EXPLORING ACADEMIC AND ATHLETIC IDENTITY AMONGST FEMALE STUDENT-ATHLETES

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ABSTRACT

EXPLORING ACADEMIC AND ATHLETIC IDENTITY AMONGST

FEMALE STUDENT-ATHLETES

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Two samples of female student-athletes were surveyed to explore dimensions of athletic and academic identities in Division I female student-athletes. Quantitative methods used a refined version of the 2010 NCAA Growth, Opportunities, Aspirations, Learning of Students in college (GOALS) survey to explore constructs underlying female student-athletes' athletic and academic identities using exploratory factor analyses, tests of internal reliability, and independent *t*-tests. Qualitative methods used interviews to further explicate quantitative findings by exploring female student-athletes' self-expressed perspectives about their identities as students and athletes. EFA and Cronbach's alpha results suggest a possible 2-factor or 3-factor model underlying athletic and academic identity in female student-athletes. Results showed that female student-athletes are equally dedicated to athletic and academic pursuits, although athletic identity is dominant in their lives. Participants expressed similarities in descriptions of self as students and athletes and used similar approaches to athletic and academic expectations. Current findings of this initial study exploring athletic and academic identities using the refined GOALS survey offer critical insights into appropriate techniques for measuring female student-athletes' athletic and academic identities and could be explored further in future studies with larger sample sizes.

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DEDICATION

This dissertation is dedicated to my son, K. You are my dream and my inspiration. May you be inspired to trust your heart, follow your dreams, and do your best, even if things are hard. I love you.

CHAPTER I

STATEMENT OF THE PROBLEM

Since the passing of Title IX in 1972, intercollegiate athletics has seen an increase of female student-athletes (Aries et al., 2004; Beyer & Hannah, 2000). Currently there are more than 222,000 female student-athletes in the NCAA (National Collegiate Athletic Association [NCAA], 2021a). These female student-athletes are approximately 47% of the NCAA student population (NCAA, 2021a) and are distributed across more different sports than male student-athletes (Siegel, 1994). Research about academic success in intercollegiate athletics consists primarily of studies comparing student-athletes based on gender and less about the reasons for success within this population of college students. Scholars have theorized that different levels of academic identity may be a contributing characteristic to academic success (Beron & Piquero, 2016; Gayles, 2004; Miller, 2009; Rankin et al., 2016; Simons et al., 2007) Although Title IX was passed over fifty years ago and the nation continues to celebrate this impactful legislation, there is still minimal research about the identities of female student-athletes and the dimensions that may contribute to higher achievements in college, both athletically and academically.

Research has suggested that students are more academically successful if they feel more connected to the institution and have higher levels of academic identity (Melendez, 2006; Rankin et al., 2016). Logically then, it is important for student-athletes to connect with people beyond their teammates and coaches; and research has shown that athletics played a key role in helping a student-athlete socially and academically adjust to the college environment (Melendez, 2006). Encouraging, empowering, and positive interactions with academic advisors, faculty, other students, and even athletic administration were found to lead to greater academic success for student-athletes (Comeaux et al., 2014; Hollis, 2001; Rankin et al., 2016). Researchers found that

positive interactions with other peers and faculty members contributed to better academic performance, but schedule demands limited student-athletes' abilities to engage in academic interactions such as office hours, group study sessions and student organizations and clubs, that enhance academic achievement (Comeaux et al., 2014; Gayles & Hu, 2009; Rankin et al., 2016).

Women who participate in intercollegiate athletics at the college level have been consistently outperforming their peers for decades academically (Melendez, 2006; NCAA, 2020a). Female student-athletes graduate at higher rates than male student-athletes as well as their female nonathlete peers, and typically obtain higher GPAs while in college (Comeaux et al., 2014; Johnson et al., 2013; Melendez, 2006; Rankin et al., 2016). Recent statistics show that female student-athletes had a graduation rate of 75% while male student-athletes had a graduation rate of 64% in 2020 (NCAA, 2020a). The national average was 71% for females and 66% for males in the general student body (NCAA, 2020a). The graduation percentage of female student-athletes has continuously increased and has been higher than their female non-athlete peers for the past decade (NCAA, 2020a). When disaggregated by race, female student-athletes who identify as white, black and Hispanic/Latino have significantly higher graduation rates than their female peers of the same race.

Since student-athletes typically miss classes for travel and athletic competitions, student-athletes are encouraged and are more likely to utilize academic support programs and services than nonathlete peers. Melendez (2006) theorized that academic support programs typically offered to athletes, such as tutoring and study hall requirements, may be part of the reason for improved academic achievement in this population. These programs and services are typically coordinated or overseen by athletics academic staff. In one study completed by Johnson et al. (2013), male and female student-athletes were compared in their usage of tutoring services over

a three-year period of time. The results indicated that female student-athletes used tutors less overall than male student-athletes (Johnson et al., 2013). However, the study also indicated that once a female student-athlete obtained a tutor, she met with that tutor more during the semester than her male counterparts and achieved an overall higher GPA (Johnson et al., 2013). Although female student-athletes did not require a tutor as often, they did utilize the service to help with academic improvement. Johnson et al. (2013) provided insight into a possible difference between the performance of male and female student-athletes, but it did not answer questions related to the trends between student-athletes and their nonathlete peers. Unlike their nonathlete peers, student-athletes struggle to engage in academic related opportunities, such has clubs and organizations, residential learning groups or programming sponsored by their academic program that enhance the academic experience and improve academic performance. Melendez (2006) further showed the impact that athletics has on college adjustment is not always negative; female student-athletes expressed higher feelings of inclusion and personal identity at their university compared other college peers at the same institution.

Identity of Student-Athletes

Identity development is built upon a combination of past and present experiences (Foster & Huml, 2017). Many student-athletes begin participating in athletics as children. In a survey completed by the NCAA in 2019, an overwhelming majority of current student-athletes at a NCAA school competed in high school or on a club sports team (NCAA, 2019b). Current student-athletes who did not compete in high school or on a club sports team accounted for less than 3% on most athletic teams (NCAA, 2019b). The exceptions included men's and women's tennis, women's rowing, women's lacrosse and women's golf since there are typically not

options for these sports for students to participate in high school or organized club teams (NCAA, 2019b).

Student-athletes must balance two roles while they pursue their college degree: that of student and that of athlete (Rankin et al., 2016; Watt & Moore, 2001). The roles, for the student-athlete, are not separate, although the expectations for each role are clearly different. Many times, trying to balance these identities causes internal conflict within the student-athlete (Rankin et al., 2016; Settles et al., 2002). It is not an easy balancing act as both roles require an excessive amount of dedication, time, and effort to be successful. The identity of an athlete may also play a role in the academic success of female student-athletes. Student-athletes that exhibit higher levels of athletic identity and athletic motivation tend to have lower academic motivation (Retting & Hu, 2016). Many scholars have found that female student-athletes tend to have lower levels of athletic identity than male student-athletes (Beron & Piquero, 2016; Melendez, 2006; Riemer et al., 2000). The effects of identifying more with their academic role contributes to the higher levels of academic success for female student-athletes and could also be evidence that female student-athletes are able to better balance the expectations related to the two identities which allows them to engage in more academic related activities during their college career (Meyer, 1990; Potuto & O'Hanlon, 2007).

Identity plays out in internal and social ways which fuels a constant, ongoing renegotiation of the identities a person holds (Miller, 2009). Athletic participation is tied very closely to a person's social identity and negative feelings, such as depression or low self-esteem, because of sport related outcomes (Hale et al., 1999). Athletic identity is influenced by individuals collecting information from their surroundings that then is used to define and contextualize their role as an athlete (Huml et al., 2019). Stronger levels of athletic identity are

found when in the presence of other athletes (Brewer et al., 1993). It is typical for student-athletes to identify themselves first as an athlete, rather than any other group they may identify with including their race (Brown et al., 2003).

Internally, student-athletes' self-esteem is intertwined with their athletic performance. Chen et al. (2010) found that student-athletes have lower self-esteem in general when they are not performing well in their sport. Student-athletes feel a constant pressure to win (Weatherly & Chen, 2019). Similarly, student-athletes who are injured tend to struggle more emotionally and socially, sometimes to the point of depression, because they are not able to perform and are more distant from their friends and teammates (Chen et al., 2010; Miller, 2009). Sports define these student-athletes' self-worth (Brewer et al., 1993). Athletic identity is positively associated with athletic performance and success (Franck et al., 2016; Van Rens et al., 2019). However, there is very little information on what defines athletic success, as it varies based on the influences of coaches and institutional culture (Aries et al., 2004; Rankin et al., 2016).

Athletic identity may also play a role in the academic success of a female student-athlete. In a study completed by Melendez (2006) that analyzed the influence of athletic participation on the adjustment for freshman and sophomore student-athletes, female student-athletes exhibited higher levels of social adjustment and institutional attachment when transitioning to college. Female student-athletes showed greater interest and engagement in both athletic and academic activities (Potuto & O'Hanlon, 2007). Female student-athletes also expressed the importance of both athletic and academic roles and saw the relationship between education and success (Meyer, 1990). Female student-athletes also had a higher degree of commitment to their goals, especially their educational goals (Melendez, 2006). These findings seem to indicate that female student-athletes are cognizant of their academic role and more engaged in their academic career and, thus

are motivated to be academically successful. Although research has answered questions related to the differences between academic success shown in male and female student-athletes, it is not clear about how the synergy between academic and athletic identities play a role in successful academic outcomes. Due to the success seen in the female student-athlete population, it is important to explore these identities further with this population to determine possible answers.

Research on student-athletes and nonathletes

Many unknowns remain in regard to the behaviors, experiences and educational outcomes between student-athletes and nonathletes in college (Retting & Hu, 2016). The transition between high school and post-secondary schooling impacts identity development (Jensen & Jetten, 2016). Many undergraduate students must rework their identity into a new context, trying to establish a sense of belonging within the academic arena (Jensen & Jetten, 2016), in addition to adjusting from childhood to adulthood. Academically, this reworking an undergraduate student must navigate is essentially relearning who they are as a student and can be applied through adjusting of study habits, new surroundings, resources, and academic focus (Jensen & Jetten, 2016). When comparing student-athletes to the general undergraduate population, similarities and differences can be found.

Similarities between Nonathletes and Student-Athletes

Student-athletes and nonathlete students see the value of post-secondary education and have the ultimate goal of obtaining a college degree (Okagaki et al., 2009). To pursue a college education is much deeper than the degree, however. Many times, it is a sense of status or a means of becoming valuable (Okagaki et al., 2009). For many, a college degree helps a person establish a more solid financial foundation as well as gain key skills in order to survive the world (Okagaki et al., 2009).

Stereotypes of high achievement and ability in education typically favor males even though females consistently have outperformed males in all educational levels (Verniers & Martinot, 2014). This is also seen at the university level. The nonathlete female population consistently outperforms males in academic outcomes in college (Verniers & Martinot, 2014) and female student-athletes consistently outperform male student-athletes as well (Bell, 2009). However, females are typically underrepresented in prestigious areas of higher education, such as areas in science, technology, engineering and mathematics (Verniers & Martinot, 2014). This gap is seen across most female and male groups.

Another similarity seen between nonathlete student populations and student-athletes population is the underdevelopment of career identities. Undergraduate students have been found to need training in career development and need help developing a professional identity (Jensen & Jetten, 2016). When comparing female student-athletes to their female nonathlete peers, female student-athletes have lower levels of career identities (Lally & Kerr, 2005; Riemer et al., 2000). Students in the general undergraduate population begin building their professional identities earlier (Jensen & Jetten, 2016) than student-athletes who may begin in their last year of or after college (Coffey & Davis, 2019).

Student-athletes enter college with lower cognitive achievement than their nonathlete peers (Howard-Hamilton & Sina, 2001). However, researchers have found that by second year in an undergraduate degree, student-athletes and their nonathlete peers do not show any significant difference cognitively (Howard-Hamilton & Sina, 2001). This supports that there are positive outcomes that could be attributed to sports participation including key skills needed for adaptation to the college lifestyle.

Financial wellbeing between student-athletes and nonathletes is another similarity. Financial wellbeing can be defined as the confidence a student has to manage their economic life (Gallup, 2020). Although not a specific academic outcome, academic performance is impacted by financial stability (Oseguera et al., 2018). The income of parents also impacts academic outcomes for both populations (Oseguera et al., 2018). The financial wellbeing while in college between these two groups is essentially the same with student-athletes having a 41% percent confidence level and the nonathlete population having a 40% confidence level to manage economic expectations according to a research study completed by Gallup (2020). In addition, the recent Gallup (2020) poll also found that student loan accrual for both populations is essentially the same, outlining those financial implications between both groups are consistent.

Differences between Nonathletes and Student-Athletes

The major difference between student-athletes and nonathletes is the need to balance athletic and academic identities as well as the expectations of both these roles (Bimper, 2014). The commitments to be a student-athlete is mentally, emotionally, and physically exhausting (Watt & Moore, 2001). Every day, student-athletes must dedicate time to their role as athletes and devote time to learning in the classroom. Most student-athletes have lower academic identity levels than their nonathlete peers (Van Rens et al., 2019), which is a predictor for lower academic success (Beron & Piquero, 2016).

Despite the challenges that student-athletes face academically because of their athletic involvement, this population of students show no significant underperformance compared to their peers, even though they typically enter college with an academic disadvantage (Aries et al., 2004). In recent years, researchers have determined that SAT scores are invalid predictors of success of first-year college athletes and do not indicate long term success (Ting, 2009).

Scholars indicate that participation in athletics has shown positive outcomes of retention beyond the first year of college (Leppel, 2006) and motivation to complete a bachelor's degree (Gayles, 2009; Melendez, 2006). Student-athletes graduate at higher rates than that of their nonathlete peers (Gayles, 2004; Melendez, 2006; Watt & Moore, 2001). According to the NCAA, student-athletes have graduated at higher rates than the student body since 2002 (NCAA, 2020a). Student-athletes have one of the highest graduation rates for student populations at the college level and have steadily improved over the past 20 years (Melendez, 2006; NCAA, 2020a). As the number of student-athletes has increased, the rate of graduation too has increased during that time frame from a completion rate of 58% in 2002 to 69% in 2019 (NCAA, 2020a). The competitive aspects of determination, drive and winning found in student-athletes' identities could be benefiting their academic performance (Bailey & Bhattacharyya, 2017).

Student-athletes are outperforming their peers in degree completion rates when analyzed by gender and race. Nationally, female student-athletes had a degree completion at a rate of 75%, whereas their nonathlete female peers only had 71% of the population complete their degree in 2020 (NCAA, 2020a). Black student-athletes had a percentage of 59% for degree completion, where there nonathlete Black peers only graduated at a rate of 50% in 2020 (NCAA, 2020a). Focusing on Black female student-athletes the gap is even greater with the student-athlete population where 66% completed and the nonathletes had 54% completing in 2020 (NCAA, 2020a). In fact, the only population of student-athletes that did not outperform their peers were White men, but statistically, were even with their nonathlete peers (NCAA, 2020a). Studying student-athletes who are high performing in their academic roles will only give more insights for strategies that can be used to obtain higher levels of academic success across all groups of undergraduate students (Retting & Hu, 2016).

Due to academic preparation and commitments, female student-athletes should be at a disadvantage when compared to their female non athlete peers. Yet despite the challenges, female student-athletes are outperforming their female nonathlete peers. The difference may be related to their identities as students and as athletes. The question raised is what the dimensions of athletic and academic identities are found amongst female student-athletes. With limited research about the identities of female student-athletes and minimal tools available to measure these identities, the question raised above is difficult to answer. There is a need to expand the current research base to find appropriate techniques for measuring female student-athletes' athletic and academic identities and to explore how female student- athletes perceive themselves as students and as athletes.

Purpose of Study

The purpose of this concurrent mixed methods study is to explore dimensions of athletic and academic identities in Division I female student-athletes, a population with high academic achievement and graduation success rates. Quantitative methods will use a refined version of the 2010 NCAA Growth, Opportunities, Aspirations, Learning of Students in college (GOALS) survey with two samples to explore constructs underlying female student-athletes' athletic and academic identities using exploratory factor analyses, tests of internal reliability, and independent *t*-tests. Qualitative methods will use interviews to further explicate quantitative findings by exploring female student-athletes' self-expressed perspectives about their identities as students and athletes. Findings from this study may offer critical insights into appropriate techniques for measuring female student-athletes' athletic and academic identities and how female student athletes understand themselves as women who navigate complex collegiate experiences of being both a student and an athlete. Future research will benefit by exploring the

extent to which female student-athlete identities associate with their academic success, using a refined version of the GOALS survey as tested in this study.

CHAPTER II

LITERATURE REVIEW

Intercollegiate athletics holds a prominent position on many college campuses in America. Over 1,100 institutions are members in the National Collegiate Athletics Association (NCAA), which comprises close to half a million student-athletes across 40 different sport affiliations and three divisions (NCAA, 2020a). With so many universities and colleges involved with the NCAA, athletics plays an integral role on college campuses across the nation.

Intercollegiate athletics is not solely about the competition. Many university presidents express that having an athletics program benefits their campus including exposure (Blumenstyk, 2015) and building community with students, faculty, and alumni (Aries et al., 2004). Institutional sports teams can bring added marketing and exposure to a campus. Universities rely on televised sporting events to bring attention that can improve enrollment and image (Watt & Moore, 2001). Many colleges consider athletics as critical recruiting avenues for new students and donor support (Beyer & Hannah, 2000; Blumenstyk, 2015). Athletics brings awareness of an institution to those who are followers of sports and can also build institutional pride for current students and alumni, particularly if the team is winning. For some in the public, the image and reputation of an institution can solely be based on the performance of its sport teams (Howard-Hamilton & Sina, 2001; Pascarella et al., 1999). This can be an important factor for the recruitment of new students, enrollment growth and philanthropy efforts.

Student-athletes are the important constituents of intercollegiate athletics and at times, the face of an institution, and therefore are representatives of their school, their sport, their division, and the NCAA. Being involved in intercollegiate athletics adds complexity to a student's life (Watt & Moore, 2001). Student-athletes often cope with public scrutiny and face negative

stereotypes such as poor academic performance, lack of intelligence, entitlement, and social advantages (Carodine et al., 2001; Jolly, 2008). Student-athletes are required to abide by academic, athletic and legal codes of conduct instituted by NCAA, the athletic conference that they compete in and institutions they attend. These rules are not just for the court, playing field, gymnasium, or pool, but also for the communities in which they live and the classrooms where they learn. In addition, student-athletes have academic regulations that they must comply with in order to remain eligible to compete and receive financial funding for their education.

Most student-athletes on campuses are similar in terms of age, starting college right out of high school and social makeup to other traditional students on their campus. However, due to the high demands, time constraints and expectations of a student-athlete's lifestyle, these students can be classified as a unique, nontraditional student population (Comeaux & Harrison, 2011; Hollis, 2001; Sedlacek & Adams-Gaston, 1992). These students must balance obligations to professors, classmates, coaches, teammates, and athletic personnel (Watt & Moore, 2001). Student-athletes are expected to not only perform in the classroom, but also meet the requirements of their sport that can be both mentally and physically grueling (Carodine et al., 2001). They are required to dedicate a substantial amount of time each week to sports related activities (Comeaux et al., 2014). It is believed that most student-athletes, especially those competing at the Division I level, could spend more than 40 hours a week dedicated to practice time, weights, rehab, team meetings, travel, competition, and community service events (Bell, 2009; Comeaux, 2011; Comeaux et al., 2014; Hollis, 2001; Johnson et al., 2013; Jolly, 2008; Rankin et al., 2016; Simons et al., 2007; Umbach et al., 2006). Thus, the athletic time requirements each week for a student-athlete mimics that of a full-time job. These students must manage their athletic life as well as meet the minimum expectation of a full-academic load

(Jolly, 2008). Even with the best intentions, student-athletes can find themselves isolated from their peers because of schedule demands and behind academically in their classes (Hollis, 2001).

The necessary balance that student-athletes must obtain to succeed is more than schedules and demands. These students also balance the roles that influence who they are as a person. Their identities as a student and as an athlete require prioritization, and can influence goals, decisions, behaviors and how they define themselves (Brewer et al., 1999). In order to better support student-athletes in meeting the complex demands of their higher education and participation in sports, exploring the identities that these students build to define themselves is important and likely to shed light on the reasons for their educational success or failure.

Identity

Identity can be defined as the value or importance that a person assigns to their perceived competence or incompetence, which influences their self-esteem, affect and motivation (Brewer et al., 1993). Identity can be attached to distinct networks or relationships that influence how a person characterizes themselves, which can determine their choices and values; including who their friends are and who they want to be (Stryker & Burke, 2000). Identity develops as a person copes with internal needs, social demands and developmental challenges (Hejazi et al., 2008; Miller, 2009), and is an accumulation of complex meanings that the person attaches to societal roles in past and present experiences (Foster & Huml, 2017; Miller, 2009; Stryker & Burke, 2000). The two predominant identities that all student-athletes must balance are athletic and academic.

Athletic Identity

The ways in which athletic involvement and experiences can psychologically and cognitively affect a person is considered collectively to be their athletic identity (Chen et al.,

2010). Primarily related to those individuals who participate in athletic endeavors; athletic identity is a reflection of how an individual considers themselves to be 'like' an athlete in their thoughts and emotions (Bell, 2009; Brewer et al., 1993; Van Rens et al., 2019). These perceptions are a key source of an athlete's self-esteem and definition of self (Brewer et al., 1999) and are positively associated with athletic performance (Van Rens et al., 2019). Athletic identity is influenced by family, friends, teammates, coaches, teachers, and the media (Brewer et al., 1993); these environmental variables work to influence individuals in their role as athletes (Huml et al., 2019).

Research on athletic identity emerged in the 1990s. Brewer et al. (1993) presented the first measurement tool for athletic identity called the Athletic Identity Measurement Scale (AIMS). The AIMS scale is a questionnaire that was created with input from research assistants and former student-athletes; it focuses on the strength and exclusivity of identification related to the athlete role (Beron & Piquero, 2016; Brewer et al., 1993). The AIMS scale is still widely used for determining athletic identity and although there are other scales that have been created since, most are based on the AIMS scale (Beron & Piquero, 2016).

Hale et al. (1999) completed a confirmatory factor analysis using the AIMS on professional Olympic athletes from Russia, the United Kingdom, and the United States of America and determined that athletic identity is a three-dimensional construct composed of social identity, exclusivity, and negative affectivity. Social identity was a key factor based on questions asked about who their friends were, what level did they see themselves as athletes, or the number of sports related goals they had set for themselves (Hale et al., 1999). Exclusivity was determined based on scores related to the level importance sports played in their life including the amount of time spent thinking and participating in their sport (Hale et al., 1999).

Athletic identity levels also are influenced by negative outcomes, or negative affectivity, related to their sport, such as depression when injured or low self-esteem based on playing poorly (Hale et al., 1999). Although the AIMS has been used in many studies and different types of athletic populations, it solely looks at athletic identity and does not have a comparative scale for academic identities.

Being an athlete is the predominant identity that most student-athletes apply to define themselves, more than any other group they identify with including student and racial associations (Brown et al., 2003). Strong levels of athletic identity have been found in high school aged athletes and tends to "dominate all facets of existence" (Alder & Alder, 1985, p. 244). Those that have a high level of athletic identity tend to have long sports careers, usually pursuing professional opportunities (Anderson, 2004; Chen et al., 2010). Transitioning away from athletic roles is harder for those with stronger athletic identity (Hale et al., 1999; Saxe et al., 2017).

Research on athletic identity has focused on how it impacts other areas of an athletes' life including health and wellness, academics, and career outcomes. However, there are two areas of athletic identity that have not yet been explored; the influence of athletic identity on athletic success and the synergistic effects that athletic and academic identities have on one another that contribute to academic success, specifically with a focus on female college students. Research on athletic identity's influence on athletic success has not been explored because of the varying definitions of athletic success. The conditions for athletic success are different for each person, coach, and sports program (Rankin et al., 2016). Institutions could see different definitions between teams because each coach has different expectations, and each individual athlete has

different objectives and goals. This literature review will highlight the importance that athletic identity may play a role in academic success, especially in the success of female student-athletes.

Athletic Identity and Race. Athletic identity can also be influenced by different racial, socioeconomic and cultural backgrounds. Student-athletes of color began participating on NCAA teams in the mid-1960s (Person et al., 2001). Now, nearly half of student-athletes competing at the Division I level are student-athletes of color (NCAA, 2021a). Student-athletes of color juggle multiple identities and roles to succeed in college (Person et al., 2001). Race, particularly for Black students, tend to be a higher contributor for athletic identity (Harrison et al., 2011). Participating in sports is a critical factor for developing social acceptance and prestige for minority youth, (Harrison et al., 2011) and at times, becomes a way to shield their self from discrimination (Brown et al., 2003). Student-athletes of color face racism on campus and added pressures to perform athletically (Person et al., 2001). Female student-athletes of color are typically targeted by sexism as well (Person et al., 2001). Many black student-athletes feel the need to conceal their athleticism and their identity as an athlete to protect themselves from negative comments and stereotypes that they endure in their college communities (Comeaux, 2010; Harrison et al., 2011).

Academic Identity

Academic identity is the self-awareness of academic abilities and interests (Hyatt, 2003) and is positively influenced by commitment to academic pursuits (Guay et al., 2004). Students who have stronger academic commitment exhibit stronger study skills and motivation to complete academic tasks that lead to better academic performance, (Nichols et al., 2019; Stryker & Burke, 2000); including higher grade point averages (Lounsbury et al., 2005), and persistence toward goals including graduation (Guay et al., 2004).

Studies have shown that, on the whole, student-athletes have lower academic identity than their peers (Van Rens et al., 2019). Some researchers have found that a strong athletic identity influences lower academic achievement for a student-athlete (Bimper, 2014). However, Beron and Piquero (2016) found instead that high athletic identity was not an indicator of academic trouble; rather low academic identity was a predictor of low academic performance. These conflicting findings support the need for further exploration of these identities within the student-athlete population.

Academic identity changes throughout a student-athlete's collegiate experience and is influenced by the changes in academic demands (Van Rens et al., 2019). Student-athletes show higher levels of academic identity later in college (Chen et al., 2010; Lally & Kerr, 2005) which may be related to a natural transition of focus away from sports. Coaches and athletic advisors also play a vital role to the development of a student-athletes academic identity and academic outcomes (Bell, 2009) as they exhibit expectations and importance of the role in a student-athlete's collegiate experience. Academic outcomes for student-athletes tend to be more influenced by the demands and expectations of a student-athlete's sport (Comeaux & Harrison, 2011) and how well they can balance managing two roles, each being a full-time commitment, simultaneously in college (Chen et al., 2010).

Academic Identity and Race. Cultural, ethnic, racial and socioeconomic backgrounds play an integral role in the beliefs, practices and expectations for advanced education (Rouland, 2017). Academic identity of students of color requires a balance of ethnic affiliation and academic performance (Gu et al., 2019). Ethnic minorities sense of belonging is contextually formed and complex (Gu et al., 2019). Student-athletes of color endure a double stigma (Harrison et al., 2011), because they are not only a minority, but also an athlete. Many endure

stereotype threats (Gu et al., 2019) and face racist practices in their classrooms from faculty and peers (Comeaux, 2011) that can impact social and academic integration (Person et al., 2001) as well as influence the pursuit of academic opportunities (Comeaux, 2010).

Student-athletes are typically recruited from school experiences, aptitudes and socioeconomic contexts that are significantly different than other students (Pascarella et al., 1999). Prior research suggests that student-athletes of color are more likely to be raised by a single mother and are typically their first in their family to attend college (Person et al., 2001). Females disproportionally are heads of households in Black and Hispanic households, and therefore for female student-athletes of color, college success is not only critical for them, but for their families as well (Morales, 2008). Student-athletes of color not only see opportunities with athletics, but also believe that working hard to balance academics and athletics will benefit them in the long run and help them reach their personal goals (Potuto & O'Hanlon, 2007). Although these characteristics are not in the background of all student-athletes of color, these trends have been found in research studies over the past two decades.

Academic Success

Academic success is a term with different meanings depending on varying views (York et al., 2015). The most common indicators used for determining academic success in a student population are graduation rates, retention, and grade point averages (Caruth, 2018; Nichols et al., 2019; Watt & Moore, 2001). College students typically define academic success as the outcomes of the learning process including gaining of skills and knowledge, meeting personal goals, and professional achievement (Stock et al., 2018). Both definitions are important to consider and instead should be defined as academic achievement. Academic achievement is expressed through the students' GPA and grades, completion of course activities and requirements, mastery of

program learning outcomes that allow a progression and secondary admission into students' chosen academic path (York et al., 2015). Achievement can also be expressed through persistence and overall retention rates (York et al., 2015), which for student-athletes and intercollegiate institutions, contribute to a program's Academic Progress Rate (APR), a policy implemented by the NCAA to hold athletic departments accountable to the academic progress, achievement, and success of student-athletes (NCAA, 2019a). Academic achievement is influenced by different experiences that enhance the college experience of a student-athlete. It is important to highlight the perceived challenges and benefits that participation in intercollegiate athletics has on academic achievement for student-athletes.

Challenges of Academic Success for Student-Athletes

For some student-athletes, academic challenges start at the points of recruitment and admission to the university as the focus for attending school looks different than most. Many prospective student-athletes base their decision to attend a school on the coach, the opportunity to play, location of the school, degree programs offered, and academic services available (Gabert et al., 1999; Letawsky, 2001; Schneider & Messenger, 2012). Coaches look for the best athlete to join their team, not the best student (Gayles & Baker, 2015). Student-athletes as a whole tend to have lower academic preparation prior to college compared to their nonathlete peers (Gayles, 2009; Hollis, 2001) and have lower SAT scores at college entry (Aries et al., 2004). These students are distinct from incoming nonathlete students because they immediately must learn to balance athletics, academics, and social demands (Gayles & Baker, 2015) and often suffer the same circumstances as non-traditional students that impact academic performance (Sedlacek & Adams-Gaston, 1992). Athletes have expressed that they believed they could have higher GPAs

in college if not an athlete (Wolverton, 2007), but found it hard to find time to study (Aries et al., 2004).

One of the biggest challenges for student-athletes related to academic success are the expectations, demands and stressors that they endure every day of their collegiate career (Aries et al., 2004; Beauchemin, 2014; Carodine et al., 2001; Comeaux & Harrison, 2011; Nichols et al., 2019). Athletically, these students dedicate up to 40 hours per week to their sport (Bell, 2009; Comeaux, 2011; Comeaux et al., 2014; Hollis, 2001; Johnson et al., 2013; Jolly, 2008; Rankin et al., 2016; Simons, et al., 2007; Umbach et al., 2006). However, they also have to manage other stressors such as injuries or even possible benching (Beauchemin, 2014), which can have devastating effects on an athlete's self-esteem and sense of purpose (Chen et al., 2010). These students have different expectations from multiple sources including professors, peers, family members, coaches, teammates, support staff and even themselves (Carodine et al., 2001; Nichols et al., 2019).

Student-athletes are possibly one of the most scrutinized and stigmatized groups of students in colleges and universities (Simons et al., 2007). This group of students, depending on the sport they play, are famous figures within their college community and are watched and analyzed every day by coaches, faculty members, support staff, peers, media and fans (Watt & Moore, 2001). Many student-athletes experience the stereotype of being a jock (Coffey & Davis, 2019; Comeaux, 2011) which typically is a term that is associated with being dumb (Simons et al., 2007), domineering, and masculine (Miller, 2009). Female student-athletes face stereotypes of being lesbians and are judged on higher standards of appearance (Person et al., 2001).

For student-athletes the negative stigmas of being an athlete can be damaging not only to their identity (Miller, 2009) but also to their credibility as a student (Comeaux, 2011; Simons et

al., 2007). These negative perceptions are instilled and fueled by their campus community, including faculty and peers (Chen et al., 2010; Comeaux, 2010; Engstrom et al., 1995; Miller, 2009; Simons et al., 2007) who believe that athletes receive favors and extra benefits (Simons et al., 2007), are not smart enough to earn As in their courses (Comeaux & Harrison, 2011) and lack motivation for good academic performance (Comeaux, 2011). Many student-athletes find it hard to gain the respect of their faculty (Aries et al., 2004) which for some, can be so defeating that it causes a student-athlete to disidentify with academics by focusing more on their athletic abilities or concealing their athletic identity to avoid stigmatization (Simons et al., 2007). Those who spend more time focusing on their sport, including those who are planning on seeking a professional career, report lower grade point averages during their collegiate experience when compared to other student-athletes who do not have professional sport opportunities after college (Beron & Piquero, 2016).

Student-athletes also have less academic autonomy (Alder & Alder, 1985; Bell, 2009) and are sometimes prohibited from taking certain classes or majors because of the time commitment needed for athletic participation (Bell, 2009; Wolverton, 2007). In a study completed by Potuto and O'Hanlon (2007), over 11% of student-athletes expressed they were not able to pursue the major they wanted because of athletic involvement. Beron and Piquero (2016) noted in their study that student-athletes exhibited lower GPAs if they were discouraged away from certain majors by a coach. Student-athletes who are steered away from their interest can become uninterested because they do not relate to the subjects or find merit in what they are studying (Alder & Alder, 1985). When coaches become too involved in a student-athlete's academic career, the student is not able to make academic decisions (Alder & Alder, 1985; Bell, 2009).

Student-athletes are sometimes encouraged to major in certain fields that have been deemed "friendly" for athletic schedules. This is known as academic clustering (Schneider et al., 2010). The reasons for academic clustering can be positive and legitimate (Schneider et al., 2010) such as interactions with faculty members who value the athletes' academic success (Capriccioso, 2006) or the ability to feel comfortable in class because other athletes are in attendance (Schneider et al., 2010). Academic clustering limits the individual identity development of student-athletes (Foster & Huml, 2017) and increases levels of social isolation, which is highly predominant in athletic life due to the demands of their schedule and athletic culture (Alder & Alder, 1985; Riemer et al., 2000).

Positive Benefits of Academic Success for Student-Athletes

Although there are many challenges to participating in intercollegiate athletics, studies have shown many benefits as well. Student-athletes show higher levels of overall wellbeing than other college students not involved in sports (Aries et al., 2004). Participation in sports not only improves physical wellbeing, but also has been shown to provide psychological, social and educational benefits as well (Chen et al., 2010).

Despite the challenges that student-athletes face academically because of their athletic involvement, this population of students show no significant underperformance compared to their peers, even though they typically enter college with an academic disadvantage (Aries et al., 2004). In recent years, researchers have determined that SAT scores are invalid predictors for success of first-year college athletes and do not indicate long term success (Ting, 2009). Scholars have found that participation in athletics has shown positive outcomes of retention beyond the first year of college (Leppel, 2006) and motivation to complete a bachelor's degree (Gayles, 2009; Melendez, 2006). Student-athletes graduate at higher rates than their nonathlete

peers (Gayles, 2004; Melendez, 2006; Watt & Moore, 2001). According to the NCAA, student-athletes have graduated at higher rates than the student body since 2002 (NCAA, 2020a). Student-athletes have one of the highest graduation rates for student populations at the college level and have steadily improved over the past 20 years (Melendez, 2006; NCAA, 2020a). It is important to note that these graduation rates have improved as the number of students participating in intercollegiate athletes has increased. Between 2001 and 2015, the number of student-athletes participating in intercollegiate athletics grew by 16,565 (Hosick, 2015). The rate of graduation has increased during that time frame from a completion rate of 58% in 2002 to 69% in 2019 (NCAA, 2020a). The competitive aspects of determination, drive and winning found in student-athletes' identities could be benefiting their academic performance (Bailey & Bhattacharyya, 2017).

Athletics participation allows student-athletes to have a chance at a higher education that they may not have had otherwise (Potuto, & O'Hanlon, 2007). Socioeconomic status has been found to be the most powerful predictor of academic achievement for college students (Gu et al., 2019). For some student-athletes, they are in college only because of the financial support they receive due to their athletic involvement (Person et al., 2001; Potuto & O'Hanlon, 2007). This is especially true for those from a lower-socioeconomic class or ethnic minority group (Potuto & O'Hanlon, 2007). Black student-athletes, who are the largest proportion on students on athletic scholarships, usually come from the lower economic quartiles (Oseguera et al., 2018). Most White student-athletes have higher family incomes, which gives them an advantage academically (Oseguera et al., 2018). Multiracial men report higher gains academically than multiracial women, indicating that multiracial men may have better socioeconomic backgrounds than multiracial women (Oseguera et al., 2018). Asian students typically have higher levels of

academic success and have more pressures from their families to succeed academically (Oseguera et al., 2018).

Intercollegiate athletics has become a unique and diverse subpopulation in higher education (Buzzetta et al., 2017; Coffey & Davis, 2019) that encourages connection to a campus community (Umbach et al., 2006). Student-athletes are connected to a subgroup of college students, their sports team, almost immediately who become an influential part of their support group (Bell, 2009; Dennis et al., 2005; Watt & Moore, 2001). Athletics plays a key role in helping a student-athlete socially and academically adjust to the college environment (Melendez, 2006). Many student-athletes have expressed how it is easier to get to know people on campus and be engaged with the campus community because of their athletic involvement (Aries et al., 2004). Participating in athletics connects student-athletes directly with others of similar interests, backgrounds and hobbies which helps prevent feelings of loneliness, builds a sense of belonging, optimism, and supports inclusion, which generally can be challenging for college students (Melendez, 2006). Student-athletes who have positive interactions and are empowered to build relationships with academic advisors, faculty, other students, and even athletic administration have been found to have higher levels of academic success (Bell, 2009; Comeaux et al., 2014; Melendez, 2006; Rankin et al., 2016).

Experiential Learning

Intercollegiate athletic participation is experiential learning. Experiential learning typically is defined as practical knowledge and experience gained from engaging activities that bridge the gap between curricular instruction and real-life experiences (Kolb, 1984). Experiential learning encourages the learner to be an active participant in the learning process and requires the learner to identify and solve problems (Ediger, 2012). Scholars, theorists, and practitioners

who favor experiential learning see education as the process of creating knowledge rather than a focus of meeting outcomes (Kolb et al., 2014; Tyler, 1951). The experience itself is the process of learning and only through the navigation of the process does true learning occur. Students are essentially relearning the topics they know by engaging in a new process of application and integration into real situations (Kolb et al., 2014). Education should have the goal of integrating the learners into society and the world with tangible experience. Experiential learning can be more appealing to learners by fostering identification with their school and commitment to school-related values (Leppel, 2006), and helps learners build networks of contacts that can be useful when needing assistance for class assignments and career decisions (Leppel, 2006). Experiential learning focuses on the holistic process of helping a learner to adapt and function in the world around them (Kolb et al., 2014). Students learn to navigate conflict, identify problems and solutions, and see successes and failures as part of their educational journey.

Athletic involvement has shown to give student-athletes a chance to acquire skills that they may not otherwise receive in the traditional classroom setting. Student-athletes have indicated that their athletic participation has improved skills in leadership, teamwork, decision-making, time management, and studying as well as influenced responsibility and personal advocacy (Buzzetta et al., 2017; Coffey & Davis, 2019; Melendez, 2006; Potuto & O'Hanlon, 2007; Simons et al., 2007). These skills build traits that influence academic success and increase developmental, social, and emotional growth and identity (Melendez, 2006; Simons et al., 2007) and help with growth mindset and goal orientation (Buzzetta et al., 2017; Nichols et al., 2019). Student-athletes have also expressed that their involvement in athletics has helped them understand, relate to, and work with people who have different backgrounds (Comeaux et al., 2014). Melendez (2006) explains that student-athletes also have better skills in building and

achieving long-term and short-term goals. In the end, many student-athletes believe that all the sacrifices they make for athletics will pay off for them when they enter their careers because of what they learn through their experience in college (Potuto & O'Hanlon, 2007). The question that still must be answered is what positive outcomes support academic identity in female student-athletes.

A study completed by Coffey and Davis (2019) showed that, indeed, student-athletes are far superior to their nonathlete peers in the workplace in many areas. Students who participate in intercollegiate athletics in college are highly recruited by employers because they have many transferable skills they have learned through their athletic participation (Coffey & Davis, 2019). Employers have expressed that student-athletes are able to work better in fast-paced environments, take accountability for their actions, accept constructive feedback well, and have a better overall transition into the workplace (Buzzetta et al., 2017; Coffey & Davis, 2019). Through their training as an athlete, these students gain necessary skills that are easily transferable to the workplace. The lessons were not taught in the classroom setting but are tangible and impactful for life.

Experiential learning helps a student connect the experience to their life and is most powerful when combined with the student's interests and strengths (Leshkovska & Spaseva, 2016). Athletics allows student-athletes to learn valuable life lessons such as time management, balance between lifestyles and applying feedback to performance while doing something that they are good at and love to do. Experiential learning must be supported by mentors who are willing to work alongside their mentees and help guide them (Leshkovska & Spaseva, 2016). These mentors can be teachers, instructors, supervisors, advisors, and coworkers. Student-

athletes must also have supportive people and services to help them navigate the challenges of this lifestyle.

Support Services for Student-Athletes

Student-athletes receive a variety of academic support services throughout their collegiate careers. In the 1990s, the NCAA mandated that all institutions provide academic support opportunities for their student-athletes (Meyer, 1990; Rubin, 2017). These services would be hard to access for student-athletes if not offered through athletics due to their lack of time (Watt & Moore, 2001). Although many services can be offered in a collaborative model with university services, faculty and student peers see the services provided to student athletes as special offerings that make student-athletes spoiled and pampered when in reality these services create equal opportunities for student-athletes (Hyatt, 2003). Student-athletes are typically more satisfied with college academic support than nonathletes (Burns et al., 2013).

Since student-athletes' schedules are so rigorous, the athletic academic professionals are responsible for helping student-athletes manage academic responsibilities outside of athletic expectations and focus on building time management skills (Bell, 2009; Jolly, 2008; Rubin, 2017). Student-athletes typically have their daily schedules dictated by someone else (Jolly, 2008). Athletic advisors monitor study time through mandatory study halls and are accessible for questions related to academic motivation, organize tutoring schedules for each student-athlete, support students through class issues, and give schedule suggestions (Bell, 2009). Athletic advisors are advocates for the student-athletes with their coach or faculty member (Rubin, 2017). Goal setting and career decision making has been highlighted as a responsibility that athletic advisors should focus on also (Burns et al., 2013; Buzzetta et al., 2017). Many times, student-athletes also rely on athletic advisors for eligibility support (Burns et al., 2013; Rubin, 2017).

Support services for student-athletes are successful when there are people who understand the culture and context of the sport they play, recognize the factors that indicate risk for athletic and academic success, and institute support structures for the demanding lifestyle of student-athletes (Johnson et al., 2013; Sedlacek & Adams-Gaston, 1992). Student-athletes find connection to their institutions through advising and counseling services and need guidance to achieve academic success (Hollis, 2001). Advisors create real, deep, and authentic relationships with the student-athletes that they advise (Comeaux et al., 2014).

One offering that has found success for student-athletes are summer orientations and early academic start programs (Hollis, 2001). By allowing freshman student-athletes to take summer classes prior to their first academic term, and paying for those classes, has statistically proven to improve academic success and help institutions provide equal educational opportunities for their student-athletes (Hollis, 2001). These programs allow academically underprepared students the opportunity to begin building academic skills needed such as study habits and time management skills with a smaller academic load and establish foundations needed to be successful in college (Hollis, 2001). These early start programs have shown higher graduation rates for student-athletes (Hollis, 2001).

Tutoring is another important service that student-athletes utilize during their time at a college institution (Bell, 2009; Johnson et al., 2013). Tutoring is used due to missing class because of increased travel requirements (Beron & Piquero, 2016; Johnson et al., 2013). Tutoring is often required by athletic programs. Foster (2003) found that most student-athletes saw tutoring as oppressive and controlling rather than a privilege or as crucial for their success. However, student-athletes who attended tutoring have seen higher success results including higher term grade point averages (Johnson et al., 2013).

Multidimensional Identities of Student-Athletes

Individuals typically have multiple identities and role relationships that may reinforce or compete with one another (Stryker & Burke, 2000). Student-athletes must balance a minimum of two roles while they pursue their college degree: that of student and that of athlete (Watt & Moore, 2001). The identities, for the student-athlete, are not separate, but rather multidimensional, and the expectations for each identity are clearly different. Many times, trying to balance these identities as one single identity causes internal conflict within the student-athlete (Rankin et al., 2016). It is not an easy balancing act as both roles require an excessive amount of dedication, time, and effort to be successful and can lead to role conflict (Chartrand & Lent, 1987; Hollis, 2001).

Role conflict is reflected when one identity competes or interferes with another role life usually due to increased involvement in one or both roles (Carodine et al., 2001; Hollis, 2001; Settles et al., 2002; Stryker & Burke, 2000). People who struggle with managing dual roles also have difficulty forming future goals (Buzzetta et al., 2017). The goals of a student-athlete are focused on academic achievements as well as on athletic performance (Comeaux & Harrison, 2011). Although most student-athletes strive to achieve high levels of success in both areas, over time some student-athletes may have to choose one identity over another because of lack of time, demands, or expectations to continue in a role or remain eligible to compete (Alder & Alder, 1985). Bell (2009) found that athletes were more likely to skip an academic event if it conflicted with practice and would rather make up classwork than miss a team meeting. For most student-athletes, their student identity, or academic identity, takes a back seat to their athletic identity (Watt & Moore, 2001). The process by which students navigate the changing importance of their identity is described by identity-control theory, which is a hierarchical ordering of dynamic self-

identities that shift overtime and are fluid with role performance and demands (Bell, 2009; Burke, 2006; Van Rens et al., 2019).

The ways in which a person prioritizes their roles when managing dual identities is established early in life. For student-athletes, their dual roles are influenced by experiences and people prior to college but are further impacted by their experiences as a college athlete (Foster & Huml, 2017). Coaches play a key role in helping student-athletes identify in both athletic and academic domains (Bell, 2009). Negative stigmas and stereotypes of faculty and peers that deem student-athletes as unqualified and unintelligent in the academic arena can encourage student-athletes to focus more on their athletic role (Bailey & Bhattacharyya, 2017; Jolly, 2008; Watt & Moore, 2001). For some, the stronger identity can be encouraged based on which role they have better performance (Yopyk & Prentice, 2005).

Studies have shown higher positive associations when student-athletes view their identities as two separate identities (Settles et al, 2002; Van Rens et al., 2019). Student-athletes that have shown higher levels of success expressed that they view their identities as separate (Van Rens et al., 2019). Overall psychological wellbeing, including happiness and life satisfaction, has been found with those who are able to separate roles (Settles et al., 2002; Thoits, 2012; Van Rens et al., 2019). Separating these two identities allows for fluid movement between academics and athletics which allows one role to be more predominant when completing specific activities, such as an exam or competition (Yopyk & Prentice, 2005). Understanding the differences and distinctiveness of each role can influence success, particularly in academic performance (Yopyk & Prentice, 2005) and may become an important resource for colleges and universities who seek to support student-athletes.

Impact of gender in intercollegiate athletics and academic success

Since the passing of Title IX fifty years ago in 1972, intercollegiate athletics has seen an increase of female student-athletes (Aries et al., 2004; Beyer & Hannah, 2000). Currently there are more than 222,000 female student-athletes in the NCAA (NCAA, 2021a). These female student-athletes are approximately 47% of the NCAA student population (NCAA, 2021a) and are distributed across more different sports than male student-athletes (Siegel, 1994).

It is important to include that some collegiate athletes may not identify as just female or male. Recently, the NCAA has been reviewing and implementing policies through a phased approach that expands athletic opportunities to individuals who identify as transgender. In 2022, the NCAA updated the Transgender Student-Athlete Participation policy to allow a more inclusive environment in collegiate athletics (NCAA, 2022d). This policy aligns participation in collegiate conferences and championships based on Olympic standards, which requires adaptation based on the national governing body of that sport. Although transgender identities are not a scope of this study, it is important to mention that this is an added layer of complexity that not only affects those who identify as transgender but may affect others based on the adjustments and implementation of legislation and policies.

Gender stereotypes in education typically favor men (Verniers & Martinot, 2015) and athletics is no exception since most leadership roles including athletic directors and head coaches are men (NCAA, 2021a). Title IX was passed to give female student-athletes equal opportunity as men to athletic scholarships and funding for education and athletic opportunities (Women's Sports Foundation, 2019). Female student-athletes have expressed that they face more resistance and must overcome more obstacles than their male student-athlete peers to pursue college and career goals (Morales, 2008). However, female student-athletes consistently perform better academically than their male student-athlete peers (Bailey & Bhattacharyya, 2017; Comeaux,

2011; Melendez, 2006; Simons et al., 1999; Watt & Moore, 2001). In 2020, Division I male student-athletes had a graduation rate of 66% and Division I female student-athletes had a graduation rate of 75% (NCAA, 2020a). Top female athletic teams also had higher academic progress rates, grade point averages and graduation rates when compared to top male athletic teams (Bailey & Bhattacharyya, 2017; NCAA, 2020b).

Gender plays a significant role in the retention of a student-athlete, with female student-athletes more likely retaining in college than male student-athletes (Le Crom et al., 2009). Female student-athletes are less likely to drop out of school if they lose their athletic opportunity and are less likely to transfer to a different institution to pursue different athletic opportunities than male student-athletes (Leppel, 2006). Although evidence showed female student-athletes have higher positive outcomes academically, there is little research on why (Burnett et al., 2010; Comeaux & Harrison, 2011; Pascarella et al., 1999; Simons et al., 2007).

Identity and experience may play a role in retention and higher academic success. Female student-athletes have reported varying levels of athletic identity in research. Many researchers have found that male student-athletes have higher levels of athletic identity than women (Beron & Piquero, 2016; Gayles, 2004; Miller, 2009; Rankin et al., 2016; Simons et al., 2007). Chen et al. (2010) found that female student-athletes had similar levels of athletic commitment and athletic identity as male student-athletes, but the difference was that male student-athletes experienced greater benefits from their athletic involvement than female student-athletes. This may be true for students who have higher motivation toward their athletic expectations, particularly student-athletes who are pursuing a position on a professional sports team after college, although it is still important to these student-athletes to complete their undergraduate degree (Gayles, 2004). The athletic motivation for a professional career can distract and hinder

success academically (Beron & Piquero, 2016; Gayles, 2004). Trends show that student-athletes that have opportunities to compete in their sport beyond college, either professionally or in the Olympics, dedicate more time to athletics than academics (Beron & Piquero, 2016). In one study, female student-athletes who had an opportunity to compete professionally reported lower cumulative GPAs (Beron & Piquero, 2016), but this data was self-reported and part of a larger study in relation to many components that affect a student-athlete's GPA. Typically, male student-athletes have more opportunities to compete at a professional level in their sport than female student-athletes, and therefore, male student-athletes may focus more on athletic achievement rather than academics (Melendez, 2006). Goal outcomes for college experiences are different for female student-athletes and male student athletes, contributing to stronger identities with the more predominant role. With fewer professional sport opportunities after their collegiate sport career for females, academics may be more of the focus since more outcomes and goals are more likely to come through their academic role rather than their athletic role, whereas male student-athletes use college athletic experience as a step toward competing professionally.

Negative stressors related to athletic performance are contributors that make it harder to balance academic expectations for male student-athletes (Linnemeyer & Brown, 2010; Nichols et al., 2019; Weatherly & Chen, 2019). Male student-athletes face pressure from their teammates to perform (Marx et al., 2008; Nichols et al., 2019) and more pressure from the athletic department to excel, especially when participating in a revenue generated sport like football and basketball (Linnemeyer & Brown, 2010; Weatherly & Chen, 2019). Negative stressors such as family commitments, emotional traumas, poor self-esteem, and hardships have a higher impact on the academic success of female student-athletes (Petrie et al., 1996). Female student-athletes have high expectations for performance both academically and athletically from teammates, coaches,

and professors (Heller et al., 2005; Nichols et al., 2019) and see their athletic requirements as tasks and duties (Miller, 2009).

Female student-athletes adjust to college expectations and university settings better than male student-athletes (Lubker & Etzel, 2007). A study completed by Melendez (2006) on the impacts that athletics had on college adjustment found that female student-athletes expressed higher feelings of inclusion and personal identity. Female student-athletes also express more positive feelings about the atmosphere and environment of their campus community and felt less negative stigmatization related to their athletic role than male student-athletes (Comeaux et al., 2014; Rankin et al., 2016; Simons et al., 2007). Faculty members are more supportive of female student-athletes in their classes than male student-athletes (Comeaux, 2010). Male student-athletes are less likely to interact with nonathlete peers (Gayles & Hu, 2009) and faculty members (Comeaux, 2010). Due to sport participation in college, student-athletes show higher rates of inclusion, adjustment, and acclimation to the college environment than their non-athletic peers (Melendez, 2006; Rankin et al., 2016). The lack of interactions with nonathlete peers and faculty have been shown to have an impact on male student-athletes academic success but have not been found to be significantly influential for female student-athletes (Comeaux et al., 2014). Generally, female student-athletes' perception of the campus community, athletic involvement and educational opportunities were higher than male student-athletes which improved their experience overall (Melendez, 2006).

Academic motivation is a contributor to higher academic success. Female student-athletes have higher levels of academic motivation than male student-athletes (Lee & Sten, 2017; Riemer et al., 2000; Tudor & Ridpath, 2019; Weatherly & Chen, 2019) and less academic disengagement (Tudor & Ridpath, 2019). Motivation toward academic goals became more vital

for female student-athletes as they advanced in their academic career, whereas for male student-athletes their athletic roles became more important, with less focus on academics (Meyer, 1990). Female student-athletes prioritize both their school and sport responsibilities over socialization (Riemer et al., 2000); have a strong commitment to academic completion (Meyer, 1990); and obtain higher grade point averages than their male student-athlete peers (Beron & Piquero, 2016; Johnson et al., 2013).

Female student -athletes have more ownership of learning and educational outcomes (Tudor & Ridpath, 2019) and are more actively engaged in their selection of academic careers than male student-athletes (Comeaux et al., 2014; Meyer, 1990). Overall, female student-athletes show more interest in curricular and co-curricular activities (Potuto & O'Hanlon, 2007). In one study completed by Johnson et al. (2013), male and female student-athletes were compared in their usage of tutoring services over a three-year period of time. The results indicated that female student-athletes used tutors less overall than male student-athletes (Johnson et al., 2013). However, the study also indicated that once a female student-athlete obtained a tutor, she met with that tutor more during the semester than her male counterparts and achieved an overall higher GPA (Johnson et al., 2013). Although female student-athletes did not require a tutor as often, they did utilize the service to help with academic improvement.

Female student-athletes see the importance of academics because their future lies in their education, educational goals, and their degree program, rather than their athletic abilities (Melendez, 2006; Meyer, 1990). Female student-athletes view athletics as a way to fund their educational experience more so than male student-athletes and many do not see themselves competing in the sport beyond their collegiate years (Melendez, 2006; Riemer et al., 2000). Being successful in college is critical to supporting their families and the future of their family

(Meyer, 1990; Morales, 2008). Female student-athletes want to leave a positive legacy, at their institution, on their sport and for those close to them (Saxe et al., 2017).

For decades, scholars and researchers have noticed the high academic achievement of female student-athletes. The reasons behind their success still have many unknowns (Retting & Hu, 2016) and there is little research available that specifically focuses on female student-athletes and their academic achievement. Most research related to female student-athletes is part of larger all-inclusive studies on male and female student athletes (Petrie & Stoever, 1997) or has more of a focus on the impact of Title IX on athletics (Beron & Piquero, 2016; Person et al., 2001). In fact, researchers have determined that the role that gender plays in the success of student-athletes is often overlooked and should be further evaluated (Mattern et al., 2017; Petrie et al., 1996), particularly focusing on academic success (Gayles, 2004) and gender to athletic and academic identity (Huml et al., 2019; Lounsbury et al., 2005; Nichols et al., 2019; Van Rens et al., 2019). Studying high performing athletes gives insights for all student populations including academic support (Retting & Hu, 2016). Since female student-athletes have a substantial positive relationship with academic success (Burnett et al., 2010; Comeaux & Harrison, 2011; Pascarella et al., 1999; Simons et al., 2007), they are a target population for research related to academic success. Determining what reasons support success in this population may allow researchers to look holistically at other collegiate student populations to be able to address needs and gaps.

Identity Framework

Identity has become a key analytic tool in educational research to understand schools and communities (Gee, 2000). Identity is the value or importance that a person assigns to their perceived competence or incompetence (Brewer et al., 1993) and can simply be defined as the recognizable kind of person someone is in particular contexts (Gee, 2000). Identity influences

self-esteem, affect, motivation, choices, values, and relationships (Brewer et al., 1993; Stryker & Burke, 2000) and may be based on interactions with others in particular interactions, positions, places or at certain times (Gee, 2000).

Gee (2000) provides four perspectives of identity that explain a framework for research: nature, institution, discursive and affinity perspective identities. These perspectives have complex interrelations, similar to the lifestyle of a student-athlete (Watt & Moore, 2001), that are not separate from one another (Gee, 2000). In fact, recognition of these four types of perspectives through the characteristics found in a person connects and reinforces the identity or role. For student-athletes, there are two predominant identities that are to be explored and have been found to contribute to the definition of the kind of person they are and their interactions in their collegiate life: athletic and academic. The interaction of athletic and academic identities for student-athletes is complex and challenging to balance. Academic identity and athletic identity can be understood through the four interpretive systems presented by Gee (2000).

Nature Perspective Identities (N-Identities)

Nature identity is developed from forces that a person cannot control (Gee, 2000), such as race, gender, or genetics. Nature identities must be recognized by the self or others as being meaningful in defining a person. These types of identities gain power through the connections within the other three views of identity, institutions, discourse and dialogue, and affinity groups (Gee, 2000).

The nature identity this study will focus on will primarily be gender, specifically those who identify as female. Gender is a significant contributor to the academic success of student-athletes. Women who participate in intercollegiate athletics at the college level consistently graduate at higher rates than male student-athletes as well as their female nonathlete peers, and

typically obtain higher GPAs while in college (Comeaux et al., 2014; Johnson et al., 2013; Melendez, 2006; Rankin et al., 2016). Nature identities with female student-athletes can also be seen through different racial and ethnic backgrounds. Although the racial and ethnic aspects of nature identity may arise, these areas will not be an explicit focus in this study.

Institutional Perspective Identities (I-Identities)

Institutional perspectives or I-identities are obtained through the power given to authorities and institutions that define a person (Gee, 2000). Institutional identities are derived through laws, rules, traditions, or principles that officially define a person based on titles or positions, as well as granting specific rights and responsibilities of those roles to a person (Gee, 2000). These titles or positions that are bestowed can be perceived as negative or positive and could be actively or passively implemented based on the person (Gee, 2000).

Three primary institutional identities that the female student-athlete population potentially would have are the role of student, the role of athlete and the combined role of student-athlete. These institutional identities are defined by the school they attend, the NCAA, and the organizations that represent their athletic conference, department and team. The student has the responsibility to abide by the student code of conduct on campus and in the classroom. The athlete must follow guidelines outlined by the athletic department, their teams and during athletic competition. The NCAA is a national organization that oversees the regulations, fairness, and treatment of student-athletes at institutions that participate in intercollegiate sports (NCAA, 2021b). All student-athletes are required to register and be cleared to participate by the NCAA and are bound by NCAA regulations to be eligible to play throughout their collegiate career (NCAA, 2021b).The student-athlete balances the role of student and of athlete, navigating the necessary exceptions to manage both roles, enduring celebrity status on their campus as an

athlete but also not being able to fully integrate in as a student like their nonathlete peers which can lead to exclusion in one or both roles.

Discursive Perspective Identities (D-Identities)

A third type of identity perspective is called discursive identity (Gee, 2000). Discursive identity, or D-identity, recognizes individual traits or characteristics through discourse and dialogue with rational individuals (Gee, 2000). Discursive identities can be constructed and sustained through casual interactions rather than through forced interactions with institutions which commonly can define institutional identities (Gee, 2000).

Common discursive identities that student-athletes may exemplify are athleticism, competitiveness, self-motivation, determination and being a good communicator. Through the many learning experiences that participating in intercollegiate athletics provides, student-athletes develop a variety of skills that are impactful for their success not only in college, but in their career once they graduate (Buzzetta et al., 2017; Coffey & Davis, 2019; Melendez, 2006; Potuto & O'Hanlon, 2007; Simons et al., 2007), including decision-making, accountability, teamwork, time management and leadership abilities. These traits are supported by employers who have expressed the will to recruit student-athletes for roles within their companies (Coffey & Davis, 2019).

Discursive identities are also encouraged by faculty, peers, fellow teammates, fans of their team and spectators as athletes can receive compliments to their athletic performance. Athletic identity is influenced by family, friends, teammates, coaches, teachers, and the media (Brewer et al., 1993), and is a key source of an athlete's self-esteem and definition of self (Brewer et al., 1999). Coaches and academic advisors play a vital role in the development of student identity and positive academic success outcomes for student-athletes (Bell, 2009).

Not all discursive identities may be positive, however. Female student-athletes often are subjected to negative labels such as being less feminine (Cohen, 1993) and can endure academic stereotypes from faculty and peers such as being academically unqualified, unintelligent (Watt & Moore, 2001), lacking motivation for good academic performance (Comeaux, 2011) or have their performances constantly scrutinized a student and as an athlete (Carodine et al., 2001; Jolly, 2008).

Affinity Perspective Identities (A-Identities)

Affinity identity is the fourth perspective of identity. Affinity identity is based on allegiance, access, or participation in practices that a group of people relate to across a large area (Gee, 2000). For affinity identities, allegiance to the common set of endeavors or practices has a primary place in a person and shared secondly by the culture or traits of the group (Gee, 2000). A person must actively choose to join an affinity group (Gee, 2000).

Based on this definition, female student-athletes have affiliation groups based on both their athlete role and their student role. Both roles identify with a particular college or university where these student-athletes attend classes and represent in competition. For many female student-athletes, the ability to be recruited and compete as an athlete determines their affiliation as a student (Shulman & Bowen, 2001).

Due to the exposure that intercollegiate athletics play, student-athletes become affiliated and are key representatives of their institution as well as their sport, their team, and student groups within their sport. Student-athletes are affiliated with their athletic department, athlete organizations such as the Student-Athlete Advisory Council (SAAC) and their team where many of their lasting friendships and bonds are established.

The student may connect with a particular college or department where their majors are housed. They can engage in student organizations offered through their program of study and affiliate with national organizations that bridge the connection between the classroom and career.

Female Student-Athletes, Identity and Academic Success

To better understand how academic and athletic identity affect student-athletes, it is important to look at the challenges and benefits of athletic participation on academic success. Participating in intercollegiate athletics can present challenges to academic success for student-athletes due to the stress and time demands of athletic expectations (Aries et al., 2004; Beauchemin, 2014; Carodine et al., 2001; Comeaux & Harrison, 2011; Nichols et al., 2019). Many student-athletes exhibit lower academic preparation when entering college than their peers (Gayles, 2009; Hollis, 2001), have less academic autonomy, and are sometimes prohibited from selecting certain academic majors of interest because coursework and degree expectations conflict with athletic schedules (Coffey & Davis, 2019; Comeaux, 2011; Simons et al., 2007). Student-athletes are also challenged to overcome many negative stereotypes that can damage their identity (Miller, 2009) and hinder their credibility as a student (Comeaux, 2011; Simons et al., 2007).

Gender has been a key difference for athletic identity for student-athletes that may influence successful academic outcomes. Female student-athletes consistently perform better academically than their male student-athlete peers (Bailey & Bhattacharyya, 2017; Melendez, 2006; Watt & Moore, 2001). Previous research has reported varying levels of athletic identity in female student-athletes that could be a reason for the higher levels of academic success. Some scholars have found that female student-athletes tend to have lower levels of athletic identity than male student-athletes (Beron & Piquero, 2016; Gayles, 2004; Miller, 2009; Rankin et al.,

2016; Simons et al., 2007) while others found that female student-athletes have similar levels of athletic identity (Chen et al., 2010). While male student-athletes express greater benefits from their athletic experience than female student-athletes (Chen et al., 2010) and tend to have more professional opportunities to continue their sport (Melendez, 2006), some scholars have concluded that these opportunities for male student-athletes influence higher athletic motivation and lower academic motivation (Gayles, 2004; Lee & Sten, 2017; Riemer et al., 2000; Tudor & Ridpath, 2019; Weatherly & Chen, 2019). Female student-athletes are more active in learning and educational outcomes than male student-athletes (Tudor & Ridpath, 2019) and see the importance of academics because they rely on their education for future success rather than their athletic abilities (Melendez, 2006; Meyer, 1990).

The academic success for female student-athletes in the classroom also extends beyond their male student-athlete peers. Female student-athletes also perform better than their female, nonathlete peers in academics (Comeaux et al., 2014; Melendez, 2006; Watt & Moore, 2001) and scholars suggest more research is needed to determine why (Retting & Hu, 2016). Female student-athletes typically enter college at a disadvantage to their female nonathlete peers but show little differences in academic capabilities and college achievements (Bailey & Bhattacharyya, 2017). Female student-athletes also show lower career goals and career identities in college than their nonathlete peers (Aries et al., 2004; Beron & Piquero, 2016; Shulman & Bowen, 2001). However, female student-athletes show higher levels of academic adjustment, college attachment, and overall satisfaction in their education experience than female nonathletes (Melendez, 2006; Oseguera et al., 2018; Retting & Hu, 2016).

Though student-athlete academic outcomes have been researched for decades, there still is little research about why female student-athletes specifically have higher academic outcomes

(Burnett et al., 2010; Comeaux & Harrison, 2011; Pascarella et al., 1999; Simons et al., 2007). Although this is a need within the current literature, this study will not determine why female student-athletes have higher academic outcomes. This study will explore female student-athletes' identities as students and athletes as possible contributing reasons to their success in higher education. The proposed study will focus exclusively on intercollegiate female student-athletes, using both quantitative and qualitative methodologies. Quantitative methods will focus on the development of a psychometrically sound tool that measures athletic and academic identity, so that future research can begin to examine how identity contributes to academic success. The field needs a reliable tool to measure this construct before it can start testing hypotheses about whether academic and athletic identity predict academic success. The qualitative methodology aims to understand the self-expressed perceptions that the student-athletes themselves believe contribute to their own (i.e., female) academic and athletic identities. This knowledge may help academic professionals understand the needs of this unique student population, allowing more insight to build programming to help further support these students during their academic career. Just like coaches develop key skills that enhance a student-athlete's athletic performance, understanding the identities of student-athletes will allow academic professionals to build confidence to help support and improve academic performance.

Research Questions

1. What factor structure underlies concepts pertaining to athletic and academic identity in a national sample of Division I female student-athletes (sample one)?

    Hypothesis: I anticipate that two-factors, athletic identity and academic identity, will underlie concepts pertaining to identity in sample one (Rankin et al., 2016; Watt & Moore, 2001).

2. What is the internal consistency of items underlying factors identified through exploratory factor analysis (EFA) in sample one?

    Hypothesis: I anticipate that factors will demonstrate adequate internal consistency (Allison, 2020; Jones et al., 2017).

3. To what extent are indicators of factor validity and internal consistency from sample one replicated in a local sample of Division I female student-athletes (sample two)?

    Hypothesis: I anticipate that factors identified in sample one (athletic identity and academic identity) (Rankin et al., 2016; Watt & Moore, 2001) and measures of internal consistency will be replicated in sample two (Allison, 2020; Jones et al., 2017).

4. Does sample one differ from sample two in their responses to individual items and overarching dimensions of athletic and academic identity?

    Hypothesis: I anticipate that sample one and sample two will not differ on scores of athletic identity and academic identity, although individual items will demonstrate variability across samples.

5. How do female student-athletes perceive their athletic and academic identities?

CHAPTER III

METHODOLOGY

The purpose of this concurrent mixed methods study was to explore dimensions of athletic and academic identities in Division I female student-athletes, a population with high academic achievement and graduation success rates. Quantitative methods used a refined version of the 2010 NCAA Growth, Opportunities, Aspirations, Learning of Students in college (GOALS) survey with two samples to explore constructs underlying female student-athletes' athletic and academic identities using exploratory factor analyses, tests of internal reliability, and independent *t*-tests. Qualitative methods used interviews to further explicate quantitative findings by exploring female student-athletes' self-expressed perspectives about their identities as students and athletes. Findings from this study may offer critical insights into appropriate techniques for measuring female student-athletes' athletic and academic identities and how female student athletes understand themselves as women who navigate complex collegiate experiences of being both a student and an athlete. Future research may benefit by exploring the extent to which female student-athlete identities associate with their academic success, using a refined version of the GOALS survey as tested in this study.

Institutional Reviews and Approval

Approvals to utilize the 2010 NCAA GOALS data were sought from the NCAA research staff who were contacted in early 2020 to begin the process of retrieving the survey instrument and data from the 8,000 student-athletes that have been collected through the 2010 administration of the GOALS survey, the most recent GOALS data set open to researchers. A formal request was submitted in October 2020, but approval was interrupted by the coronavirus pandemic. In early 2021, the request was conditionally approved by the NCAA, granting

permission to use only a subset of the GOALS survey instrument and data, but not the instrument in its entirety. The stipulation that only a subset of the GOALS survey could be utilized prompted the selection of a subset of items from the original survey to be utilized for this study. A description of this process can be found below, in the methods section of this chapter. Following this, approval from the Athletics department was requested in early 2022 via a presentation of the project objectives to inform the athletics administration, including the Vice President of Intercollegiate Athletics, Deputy Athletic Director, Senior Associate Athletic Directors, and the Senior Women's Administrator. Approval for this research project was also obtained from the university's Institutional Review Board.

Setting

This research study was conducted on the main campus of a university in the southwestern region of the United States. The institution is a public teaching and research university and offers nationally ranked programs and degrees, both at the undergraduate and graduate level in many disciplines including education, engineering, business, health services, science, and art (National Center for Education Statistics [NCES], 2020). Approximately 30,000 students are enrolled at this institution; most of whom are located at the main campus (NCES, 2020). With a focus on students as one of the institution's key values, this university has been recognized as a leading institution for veteran students (Altman, 2019), Hispanic students (Hispanic Association Colleges & Universities [HACU], 2017), Native American students (Carnegie Dartlet, 2021) and first-generation students (Association of Public & Land-Grant Universities, 2020).

Of importance to the current study, this institution is a member of the NCAA and competes at the Division I level in the Big Sky and Western Athletic Conferences (NCAA,

2022c). The university sponsors a total of 15 athletic programs: six male athletic teams and nine female athletic teams (Equity in Athletics Data Analysis [EADA], 2020). In the 2019-2020 academic school year, the athletics program had 409 student-athletes (EADA, 2020). Male student-athletes accounted for 54.5% of the population with 219 members and female student-athletes accounted for 46.5% of the population with 190 (EADA, 2020). This institution is a leading performer in their conference and the nation in many sports including track and field, cross country, swimming and diving, tennis, and volleyball and hundreds of student-athletes have received academic honors at the institutional, conference and national levels (Big Sky Conference, 2022; Western Athletic Conference, 2022).

Data and Participants

In this section, each instrument used to gather quantitative and qualitative data will be further explored.

Quantitative Data and Participants

NCAA GOALS Survey. The NCAA first developed the GOALS in 2006 to help inform researchers, institutions, and the NCAA of the student-athlete experience. The survey does attempt to gather data to help tell a real-life story of the lives of student-athletes and can be used to give prospective student-athletes a better understanding about the demands of college sports participation (NCAA, 2017). Results from the survey are used by the NCAA to make objective, data-based examinations of how college sports participation impacts the student-athletes in attempts to improve the experiences in the future (NCAA, 2017); thus, the original survey gathers data on topics that are outside the focus of the proposed study.

The original GOALS survey was created by the NCAA research staff who sought input from several outside academic consultants. The survey questions focused on seven primary areas

including college athletic experiences, college academic experiences, college social experiences, the combined student-athlete experiences, time expectations, health and wellness, and student-athlete background information (NCAA, 2017). The survey has been revised three times, and given to current student athletes in spring 2010, 2015 and 2019 (NCAA, 2019c). Subsections of the GOALS survey have been adjusted over time to ask more relevant questions for research based on current events within the NCAA at the time. Each survey instrument asks between 80-95 questions. However, subsections consistently included are college academic experience, college athletic experience, college social experience, health and wellbeing, and time commitments of student-athletes. Unfortunately, the questions in each of these subsections have changed in each version (NCAA, 2019c).

The NCAA uses a stratified random sampling strategy for the GOALS survey, to produce a representative sampling of all NCAA member schools that sponsor given sports (Allison, 2020). All three divisions of the NCAA are encouraged to participate. The survey is anonymous, self-administered at each NCAA institution that chooses to participate and is proctored by the institution's Faculty Athletic Representative (NCAA, 2017). The scanning and compilation of the data is completed by an outside vendor and the NCAA completes a series of checking processes including hand verification of hundreds of surveys before any statistics are compiled or summarized (NCAA, 2017).

The first circulation of this survey was completed in 2006. In 2006, data was collected from 20,925 student-athletes at 627 institutions and 2,026 different sport teams (Allison, 2020; Beron & Piquero, 2016; NCAA, 2017). Sixty-one percent of NCAA institutions participated in this rendition of the survey. The survey was once again circulated in 2010. The representation was similar as 2006 in that approximately 20,000 student-athletes participated in the survey from

608 NCAA institutions (Jones et al., 2017). Although the survey was completed again in 2015 and 2019, only data from 2006 and 2010 can be requested for use in scholarly works outside of the NCAA, although the data set in its entirety is not released to researchers outside of the NCAA.

The GOALS survey is conducted by the NCAA approximately every four years with approximately 20,000 student athletes (NCAA, 2019c), typically to one male team and one female team at each school that is part of the NCAA. The GOALS survey is used by the NCAA to study the experiences and wellbeing of current student athletes (NCAA, 2019c). Many of the survey questions are repeated on multiple versions of the survey to allow trends to be identified within the populations (NCAA, 2019c). The 2010 survey results are the most recent data that is available for use in research. The GOALS 2010 survey can be found in Appendix A.

Sample. This research study has a primary focus on female intercollegiate student-athletes at the Division I level. Data from this study was derived from two samples. Sample one was derived from the NCAA 2010 GOALS survey (N=20,000) (Jones et al., 2017). Of those who participated, a subsample of Division I female student-athletes from across the nation, representing 15 different sports was extracted (N=2,914).

Sample two was derived from a local sample of Division I female student-athletes from one institution representing 9 different sports (N=190). The aim was to have 80-100 student-athletes, or 50-52%, voluntarily participate in the survey. For this study, 153 students were requested to complete the electronic survey in April 2022. The response rate was 28.1% (n=43). Additionally, two student-athletes participated in semi-structured interviews. Information necessary to identify local female student-athletes to complete the survey was requested from the Senior Associate Athletic Director in the institution's athletics department.

Qualitative Data and Participants

Qualitative Interviews. For the qualitative semi-structured interviews, two interviews were conducted with female student-athletes to better understand their perceptions of athletic and academic identity. These interviews were conducted in summer 2022 and were recorded and transcribed to ensure accuracy of information presented by the student-athlete. A transcript of the interview was sent to the participant prior to data analysis to confirm accuracy and clarify information obtained. If there were any changes necessary or if the person interviewed asked for parts to be omitted, the researcher made note of these changes and added messages in the final analysis if the text was used.

Questions for these interviews were created based on Gee's definition of identity which defines the kind of person someone is perceived to be (Gee, 2000). The semi-structured interviews were facilitated with open-ended questions, providing autonomy to the participants without presuming an answer (Seidman, 2019). The interview questions asked the participant to describe what kind of athlete and what kind of student they were from their perspective. Additional sub questions focused on understanding the experiences and relationships that were formed in their academic and athletic roles. Follow up questions were used in the interview to clarify and enhance answers given by the interviewee. Interview questions can be found in Appendix B. Participants were given a scripted introduction to the research study to be informed of the purpose, importance and use of the information that was provided in the interview. Additionally, participants were given two introductory questions asking for a short self-introduction and why they chose their university, to allow participants to feel a little more comfortable and build rapport with the interviewer.

The interview questions were grouped into two parts. The first half of the questions focused on academic identity and the student-athlete's perceptions of themselves as a student. Questions were written in an open-ended format to allow autonomy for the participant to answer in their own way. Questions asked participants to describe the kind of student they are and how they see themselves as a student. Based on Gee's (2000) identity development, participants also were asked to identify people who have influenced, positively or negatively, their academic endeavors, and what groups or organizations that they associate with as a student. Finally, participants were asked if their university and the NCAA have helped with their identity as a student, and if so, asked to explain how. With these specific questions, the aim was to identify key words that student-athletes used to describe themselves as students, groups that they associated with as a student, who were their encouragers for academic pursuits and how institutions have contributed to the shaping of the identities of these student-athletes.

The second part of the interview questions focused on athletic identity and the student-athlete's perceptions as an athlete. The questions were similarly written as the academic identity questions, in that they first asked the participant to describe the kind of athlete they were and how they saw themselves as an athlete. Questions also asked participants to identify people who have influenced their athletic endeavors, groups, and organizations that they associate with as an athlete, and how their university and the NCAA has helped them identify as an athlete. These questions were used to identify ideas and concepts that shape and influence athletic identity in female student-athletes.

Sample. Local sample participants were offered an additional opportunity to participate in a subsample for the purpose of qualitative interviews to investigate findings at an individual level. Two female student-athletes participants participated in a 60–90-minute interview.

Preferences were to interview those that came from different sport teams, represented different class standings (i.e. freshman, sophomore, junior, and senior) and/or were from different races or ethnic backgrounds. The two participants had notably different demographic backgrounds including being from different teams, academic years, and racial and ethnic backgrounds.

Measures

Due to the restrictions from the NCAA that any one survey cannot be used in its entirety, and in order to refine the survey to more succinctly focus on athletic and academic identity, a content validity review, was completed prior to the initiation of the current study.

Content validity review is the first stage of the measure development process (Holmbeck & Devine, 2009). One researcher and two doctoral students, one of whom is the primary researcher for this study, independently reviewed the entire GOALS survey inclusive of 88 questions and 223 items to identity a collectively agreed upon set of questions and items that aligned with athletic and academic identity (Sireci, 1998). Questions that were hypothesized to reflect academic identity asked about specific responses related to their academic life, outcomes, participation, or experience. Questions that were hypothesized to reflect athletic identity specifically asked about outcomes related to their sport, their athletic experience or life as an athlete. Only the questions that the researcher and doctoral students unanimously agreed to reflect either athletic identity or academic identity were considered for the final selection (25 items). For example, a final item selected from the GOALS survey that reflected athletic identity was "I have personal goals related to my sport," whereas one that was not selected as reflecting athletic identity was "My head coach has team members' best interests in mind." Similarly, an item that was selected to reflect academic identity was "I would be willing to sacrifice my

athletic participation for academics" whereas one that was not selected was "How do you feel about the classes you have taken this year."

The refined GOALS survey was administered to local sample of Division I female student-athletes in the Spring 2022. The signed approval form from the NCAA to use the survey can be found in Appendix C and the data use agreement in Appendix D. The refined GOALS survey can be found in Appendix E. For this project, the local survey was conducted using Qualtrics and was sent to each female student-athlete's individual school email account. Student-athlete participation was sought through email invitations, and face-to-face presentations with a question-and-answer session during Student Athlete Advisory Council meetings and team practices.

Harmonization

The current study used data harmonization techniques to integrate two sources of data related to female student-athlete academic and athletic identities. Data integration techniques pool individual participant-level data gathered from different research studies. Pooling data improves statistical inferences and maximizes opportunities for replication studies by increasing sample size and sample heterogeneity (Curran & Hussong, 2009; Fortier et al., 2017; Granda & Blasczyk, 2011). The first step in this process was conducting feasibility analysis to identify common constructs (e.g. single- and multi-item measures), between studies and to review metrics and response scales of these measures. Next, common single items measured with different response scales and metrics were transformed so individual responses could be pooled using the same response scale or metric.

The survey created to gather data from sample two was designed to mirror the design of targeted sections of the refined GOALS survey. Although each sample administered the same

questions, there were small differences between datasets on common measures including race and gender. Due to these differences, harmonizing single item constructs with different response options were completed. Variables were transformed and recoded to create comparable scales by using techniques such as collapsing response options. To collapse response options, the frequencies of responses on each data set was reviewed individually to identify which response options had the lowest percentage rates and created, combined, and reassigned responses into a new group (Fortier et al., 2017). Datasets were also evaluated for discrepancies that occurred during the survey process and additional harmonization steps were considered if needed.

Data Analysis

Quantitative Analysis

Descriptive, inferential, and exploratory factor analyses were used to evaluate the results from both the 2010 GOALS survey and the local female student-athlete sample. Each sample was analyzed separately, using parallel processes. Descriptive statistics are used to describe and characterize data obtained in research studies (Pagano, 2010). Descriptive statistics provided a foundation for a comparison of the results between the two populations, allowing also for the identification of factors that contrast between the two groups (Tabachnick & Fidell, 2007). Inferential statistics test the differences between populations (Tabachnick & Fidell, 2007). Exploratory factor analysis was used to determine the internal reliability of the survey (Tabachnick & Fidell, 2007) and determine if the reliability is consistent with both samples.

Descriptive Analysis. Data obtained for sample one was converted to numeric values and sorted to include only Division I female student-athlete responses. Data obtained from sample two was analyzed separately and compared to results of sample one. Frequency distribution was used to ease understanding and interpretation (Pagano, 2010). Next, to

determine variability characteristics of distributions, measures of central tendency were used specifically finding the mean, median and mode of each variable, range, standard deviations, and variance. Measures of central tendency allow understanding of how different the responses are that have been recorded in the sample (Pagano, 2010). Also, an evaluation of interquartile ranges were explored to measure variability of the data (Whitley & Ball, 2002).

Exploratory Factor Analysis (EFA). Exploratory factor analysis (EFA) was used to explore structures underlying concepts pertaining to academic and athletic identity. EFA was conducted separately with sample one and sample two, using items identified from the adapted GOALS survey. EFA results from sample one was compared to those in sample two to explore whether findings pertaining to construct validity were replicable in comparable populations. EFA was completed in Mplus (Muthén & Muthén, 2022) using varimax orthogonal rotation. Orthogonal rotation was most appropriate for this study since the factors are considered uncorrelated. Varimax rotation analyzed factors through the process of minimizing complexity of factors and maximizing variance within each factor loading and across variables (Tabachnick & Fidell, 2007). Varimax rotation technique is the most commonly used in orthogonal based analyses (Tabachnick & Fidell, 2007). Mean eigenvalues greater than 1.0 were used to identify factors to retain and represented variance as well as a scree test (Tabachnick & Fidell, 2007). Variables that loaded on a factor with a correlation value of at least .45 will be retained (Comrey & Lee, 1992; Larios et al., 2009; Tabachnick & Fidell, 2007). Variables with this correlation value are considered fair and represent approximately 20% of overlapping variance (Comrey & Lee, 1992; Tabachnick & Fidell, 2007). Items that loaded on more than one factor were evaluated for high correlation and likely were eliminated since cross-loadings typically are not reliable (Tabachnick & Fidell, 2007).

Cronbach's Alpha. Cronbach's alpha was calculated separately for sample one and sample two to measure the internal consistency (i.e., reliability) of items underlying factors identified through EFA. Cronbach's alpha is a measure of internal reliability which demonstrates the extent to which items contained within a measure or subscale are closely related to one another (Tavakol & Dennick, 2011). Cronbach's alpha is affected by the number of items tested, length of the measure, and dimensionality (Tavakol & Dennick, 2011). Alpha values greater than 0.70 suggest that items within a measure or subscale are adequately related to produce reliable scores (Cho & Kim, 2015). Cronbach's alpha values from sample one was compared to those from sample two to explore the extent to which internal consistency was replicable in comparable populations.

Inferential Analysis. Independent *t*-tests was used to determine whether respondents from sample one and sample two differed on individual items and scales/domains generated from the EFA. Independent *t*-tests provide statistical evidence of differences between two samples (Pagano, 2010). Statistical assumptions for independent *t*-tests included a normal distribution, homogeneity of variance, and independence of observations (Pagano, 2010). If items or domain level scores violated statistical assumptions mentioned above, appropriate adjustments were made (e.g. use of Mann-Whitney U test or chi-square difference testing for categorical variable; Pagano, 2010). To create domain level scores for student-athlete identities, all item factors found through EFA were summed to create a single score for separate domains. Sum scores are used to unit-weight each item by combining all standardized loadings to the same value (McNeish & Wolf, 2020). Although results were not anticipated to suggest differences between the scores of athletic identity and academic identity from sample one or sample two, findings could suggest that individual item scores differed between groups. If these hypotheses are

validated, results could suggest evidence of the consistency of the factor structure and internal reliability.

Qualitative Analysis

The transcripts obtained through the student-athlete interviews were inductively analyzed through three layers of analysis. Data were separated into themes that are outlined by codes and definitions. A priori themes used in the first two layers of analysis were based on previous research that has identified characteristics about identity, specifically athletic and academic identities (Ryan & Bernard, 2003).

The first layer of analysis focused on the four perspectives of identity outlined by Gee (2000). Data were categorized into themes that exhibit nature perspective identity, institution perspective identity, discursive perspective identity and affinity perspective identity. Codes for the first round of analysis can be found in Table 1.

Table 1

Gee's Four Identity Perspectives Codes

Code Identifier	Meaning	Example in text
Nature Identity	Identity developed from forces that a person cannot control (Gee, 2000). These include race, gender, genes, etc.	"I am a girl. I am not supposed to be good at math." "I come from a competitive family. Many of us are athletes."
Institutional Identity	Identity obtained through power given to authorities and institutions that define a person, typically derived through laws, rules, traditions and principles based on titles or positions (Gee, 2000).	"I have to work hard to get the grades I get. I don't get any special favors just because I am an athlete." "Since I miss class so much because I have to travel for my sport, I can't be a good student."

Code Identifier	Meaning	Example in text
Discursive Identity	Identity that recognizes individual traits or characteristics through discourse and dialogue with rational individuals (Gee, 2000).	"I have always been told I was really smart and that I was good at school." "I am very competitive. Of all my siblings, I am the most competitive."
Affinity Identity	Identity based on allegiance, access of participation in practices that a group of people related across a large space (Gee, 2000).	"As honors student, I want to graduate with a 4.0." "I have to make sure that I remain eligible so I can still be on the team."

The second layer of analysis focused on data that expressed athletic identity, academic identity, both identities and neither identity group. The data were organized by themes that match the groups and definitions found in Table 2.

Table 2

Academic and Athletic Identity Codes

Code Identifier	Meaning	Example in text
Academic identity	A person's self-awareness of academic abilities and interests (Hyatt, 2003).	"It is important for me to do good in school. Getting a college degree is important for my lifelong success."
Athletic identity	A reflection of how an individual considers themselves to be 'like' an athlete in their thought, emotions and actions (Bell, 2009; Brewer et al., 1993; Van Rens et al., 2019).	"Sports and being on a team has always been a big part of my life."
Both	Connections between both academic and athletic identities.	"My teammates and I work hard to get high grades, as we want to have the highest team GPA of all the teams at my school."
Neither	No connection to either academic or athletic identity	"It is easier to go to class when it is warm outside."

The final layer of analysis used open coding. The themes were determined upon initial evaluation of the transcripts. The two primary techniques used will include cutting and sorting

and word lists. The cutting and sorting technique involve connecting quotes from the interviews that are similar in topic and identified as a particular theme (Ryan & Bernard, 2003). The word list technique is used to determine the number of times, or the frequency, a particular word is used to describe a concept (Ryan & Bernard, 2003).

Presentation of data. Findings from the interviews were presented in a narrative format with a focus on experiences that highlight the participant's identities as students and athletes. These narratives include direct quotations from the participants and pseudonyms are used to ensure privacy and confidentiality of their stories. A summary of findings that compare commonalities and difference of these female student-athletes experiences was included after the individual narratives. Finally, additional findings from interviews as well as figures that summarize common themes were used.

Reliability. Each layer of analysis was completed by two separate coders to determine interrater reliability. Interrater reliability is the degree that coders agree on how the themes are applied to the data and important to determine that coders are measuring the same characteristics (Ryan & Bernard, 2003). Interrater reliability is an appropriate approach with semi structured interviews (Morse, 1997).

Once a second rater was identified, the process began with training on the codes and their definitions in this study. Data from one question was analyzed independently for each code, and once completed, the two coders met to compare codes and determine if reliability had been met. Reliability was determined based on the percentage of consistency between the coders. Although there is no standard percentage for interrater reliability, it is recommended that a minimum benchmark of 80% of agreement be reached (Miles & Huberman, 1994; Saldana, 2021). Perfect

correlation between raters is rare, but confidence is built in interrater that show some disagreement between raters (McHugh, 2012).

Since coding was consistent on the first question for both codes, the coding process outlined continued with the remaining data. However, the interraters met prior to the full completion of coding to clarify an approach on codes related to Gee's Four Identity Perspectives because there was overlap found between discursive and institutional identities based on how the participants expressed these perspectives. Once an agreement was reached between the two interraters, the coding process continued and remaining data was coded to completion without additional meetings. The interrater reliability percentage for the Gee's Four Identity Perspectives was 81% and the percentage for the Athletic and Academic Identity Codes was 89%. Since recommended benchmarks were met after the first round of coding, no additional rounds were needed.

Validity. Validity of the data were determined using three strategies outlined by Creswell (2009). The first strategy used was triangulation which uses data sources to build justifications for the themes used in the coding process (Creswell, 2009). Themes have been identified and defined by previous research on identity, athletic identity and academic identity. Additionally, the data from the interviews were compared and corroborated with the quantitative data analysis outlined in the descriptive statistical analysis process completed on the NCAA population and local population of female student-athletes. The comparison and corroboration of both studies is known as concurrent triangulation (Creswell, 2009).

A second strategy used for validity was to present any negative or discrepant information. Discussion of contrary information adds to credibility in qualitative research (Creswell, 2009).

This was done by including any statements about a perspective that was gathered that did not support or was divergent from the general theme of the code identifier.

The third strategy was to be transparent about the researcher bias. This was presented as a self-reflection of the inclinations and interpretations that are brought into the study shaped by personal background. A core characteristic of qualitative research is reflectivity (Creswell, 2009).

Positionality Statement. As an academic professional, I work daily with student-athletes that I frequently advise on academic expectations. In this role, I frequently see the physical, emotional, mental and social struggles that student-athletes experience. My research interest focusing on student-athletes comes not only from my daily work with them, but also from my own background and identity as a white female athlete when I was younger. Although I did not compete at the colligate level, my lifestyle while in my sport mimicked that of collegiate student-athletes. However, since I was not a college athlete, and come from a different background than some of the student-athletes that I will be researching, I acknowledge my experience and background as a female athlete is different from current collegiate athletes and I will only offer these findings as an interpretation of the expressed identities and experiences. I understand that I may represent a position of power to some of the participants, making them less comfortable or more hesitant in sharing. I also acknowledge that my positionality may influence this research to some extent, but I will outline my own biases prior to research analysis to bracket any possible bias or assumptions that may be present in my interpretations (Lincoln & Guba, 1985; Su-Russell & James, 2021). I also have instituted in my methodology multiple evaluations by the participants, additional researchers and scholars to ensure that my own biases are limited within the results of this study.

Summary

The purpose of this study was to explore dimensions of athletic and academic identities in Division I female student-athletes, a population with high academic achievement and graduation success rates. Quantitative methods used a refined version of the 2010 NCAA Growth, Opportunities, Aspirations, Learning of Students in college (GOALS) survey with two samples to explore constructs underlying female student-athletes' athletic and academic identities using exploratory factor analyses, tests of internal reliability, and independent *t*-tests.

The second phase of the study used semi-structured qualitative interviews to further explicate quantitative findings by exploring female student-athletes' self-expressed perspectives about their identities as students and athletes. Qualitative methods will use interviews to further explicate quantitative findings by exploring female student-athletes' self-expressed perspectives about their identities as students and athletes. Two student-athletes participated in the interviews. The interviews were recorded and transcribed. Data obtained from the interviews was analyzed through three layers of analysis. First, data were analyzed based on Gee's (2000) four perspectives of identity. Secondly, data were analyzed by reviewing expressed statements of athletic identity, academic identity, both identities or neither identity. Finally, data were open-coded looking for themes, common words or phrases that were used to gain further understanding of the perceptions female student-athletes have with their own athletic and academic identities.

There are limitations to this study that need to be noted. First, this study was affected by the limits that the NCAA placed on the use of the GOALS survey. The NCAA prevents the use of all questions and items contained within the entire GOALS survey for research related purposes. Hence, before obtaining GOALS data, it was necessary to select questions and items

perceived to relate to athletic and academic before conducting EFAs. A content validity review of all GOALS questions and items was conducted to determine which of these most closely related to athletic and academic identity. Although it is standard practice in the field of measure development to have context experts involved in this process, experts were not used for this study (Holmbeck & Devine, 2009). Hence, there is the possibility that items selected for EFA do not align with expert opinion about athletic and academic identity. Additionally, due to limited sample sizes and timeframes, only an EFA will be completed as part of the data analysis, rather than also completing a CFA to verify structure and validity.

Limitations were also found in the qualitative focus of this study. Since only two student-athletes were interviewed in this study, only a few perceptions were used to identify key findings. Plus, these interviews take time, more so than completing a survey, and results varied based on how the participant was engaged, comfort level, and feelings. When using percentage agreement for interrater reliability, findings did not take into consideration when a rater was guessing on a score, portraying overestimation in the agreement percentage (McHugh, 2012). However, this study is foundational research for future studies that have expanded sample sizes and extend beyond just one institution. Findings from this study offer critical insights into appropriate techniques for measuring female student-athletes' athletic and academic identities and how female student athletes understand themselves as women who navigate complex collegiate experiences of being both a student and an athlete. Future research will benefit by exploring the extent to which female student-athlete identities associate with their academic success, using a refined version of the GOALS survey as tested in this study.

CHAPTER IV

RESULTS

The purpose of this concurrent mixed methods study was to explore dimensions of athletic and academic identities in Division I female student-athletes, a population with high academic achievement and graduation success rates. Quantitative methods used a refined version of the 2010 NCAA Growth, Opportunities, Aspirations, Learning of Students in college (GOALS) survey with two samples to explore constructs underlying female student-athletes' athletic and academic identities using exploratory factor analyses, tests of internal reliability, and independent *t*-tests. Qualitative methods used semi-structured interviews to further explicate quantitative findings by exploring female student-athletes' self-expressed perspectives about their identities as students and athletes. Findings from this study may offer critical insights into appropriate techniques for measuring female student-athletes' athletic and academic identities and how female student athletes understand themselves as women who navigate complex collegiate experiences of being both a student and an athlete.

Data Collection

Data from sample one was obtained from the NCAA, converted to numerical values, and filtered to only contain responses from participants that identified as female from a Division I institution. Data from sample two was collected from female student-athletes at a Division I institution in the Southwest and converted to numerical values. Both samples were aligned by item and scale, undergoing a harmonization to ensure successful merging of data on variables. Analysis was completed by evaluating sample one and sample two independently and then in comparison. Both samples were also merged and evaluated as a holistic dataset. Descriptive

statistics, exploratory factor analysis, Cronbach alpha values and independent *t*-tests were utilized for all data sets (independent, compared and holistic).

Harmonization of Datasets

Harmonization techniques were used to integrate data from sample one and sample two. Since these samples were administered surveys with the same questions, there are only small differences between datasets on common measures including race, gender and one item related to athletic identity. Variables were transformed and re-coded by first evaluating frequencies of responses individually in each data set to determine lowest percentage rates and then collapsing response options by combining and reassigning responses into a new group (Fortier et al., 2017). By completing this task, individual items could be pooled in order to use the same response scale and metric.

Demographic information regarding race for sample one was requested using seven response categories, American Indian, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Pacific Islander, White and Other. However, due to concerns that the NCAA had about identifiable data from participant responses about race, the NCAA collapsed racial categories into three response fields, inclusive of White/European, Black/African American and Other/Multiracial (two or more racial categories selected). Demographic information regarding race for sample two was requested using seven categories, inclusive of American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, White, Other (please specify), or prefer not to say. Due to these differences, it was necessary to harmonize race between datasets, given the differences between the item response categories. Before collapsing categories in sample two to mirror those in sample one, the frequency of categorical endorsements was reviewed. For sample two, participants only endorsed three racial

categories, White/European, Black/African American and Multiracial. The numerical value of the race categories for each sample were also different. For sample one, racial categories are measured with the following: 0=White, 1=Black, and 2=Other or multiracial. However, race is measured with the following categories in sample two: 1=American Indian or Alaska Native, 2=Asian, 3=Black or African American, 4=Native Hawaiian or Pacific Islander, 5=White, 6=Other and 7=Prefer not to say. Value labels were re-coded with sample two to match the value labels from sample one. However, to keep the richness of the data from sample two, the original data were kept with categories added for those who identified as a mixed race. For this, the value 8 was given to those who identified as mixed-race Black/White and a 9 value was given to those who identified as White/Other.

Sample one only used two categorical responses to measure gender: Female or Male and data were further filtered to only include female responses. Sample two measured gender with seven categories: Female, Male, Non-Binary, Transgender Male, Transgender Female, Other and Prefer not to say. For sample two, each gender was given a numerical value: Female=1, Male=2, Non-Binary=3, Transgender Male=4, Transgender Female=5, Other=6, and Prefer not to say=7. After analysis of the data, only values of 1 and 3 were in participant responses. Data from sample one were re-coded and given the same values as sample two.

Sample one and sample two both administered the same question about professional sport participation post college experience. However, datasets differed in the response scales used for this question. Sample one used a 1 (very unlikely) to 6 (very likely) response scale**.** Sample two used a 1 (unlikely) to 5 (very likely) response scale. Before collapsing categories in the dataset from sample one to mirror those in sample two, frequency analyses were run in each dataset to identify which items had the lowest endorsement rates. Based on the frequency analysis of

sample two, categories 3 “somewhat unlikely” (9.7%) and 4 “somewhat likely” (11.1%) were identified as the best categories to combine in single category (now numbered 3) because the percentage of those two combined was similar to category 3 “somewhat likely” (20.9%) in sample two. Once these categories were collapsed in sample one, all responses in category 5 had to be re-coded to 4 and all responses in category 6 also had to be re-coded to 5 to match the dataset of sample two.

Sample Demographics

Sample one was comprised of 2,914 Division 1 female student-athletes who took the original GOALS survey in 2010 and were attending schools from across the United States. Prior to obtaining the data, the NCAA transformed two multi-categorical demographic variables (sport and ethnicity/race) by dichotomizing response fields due to concerns about participant confidentiality. For this data, these student-athletes were grouped into two groups for sport by the NCAA: Women’s Basketball or Women’s Other. Over 11% of the respondents (*n*=341) considered basketball as their primary sport whereas 88.3% (*n*=2573) were on a women’s team other than basketball. The NCAA only releases racial data based on three categories: White, Black or African American, or Other. For this survey, 74.9% of the respondents were White or European (*n*=2182), 13% Black or African American (*n*=379) and 12% Other or Multiracial (*n*=350).

Sample two was comprised of female student-athletes from a local Division I institution in the southwestern United States. For this study, 153 students were requested to complete the electronic survey in April 2022. The response rate was 28.1% (*n*=43). All sports teams were represented in the responses, with soccer having the highest proportion of responses (25.6%; *n*=11). The indoor and outdoor track team and swimming and diving team also had over 20%

represented in the completed surveys (*n*=9). Cross country represented 14% (*n*=6), volleyball at 7% (*n*=3) and tennis and golf (*n*=1) both had representation in the final sample. Harmonized data for racial demographics for sample two indicated most of the respondents identified as White (80.5%, *n*=33), while a much smaller proportion of respondents identified as Other/Multiracial (14.6%, *n*=6), and Black/African American (4.9%, *n*=2). Since this study adapted the survey slightly, more robust ethnic and racial demographics were obtained. For ethnicity, data indicated that five respondents (11.6%) identified as Hispanic, Latino or Spanish Origin, while 81.4% (*n*=35) indicated they were not Hispanic, Latino or Spanish Origin. The majority of respondents (76.7%; *n*=33) identified as White, while a much smaller proportion identified as Black and White (9.3%; *n*=4), Black/African American (4.7%; *n*=2), other (2.3%; *n*=1), and as white and other (2.3%; *n*=1).

All respondents were asked to volunteer for a follow-up interview. Nineteen responded to be contacted for this purpose. After multiple attempts of scheduling a time for an interview, only two completed the interview. Interviews were completed in July 2022. Although the sample size was small, the two participants had notably different demographic backgrounds including being from different teams, academic years, and racial and ethnic backgrounds.

Descriptive Statistics

Descriptive statistics were analyzed by evaluating sample one, sample two and the combined sample. Measures of central tendency, using mean, median and mode, were evaluated to understand the characteristics of the data (Pagano, 2010). Range, standard deviations, and interquartile ranges were evaluated by individual items to measure variability. Additionally, data was analyzed for normal distributions using skew, kurtosis, and frequency histograms. Finally,

homogeneity of variance was reviewed using Levene's test comparing the means of the independent groups.

Measures of Central Tendency. Mean, median and mode were analyzed. For sample one, data showed mean values of items clustered at the higher values of the Likert scale where 1= Strongly Disagree and 6=Strongly Agree. The result of data grouping at the upper limits of a Likert scale could be considered a ceiling effect (Cramer & Howitt, 2004). Of the 25 items, 21 items had a mean of 4.0 or higher. The item with the highest mean value (*M*= 5.58; *SD*=0.67) was "I consider myself a dedicated athlete," whereas the lowest mean value (*M*=1.92; *SD*=1.06) was the survey question "How likely will you become a professional and/or Olympic athlete." Median and mode values showed all items were at the higher end of the Likert scale with 22 of the 25 items having a value of 4.0 or higher. A median value of 5 was 52% (13) of all items. A mode value of 6 was most common, which was 48% (12) of all items.

Table 3

Descriptive Statistics of Survey Responses - Sample One

Survey Item	Sample 1 *n*=2914	
	M (*SD*)	*Range*
How likely do you think you will become professional/Olympic athlete.	1.92 (1.06)	1-5
I consider myself a dedicated athlete.	5.58 (.67)	1-6
I consider myself a dedicated student.	5.38 (.77)	1-6
I have many personal goals related to sport.	5.29 (.85)	1-6
I have many personal goals related to academics.	5.39 (.78)	1-6
I need to excel in athletics to feel good about myself.	4.73 (1.16)	1-6
I need to excel in academics to feel good about myself.	4.92 (1.01)	1-6
My sport experiences are an important part of my overall college experience.	5.39 (.79)	1-6
My academic experiences are an important part of my overall college experience.	5.27 (.81)	1-6
I feel other students view me as more of an athlete than as a student.	4.43 (1.30)	1-6
I feel that my professors view me as more of an athlete than a student.	3.58 (1.39)	1-6

Survey Item	Sample 1	
	M (*SD*)	*Range*
I would have gone to a four-year college somewhere else even if I hadn't been an athlete.	5.12 (1.51)	1-6
I would be willing to sacrifice my athletics participation for academics.	4.00 (1.57)	1-6
I would be willing to sacrifice my academic performance for athletics participation.	3.04 (1.48)	1-6
My athletics participation is important in preparing me for life after graduation.	4.63 (1.36)	1-6
I believe the classes I'm taking are relevant to my future.	5.02 (1.02)	1-6
I have a personal interest in my classes.	4.92 (.98)	1-6
I took these classes primarily to stay academically eligible to compete.	2.45 (1.53)	1-6
I took these classes because they fit with my practice schedule.	4.07 (1.55)	1-6
How do you feel about your efforts made in classes.	4.95 (.86)	1-6
How do you feel about your relationships with faculty.	4.83 (.83)	1-6
How do you feel about your ability to succeed academically.	5.03 (.81)	1-6
How do you feel about overall college academic experience to this point.	5.03 (.82)	1-6
Academic offerings, academic reputation, etc. contributed to my decision to attend current college.	4.94 (1.17)	1-6
Athletic participation contributed to decision to attend current college.	5.25 (1.05)	1-6

For sample two, measures of central tendency also showed a result known as ceiling effect, which is a result of the data grouping at the upper limits of a Likert scale. Average means clustered on the higher end of the Likert scale with 19 items having a mean value of 4.0 or higher. The item with the highest mean (*M*=5.71; *SD*=0.50) was “My sport experiences are an important part of my overall college experience” and the lowest mean value (*M*=1.81; *SD*=1.00) was “How likely will you become a professional and/or Olympic athlete.” Median and mode for sample two were similar to sample one with 21 of the 25 items with a median value of 4.0 or higher. A median value of 5 was the most common, which composed of 40% (10) of the items. Of the 25 items, 22 had a mode value of 4.0 or higher: a value of 6 being the most common, which was 44% (11) of all items.

Table 4

Descriptive Statistics of Survey Responses - Sample Two

Survey Item	Sample 2 *n*=43	
	M (*SD*)	*Range*
How likely do you think you will become professional/Olympic athlete.	1.81 (1.00)	1-5
I consider myself a dedicated athlete.	5.69 (.51)	4-6
I consider myself a dedicated student.	5.33 (.90)	3-6
I have many personal goals related to sport.	5.38 (.76)	4-6
I have many personal goals related to academics.	5.24 (1.12)	2-6
I need to excel in athletics to feel good about myself.	5.17 (.90)	2-6
I need to excel in academics to feel good about myself.	5.07 (1.06)	2-6
My sport experiences are an important part of my overall college experience.	5.71 (.50)	4-6
My academic experiences are an important part of my overall college experience.	5.12 (.91)	2-6
I feel other students view me as more of an athlete than as a student.	4.76 (1.24)	2-6
I feel that my professors view me as more of an athlete than a student.	3.33 (1.30)	1-6
I would have gone to a four-year college somewhere else even if I hadn't been an athlete.	5.07 (1.64)	1-6
I would be willing to sacrifice my athletics participation for academics.	3.83 (1.20)	2-6
I would be willing to sacrifice my academic performance for athletics participation.	3.29 (1.47)	1-6
My athletics participation is important in preparing me for life after graduation.	4.49 (1.18)	2-6
I believe the classes I'm taking are relevant to my future.	5.07 (1.29)	1-6
I have a personal interest in my classes.	4.85 (1.29)	1-6
I took these classes primarily to stay academically eligible to compete.	2.71 (1.40)	1-6
I took these classes because they fit with my practice schedule.	3.73 (1.58)	1-6
How do you feel about your efforts made in classes.	5.13 (1.09)	1-6
How do you feel about your relationships with faculty.	4.95 (.90)	1-6
How do you feel about your ability to succeed academically.	5.28 (.90)	1-6
How do you feel about overall college academic experience to this point.	4.95 (.98)	1-6
Academic offerings, academic reputation, etc. contributed to my decision to attend current college.	4.53 (1.33)	1-6
Athletic participation contributed to decision to attend current college.	5.65 (.53)	4-6

The combined sample showed only small differences from sample one. Twenty-one items had a mean of 4.0 or higher. On mean values, 21 of the 25 items had the exact same mean value

as sample one. Four items that did not have the same mean had a difference of 0.01 of which three items were higher than the means in sample one by 0.01 and one item was lower than the mean in sample one by 0.01. The questions with the highest and lowest mean value identified in sample one were the same. The median values were exactly the same as sample one, with 22 of the 25 items being 4.0 or higher. Only one mode value differed in the combined sample from sample one, but a mode value of 6 was still most common, which was 44% (11) of all items.

Table 5

Descriptive Statistics of Survey Responses - Combined Sample

Survey Item	Combined Sample *n*=2957	
	M (*SD*)	*Range*
How likely do you think you will become professional/Olympic athlete.	1.92 (1.06)	1-5
I consider myself a dedicated athlete.	5.58 (.67)	1-6
I consider myself a dedicated student.	5.38 (.77)	1-6
I have many personal goals related to sport.	5.29 (.85)	1-6
I have many personal goals related to academics.	5.39 (.78)	1-6
I need to excel in athletics to feel good about myself.	4.73 (1.16)	1-6
I need to excel in academics to feel good about myself.	4.92 (1.01)	1-6
My sport experiences are an important part of my overall college experience.	5.39 (.79)	1-6
My academic experiences are an important part of my overall college experience.	5.27 (.82)	1-6
I feel other students view me as more of an athlete than as a student.	4.44 (1.30)	1-6
I feel that my professors view me as more of an athlete than a student.	3.57 (1.39)	1-6
I would have gone to a four-year college somewhere else even if I hadn't been an athlete.	5.12 (1.51)	1-6
I would be willing to sacrifice my athletics participation for academics.	4.00 (1.57)	1-6
I would be willing to sacrifice my academic performance for athletics participation.	3.04 (1.48)	1-6
My athletics participation is important in preparing me for life after graduation.	4.63 (1.36)	1-6
I believe the classes I'm taking are relevant to my future.	5.02 (1.03)	1-6
I have a personal interest in my classes.	4.92 (.98)	1-6
I took these classes primarily to stay academically eligible to compete.	2.46 (1.53)	1-6
I took these classes because they fit with my practice schedule.	4.07 (1.55)	1-6
How do you feel about your efforts made in classes.	4.95 (.86)	1-6

Survey Item	Combined Sample	
	M (*SD*)	*Range*
How do you feel about your relationships with faculty.	4.83 (.84)	1-6
How do you feel about your ability to succeed academically.	5.04 (.81)	1-6
How do you feel about overall college academic experience to this point.	5.03 (.82)	1-6
Academic offerings, academic reputation, etc. contributed to my decision to attend current college.	4.93 (1.17)	1-6
Athletic participation contributed to decision to attend current college.	5.25 (1.05)	1-6

Distribution and Dispersion. Range and standard deviation were used to measure variability and quartile values were evaluated across individual items to determine data spread within samples. Range is the difference between the highest and lowest scores in the distribution (Pagano, 2010). Since a Likert scale was used in this study, the distribution of reported scores were reviewed to determine if distribution matched that of the Likert scale of 1 to 5 for one athletic identity item asking "How likely do you think it is that you will become a professional and/or Olympic athlete" which was adjusted in the harmonization process to match the range scale of sample two. All other 24 items have Likert scales with a range of 5. Sample one and the combined sample showed variability in the data with the one athletic identity item having a range of 4 and the other 24 items having a range of 5. The ranges for sample two varied based on the question. Only 13 items (52%) had a range of the full Likert scale of 5, including the one athletic identity item with the range of 4. Of the other 12 items in sample two, seven items had a range of 4 (28%), one item had a range of 3 (4%) and four items had a range of 2 (16%).

Using standard deviation to evaluate sample fluctuation and to determine if the data had any outliers (Pagano, 2010), the data for sample one shows that all 25 items were within two standard deviations of the mean. Ten of the items (40%) were less than one standard deviation of the mean and 15 items (60%) were between 1 and 2 standard deviations. Therefore, no

significant outliers were deducted in this data. Sample two also resulted in all 25 items being within two standard deviations of the mean. For this sample, no outliers were found since 11 items (44%) were within less than one standard deviation and 14 items (56%) were between 1 and 2.

Standard deviation scores for the combined sample reported similar values as sample one. All 25 items reported a standard deviation of less than 2; 11 items reported less than 1 standard deviation and 14 items between 1 and 2 standard deviations. Although 21 items showed less than 0.003 difference in standard deviation values between sample one and the combined sample, there were four items that had a 0.004 or higher difference in the standard deviation values. Two items that showed higher values in the combined sample were "I have many personal goals related to academics" which was 0.006 higher than sample one and the item "I have a personal interest in my classes" also had a higher value of 0.005. Two items that showed lower values in the combined sample were "I would be willing to sacrifice my athletics participation for academics" and "Athletics participation contributed to my decision to attend particular college" both had a value 0.004 lower than sample one.

In order to determine data spread within the samples, quartile values were analyzed. Most items in both samples demonstrated limited variability, indicated by data values of 5 being the same at the 25^{th} and 50^{th} percentile and values of 6 at the 50^{th} and 75^{th} percentile. For example, sample one had five items with a value of 5 at the 25^{th} percentile and the same value of 6 at the 50^{th} and 75^{th} percentile; five different items had the same value of 5 at the 25^{th} and 50^{th} percentile and a value of 6 at the 75^{th} percentile.

Sample two showed even less variability with the same data value of 5 at the 25^{th} and 50^{th} percentile or same values of 6 at the 50^{th} and 75^{th} percentile. Six items had a value of 5 at

the 25th percentile and the same value of 6 in the 50th and 75th quartiles; six different items had the same value of 5 at the 25th and 50th percentiles and a value of 6 at the 75th percentile. Since both samples showed limited variability, the combined sample also demonstrated that 10 of the 25 items had data values of 5 or 6 at the 25th, 50th and 75th percentile.

Normality. Skew, kurtosis, and frequency histograms were used to evaluate if the data was normally distributed. Skew evaluates the symmetry of the distribution (Tabachnick & Fidell, 2007). Kurtosis evaluates whether the distribution of scores is heavily clustered in the peak (near the mean) or in the tales (toward the end of the distribution (Tabachnick & Fidell, 2007). Normal distribution numbers are identified as zero in skew and kurtosis values (Tabachnick & Fidell, 2007), although values can be considered normal in univariate distributions for skew between -2 and +2 and for kurtosis with values from -7 to +7 (Bryne, 2010; Hair et al., 2010). Kurtosis values over 8.0 are considered extreme (Kline, 2011). Frequency histograms were evaluated to see the direction of the data in comparison to a normal bell-shaped curve.

For sample one, skew was between -2 and +2 for 23 items. Only two items had values greater than -2. The items considered to fall outside of this range were "I consider myself a dedicated athlete" (-2.23) and "Athletics participation contributed to my decision to attend a particular college" (-2.05), meaning more participants answered that they strongly agree with the statement. Kurtosis also showed high values in the item "I consider myself a dedicated athlete" with a value over 8.

Sample two also had 23 items between the -2 and +2 skew range. However, the two items were different not the same two found in sample one. Those two items that fell outside of this range were "How do you feel about your relationships with faculty" (-2.08) and "How do you feel about your ability to succeed academically" (-2.77), meaning that participants' answers were

more positive on these questions. These two items also had high kurtosis values. The item "How do you feel about your relationships with faculty" had a value over 8 and "How do you feel about your ability to succeed academically" had a value over 12.

Similar to other descriptive data analysis results, the combined sample had similar results from sample one. Although 23 of the items were within normal skew range, two items were slightly above -2 and were the same items that were identified in sample one to not have a normal skew value. The items considered to fall outside of this range were "I consider myself a dedicated athlete" (-2.23) and "Athletics participation contributed to my decision to attend a particular college" (-2.06). Additionally, one item was found to have a high kurtosis value of over 8 which was "I consider myself to be a dedicated athlete."

Statistical Assumptions. Statistical assumptions were evaluated as this study will include independent *t*-tests. Laerd Statistics (2018) suggested six specific assumptions for *t*-test that were used to guide evaluation of the data prior to analysis. The first assumption outlined that variables must be on a continuous scale. Although Likert scales are considered ordinal numbers, scholars agree that Likert scales are composed of many sums across many items and can be assumed as interval (Carifio & Perla, 2008; Norman, 2010). Likert scales can be used with caution when data is normally distributed (Sullivan & Artino, 2013). In this study, 23 of the 25 items were considered normally distributed, with two items considered to be slightly outside of the recommended range. The second and third assumptions are that there are two categorical, independent groups with no relationship between the groups. In this study, data from sample one was obtained from multiple collegiate student-athletes in 2010 and sample two was obtained from student-athletes at one institution in 2022. There is no overlap in the sample participants.

Assumption four, five and six were evaluated through SPSS and explained in the descriptive statistics analysis section. Assumption four requires evaluation of the data for outliers; there were no significant outliers found. The fifth and sixth assumptions require researchers to ensure that data is approximately normally distributed for each group and that the data shows evidence of homogeneity of variances. Homogeneity of variance is important when comparing groups because it assumes that distributions of independent groups are similar or equal (Levine et al., 2013).

In order to prepare for future analysis using the independent *t*-test, the assumption of homogeneity of variance had to be considered. For this, the Levene's test was used comparing the means of the independent groups. Rules of Homogeneity of Variance are violated if *p*-values are less than .05 (Martin & Bridgmon, 2012). Table 6 shows the seven items that were found in violation of the rules of homogeneity of variance based on the mean. One of these items, "Athletic participation contributed to my decision to attend my current college" was found to not have a normal distribution and may present limitations in future findings.

Table 6

Items that Violated Rules of Homogeneity of Variance

Survey Item	*p*-value
I have many personal goals related to academics.	0.009
I need to excel in athletic pursuits to feel good about myself.	0.037
My sport experiences are an important part of my overall college experience.	0.001
I would be willing to sacrifice my athletics participation for academics.	0.013
I believe the classes I'm taking are relevant to my future.	0.032
I have a personal interest in my classes.	0.016
Athletic participation contributed to decision to attend my current college.	0.010

Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was used to explore structures underlying concepts related to academic and athletic identity in sample one and sample two. The EFA was conducted separately for sample one and sample two. The EFA results from each sample were compared to one another to determine if findings pertaining construct validity were replicable in comparison populations. For this study, the EFA was run in Mplus statistical software (Muthén & Muthén, 2022) using orthogonal varimax rotation. Since athletic and academic identity are considered uncorrelated, orthogonal rotation is most appropriate for this study. Varimax rotation technique is most commonly used in orthogonal based analyses and analyzes factors through the process of minimizing complexity of factors and maximizing variance within each factor loading and across variables (Tabachnick & Fidell, 2007). Each factor model must be analyzed to determine the most appropriate recommended factor structure. For this study, EFA models were evaluated to identify a possible factor structure using chi-square tests, RMSEA, scree plots, and factor loadings.

Chi-square tests and Root Mean Square Error of Approximation (RMSEA) were used to determine model fit. Chi-square goodness of fit statistic measures how well the statistical model fits the set of observations (Pagano, 2010). For chi-square, the *p*-value must be greater than $p=.05$ to indicate that poor model fit is not significant. Unlike chi-square, best fit for RMSEA is equal to a value of 0 (Kline, 2011). RMSEA values of less than .05 typically are considered a good fit (Browne & Cudeck, 1993; Kline, 2011) although values between .05 and .08 are acceptable (Fabrigar et al., 1999).

Scree plots and factor loadings were evaluated to further identify a possible factor model. Scree plots visualize eigenvalues on a graph scale. Factor extraction should be based on the point on the graph that there is a leveling of the plot or an “elbow” (Kline, 2011). Factor loadings were

reviewed to determine which items were grouping with each other. Items that loaded onto a factor with a value of .30 or higher were considered in the initial evaluation of factor loadings.

EFA Results: Sample One. The EFA for sample one was run using Mplus statistical software. Mplus provides analysis of each factor scenario possible and was able to run 5-factor models. No model was mathematically possible to determine additional factors beyond five. This is likely because each factor must have a minimum of two indicators per identified factor (Kline, 2011). As the number of factors increased, the fewer number of indicators could load onto a factor.

Sample one had high chi-square values, with 1 factor=13704.02, but p=.00. As factor models increased, chi-square numbers decreased, but p values remained at 0.00. Chi-square is a statistic that is sensitive to sample size. With larger sample sizes, p-values decrease and the "badness of fit" statistic increases. (Babyak & Green, 2010; Bergh, 2015). With small sample sizes, there is not enough power to identify differences between the specified model and the comparison model. Generally, sample sizes over 500 substantially increase the risk of a Type 1 error. Since the size of sample one was large (N=2914), just using a chi-square statistic to determine model fit is not recommended. Using chi-square with a large sample size and relying on traditional fit statistics usually will result in the discard of any model tested (Bergh, 2015). Therefore, it is important to rely on other statistical indices.

RMSEA values for sample one did meet recommended values for two suggested factor models. Sample one reached a .08 RMSEA value with a 4-factor model and RMSEA value of .07 with a 5-factor model. Chi-square and RMSEA values for sample one can be found in Table 7.

Table 7

Summary of Model Fit Information - Sample One

Model	Chi-square	Degrees of Freedom	*P*-Value	RMSEA
1-factor	13704.02	275	0.0000	0.12
2-factor	8799.89	251	0.0000	0.10
3-factor	5822.84	228	0.0000	0.09
4-factor	4107.63	206	0.0000	0.08
5-factor	2933.52	185	0.0000	0.07

Table 8 shows the values of the models compared to each other. The models compare the chi-square values for factor models in order to determine which model provides the best fit. For example, the chi-square values of the 2-factor model to the chi-square value of the 1-factor model, to determine if adding more factors increase fit. Although in this sample acceptable *p*-values were still not reached, results show that there is more meaningful difference in chi-square values comparing the 2-factor against the 3-factor model.

Table 8

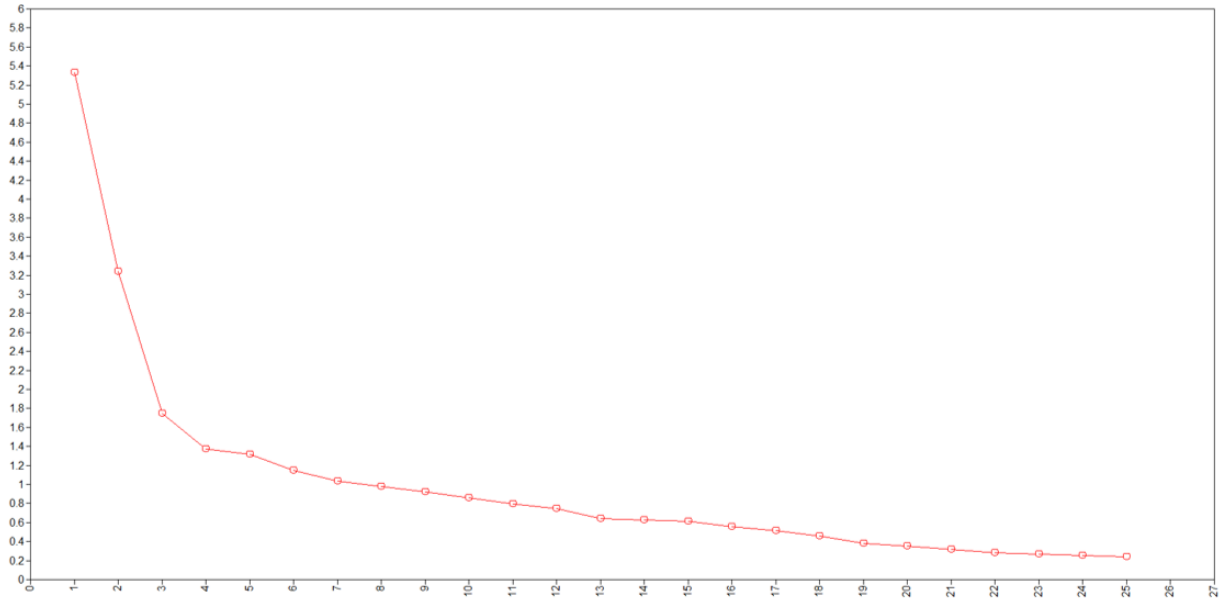
Models Compared - Sample One

Models Compared	Chi-square	Degrees of Freedom	P-Value
1-factor against 2-factor	4904.12	24	0.0000
2-factor against 3-factor	2911.05	23	0.0000
3-factor against 4-factor	1715.20	22	0.0000
4-factor against 5-factor	1174.11	21	0.0000

Next, the scree plot was evaluated for sample one to visually determine the number of factors for possible extraction. Results showed one primary “elbow joint” or point of inflection at the bend 3-factor model (see figure 1).

Figure 1

Scree Plot – Sample One



Finally, factor loadings were evaluated for a 4-factor model, a 3-factor model, and a 2-factor model. The 4-factor model was evaluated since it generated acceptable RMSEA values. The 3-factor model was evaluated because it was the suggested model fit from the scree plot. Since this study is focused on identifying factors associated with two distinct identities, athletic identity and academic identity, the 2-factor model was also reviewed.

Factor loadings from the 4-factor model indicated that this solution was not appropriate for the data, given that one factor was measured by a singular item. Watkins (2018) suggests that a factor must have a minimum of two factor loadings, although three factor loadings is generally recommended, hence this factor/item was dropped from the 4-factor model, which generated a 3-factor solution. Table 9 outlines all factor loadings for the 4-factor model.

Table 9

Exploratory Factor Analysis Factor Loadings, 4- & 5-Factor Models - Sample One

Items	4-Factor				5-Factor				
	1	2	3	4	1	2	3	4	5
How likely do you think you will become professional/Olympic athlete.	**.32**	-.15	.01	.02	.25	-.22	.02	.11	.02
I consider myself a dedicated athlete.	**.52**	.42	.10	-.01	**.63**	.24	.09	.03	.00
I consider myself a dedicated student.	-.06	**.72**	.35	-.10	.16	**.70**	.34	-.15	-.09
I have many personal goals related to sport.	**.58**	.40	.07	-.01	**.68**	.22	.06	.05	.00
I have many personal goals related to academics.	-.05	**.76**	.26	-.09	.16	**.75**	.25	-.10	-.08
I need to excel in athletics to feel good about myself.	**.53**	.24	-.08	.01	**.54**	.11	-.08	.17	.01
I need to excel in academics to feel good about myself.	.04	**.58**	.08	-.07	.17	**.57**	.08	.01	-.06
My sport experiences are an important part of my overall college experience.	**.62**	.28	.04	-.04	**.72**	.07	.02	.02	-.04
My academic experiences are an important part of my overall college experience.	-.01	**.65**	.17	-.13	.18	**.63**	.16	-.10	-.12
I feel other students view me as more of an athlete than as a student.	**.48**	-.15	-.16	.02	.23	-.11	-.10	**.72**	.00
I feel that my professors view me as more of an athlete than a student.	**.32**	-.18	-.15	.04	.03	-.08	-.09	**.76**	.14
I would have gone to a four-year college somewhere else even if I hadn't been an athlete.	-.16	.18	.04	-.04	-.09	.21	.03	-.06	-.04
I would be willing to sacrifice my athletics participation for academics.	-.47	**.32**	.08	-.09	-.35	**.43**	.07	-.16	-.08
I would be willing to sacrifice my academic performance for athletics participation.	**.45**	-.31	-.15	.05	.28	-.38	-.14	.26	.04
My athletics participation is important in preparing me for life after graduation.	**.38**	.03	.09	-.04	**.39**	-.07	.09	.04	-.04
I believe the classes I'm taking are relevant to my future.	-.04	.18	.18	-.68	.01	.19	.18	-.07	-.68
I have a personal interest in my classes.	-.03	.20	.21	-.92	.04	.20	.02	-.09	-.91

Items	4-Factor				5-Factor				
	1	2	3	4	1	2	3	4	5
I took these classes primarily to stay academically eligible to compete.	.20	-.24	-.10	-.12	.03	-.22	-.09	.27	.11
I took these classes because they fit with my practice schedule.	.18	-.06	-.04	-.06	.09	-.06	-.03	.19	.06
How do you feel about your efforts made in classes.	-.06	.32	**.71**	-.11	.05	.31	**.70**	-.14	-.10
How do you feel about your relationships with faculty.	.03	.12	**.57**	-.14	.07	.10	**.56**	-.04	-.14
How do you feel about your ability to succeed academically.	-.05	.21	**.82**	-.06	.02	.21	**.82**	-.10	-.05
How do you feel about overall college academic experience to this point.	.00	.19	**.78**	-.16	.07	.17	**.77**	-.09	-.15
Academic offerings, academic reputation, etc. contributed to my decision to attend current college.	.00	.24	.11	-.13	.07	.22	.10	-.06	-.13
Athletic participation contributed to decision to attend my current college.	**.33**	-.02	.09	-.02	.27	-.08	.10	.16	-.03

Note. Factor loadings above .30 are in bold.

Factor loadings from the 3-factor model showed that factor one had 10 items with factor loadings from .30 to .64. These items were questions related to athletic participation. Factor two was measured by six items that were related to academic identity, with loadings from .32 to .76. Factor three was measured by four items related to self-perceived academic experiences, with loadings ranging from .58 to .81 and included questions that asked about how the participant felt about efforts they made in class or their ability to succeed. Table 10 outlines all factor loadings for the 3-factor model.

Factor loadings for the 2-factor model showed that factor one had seven items related to athletic participation with factor loadings from .35 to .66. Factor two was measured by 11 items related to academic participation, with loadings from .37 to .78. These loadings were similar to the factor two loadings for the 3-factor model with an additional item loading which was "I believe the classes I am taking are relevant to my future." Table 10 outlines all factor loadings for the 2-factor model of sample one.

Table 10

Exploratory Factor Analysis Factor Loadings, 1- to 3-Factor Models - Sample One

Items	1-Factor	2-Factor		3-Factor		
	1	1	2	1	2	3
How likely do you think you will become professional/Olympic athlete.	.12	.27	-.10	**.30**	-.18	.01
I consider myself a dedicated athlete.	-.33	**.61**	.31	**.56**	.36	.10
I consider myself a dedicated student.	-.77	.10	**.78**	.01	**.72**	.36
I have many personal goals related to sport.	-.29	**.66**	.26	**.61**	.34	.07
I have many personal goals related to academics.	-.73	.13	**.73**	.02	**.76**	.27
I need to excel in athletics to feel good about myself.	-.08	**.59**	.04	**.55**	.19	-.09
I need to excel in academics to feel good about myself.	-.49	.16	**.48**	.10	**.58**	.09
My sport experiences are an important part of my overall college experience.	-.20	**.67**	.16	**.64**	.23	.04
My academic experiences are an important part of my overall college experience.	-.62	.14	**.62**	.04	**.66**	.19
I feel other students view me as more of an athlete than as a student.	.25	**.44**	-.30	**.46**	-.19	-.16
I feel that my professors view me as more of an athlete than a student.	.27	.27	-.30	**.30**	-.21	-.16
I would have gone to a four-year college somewhere else even if I hadn't been an athlete.	-.18	-.11	.19	-.14	.20	.04
I would be willing to sacrifice my athletics participation for academics.	-.34	-.37	**.37**	-.44	**.38**	.09
I would be willing to sacrifice my academic performance for athletics participation.	**.37**	**.36**	-.40	**.41**	-.36	-.16
My athletics participation is important in preparing me for life after graduation.	-.07	**.37**	.04	**.38**	.00	.10
I believe the classes I'm taking are relevant to my future.	-.42	-.03	**.42**	-.04	.28	.28
I have a personal interest in my classes.	-.49	-.02	**.48**	-.03	**.32**	.34
I took these classes primarily to stay academically eligible to compete.	.29	.14	-.31	.18	-.27	-.13
I took these classes because they fit with my practice schedule.	.11	.16	-.13	.18	-.09	-.06
How do you feel about efforts made in classes.	-.71	-.03	**.70**	-.02	.32	**.72**

Items	1-Factor	2-Factor		3-Factor		
	1	1	2	1	2	3
How do you feel about your relationships with faculty.	-.48	.01	**.47**	.04	.11	**.58**
How do you feel about ability to succeed academically.	-.67	.05	**.66**	-.02	.21	**.81**
How do you feel about overall college academic experience to this point.	-.66	.01	**.64**	.02	.19	**.80**
Academic offerings, academic reputation, etc. contributed to decision to attend current college.	-.29	.04	.29	.01	.25	.13
Athletic participation contributed to decision to attend current college.	-.02	.29	.00	**.32**	-.05	.09
Cronbach's alpha		0.661	0.823	0.692	0.724	0.845

Note. Factor loadings above .30 are in bold.

EFA Results: Sample Two. The EFA for sample two was also run in Mplus statistical software. Mplus provides analysis on each factor scenario and was only able to run up to a 4-factor model. Any EFA model beyond 4-factors was not mathematically possible. As with sample one, this problem likely reflects an under-powered design given that a minimum of two adequately correlated items are needed to load on a single factor, which was not viable in sample one.

Chi-square values for sample two lowered as more factors were added. For example, the 1-factor model had a chi-square value of 750.278 whereas a 4-factor model had a value of 482.144. However, *p*-values remained at .00 for both models. Similar to sample one, sample size was an issue with this dataset as well which influenced the *p*-value. Unlike sample one, sample two was too small of a sample size (*N*=43). In this case, the sample did not have enough power to identify differences in the observed model (Bergh, 2015).

RMSEA values for sample two never reached the recommended value of .08. RMSEA values decreased as factor models increased. Chi-square and RMSEA values for sample two are found in Table 11.

Table 11

Summary of Model Fit Information - Sample Two

Model	Chi-square	Degrees of Freedom	P-Value	RMSEA
1-factor	750.27	275	0.0000	0.20
2-factor	618.76	251	0.0000	0.18
3-factor	548.68	228	0.0000	0.18
4-factor	482.14	206	0.0000	0.17

Table 12 shows the values of the models compared to each other. Like sample one, acceptable *p*-values still were not reached with this sample. However, initial results show that

there is a meaningful difference in chi-square values comparing the 2-factor against the 3-factor model.

Table 12

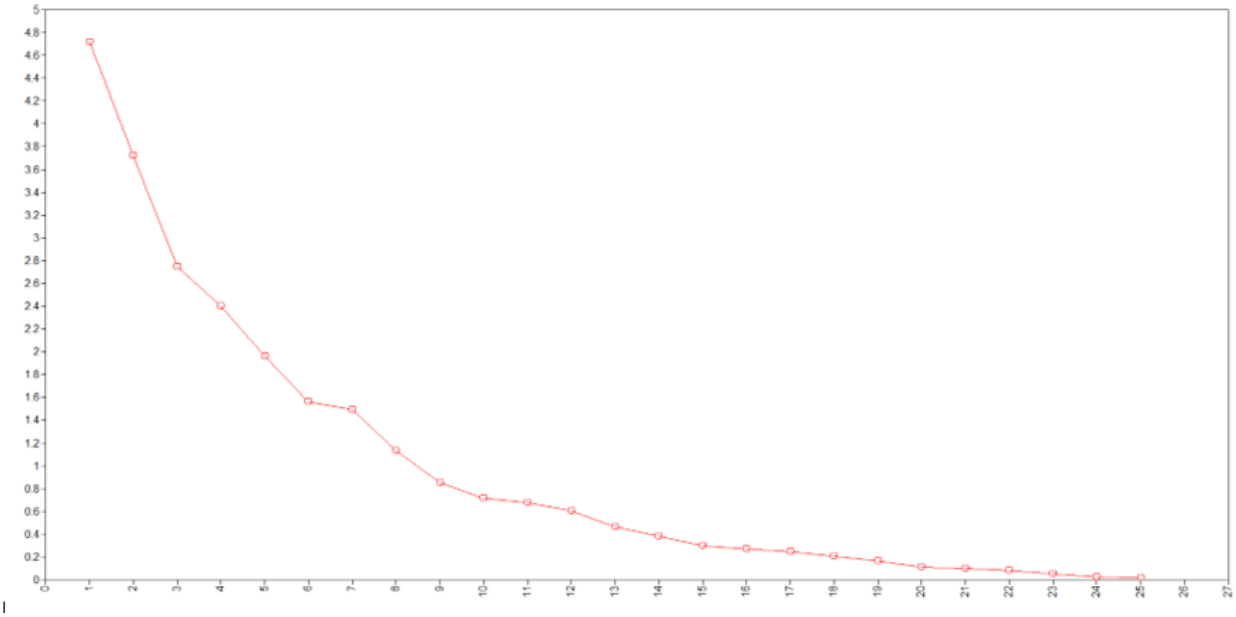
Models Compared - Sample Two

Models Compared	Chi-square	Degrees of Freedom	P-Value
1-factor against 2-factor	131.51	24	0.0000
2-factor against 3-factor	70.07	23	0.0000
3-factor against 4-factor	66.54	22	0.0000

The scree plot for sample two was not clear and showed three points of inflection or "elbows." One point suggested a 2-factor model, the second bend suggested a possible 3-factor or 4-factor model and the third suggested a 6- or 7-factor model (see figure 2). This is likely because of the sample size being so small. However, since Mplus only could run up to a 4-factor model, the 2-factor model, 3-factor model and 4-factor model were considered in further analysis.

Figure 2

Scree Plot – Sample Two



Factor loadings were used to evaluate the 4-factor model, the 3-factor model, and the 2-factor model. Since the chi-square and RMSEA values did not meet any recommendations, model evaluation was based on the scree plot examination. Due to the ambiguity of the scree plot itself, the 4-factor, 3-factor and 2-factor model were analyzed to determine if there was a model fit based on factor loadings.

Factor loadings from the 4-factor model indicated that this solution was not appropriate for the data, given that one factor was measured by items with loadings less than .3, and a second factor was measured by two items that were cross-loading on another factor within the model, where values were higher, hence these factors were dropped from the 4-factor model, which generated a 2-factor solution. Factor loadings for the remaining two factors showed that factor one had five athletic participation items with factor loadings ranging from .50 to .86. Factor loadings for the second factor measured eight academic participation items with factor loadings ranging from .32 to .81. Although this factor model generated a 2-factor solution, it will be referred to as the 4-factor model for sample two and can be found in Table 13.

Factor loadings from the 3-factor model also indicated that this solution was not appropriate for the data, given that one factor was measured by a singular item. Hence this factor/item was dropped from the 3-factor model, which generated a 2-factor solution. Factor loadings showed that factor one was measured by five items related to athletic identity with factor loadings ranging from .49 to .88. The five athletic items on the 3-factor model were the exact same as the five athletic items in the 4-factor model. Factor two was measured by five academic identity items with factor loadings ranging from .36 to .96. Although this factor model generated a 2-factor solution, it will be referred to as the 3-factor model for sample two. Factor loadings for the 3-factor model can be found in Table 13.

Table 13

Exploratory Factor Analysis Factor Loadings, 3- & 4-Factor Models - Sample Two

Items	3-Factor			4-Factor			
	1	2	3	1	2	3	4
How likely do you think you will become professional/Olympic athlete.	**.56**	.17	-.05	**.52**	.08	.10	-.13
I consider myself a dedicated athlete.	**.71**	-.06	.22	**.73**	.03	-.04	.24
I consider myself a dedicated student.	-.02	-.72	**.48**	-.04	.05	-.57	**.66**
I have many personal goals related to sport.	**.88**	-.06	.08	**.86**	.05	-.10	.06
I have many personal goals related to academics.	-.05	-.93	.13	-.11	.00	-.87	**.33**
I need to excel in athletics to feel good about myself.	.23	-.15	-.20	.23	-.26	-.15	-.05
I need to excel in academics to feel good about myself.	-.14	-.68	-.08	-.17	-.17	-.65	.14
My sport experiences are an important part of my overall college experience.	**.59**	.03	-.41	.60	.04	-.01	-.08
My academic experiences are an important part of my overall college experience.	.02	-.81	-.02	-.03	.05	-.84	.11
I feel other students view me as more of an athlete than as a student.	.02	-.09	-.37	.07	-.82	.00	.03
I feel that my professors view me as more of an athlete than a student.	-.16	-.14	-.44	-.15	-.47	-.14	-.22
I would have gone to a four-year college somewhere else even if I hadn't been an athlete.	-.15	-.01	.16	-.14	-.07	.07	.22
I would be willing to sacrifice my athletics participation for academics.	-.16	-.37	.10	-.17	-.28	-.24	**.36**
I would be willing to sacrifice my academic performance for athletics participation.	.06	.12	-.35	.09	-.61	.18	-.10
My athletics participation is important in preparing me for life after graduation.	.26	.00	.02	.26	-.06	.00	.05
I believe the classes I'm taking are relevant to my future.	.10	-.28	-.17	.07	-.02	-.34	-.14
I have personal interest in my classes.	.17	-.34	-.16	.14	-.02	-.46	-.12
I took these classes primarily to stay academically eligible to compete.	.02	.48	-.28	.04	-.21	-.45	-.29
I took these classes because they fit with my practice schedule.	-.20	-.02	-.17	-.18	-.44	.06	.03
How do you feel about efforts made in classes.	.13	-.24	**.76**	.13	.47	-.15	**.65**
How do you feel about your relationships with faculty.	-.14	-.46	.01	-.14	-.44	-.21	**.32**
How do you feel about ability to succeed academically.	.17	-.01	**.96**	.19	.48	.13	**.81**
How do you feel about overall college academic experience to this point.	.12	-.20	**.72**	**.37**	.15	-.02	**.76**
Academic offerings, academic reputation, etc. contributed to decision to attend current college.	.09	-.38	**.35**	.11	-.33	-.18	**.67**

Items	3-Factor			4-Factor			
	1	2	3	1	2	3	4
Athletic participation contributed to decision to attend current college.	**.49**	-.15	.10	**.50**	.15	.11	.00
Cronbach's alpha	0.75		0.83	0.75			0.82

Note. Factor loadings above .30 are in bold.

Factor loadings for the 2-factor model were reviewed since the scree plot suggested a possible 2-factor model and analysis of the other two factor models for sample two resulted in a 2-factor model suggestion. Factor two was measured by six items related to academic identity with loadings ranging from .36 to .98. However, the 2-factor model indicated that this solution was not appropriate for this data given that one single factor was measured by one singular item. Therefore, the 2-factor model will not be used in further analysis for this study. Additionally, further evaluation should be explored by completing a Confirmatory Factor Analysis (CFA) based on the EFA results for both sample one and sample two to further determine groupings and theory-based model fit. Table 14 outlines all factor loadings for the 2-factor model of sample one.

Table 14

Exploratory Factor Analysis Factor Loadings, 1- & 2-Factor Models - Sample Two

Items	1-Factor	2-Factor	
	1	1	2
How likely do you think you will become professional/Olympic athlete.	-.20	.23	.05
I consider myself a dedicated athlete.	.09	.02	**.36**
I consider myself a dedicated student.	**.81**	-.71	**.49**
I have many personal goals related to sport.	.04	.04	.24
I have many personal goals related to academics.	**.92**	-.93	.15
I need to excel in athletics to feel good about myself.	.08	-.12	-.14
I need to excel in academics to feel good about myself.	**.64**	-.69	-.07
My sport experiences are an important part of my overall college experience.	-.06	.10	.08
My academic experiences are an important part of my overall college experience.	**.77**	-.80	.02
I feel other students view me as more of an athlete than as a student.	.00	-.09	-.36
I feel that my professors view me as more of an athlete than a student.	.01	-.16	-.45
I would have gone to a four-year college somewhere else even if I hadn't been an athlete.	.06	-.03	.12
I would be willing to sacrifice my athletics participation for academics.	**.40**	-.39	.08
I would be willing to sacrifice my academic performance for athletics participation.	-.23	.12	-.33
My athletics participation is important in preparing me for life after graduation.	.00	.02	.08
I believe the classes I'm taking are relevant to my future.	.21	-.27	-.13
I have personal interest in my classes.	.27	-.32	-.10
I took these classes primarily to stay academically eligible to compete.	-.54	**.47**	-.29
I took these classes because they fit with my practice schedule.	-.02	-.04	-.21
How do you feel about efforts made in classes.	**.43**	-.22	**.78**
How do you feel about your relationships with faculty.	**.36**	-.37	.00
How do you feel about ability to succeed academically.	.25	.01	**.98**
How do you feel about overall college academic experience to this point.	**.38**	-.18	**.74**
Academic offerings, academic reputation, etc. contributed to decision to attend current college.	**.47**	-.37	**.39**

Items	1-Factor	2-Factor	
	1	1	2
Athletic participation contributed to decision to attend current college.	-.15	.21	.20

Note. Factor loadings above .30 are in bold.

Cronbach's Alpha

In order to determine internal consistency reliability, Cronbach's alpha was calculated for this study. Cronbach's alpha is used to ensure that responses across the measure are consistent across items (Kline, 2011). Although there are no specific standards for Cronbach's alpha or reliability coefficient values, guidelines recommend a value around .70 to be adequate, values at .80 considered to be very good and .90 or higher are considered excellent. Values below .50 typically are related to an observation error and unacceptable (Kline, 2011).

For this study, factor solutions established from the EFA for sample one and sample two were used to guide calculations for Cronbach's alpha to reduce ambiguity as to which factor solution provided the best fit. For example, sample one met statistical recommendations for RMSEA values with the 3-factor and 4-factor models, although never met recommendations for the chi-square statistic. Scree plots, results from the EFA, and extant literature were used to inform models used to test internal consistency, which included 2-factor models, 3-factor models and 4-factor models. Since a final model solution was not entirely evident after these analyses, Cronbach's alpha was run as an additional tool to establish which factor solution was a best fit for the data.

For sample one, Cronbach's alpha was calculated for the 3-factor and 2-factor models based on the results of the EFA and scree plot. Results from the 3-factor model generated adequate Cronbach's alpha values. The first factor of the 3-factor model had 10 items, the athletic participation related questions, with a Cronbach's alpha value of .69. The second factor had six items related to academic participation with a Cronbach's alpha value of .72 and the third factor had four items related to self-perceived academic experience items with a Cronbach's alpha value of .84.

Next, Cronbach's alpha was calculated for the 2-factor model. Results from the 2-factor model generated adequate Cronbach's alpha values. The first factor had seven items related to athletic participation on factor one with a Cronbach's alpha value of .66 and 11 items related to academic participation on factor two with a Cronbach's alpha value of .82. Since the 3-factor model had higher Cronbach's alpha values for both factor one and factor two than the values in the 2-factor model, it was confirmed as the better factor solution.

For sample two, Cronbach's alpha values were calculated for the 4-factor model, which had a 2-factor solution and the 3-factor model, which also had a 2-factor solution, based on the results of the EFA and scree plot. Results from the 4-factor model generated adequate alpha values. The first factor had five items related to athletic participation with a Cronbach's alpha value of .75. The second factor had eight items related to academic participation with a Cronbach's alpha value of .82.

Next, Cronbach's alpha was calculated for the 3-factor model. Results from the 3-factor model generated adequate Cronbach's alpha values. The first factor had the same five items related to athletic participation as the 4-factor model and had a Cronbach's alpha value of .75. The second factor had five items also with a Cronbach's alpha value of .83. Since the 3-factor model had a higher value for the second factor and less items, the 3-factor model was confirmed as the better factor solution.

In order to determine if internal consistency is replicable in the two samples, shared items had to be evaluated based on the Cronbach's values for each sample. The factor model with best fit for sample one was determined to be the 3-factor model. For sample two, the factor model with best fit was the 3-factor model. Since sample two had fewer items per factor, these items were used as the base line for the shared items. For the factor related to athletic

participation there were five items that were common between sample one and sample two. These five items were compared with each sample to determine Cronbach's alpha values for comparison of samples. Factor one Cronbach's alpha value for sample one was .59 and for sample two was .75. Factor two included self-perception academic questions and had three shared items. Sample one had a Cronbach's alpha value of .85 and sample two was .87. In both cases, sample two had a higher internal consistency reliability value than sample one.

Final factor solutions had to be selected for each sample in preparation for analysis using independent *t*-tests. These final factor solutions were based on a comprehensive evaluation of results found in the EFA, scree plot, factor loadings and Cronbach's alpha. The factor solutions with the best fit for the data were the 3-factor model for sample one and the 3-factor model with a 2-factor solution for sample two. Shared items that matched were identified between these two models for samples. The evaluation resulted in five shared items for athletic identity and three shared items for academic identity. Table 15 lists the shared items from the factor models.

Table 15

Exploratory Factor Analysis Factor Loadings - Shared Items from Sample One and Sample Two

Items	Sample One (3-Factor Model)		Sample Two (3-Factor Model)	
	1	2	1	2
I consider myself a dedicate athlete	0.565		0.718	
I have many personal goals related to my sport	0.619		0.882	
My sports experiences are an important part of my overall college experience	0.646		0.597	
How likely do you think it is that you will become a professional and/or Olympic athlete	0.308		0.526	
Athletic participation contributed to your decision to attend your current college	0.327		0.498	
How do you feel about the efforts you've made in your classes		0.727		0.654
How do you feel about your ability to succeed academically		0.816		0.813
How do you feel about your overall college academic experience to this point		0.804		0.768
Cronbach's Alpha	0.592	0.858	0.756	0.875

Inferential Analysis

Independent *t*-tests were conducted to determine whether respondents from sample one and sample two differed on individual items and the factors generated from the EFA. As the results from the EFA in this study did not generate a clear factor solution, models that generated the strongest internal consistency, found with the highest Cronbach's alpha values, were used to inform individual *t*-tests. Items from the best fit model of sample one, the 3-factor model, and items from the best fit model of sample two, the 3-factor model with the 2-factor solution, were compared to identify items that were that same in each sample. In addition to *t*-tests, in order to compare the academic and athletic identity in sample one and sample two, item responses were summed to create domain level scores. Sum or composite scores were created for each factor by totaling scores of individual items that loaded onto a factor (McNeish & Wolf, 2020). The evaluation resulted in five shared items for athletic identity and three shared items for academic identity. Table 13 lists the shared items from the factor models. These shared items were used to generate sum scores and conduct *t*-tests to compare sample one to sample two. Sum scores for both samples, including means and standard deviations are listed in Table 16.

Table 16

Independent T-Test Results for Individual Items and Factors by Sample

Item	Sample 1		Sample 2					
	M	*SD*	*M*	*SD*	*t*	df	*p*-value	Cohen's *d*
Athletic Identity Factor (sum score)	23.43	2.76	24.27	2.49	1.91	2866	0.05***	0.30^^
I consider myself a dedicated athlete.	5.58	0.67	5.69	0.51	1.08	2935	0.27*	0.16^
I have many personal goals related to my sport	5.29	0.85	5.38	0.76	0.67	2929	0.50*	0.10^
My sports experiences are an important part of my overall college experience	5.39	0.79	5.71	0.50	4.11	44[a]	<.001***	0.41^^
How likely do you think it is that you will become a professional and/or Olympic athlete	1.92	1.06	1.81	1.00	-0.67	2944	0.49*	-0.10^
Athletic participation contributed to your decision to attend your current college	5.25	1.05	5.65	0.53	4.65	43.38[a]	<.001***	0.38^^
Academic Identity/Self Perception Factor (Sum Score)	15.01	2.21	15.35	2.67	0.97	2907	0.33*	0.15^
How do you feel about the efforts you've made in your classes	4.95	0.86	5.13	1.09	1.28	2930	0.20*	0.20^
How do you feel about your ability to succeed academically	5.03	0.81	5.28	0.90	1.85	2922	0.06**	0.29^^
How do you feel about your overall college academic experience to this point	5.03	0.82	4.95	0.98	-0.58	2915	0.55**	-0.09^

Note. p-value two tailed.

[a] Equal variances not assumed.

**p* > .10= not significant **p < .10 to .05= trending toward significance; *** p < .05 to <.001 = significant.

^ Cohen's *d* 0.2= small effect; ^^ Cohen's *d* 0.5= medium effect; ^^^Cohen's *d* 0.8= large effect

Next, independent *t*-tests were run comparing sample one to sample two for the athletic identity sum score, academic identity sum score, and each individual shared items between the sample models. Before individual *t*-tests could be analyzed, Levene's Test for Equality of Variance was examined to determine whether the two samples had equal variances. P-values greater than 0.05 indicate that samples have equal variances, while *p*-values less than *p*=.05 indicate that equal variances are not assumed (Perdue, 2017). If samples do not have equal variances, adjustments that account for two sample variances are needed to interpret *t*-tests. When a *t*-test is run, the mean scores are reviewed to determine if there are significant differences. A *p*-value of .05 is considered significant and a *p*-value of more than .05 but less than .10 is considered trending toward significance. Cohen's *d* statistic was calculated to determine the magnitude of difference between two samples on targeted outcomes. If Cohen's *d* has an effect size is less than 0.2, it is considered small, 0.5 is a medium effect size and 0.8 a large effect size (Pagano, 2010).

A total of 10 independent *t*-tests were run for this study, one using the athletic identity sum score, one for the academic identity sum score, and then eight individual shared items between samples. The athletic identity sum score for sample one and sample two resulted in equal variances assumed as *p*=.36. This result supports the null hypothesis that the two samples were similar. The independent samples *t*-test indicated that mean levels of athletic identity in sample two (*M*=24.27, *SD*=2.49) were higher than those in sample one (*M*=23.43, *SD*=2.76), which trended towards significance and demonstrated a small to medium effect, *t*(2866)=1.91, *p*=.055; *d*=.30. The five individual items showed that three items supported the null hypothesis that the samples were similar, where two rejected the null hypothesis. The two items that showed unequal variances were "My sports experiences are an important part of my overall college

experience" and "Athletic participation contributed to the decision to attend my current college." These two items were also found to reject homogeneity of variance rules in the descriptive analysis process. Sample two showed higher levels of athletic identity than sample one on four of the five items.

Equal variances were found for the academic identity sum score as p=.58, therefore the two samples are similar. The independent samples *t*-test indicated that mean levels of academic identity in sample two (M=15.35, SD=2.67) were higher than those in sample one (M=15.01, SD=2.21), which had no significance and demonstrated a small effect, $t(2907)$=.971, p=.332; d=.15. The independent *t*-tests were run for the three items related to academic identity. All three items were found to have equal variances assumed. One item, "How do you feel about your ability to succeed academically," was trending toward significance, whereas the other two items, "How do you feel about the efforts you've made in your classes" and "How do you feel about your overall college experience to this point" showed results that were not statistically significant.

Interview Findings

Two female student-athletes were interviewed to determine their perceptions regarding athletic and academic identities. Interviews were completed in July 2022 and were 30-45 minutes in length. Findings of each interview were presented in a narrative format with a focus on experiences that highlighted their identities as students and athletes. These narratives included direct quotations from the participants and pseudonyms were used to ensure privacy and confidentiality of their stories. After each individual narrative, a summary of the findings compared the commonalities and differences of these female student-athletes' experiences, and

additional findings were presented regarding how these student-athletes felt support in their collegiate experiences.

Participant 1 – "Jessica"

At the time of the interview, Jessica had just completed her first year as a student-athlete at the institution she attended and competed throughout her first year in her sport. Jessica was talkative, passionate, thoughtful, and energetic throughout her interview. On the day of her interview, she was working, and completed her interview from an office space during her lunch break.

For Jessica, being an athlete was a highlight that was shown throughout her interview. She explained that her choice to attend the college was fully based on the opportunity to participate in her sport. The coach that recruited her found her through social media and recruited her during her senior year of high school. She indicated that it was because of how she connected with the coach that she seriously considered attending the institution. She also explained that she did consider academics in her choice because once she saw that the school offered the major she wanted to pursue, the decision to attend this institution was solidified.

Also evident was the influence that her dad had on her life. She would frequently refer to how her parents helped her and specifically would mention her dad as an influential piece of her athletic success. Her dad was also a student-athlete, and therefore was a guiding force throughout her development in the sport and transition into collegiate athletics.

As a student. Jessica described herself as someone who loved to learn and loved going to school. She repeated how much she loved to learn in answering one of the interview questions five times, with the phrases, "I love to learn," "I think that my love for learning," "I love to do it, I enjoy it," and "I like to learn." Her passion for school was evident. Jessica said about her

education that “It’s something that’s always been interesting to me, and I think that love for learning has cultivated into certain aspects of things.” She also shared a story about herself as a little girl begging her mom to start school at the age of four when her mom wanted to wait a year for her to start kindergarten. From an early age, she loved going to school and indicated that attending school was one of the “greatest decisions” she has made and mentions benefits she has seen in her life by commenting, “Stuff like that it has led me – that’s a lot of the reason why I work so hard at school.”

When asked to describe herself as a student, Jessica mentioned on three different occasions being super hardworking, hardworking or very hardworking. She identified as being “obsessed with math” to the point that “it’s a problem” and that she has goals to continue school even after her bachelor’s degree. Jokingly, she commented about going to grad school by saying “I wouldn’t be surprised if I went back to school at 60 just to get a PhD just because I can.”

Jessica also described herself as being a “contributor” but was not overly talkative or “over the top” in class. She would always turn her work in on time and aim for the highest grades. For her, the expectation to do well in school was influenced by her parents, but over time that expectation became her own of herself.

> From the time I was really, really little – the expectation was always very, very high. It’s been that way for me…Pretty much didn’t matter what subject it was, what grade or school I was in, hard the class was supposed to be, pretty much always the expectation for me was…really, to get an A. That was always the bar. That was what was set by my parents, and I met the expectations and I think over time that became the expectation of myself as well. I knew I was capable of getting an A and that’s what I expected to do.

Professors were identified by Jessica as the institutional representatives of support connected to academics. Much of her identity as a student was enhanced with her interactions with professors. Professors encouraged learning and experience. She highlighted professors' encouragement for success by saying, "They all do really care. They want to see, not even just me, but all my peers, they want to see all of us, be successful." However, she also expressed that not all professors understood her lifestyle as a student-athlete, especially those professors who are not willing to work with her or work around scheduling conflicts between her academic expectations and her athletic expectations.

As an athlete. Jessica described herself as an athlete as being diligent, super detailed-oriented, focused, hardworking and a team player. She indicated that she "put a lot of time into what I do" as an athlete and that many times at practice she is disengaged and was not super social because she is so focused. She said, "It's just because I'm so focused on what I am doing, it's just like tunnel vision all the way through practice." She also described herself as a "bottom-line person" knowing that she is the one who must put in the effort to be successful in her sport.

For Jessica, her dad was most influential in her athletic self, describing him as "by far the biggest factor in anything that had to do with athletics" and saying that "he's been somebody who has been really instrumental in my growth to get to this point. Even from here on, he will continue to be." She also credited coaches, both in the past and currently, as being supportive and influential in her athletic endeavors. She discussed negative impacts of poor coaches or transitions of coaches who left during her time as an athlete as challenging and that these changes "tore the team apart." Coaches, to her, brought cohesion and unity to the team and mentioned some of her coaches were good and helped "bring us back together." Jessica mentioned that her teammates are important to her. She explained "Overall, I think teammates

are super, super important when it comes to how I just survive day to day and get through things."

However, Jessica had challenges that she had to navigate as an athlete and did not feel supported by the NCAA or her university athletic department. Jessica only mentioned being a woman when discussing herself as an athlete. She connected her nature identity to her athletic identity. Specifically, Jessica said statements such as "being a woman and competing in college athletics" and "woman in sports." She also discussed impacts of NCAA rules and her university athletic department decisions as affecting not only on her but "other female athletes." As a female student-athlete on a non-revenue team, she said, "If you are not a football player or a men's basketball player, it's very easy to get pushed to the back burner." She also shared a story about a time when her team was not able to hold a competition because a men's team had to have access to the facility instead, although there was another facility on their campus they could use. Jessica understood that "the money comes from where it comes from," but that "sometimes I definitely see those sports take precedent over us in the things that we are doing."

Jessica talked the most about her athletic role. It was noted that she would frequently be asked about being a student, answer a short sentence and easily fell into finishing her answer for that question as her athletic self. Her athletic identity was dominant of all her identities, and this was seen throughout her interview. For her, she was an athlete. She said in her interview, "As a person, I think a lot of who I am as an athlete and a person is very attached. It's almost, a lot of times, I feel like it is one and the same."

As a student-athlete. Jessica described being a student-athlete as a lifestyle and commented that it was "not easy." She noted that she does not have a lot of free time and that she needed "help balancing those [school and sport] things sometimes." Jessica also described being

a student-athlete by using the phrases, “being an athlete is not easy,” “being a student athlete in general is hard,” “I have a lot of things going on,” “it seems impossible,” “during season it gets super complicated,” and “it can be a little tough sometimes.”

Jessica was an active participant with the Student-Athlete Advisory Council (SAAC), and found that it was beneficial to her support as a student-athlete. “I think it’s [SAAC] a really cool way that athletes can come together from different teams. It’s not even just sport people; this is everybody. We can get together and support each other and talk about things that are important to us.”

Participant 2 – “Lucy”

The second participant interviewed for this study will be called “Lucy.” Lucy had just graduated with her bachelor’s degree in the STEM field and had competed as a student-athlete for four years. She spent half of her collegiate career navigating the Covid-19 pandemic. Lucy attended the same school as Jessica, but was on a different sport team, pursued a different major and had a different racial identity. On the day of her interview, Lucy had just arrived home after a long day working in the office. She decided to complete her interview while sitting in her backyard, enjoying the summer evening.

Lucy also committed to attending the institution she chose because of her coach. She had known her coach for a long time and even worked with her coach prior to attending the university. She wanted the opportunity to continue to grow in her sport and have the option to still work with the same coach through her collegiate years. Although she is no longer competing in her sport, she spends time volunteering with club teams and even occasionally works with her former university team.

Lucy was much quieter and more reserved in her interview than Jessica. The interview felt like a moment for her to reflect on what she had done as a student and as an athlete. There was a sense of sadness that came through as she spoke. It was clear that she really loved what she did and was transitioning to a new phase of her life.

As a student. Lucy described herself also as being a student who was hardworking, detail oriented and put in the effort it takes for school. On three different occasions she talked about applying herself fully to get her work done. “I will stay up until the very last minute just so I put in my full effort. I don’t ever wanna do something halfway.” She explained that academics “just doesn’t come super easily to me” and would “put in the effort it takes” to be a good student. Lucy said her goal was, “just trying to be the top at the classroom” though she did not see herself as “the smartest of the smart” when comparing herself to her peers. She worked hard to achieve and wanted to earn the best grades possible.

Lucy also saw the institution as her professors when discussing support that she received as a student. Lucy spent half of her collegiate academic career navigating the challenges of completing school during the Covid-19 pandemic. The transition to online learning for Lucy was not as challenging for her as others because she said she could feel the support from her professors. She discussed one professor who she felt supported her.

> I had a professor right when the pandemic hit. That class is already a difficult one. She was awesome. Transitioning online and everything with such a difficult class, she was really helpful. She always reached out and was always willing to help and go above and beyond…She was amazing.

The transition to online learning was less difficult because the institution made sure that students and professors had resources needed to succeed. However, Lucy felt that the transition

back to in-person "was pretty difficult." She felt there was push that rushed the in-person experience. She commented that the transition to in-person brought on too many demands for the professors, saying, "I almost felt like it got harder when we first went back in-person, and that there wasn't a ton of – I think too many people wanted extra support. It might've been too much of an overload for professors."

Lucy also had plans to continue school beyond her bachelor's degree and was applying for graduate school at the time of her interview. She said that one of the ways she felt supported as a student were the people and the many connections she made as a university student who attended her school. Some of these connections were made through the community in which the school was located. "I think the [city] community as a whole really supports the [university] students…having the whole town's support of the university is really cool. Just anywhere you go, if you're an [university] student, they're willing to do something to help you." Lucy also found connections as she traveled to other places where she competed too through the alumni of the university.

As an athlete. Lucy described herself as an athlete who really did not know when to stop, determined and pushing the limits. She indicated that her coach told her "quite a few times that I don't really know when to stop" as she described her determination as an athlete. Lucy had endured many injuries throughout her collegiate athletic career because she was "pushing the limits" of her body in training and competition.

Lucy referred to her athletic expectations as a "job." She mentioned a few times in her interview of seeing her "work pay off" when she was supported by peers who had seen her win a competition or the university athletic department supporting their health and wellbeing. Similar to Jessica, Lucy also referred to the institution as the university athletic department and stated

that she felt support from the institution with the facilities and services provided to train. “It really shows how much they care about our athletes and support our success. It makes our job easier. It makes us want to show up every day and train. It’s worth something.”

Lucy was an active member of the Student-Athlete Advisory Council during her time at her school, and took on leadership roles that helped her learn and grow. Her last two years on the team she also was a leader and captain. She also participated in the Athletes for Social Alliance group through the NCAA and she felt that it allowed athletes to have a voice with hidden topics that were difficult to talk about such as consent and social justice. However, she also stated that she felt frustrated by the many surveys that the NCAA conducted and from her perspective did not see changes. She commented, “It felt like a waste of time and that it wasn’t helping anything. I know there are thousands of student-athletes that they listen to. Probably the bigger schools get listened to a little bit more.”

Lucy also stated on her coach and teammates were a “huge influence.” Her coach helped her grow and eased the transition from club team to her collegiate team. Many of the descriptions that Lucy shared about herself as an athlete were comments she believed her coach would have said or had already told her throughout the years she trained with her coach. Teammates were also important to Lucy as people who she couldn’t have “done it without them.” Although over the years she had many teammates that changed because of those who graduated and new ones coming in, she said that all of them “influenced who I am in some little way.”

Lucy indicated that retiring from her sport was a very difficult decision and was hard. She loved her sport and said that it “gave me a lot.” For Lucy, her identity as an athlete that she saw in herself was what sport gave her - happiness.

> It [sport] made me so happy. Some days were rough. I did go home, and my body was tired and sore. The joy it did bring me when I would get to compete and do what I love, I just saw myself as a happier person when I was able to compete when I was healthy. Yeah, I just think a happy person.

As a student-athlete. Lucy commented "it's a lot being a student-athlete" and that the lifestyle of a student-athlete "was difficult in trying to balance 20-hour practice weeks" Lucy's experience of trying to balance the athletic and academic self was seen even before she officially committed to the university at her recruitment visit. During her visit, Lucy met with an academic advisor who discouraged her from pursuing her major and being a student-athlete, saying that it was not going to be possible for her to do both. For Lucy, that gave her the motivation to do it. Lucy explained her feelings after that interaction explaining, "I knew what I wanted, but that pushed me even more to prove her wrong and say, 'I can do this'."

In addition, the struggles of navigating these identities, Lucy was very open about mental struggles she had as a student-athlete, especially when she was injured. She stated that her parents were her biggest supporters to help "through everything that this sport brought me through. All of the mental struggles that come with any sport." She also stated that she was very glad to see the NCAA instituting support around Covid protocols and mental health initiatives that reinforced identities beyond an athlete. She said, "It's not like we're just athletes, and they only care about seeing us perform. They do care about our health." Additionally, she made another comment about mental health reform, saying "That you're more than just an athlete."

Overall, Lucy saw positive outcomes from navigating life as a student-athlete and trying to balance the two identities. She learned that plans change, and she learned how to adapt. To her, these skills are going to be "super beneficial for the rest of my life." She concluded

indicating that it had “been a hard journey, but it’s been really beneficial in athletics and academics…but it was good.”

Experiences as Students

In this study, there were similarities that were found in the experiences of Jessica and Lucy. As students, these two female student-athletes showed that they both were hardworking and dedicated time to being successful in the classroom. The description of their academic self also brought up negative phrases that they used to describe themselves. Both participants showed negativity in their phrases related to academic identities. For example, Jessica referred to herself as being weird because she liked math, and Lucy said that she wasn’t the “smartest of the smart” when discussing how she had to work hard to achieve at school.

The identity as a student for both Jessica and Lucy typically was seen through the lens of their professors. When institutional identities were coded in the interviews, even though Jessica and Lucy were pursuing different majors and did not have the same professors, both participants referred to how their professors made them feel or what professors did or did not do to support them as students. They both felt rewarded and valued by some professors, and devalued by others who did not accept their athletic lifestyle.

Additionally, these two exhibited a competitive nature towards academics that showed they wanted to be the best or achieve the best grade possible that led to personal motivation as students. Academics was a priority to them, and they both noted that they always turned their work in on time and never was late turning in assignments, even if it meant that they sacrificed sleep or personal time to get it done. Jessica and Lucy wanted to achieve, and had goals related to academics that went beyond their undergraduate degree. Both had plans to pursue a graduate degree and saw the importance of achieving in school now as a path of getting to the next level.

Differences were found related to their academic identities as well, primarily based on their major and academic level. As they pursued different majors that would lead to different job opportunities, the engagement levels were different. Jessica was pursuing possible internships in the future, whereas Lucy engaged more in student organizations to build her leadership skills. Lucy's college academic experience had to endure the transitions of online learning because of the Covid-19 pandemic and then the difficulties of going back to the in-person setting. Since Jessica was just starting her degree at this institution, she did not have the "before Covid-19 experience" at the university level to compare challenges or differences in support levels.

Experience as Athletes

There were some similarities between how the participants described themselves individually as students and as athletes. Common words used to describe themselves as students and as athletes were hardworking, diligent, and detail oriented. There were also phrases that were similar to what one participant used. Both participants also used slightly negative qualifiers when describing themselves as students but using similar words with more confidence when describing themselves as athletes. For example, Lucy said that she was "pretty hardworking" as a student and Jessica said that she was "pretty diligent" when describing herself as a student, and then said that she was "diligent" as an athlete.

Jessica and Lucy both chose their institution based on the opportunity to pursue athletics and work with the coach who recruited them. The decision to attend school was an athletic decision, not an academic decision. Athletic expectations consistently took priority over their academic requirements. Their dedication to their sport required excessive amounts of balance, of which both commented on balance being a challenge.

Both participants showed that their identity as an athlete was related to the rules and systems of the NCAA and the university athletics program. Upon evaluation of when the student used the word "university" or mentioned the university name, the participants were referring to the university athletic department specifically. Institutional identities connected to the NCAA referred to many of the rules, regulations, and initiatives that the participants were required to follow. Participants highlighted specific instances related to Covid protocols, Name, Image and Likeness (NIL) rules, mental health reform and transgender discussions. Negative experiences were expressed related to these rules, but also to participating on a team that was considered a non-revenue team (i.e. not football or men's basketball), a smaller school in terms of athletic division and being a woman in sports.

Differences were also seen in their athletic roles. Jessica and Lucy were athletes that competed in different sports and were on different teams. This impacted the experiences and culture that they endured. Jessica had a parent who was an athlete who had been and was an influence in her life. She also experienced a coach leaving and navigated a challenging transition that was not positive. Lucy endured injuries while an athlete that led to mental struggles. She also had to adjust some of her plans and eventually retired, so viewed her time in athletics as over in her interview rather than still active like Jessica. Lucy approached it from a reflective state and holistically saw the impact that athletics had on her life.

Experiences As Student-athletes

Throughout the interviews, it was evident that these student-athletes saw their identities intertwined or interconnected to the point that it was difficult to determine which identity was the focus. Frequently, one would start talking about their academic self, which then would carry over into a story or example as an athlete. Jessica made the comment, "as a person, I think a lot of

who I am as an athlete and a person is very attached. It's almost a lot of times, I feel like it is one and the same." In this case, she saw herself primarily as an athlete when thinking of the connection of who she was a person.

Additionally, both student-athletes saw value in participating in SAAC. They found the value of shared experiences with other student-athletes and the opportunities for leadership. Lucy participated in SAAC longer, being older, and saw the value of having a voice that supported not only her, but other student-athlete experiences.

Few differences were seen between these two participants as student-athletes, likely because they attended the same institution. Differences were related to their sport team, major expectations, and year in school. These differences were highlighted in the prior sections.

Support for Female Student-Athletes

Throughout the interview, Jessica and Lucy were asked to describe the type of support they experienced as students and as athletes. Support, or ways they felt unsupported, was seen in the form of certain people in their lives, representatives of the university that they attended and the NCAA organization. This section will highlight these findings and elaborate specifically on quotes that may have been mentioned before to highlight the similarities of these student-athletes.

Student-athlete Supporters. In the interviews, both female student-athletes indicated that there were four types of people that were helpful in helping them in the pursuit of their academic and athletic goals. These people included coaches, teammates, parents and professors.

Coaches. The coaches of these student-athletes played a big role in the identities of these student-athletes. First, both participants said that they chose the institution they attended because of their sport and specifically because of the coach that recruited them. Jessica was contacted by

her coach after being highlighted on Instagram during her senior year of high school. Attending the institution was not initially in her plans, but because of the coach she changed her decision. "I changed my plans and switched everything over to be with the [coach]…He reached out and I switched my plans in a matter of weeks." Lucy had worked with the coach previously and wanted to continue the relationship. "I progressed a lot with [coach] I think just because she knew – my very basic, she knew how I started. It was just a really nice transition, and she helped me out a lot." Lucy also said that her coach was a "huge influence" for her.

Coaches also are influential for experiences within the college environment, not just recruiting. For Jessica, many of her coaches influenced her idea of the sport and she commented that "super difficult to work with" coaches were a challenge and that it felt like she "was stuck out on an island on her own" when navigating difficult relationships with coaches. Coaching changes were difficult to navigate as well. Jessica experienced a coaching change, commenting "Our coach left us at the end of November…That's not a typical transition to go through as a team. That was tough." The coaching change affected the team in a way that she felt the team "broke apart." She said that it was because of the other coaches who stepped into support, brought the team back together, and built connections with teammates making the challenges easier. She said the other coaches have "been a positive light."

Teammates. Another group highlighted by the participants as being influential for their success were their teammates. The participants both indicated that their teammates were people that they found to be helpful throughout the experience. Jessica highlighted that her teammates were the "people you want to be close with" and are "a huge, huge, huge part of all, surviving college athletics in general." Lucy also commented that her teammates also positively influenced her, specifically with her athletic endeavors, "Just my teammates. Obviously, they changed a lot

every year, but every single one of them have all influenced who I am in some little way, which has been really amazing." Attending and being on SAAC was also important to be able to come together as athletes in general. Support was found through SAAC as an avenue to have a voice. Jessica said, "we can all get together and support each other and talk about things that are important to us."

Parents. Parents of student-athletes played an important role in the success in academics and as athletes. For these student-athletes, parents were the foundation of expectations for academics and the supportive people helping through the struggles of athletics. Jessica commented that her parents "have been super supportive of this [being a student-athlete]" and that her parents set the expectations of academic success "very, very high." Her parents, particularly her dad who was also a student-athlete, "has been instrumental in my growth to get to this point. Even from here on, he will continue to be."

Lucy specifically discussed how her parents helped her navigate the struggles of being a student-athlete and who helped her as she recovered from injuries. She highlighted the adversity of the sport through her description of how her parents helped her.

> My parents. Through everything that this sport has brought me through. The traveling, the injuries, all of the back and forth, and the recoveries that were there, and talking me through it all, and there for me no matter what. All of the mental struggles that come with any sport. Couldn't have done it without them.

Professors. Professors were highlighted by the student-athletes to have been influential in their academic success as students but were also mentioned to be unsupportive if they did not "understand the lifestyle" of a student-athlete as Jessica mentioned. Lucy shared a story about an academic advisor that told her she would not be able to major in what she wanted to pursue and

be an athlete. “She told me there was no way I’d make it through all four years as a [major] student-athlete, that it wasn’t possible. I would end up having to get rid of something, and it just was really discouraging.” However, this student used her discouragement to motivate her to pursue her goals. The criticism motivated her to “prove her wrong.”

Professors were also mentioned of not being supportive of the lifestyle of student-athletes by not being willing to work with their schedule. Jessica said, “some teachers are not willing to work with you and work around things.” The balance of practice and traveling was a challenge and she needed “help balancing those things sometimes.” However, both participants had many professors that were willing to help them and wanted to see them succeed. Jessica said was impressed by many of her professors were “very invested” in her academics and that she has “never had teachers that care about my learning this much.” The teachers are knowledgeable in their areas and that she was learning “stuff that matters.” Lucy also found teachers to be helpful and had one in particular who “always reached out and was always willing to help and go above and beyond.” Professors who were willing to help not only allowed these students to believe in themselves as students, but they also helped them “feel like it’s still possible to be a student-athlete.”

Student-athletes and the University. One commonality that came up between the participants in this study was that when asked about university support, the university was seen as the athletics department. The participants discussed support related to their athletic life, and less so to their academic life. The support that they saw was through facilities that they used for training. The weightroom, athletic training, and nutrition services were specifically mentioned as supportive elements.

> They [the university] put a lot of time into the weight room that's in there. We got all sorts of food options to make sure we're eating right, all that kind of stuff. Our new sport medicine facility is stellar. Stuff like that, it's great to see them support us in that way, to be willing to invest in our physical health.

Lucy shared a similar sentiment saying that the facilities "really shows how much they really care about our athletes and support our success" and it "makes our job easier. It makes us want to show up every day and train. It's worth something."

As great as the facilities were, the treatment of the non-revenue sports was discussed as a way these student-athletes felt they were not supported by the university. Student-athletes who participate on non-revenue teams noticed the difference, and this institution was no exception. Jessica highlighted this point, mentioning a national level, but specifically at her institution:

> I think sometimes I've seen, there's been instances where being a [sport] athlete at [institution name] doesn't necessarily benefit you, because at the end of the day, a lot of times in Division I sports, if you are not a football player or a men's basketball player, it's easy to get pushed to the back burner. As much as our team wins, our team won [competition] this year. It's ridiculous. As much as you win and stuff like that, at the end of the day the money comes from where it comes from. I think sometimes I definitely see those sports take precedence over us in the things that we're doing…you notice that you get shoved to the side every now and then for those.

Student-athletes and the NCAA. The NCAA has stated that the mission and top priorities of their organization is to cultivate an "environment that emphasizes academics, well-being and fairness" (NCAA, 2022b). In this study, the priorities of well-being and fairness were highlighted in terms of protocols related to drug testing, programs that exhibit fairness, and

"keeping the integrity in sports" as Jessica stated. Covid pandemic protocols were mentioned by Lucy as rules that were put in place to protect student-athletes and that it showed the NCAA "care about our health." Lucy also shared that she felt the NCAA did a good job of reaching out and asking for input through various surveys to gauge how student-athletes were doing, but also felt that it was "a waste of time," "frustrating," and "wasn't really helping anything." She never saw changes or results and because of this, stating, "I know there's thousands of student-athletes that they [NCAA] listen to. Probably the bigger schools get listened to a little bit more."

Research Questions

What factor structure underlies concepts pertaining to athletic and academic identity in a national sample of Division I female student-athletes (sample one)?

For this study, it was hypothesized that two factors, athletic and academic identity, would underlie concepts pertaining to identity in sample one (Rankin et al., 2016; Watt & Moore, 2001). An Exploratory Factor Analysis (EFA) was completed with data from sample one to determine if this hypothesis would be confirmed. Chi-square test and Root Mean Square Error of Approximation (RMSEA) were evaluated to determine model fit. Scree plots and factor loadings were reviewed.

Findings from the EFA and Cronbach's alpha indicated that for sample one, the 3-factor model was a good solution for the data. The EFA was run in Mplus statistical software using varimax orthogonal rotation. Mplus allowed up to a 5-factor model. In review of Chi-square, as the model number increased, the chi-square decreased, but *p* values remained significant at *p*=.00. This is likely due to the sample size as chi-square is affected by sample size, especially larger sample sizes and results in discarding of any model tested (Bergh, 2015). RMSEA values reached the recommended value of .08 at a 4-factor model and .07 with a 5-factor model.

Next, the scree plot was reviewed to consider possible factor solutions. Results showed an "elbow" or bend at 3-factors, indicating this as possible factor solution; however, fit indices for the 3-factor model did not meet criteria for an adequate fitting model. Therefore, evaluation of factor loadings of a 2-factor model, the 3-factor model and the 4-factor model were reviewed. Items that had a factor loading of .30 or higher were retained. Although the 4-factor model was best based on the RMSEA value, when reviewed, it was determined that one of the factors did not meet factor loadings requirements as only one item loaded onto that factor with a high enough loading value. Expectations require that factors have a minimum of 2 items that load to be considered a true factor. Therefore, this factor was eliminated, creating a 3-factor model.

The 3-factor model had eight items on factor one with reported factor loadings from .32 to .64, six items on factor two with reported factor loadings from .32 to .76 and four items on factor three with reported factor loadings from .58 to .81. Factor one favored questions related to athletic identity such as "I consider myself a dedicated athlete" and "My sports experiences are an important part of my overall college experience." Factor two focused on academic identity including the question "I have a personal interest in my classes." Items loading onto factor three were questions grouped together on the survey that focused on respondents' perceptions about their academic performance asking, "How do you feel about your ability to succeed academically" and "How do you feel about the efforts you've made in your classes."

Evaluation of the 2-factor model showed similar results to factors one and two in the 3-factor model. Factor one had seven items with factor loadings ranging from .35 to .66 that were related to athletic participation. Factor two had 11 items related to academic identity, generating factor loadings ranging from .37 to .78. The factor structure of concepts from sample one does support a 2-factor structure, however, a 3-factor model had a better model fit, although not fully

confirmed. Further analysis would need to be done to confirm the true factor and a Confirmatory Factor Analysis should be completed in order to determine the factor structure of athletic identity and academic identity.

What is the internal consistency of items underlying factors identified through exploratory factor analysis (EFA) in sample one?

Internal consistency of items identified through the EFA in sample one were hypothesized to show adequate values as part of this study (Allison, 2020; Jones et al., 2017). Cronbach's Alpha was used to determine internal consistency reliability. Due to some ambiguity regarding which factor solution provided the best fit, factor solutions from the EFA from sample one were used to guide the calculations used for Cronbach's Alpha. The 2-factor and 3-factor models identified for sample one were evaluated further for internal consistency.

For the 3-factor model, Cronbach's alpha for factor one had a value of .69 which is slightly below the recommended value guideline of 0.70 for adequate fit (Kline, 2011). Factor two had a Cronbach's alpha value of .72 and factor three had a value of .84, both of which are considered an adequate or very good fit for internal consistency. The 2-factor model had a value of .66 for factor one, which is below adequate fit, and factor two had a value of .82 which is considered a very good fit. In both factor models for sample one, the athletic identity factor was below recommended values, but the academic identity factors had good internal consistency reliability results. The 3-factor solution was confirmed as the better fitting model, based on the internal consistency results since all factors had higher Cronbach's Alpha values than the factors in the 2-factor model.

To what extent are indicators of factor validity and internal consistency from sample one replicated in a local sample of Division I female student-athletes (sample two)?

For sample two, it was hypothesized that the factors identified in sample one (Rankin et al., 2016; Watt & Moore, 2001) and adequate measure of internal consistency will be replicated (Allison, 2020; Jones et al., 2017). The same analyses (i.e. EFA, chi-square tests, RMSEA and Cronbach's Alpha) were run for sample two to determine its factor structure and internal consistency. Scree plots and factor loadings were evaluated additionally to determine if a factor structure could be confirmed.

Findings from the EFA and Cronbach's alpha indicated that for sample two, the 3-factor model with a 2-factor solution was a good fitting model for the data. Sample two had a very small sample size for an EFA (N=40). However, Mplus was able to run a factor analysis for up to a maximum 4-factor model. Similarly, to sample one, chi-square values were high, and p-values remained at .00 with every suggested model. Additionally, RMSEA values were also high, with the 4-factor model having a RMSEA value of .177. Although chi-square and RMSEA values continued to lower as the number of factors increased, neither model fit statistic met general guidelines for an adequate fitting model; therefore, results generated from the EFAs with sample one became extremely helpful in decisions making about an appropriate factor solution for sample two, since the sample was underpowered.

Evaluations of the scree plot for sample two showed two possible points of inflection or "elbows" bends at a 2-factor model, a possible 3-factor or 4-factor model and a possible a 6- or 7-factor model. However, since Mplus only could run up to a 4-factor model, the 2-factor model, 3-factor model and 4-factor model were considered in further analysis. The 4-factor model of sample two defined two factors with one factor having five items with factor loadings ranging from .50 to .86 and the second factor having eight items with factor loadings ranging from .32 to .81. However, the two other factors were removed because one factor did not have any items

with loadings above .32 and another only had two items with loadings above .32, but both items had higher values loaded on another factor. The 4-factor model had a 2-factor solution.

The 3-factor model also had two defined factors, with factor one generating five items with factor loadings ranging from .49 to .88. Factor two also had five items with factor loadings ranging from .36 to .96. Factor three only had one item with a loading above .32 and therefore was removed as a viable factor, since a minimum of two items are required to be considered a valid solution. Therefore, the 3-factor model also only had a 2-factor solution.

Cronbach's alpha values were calculated to determine internal consistency for the 4-factor model and 3-factor model of sample two. For the 4-model, factor one items were related to athletic identity and had Cronbach's alpha value of .75. Factor two items were related to academic identity and had Cronbach's alpha value of .82. Both factors generated an adequate to very good value of internal consistency. For the 3-factor model, Cronbach's alpha values for factor one was .75 and factor two was .83. Again, results these factors generated adequate to very good values of internal consistency. Based on the internal consistency, the 3-factor model has better internal consistency since it had higher values for factor two. The internal consistency for sample two showed higher values in athletic identity, and similar values for academic identity.

Does sample one differ from sample two in their responses to individual items and overarching dimensions of athletic and academic identity?

For this study, it was hypothesized that sample one and sample two would not differ on scores of athletic identity and academic identity although individual items would demonstrate variability across the two samples. In order to evaluate the differences between the samples a series of independent *t*-tests were completed. Additionally, sum scores were generated in order to create domain level scores for athletic and academic identity related items found through the

EFA. For athletic identity, five shared items were used to create the sum score, and three shared items were used to create the sum score for academic identity. These shared sum scores were evaluated with Cronbach's alpha to determine internal reliability.

Homogeneity of variance was evaluated and determined if variances were equal across the two samples. Levene's test for Equality of Variance was used and *p*-values greater than .05 would result in equal variances being assumed. Similarly, once the *t*-test was run, *p*-values less than .05 would be considered significant and those values between .05 and .1 would be trending towards significant.

The athletic identity sum score for sample one and sample two resulted in equal variances assumed as p=.36. This result supports the null hypothesis that the two samples were pulled from the same underlying population. The independent samples *t*-test indicated that mean levels of academic identity in sample two (M=24.27, SD=2.49) were higher than sample one (M=23.43, SD=2.76), which trended towards significance, $t(2866)=1.91$, p=.055; d=.30. The five individual items showed that three items supported the null hypothesis that the samples were similar, whereas two rejected the null hypothesis. The two items that showed unequal variances were "My sports experiences are an important part of my overall college experience" and "Athletic participation contributed to the decision to attend my current college." These two items were also found to reject homogeneity of variance rules in the descriptive analysis process. Sample two showed higher levels of athletic identity than sample one on four of the five items.

Equal variances were found for the academic identity sum score as p=.58, therefore the two samples were pulled from the same underlying population. The independent samples *t*-test indicated that mean levels of academic identity in sample two (M=15.35, SD=2.67) were higher than sample one (M=15.01, SD=2.21), which was statistically not significant, $t(2907)=.971$,

p=.332; *d*=.15. The independent *t*-tests were run for the three items related to academic identity. All three items were found to have equal variances assumed. One item, "How do you feel about your ability to succeed academically," was trending toward significance, whereas the other two items, "How do you feel about the efforts you've made in your classes" and "How do you feel about your overall college experience to this point" showed results that were not statistically significant. Independent *t*-test results can be found in Table 14.

How do female student-athletes perceive their athletic and academic identities?

Two female student-athletes were interviewed for this study with the purpose of understanding more about how they perceive their athletic and academic identities. The interviews asked questions about how they saw themselves as students or athletes. Words and phrases that they used to describe themselves or that particular identity was highlighted and grouped into codes based on athletic or academic identities.

Athletic identity. For these student-athletes, their athletic identity, or status as an athlete, was most connected to the sport they played or their team. Key words and phrases that were used by these participants to describe themselves as athletes were detail orientated, determined, hardworking, diligent, focused, team player, disengaged and having "tunnel vision" in practice. Jessica described that she approached her athletics in the "same way I pursue academics," meaning that she had the same work ethic and drive in both of her identities. Lucy said that she always pushed her body "to the limits" and didn't "know when to stop." She also explained that her sport was something that she loved, and that she saw herself as a happier person when she was healthy, competing and training in her sport.

Lucy also discussed the "mental struggles" of the sport, especially when battling through injuries. She mentioned that recent NCAA initiatives implemented a way to discuss mental

wellness that she said was a “huge step” by the NCAA and felt that she was acknowledged as “more than just an athlete.” Both participants discussed the difficulties of the student-athlete lifestyle, particularly related to balance, which will be discussed in a later section.

Another important element to note is that it is only in the discussion of their athletic identity that gender or being a woman or female was discussed. Specifically, the discussion was related to transgender regulations and how this regulation negatively impacts her as a “woman in sports.” She saw the opportunity to compete in her sport and for women in general to have their own teams was “special.” Words such as neglected, difficult, seeing direct effects of and negatively impacted were used to describe feelings of this regulation. Jessica also explained that her identity as an athlete is who she is, implying that her identity is as an athlete, and as a person she is an athlete. She stated, “As a person, I think a lot of who I am as an athlete and a person is very attached. It’s almost a lot of time I feel like it’s one and the same.”

People who are most influential to their identity as an athlete are coaches, teammates, and parents. Coaches were influential not only in college choice through the recruitment choice, but also for encouragement, growth, and connection with others on the team. Teammates were influential for supporting the day-to-day lifestyle as athletes, or the common bond of being in similar situations to truly understand what it takes to be a collegiate athlete. Parents were influential in supporting their dreams of competition growing up and being the foundation that they relied on when battling injuries or needing support through complicated difficulties. When participants referred to the university when discussing their athletic self, they were referring primarily to the athletic department and the resources that were provided through facilities that they trained in such as the weightroom, sports medicine and nutrition services.

Academic Identity. Academic identity was commonly identified related to the major or field of study that these participants were pursuing. Additionally, participants identified themselves by the year of graduation. Key words or phrases that were used to describe themselves as students were detailed oriented, hardworking, "looking the best I can," dedicated, good student, "I contribute," studious, diligent, and always "turn my homework in on time." Jessica identified herself as someone who loved learning and was "obsessed with math." Lucy identified herself as someone who did not ever want to "do something halfway" and she would stay up until the last minute to put in her full effort. Words used to describe themselves as students were also the same words used to describe themselves as athletes, however, both participants used a slightly negative qualifier when describing themselves as students. Lucy said that she was "pretty hard working" as a student and did not see herself as "the smartest of the smart" when comparing herself to her peers. Jessica said that she was "pretty diligent" when describing herself as a student, and then said that she was "diligent" as an athlete.

Jessica and Lucy both exhibited a competitive nature that they wanted to be the best or achieve the best grade possible that led to personal motivation as students. Lucy said her goal was, "just trying to be the top at the classroom" though she did not see herself as "the smartest of the smart" when comparing herself to her peers. Jessica explained that she had a personal expectation to receive an A in her classes because she knew she "was capable of getting an A."

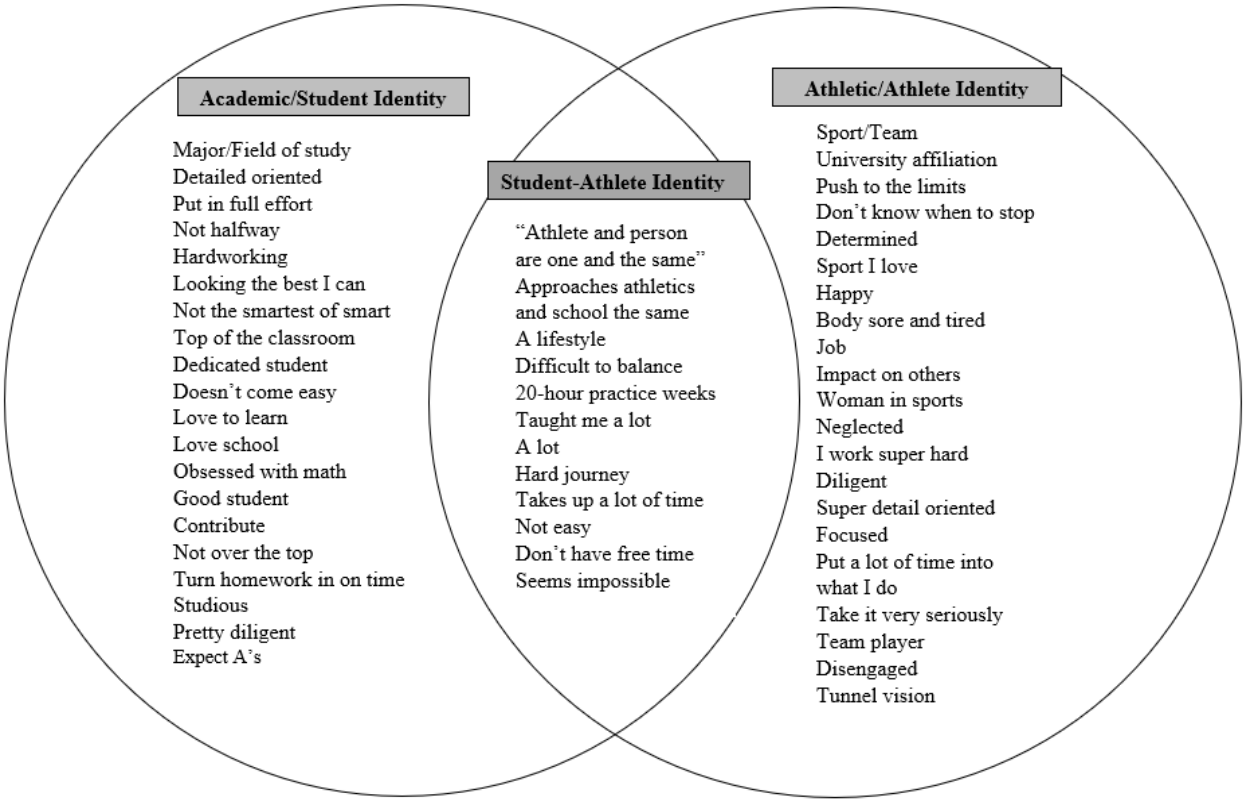
People who are most influential to their identities were professors and parents. Professors were influential in their academic success as students, but few were mentioned as being unsupportive if they were not willing to help them with balance related to academic and athletic expectations. Professors were seen as the institution representative to their academic identity.

Parents, again, were influential in foundations that were built in academic expectations growing up.

Student-athlete identity. As student-athletes have multidimensional identities, these student-athletes saw their identities intertwined or interconnected to the point that it was difficult to determine which identity was the focus as they answered questions throughout the interview. Frequently, one would start talking about their academic self, which then would carry over into a story or example as an athlete. The identity of being a student-athlete was commonly referred to by the interview participants, particularly around the "lifestyle" that they exhibited and the challenges in role balance. Specific keywords and phrases used to describe their student-athlete identity were "difficult to balance," "taught me a lot," "a hard journey," "takes up a lot of time," "not easy," and "seems impossible." Figure 3 visualizes the many descriptive words and phrases that were used to describe these identities.

Figure 3

Venn Diagram of Quotes and Phrases Describing Academic, Athletic and Student-Athlete Identities.



CHAPTER V

DISCUSSION

In this chapter, interpretation of this study is based on data results from the survey and interviews to highlight findings from the survey results about athletic and academic identity. Limitations will be explained to better understand challenges faced in this study that affect interpretation of the results and considerations for needed changes for future research proposals. Additionally, implications for practice, research and policy implementation will be addressed to better understand key results of this study and how adjustments in practice can influence daily work with female student-athletes. Finally, recommendations will be discussed to highlight additional needs of future research in this field.

Interpretation of Findings

This study presents key findings that support our understanding of female athletic and academic identity. Due to restrictions from the NCAA that the GOALS survey could not be used in its entirety, it was necessary to refine the survey for this study to succinctly focus on athletic and academic identity. To complete this task, a content validity review was completed prior to the initiation of this current study. One researcher and two doctoral students, one who is the primary researcher for this study, independently reviewed the entire GOALS survey inclusive of 88 questions and collectively agreed upon 25 questions which items aligned with academic and athletic identity. One objective of this study was to determine if the refinement of the survey questions was effective based on the results of this study. Data were evaluated to determine the factor structure underlining athletic and academic identity with nationwide sample (sample 1) and a local sample (sample 2). For both evaluations, the measure refinement process presented challenges. Model fit using chi-square and RMSEA statistics, scree plot examination and

evaluation of factor-loadings were used to determine a factor model. Factor loadings suggested a possible 2- or 3-factor model for sample 1, but model fit indices for chi-square did not reach recommended values for either model due to the sample size being large. RMSEA statistics recommended a 4-factor model, however, evaluation of the scree plot and factor loadings suggested that a 2-or 3-factor model was a better fit. Due to this ambiguity, Cronbach's alpha calculations were computed for both the 2- and 3-factor model to determine internal consistency, which suggested that the 3-factor model was the best fit. Analysis of sample 2 resulted in similar ambiguity but had additional complications due to a small sample size. The data suggested that a 4-factor model (which generated a 2-factor solution), or a 3-factor model (which generated a second 2-factor solution) may be appropriate for the data. After internal consistency was evaluated using Cronbach's Alpha, the 3-factor model was found to be the best fit. Tables 10 and 14 outline the factor items for each of these models.

The EFA results suggested that an underlying factor structure exists for athletic and academic identities and that these two identities can be separated into distinct constructs. Academic identity, however, showed additional complexity in that two constructs, academic identity, and academic self-perception, were present in the results of the EFA. Further investigation could refine these constructs, specifically evaluating items that are loading onto these unique factors and completing additional analysis, (i.e. Confirmatory Factor Analysis) to clarify and confirm results found through the EFA. Additionally, further refinement of the instrument could improve inconsistencies found in the data and improve reliability.

This study found through initial exploration that there were five athletic items and three academic items that were common in both samples. Generalizable findings were contextualized in participants' lived experiences through qualitative interviews regarding female student-

athletes' athletic and academic identities. A summary of these connected findings is explored further using the themes of athletic identity, academic identity, and student-athlete lifestyle.

Athletic Identity in Female Student-Athletes

Female student-athletes in this study responded to survey and interview questions specifically about athletic identity including how they see themselves as athletes, goals related to their sport, sport experiences in college and decisions that they made to pursue collegiate athletics. This study found that female student-athletes express strong athletic identity. Additionally, results from the survey and interviews indicate that female student-athletes express more academic goals than goals leading to professional sports. Findings from the interviews also indicate that the decision to go to college seems specifically driven by athletics. These three themes were found in the analysis of the data and will be expanded in the following sections.

Strong Athletic Identity. Previous research has indicated that female student-athletes have lower athletic identity than male student-athletes (Beron & Piquero, 2016; Gayles, 2004; Miller, 2009; Rankin et al., 2016; Simons et al., 2007), although other scholars have found that female student-athletes had similar levels of athletic commitment and athletic identity (Chen et al., 2010). Although this study did not survey male student-athletes, findings suggest that female student-athletes have strong athletic identity and that their athletic identity may be more dominant than their academic identity. These suggestions were seen through the analysis of mean scores on the GOALS survey data. Both samples of female student-athletes suggested a 3-factor structure in which one factor was related to athletic identity and two were connected to academic identity. This result might suggest that academic identity is more intricate that initially understood, and that athletic identity may be less complex in comparison, likely because student-athletes need more support from professors to balance academic requirements around athletic

expectations. Jessica commented that navigating athletics and academics is challenging because "some teachers are not willing to work with you and work around [athletic expectations] … and especially during season it can get super complicated because you are gone on weekends. You have requirements and things for every different class."

Navigating complex academic expectations may be one reason these women indicated stronger athletic identities. The results of the current study reveal only the beginnings of our understanding about the intricacies of influence between athletic and academic identity. Given that athletic experiences are so important to these women, it is likely that bidirectional influences are at play. For example, lack of support in their academic endeavors may influence both identities in some fashion. What seems most likely is that the interplay between athletic and academic identity contributes to improved or hindered outcomes. Survey questions asked female student-athletes to rate on a Likert scale of 1=Strongly Disagree and 6=Strongly Agree how important their sports and academic experiences were to their overall college experience. In both samples, mean ranges were higher for sports experiences being important (sample one M=5.39, SD=0.79*;* sample two M=5.71, SD=0.50) than academic experiences (sample one M=5.27, SD=0.81*;* sample two M=5.12, SD=0.91).

Similar results were seen in the interviews with the student-athletes discussing their athletic identity more often than their academic identity. Participants frequently would begin an answer to an interview question from the student or academic perspective, but unintentionally continue answering from an athletic perspective. Athletic identity was more dominant in their responses and prevalent throughout the interviews. This is supported by previous research completed by Brown et al. (2003) that suggests that the predominant identity, ahead of any other type of identity, including race, was being an athlete. For student-athletes, being an athlete is not

just about what they do, it is who they are, connecting who they are to their athletic self. This result was also found in this study, with Jessica indicating that her identity as an athlete was an integral part of who she was as a person. She said, "as a person, I think a lot of who I am as an athlete and a person is very attached. It's almost a lot of times, I feel like it is one and the same."

Pursuing Professional Sports Unlikely. Scholars previously have suggested that because female student-athletes have less professional sport opportunities to influence athletic motivation suggesting this being a reason why they have lower athletic identity than male student-athletes (Gayles, 2004; Lee & Sten, 2017; Melendez, 2006; Riemer et al., 2000; Tudor & Ridpath, 2019; Weatherly & Chen, 2019). Although this study found that female student-athletes have high levels of athletic identity, it also found that most female student-athletes do not plan on pursuing professional athletics on a professional team or becoming an Olympian. From the EFA, the fifth shared item found loading on the athletic identity factor showed that female student-athlete were very unlikely to pursue professional sports. This item had a Likert scale of 1= Unlikely and 5=Very Likely. Sample one had a slightly higher value (M=1.92, SD=1.06) than sample two (M=1.81, SD=1.00). Additionally, the student-athletes who participated in the interviews commented that they were planning on pursuing graduate school options, rather than continuing in athletics.

Although being a competitive athlete may not be in their future specifically, both participants indicated that the sport still influences what they do in the future. Lucy, although applying for graduate schools currently, is still actively involved as a volunteer coach in a local club team and the collegiate team. She indicated that she coaches because she loves "the sport and I wanna be to around it as much as possible." Her goals for graduate school are also being influenced by athletics, with a connection to medicine. Jessica, who had just finished her first

year in college, indicated that she had future goals in athletics, though unknown if this comment was related to future goal as a collegiate athlete or if the comment indicated future goals in athletics post-eligibility.

College Selection as an Athletic Decision. Women in these two samples indicated that their college selection was primarily based on the coach and the option to pursue athletics. Coaches played a major role in the lives of student-athletes and were the primary reason why the female student-athletes in this study chose the institution that they were attending. This finding is consistent with previous research that focused on college selection for student-athletes (Gabert et al., 1999; Letawsky, 2001; Schneider & Messenger, 2012). For the participants in this study, the decision to attend their university was made first based more on the opportunity to be on the team with this coach; academic opportunities were considered, but not the primary reason. Findings suggest this in that both samples showed higher mean scores on the question asking if athletic participation contributed to decision to attend current college (sample one, *M*=5.25; sample two, *M*=5.65) than on the question asking if academic offerings and academic reputation contributed to their decision to attend their current institution (sample one, *M*=4.94; sample two, *M*=4.53). College selection for female student-athletes is driven by sports or athletics and less so by academics. Athletic experiences were found to be an important part of their overall college experience. Based on the means, female student-athletes in both samples indicated that their sports experience being an important part of their overall college experience was slightly higher than academic experiences. Although both athletic and academic experiences were found to be important to these student-athletes with mean values over 5 for both questions on a Likert scale where 1=Strongly Disagree and 6=Strongly Agree.

Academic Identity in Female Student-Athletes

Academic identity was explored in this study by asking similar questions that were asked of their athletic identity both in the survey and the interview. These questions included how they saw themselves as students, academic goals, and the importance of academic experiences in college. Findings suggest that female student-athletes value their academic experiences and are dedicated to both their athletic role and their academic role, although initial results show that academic identity may be more complex with two constructs shown in EFA results. This suggests that female student-athletes have strong academic commitment, academic self-perception is important, and that these student-athletes approached academic and athletic roles similarly. These themes are expanded in the following sections.

Strong Academic Commitment. Female student-athletes exhibited results that showed that both athletics and academics were important. Although mean scores indicated higher levels on athletic identity items with data skewed toward higher values on the Likert scales of 4, 5 and 6, academic identity items also showed a similar tendency, although with lower mean values. Female student-athletes in both populations indicated that they would be more willing to sacrifice athletic participation for academics than academic performance for athletic participation. Additionally, these student-athletes see the relevance of their classes to their future with sample one (M=5.02, SD=1.02) having a slightly lower value than sample two (M=5.07, SD=5.07).

Interviews supported the fact that dedication to their academic expectations was important to these participants. Jessica said that her expectations for academics were because of the expectations initially established by her parents, which in turn became her own as she got older. Lucy described herself as being “very detailed oriented” and that if she was “running late on an assignment, I will stay up until the very last minute just so I put in my full effort” when it

came to her coursework. The results of this study suggest that female student-athletes are showing strong commitment to both their athletic and academic identities. This idea supports findings by Beron and Piquero (2016) that indicate that high athletic identity was not an indicator of academic trouble, but that low academic identity was a predictor of low academic performance for student-athletes. Female student-athletes find both academics and athletics important and dedicate the time, setting` self-expectations and goals, to be successful in both roles.

Academic Self-perception and Academic Identity. Self-perception was found to be an important factor related to academic identity in female student-athletes. Self-perception or self-concept is defined as the way people view themselves and is commonly researched in psychology, although academic self-concept is widely debated among scholars as an influence on academic success (Morris, 2020). However, results from the survey and interviews in this study indicate that self-perception influences academic identity in female student-athletes. Interpretation of the EFA findings of both samples suggest that self-perception was a possible construct found within the items. Three shared items across both samples were used to create the academic identity sum scores and were questions asking participants how they felt about efforts they made in class, ability to succeed academically and overall college academic experiences to this point. Independent *t*-tests of the sum score and the individual items indicated that there were no statistical differences between sample one and sample two. Results can be found in Table 16. Female student-athletes in sample 1 expressed slightly lower values than sample two on 2 of the 3 items, but sample two (M=4.95, SD=0.98) exhibited slightly lower values that sample one (M=5.03, SD=0.82) on the question that asked about their overall college academic experiences. Although this construct possibly was identified due to groupings of the questions on the survey,

academic self-perception was also found in the interview results. Findings showed that these student-athletes saw themselves more or less in a positive light as students. Participants were asked to describe themselves as students and as athletes and they used similar words in their description of themselves in each role, such as diligent and hardworking. However, when describing themselves as students, Jessica and Lucy added a qualifier word. For example, when describing herself as a student, Lucy said she was "pretty hardworking." However, when describing herself as an athlete, she used the word "hardworking." The difference in description exhibits less confidence or an insecurity in her role as student and her academic identity.

Academic Approach. "I approach athletics in a very similar way to how I approach school," said Jessica when asked to describe herself as a student and as an athlete. This suggests that female student-athletes approach expectations as students and as athletes similarly, although the roles are distinctly different. Female student-athletes were dedicated to both roles, exhibiting mean values of over 5 in both populations on a Likert scale of 1=Strongly Disagree and 6=Strongly Agree, when asked if a dedicated student or a dedicate athlete. In the interviews, both participants described themselves as hardworking both as students and as athletes. They also indicated that they put in the time to finish assignments and always turned in assignments on time as students. Similarly, these participants exhibited a competitive nature that they wanted to be the best or achieve the best grades possible that lead to personal motivation as students using phrases such as "just trying to be the top at the classroom" or explaining that personal expectations are getting an A in her classes because she "was capable of getting [a grade of] A."

Student-Athlete Lifestyle

Female student-athletes in this study used words and phrases such as "a lot," "a hard journey," "not easy," and "seems impossible" to describe what it is like to be a student-athlete.

The challenges of being a student and an athlete are more than just academic and athletic expectations but include how they socialize and adjust to their university environment (Melendez, 2006). The expectations and challenging lifestyle that student-athletes endure were highlighted through questions asking about supportive people and institutions. For student-athletes, there are more challenges than benefits to being a student-athlete. In the following sections, student-athlete identity is explored through the themes of balance, benefits, and NCAA policies.

Balance. Balancing the expectations of academics and athletics is challenging and likely why the female student-athletes in this study expressed that being a student-athlete is not easy and hard. Participants in this study expressed the difficulties of trying to manage both athletic and academic expectations, roles, and identities. Lucy said, "Just trying to those classes in a STEM field, especially [major], was difficult in trying to balance 20-hour practice weeks." Previous literature supports that both roles of student and athlete require an excessive amount of dedication, time, and effort (Chartrand & Lent, 1987; Hollis 2001) with each role being a simultaneous full-time commitment (Chen et al., 2010). Being a student-athlete is more than just roles and expectations, Jessica called being a student-athlete a "lifestyle." Lifestyles are how you live, habits, and behaviors or who you are. This seems to express that being a student-athlete is a combined identity for her.

Educators were highlighted as being influential for academic identity and success, but also unsupportive of being a student-athlete if they were not willing to be flexible with their schedule, especially those that do not "understand the lifestyle." Jessica indicated that she did not feel supported by professors who "are not willing to work with you and work around things," expressing she needed "help balancing those things sometimes" including practice, travel, and

academic expectations. An additional result showed that educators who did not understand the lifestyle of student-athletes could negatively limit opportunities that these individuals pursued. Lucy expressed that she did not feel supported when an advisor told her that she would not be able to major in what she wanted to pursue and be a student-athlete so she would have to "get rid of something." The unwillingness to support the student-athlete in balancing these roles could have long term effects on life choices and ultimately, future goals and opportunities. The lack of support could be life altering.

This study found that these students highly valued both academics and athletic endeavors, however when it came to feeling supported, female student-athletes only mentioned that they felt supported in being a student-athlete if there was flexibility in their academic expectations (i.e., faculty being willing to work with schedule), which again indicates an expression of a combined identity. Based on the responses in the interviews, the participants indicated that they were more willing to request scheduling accommodations from academic personnel (i.e., professors) than from athletics personnel (i.e., coaches). Previous research supports the idea that many times, academic identity takes a back seat to athletic identity (Watt & Moore, 2001) and academic outcomes are influenced by their sport (Comeaux & Harrison, 2011).

Benefits. Chen et al. (2010) indicated that although athletic identity and academic identity may be strong in female student-athletes, and even similar to male student-athletes, the differences between the two groups may be based on the benefits that are garnered by male student-athletes, who typically experience more benefits from athletic participation. Jessica indicated that she did not see any benefits to being an athlete "unless they were a football player or a men's basketball player." Specifically, she referenced her own experience of being on a championship team and that her team "got pushed to the back burner" and a male revenue sport's

team took “precedence” over their team. Previous research has supported that revenue generated sports like football and men’s basketball has more support and focus from athletic departments (Blumenstyk, 2015; Linnemeyer & Brown, 2010; Weatherly & Chen, 2019).

Lucy used words such as job and work to describe her athletic role. She described that it was nice to be seen as “more than an athlete” by the NCAA, indicating that she has more than one role, though not separate. Trying to separate these identities can cause internal conflict, as indicated by Rankin et al. (2016). These students expressed more concrete goals for their future relate to their academic identity than their athletic identity. Future goals in relation to athletics included coaching for Lucy. Jessica, however, only indicated future goals related to her sport in terms of the influence of a previous coach in her life. She explained “any of my athletic goals that I pursue now, in the future, he will always be the biggest part of that” but did not indicate anything specific. The data from sample one and sample two also indicated low mean scores on a question about pursuing professional athletics beyond college, but also had high means on questions that asked about personal goals related to sports and academics. On survey items that asked the level of agreement with the statement “I have many personal goals related the academics” and “I have many personal goals related to my sport,” sample one had a higher mean score for goals related to academics (M=5.39, SD=0.782) than goals related to athletics (M=5.29, SD=0.854) with a Likert scale of 1=Strongly Disagree and 6=Strongly Agree. However, the wording of these questions may indicate current goals rather than future goals.

NCAA Policies and Identity. Participants in this study discussed two topics that are important in relation to growing concerns across the nation and responses related to current policies and research in the NCAA. Mental health and transgender participation initiatives are not a focus of this study but were concerns for these students and their identities. These topics

will be expanded in this section using the words of the student-athletes from this study and should be considered for future research.

Mental Health Initiatives. Mental health initiatives have been a focus of research conducted by the NCAA since 2018; and the NCAA has recently published their findings for athletes and nonathletes (NCAA, 2022a). Although the NCAA study shows that student-athletes have higher mental wellness than nonathletes, findings showed that female student-athletes statistically have higher levels of debilitating depression, overwhelming anxiety, mental exhaustion, and loneliness than their male student-athlete counterparts (NCAA, 2022a).

In this study, Lucy highlighted the focus on mental health initiatives as a positive move by the NCAA. She had alluded to mental struggles that her parents had helped her through as she battled injuries but personalized it as she raised this topic.

> Towards the end [of the Covid pandemic], they [NCAA] started doing a lot of the mental health initiatives about athletes and protecting their mental health. That you're more than an athlete. That was a huge step, I think, just because so many athletes struggle with – it's a huge, almost burden to deal with. Especially with an injury or something. It's a lot being a student-athlete. You're always encouraged to be strong and push through it. It's nice to know there's resources. You can open up. It's not something that you need to be scared about. It's not something you just have to push through.

For this student-athlete, mental health was a challenge that she endured while she attended college. The support around her mental health showed that she mattered to people beyond her athletic ability. As athletes, strength is part of the lifestyle because of their training and practice schedule. Allowing the opportunity to open up about what matters to them and that they need help shows that they matter, that they "are more than an athlete" as she stated. Personal

connection that embraces how they are reminds student-athletes that they have value beyond the sport they play.

Transgender regulations. Diversity and inclusion remain as a primary focus for the NCAA, starting with the inclusion of women in athletics due to the passing of Title IX over 50 years ago. Recently, transgender athletic participation has been a source of discussion that has been seen throughout the nation this past year. This topic has been discussed at all athletic levels from elementary ages to professional sports. In 2022, the NCAA evaluated and implemented participation policies that allow opportunities for athletic competition for individuals who identify as transgender. The policies implemented by the NCAA align with similar policies outlined by the U.S. Olympic and Paralympic Committee (NCAA, 2022d).

Jessica discussed how she sees transgender regulations affecting the future of sports, but negatively affecting female student-athletes. In fact, she brought this topic up in two different areas of her interview as a way that the NCAA does not support her, both as a student and as an athlete. She explains first, the impact she sees it on female athletes:

> I think some of the other rules that they've [NCAA] had regarding how they've [NCAA] handled some of the transgender athletes and how that kind of stuff has played out has been a little difficult to see as a woman in sports. It's a complicated topic, but I still think it's important and I think some of the decisions that have been made on that have kind of neglected. I think as far as women have come to earn the right to be able to play our own sports, and have our own teams, and compete athletically, like getting a chance to do that, is just so special. I think that's definitely been something that's a little bit difficult to deal with, being a woman and competing in college athletics.

She highlights that women have had to fight for the opportunity to play and to compete. For her, being an athlete is an opportunity and a right that she has worked hard for to get to this point. She had mentioned that she was "pushed to the back burner" for the male sports already and points out that she feels transgender regulations in the NCAA "neglect" women in athletics. She continued later in the interview about this topic, explaining how personal it was to her and to her identity as an athlete:

> To be honest, I think that [transgender regulations] affects me as a person and as an athlete. As an athlete, I'm gonna be the one seeing the direct effect of it. As a person, I think a lot of who I am as an athlete and a person is very attached. It's almost, a lot of times, I feel like it's one and the same. I definitely think that something that's had an effect on, not even just me, but on a lot of other female athletes.

Transgender participation will continue to be a topic of influence on sports, particularly for female student-athletes. As this study has raised, it is not only just a matter of athletics in general, but for female athletes like Jessica, it is personal and impacts the very existence of who they are as women. As female athletes, the special opportunity to compete at a collegiate level is one that they feel they must continue to fight for every day, even 50 years after the passing of Title IX legislation. For some student-athletes like Jessica, allowing transgender women to participate is seen as a threat to her own athletic identity and her opportunity to participate in sports. The reasons behind Title IX implementation decades ago are the same reasons today. The fight continues to be focused on female student-athletes having an equal opportunity to compete in sports.

Limitations

For the purposes of this study, four limitations have been identified that may have affected the results. These limitations include the size of the local sample (sample two), a ceiling effect in the survey results, factor models defined from an exploratory factor analysis only, and the limited number of participants who attended interviews.

Sample Size of Population

The first limitation of this study is the sample size of the local population (sample two). With the type of analysis included in this study, a larger sample size is needed to analyze the two samples and be more confident in the findings. The aim was to have approximately 80-100 students participate in the study so that the sample size would be large enough for correlations to be reliable (Tabachnick & Fidell, 2007). However, only 43 students participated. Since this number is less than half of the recommended population, elements of this study were impacted including power, model fit, and homogeneity of variance and findings of sample two should be interpreted with caution. Anecdotally, the reduced number of participants may have been a result of the Covid pandemic negatively impacting these student-athletes' personal and college lives.

Sample two was underpowered. Power measures the sensitivity of analytics to determine real effects (Pagano, 2010). Thus, having an underpowered sample created challenges in determining the probability that results are true effects and prevented a properly fitted model for this data. For this study, low power was seen in the EFA results in the difficulty encountered fitting a factor model for sample two. The results of the data were ambiguous and showed inconsistencies. Although multiple techniques were used to explore model fit, including factor loadings, scree plot analysis, and Cronbach's alpha, a true factor model remains uncertain. If it had not been for sample one that established a foundation and guide, the data for sample two alone would not have given a clear understanding or solution for this study.

Model fit was also difficult to achieve as chi-square was unable to be used to evaluate models due to challenges with sample sizes. Chi-square model fit recommendations were never reached with sample one as chi-square is sensitive to large sample sizes (Bergh, 2015). With small sample sizes, the challenge is power as described above. Although model fit with RMSEA values were eventually reached within the recommendations for sample one, the recommended models were difficult to achieve when evaluating factor loadings. Sample two had too small of a sample size so model fit was never reached.

A third area that was affected by sample size was the homogeneity of variance (HOV) results. The results of this study showed that seven total items, two of which were used in the athletic identity factor, violated homogeneity of variance for the independent *t*-tests; again, likely affected by sample size. As the two samples used in this study were not pulled from the same underlying population, resulting in heterogeneity, the distributions and mean scores were not the same. In addition, a differing factor model for sample two may have resulted from a larger sample size. The recommendation is to interpret the findings of sample two with extreme caution as results from this study cannot be interpreted with confidence. For future studies, sample size could be expanded by using different data collection methods (volunteering in-person rather than through an email invitation), or even expanded to include participants from other institutions of similar sport and conference make-up to improve the likelihood of achieving a higher sample size.

Ceiling Effect of Survey Results

Another limitation presented by the data in this study is that nearly all items demonstrated ceiling effects as scores clustered toward the upper limit of the Likert scales (Chyung et al., 2020; Cramer & Howitt, 2004). This issue in survey data may occur because there is a limitation

in the sensitivity of the survey instrument and can occur with surveys that measure perceptions and opinions. Due to little variance in data, limitations can occur because it is difficult to accurately measure true responses from individual respondents while distinguishing them from others (Chyung et al., 2020). It would be important to explore this further by analyzing this survey with a different population of student-athletes to determine if it is a phenomenon related to female student-athletes or if the ceiling effect is seen in other samples. However, for this study, it is likely that ceiling effect occurred because the survey instrument was not sensitive enough to capture heterogeneity in the 3rd quartile of the distribution. Response options could be adjusted to improve data variance, such as increasing the number of total response options for an item, a ranking scale or adjusting the responses to only using a positive ranking scale (i.e., agree, moderately agree, highly agree or strongly agree) (Brown, 2004; Chyung et al., 2020).

Completion of Exploratory Factor Analysis Only

For this study, an Exploratory Factor Analysis was only proposed to be completed in analysis. A Confirmatory Factor Analysis (CFA) was never approached in analysis proposals. In retrospect, the CFA should have been included in the methodological plan of this study to have the ability to determine factor models found. The CFA would have helped identify if the constructs of athletic or academic identity could be confirmed with the GOALS measurement tool and if the data fit the proposed theory-based models. By not including CFA, the study is limited because the results found are only based on the current data and not on theoretical framework or concepts, which can be formally tested. Due to the ambiguous nature of the results in the Exploratory Factor Analysis, conclusions on a specific factor model were not achieved. To specifically identify items and factors that contribute to athletic and academic identity within female student-athletes, a confirmatory factor analysis should be completed.

Limited Perception from One Institution

A final limitation for this study is that the results in sample two and the perceptions from the interviews were only from two participants who attended the same institution. This may have limited the expression of varied experiences. This limitation does not allow for variability in responses necessarily, although experiences of the participants can differ some based on individual backgrounds, coaches and their team expectations, the length of time they are a student-athlete and the differences in academic majors and programs. Expanding the survey and interviews to other institutions might allow differences between NCAA conferences, sports, and academic levels to be highlighted as well to determine if there are commonalities and differences that affect results.

Implications

Female student-athletes dedicate many hours to their sport and their academic experience while attending their university, and these two endeavors seem to support their academic performance. This study explored the dimensions of and techniques for measuring athletic and academic identities in female student-athletes. Additional research will need to be conducted to determine a) specific factors, and b) the impact of each factor. However, there are findings from this study that can begin to help educators and researchers understand the balance between these two identities and the characteristics of female student-athletes that provide the mechanism through which they benefit. The following provides probable implications from the findings of this student for both practice and research.

Implications for Practice

Within higher education, how professionals interact and support student-athletes must evolve to ensure that these students are supported with the challenges of balancing athletic and

academic expectations. Given the differences between male and female student-athletes, different approaches are necessary, and this study highlights there are specific areas that female student-athletes themselves expressed regarding a) why they choose to attend college, b) how their two identities are equally important, and c) how educators can support the success of female student-athletes by helping them balance expectations in pursuing athletics and academics. The following sections will elaborate on each of these areas further.

Collaboration between Athletics and Academics. Female student-athletes are making choices to attend postsecondary schools based on the coach and the option to pursue athletics. This study highlights that coaches play an integral role in recruitment. Coaches drive the student-athletes' decision regarding their commitment to a university. The female student-athletes in this study indicated that they chose their institution because of the ability to work with a coach that they felt comfortable with and is supportive. In this study, academic opportunities were highlighted as a consideration during the recruitment process but not a driving factor for attending their institution. Coaches build a bond and a connection with a student-athlete during the recruitment process, sometimes even before the student-athlete steps onto campus. Female student-athletes depend on support from coaches to assist in the transition process between high school and college, but also for growth in their sport. Coaches bring new recruits into an environment with other students who share experiences as teammates, athletes, students, and friends. The participants in this study also saw their teammates as a part of a support system in their "survival" of the complex journey of being a student-athlete. Unfortunately, relationships built in their academic life were seen as more challenging and less supportive. The challenges of academic life were expressed through revelations about professors and advisors who did not understand the lifestyle of student-athletes or denounced and were not encouraging of their

athletic endeavors. A supportive structure is built in athletics that begins during the recruitment phase for a student-athlete. In order to build a supportive structure for academics, engaging academics in the recruitment process for prospective student athletes should be considered. These steps can be as simple as including academic tours and building connections with supportive university representatives such as academic advisors or professors who will work with student-athletes. Highlighting both roles for student-athletes from initial recruitment may assist in building a more holistic supportive environment.

Importance of Academic/Athletic Identity. This study highlights that female student-athletes have strong athletic identity. However, female student-athletes also have strong academic commitment, though lower mean values on survey items, showing that female student-athletes prioritize goals and expectations in both roles. Female student-athletes in this study agreed that both their athletic and academic roles were important and approached both academics and athletics similarly. Female student-athletes in this study exhibited characteristics of being hardworking and dedicated, willing to spend the time needed to be successful in their sport and in their classes. It may very well be that there is a bidirectional relationship between the drive to be a better athlete and the drive for academic achievement and vice versa. Female student-athletes also expressed a competitive spirit wanting to achieve the best grade or being the best in the classroom, including putting in their full effort to turn in quality work. The participants in this study expressed that they always turned in their work on time, even if it meant sacrificing sleep or other personal plans to get the work done. Graduate programs and additional schooling are also future goals for female student-athletes, more than professional athletics or pursuing Olympic opportunities in their sport. Support for female student-athletes entails expressing acceptance of their lifestyle and the importance of sports and academics as a combined identity.

Participants sought support from individuals who are willing to help them achieve through balancing expectations to allow them to be the best in both academics and athletics.

Balance is a Primary Concern. Female student-athletes struggle to balance athletic and academic expectations. Participants in this study highlighted that finding time to get everything done, between athletics and academics, was difficult and demanded their time and attention. Athletics seemed to dominate the expectations of participants, with daily practice, traveling, weight training, and competitions. Female student-athletes look to educators, mainly their professors, for flexibility in helping to navigate expectations. In this study, Jessica said that professors who were willing to give assignments ahead of time or those who allowed for adjustments in exam dates when traveling alleviated stress. Both participants in this study expressed a desire to put their best into their academic expectations and achieve high grades, but balancing these two identities can lead to conflict, many times having to navigate the challenges themselves with minimal support. For example, the student-athletes in this study expressed that it was difficult to work with a professor who did not understand the demands of athletic expectations, or "the lifestyle of student-athletes." For her, the professors expressed that per participation in athletics was a choice for her and that she did not have to be an athlete, but in the student-athletes' perspective, athletics provides financial support for her to go to school. Helping student-athletes achieve expectations while providing academic flexibility is an important way to assist with balance. Recognizing both roles as equally important to female student-athletes allows them to feel more supported, valued and accepted.

Implications for Research and Policy Implementation

Research related to female student-athletes is currently sparse and would benefit from continued growth in determining athletic and academic factors that benefit this unique

population. This study represents a beginning to larger areas of research that will explore athletic identity and the impact that it has on the success of female student-athletes in the classroom. Key areas for research related to female student-athlete include a) measure development of refined GOALS survey, b) the role that academic self-perception plays for female student-athletes, c) mental wellness of female student-athletes, and d) the impact of policy implementation on identity.

Measure Development of the Refined GOALS Survey. This study explored a refined GOALS survey to determine if a factor structure and internal consistency reliability could be achieved while exploring athletic and academic identity related items. Initial results from the EFA of sample one showed that three constructs were identified, one specific to athletic identity and two constructs related to academic identity. Cronbach's alpha generated acceptable levels of internal consistency reliability in shared items of athletic identity and shared items of academic perception. Additional testing is necessary to refine survey questions even further for both identities and to explore if a ceiling effect is occurring based response options. Since no measurement tool has been found to explore both athletic and academic identity in the same instrument, this study is an initial step in exploration of this area.

Academic Self-Perception of Female Student-Athletes. Self-perception was an important highlight found in this study as an expression of how female student-athletes saw themselves in academics. The EFA resulted in a suggested 3-factor model, with two factors dedicated to academic identity. One of the factors had three survey questions that specifically asked respondents about their self-perception as a student. The questions required participants to rate how they felt about their ability to succeed academically, the efforts they had made in class and their overall college academic experiences. Although the relationship between these

questions as a factor could be related to the wording or the location of these questions on the survey, the finding of academic self-perception was also found in qualitative analysis. The female student-athletes in this study described themselves as hardworking, diligent, dedicated students. These same words were used by the participants to describe themselves as athletes, but both participants put qualifiers on their academic description of self, such as "pretty hardworking" and seemed a little less confident in the way they spoke about their academic self. Lucy described herself as not being the "smartest of the smart," and Jessica said that she had a "problem" in that she was "weird" to enjoy mathematics. Further exploration would be needed to determine if self-perception is also seen related to athletic identity or if self-perception is prevalent in academic identity because athletic identity is more dominant.

Mental Health of Female Student-Athletes. Although not a primary focus of this study, mental health was found to be a prominent concern of female student-athletes and their success. As highlighted in this study, female student-athletes face a tremendous amount of pressure to balance athletic and academic roles and expectations. They expressed a drive to be the best both in their classroom and in their sport. However, trying to achieve the balance can be overwhelming and challenging. Jessica and Lucy used the words "not easy," "a hard journey," "a lot," and "seems impossible" to describe how difficult it is to be a student-athlete. Recent research by the NCAA focusing on the mental well-being of student-athletes showed that female student-athletes experience more symptoms of depression, overwhelming anxiety, and mental exhaustion than their male counterparts (NCAA, 2022a). Connecting mental health to the stresses of identity is key since female student-athletes feel overwhelmed by their roles as both student and athletes. It should be explored if high levels of both academic and athletic identity result in higher levels of stress. However, these results also show that females in general, both

nonathletes and student-athletes, had higher percentages than their male counterparts. Mental health of our female college students tends to have greater challenges than those of our male student-athletes, especially at Division 1 institutions.

Policy Implementations and Identity as Female Athletes. This study highlights the need to explore how policy implementation, particularly by the NCAA, impacts the identity of female student-athletes and in turn, their experiences. Policies that have recently been implemented and are still under review by the NCAA could have serious implications on women's athletics. In particular, two highlights from this study were the Name, Image and Likeness (NIL) policy and rulings on transgender athletes' participation in women's athletic events.

Participants in this study have not personally benefited from the NIL policy but did mention that they knew athletes that were already receiving benefits based on their status as a student-athlete. This policy could impact academic performance as athletic roles allow student-athletes to be paid, making student-athletes focus more on athletic performance, and encouraging higher levels of athletic identity. A small number of female student-athletes are receiving benefits from the NIL ruling, but as these numbers grow, differences in academic performance should be observed.

A second area of focus related to NCAA policies that should be considered for future research is the impact of transgender regulations in athletic competition, particularly the differences between impact of women teams vs. men teams. Based on results of this study, female student-athletes feel like the rulings could change the makeup of the sport and might personally affect them as women and as athletes. The influence of athletic identity is one area of focus that should be explored further as this topic is discussed or implemented more in the

NCAA. Title IX gave women the right to have an equal opportunity to participate in collegiate sports, and future policies could positively or negatively influence the movement that happened to pave the way for this generation of women athletes. Exploring the feelings, thoughts and struggles related to their identity as female student-athletes will allow scholars to understand the drive to participate in athletics even more.

Overall, research on female student-athletes will enhance the understanding of athletic and academic identities, the connections between these identities and how to better support women in higher education. As current trends show, women pursue postsecondary education at higher rates than more we can understand the needs of these students and how to best build support programs to assist them in their pursuits, the landscape of higher education can be molded into systems that allow all students to grow, feel connected, valued and support to reach their goals.

Recommendations

Based on this study, the primary recommendation for future research is to expand the sample size for the survey data. One way to expand sample size would be to collect data from student-athletes attending multiple institutions. If data had been collected at multiple institutions, different experiences would also diversify data results allowing for deeper understanding of the female student-athlete population as a whole. Expanding the sample size will allow less ambiguity in the data and allow for factors to be more easily identified. Additionally, multiple conferences, sports or divisions could be compared individually to determine shared experiences also if sample size was larger.

A second recommendation would be to complete a Confirmatory Factor Analysis of the data. Aligning sample size to meet expectations for a CFA will allow the results to be explored

through a theoretical analysis of the CFA and allow deeper understanding of factors that contribute to academic success in female student-athletes. Understanding the specific constructs to success will allow more targeted recommendations to be proposed for those who work with female student-athletes on a regular basis.

A final recommendation would be to conduct interviews with female student-athletes at multiple institutions. Conducting additional interviews would allow researchers to determine if results found in this study are unique to this institution or if similar results are found with other female student-athletes that attend different institutions. The selection of institutions could be unique to a conference or division also. Specific themes related to how student-athletes feel support from their athletic institution should be explored to recommend services that female student-athletes feel are important toward their success.

Conclusion

Results from the samples explored in this study seem to indicate that both athletic and academic identities may play a role in the success of female student-athletes in the classroom. Athletic identity is prominent in female student-athletes' everyday life, but academic identity and achievement are also high priorities. Survey and interview results in this study showed that female student-athletes are dedicated to achieving in their sport and in their academics. They expressed similar levels of dedication, goal setting and positive experiences in both academics and athletics and deemed them important elements to their college experience.

Coaches, parents, professors, and teammates all play an important supportive role in these student-athletes' lives through encouragement, mentoring and supporting balanced expectations in both athletics and academics. Female student-athletes in this study expressed that being an athlete is who they are and people who understand the lifestyle of a student-athlete are

those who support them in their pursuit of athletic and academic goals. Collaboration between athletics and academics may be of benefit to the female student-athlete experience as it will build more understanding of the needs, desires, and characteristics that these students bring to their sport and the classroom. These insights may provide additional understanding of how to best support and enhance the educational experience for all student populations as students pursuing post-secondary educational opportunities are having to balance more roles and expectations.

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Appendix A

NCAA 2010 Growth, Opportunities, Aspirations, and Learning of Students (GOALS) in College Survey

GOALS
Growth, Opportunities, Aspirations, and Learning of Students in College

NCAA

Dear Student:

By completing and returning this questionnaire, you are agreeing to volunteer for this study. You may stop the survey at any time.

The information you provide is completely confidential. That means that nobody, including the NCAA researchers, will report your responses as coming from you, your team or your school. All reported results will be in terms of sport trends or national averages; an individual's responses will never be reported in isolation.

If you are under 18 years of age, you are excused from further participation in this research study. Please return the questionnaire to the person administering the study.

If you have questions regarding the study or survey instrument, please contact Karen Cooper, study coordinator, at 317/917-6307 or kcooper@ncaa.org. For questions regarding the study procedures, please contact Michael Miranda, Research Review Board coordinator, at 317/917-6304 or mmiranda@ncaa.org.

Your answers will be read automatically by a machine called an optical mark reader. Please follow the instructions carefully:

- Use only blue or black ink.
- Make heavy marks inside the circles.
- Mark-out or erase cleanly any answer you wish to change.
- Make no other markings or comments on the answer pages since they interfere with the automatic reading. (If you want to add a question or comment about this study, please use the space provided at the end of this survey.)

THANK YOU FOR YOUR PARTICIPATION IN THIS IMPORTANT STUDY ON STUDENT EXPERIENCES!

PROOF

MARKING INSTRUCTIONS | Use Blue or Black ink pen or Black Lead Pencil Only | Correct Mark ● | Please print clearly: A B C 1 2 3

PART 1: COLLEGE ATHLETICS EXPERIENCE

1. **What is the main sport that you are currently playing in college? (Fill in only one circle)**
   - ○ Baseball
   - ○ Basketball
   - ○ Bowling
   - ○ Cross Country
   - ○ Fencing
   - ○ Field Hockey
   - ○ Football
   - ○ Golf
   - ○ Gymnastics
   - ○ Ice Hockey
   - ○ Lacrosse
   - ○ Rifle
   - ○ Rowing
   - ○ Skiing
   - ○ Soccer
   - ○ Softball
   - ○ Swimming/Diving
   - ○ Tennis
   - ○ Track (Indoor or Outdoor)
   - ○ Volleyball
   - ○ Water Polo
   - ○ Wrestling

2. **What is your gender?**
   - ○ Female
   - ○ Male

3. **How do you describe yourself? (Select all that apply)**
   - ○ American Indian or Alaskan Native
   - ○ Asian
   - ○ Black or African American
   - ○ Hispanic or Latino
   - ○ Native Hawaiian or Pacific Islander
   - ○ White
   - ○ Other

4. **Have you participated in a second sport in college?**
   - ○ No
   - ○ Yes, but not this year
   - ○ Yes, I'm participating in more than one sport this year

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5. **Based on your roster spot or frequency of competition, how would you classify your current status in your main sport?**

- ○ First team (for example, you start in a team sport or compete in your preferred events in individual sports)
- ○ Second team (e.g., regular substitute in a team sport, often compete in some event in individual sports)
- ○ Third team (e.g., participate in practice but compete infrequently)
- ○ Practicing or training but not competing

6. **This year, did you receive an athletics scholarship of any kind in your sport?**

- ○ No
- ○ Yes, partial athletics scholarship
- ○ Yes, full athletics scholarship

7. **Have you or your current team participated in any NCAA championships competitions (including regional qualifiers and Division I football bowl games) during your time at this school?**

- ○ Yes
- ○ No

8. **Have you missed an entire season of competition in your sport while you've attended this college due to... (Please respond to each item)**

	Yes	No
a. Medical reasons (e.g., injury, illness, pregnancy)?	○	○
b. Transfer rules?	○	○
c. Walking on part way through college?	○	○
d. Coach's decision (non-medical redshirt)?	○	○
e. Other voluntary reasons (e.g., study abroad, concentrating on academics)?	○	○
f. Other involuntary reasons (e.g., academic suspension, kicked off team)?	○	○

9. **How likely do you think it is that you will become a professional and/or Olympic athlete in your sport?**

- ○ Very likely
- ○ Likely
- ○ Somewhat likely
- ○ Somewhat unlikely
- ○ Unlikely
- ○ Very unlikely

10. **How much do you agree or disagree with each of the following statements?**

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
a. I consider myself a dedicated athlete	○	○	○	○	○	○
b. I consider myself a dedicated student	○	○	○	○	○	○
c. I have many personal goals related to my sport	○	○	○	○	○	○
d. I have many personal goals related to my academics	○	○	○	○	○	○
e. I need to excel in athletic pursuits to feel good about myself	○	○	○	○	○	○
f. I need to excel in academic pursuits to feel good about myself	○	○	○	○	○	○
g. My sports experiences are an important part of my overall college experience	○	○	○	○	○	○
h. My academic experiences are an important part of my overall college experience	○	○	○	○	○	○
i. I feel that other students view me as more of an athlete than as a student	○	○	○	○	○	○
j. I feel that my professors view me as more of an athlete than as a student	○	○	○	○	○	○
k. I feel that some of my professors discriminate against me because I am an athlete	○	○	○	○	○	○
l. I feel that some of my professors favor me because I am an athlete	○	○	○	○	○	○

11. Please indicate your level of agreement with the following statements: My head coach, . .

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
a. Sets an example of how to do things the "right way" in terms of ethics	○	○	○	○	○
b. Defines success not just by winning, but by winning fairly	○	○	○	○	○
c. Has team members' best interests in mind	○	○	○	○	○
d. Can be trusted	○	○	○	○	○
e. Listens to what members of this team have to say	○	○	○	○	○
f. Treats all members of the team equally	○	○	○	○	○

12. Please indicate your level of agreement with the following statements: My head coach, . .

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
a. Puts me down in front of others	○	○	○	○	○
b. Ridicules me	○	○	○	○	○
c. Makes negative comments about me to others	○	○	○	○	○

13. Please indicate your level of agreement with each of the following statements:

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
a. Academic honesty is strongly valued at this college	○	○	○	○	○
b. Our school encourages student-athletes to practice good sportsmanship	○	○	○	○	○
c. Our school expects student-athletes to be positive role models for others	○	○	○	○	○
d. Winning is more important to me than good sportsmanship	○	○	○	○	○
e. My team mates would be willing to cheat in order to win	○	○	○	○	○

14. Please indicate your level of agreement with the following statements:

	Strongly Agree	Agree	Somewhat Disagree	Disagree	Strongly Disagree
a. I would have gone to a four-year college somewhere even if I hadn't been an athlete	○	○	○	○	○
b. I would be willing to sacrifice my athletics participation for academics	○	○	○	○	○
c. I would be willing to sacrifice my academic performance for athletics participation	○	○	○	○	○
d. My athletics participation is important in preparing me for life after graduation	○	○	○	○	○

PART 2: COLLEGE ACADEMIC EXPERIENCE

15. What is your current academic standing?

- ○ Freshman
- ○ Sophomore
- ○ Junior
- ○ Senior
- ○ Graduate student

16. Did you transfer into your current college or university from another college?

- ○ No *(Skip Question 17 and go to Question 18)*
- ○ Yes, I transferred here from a two-year college
- ○ Yes, I transferred here from another four-year college

17. If you have transferred, were your reasons for transferring from your previous college to your current one. . . (Please respond to each item)

	Yes	No
a. Academic reasons?	○	○
b. Athletic reasons?	○	○
c. Medical reasons?	○	○
d. Financial reasons?	○	○
e. Family / Personal reasons?	○	○

18. Which of the following best describes your current overall grade point average?

○ A	○ C+
○ A-	○ C
○ B+	○ C-
○ B	○ D or below
○ B-	○ No grades given or don't know

19. How important is graduation from this college or university. . .

	Not Important at All	Somewhat Unimportant	Somewhat Important	Important
a. To you?	○	○	○	○
b. To your family?	○	○	○	○
c. To your college coach?	○	○	○	○

20. Please indicate your level of agreement with the following statements:

	Strongly Agree	Agree	Somewhat Agree	Not Sure	Somewhat Disagree	Disagree	Strongly Disagree
a. If I could start over, I still would attend this school	○	○	○	○	○	○	○
b. I would recommend this school to a prospective student-athlete	○	○	○	○	○	○	○
c. I am glad that I made the choice to be at this school	○	○	○	○	○	○	○

21. In my first year after leaving this college, I figure to be. . . (Fill in only one circle)

- ○ Working at a job related to my major
- ○ Working at a job, but not necessarily one that is related to my major
- ○ Attending graduate school
- ○ Serving in the military
- ○ Devoting myself to my sport (e.g., training, playing professional sports, etc.)
- ○ Taking some transition time or a transition job before embarking upon a career
- ○ Staying at home / serving as a caregiver
- ○ I don't yet have any post-college plans or goals

22. Do you think you will go to graduate school or obtain an advanced professional degree (for example, law degree, medical degree, master's degree, doctorate) at some point after college?

- ○ Very likely
- ○ Somewhat likely
- ○ Not sure
- ○ Somewhat unlikely
- ○ Very unlikely

23. How do you feel about the classes that you have taken this year?

- ○ I have enjoyed them all
- ○ I have enjoyed most of them
- ○ I have enjoyed some of them
- ○ I haven't enjoyed any of them

24. If you weren't a student-athlete, would you have taken the same classes this year?

- ○ I definitely would choose these classes again
- ○ I probably would choose these classes again
- ○ I probably would not choose these classes again
- ○ I definitely would not choose these classes again

25. Thinking about your classes this year, how much do you agree or disagree with the following statements?

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
a. I believe the classes I'm taking are relevant to my future	○	○	○	○	○	○
b. I have personal interest in my classes	○	○	○	○	○	○
c. I thought the classes would be easy	○	○	○	○	○	○
d. A professor or academic advisor recommended the classes	○	○	○	○	○	○
e. My parents expected me to take these classes	○	○	○	○	○	○
f. My coaches recommended I take these classes	○	○	○	○	○	○
g. My teammates recommended I take these classes	○	○	○	○	○	○
h. I took these classes primarily to stay academically eligible to compete	○	○	○	○	○	○
i. I took these classes because they fit with my practice schedule	○	○	○	○	○	○

26. Have your coaches or others in the athletics department (e.g., academic advisors) discouraged you from choosing certain classes?

- ○ Never
- ○ Once or twice
- ○ Often

27. Has your athletics participation prevented you from taking classes that you wanted to take?

- ○ No
- ○ Yes, but I currently do not have regrets about those course choices
- ○ Yes, and I currently do have regrets about those course choices

28. What is your major area of study? (Fill in only one circle)

- ○ Biological Sciences (Zoology, Physiology, etc.)
- ○ Business (Accounting, Marketing, Personnel, etc.)
- ○ Communications (Journalism, Public Relations, etc.)
- ○ Education (Elementary, Special, etc.)
- ○ Engineering, Computer/Information Sciences
- ○ Exercise, Sports, Kinesiology
- ○ Humanities and Fine Arts (Music, Religion, English, etc.)
- ○ Physical Sciences and Mathematics (Chemistry, etc.)
- ○ Professional Studies (Nursing, Occupational Therapy, etc.)
- ○ Social Sciences (Psychology, History, Economics, etc.)
- ○ Other academic field
- ○ I have not yet chosen a major area of study. *(Skip Questions 29–30 and go to Question 31)*

29. If you weren't a college athlete, would you still choose your current major?

- ○ I definitely would choose this major again
- ○ I probably would choose this major again
- ○ I might choose this major again
- ○ I probably would not choose this major again
- ○ I definitely would not choose this major again

30. Has athletics participation prevented you from majoring in what you really want?

- ○ No
- ○ Yes, but I currently do not have regrets about my choice of major
- ○ Yes, and I currently do have regrets about my choice of major

Questions 31–34 are related to non-traditional courses. Non-traditional courses are those that do not include regular in-person meetings in a typical classroom setting or lecture hall. They may include web-based, independent study or directed reading courses.

31. So far during your college experience, have you... (Select all that apply)

- ○ Taken non-traditional courses that were offered through your institution?
- ○ Taken non-traditional courses that were offered through a different institution?
- ○ Not taken any non-traditional courses? *(Skip Questions 32–34 and go to Question 35)*

32. If you have taken non-traditional courses, when did you take them? (Select all that apply)

- ○ During the school year
- ○ During the summer

33. If you have taken non-traditional courses, what were some of the reasons? (Select all that apply)

- ○ To get ahead academically
- ○ They were more convenient to my academic schedule
- ○ They were more convenient to my athletic schedule
- ○ My coaches recommended such courses
- ○ To regain eligibility during the off-season
- ○ I prefer the structure of non-traditional courses
- ○ The course is required for my major
- ○ The course is only offered as a non-traditional course

34. How much do you agree or disagree with the following statements about the non-traditional courses you've taken?

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
a. I feel that these courses are as difficult as "traditional" courses	○	○	○	○	○	○
b. I learn as much or more in these courses as I do in "traditional" courses	○	○	○	○	○	○
c. I spend as much time or more on these courses as I do on "traditional" courses	○	○	○	○	○	○

35. How well do the following statements describe your classroom or study experiences so far in college?

	Very much typical of me	Fairly typical of me	Somewhat typical of me	Not very typical of me	Not at all typical of me
a. I put off studying more than I should	○	○	○	○	○
b. Even when I don't like a course, I work hard to get a good grade	○	○	○	○	○
c. When work is difficult, I either give up or study only the easy parts	○	○	○	○	○
d. My mind wanders a lot when I study	○	○	○	○	○
e. I find it hard to pay attention during lectures	○	○	○	○	○
f. I have a positive attitude about attending my classes	○	○	○	○	○
g. I do not care about getting a general education. I just want to get a good job	○	○	○	○	○
h. I feel panicky when I take an important test	○	○	○	○	○
i. I worry that I will flunk out of school	○	○	○	○	○
j. When I take a test, I realize I have studied the wrong material	○	○	○	○	○
k. During class discussions, I have trouble figuring out what is important enough to put in my notes	○	○	○	○	○

36. So far in college, how do you feel about...

	Very Positive	Somewhat Positive	Positive	Somewhat Negative	Very Negative
a. The efforts you've made in your classes?	○	○	○	○	○
b. Your relationships with the faculty?	○	○	○	○	○
c. Your ability to succeed academically?	○	○	○	○	○
d. Your overall college academic experience to this point?	○	○	○	○	○

37. Have your coaches or others in the athletics department ever discouraged you from participating in an extracurricular activity that interested you?

- ○ Yes
- ○ No

38. Do you believe that your athletics participation has had an effect on your overall grade point average (GPA)?

- ○ Yes, I believe that my GPA would be higher if I was not participating in a sport
- ○ Yes, I believe that my GPA would be lower if I was not participating in a sport
- ○ No, I believe sports participation has had no effect on my GPA

39. How much have the following people impacted your academic career so far at this college?

	Very Large Impact	Large Impact	Moderate Impact	Small Impact	No Impact or Not Applicable
a. Your college coaches	○	○	○	○	○
b. The academic advisors in your athletics department	○	○	○	○	○
c. The tutors in your athletics department	○	○	○	○	○

40. How satisfied or dissatisfied are you with each of the following academic and career support services offered by your institution or athletics department?

	Somewhat Satisfied	Satisfied	Somewhat Dissatisfied	Dissatisfied	I did not use	Not offered by athletics dept or institution
a. Academic advisors who assist with course selection and/or monitor degree progress	○	○	○	○	○	○
b. Study hall	○	○	○	○	○	○
c. Tutoring	○	○	○	○	○	○
d. Priority registration	○	○	○	○	○	○
e. Career counseling	○	○	○	○	○	○
f. NCAA CHAMPS/Life Skills program	○	○	○	○	○	○
g. Academic support services tailored to meet my specific needs	○	○	○	○	○	○

PART 3: COLLEGE SOCIAL EXPERIENCE

41. Please indicate the extent to which you agree or disagree with the following statements:

	Strongly Agree	Agree	Disagree	Strongly Disagree
a. I see myself as part of the campus community at this college	○	○	○	○
b. I have a sense of belonging to this campus	○	○	○	○
c. Athletics provides me a connection to this campus	○	○	○	○

42. How many of your closest friends at this college are on your sports team?

- All of my closest college friends are on the team
- Many of my closest college friends are on the team
- Some of my closest college friends are on the team
- Few of my closest college friends are on the team
- None of my closest college friends are on the team

43. How do you feel that being an athlete has impacted your ability to fit in socially on this campus?

- Greatly helped
- Helped somewhat
- Neither helped nor hurt
- Hurt somewhat
- Greatly hurt

44. While at this school, have your roommates been other student-athletes?

- Yes, I've roomed with student-athletes every year
- Yes, I've roomed with student-athletes but not every year
- No, I've never lived with another student-athlete

45. On average over the past year, how much time have you spent taking part in service projects or volunteer activities of any type? (Fill in only one circle)

- One or more hours per day
- A few hours per week
- A few hours per month
- A few hours during the year
- Did not participate in service or volunteerism last year

46. Are you required to take part in service projects or volunteer activities as part of your athletics participation? (Fill in only one circle)

- Yes, my coach/team requires it frequently
- Yes, my coach/team requires it occasionally
- My coach/team suggests we take part in these types of activities but does not require them
- No, we do not take part in such activities as a team

47. Please indicate your level of agreement with the following statement: My participation in service projects / volunteer activities with my team was a valuable experience.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree
- Not applicable / Did not participate in volunteerism

48. How often do you interact on a personal level (like having a conversation, eating together, hanging out at practice, etc.) with people from other racial or ethnic groups?

- Every day
- Nearly every day
- Most days
- Sometimes
- Seldom
- Never

49. Generally, how do you feel about the experiences you have had with people of other racial or ethnic groups while at this college?

- Very good
- Good
- Somewhat good
- Somewhat bad
- Bad
- Very bad

50. Do you believe that your athletics participation has had an effect on your interactions and experiences with people from other racial and ethnic groups?

- Yes, it has had a positive effect
- Yes, it has had a negative effect
- No, it has had no effect

51. Please indicate your level of agreement with each of the following statements about the atmosphere or climate on your team:

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
a. My coaches have created an inclusive environment for all members of the team	○	○	○	○	○
b. My coaches and teammates are accepting of differing viewpoints and cultures	○	○	○	○	○
c. My coaches and teammates are always respectful of persons from other racial/ethnic groups	○	○	○	○	○

PART 4: RECRUITMENT

52. How much do you agree or disagree that each of the following reasons contributed to your decision to attend your current college?

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
a. Academic offerings, academic reputation, etc.	○	○	○	○
b. Athletics participation	○	○	○	○
c. Proximity to home, family, friends	○	○	○	○
d. Proximity to boyfriend, girlfriend, spouse	○	○	○	○
e. Social scene at this school or have friends attending	○	○	○	○
f. Expectations (of parents, teachers, community, etc.)	○	○	○	○

53. Based on what you know now and what others (e.g., friends, coaches, alumni) told you to expect, how accurate were your initial expectations of. . .

	Very Accurate	Mostly Accurate	Somewhat Accurate	Not at all Accurate
a. The athletics experience at this college?	○	○	○	○
b. The academic experience at this college?	○	○	○	○
c. The social experience at this college?	○	○	○	○
d. The time demands of being a student-athlete at this college?	○	○	○	○

54. Prior to enrolling in your current college, did you visit the campus (either on an official or unofficial visit)?

- ○ Yes
- ○ No

55. Were you recruited to play sports at your current college?

- ○ Yes, a coach or others contacted me prior to when I enrolled in this school
- ○ Yes, but not until I had already enrolled in this school
- ○ No, I walked on to the team w/thout being recruited

56. Please indicate your level of agreement with the following statement: I would have attended this college even if a different coach was here.

- ○ Strongly agree
- ○ Agree
- ○ Somewhat agree
- ○ Somewhat disagree
- ○ Disagree
- ○ Strongly disagree

57. Prior to coming to this college, approximately how many schools specifically contacted you about playing sports for their school? (NOTE: Do not include form letters that may have been sent to many recruits at once.)

- ○ None *(Skip Question 58 and go to Question 59)*
- ○ 1–9
- ○ 10–20
- ○ More than 20

58. How much do you agree or disagree with each of the following statements about your overall experiences with college athletics recruiting?

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
a. The information I received during recruitment helped me decide what college to attend	○	○	○	○	○	○
b. Some of the coaches recruiting me contacted me too often	○	○	○	○	○	○
c. The coaches recruiting me talked a lot about academics	○	○	○	○	○	○

59. How important was the advice of each of the following people in terms of your decision to attend your current college?

	Extremely Important	Somewhat Important	Not Important at All
a. Parents or relatives	○	○	○
b. Friends / teammates	○	○	○
c. Teacher / guidance counselor	○	○	○
d. High school coach	○	○	○
e. Other coach (e.g., summer league or AAU coach)	○	○	○
f. Other adults	○	○	○

60. Where did you attend high school?

- ○ In the United States or Canada
- ○ In another country

SURVEY 5: HEALTH AND WELL-BEING

61. During the last 30 days, on how many days (if any) did you have the following problems or symptoms?

	None	1–3 Days	4–7 Days	8–14 Days	15+ Days
a. Headache	○	○	○	○	○
b. Trouble with sinus congestion, runny nose or sneezing	○	○	○	○	○
c. Difficulty thinking or concentrating	○	○	○	○	○
d. Trouble sleeping	○	○	○	○	○
e. Stayed home most or all of a day because you were not feeling well	○	○	○	○	○

62. During your collegiate career to this point, have you been diagnosed with or do you believe you have had a concussion?

- ○ Yes, more than once
- ○ Yes, once
- ○ No

63. The questions in this scale ask you about your feelings and thoughts during the last month. For each, please indicate how often you felt or thought a certain way.

	Never	Almost Never	Sometimes	Fairly Often	Very Often
a. In the last month, how often have you felt that you were unable to control the important things in your life?	○	○	○	○	○
b. In the last month, how often have you felt confident about your ability to handle your personal problems?	○	○	○	○	○
c. In the last month, how often have you felt that things were going your way?	○	○	○	○	○
d. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	○	○	○	○	○

64. How satisfied are you with the care you have received from athletic trainers, team doctors, etc. at your current college when you have had physical health issues?

- ○ Very satisfied
- ○ Somewhat satisfied
- ○ Neither satisfied nor dissatisfied
- ○ Somewhat dissatisfied
- ○ Very dissatisfied
- ○ I have not required care for physical health issues

65. How much do you agree or disagree with the following statements?

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
a. I would feel comfortable talking with coaches and team personnel about mental health issues	○	○	○	○
b. Coaches are concerned about my mental health and well-being	○	○	○	○

66. How much do you agree or disagree with each of the following statements? (Please respond to each item)

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
a. I think I have a good body	○	○	○	○
b. I am happy with my current weight	○	○	○	○
c. I like what I look like in pictures	○	○	○	○

67. How often do you...

	Every Day	Nearly Every Day	More Days	Sometimes	Seldom	Never
a. Eat at least some green vegetables?	○	○	○	○	○	○
b. Eat at least some fruit?	○	○	○	○	○	○
c. Engage in vigorous cardiovascular activity?	○	○	○	○	○	○
d. Get at least seven hours of sleep?	○	○	○	○	○	○
e. Feel like you're doing a poor job of eating healthy?	○	○	○	○	○	○

68. All things considered, how happy are you today?

- ○ Very happy
- ○ Somewhat happy
- ○ Somewhat unhappy
- ○ Not happy at all

SECTION 6: TIME COMMITMENTS

For questions 69–70 think about the current (or most recent) season in which you played your sport:

69. While school was in session during the season, picture the weekday (Monday to Friday) that most felt like your "typical" day on campus. On that day, how many hours did you spend on each of the following activities?

Number of Hours

	0	1	2	3	4	5	6	7	8+
a. Attending class, lab, discussion groups, etc.	○	○	○	○	○	○	○	○	○
b. Studying or academic work outside of class	○	○	○	○	○	○	○	○	○
c. Sport commitments:									
i. Athletic Activities (Practicing, training, competing, training room, etc.)	○	○	○	○	○	○	○	○	○
ii. Non-Athletic Activities (Meetings with coaches, team functions, film study, etc.)	○	○	○	○	○	○	○	○	○
d. Other extracurricular activities	○	○	○	○	○	○	○	○	○
e. A job (for pay)	○	○	○	○	○	○	○	○	○
f. Socializing, relaxing, family	○	○	○	○	○	○	○	○	○
g. Sleeping	○	○	○	○	○	○	○	○	○

70. While school was in session during your season, picture what your weekends were like.

In total (that is, adding up your commitments for Saturday and Sunday), how many hours did you spend on each of the following activities during a typical weekend on campus?

	0 hours	1–2 hours	3–4 hours	5–6 hours	7–8 hours	9–10 hours	11–12 hours	13–14 hours	15+ hours
a. Attending class, lab, discussion groups, etc.	○	○	○	○	○	○	○	○	○
b. Studying or academic work outside of class	○	○	○	○	○	○	○	○	○
c. Sport commitments:									
i. Athletic Activities (Practicing, training, competing, training room, etc.)	○	○	○	○	○	○	○	○	○
ii. Non-Athletic Activities (Meetings with coaches, team functions, film study, etc.)	○	○	○	○	○	○	○	○	○
d. Other extracurricular activities	○	○	○	○	○	○	○	○	○
e. A job (for pay)	○	○	○	○	○	○	○	○	○
f. Socializing, relaxing, family	○	○	○	○	○	○	○	○	○
g. Sleeping	○	○	○	○	○	○	○	○	○

71. During the season, how much time in a typical week (including weekends) do you spend away from campus due to athletics competition?

- ○ No time spent away / Didn't travel
- ○ One-half day or less away per week
- ○ 1 day away per week
- ○ 2 days away per week
- ○ 3 days away per week
- ○ 4 or more days away per week

72. During periods in the school year when your sports team is not competing, do you spend more or less time on the following?

	Much More	A Little More	About the Same	A Little Less	Much Less
a. Attending class, lab, discussion groups, etc.	○	○	○	○	○
b. Studying or academic work outside of class	○	○	○	○	○
c. Sport commitments:					
i. Athletic Activities (Practicing, training, competing, training room, etc.)	○	○	○	○	○
ii. Non-Athletic Activities (Meetings with coaches, team functions, film study, etc.)	○	○	○	○	○
d. Other extracurricular activities	○	○	○	○	○

73. If you could, would you prefer to spend more or less time in each of these areas while in college?

	Much More Time	A Little More Time	OK with current time spent	A Little Less Time	Much Less Time
a. My classwork or other educational opportunities	○	○	○	○	○
b. Athletics training, competition, etc.	○	○	○	○	○
c. One or more extracurricular activities	○	○	○	○	○
d. Family responsibilities	○	○	○	○	○
e. A job	○	○	○	○	○
f. Socializing with friends	○	○	○	○	○
g. Relaxing by myself	○	○	○	○	○
h. Sleeping	○	○	○	○	○

74. How do you feel about the amount of time that you spend with your coaches during the course of the year?

- ○ I am satisfied with the amount of time I spend with my coaches
- ○ I wish I could spend more time with my coaches
- ○ I wish I could spend less time with my coaches

75. How many hours per week do you spend working at a job for pay (including work-study)?

- ○ 0 hours
- ○ 1–5 hours
- ○ 6–10 hours
- ○ 11–15 hours
- ○ 16–20 hours
- ○ More than 20 hours

76. If you had one extra hour each day during the school year that you could use any way that you wanted, on what one activity (other than sleeping) would you most want to spend it? (Fill in only one circle)

- ○ My classwork or other educational opportunities
- ○ Sport / exercise
- ○ An extracurricular activity
- ○ Spending time with family
- ○ A job
- ○ Socializing with friends
- ○ Relaxing by myself

77. During your most recent athletic season, how many classes did you miss on average each week for any reason (practice, travel, competition, skipped)?

- ○ None
- ○ 1 class
- ○ 2 classes
- ○ 3 classes
- ○ 4 classes
- ○ 5 classes
- ○ 6+ classes

78. Are you satisfied with how often you have been able to visit home or family during your time at this college (including summer and winter breaks)?

- ○ Very satisfied
- ○ Somewhat satisfied
- ○ Neither satisfied nor dissatisfied
- ○ Somewhat dissatisfied
- ○ Very dissatisfied

7: FINANCES

79. Do you rely on the following to help pay for college? (Please respond to each item)

	Yes	No
a. Family contribution	○	○
b. Personal contribution / Job	○	○
c. Pell Grant	○	○
d. Need-based financial aid (including state or institutional grants)	○	○
e. Academic scholarship	○	○
f. Athletics scholarship	○	○
g. Loans	○	○

80. When choosing your current institution, was the total cost to you and your family of attending this college an important factor in making your decision?

- ○ Very important
- ○ Important
- ○ Somewhat important
- ○ Somewhat unimportant
- ○ Unimportant
- ○ Not important at all

81. Are you concerned that financial considerations may affect your ability to complete your degree?

- ○ Yes, I'm very concerned
- ○ Yes, I'm somewhat concerned
- ○ No, I'm not concerned

82. How satisfied or dissatisfied are you with the following?

	Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	Dissatisfied
a. The counseling I received from the coaches at my school on financial aid	○	○	○	○	○
b. The counseling I received from the financial aid office at my school	○	○	○	○	○

83. Indicate the extent to which you agree or disagree with the following statement: I usually have enough money to buy things I need (e.g., groceries).

- ○ Agree
- ○ Somewhat agree
- ○ Somewhat disagree
- ○ Disagree

84. Have any of the following happened to you while enrolled at your current institution?

	Yes	No
a. NCAA team limits on financial aid prevented me from accepting non-athletics aid	○	○
b. I was told not to apply for additional aid due to NCAA team limits on financial aid	○	○

85. Has your athletics scholarship changed significantly (beyond tuition or room/board increases) since enrolling in your current institution?

- ○ Yes, it has increased
- ○ Yes, it has decreased
- ○ No, it has not changed significantly
- ○ Not applicable / I don't receive an athletics scholarship

86. What is the highest level of education that your parent(s) have completed? (Mark one circle per column)

	Father	Mother
a. Did not finish high school	○	○
b. Graduated from high school	○	○
c. Attended college but did not complete degree	○	○
d. Completed an associate's degree (A.A., A.S., etc.)	○	○
e. Completed a bachelor's degree (B.A., B.S., etc.)	○	○
f. Completed a master's degree (M.A., M.S., etc.)	○	○
g. Completed a doctoral degree (Ph.D., J.D., M.D., etc.)	○	○
h. Don't know	○	○

PART 8: OPPORTUNITY FOR ADDITIONAL FEEDBACK & COMMENTS

87. **What has been the best part of your student-athlete experience so far?**

88. **If you could change one thing about your student-athlete experience, what would it be?**

Decision makers and campus leaders within the NCAA have also expressed specific interest in how aspects of your college experience relate to academic success. To help in that effort you may, on a strictly voluntary basis, share the last four digits of your social security number (SSN) with us in the box below. By providing the last four digits of your social security number, you are consenting to allow NCAA researchers to attempt to link (based on the four digits provided and other information like your sport) your survey data to academic data the NCAA has already gathered or will collect in the future. Your identity will remain completely confidential and the SSN identifier will be removed from the data file used by researchers once the data link is made.

Last four digits of SSN (optional)

The survey you have just completed is part of the largest study on student-athletes the NCAA has ever undertaken. Your responses will help us better understand how participation in athletics impacts a student's college experience.

Thank you for participating in the GOALS study and best wishes for 2010!

Appendix B
Questions for Student-Athlete Interviews

Introduction to the study.

Tell me a little bit about yourself (major, academic year, sport, position, etc.)

Why did you pick [institution name]?

Describe the kind of student you are.

How do you see yourself as a student?

Who has influenced your academic endeavors?
(Can be positive or negative, multiple people)

What groups or organizations do you associate with as a student?

In what ways has [institution name] supported or not supported how you see yourself as a student?

How has the NCAA supported you or not supported how you see yourself as a student?

How have other people, groups or organizations supported you or not supported how you see yourself as a student?

Describe the kind of athlete you are.

How do you see yourself as an athlete?

Who has influenced your athletic endeavors?
(Can be positive or negative, multiple people)

What groups or organizations do you associate with as an athlete?

In what ways has [institution name] supported or not supported how you see yourself as an athlete?

How has the NCAA supported you or not supported how you see yourself as an athlete?

How have other people, groups or organizations supported you or not supported how you see yourself as an athlete?

Appendix C
NCAA Approval for Use of 2010 GOALS Survey Items

NATIONAL COLLEGIATE ATHLETIC ASSOCIATION

AGREEMENT GOVERNING USE OF ORIGINAL SURVEY ITEMS

In consideration for being able to use items from the National Collegiate Athletic Association (NCAA) 2010 GOALS survey in accordance with the terms listed below and any other instructions provided by the NCAA, the undersigned hereby agrees to the following:

1) I will appropriately list the NCAA as a reference in the project/research materials consistent with academic protocol, and, upon the NCAA's request, will provide such materials to the NCAA Managing Director of Research or NCAA research staff;

2) I will not use the NCAA name, logos or trademarks, or any other designations proprietary thereto, in a manner that explicitly or implicitly conveys that the NCAA is financially supporting the research study, endorsing the research study and its protocols/procedures or endorsing the outcomes of the project, or otherwise without the NCAA's prior written consent. Any questions regarding the use of the NCAA name, logos or trademarks, or any other designations proprietary thereto, will be directed to the NCAA Managing Director of Research;

3) I understand that this agreement solely allows for the use of select items from the instrument/survey and not the use of an instrument/survey in its entirety. To use the survey instrument in its entirety, advance written consent must be obtained from the NCAA Managing Director of Research;

4) I acknowledge and agree that this agreement is subject to immediate revocation/termination upon written notice thereof by the NCAA, may not be assigned or transferred in whole or in part without the advance written consent of the NCAA Managing Director of Research.

Christine Drake	10/2/2020
Name of External Researcher (printed)	Date
C Drake	
Signature of External Researcher	Todd A. Petr, Managing Director of Research
Northern Arizona University	
Institution Name	
PO Box 15066, Flagstaff, AZ, 86011	928-523-0959
Work Address	Work Phone Number

Appendix D
NCAA Approval for Data Use of 2010 GOALS Survey

NCAA Data Use Agreement

This Agreement entered into this 20 day of January, 2021 by and between the National Collegiate Athletic Association (NCAA) and Christine Drake and Dr. Jon Lee ("Licensee(s)").

WHEREAS, the NCAA owns research data ("NCAA data") pertaining to college and university athletic programs and student-athletes, and

WHEREAS, Licensee desires to license NCAA data for use in academic research; and

WHEREAS, Licensee agrees to abide by the terms and conditions defining how Licensee may use NCAA data;

THEREFORE, the parties are agreed as follows:

1. Term. The term of the license shall be from date of execution and ending at the conclusion of one year from execution and may be renewed annually by mutual, written agreement of the parties.

2. Royalty. There shall be no royalty charged for Licensee's use of NCAA data.

3. Scope. Licensee shall receive the following NCAA data for use by Licensee within the project whose complete description may be found in Exhibit A ("Project").

4. Personnel access. Only those individuals identified in Exhibit B shall have access to NCAA data during the course of completing the Project.

5. Disposal of data upon termination. Licensee shall dispose of NCAA data in a manner consistent with industry protocol at the agreement's termination.

6. Confidential information. Licensee understands that the data provided is confidential information that may not be transferred, licensed, or in any way accessed by entities or individuals other than those identified in Exhibit B. Licensee further agrees to abide by all federal laws protecting against disclosure of student-athlete educational records and regulations related to human subject research.

7. Privacy of research subject. Licensee agrees to make no attempt to tie specific responses to any individual or otherwise identify the personal information of a research subject included in the NCAA data. If the identity of any individual research subject is discovered (inadvertently or otherwise), Licensee agrees to notify NCAA of any such discovery, with such notification to provide a reasonably detailed explanation as to how and why Licensee discovered the identity of a research subject.

8. Use of NCAA Name. Licensee shall be entitled to list the NCAA as a reference in Project materials consistent with academic protocol. Licensee shall not use the NCAA

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public in a manner to convey the NCAA's endorsement of or agreement with the outcome of the Project. Any other use of the NCAA name or its trademarks shall be with the advance written consent of the NCAA. In addition, Licensee agrees that the following statement will be incorporated in the acknowledgment of the source of the data: "Conclusions drawn from or recommendations based on the data provided by the National Collegiate Athletic Association are those of the author(s) based on analyses/evaluations of the author(s) and do not represent the views of the officers, staff or membership of the NCAA."

9. Indemnification. Licensee agrees to indemnify fully and save harmless the NCAA, its officers, agents, employees, and each and all of its member institutions, of and from any and all claims, demands and causes of action, including costs and attorney's fees, arising out of anything done or purported to have been done by Licensee, or any of its agents, under this Agreement or in connection with the data provided. The NCAA agrees to indemnify fully and save harmless Licensee, its officers, agents, and employees of and from any and all claims, demands and causes of action, including costs and attorney's fees, arising out of anything done or purported to have been done by the NCAA, or any of its agents, under this Agreement.

10. Right of termination. Either party shall have the right to terminate this agreement by providing advance written notice of twenty (20) days. All representations, warranties, and indemnification shall survive termination of the agreement.

11. Licensee status. Licensee represents that it is conducting research independently of the NCAA in the capacity of a licensee and that Licensee is not an agent, partner or employee of the NCAA.

12. Governing law and choice of venue. The laws of the State of Indiana shall govern this Agreement. Licensee agrees that any action or proceeding relative to this Agreement shall take place in a court of competent jurisdiction in Marion County, Indiana.

13. Agreement disclosure. Upon request by the Chief Executive Officer of any active member institution that is directly affected hereby, the NCAA may provide a copy of this Agreement to such person.

14. Licensee authority. Licensee represents that it has the full right and authority and all of the necessary sources of authority to enter into this Agreement and to perform the services herein. The individual executing and delivering this Agreement is duly authorized to do so by Licensee and this Agreement is legally binding upon and enforceable against each of the parties hereto.

15. Waiver. No waiver by either party of a breach of a default hereunder shall be deemed a waiver by such party of a subsequent breach or default of a like or similar nature.

16. Assignment of rights precluded. This Agreement may not be assigned or transferred in whole or in part without the advance written consent of the NCAA.

17. Entire agreement. This document constitutes the entire Agreement between the parties hereto. There are no warranties or representations save as are expressly set out herein.

18. Severability. In the event that any term or condition of this Agreement shall for any reason be held invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other term or provision and this Agreement shall be interpreted and construed as if such term or provision, to the extent the same shall have been held invalid, illegal or unenforceable, had never been contained herein.

19. Final execution. This Agreement shall not be binding upon the NCAA unless and until it is duly executed by the President of the NCAA or the President's designee.

20. Notice. All notices, claims, certificates, requests, demands and other communications hereunder shall be in writing and will be deemed to have been given if delivered by hand, email, prepaid telegram or mailed (registered or certified mail, postage prepaid, return receipt requested, or any means of express mail with confirmed delivery) as follows:

To the NCAA:

Todd Petr, Managing Director of Research
National Collegiate Athletic Association
P.O. Box 6222
Indianapolis, Indiana 46206

To Licensee:

Christine Drake
Northern Arizona University
PO Box 15066, Flagstaff, AZ 86011

IN WITNESS WHEREOF, the parties hereunto have caused this instrument to be executed by their duly authorized officers on the day and year first thereto above written.

THE NATIONAL COLLEGIATE ATHLETIC ASSOCIATION

By: Todd A. Petr

Title: Managing Director of Research

LICENSEE

By: CDrake

Title: Graduate Student

LICENSEE

By:

Title: Faculty Sponsor

1/28/02

Appendix E

NCAA 2010 Growth, Opportunities, Aspirations, and Learning of Students (GOALS) in College Survey Requested Questions (Adapted Survey)

What is the main sport that you are currently playing in college?

- Basketball
- Cross Country
- Golf
- Soccer
- Swimming/Diving
- Tennis
- Track (Indoor and/or Outdoor)
- Volleyball

What is your gender?

- Female
- Male
- Non-binary
- Transgender Male
- Transgender Female
- Other (please specify)
- Prefer not to say

What is your ethnicity?

- Hispanic or Latino or Spanish Origin
- Not Hispanic or Latino or Spanish Origin

What is your racial and ethnic background (choose **all** that apply)

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White (European descent)
- Other (please specify)
- Prefer not to say

How likely do you think it is that you will become a professional and/or Olympic athlete in your sport?

- Very likely
- Likely
- Somewhat likely
- Somewhat unlikely

- Unlikely
- Very unlikely

How much do you agree or disagree with each of the following statements:

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

a. I consider myself a dedicated athlete.
b. I consider myself a dedicated student.
c. I have many personal goals related to my sport.
d. I have many personal goals related to my academics.
e. I need to excel in athletics pursuits to feel good about myself.
f. I need to excel in academic pursuits to feel good about myself.
g. My sports experiences are an important part of my overall college experience.
h. My academic experiences are an important part of my overall college experience.
i. I feel that other students view me as more of an athlete than as a student.
j. I feel that my professors view me as more of an athlete than a student.

Please indicate your level of agreement with the following statements:

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

a. I would have gone to a four-year college somewhere even if I hadn't been an athlete.
b. I would be willing to sacrifice my athletics participation for academics.
c. I would be willing to sacrifice my academic performance for athletics participation.
d. My athletics participation is important in preparing me for life after graduation.

Thinking about your classes this year, how much do you agree or disagree with the following statements?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

a. I believe the classes I'm taking are relevant to my future.
b. I have a personal interest in my classes.
h. I took these classes primarily to stay academically eligible to compete.
i. I took these classes because they fit with my practice schedule.

So far in college, how to do you feel about:

- Very positive
- Positive
- Somewhat positive
- Somewhat negative
- Negative
- Very negative

a. The efforts you've made in your classes?
b. Your relationships with the faculty?
c. Your ability to success academically?
d. Your overall college academic experience to this point?

How much do you agree or disagree that each of the following reasons contributed to your decision to attend your current college?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

a. Academic offerings, academic reputation, etc.
b. Athletic participation