reach middle age (Runfola et al., 2013). Polivy and Herman (2004) conducted research on sociocultural pressures related to body shape/size directed toward women and found that exposure to images idealized by the media can lead to low self-esteem, unhealthy eating habits, and even eating disorder symptoms. In a different study about body image after viewing thin media images women had a more negative view of themselves compared to when they viewed images of plus-size, average size women, houses, or cars (Groesz, Levine, & Murnen, 2002).

Developmental Changes in Body Image

Research examining body image over the lifespan has generally focused on examining changes from adolescence to older adulthood. In one cross-sectional study, Frost and McKelvie (2004) found that there was a decrease in high school students' self-esteem compared to students in college and elementary school. This study also found that there was a positive correlation between self-esteem and body satisfaction.

A longitudinal study of men and women in Australia found that both groups experienced body dissatisfaction. Overall, women were more dissatisfied than men, but both groups described feelings of body dissatisfaction as being the norm (Mellor, Fuller-Tyszkiewicz, McCabe, & Ricciardelli, 2010).

Older women typically accept their bodies more readily compared to younger women, a finding that is somewhat surprising for women who are from a Western cultural background which values youth (Tiggemann, 2015). Researchers suggest that the focus of older women in terms of body image may shift toward valuing the functionality of their body, acceptance of the inevitable process of aging, as well as other inner authentic qualities such as accomplishments they have attained over the course of their life (Tiggemann, 2015).

Body Image in Female Athletes

Anderson, Petrie, and Neumann (2012) measured dietary restraint, sport pressures, and body dissatisfaction among collegiate female swimmers, divers, and gymnasts over the course of a five month season. These variables were relatively stable throughout the season, suggesting that these female athletes train and compete in an environment where they are consistently focused on their bodies, their eating, and their weight. They also found that perceived pressure from the sport at the beginning of the season predicted levels of body dissatisfaction at the end of the season. Therefore, athletes who experienced weight pressure and a focus on thinness in their sport ended up having increasing body dissatisfaction over the course of an athletic season. This finding remained true even when they controlled for athletes' level of body dissatisfaction at the beginning of the season. This study highlights the importance of the athletic environment (e.g.,

scrutiny by coaches and teammates regarding body weight and appearance) on athletes' perceptions of their bodies and their overall body satisfaction.

Reel and Gill (1996) report some differences in eating behaviors between high school and college cheerleaders. High school cheerleaders had higher scores than college cheerleaders on measures of maturity fears, bulimia, and ineffectiveness. However, these findings could be due to developmental differences. High school athletes have higher rates of eating disorders, increased feelings of a lack of control in their life, and experience bodily changes as growth slows. The cheerleaders most commonly reported that their revealing team uniforms were associated with concerns about their body image. A total of 53.5% of college cheerleaders strongly agreed or agreed with the statement "my cheerleading team uniform makes me conscious of my bodily appearance" whereas 60.7% of high school cheerleaders strongly agreed or agreed with the statement (Reel & Gill, 1996). Another study showed a difference between athletes participating in lean (cheer) versus non-lean sports (basketball) such that those who participated in a lean sport had higher body dissatisfaction regardless of participation level (Kong & Harris, 2015).

Although previous studies have generally found similar results, Kantanista et al. (2018) found that elite female athletes participating in aesthetic sports had more positive body image than those who participated in non-aesthetic sports. Aesthetic sports consist of sports that are "judged" (as opposed to using points scored or times to determine the winner) and include a revealing uniform (e.g., figure, skating gymnastics). Non-aesthetic sports include basketball, soccer, golf, and others. Kantanista et al. (2018) found that type of sport, BMI, age, and level of competition were all significant predictors of body image among these women. They noted that athletes who competed at an international level versus the national level had a more positive

view of their body image. The authors speculate that this difference was due to the differing BMIs of the females in the two groups. The females participating in aesthetic sports had a lower BMI than those who were participating in non-aesthetic sports. They also found that younger athletes had a higher negative perception of their bodies compared to athletes who were older, especially those athletes in highly competitive sports environments. They hypothesized that increased experience was associated with improved perception of their bodies.

Garner and Garfinkel (1980) found that anorexia nervosa and milder variants of the disorder were overrepresented in the modeling and dance population, providing support for the hypothesis that those populations with an increased focus and variation of body thinness are also at an increased risk for anorexia and other related eating problems. Female athletes with disordered eating considered themselves to weigh more than their actual weight compared to those who did not have disordered eating despite being no significant difference in their weight (De Bruin, Oudejans, Bakker, & Woertman, 2011). In a study conducted by Fortes et al. (2013), female athletes participating in aesthetic sports (e.g., artistic gymnastics, synchronized swimming, and high diving) showed a relationship between psychological commitment to exercise, body dissatisfaction, and risky eating behaviors such that those who were more dissatisfied with their body image or showed signs of excessive psychological commitment were more susceptible to an eating disorder.

Hypothesis

The current study examined body image in high school and college female athletes. No previous research has examined body image in female athletes from a developmental perspective. Due to the nature of the data collection, this study only focused on athletes who

participated in school-sponsored athletic programs. This survey did not assess club sport participation at the high school or collegiate level but did include members of the cheerleading and dance squads at both the college and the high school level. Most prior studies have focused on comparing athletes and non-athletes in terms of body image or comparing the impact of type of sport (e.g., aesthetic or non-aesthetic) on body image. The purpose of the current study was to evaluate developmental changes in body image from high school to college among female athletes. We hypothesized that collegiate female athletes would report more weight-related pressures in their sport, but that high school athletes would have higher levels of body dissatisfaction. Based on the findings of Kantanista et al. (2018), the collegiate athletes were predicted to be more physically fit due to competing at a higher level. The higher fitness level was predicted to be associated with lower levels of body dissatisfaction compared to high school athletes. However, the higher level of competition was also predicted to be associated with increased weight pressures from the sport.

METHODS

Participants

A total of 96 participants completed the study. However, only 87 responses were used in the analyses. Data from nine participants was not evaluated because of duplicate answers and/or total completion time that was too short (e.g., the individual did not spend enough time completing the questionnaires to have been able to read and respond thoughtfully). To be included in the analysis, participants had to spend at least 232 seconds completing the questionnaires. This cutoff time was determined by multiple researchers completing the survey as quickly as possible to determine the shortest amount of time someone could spend while answering all of the questions. Of these 87 responses, 25 were from high school female athletes and 62 were from college female athletes. The participants were represented by 10 different sports. The sports included basketball, soccer, tennis, golf, softball, dance, cheer, cross country, track and field, and volleyball. The participants were 88.5% White, 9.2% Black, and 2.3% Asian. The mean age of high school participants was 16.28 while the mean age of college participants was 20.13. There were no differences between groups on BMI ($M = 21.37$ for high school athletes; $M = 22.44$ for college athletes). The majority of high school participants were recruited using the email addresses and mobile numbers that were provided by their parent/guardian, and the college athletes received an email with a survey link that took them to the Qualtrics survey. See Table 1 for a summary of the distribution of participants according to age and sport.

Table 1. Distribution of Sport Participation Among College and High School Athletes

	College		High School	
	n	%	n	%
Volleyball	4	6.45	3	12.00
Track and Field	11	17.74	3	12.00
Tennis	5	8.06	2	8.00
Softball	10	16.13	5	20.00
Soccer	10	16.13	7	28.00
Dance	5	8.06	1	4.00
Golf	2	3.23	1	4.00
Cross country	7	11.29	1	4.00
Basketball	3	4.84	2	8.00
Cheer	5	8.06	0	0

Measures

Participants completed a series of questionnaires selected to assess demographic information and various aspects of body image. The questionnaires assessing body image were the Body Shape Questionnaire (BSQ-34), the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) and the CHEER-Revised survey. All of these measures were self-report questionnaires.

Body Shape Questionnaire

The BSQ-34 consists of 34 items developed by Cooper, Taylor, Cooper, and Fairbum (1987). These questions are answered on a Likert-type scale ranging from one (“strongly disagree”) to five (“strongly agree”). A score of less than 80 is classified as “no concern with shape,” 80 to 110 “mild concern with shape,” 111 to 140 “moderate concern with shape,” and over 140 “marked concern with shape” (Nergiz-Unal, Bilgic, & Yabanci, 2014). The reliability coefficient of the BSQ in the current sample was excellent (Cronbach’s alpha = .97). Research by Rosen, Jones, Ramirez, and Waxman (1996) found that the BSQ-34 was a reliable and valid measure for the assessment of weight and shape concerns in women.

Sociocultural Attitudes Towards Appearance Questionnaire-4

The SATAQ-4 is a self-report measure examining endorsement of appearance ideals and experience of appearance pressures (Schaefer et al., 2015). Each item is answered using a Likert-type scale from one (“never”) to seven (“always”). The SATAQ-4 has a total of 22 questions and five subscales including (1) Internalization: Thin/Low Body Fat, (2) Internalization: Muscular/Athletic, (3) Pressures: Family, (4) Pressures: Peers, and (5) Pressures: Media. Schaefer et al. (2015) demonstrated preliminary support for both the reliability and validity of the SATAQ-4 for both men and women. There was a positive relationship between scores on the two subscales and the three Pressures subscales and eating disorder symptoms. Cronbach’s alpha in the current sample was good (.90).

CHEER-Revised

The CHEER questionnaire is a self-report measure originally developed by Reel and Gill (1996). The original CHEER questionnaire was developed to assess the pressures of weight in

cheerleading and specific pressures that cheerleaders may experience. Ten of the thirteen questions from the original “CHEER” survey were edited so that they were applicable to sports in general (as opposed to cheerleading specifically) and an additional two questions were created and added to the survey. The new edited measure is referred to as the CHEER-Revised. For example, the original item “my squad has a weight requirement to try out” was edited to state, “my team has a weight requirement to try out/be on the team.” Each of the five items on the CHEER-Revised scales were answered using a Likert-type scale from one (“strongly disagree”) to five (“strongly agree”). Reliability in the current sample was adequate (Cronbach’s alpha = .84).

Procedure

Prior to conducting the research, approval was granted by the university’s Institutional Review Board (IRB- FY2021-276, Approval Date: March 24, 2021; See Appendix). Before sending the survey link to any high school student, a completed consent form from a parent was obtained. The high school participants received a Qualtrics link either via email or by text message to provide consent and complete the questionnaires. The college athletes received the Qualtrics link via email. The participants first completed a demographic questionnaire which included questions about age, height, weight, race/ethnicity and a series of sports-specific questions (e.g., primary/preferred sport, club sport participation for high school athletes, and plans to play in college for high school athletes). After participants completed the demographic information, they completed the BSQ-34, SATAQ-4, and the CHEER-Revised survey.

RESULTS

Descriptive Information

The age for high school athletes ranged from 15 to 19 years ($M = 16.28$) while the age for college athletes ranged from 18 to 23 years ($M = 20.13$). The majority of the participants were White (88.5%) with a small percentage of Black (9.2%) and Asian (2.3%) participants. The BMI, which was calculated from self-reported height and weight, ranged from 17.50 to 31.2 for all but one of our participants. One high school athlete reported a BMI of 45.20 which was excluded from analysis comparing BMI between groups because it was an outlier. There were seven volleyball players (8.0%), 14 track and field participants (16.1%), seven tennis players (8.0%), 15 softball players (17.2%), 17 soccer players (19.5%), six dancers (6.9%), three golfers (3.4%), eight cross country participants (9.2%), five basketball players (5.7%), and five cheer participants (5.7%).

Differences Between High School and College Athletes

A series of independent-samples t-tests were conducted to compare body dissatisfaction and weight pressures in high school and college female athletes. SATAQ-4 total scores did not differ between high school ($M = 68.32$, $SD = 15.16$) and college athletes ($M = 66.72$, $SD = 14.16$); $t(85) = -1.45$, $p = .642$. This finding suggests that high school and college female athletes had similar levels of endorsement of appearance ideals and experience of appearance pressures. In addition, none of the five subscales of the SATAQ-4 differed significantly between high school and college athletes (see Table 2 for a summary of the SATAQ-4 results). In addition, BSQ-34 total scores did not differ between high school ($M = 98.82$, $SD = 35.78$) and college

athletes ($M = 92.31$, $SD = 30.01$); $t(78) = .821$, $p = .414$. The BSQ score among both groups fell into the “mild concern about shape” category. Scores on the CHEER-Revised scale were significantly lower for high school athletes ($M = 28.77$, $SD = 11.08$) than college athletes ($M = 34.25$, $SD = 8.67$); $t(77) = -2.32$, $p = .023$. These results suggest that college female athletes experience increased pressures related to weight, shape, and appearance in their sports compared to high school female athletes.

Table 2. Mean Values for Survey Questionnaires

	High School Athletes		College Athletes		<i>t</i> -test
	M	SD	M	SD	
SATAQ Total	68.32	15.16	66.72	14.16	.466
SATATQ Internal body fat subscale	17.84	4.36	18.05	4.31	-.204
SATAQ Internal body athletic	17.48	3.50	18.87	4.00	-1.513
SATAQ family	8.92	4.81	7.57	4.17	1.299
SATAQ peer	8.88	4.40	7.26	3.72	1.735
SATAQ media	15.20	4.28	14.97	4.93	.207
BSQ-34	98.82	35.78	92.31	30.01	.821
CHEER- Revised	28.77	11.08	34.25	8.67	-2.324*

* $p < .05$; Sociocultural Attitudes Towards Appearance = SATAQ; Body Shape Questionnaire = BSQ

DISCUSSION

Conclusion

No previous research has directly examined differences in body image among high school and college female athletes. The current study served as a pilot study evaluating a few key body image components among a relatively small sample of high school and college female athletes.

The current findings suggest that high school and college female athletes have similar levels of social pressures, internalization of the thin ideal, and shape/weight concerns. Interestingly, differences emerged when examining weight and shape pressures that were sport specific. The CHEER-Revised scores were higher among college female athletes than high school athletes. This measure assesses the importance of weigh-ins, pressures for thinness from the coach, pressures for thinness from teammates, body consciousness related to uniforms, and the perception that weighing less is related to better performance.

On the one hand, it is encouraging that both high school and college female athletes in the current sample reported only “mild concern with shape” according to the BSQ (high school $M = 98.82$ and college $M = 92.31$). Our sample size was not large enough to compare across sports, but previous research would suggest that females participating in aesthetic sports would have higher levels of shape/weight concerns (Steinfeldt, Zakrajsek, Bodey, Middendorf, & Martin, 2013). Despite having only mild concern with shape, the college female athletes in this sample did describe experiencing more weight-related sport pressures. These differences were primarily driven by answers to the following three CHEER-Revised questions: “My teammates notice if I put on weight” (college $M = 2.81$; high school $M = 1.77$), “My team participates in a

weight-training program during the season” (college $M = 3.95$; high school $M = 2.82$), and “My coach notices if I put on weight” (college $M = 2.72$; high school $M = 1.82$). While participation in a weight training program is not problematic, the college athletes agreed more strongly that their teammates and coach notice if they gain weight. This finding suggests that college athletes feel that their body weight is more scrutinized than high school athletes. It is also possible that because high school athletes are often still growing, the notion of “weight gain” may be perceived differently in this younger group. Previous studies have compared body dissatisfaction among athletes and non-athletes but not at the developmental level which made this study unique. Studies have also compared aesthetic and non-aesthetic sports and the impact of type of sport on the development of body dissatisfaction. These results represent the first finding related to developmental changes of female athletes from high school to college.

Limitations

There were several limitations of this study. First, the high school data was collected from single private Catholic high school. This sample was primarily White and affluent. Therefore, the data may not be applicable to other high school populations with more diverse student characteristics. A variety of variables that may impact body image among athletes were not considered. For example, injury status was not evaluated although injuries can impact playing time and overall activity. Body dissatisfaction as a result of injury-related inactivity may affect athletes. In addition, sport participation motivation was not evaluated. While some students in high school participate in sports to be competitive and to potentially earn a college scholarship, others participate for other reasons such as comradery. Finally, there may be crossover effects from playing multiple sports in high school which is unlikely in college. It is

also important to note that this survey was conducted during the spring of 2021 at the height of the COVID-19 pandemic which may have had an unknown impact on participants.

The current study consisted of a small sample. Future work should incorporate a larger sample from across a diverse group of high schools and colleges. Despite these limitations, the present study provides a preliminary developmental understanding of body image concerns among high school and college female athletes.

REFERENCES

- Anderson, C. M., Petrie, T. A., & Neumann, C. S. (2012). Effects of sport pressures on female collegiate athletes: A preliminary longitudinal investigation. *Sport, Exercise, and Performance Psychology, 1*(2), 120–134. <https://doi.org/10.1037/a0026587>
- Cooper, P. J., Taylor, M. J., Cooper, Z., & Fairbum, C. G. (1987). The development and validation of the body shape questionnaire. *International Journal of Eating Disorders, 6*(4), 485-494. [https://doi.org/10.1002/1098-108X\(198707\)6:4<485::AID-EAT2260060405>3.0.CO;2-O](https://doi.org/10.1002/1098-108X(198707)6:4<485::AID-EAT2260060405>3.0.CO;2-O)
- De Bruin, A. P., Oudejans, R. R.D., 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*(3) 201-215. <https://doi.org/10.1002/erv.1112>
- Feingold, A., & Mazzella, R. (1998). Gender differences in body image are increasing. *Psychological Science, 9*(3), 190-195. <https://doi.org/10.1111/1467-9280.00036>
- Fortes, L. D. S., Neves, C. M., Filgueiras, J. F., Almeida, S. S., & Ferreira, M. E. C. (2013). Body dissatisfaction, psychological commitment to exercise and eating behavior in young athletes from aesthetic sports. *Revista Brasileira de Cineantropometria & Desempenho Humano, 15*, 695-704. <https://doi.org/10.5007/1980-0037.2013v15n6p695>
- Frost, J., & McKelvie, S. (2004). Self-esteem and body satisfaction in male and female elementary school, high school, and university students. *Sex Roles, 51*(1), 45-54. <https://doi.org/10.1023/B:SERS.0000032308.90104.c6>
- Garner, D. M., & Garfinkel, P. E. (1980). Socio-cultural factors in the development of anorexia nervosa. *Psychological Medicine, 10*(4), 647-656. <https://doi.org/10.1017/S0033291700054945>
- Groesz, L. M., Levine, M. P., & Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders, 31*(1), 1-16. <https://doi.org/10.1002/eat.10005>
- Grogan, S. (2006). Body image and health: Contemporary perspectives. *Journal of Health Psychology, 11*(4), 523-530. <https://doi.org/10.1177/1359105306065013>
- Kantanista, A., Glapa, A., Banio, A., Firek, W., Ingarden, A., Malchrowicz-Moško, E., Markiewicz, P., Płoszaj, K., Ingarden, M., & Maćkowiak, Z. (2018). Body image of highly trained female athletes engaged in different types of sport. *BioMed research international, 2018*. <https://doi.org/10.1155/2018/6835751>

- 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*(2), 141-160. <https://doi.org/10.1080/00223980.2013.846291>
- Mellor, D., Fuller-Tyszkiewicz, M., McCabe, M. P., & Ricciardelli, L. A. (2010). Body image and self-esteem across age and gender: A short-term longitudinal study. *Sex Roles, 63*(9), 672-681. <https://doi.org/10.1007/s11199-010-9813-3>
- Nergiz-Unal, R., Bilgiç, P., & Yabancı, N. (2014). High tendency to the substantial concern on body shape and eating disorders risk of the students majoring nutrition or sport sciences. *Nutrition Research and Practice, 8*(6), 713–718. <https://doi.org/10.4162/nrp.2014.8.6.713>
- Polivy, J., & Herman, C. P. (2004). Sociocultural idealization of thin female body shapes: An introduction to the special issue on body image and eating disorders. *Journal of Social and Clinical Psychology, 23*(1), 1-6. <https://doi.org/10.1521/jscp.23.1.1.26986>
- Reel, J. J., & Gill, D. L. (1996). Psychosocial factors related to eating disorders among high school and college female cheerleaders. *The Sport Psychologist, 10*(2), 195-206. <https://doi.org/10.1123/tsp.10.2.195>
- Reel, J. J., SooHoo, S., Petrie, T. A., Greenleaf, C., & Carter, J. E. (2010). Slimming down for sport: Developing a weight pressures in sport measure for female athletes. *Journal of Clinical Sport Psychology, 4*(2), 99-111. <https://doi.org/10.1123/jcsp.4.2.99>
- Rosen, J. C., Jones, A., Ramirez, E., & Waxman, S. (1996). Body shape questionnaire: Studies of validity and reliability. *International Journal of Eating Disorders, 20*(3), 315-319. [https://doi.org/10.1002/\(SICI\)1098-108X\(199611\)20:3<315::AID-EAT11>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1098-108X(199611)20:3<315::AID-EAT11>3.0.CO;2-Z)
- Runfola, C. D., Von Holle, A., Trace, S. E., Brownley, K. A., Hofmeier, S. M., Gagne, D. A., & Bulik, C. M. (2013). Body dissatisfaction in women across the lifespan: Results of the UNC-SELF and gender and body image (GABI) studies. *European Eating Disorders Review, 21*(1), 52-59. <https://doi.org/10.1002/erv.2201>
- Schaefer, L. M., Burke, N. L., Thompson, J. K., Dedrick, R. F., Heinberg, L. J., Calogero, R. M., Bardone-Cone, A. M., Higgins, M. K., Frederick, D. A., Kelly, M., Anderson, D. A., Schaumberg, K., Nerini, A., Stefanile, C., Dittmar, H., Clark, E., Adams, Z., Macwana, S., Klump, K. L., . . . & Swami, V. (2015). Development and validation of the sociocultural attitudes towards appearance questionnaire-4 (SATAQ-4). *Psychological Assessment, 27*(1), 54–67. <https://doi.org/10.1037/a0037917>

- Silberstein, L.R., Striegel-Moore, R. H., Timko, C., & Rodin, J. (1988). Behavioral and psychological implications of body dissatisfaction: Do men and women differ? *Sex Roles, 19*(3-4), 219-232. <https://doi.org/10.1007/BF00290156>
- Striegel-Moore, R. H., Rosselli, F., Perrin, N., DeBar, L., Wilson, G. T., May, A., & Kraemer, H. C. (2009). Gender difference in the prevalence of eating disorder symptoms. *International Journal of Eating Disorders, 42*(5), 471-474. <https://doi.org/10.1002/eat.20625>
- Steinfeldt, J. A., Zakrajsek, R. A., Bodey, K. J., Middendorf, K. G., & Martin, S. B. (2013). Role of uniforms in the body image of female college volleyball players. *The Counseling Psychologist, 41*(5), 791-819. <https://doi.org/10.1177/0011000012457218>
- Tiggemann, M. (2015). Considerations of positive body image across various social identities and special populations. *Body Image, 14*, 168-176. <https://doi.org/10.1016/j.bodyim.2015.03.002>

APPENDIX: IRB APPROVAL



Missouri State.
U N I V E R S I T Y

To:

Brooke Whisenhunt
Psychology
Danae Hudson

RE: Notice of IRB Approval

Submission Type: Initial

Study #: IRB-FY2021-276

Study Title: Comparing Body Image in Female High School and College Athletes Across Different Sports.

Decision: Approved

Approval Date: March 24, 2021

This submission has been approved by the Missouri State University Institutional Review Board (IRB). You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects or others occur it must be reported immediately to the IRB.

This study was reviewed in accordance with federal regulations governing human subjects research, including those found at 45 CFR 46 (Common Rule), 45 CFR 164 (HIPAA), 21 CFR 50 & 56 (FDA), and 40 CFR 26 (EPA), where applicable.

Researchers Associated with this Project:

PI: Brooke Whisenhunt

Co-PI: Danae Hudson

Primary Contact: Mercedes Robinson

Other Investigators: Savannah Sneed, Makenna Ricketts, Brianna Eisenbarth, Riley Brady, Caitlyn Allen