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## Never Enough: Assessing Body Image in College-Age Males

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Never Enough: Assessing Body Image in College-Age Males

By

Austin Coale

Submitted in Partial Fulfillment  
Of the Requirements for  
Graduation with Honors from the  
South Carolina Honors College

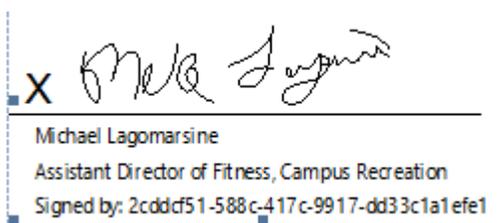
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### **Abstract**

Body image issues are a prevalent issue among college-age students. College-age males specifically suffer from societal pressures of masculinity which manifest in different body image threats and coping strategies that focus on over-exercising and increased muscularity. This study aims to look at two distinct athletic populations of males at the University of South Carolina: yoga and weightlifting. An eleven item survey interrogated three types of coping strategies: avoidance, appearance fixing, and positive rational acceptance. Thirty males were surveyed and found that males participating in yoga reported rates of appearance fixing that were statistically significantly higher than those in the weightlifting groups. A qualitative analysis found that both groups participated in multiple workouts a day at the same rate and that both groups participated in similar athletic activities outside of their primary athletic group.

### **Never Enough: Assessing Body Image in College-Age Males**

It has been established consistently and with many studies that college students experience higher-than-average levels of stress with stressors coming interpersonally, academically, and from the university environment (Eisenbarth, 2019; Karaman, 2019; Ross, 2007; Vidic & Cherup, 2019). These stressors are dealt with differently on a personal level based on several factors including level of academic stress, achievement and motivation scores, life satisfaction ratings, and the presence of an internal locus of control (Karaman, 2019). Locus of control is an important factor that was found to have variability from person to person where an internal locus of control acted as a positive and protecting factor against the effects of stress. It was also noted that college students face significantly different stressors and situations than other groups, even other groups of the same age (Ross, 2007). The high stress found in college students was linked to coping behaviors, both positive and negative (Eisenbarth, 2019). These negative coping strategies, including substance misuse, suicide ideation, and stress-related mental health issues, impact academic success and are viewed as a symptom of the greater issue of stress in college rather than issues that should be viewed individually (Eisenbarth, 2019). Interestingly, it was found that genders respond and cope with stress in different ways with their coping mechanisms indicating different approaches should be taken to address stress in these different subsections of the college population (Eisenbarth, 2019; Karaman, 2019). It was found that college males deal with stress by behavioral disengagement while college females coped through denial (Eisenbarth, 2019).

Several studies have aimed to link yoga to stress relief and a reduction of many mental health indicators of stress including anxiety and depression. Specifically, a 2011 study found that exercise-based yoga and mindfulness-based yoga provided different outcomes with the

mindfulness group seeing much greater improvement in wellness related factors (Smith et al., 2011). From a biomechanical perspective, significant participation (5 weeks or more) in yoga has been showed to reduce adrenomedullin, a biomarker related to diseases like obesity as well as psychological problems like excess stress (Daukantaitė, 2018). While many of these subjects focus on the adult post-college population or specific school-related populations like medical students, a few studies have been done that have been undertaken with the college population in mind. One such study found that mindfulness-based activities have been linked to improvement with lower scores on measures of stress and higher scores on measures of resilience and self-efficacy (Vidic & Cherup, 2019). These scores are interesting not only for their stress-mediating factors but also for their impact on resilience and self-efficacy, two factors that are important for measuring and interrogating a specific factor of stress: body image.

Despite the fact that the media and social programs have recently invested interest in the topic of body image among college students, body image and body image issues have been present in the college population for years (Cash, Morrow, Perry, and Hrabosky, 2004). Specifically, a study that interrogated body image reports from 1981 to 2001 found that body image rates among college women had actually fallen in the 1990s (Cash, Morrow, Perry, and Hrabosky, 2004). While the rates of women with body dissatisfaction were still relatively high, they found that male body image issues had remained relatively stable over the twenty year study (Cash, Morrow, Perry, and Hrabosky, 2004). This study was interesting in that it accepted that male body image issues were a difficult area to target because their body image issues did not focus on thinness but rather were a complex relationship between masculinity, stress, and muscularity (Cash, Morrow, Perry, and Hrabosky, 2004). This study specifically used Overweight Preoccupation, Cognitive Investment in Appearance, and Body Areas Satisfaction as

metrics to measure body image (Cash, Morrow, Perry, and Hrabosky, 2004). This study provides a contradiction to research that had long supported the idea that males were not at much risk as other groups such as women and members of the LGBTQ community (although many of these members are also males) (Feldman, 2007). One major explanation for this may be the fact that many studies include weight preoccupation as a factor in body image evaluation as well as the fact that, until recently, it was much more difficult for males to get a clinical diagnosis of an eating disorder (Feldman, 2007; Kantor, 2018).

The notion that males have different body image concerns than women have been upheld by several studies that each present a similar picture of why men experience different body image threats than women. One major factor in men and their relationships with their bodies is society (Booth, 2019; van Well & Arrindell, 2005). Specifically, it was found that the masculine gender role was positively associated with self-stigma and that males reported needing help and having problems at lower rates (Booth, 2019). This was attributed to the notion that self-stigma was associated with lower rates of seeking help including therapy and help from medical professionals; however, this also meant that males reported issues at lower rates (Booth, 2019). This indicates that many traditional measures that interrogate males on their opinions of their body image may be called into question as males report issues like poor body image at lower rates (Booth, 2019). This gender role stress was attributed to societal expectations of masculinity (Booth, 2019; van Well & Arrindell, 2005). These expectations of gender roles were supported across cultures and found that masculinity presented increased stress in those that identified as male; however, this difference was also replicated with feminine ideals showing that societal pressures increase expectations and stress (van Well & Arrindell, 2005). From a biological perspective, masculinity has been shown to increase mortality and morbidity among the gender

with a study showing that heart rate reactivity (vagal withdrawal) was directly related to threats of masculinity (Kramer et al., 2017).

One major indication of how these societal pressures directly impact body image of males presents through increased emphasis on muscularity as an indicator of body image concerns in younger males (Davey & Bishop, 2006). Emphasis on increased muscularity is a subclinical measure that aims at targeting muscular dysmorphia: a clinical diagnosis wherein a preoccupation with increasing muscle mass occurs (Davey & Bishop, 2006). The study also notes that 95% of males presenting to college counseling centers have body dissatisfaction; abnormal exercising behaviors, a trend that accompanies this body image disturbance, were found to be rising as well (Davey & Bishop, 2006). The study links body image issues to society and the cultural stereotype that masculine figures are muscular (Davey & Bishop, 2006). College age men are found to be at high risk; 19.4 years old was found to be the peak age for onset of muscular dysmorphia as well as other body dysmorphic issues (Davey & Bishop, 2006). However, those with high scores in masculinity were found to be associated with higher forms of stress-coping mechanisms, providing the link of over-exercising and preoccupation with weight control to college age males and those with intense pressures of stereotypical masculinity (Hirokawa & Miyata, 2004).

Finally, a recent study in French men (average age 22) found that muscularity and lean muscle mass had been internalized, and that the internalization had led to a direct increase in coping strategies that included muscularity enhancement activities (Girard & Rogers, 2018). This study presents the link between masculine pressures and coping strategies like weightlifting and exercise that this study aims to interrogate. Specifically, given the previously mentioned stress reducing benefits found in yoga populations, this study aims to determine if yoga acts as a

protective force in college age males or whether yoga is simply another forum in which college age males can increase their exercise regimen. This idea was supported by a study in which women who participated in yoga had body image and coping strategies like extreme exercise rates similar to women in the general population; however, males who participated in yoga had higher rates of extreme weight control behaviors, indicating that yoga may not be serving the same purpose for men and women (Neumark et al., 2011).

Once it was established that body image was a prevalent issue in the population of college-age males, the next important step was to understand how to measure body image for a non-clinical survey that would be effective and produce accurate results. One factor that was found to reliably predict lower body image views was body image inflexibility (Callaghan, 2015). Body image inflexibility describes the process of being unable to move past body image concerns that are felt internally by a person – these threats need not be external threats such as comments by others but more accurately describe the cognition of the individual (Callaghan, 2015). Body image flexibility was shown to be a protective factor when looking at women regardless of their BMI (Hill et al., 2013). This suggests that having the cognitive ability to acknowledge body image threats while maintaining the ability to continue with normal life activities would indicate lower rates of eating disorders and disordered cognition about the body (Hill, 2013). Body image inflexibility was operationalized in the Body Image-Action and Acceptance Questionnaire (BI-AAQ) which was found to have high reliability and construct validity in measuring body image inflexibility and linking this variable decreased disordered eating and decreased body image dissatisfaction (Sandoz et al., 2013). This questionnaire is important in providing a link between body image inflexibility and body image rather than simply eating disorders. The BI-AAQ provided the starting point for creating a new assessment

that would target body image dissatisfaction; however, it was determined that males would be unlikely to respond accurately to questions relating to eating disorders explicitly (Booth, 2019). The BI-AAQ is a 12-item survey that uses a Likert scale ranging from 1 (never true) to 7 (always true) with all items being reverse-coded; this meant the questions asked about body image inflexibility but the final score would report a level of body image flexibility (Basarkod & Ciarrochi, 2017). Interestingly, it was determined that the 12-item BI-AAQ survey could reliably be shortened to a 5-item test that still used a Likert scale from 1 to 7 but allowed researchers to isolate body image dissatisfaction as a factor (Basarkod & Ciarrochi, 2017). The resultant test showed good reliability at predicting body image dissatisfaction and was the driving force behind creating a shorter test for the survey the researcher would create (Basarkod & Ciarrochi, 2017).

The link between body image and coping was determined to be the evaluative angle upon which the survey would be based. Research shows the link between negative body image and distorted coping strategies (Cash, Santos, and Williams, 2005). The strategies can be divided into three categories including appearance fixing, avoidance, and positive rational acceptance (Cash, Santos, and Williams, 2005). Appearance fixing describes measures such as exercising for appearance benefits; avoidance describes actions taken to suppress body image concerns such as over-exercise; and finally positive rational acceptance describes action undertaken for non-physical benefits and wellbeing (Cash, Santos, and Williams, 2005). Given this understanding, the Body Image Coping Strategies Inventory (BICSI) was selected as the basis for the survey. BICSI was initially tested on college students and, while the original inventory was 50 questions, it performed well and had high reliability (Cash, Santos, and Williams, 2005). The initial results showed that men frequently did not engage in positive rational acceptance practices, suggesting

that those with high scores on the other two coping strategies would have more negative body image perceptions while simultaneously not engaging in exercise for positive goals like relaxation and acceptance of one's flaws (Cash, Santos, and Williams, 2005).

For this reason, the researcher decided to use BICSI for the basis of the survey. Using the information gained surrounding the success of the amended BI-AAQ survey, the researcher created a survey that implemented 11 questions with a Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Basarkod & Ciarrochi, 2017). Rather than asking about frequency of activity, the survey would be presented after an exercise type: either weightlifting or yoga. Participants would be asked whether they found themselves doing any of the coping strategies and to what extent. The survey asked many questions that could be measured quantitatively, but a major portion of the study aimed at the qualitative side of this complex issue. The qualitative questions aimed to clarify body image and coping strategies in the context of an academic setting while also searching for alternative forms of exercise that may be undertaken by different groups.

For the quantitative data, it was hypothesized that the yoga group and the weightlifting group would show differences in average scores that were statistically significant. Specifically, it would show that the yoga group would report lower average scores on each of the three coping mechanisms tested by the body image survey created using the Body Image Coping Strategies Inventory. For the qualitative data, it was hypothesized that males participating in yoga would participate in multiple workouts a day at a higher rate than those weightlifting. Furthermore, it was hypothesized that yoga participants and weightlifting participants would participate in observably different other activities with yoga participants partaking in more group-focused workouts while weightlifting participants would participate in workouts that are more commonly

undertaken alone. One interesting point to note is that many of these studies surrounding yoga and body image have been published and research has been gathered within the last 5 years, with many of the studies performing their work in the last two to three. When the planning was being done for this project in 2018, it was found that interrogation of male body image had not been undertaken in coordination with yoga or other mindfulness activities.

## **Methods**

### ***Sample Demographics and Study Design***

The sample that was surveyed consisted of members who self-identified into two groups based on activity type. The survey was successfully completed by 30 males evenly divided between both activity types. One group self-selected into the activity group of “yoga” by attending Group X classes put on in both Strom Thurmond Wellness and Fitness Center and Blatt Physical Education Building. Males in this group were asked to participate in an anonymous survey after finishing either a 45 minute or hour long yoga class. The other group self-selected into the activity group of “weightlifting” through their involvement in the Barbell Club, the University of South Carolina’s weightlifting club.

By design, participants were 100% male-identifying. Self-identification of gender was an important aspect of this survey as body image in this survey was interrogated in terms of masculine influences from society rather than genetics and biological foundations of sex. Therefore, biological sex was not as important as gender identity and the associated societal pressures of someone who identifies as male. The yoga group’s average age was 23.3 years while the weightlifting group’s average was a younger 19.5 years old. 60% of the yoga group was a fourth year student in college, with 20% being third years and 20% being graduate students. In the weightlifting group, 47% were second year students, 27% were first years, 20%

were third years, and only 6% were fourth year students. 80% of the yoga group and 87% of the weightlifting group were white. The colleges participants were members of varied between groups. The most popular colleges among the yoga group were Engineering and Business, both at 27% of the sample while the weightlifting group's most popular college was Arts and Sciences with 40% of the holding a major in that college.

While it is important to note that the groups were self-selected based on participation in a specific activity or membership in an organization, this reflects the observational nature of this survey. This survey aimed to interrogate body image views that exist in college-age males, specifically those at the University of South Carolina. The study design was created assuming participants would report more accurate and honest answers on body image based on activities that they performed on a more regular basis and where the locus of control for activity-type was internal. This runs counter to an experiment where the group of thirty could be randomly assigned to an activity type to more accurately predict whether a certain activity type had a causal effect on body image. This survey attempted to get more accurate views on the state of body image issues in college age males and to determine if there was a correlation between activity type and these potential differing views. Any causes for these differences would therefore only be subject to speculation. In order to determine whether or not the activity type was performed regularly and therefore whether the participant should be accurately classified as a participant in the group, the final question used for demographics asked about level of weekly participation in the activity. Responses to the question "How often do you participate in [yoga or weightlifting]?" are reported in Table 1. All tables are reported in Appendix B.

It is interesting to denote the difference between participation between the groups. While only 27% of the group surveyed after a yoga class reported practicing yoga 2-3 times a week or

more, 100% of the weightlifting group participated in weightlifting 2-3 times a week or more with 67% performing this activity daily (7 times a week).

### ***Survey Development***

The survey was created using Google Forms. This allowed participants to easily respond on their phones while also allowing researchers to keep the survey truly anonymous, as Google Forms would remove any identifying information like email. Before the survey could be completed, participants had to acknowledge the voluntary nature of the survey by accepting an Invitation to Participate section of the survey. This served as the survey's Informed Consent section. Before the survey and project was completed, researches confirmed with the University of South Carolina that Institutional Review Board (IRB) approval was not required despite the fact that research was performed on human subjects. Due to the survey nature of this observational research, IRB approval is not required per the Undergraduate Research section on the Office of Research Compliance portion of the University of South Carolina website.

Examples of the full surveys, as participants viewed them, can be found in Appendix A. Each survey was created using an identical demographic section that asked about age, college major, year in school, race, and ethnicity. Average weekly participation in their respective activity did not appear in the demographic section but was included there for the purposes of analysis.

After the demographic section, each survey diverged into questions unique to the activity type. However, these questions mirrored each other. The surveys adapted the Body Image Coping Strategies Inventory (BICSI) assessment. The survey used a Likert scale with 5 dimensions for nine of the eleven questions asked. These dimensions included strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The other two questions allowed

qualitative responses. One was a “yes or no” question while the other asked participants to list other types of activities they participated in. The typical BICSI assessment has 28 questions; however, with the guidance of Dr. Merck, it was determined that the college population would benefit from a shorter survey length to increase response rates and decrease rates of people stopping the survey before completion. Eleven questions were used for analysis due to the ability to include four questions relating to two of the three coping elements interrogated by the BICSI and three questions relating to the third coping element. Four questions related to avoidance, four to appearance fixing, and three to positive rational acceptance.

Avoidance questions for this survey asked participants if they participated in the same activity multiple times a day, multiple times a week, or were involved in other athletic activities during the week. This attempted to determine if whether or not college males coped with issues of body image by avoiding them by excessive exercising. These questions were more difficult to word in such a way that they could be reverse scored, so the researcher decided to use this element as the more qualitative aspect of the research.

Appearance fixing questions for this survey focused on whether or not the activity type made participants more aware of their bodies and whether or not participants were motivated to choose this specific activity with appearance based outcomes in mind. These questions, while not directly reverse scored, were presented in a random order with the positive rational acceptance questions in order to not create a sense of leading participants in one direction.

Positive rational acceptance questions focused on whether the activity type allowed participants to find non-body image and appearance based benefits from the activity type. While appearance fixing questions also focused on positive benefits, the fact that positive rational acceptance questions focused on positive non-appearance factors allowed the random nature of

how the questions were presented to mask the nature of the survey and elicit more genuine responses. Having participants answer questions where they have to respond positively to some questions while negatively to others prevents mindless survey answering if they feel like the survey is leading them toward a certain response. Because the researcher did not decide to include eating habits and eating disorder questions in the survey or in the research as a whole, it was decided that only three questions would be used for the positive rational acceptance section.

### *Statistical Analysis*

Responses to the survey questions about coping mechanisms as an indicator of body image perception came in two forms. Nine of the 11 questions were Likert scale questions with five options. For questions that presented the five options verbally, the selections were coded after survey results were collected. The researcher coded strongly disagrees as 1, disagrees as 2, neither as 3, agrees as 4, and strongly agrees as 5. For questions that presented a more typical Likert scale, the disagree end of the scale was coded as 1 with the agree end of the scale taking the higher values up to a maximum value of 5. For the question that asked participants to report the number of workouts they participated in weekly, 1-2 workouts was coded as a 1 on the Likert scale, 3-4 was coded as a 2, 5-6 was coded as a 3, 7-8 was coded as a 4, and 9+ workouts a week was coded as a 5. A t-test was used to compare the questions on each survey that mirrored each other. After the individual questions were compared in this manner, a t-test was conducted using responses from the questions that related to each of the three coping mechanisms mentioned above.

There were two qualitative questions presented. The first was: “Will this [weightlifting session or yoga practice] be your only workout today?” Results were tabulated in qualitative terms as a way to analyze the data in non-numerical fashion. Answers to the first question were

recorded in a yes-or-no fashion. This allowed no's to be coded as 0 and yes's as 1. This allowed a t-test to be performed to determine if there was a difference between the two groups.

The second question was: "Please list other activities you do outside of [yoga or weightlifting]." Having this question open-ended and allowed anything to be typed into the response box. This put the impetus on the researcher to code responses into categories. The selected categories were: running, walking/cycling (low impact cardio), Group exercise (non-yoga), Weights (for the yoga questionnaire), Yoga (for the weightlifting questionnaire), and an alternative category that, upon coding, represented sport participation at the club or intramural level. Data analysis on this question was truly subjective. Because there is no ideal or expected breakdown for other types of activities for college students, a Chi Squared test would be inappropriate. The researcher analyzed trends using his own interpretation and presented some thoughts as to why the responses occurred at the recorded rates.

## **Results**

Two major hypotheses were created for the project. For the quantitative data, it was hypothesized that the yoga group and the weightlifting group would show differences in average scores that were statistically significant. Specifically, it would show that the yoga group would report lower average scores on each of the three coping mechanisms tested by the body image survey created using the Body Image Coping Strategies Inventory. For the qualitative data, it was hypothesized that males participating in yoga would participate in multiple workouts a day at a higher rate than those weightlifting. Furthermore, it was hypothesized that yoga participants and weightlifting participants would participate in observably different other activities with yoga participants partaking in more group-focused workouts while weightlifting participants would participate in workouts that are more commonly undertaken alone.

Each survey had the non-demographic questions presented in random order in order to mix the types of questions so that qualitative and quantitative questions would be mixed together. This also allowed quantitative questions that interrogated different coping mechanisms would not appear immediately after each other. For example, a person who has high body image satisfaction was hypothesized to likely respond high on positive rational acceptance while scoring lower on appearance fixing. Mixing these questions prevented “straight lining” or other effects of order response bias. Since each survey had a random ordering of questions but the questions were paired between activity groups, Table 2 includes a short description of what each pair of questions targeted. All tables are reported in Appendix B.

Six of the nine quantitative questions were found to have significant p-values after performing a t-test comparing the two groups. Interestingly, two of the three questions that were not significant at the level  $p = 0.05$  were significant at the level  $p = 0.1$ . The only question not significant at either the level  $p = 0.05$  and  $p = 0.1$  was the question that asked if participant’s activity type helped them accept their body’s limitations. Analyses of these questions are further analyzed in Table 5 as the hypothesis related to coping strategies. This meant groups of questions rather than individual questions were used to support or refute the hypotheses. The results of individual questions were reported for transparency. Questions 1, 9, 10, and 11 relate to the coping mechanism avoidance. Questions 2, 3, 4, and 8 relate to the mechanism appearance fixing. Questions 5, 6, and 7 relate to positive rational acceptance.

Table 2 shows an interesting trend where the average score for the yoga group was higher than the weightlifting group for questions 2, 3, 4, 6, 7, and 8 while the weightlifting group had higher averages for questions 1, 5, and 10.

Table 3 represents the first of two qualitative analyses of the data. This table reports

participation in other physical activities that are not the activity asked about in other questions on the survey. Because there are no standard ratios of other activity participation for these groups that are established by other studies, a Chi Squared test could not be completed. However, observations in the trends provide an insight that relate to the hypotheses. One notable fact is that the yoga group has more responses than the weightlifting group with the yoga group having 28 responses while the weightlifting group has only 19. This shows a trend that those participating in yoga may participate in more other types of activity with each respondent participating in more, on average, other activities than the weightlifting group. Another observable trend was that participation of the activities of the opposite group were skewed in the direction of the yoga group. 9 of the responses of the yoga group were “weightlifting” while only 1 response from the weightlifting group was “yoga.” This supports the hypothesis that, observationally, the yoga group and weightlifting group participate in different activities. As for the portion of the hypothesis that predicted that the yoga group would have greater participation in group-focused activity when compared to the weightlifting group, it can be seen that this is not supported. While none of the weightlifting group reported participating in group fitness classes while 4 of the yoga group reported this activity, the weightlifting group reported greater sport participation with 8 responses compared to the 5 of the yoga group.

Participants were asked “is this [activity type] your only workout today?” Responses were tabulated qualitatively and then coded so that a t-test could be performed. This t-test compared the average percent of each group reporting that they would be participating in another activity in the same day. Results of the t-test found no significant difference between the yoga group ( $M = 0.47$ ,  $SD = 0.5$ ) and the weightlifting group ( $M = 0.53$ ,  $SD = 0.5$ );  $t(28) = 0.7$ ,  $p > 0.05$ . This does not support the hypothesis that the yoga group participated in multiple workouts

a day at a higher rate than the weightlifting group.

A t-test was performed comparing average scores on the questions testing the coping mechanism avoidance between the yoga group and the weightlifting group. Results of the t-test showed no significant difference between the yoga group ( $M = 2.9, SD = 1.1$ ) and the weightlifting group ( $M = 3.2, SD = 1.2$ );  $t(58) = 0.16, p > 0.05$ . A t-test was also performed comparing average scores on the questions testing the coping mechanism appearance fixing between the yoga group and the weightlifting group. Results of the t-test showed no significant difference between the yoga group ( $M = 3.1, SD = 1.2$ ) and the weightlifting group ( $M = 1.3, SD = 0.8$ );  $t(118) = <0.001, p < 0.05$ . Finally, a t-test was also performed comparing average scores on the questions testing the coping mechanism positive rational acceptance between the yoga group and the weightlifting group. Results of the t-test showed no significant difference between the yoga group ( $M = 2.1, SD = 1.1$ ) and the weightlifting group ( $M = 2.2, SD = 1.2$ );  $t(98) = 0.4, p > 0.05$ .

These t-test results refute the hypothesis of the study. It was hypothesized that the yoga group would report lower average scores on each of the three coping mechanisms tested by the modified body image survey. The results of the t-test show that the yoga group had statistically higher averages on the coping mechanism appearance fixing. The results also show no statistically significant difference between the two groups for the two coping mechanisms of avoidance and positive rational acceptance. While these results are not significant, it is interesting to notice that the yoga group has lower averages for responses to these two factors.

Overall, the quantitative hypothesis that suggested the yoga group would have lower averages was not supported, and in fact the yoga group had a higher average score on the appearance fixing coping mechanism. The qualitative hypothesis that the yoga group was more

likely to participate in more than one athletic activity a day was not supported as there was no difference between the two groups. Finally, the qualitative hypothesis that the two groups would participate in different activities outside of their surveyed activity type was supported observationally; however, there was no observable difference that showed yoga group participants were more likely to participate in group-focused activities.

## **Discussion**

The study found results that did not support the hypothesis that the yoga group would have lower averages on the BICSI survey, and found that the yoga group actually scored higher when looking at the coping mechanisms of appearance fixing. This supports previous research that males in yoga classes have more negative body image views than the general population.

One potential shortcoming of this study was that the yoga group was compared to another group that was of a different activity type rather than a group that would represent the population as a whole. While some of the conclusions could be theorized to have applications in the general population, an extension of this study would need to be undertaken to fully understand the differences between the population of college males that participate in yoga and those that do not. This study; however, does have some serious applications for the field of Group Fitness and fitness departments at college. While it is easy to zoom in and look at the differences between the two groups, one major takeaway can be gleaned from the big picture findings of the study. The fact that so many college males do multiple workouts a day and that many people report participating in over seven workouts a week is a scary realization for the fitness industry as a whole. Despite reports and surveys about body image, which, like this study, suffer from the fact that people (specifically males) do not accurately report their feelings, the numbers are harder to lie about. Working out more than once a day and close to nine times a week can be undertaken

safely; however, in college this could be seen as a symptom of great stress manifesting in over-exercise, a clear sign of psychological stress manifesting in negative body image perception.

From the perspective of a yoga instructor, this data presents a conundrum. Surveys have consistently shown that the mindfulness practices of yoga have positive mental and body image effects on females of different age groups. Previous studies and now this study suggest that males may not be benefiting from yoga in the same way. Males are apparently using yoga as a way to add a workout into their regiment that will burn calories but still obeys the traditional knowledge that they should not lift or go for a run twice in the same day. From the perspective of a Group Fitness instructor who teaches yoga or any other format, this suggests that the cues and the verbal motivation that we present may influence the genders present in class differently. Further studies should be completed to search for new language, specifically in yoga, that will engage the same mindfulness and positive body image influences that present in higher rates among yoga-taking females.

On the qualitative side of the study, it was found that neither group was more likely to participate in more than one athletic activity a day. This is not surprising, and it speaks more to the state of exercise as a college male than it does to either activity. Close to 50% of each group reported that they would participate in more than one athletic activity on the day they filled out the survey. This fact helps to modulate another concern for inaccuracy in the survey results due to the fact that surveys should be seen as less accurate as people can have response biases that may confound results. If participants in the study discovered that the survey aimed to measure their body image perception, they may have responded with answers that would seem favorable to the researcher rather than their true perceptions.

On the observational side, there was some noticeable difference between the groups and

their preferences for other athletic activities they participate in. One noticeable part to this finding was that yoga participants were more likely to participate in Group Fitness classes like barre, high intensity interval training (HIIT), and cycling. This is likely not a trend but instead a finding of circumstance. The yoga group was found through the Campus Recreation programs at Strom Thurmond Wellness and Fitness Center and Blatt Physical Education building. Because of this, it is likely that participants in yoga also participate in other Group Fitness classes put on by the gym as the purchase of a pass permits participants to take classes of any format. Furthermore, instructors tend to teach many formats and advertise their other classes. Interestingly, there was no support for the fact that the yoga group was more likely to engage in group activities. While the weightlifting group did not participate in Group Fitness classes at high rates, they participated in sports at higher rates than those from the yoga group.

One interesting source of error in the design of the study come from the fact that members of each group are assumed to participate in this group as their primary activity. While it is likely that members of the Barbell Club at USC would consider their primary workouts weightlifting, simply participating in a Group Fitness yoga class does not necessarily assume that someone would be in the yoga group rather than the weightlifting group. While only one of the weightlifting group reported yoga participation, nine of the yoga participants reported lifting weights. It may be the case that someone surveyed in the yoga group actually would report primarily being a weightlifter and therefore would have confounded the results to an extent.

This survey provides a good starting point for other surveys that measure rates between genders, rates among different activity types, and rates between the “active” population and the general population of college students.

## **Conclusion**

While many of the hypotheses created for this study were rejected by the data gathered, it was supported that those participating in yoga are an at risk group that may have negative body image perceptions due to their increased rates of coping strategies that include appearance fixing. On the observational side, while the groups did not have different rates of participating in multiple workouts a day, it was supported that college males, specifically active college males like those surveyed in this study, tend to over-exercise at high rates, participating in multiple workouts a day and participating in seven or more workouts a week. This study provides a new survey by which coping strategies can be measured without introducing eating behaviors in a shorter format than other measures that have upwards of 30 Likert scale questions. This study suggests ways in which fitness programs in colleges as well as a yoga instruction could be changed to target different needs of college males. This study also suggests future directions of research that could be used to further interrogate the difference between male body image and female body image when it comes to the college-aged population.

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## Appendix A

### *Demographic Section (present on both questionnaires)*

Section 1 of 4

### Voluntary Survey

Thank you for participating in Austin Coale's Senior Thesis study

This survey is being run by Austin Coale as a part of his Honor's Thesis project through the University of South Carolina. This survey is completely voluntary and 100% optional. Responses will be kept confidential and no personal identifiers will be collected by this study. If you do not wish to participate now or at any point, feel free to close the study and cease participation. If you have any questions about the study, please email me, Austin Coale, at [acoale@email.sc.edu](mailto:acoale@email.sc.edu). If you agree to participate in this study, please click the check box below.

Yes

After section 1 Continue to next section

Biological Sex Multiple choice

- Male
- Female
- Prefer not to say
- Non-binary
- Add option or [add "Other"](#)

Age  
Short answer text

Major  
Short answer text

Class Level

- Freshman
- Sophomore
- Junior
- Senior
- Graduate School

Race

- American Indian or Alaskan Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or other Pacific Islander
- White or Caucasian
- Multiple Races
- Other...

Ethnicity

- Latino/Hispanic
- Non-Latino/Hispanic

Section 4 of 4

## Other activities

Description (optional)

Please list other athletic activities you routinely engage in on a weekly basis outside of yoga \*

Long answer text

How many workouts other than yoga would you say you participate in weekly? \*

- 1 - 2 workouts
- 3 - 4 workouts
- 5 - 6 workouts
- 7 - 8 workouts
- 9+ workouts

*Yoga Survey*

Will this yoga practice be your only workout today?

Multiple choice

Yes

No

Add option or [add "Other"](#)

Required

"I don't consider yoga a workout and would consider doing another workout on the same day I attend yoga class." \*

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

When I leave a yoga class I feel more focused on my body's appearance. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

I believe that yoga will make me more attractive to others. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

+++  
I find myself comparing my body to others in the yoga class. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

I practice yoga for primarily personal mental health and stress relief. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

Practicing yoga helps remind me of my good qualities. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

Practicing yoga helps me strive toward accepting my body's limitations and appreciating its unique abilities. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

I find myself working out (including yoga) primarily to look better physically. \*

	1	2	3	4	5	
	<input type="radio"/>					

## Weightlifting Survey

111

How often would you say you weightlift? \*

- This is my first time!
- Once a month
- Once a week
- 2-3 times a week
- Every day

Is lifting your only workout each day? \*

- Yes
- No

"I don't feel like lifting is enough, so I would consider doing another workout on the same day I lift" \*

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

When I leave a weightlifting session I feel more focused on my body's appearance. \*

- |       |                       |                       |                       |                       |                       |          |
|-------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------|
|       | 1                     | 2                     | 3                     | 4                     | 5                     |          |
| Agree | <input type="radio"/> | Disagree |

111

I believe that weightlifting will make me more attractive to others. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

I find myself comparing my body to others on the gym floor. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

I lift weights for primarily personal mental health and stress relief. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

Lifting weights helps remind me of my good qualities. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

Weightlifting helps me strive toward accepting my body's limitations and rewarding its unique abilities. \*

	1	2	3	4	5	
Agree	<input type="radio"/>	Disagree				

I find myself working out (including mind-body activities like yoga) primarily to look better physically \*

	1	2	3	4	5	
	<input type="radio"/>					

## Appendix B

**Table 1 – Weekly rates of participation based on group’s activity type**

<b>Yoga</b>	
2-3 times per week	27%
Once a week	27%
Once a month or less frequently	46%
<b>Weightlifting</b>	
7 times a week	67%
2-3 times a Week	33%

**Table 2 – Average score for each set of paired questions comparing yoga and weightlifting groups, with associated p-values (values with a ‘\*’ are significant at p = 0.05)**

Question	Average Score		P-value
	Yoga	Weightlifting	
Consider activity type "a workout"	2.6	3.3	0.08
Focused on physical appearance	3.1	1.5	0.001*
Attractive to others	3	1.1	<0.001*
Comparing to others during workout	3.3	1.5	<0.001*
Mental health/stress relief	2	2.7	0.08
Reminding of good qualities	2.4	1.3	0.1*
Accept body's limitations	2	1.3	0.4
Look better physically	2.9	1.5	<0.001*
List of other activities		See Table 3	
Number of workouts per week	2.2	4.2	<0.001*
Multiple workouts a day		See Table 4	

**Table 3 – Number of participants in each group participating in other activities by category (each participant could respond to more than one category)**

Activity Category	Yoga	Weightlifting
Running	7	7
Cycling/Walking (low impact cardio)	3	3
Group Fitness	4	0
Alternative (sports)	5	8
Weightlifting (for yoga group)	9	N/A
Yoga (for weightlifting group)	N/A	1

**Table 4 – Percent of participants in each group reporting that this activity would not be**

their only workout that day

Activity Type		
Yoga	Weightlifting	P-Value
47%	53%	0.7

**Table 5 – Average scores of each coping mechanism for each activity type, with associated p-values**

Coping Mechanism	Average Scores		
	Yoga	Weightlifting	P-Value
Avoidance	2.9	3.2	0.16
Appearance Fixing	3.1	1.3	<0.001
Positive Rational Acceptance	2.1	2.2	0.4