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ATHLETIC IDENTITY AMONG UNIVERSITY STUDENTS

by

Austin Boe

B.S., North Dakota State University, 2015

A Research Paper

Submitted in Partial Fulfillment of the Requirements for the
Master of Arts

Department of Sociology
in the Graduate School
Southern Illinois University Carbondale
May 2020

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Approved by:

Dr. Rachel Whaley, Chair

Graduate School
Southern Illinois University Carbondale
May 9, 2020

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HEADING 1

INTRODUCTION

What makes someone feel like an athlete? Is it solely their participation in an organized sport? While sport participation greatly influences athletic identity, it does not tell the whole story. Other factors, such as how often someone exercises, their race, their gender, and their religious affiliation can all influence a person's participation in sports (e.g. Heinze et al. 2017), so it begs the question: how do these same factors hinder or facilitate an individual's identity as an athlete? Having an athletic identity is associated with a bevy of positive outcomes, such as decreased risk of suicide and better goal setting and goal achieving behaviors, (Chang et al. 2017; Miller 2009; Miller and Hoffman 2009) so it would be worthwhile to study the things that affect whether an individual thinks of themselves as an athlete or an athletic person. The proposed study will provide a new understanding of athletic identity formation, facilitating a deeper insight into which kinds of people more readily identify as athletes.

Through previous literature, it is known that sports participation is correlated with many positive physical, emotional, and mental outcomes (Duncan, Strycker, and Chaumeton 2015; Miller and Hoffman 2009). Similar research has also been conducted to find that having an athletic identity can contribute to many different kinds of positive outcomes, such as improved mental health outcomes (Chang et al. 2017; Benson et al. 2015; Miller 2009; Miller and Hoffman 2009). Other research suggests that girls are not as supported in sports as boys, and non-white children do not receive the same benefits from sports participation as white children (Duncan et al. 2015; Fisher 2016; Heinze et al. 2017; Parent et al. 2016; Rauscher and Cooky 2016). Since sports participation is highly correlated with athletic identity (Miller and Hoffman 2009), it stands to reason that many of the factors that affect sports participation will also affect athletic

identity.

While previous literature has thoroughly examined the variables that support or detract from sport participation, not much has been done to learn more about athletic identity. Some studies have created measures of its existence (e.g., Anderson 2004), but not much has been done to uncover which factors might affect the reporting of athlete identity. The first purpose of this paper is to understand the degree in which characteristics of undergraduate college students are related to their athletic identity. As previously noted, personal characteristics, such as race and gender, can affect sport participation, and sport participation is connected to athletic identity, even if the complete nature of this relationship has not been uncovered. Therefore, it is reasonable to suggest that some of the same factors that influence sports participation may also affect athletic identity.

The second goal of this study is to examine the impact gender and race have on the relationship between participation in sport and exercise and athletic identity in undergraduate college students. Again, previous literature suggests that race and gender affect the support an individual receives for sport participation (Duncan et al. 2015), as well as the strength of the positive benefits that are typically received from sport participation. To this aim, it is also reasonable to expect that race and gender will affect athletic identity in a similar fashion to their effect on sport participation.

This study has importance for a few reasons. First, as previously stated, girls and young women do not receive the same support for sport participation as boys and young men (Duncan et al. 2015). Since previous research has shown benefits to having an athletic identity (Benson et al. 2015; Miller 2009; Miller and Hoffman 2009), it is imperative to know how gender affects the development of this identity. Secondly, at least one study has found that non-white children do

not display or report the positive outcomes to sport participation at the same strength as white children (Duncan et al. 2015). With athletic identity and sport participation so closely linked, it seems reasonable to question whether the strength of the benefits received from having an athletic identity are also muted. If that is the case, non-white individuals would perhaps need to have significantly stronger athletic identities than white people to receive similar positive outcomes. Knowing how race affects athletic identity will give provide insight into whether sport participation and athletic identity are as connected for non-white people as they are for white people. Previous literature has not sufficiently examined what affects athletic identity. Rather, it has merely introduced measures as to what constitutes athletic identity (e.g., Anderson 2004), and qualitative examinations of it focus around high-level athletes (e.g., Bennett et al. 2016). Since the current literature has not fully began to test what affects athletic identity, it is important to ask what does. In the following section, current literature on sports participation and athletic identity will be reviewed.

HEADING 2

LITERATURE REVIEW

Although the literature on athletic identity is not as extensive as the literature about sport participation and exercise, there are still notable themes. First, similar to the benefits that are associated with sports and exercise participation, athletic identity is related to a host of positive outcomes. First, a stronger athletic identity has been correlated to better mental health and stronger goal setting and goal achieving outcomes, and it has even been found to assist in coping, such as with imminent change in one's personal life (Chang et al. 2017; Benson et al. 2015; Scarfe and Marlow 2015; Miller and Hoffman 2009). This suggests that an athletic identity signals more than a simple identifying choice, and there may be necessary action or ideology that one must adopt before fully developing an athlete identity. Because of this, it is also important to note that athletic identity is associated with sport participation (Miller and Hoffman 2009).

This may seem obvious, but athletic identity is not solely developed through sports competition and practice. Anderson (2004), developed a measure of athletic identity called the Athletic identity Questionnaire, or the AIQ. The AIQ consists of four scales that each measure a specific facet of identity: athletic appearance, athletic importance, athletic competence, and athletic encouragement, or support (Anderson 2004). The appearance facet examines how much a person feels like a person who is physically fit. The importance facet measures how important exercise and sports are to an individual. The competence facet measures how good a person thinks they are at physical and athletic activities. The final facet of the AIQ is encouragement, which measures how supported in physical and athletic activities an individual thinks they are (Anderson 2004). Though athletic identity is multi-faceted and can be constantly developing, it appears that many concepts related to athletic abilities, not solely the abilities themselves,

contribute in determining an individual's athletic identity. Due to the relationship between athletic identity and sport and exercise participation, I expect increases in sport and exercise participation to increase all facets of athletic identity.

Related to the AIQ, the Sport Orientation Questionnaire (SOQ) was developed to measure how intimately an individual aligned themselves with sport and exercise dimensions (Gill and Deeter 1988). The SOQ measures three separate dimensions of sport orientation, which are win orientation, goal orientation, and competitiveness. It has since been found that sport orientation and athletic identity are closely related (Chang et al. 2017). However, as Chang et al. (2017) note, not every facet of sport orientation and athletic identity are significantly connected. Since the population that is being studied in the present paper is not exclusively made up of athletes, I expect all facets of sport orientation to positively affect all facets of athletic identity, but I anticipate that goal orientation will most affect athletic identity in this study.

It is important to note that gender plays a significant role in sport and exercise participation and athletic identity acceptance. Despite the effects of Title IX, legislation that was passed in 1972, on sports participation in youth and collegiate sports, as well as increased professional opportunities for women athletes, 1.13 million less high school girls participate in sports than high school boys, annually (NFHS 2019). During childhood and adolescence, girls participate in sports less frequently than boys, and some positive outcomes, like improved self-image, are even suppressed (Duncan et al. 2015). Girls also receive less support and encouragement to participate in sports from their parents (Heinze et al. 2017). So, during childhood and adolescence, girls are supported less to play sports than boys, do not play sports as often as boys, and do not even receive equitable benefits of participating in sports as boys do. There are a few reasons that can help explain this. Heinze and colleagues (2017) found that

female athletes are affected by their parents' views on sport and gender, even if those views are not internalized by the child. Parental attitudes about sports are affected directly by how they value sports, and they may strongly encourage their daughters to participate if associated costs get too expensive and they do not think that sports provide much value (Heinze et al. 2017). Additionally, if the parents view sports as a masculine endeavor or as activities that specifically boys do, the value that sports has for girls will decrease even more, potentially discouraging sports participation for their daughters even further (Heinze et al. 2017). This is a good example of how girls may not be developing athletic identities, as athletic encouragement is one of the four dimensions of athletic identity (Anderson 2004). These findings, coupled with the findings from Miller and Hoffman (2009), which show the relationship between sport participation and athletic identity, show that the discouragement of girls and women from identifying as an athlete begins as soon as girls begin playing sports.

Discouraging girls from participating in sport is disconcerting, at best. As stated before, sports participation is associated with a number of physical, emotional, and mental benefits (Duncan et al. 2015). Furthermore, many sports and exercise programs exist specifically for the psychological and emotional development of children, and these programs have been increasing in number over the past several years (Rauscher and Cooky 2016). Rauscher and Cooky (2016) have outlined some of the ways that youth sports programs discourage girls from participating in sports and reaping the benefits of that participation. One way that youth sports discourages girls from participating in sports is through the reproduction of the gender hierarchy. These programs focus on athletic development, and they ignore that an athlete's gender, race, class, or sexuality oftentimes influence how and when athletic identities and opportunities are cultivated (Rauscher and Cooky 2016). Without considering the context of how sports are benefitting some children

(e.g., boys) and leaving some children out (e.g., girls), youth sports programs are maintaining the status quo and not providing spaces for some children (e.g., girls) to flourish.

Similarly, many youth sports programs frame contemporary life as free from sexism (Rauscher and Cooky 2016). Rauscher and Cooky (2016) found that many youth sports programs use a narrative of “Girl Power,” or the idea that girls are able to overcome anything to achieve whatever they want, to shape their practices. They state clearly why this “creates a paradox for girls in that depoliticized forms of agency are exercised within the constraints of gender difference” (Rauscher and Cooky 2016:293). In other words, girls are expected to breakthrough and discover the benefits individually when youth sports programs do not actively give support to girls to reach equality, creating a disservice to all young girls, whether they breakthrough or not, by not changing the political structure that inherently provides unequal benefits for boys and girls. This may encourage the development of athletic competence, but the constraints that Rauscher and Cooky (2016) write about would limit the amount of athletic encouragement that girls in sports receive.

The final way that youth sports programs may discourage girls’ participation and athletic identity development is through a near-obsession with reducing childhood obesity (Rauscher and Cooky 2016). On its surface, an emphasis on reducing childhood obesity through a sports context is something that may be heralded as noble. However, as Rauscher and Cooky (2016) found, the emphasis on reducing obesity led way to harmful fat-phobic messages for the girls who participated. They explain that girls and women are pressured to be thin, have muscles that are not too large, and have curvy bodies that are not fat. They write, “Girls are inundated with messages about this body ideal; they are bombarded with both a culture of ultra thinness and fat phobia,” and the youth sports programs that emphasize reducing obesity compound these

messages (Rauscher and Cooky 2016:294). In many youth sports programs, they do not address societal inequities that girls face, and they can even relay harmful messages to the young girls who do participate (Rauscher and Cooky 2016). This can help explain why girls and boys, from childhood through adolescence, participate in sports at different rates (Duncan et al. 2015). An obsession from youth sports programs to focus on an unattainable body goal may make it difficult for young girls to develop athletic appearance, as the ideal body type that is shared with young athletes is not realistic, just as Rauscher and Cooky (2016) point out. Image concerns that are present in youth sports contexts for girls continue into adulthood for high-level athletes.

When girls and women want to participate in sports, and even when they excel in athletics, there are still challenges that prevent them from developing an identity of an athlete. As Bennett et al. (2016) explain, high-level female athletes often have to differentiate between their athletic and feminine identities. Many of the stereotypical attributes associated with athletic identity, such as strength and aggression, are not compatible with having a feminine identity, so keeping a feminine identity becomes less important for many female athletes when they play sports (Bennett et al. 2016). However, outside of a sports context, many of the athletes lose their interest in maintaining an athletic identity because it clashes with their feminine identities. The information presented by Rauscher and Cooky (2016) and Bennett et al. (2016) suggest that women may lose their connection to their athletic identities even if they are interested and participate in sports due to the barriers to play and the obstacles that are present when juggling their athletic and feminine identities. It also suggests that, depending on the context, women are juggling the different aspects of athletic identity, and exercise and sport participation may not increase their athletic identity as much as one would anticipate. This is particularly noteworthy when considering that Bennet et al. (2016) studied high-level athletes, who have stronger athletic

identities than lower-level or recreational athletes (Huml 2018). For this study, I expect being female to significantly decrease one's athletic identity, in every facet, and I also expect being female to lessen the effect that participation has on each dimension of athletic identity.

Race is also an important factor that influences athletic identity and sport and exercise participation. In a study that examined the relationships between sports participation and various outcomes in girls, Duncan et al. (2015) found significant differences among different racial groups. Black, White, and Latinx girls were all found to have increased self-worth when sports participation increased, but the rates of depression only decreased through higher sports participation for White and Latinx girls, suggesting that the relationship between mental health and sports participation could be dependent on the population (Duncan et al. 2015). This finding suggests that different races experience positive outcomes associated with sports participation differently. It was also found that Black girls participate in sports, specifically, at higher rates than White and Latinx girls, even though all groups participate in any form of physical activity at about the same rates (Duncan et al. 2015). Other researchers have found that benefits of sports participation varied across race (Parent et al. 2016). To further outline the role race may play on the relationship between mental health and sports participation, Black adolescents who participate in sports are more likely to take illegal drugs, such as cocaine and steroids, than other racial groups, suggesting that positive outcomes of sport participation related to more positive mental health outcomes (e.g., substance use) vary depending on race (Parent et al. 2016). Taken together, this suggests that race influences the relationship between sports participation and personal characteristics in children and adolescents. Given this information, I expect each of the Asian, Black, and Other racial groups, compared to the White group, to have lower scores for each dimension of athletic identity.

There is some literature to suggest that age and the transition into adulthood may also affect athletic identity. Lyons et al. (2018) found in a study of college freshman that as athletes retreat from organized, competitive sports, they also renegotiate their athletic identities during their freshman year of college. While many of the students lamented the loss of competition and structure that sports had provided them, they found friendship and community in other former athletes (Lyons et al. 2018). This is an interesting finding because it does not suggest that their athletic identity is decreasing, but instead it is shifting. Their new friendships and social groups do not compete athletically together, but they are not disengaging from their sports interests or athletic identities. This identity renegotiation is also found in McGannon et al.'s (2015) research on Olympic athlete mothers. When Olympic athletes became mothers, their athletic identity became in question. Media narratives either conjoined the identities of mother and athlete, or they portrayed them as opposing each other (McGannon et al. 2015). Both of these instances suggest that instead of age, maybe life events, which can be marked by age, are more responsible for changes in athletic identity. For this reason, and because the study only surveyed undergraduate college students, I will use year in school as a proxy for age in my analysis. I expect each subsequent year past freshman to be negatively associated with all dimensions of athletic identity.

Athletic identity can also be a predictor of risk-taking behaviors. For example, Miller and Hoffman (2009) found that athletic identity was associated with lower depression scores and lower likelihood of suicidal behavior. Other research has shown that athletic identity can provide improved mental health outcomes, particularly as it relates to goal setting and achieving (Chang et al. 2017; Miller 2009; Miller and Hoffman 2009). Because of this research, I expect risk-taking behaviors to negatively affect all aspects of athletic identity.

Although athletic identity is associated with many benefits and positive outcomes, there is some research to suggest that athletes with very strong athletic identities may experience negative outcomes from their athletic identities. Foster and Huml (2017) found that college athletes with stronger athletic identities were more likely to choose majors with less rigor. This may not seem like a negative outcome on its surface, but their major choices were a violation of their stated long-term goals, suggesting that their adherence to athletic identity is decreasing their ability to set and meet goals (Foster and Huml 2017). Another study found that stronger athletic identities among college athletes may contribute to decreased time available to complete academic pursuits while in college, as coaching and university personnel's demands for athletes are positively correlated with athletic identity strength (Huml, Hambrick, and Hums 2016). This outcome is more due to the athletes' environment, but it is nonetheless an outcome that they experience. Other studies have shown that stronger athletic identities in college athletes can lead to poor sportsmanship and underdeveloped career considerations (Yukhymenko-Lescroart 2017; Menke 2015). However, it is probably safe to assume that for low-level and recreational players, or non-athletes, (i.e., players who do not compete in organized sports) developing an athletic identity will not bring about these negative outcomes that are specifically associated with committed athletes. The data set I am studying includes non-athletes and recreational athletes alongside college athletes, I do not anticipate a negative correlation between student grade-point average (GPA) and athletic identity. I expect GPA to positively affect all aspects of athletic identity.

Research describes how sports participation is correlated with many positive physical, emotional, and mental outcomes (Duncan et al. 2015; Miller and Hoffman 2009), and it also provides evidence that athletic identity is correlated with improved mental health outcomes

(Chang et al. 2017; Miller 2009; Miller and Hoffman 2009). Gender differences have also been explored, such that it is known that girls are not as supported in sports as boys, and non-white children do not receive the same benefits from sports participation as white children (Duncan et al. 2015; Fisher 2016; Heinze et al. 2017; Parent et al. 2016; Rauscher and Cooky, 2016). Since sports participation is highly correlated with athletic identity (Miller and Hoffman, 2009), it is likely that many of the factors that affect sports participation will also affect athletic identity. Therefore, it is important to understand which personal characteristics influence an individual's athletic identity. The proposed study will provide a new understanding of athletic identity formation, and it will contribute greater insights into which personal characteristics are associated with individuals that more readily identify as an athlete or athletic.

HEADING 3

METHODS

Data and Sample

A secondary data analysis of previously gathered survey data was conducted. The data analyzed for the current project come from the “Athletic Involvement Study (of Students in a Northeastern University in the United States), 2006” (Miller 2006). Undergraduate students from a university in the Northeastern area of the United States were given a survey to fill out electronically either during their class, or through email outside of class (Miller 2006). For the statistical analysis, the sample size is 577 students, which decreased from the original survey size of 795 due to missing data. The sample demographics are included in Table 1, and include gender, race, grade point average on a 4-point scale (GPA), year in school, and risk-taking behavior. Gender was dummy coded male and female, with male serving as the reference group. Race was dummy coded White, Asian, Black, and Other, a group which consists of people of mixed race, Native Americans, and other races. The White group served as the reference group. Year in school was also dummy coded, with categories of freshman, the reference group, sophomore, junior, and senior. Previous research using the same data has focused on mental health outcomes, jock identity, and sport orientation, among others (Chang et al. 2017; Miller 2009; Miller and Hoffman 2009).

Taking a quantitative approach to answer the research questions will allow the analysis to examine multiple influences on athletic identity simultaneously, even if the analysis cannot fully provide deep understanding of athletic identity development (Babbie 2001). Considering that the current literature is lacking in the analysis of what affects athletic identity, an analysis of survey data is an appropriate place to start in understanding athletic identity more holistically. The

design is also approaching the research questions from a deductive perspective, since it is using previous literature and research to inform the current inquiry (Babbie 2001).

Measures

Athletic Identity (Dependent Variable). The survey measured the dependent variable through Anderson's (2004) conceptualization of AIQ. The four dimensions of the AIQ (athletic appearance, competence, encouragement, and importance) were measured through a 12-item section, where participants responded to a series of statements with answers ranging from 1 ("not descriptive of me") to 5 ("very descriptive of me") (Miller 2006). Some of the statements include: "my body looks in shape"; "I schedule time to exercise"; and "I receive encouragement from others for exercising" (Miller, 2006).

Each component of athletic identity was made by creating a mean index of the survey questions that corresponded with each athletic identity component. Each index consists of three survey questions, and one of the questions was reverse-coded to follow the direction of the others. Cronbach's alpha for the indexes of competence, appearance, importance, and encouragement are .834, .766, .871, and .794, respectively.

Exercise Frequency/Sport Participation. The survey asked respondents three questions about how often they currently exercise, which were combined to create a mean index. Each of the three questions asked "on average, how often these days do you engage in" and then separated type of exercise into the following: "any casual physical activity for fun"; "exercise for your health, fitness, or weight loss"; and "any organized sports activity" (Miller 2006). The response options ranged from "1-Never" to "5-Constantly (three or more times per week)" (Miller 2006). Cronbach's alpha for this index is .714.

Sport Orientation. The survey measured the sport orientation with the SOQ (Gill and

Deeter 1988). SOQ consists of 3 dimensions (goal orientation, win orientation, and competitiveness) and was assessed in a 9-question section, where participants responded to a series of statements with answers ranging from 1 (“doesn’t describe me at all”) to 5 (“describes me extremely well”) (Miller 2006). Some of the statements include: “scoring more points than my opponent is very important to me”; “I look forward to competing”; and “I try hardest when I have a specific goal” (Miller, 2006).

Each component of sport orientation was made by creating a mean index of the survey questions that corresponded with each sport orientation component. Each index consists of three survey questions. Cronbach’s alpha for the indexes of goal orientation, win orientation, and competitiveness are .834, .797, and .866, respectively.

Risk-Taking Behaviors. The survey asked 10 questions about risk-taking behaviors. This section in the survey began with, “The following questions are about experiences you may have had in the past 12 months. During the past 12 months, have you ever...”, followed by: “sustained a physical injury requiring follow-up care by a health professional”; “had unprotected sexual intercourse”; and “participated in an extreme sport,” among other (Miller 2006). The response options were “0-No” and “1-Yes” (Miller 2006). The range of what constitutes “risky behavior” here is quite large, as participating in an extreme sport is not at all similar to attempting suicide, yet they both appear in this section. This may affect the validity of the measurable impact the risk-taking behavior, since the operationalization of the term in the survey encompassed an enormous range of behaviors, and a composite of these measures may not give an accurate representation of risky behavior, making it difficult to generalize, or even understand, the effect of risk-taking behavior on athletic identity.

Analytic Strategy. For the present study, a linear regression was conducted to determine

the predictors for each dimension within the AIQ. Another model was then ran to determine if there was an interaction between gender and EF. These two steps were completed for each dimension of the AIQ. To measure the interaction between gender and exercise frequency, an interaction term was created. Exercise frequency was centered around its mean, and a new variable was created by multiplying the dummy coded gender variable by the centered exercise frequency variable, which created a new interaction variable. A linear regression was deemed appropriate because each dimension of the AIQ, the dependent variable, is a mean index of the responses to the relevant questions in the survey. Correlations between all variables and VIF scores were examined, and no evidence of multicollinearity was found. See Table 2 for correlations of important predictors.

HEADING 4

RESULTS

Participants

The final analyses included a sample size of 577 participants. See Table 1 for the descriptive information on the sample. The sample was 43.7 percent female and 56.3 percent male. About 72 percent of the sample identified themselves as White, 8.2 percent identified themselves as Asian, 8.3 percent identified themselves as Black, and 11.1 percent identified themselves as another race. Approximately 31 percent of the sample were freshmen, 32.6 percent were sophomores, 23.1 percent were juniors, and 12.8 percent of the sample were seniors in college at the time of the study. The average student GPA in the sample was 2.94 on a 4-point scale ($SD = .56$). The participants reported a mean Exercise Frequency (EF) score of 3.18 out of 5 ($SD = .98$), where a “3” response means that the participant exercises or plays a sport “Occasionally (less than once per week).” The respondents reported a mean Goal Orientation (GO) score of 3.89 out of 5 ($SD = .90$), a mean Win Orientation (WO) score was 3.66 out of 5 ($SD = 1.01$), and the mean Competitiveness score was 3.78 out of 5 ($SD = 1.05$), where a “4” response means that the respondent answered that the statement (i.e., “I set goals for myself when I compete”) with “Describes me pretty well.” The mean number of risk-taking behaviors (e.g., “In the last 12 months, I have ridden in a car without a seatbelt”) reported by the participant was 2.44 ($SD = 1.70$).

Athletic Identity: Competence

To determine the predictors of the Competence dimension within the AIQ, a linear regression was conducted. Another model was then ran to determine if there was an interaction between gender and EF. These two steps were completed for each dimension of the AIQ. In the

first model, gender, race, GPA, year in school, risk-taking behaviors, EF, GO, WO, and Competitiveness were used as predictor variables. There was a significant inverse relationship between being female and the Competence dimension ($\beta = -.13, p < .001$), while EF ($\beta = .28, p < .001$), GO ($\beta = .20, p < .001$), and Competitiveness ($\beta = .33, p < .001$), respectively, showed a significant positive relationship with the Competence dimension. In the next step, the interaction term was added to create the full model. Its addition did not significantly improve the model fit. Race, GPA, year in school, risk-taking behaviors, and WO were not significantly associated with the Competence dimension in the model. Table 3 includes the full regression results.

Athletic Identity: Appearance

. In the first model, GPA ($\beta = .12, p < .01$), EF ($\beta = .20, p < .001$), and GO ($\beta = .22, p < .001$) showed a significant positive relationship with the Appearance dimension. In the next step, the interaction term was added to create the full model. Its addition significantly improved the model fit ($\Delta R^2 = .02, df(1), p < .01$). The interaction term was negatively associated with the Appearance dimension ($\beta = -.16, p < .01$), meaning that the effect of EF on the Appearance dimension of athletic identity was weaker for females than it was for males. The relationship between GPA and the Appearance dimension ($\beta = .13, p < .01$) remained significant with the Appearance dimension, as did the effect of EF for males ($\beta = .31, p < .001$) and GO ($\beta = .22, p < .001$). Gender, race, year in school, risk-taking behaviors, WO, and Competitiveness were not significantly associated with the Appearance dimension in either model. Table 4 includes the full regression results.

Athletic Identity: Importance

For the first regression model, there was a significant positive relationship between being in the Asian ($\beta = -.16, p < .05$) and Other ($\beta = -.16, p < .05$) racial groups and the Importance

dimension, compared to the White group, while being in the Black group did not differ from the White group. GPA ($\beta = .09, p < .01$), EF ($\beta = .57, p < .001$), and GO ($\beta = .23, p < .001$), respectively, showed a significant positive relationship with the Importance dimension. In the next step, the interaction term was added to create the full model. Its addition did not significantly improve the model fit. Gender, year in school, risk-taking behaviors, WO, and Competitiveness were not significantly associated with the Importance dimension in the regression model. Table 5 includes the full regression results.

Athletic Identity: Encouragement

For the first model, there was a significant positive relationship between GPA ($\beta = .08, p < .05$), EF ($\beta = .42, p < .001$), and GO ($\beta = .25, p < .001$), respectively, with the Encouragement dimension. In the next step, the interaction term was added to create the full model. Its addition did not significantly improve the model fit. Gender, race, year in school, risk-taking behaviors, WO, and Competitiveness variables were not significant with the Encouragement dimension in this model. Table 6 includes the full regression results.

HEADING 5

DISCUSSION

The present study was conducted to examine the influences on athletic identity. From the review of literature, and using the AIQ developed by Anderson (2004), the study aimed to measure the effects of gender, year in school, GPA, race, risk-taking behaviors, sport orientation, and exercise frequency/sport participation on the multiple dimensions of athletic identity (competence, appearance, importance, and encouragement). As an extra test, an interaction term was created to see if gender interacted with the effect of exercise frequency/sport participation on the dimensions of athletic identity.

The results of this study were surprising in a few ways. First, considering the extensive literature on sport participation and the intimate link between sport participation and athletic identity, it was surprising that race did not significantly affect any of the athletic identity dimensions, except for athletic importance for Asian and other (e.g., mixed race or Native American) racial groups, compared to White people. Finally, athletic competence was the only dimension of athletic identity where GPA did not have a significant effect. It was also the only dimension where being female had a significant effect. I had expected that being female would have had a significant impact on each of the dimensions of athletic identity, but it only has a significant effect on athletic competence. It could be that women are more likely to perceive themselves as less competent at physical and athletic activities, but someone wanting a physically fit body can be achieved irrespective of any perceived competence in physical or athletic activities. Future research could study this and other indirect effects that gender has on athletic identity development.

Conversely, the study affirmed my expectations with the results related to exercise/sport

participation and goal orientation. Both of these variables were significant for each dimension of athletic identity, and they contributed greatly to the explained variance in the dependent variables. Additionally, competitiveness only had a significant effect on athletic competence, and win orientation did not significantly affect any part of athletic identity, which was also expected.

Even though the sample did not allow for some of the demographic information to be studied, and the cross-sectional data does not let us see how athletic identity changes over time, it is still important to recognize the role that gender played in the analysis of athletic competence and athletic appearance. Logically, the athletic competence dimension of athletic identity seems to be the most similar to sport and exercise participation. For athletic appearance, this study supports the findings of Rauscher and Cooky (2016) and Bennett et al. (2016), which suggest that exercise and sport participation do less to bolster a woman's athletic identity than a man's. A possible solution to encourage and support the athletic identity development and sport participation has been developed by Fisher (2016), who has presented a framework to possibly address the problems outlined by Rauscher and Cooky (2016) and Bennett et al. (2016). Specifically, to encourage more girls to play sports, and support them in doing so, sports coaching and leadership should follow models that incorporate care and thoughtfulness (Fisher 2016). Fisher (2016:383) argues that "the focus of [their] leaders must be switched from *transactional* coaching, administration, and consulting to *transformational* coaching, administration, and consulting." This means that youth sports program leaders should worry less about on-field performance, and more about the development of the individual. This may also help on-field performance, as children that receive transformational coaching, or developing the individual instead of the performance of the individual, may have more support that can breed greater resiliency and performance (Fisher 2016). Caring more about the individual, rather than

their performance, may give rise to sports programs that provide greater support to girls and women, encouraging them to participate in sports and develop athletic identities. This would be a worthwhile goal, considering the personal and social benefits that come with increased sport participation and athletic identity formation (Chang et al. 2017; Benson et al. 2015; Duncan et al. 2015; Miller 2009; Miller and Hoffman 2009).

Limitations of the Study/Suggestions for Future Research

While the survey had an adequate sample size, missing data limited the demographic characteristics that may be significant in determining what influences the strength of athletic identity. For example, after accounting for missing data, all Black students in the sample identified as Protestant. Beyond missing data, the study was confined to undergraduate college students at one university in a specific region of the United States. This is a narrow window through which to view athletic identity. Perhaps a longitudinal study would be more appropriate, giving the researcher an opportunity to measure changes to athletic identity over time. This may be a particularly important contemporary topic considering the massive size of the youth sports industry (Gregory 2017).

Another limitation of this study is the risk-taking variable that were measured through the survey. Miller (2006) asked ten questions about risk-taking behavior, but they ranged from minor risks (e.g., not wearing a seatbelt) to significant risks (e.g., attempting suicide). A different study could ask more questions about risk-taking behavior and group questions together based off of the severity of the behavior.

The study also is not able to make inroads into understanding athletic identity formation. This would be difficult to analyze in through quantitative analysis, so I would suggest qualitative research to answer the question of how athletic identity is formed. Currently, it is difficult to find

causal order of exercise participation, sport orientation, and athletic identity. Does a child want to start playing sports because they have an athletic identity or are competitive? Or do they develop a competitive personality after having participated in sports? As it stands now, it is not certain.

Future research on the topic may also include evaluations and interrogations of roles that community organizations, such as youth sports programs, play in the development of athletic identity. As was made clear by Huml et al. (2016), Rauscher and Cooky (2016), and McGannon et al. (2015), athletic identity and sport participation can be significantly impacted by entities like sports organizations, the media, and universities. Current literature focuses on the outcomes and effects of athletic identity, so the next steps should try to incorporate the impacts that social institutions and communities, as well as things like wealth and educational attainment, have on athletic identity.

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APPENDIX A

Table 1: Sample Description

	Min - Max	Mean (<i>SD</i>) or %
Dependent Variable:		
Athletic Identity:		
Competence	1-5	3.68 (.94)
Appearance	1-5	3.70 (.27)
Importance	1-5	2.95 (1.11)
Encouragement	1-5	3.07 (1.01)
Independent Variables:		
Exercise Frequency	1-5	3.18 (.98)
Sport Orientation:		
Win Orientation	1-5	3.66 (1.01)
Competitiveness	1-5	3.78 (1.05)
Goal Orientation	1-5	3.89 (.90)
Risk-Taking Behaviors	0-10	2.44 (1.70)
Race:		
White	0-1	72.4%
Asian	0-1	8.2%
Black	0-1	8.3%
Other	0-1	11.1%
Gender (female = 1)	0-1	43.7%
Student GPA	0.8-4.0	2.94 (.56)
Year in School:		
Freshman	0-1	31.5%
Sophomore	0-1	32.6%
Junior	0-1	23.1%
Senior	0-1	12.8%
Female * Ex Frequency	-2-2	-.16 (.61)

N = 577

APPENDIX B

Table 2: Correlation Matrix with Key Predictors

	AC	AA	AI	AE	EF	GO	WO	Comp	Female	RTB	F*EF
AC	1	.53**	.57**	.57**	.48**	.47**	.42**	.56**	-.32**	.17**	.32**
AA		1	.40**	.36**	.29**	.31**	.20**	.26**	-.08	.07	.11*
AI			1	.73**	.61**	.37**	.21**	.32**	-.14**	.07	.40**
AE				1	.50**	.40**	.26**	.37**	-.11**	.08*	.31**
EF					1	.27**	.24**	.33**	-.33**	.15*	.67**
GO						1	.54**	.65**	-.06	.12**	.14**
WO							1	.75**	-.25**	.22**	.14**
Comp								1	-.28**	.15**	.20**
Female									1	-.24**	-.30**
RTB										1	.09*
F*EF											1

N = 577; **-p<.01, *-p<.05; AC = AIQ Competence; AA = AIQ Appearance; AI = AIQ Importance; AE = AIQ Encouragement; EF = Exercise Frequency; GO = Goal Orientation; WO = Win Orientation; Comp = Competitiveness; RTB = Risk-Taking Behavior; F*EF = Interaction term between female and exercise frequency

APPENDIX C

Table 3: Linear Regression Results for Athletic Identity – Competence

	β (se)	β (se)
Female	-.13 (.07)***	-.21 (.07)***
Race (White ref. category):		
Asian	.01 (.11)	.01 (.11)
Black	.02 (.11)	.02 (.11)
Other	.00 (.10)	.00 (.10)
GPA	.06 (.06)	.06 (.06)
Year in School (Freshman ref. category):		
Sophomore	.07 (.08)	.07 (.08)
Junior	.03 (.11)	.03 (.11)
Senior	-.05 (.14)	-.05 (.14)
Risk-Taking Behaviors	.04 (.02)	.04 (.02)
Exercise Frequency	.28 (.03)***	.28 (.04)***
Sport Orientation:		
Goal Orientation	.20 (.04)***	.20 (.04)***
Win Orientation	-.04 (.05)	-.04 (.05)
Competitiveness	.33 (.05)***	.33 (.05)***
Female * Ex Frequency		-.00 (.07)
R ²	.46	.46

N = 577; ***-p < .001, **-p < .01, *-p < .05

APPENDIX D

Table 4: Linear Regression Results for Athletic Identity – Appearance

	β (se)	β (se)
Female	-.00 (.08)	-.02 (.08)
Race (White ref. category):		
Asian	-.05 (.14)	-.05 (.14)
Black	-.03 (.14)	-.04 (.13)
Other	-.03 (.12)	-.04 (.12)
GPA	.12 (.07)**	.13 (.07)**
Year in School (Freshman ref. category):		
Sophomore	.03 (.10)	.04 (.10)
Junior	-.05 (.14)	-.05 (.14)
Senior	-.08 (.18)	-.08 (.18)
Risk-Taking Behaviors	.02 (.02)	.02 (.02)
Exercise Frequency	.20 (.04)***	.31 (.05)***
Sport Orientation:		
Goal Orientation	.22 (.06)***	.22 (.05)***
Win Orientation	.01 (.06)	.01 (.06)
Competitiveness	.04 (.06)	.03 (.06)
Female * Ex Frequency		-.16 (.08)**
R ²	.17	.19**

N = 577; ***-p < .001, **-p < .01, *-p < .05

APPENDIX E

Table 5: Linear Regression Results for Athletic Identity – Importance

	β (se)	β (se)
Female	.04 (.08)	.04 (.08)
Race (White ref. category):		
Asian	.07 (.13)*	.07 (.13)*
Black	.02 (.13)	.02 (.13)
Other	.07 (.12)*	.07 (.12)*
GPA	.09 (.07)**	.09 (.07)**
Year in School (Freshman ref. category):		
Sophomore	.08 (.09)	.08 (.09)
Junior	.02 (.13)	.02 (.13)
Senior	-.03 (.17)	-.03 (.17)
Risk-Taking Behavior	.00 (.02)	.00 (.02)
Exercise Frequency	.57 (.04)***	.57 (.05)***
Sport Orientation:		
Goal Orientation	.23 (.05)***	.23 (.05)***
Win Orientation	-.07 (.05)	-.07 (.05)
Competitiveness	.05 (.06)	.05 (.06)
Female * Ex Frequency		-.01 (.08)
R ²	.45	.45

N = 577; ***-p < .001, **-p < .01, *-p < .05

APPENDIX F

Table 6: Linear Regression Results for Athletic Identity – Encouragement

	β (<i>se</i>)	β (<i>se</i>)
Female	.05 (.08)	.05 (.08)
Race (White ref. category):		
Asian	.04 (.13)	.04 (.13)
Black	-.02 (.13)	-.03 (.13)
Other	.04 (.12)	.04 (.11)
GPA	.08 (.07)*	.08 (.07)*
Year in School (Freshman ref. category):		
Sophomore	.08 (.09)	.08 (.09)
Junior	.03 (.13)	.03 (.13)
Senior	-.02 (.17)	-.02 (.17)
Risk-Taking Behavior	.01 (.02)	.01 (.02)
Exercise Frequency	.42 (.04)***	.43 (.04)***
Sport Orientation:		
Goal Orientation	.25 (.05)***	.25 (.05)***
Win Orientation	-.05 (.05)	-.05 (.05)
Competitiveness	.11 (.06)	.11 (.06)
Female * Ex Frequency		-.03 (.08)
R ²	.35	.36

N = 577; ***-p < .001, **-p < .01, *-p < .05

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