This is to certify that the

dissertation entitled

Contributions of Gender, Ethnic Status, Athletic Participation, and Athletic Identity to College Adjustment

presented by

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has been accepted towards fulfillment of the requirements for

Ph.D. degree in Counseling Psychology

Major professor

Date 12/11/2001

CONTRIBUTIONS OF GENDER, ETHNIC STATUS, ATHLETIC PARTICIPATION, AND ATHLETIC IDENTITY TO COLLEGE ADJUSTMENT

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Counseling, Educational Psychology, and Special Education

2001

ABSTRACT

CONTRIBUTIONS OF GENDER, ETHNIC STATUS, ATHLETIC PATICIPATION, AND ATHLETIC IDENTITY TO COLLEGE ADJUSTMENT

By

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Research exploring the experiences of college student athletes has typically revealed low levels of academic achievement and success. This is especially true of minority college athletes, who demonstrate lower graduation rates than their majority counterparts. However, sport-related predictors of minority college adjustment have generally been overlooked in the literature. The current study explored the roles of ethnic status, athletic participation, and athletic identity as predictors of college adjustment in student athletes.

Two hundred and seven college student athletes and non-athletes were recruited to participate. All participants completed questionnaires assessing background demographics, athletic identity, and college adjustment. Several hypotheses concerning interrelationships among athletic participation, athletic identity, ethnic status, and college adjustment were examined.

Findings revealed that gender and athlete status contributed significantly to college adjustment. Gender also significantly interacted with ethnic status to predict adjustment. In addition, a hypothesis concerning athletic identity as a moderator of ethnic status in student athletes was supported, although in a direction opposite to prediction. Implications for student athlete support services, as well as recommendations for future research are discussed.

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CHAPTER I

INTRODUCTION

Student adjustment in higher education has been a major focus of inquiry among scholars and administrators for many years. As student retention rates at institutions of higher learning continue to decrease, researchers are more closely examining the college adjustment process, thus further expanding the knowledge base. Currently, research indicates that more than 40% of college entrants leave higher education without earning a degree, and, of those students 75% drop out within the first two years of college. A typical entering class can expect that 56% of its students will not reach graduation, while attrition rates of up to 27% can be expected for the freshman year alone (ACT, 1999). While these numbers are sobering, the picture is considerably more bleak for ethnic minority students who pursue a college degree.

Non-Asian minority students as a group do not graduate from predominantly White colleges and universities at rates comparable to those of their majority counterparts. Furthermore, African American, Latino, and Native American students seem to be particularly at risk for dropping out before achieving their degrees (Astin, 1982). Recent data indicate that only 40% of African American and 47% Hispanic / Latino students who entered college 6 years earlier have completed their degrees. This figure dropped to 25% over 4 years for Native American students (Padilla, Trevino, Gonzalez, & Trevino, 1997). According to Zea, Jarama, and Bianchi (1995), retention rates for Latinos who have entered college have been estimated to be as low as 20%, while African American students are only half as likely as White students to obtain their Bachelor's degrees, and 1.5 times more likely to dropout.

Clearly, too many minority students are leaving their colleges and universities before completing their degrees (Padilla et al., 1997), and because these figures paint a dark picture, there is a need for more research on specific factors and influences affecting their college adjustment process and subsequent retention rates. Indeed, many universities now employ specific programs aimed at reversing the trend (Levin & Levin, 1993). Student athletes have also been identified as a high-risk group for attrition on college campuses (Russell & Petrie, 1993), and when considering the unique plight of minority student athletes attending predominantly White colleges, the issues affecting adjustment and retention are further compounded. Although student athletes account for a relatively small percentage of the general student population attending major universities, ethnic minorities comprise a significant percentage of the student athlete population in Division I colleges (Division I comprises approximately 300 schools and universities that offer a full allotment of scholarships). Of this percentage, African Americans comprise the largest subgroup (Siegel, 1996).

Approximately 6% of the full time undergraduate students at major universities are of African American heritage (Anderson, 1996), while 49% of the football players and 64% of the basketball players in Division I were African American men during the 1992-1993 academic year (Siegel, 1996). In addition, 37% of women's basketball players were African American (Lapchick, 1996). It has been estimated that nearly one quarter of all of the scholarship athletes in all Division I schools are African American (Anderson, 1996).

Unfortunately, graduation and retention rates for student athletes are equally problematic. Generally, graduation rates for student athletes vary from institution to institution, ranging from a low of 13% to a high of 87% (Sellars & Damas, 1996).

Moreover, recent NCAA data revealed that White male college athletes graduated at rates 20% higher than their Black male counterparts (Siegel, 1996). Most studies of college athletes have found negative relationships between athletic participation and academic performance, and generally reported lower GPAs, higher attrition rates, and lower graduation rates than other students (Adler & Adler, 1985).

Despite these findings, there has been little research examining the overall college adjustment of minority student athletes, and specifically the role that athletic participation may play in promoting adjustment outcomes. Athletic participation as a moderator of adjustment in minority college students has generally been overlooked, due in part to the abundance of literature addressing the negative, exploitive, and problematic aspects of collegiate sports.

However, a few studies have alluded to a facilitative relationship between sport participation and graduation rates in majority and minority student athletes (Ervin, Saunders, Gillis, & Hogrebe, 1985; Siegel, 1996). Aside from the well documented hindrances to academic achievement and graduation (Lapchick, 1996), collegiate sport participation may promote certain developmental, social, emotional, and attitudinal experiences that ease the transition into college for minority student athletes. This in turn may reduce attrition rates and increase graduation rates for many minority student athletes. These potentially positive influences of athletic participation may allow for the development of key social support networks, institutional pride, and a sense of belonging and attachment that many minority student non-athletes seem to lack when they attend predominantly White colleges and universities (Smedley, Myers, & Harrell, 1993).

Further research is needed that examines more closely the relationship between athletic participation and college adjustment in minority athletes so that clinicians, academics, and administrators can better serve the needs of their student athlete populations. In addition, as collegiate sport continues to experience economic and popular growth, greater opportunities will be generated for minorities to attend college on athletic scholarship.

Because counseling psychology has traditionally been concerned with adjustment and development of college students, it is the responsibility of counseling psychologists, as well as other faculty and support staff, to lend their expertise to this group of students as they negotiate the obstacles that await them on campus. Through the creation of more effective and comprehensive support programs, universities can better address the needs of future generations of student athletes.

Purpose

The purpose of this study is to examine more closely the psychosocial impact of the student athlete role and of athletic participation on college adjustment of student athletes. More specifically, this study will explore how athletic participation, athletic identity (Brewer, Van Raalte, & Linder, 1993), and ethnic status may interact to impact college adjustment in student athletes.

The rationale for this study concerns specific psychosocial and developmental influences associated with collegiate sports participation, and the role of the student athlete. For example, athletic participation in college often provides opportunities for social interaction and support (Sellars & Damas, 1996), for generating feelings of belonging and acceptance among one's peer group (Adler & Adler, 1991), for developing

feelings of pride and attachment to one's school (Melendez, 1991), and for developing interpersonal skills and leadership abilities (Ryan, 1989). Unfortunately, these are not experiences commonly reported by minority college students in general. Rather, the literature reveals that ethnic minority students entering predominantly White colleges and universities typically report feelings of isolation, alienation, dissatisfaction, and incompetence (Graham, Baker, & Wapner, 1985; Melendez, 1991; Smedley et al., 1993; Stamps, 1987).

Overidentification with the role of athlete can hinder development and college adjustment as well. High levels of athletic identity may negatively influence student athlete adjustment by constraining normal socialization and social development in college. Athletic identity entails the cognitive, affective, behavioral, and social concomitants of identifying with the athlete role. Individuals who commit to such roles without engaging in adequate exploratory behavior are said to be identity foreclosed (Murphy, Petitpas, & Brewer, 1996), and thus risk a variety of psychological, emotional, and developmental consequences.

In sum, athletic participation can be both the doorway and the obstacle to opportunity and achievement for many collegiate athletes. The purpose of this study is to examine more closely what factors contribute to the adjustment of student athletes as they negotiate their college experiences.

CHAPTER II

REVIEW OF THE LITERATURE

Although the literature addressing college student experiences is vast, this study will focus primarily on the unique experiences of the minority student athletes. Four main areas of literature will be reviewed. First the literature addressing the adaptation to college of minority students will be presented. Research focusing on the definition and assessment of academic achievement and college adjustment will be included, as well as the literature addressing cognitive and noncognitive predictor and outcome variables.

Second, the literature focusing on psychosocial influences on college adjustment will be presented. Specific attention will be given to psychological, social, and cultural influences on the college adjustment of minority students. Specific psychosocial constructs and models of college adjustment will also be highlighted.

Third, the literature addressing the experiences of college athletes will be presented. This section will review the literature on collegiate athletic participation, college student athlete retention and graduation rates, and other relevant sport-specific literature. Part of this review will focus on ethnic and athletic between-group comparisons of college adjustment and graduation rates in an effort lay the foundation for the current proposed inquiry.

Fourth, the literature addressing athletic identity development will be reviewed. In this section the construct of athletic identity will be defined and its utility as a predictor of college adjustment will be addressed. Finally, the relevant literature employing the construct of athletic identity will be reviewed.

Minority Student Adaptation to College

Academic Achievement. Historically, college adjustment has been associated with academic success and achievement. This was especially the case before the late 1960's when affirmative action legislation was introduced, triggering a ten year increase in ethnic minority representation at colleges and universities across the country (Smedley et al., 1993). Research of the day often focused on college GPA, retention, and graduation rates as the sole outcome measures of college adjustment for incoming freshman. In addition, early college adjustment research often employed cognitive or academic predictor variables, such as high school GPA, SAT scores, ACT scores, and scores on tests of abilities (Gerdes & Mallinckrodt, 1994; Sedlacek & Adams-Gaston, 1992; Zea et al., 1995) with varying degrees of success, especially for ethnic minority populations (Petrie & Russell, 1995; Sedlacek, 1989).

For example, high school GPA was shown to be a significant predictor of college grades for Black and White students, but these results have been inconsistent in the literature (Young & Sowa, 1992). SAT and ACT scores have also correlated fairly well with freshman grades of White students, but these standardized tests were more moderately correlated with the freshman grades of minority students. This result is not surprising given that these tests were normed on samples of traditional White students (Sedlacek & Adams-Gaston, 1992).

Several studies have supported the view that traditional predictors of academic success are not the best predictors of performance among minority (Black) college students (Stamps, 1987). Moreover, these studies have lent support to the use of

nonintellectual, noncognitive factors as better predictors of academic success and retention for minority student populations (Sedlacek, 1987; Tracey & Sedlacek, 1988).

Noncognitive factors. According to Ting (1997), research studies employing cognitive factors exclusively to predict academic achievement in college typically had low to moderate validity, accounting for an average of 22% to 35% of the variance. This led researchers to consider other noncognitive, environmental, and psychosocial variables as potential influences on the adjustment process of college students. This was particularly true for ethnic minority students who are often forced to cope with a litany of sociocultural, developmental, historical, and psychological forces unique to their experiences as minorities (Lunneborg & Lunneborg, 1986).

Researchers shifted attention to these noncognitive factors as more valid predictors of academic achievement, especially for nontraditional populations (Sedlacek & Adams-Gaston, 1992). One result of this paradigm shift was the development of the Noncognitive Questionnaire (NCQ) (Tracey & Sedlacek, 1987), a 23-item, 8 subscale instrument designed to collect information regarding psychological, social, and cultural variables influencing college students' academic success. Sedlacek and his colleagues identified eight key noncognitive variables along which data needed to be collected. The variables were (1) self-confidence; (2) realistic self-appraisal; (3) demonstrated community service; (4) nontraditional knowledge acquired in a field; (5) successful leadership experiences; (6) preference for long term over short term goals; (7) ability to understand and cope with racism; and (8) availability of a strong support person.

Sedlacek and his colleagues (Sedlacek, 1989; Tracey & Sedlacek, 1987) used the NCQ to explore the role of noncognitive factors in college adjustment. They reported

promising findings when using these noncognitive, psychosocial variables to predict college performance for different student groups, and particularly for ethnic minorities (Ting 1997). Sedlacek reported ranges of 40% to 60% of the variance when using noncognitive variables to predict grades and retention rates for student groups such as African Americans, student athletes, international students, and for cross race comparisons (Boyer & Sedlacek, 1988; Ting, 1997). Tracey and Sedlacek later used regression to determine that noncognitive variables alone (without SAT scores) were more strongly correlated with Black student retention and graduation than SAT scores alone (Sedlacek, 1989). Reliability, validity, and normative data for the NCQ were also generated (Tracey & Sedlacek, 1989).

The NCQ studies also had their limitations. None of the studies reviewed focused on college adjustment as the outcome variable, choosing instead to focus on traditional indexes of academic achievement and success. The validity of the NCQ as a predictor of the psychosocial aspects of college adjustment is not yet known. In addition, the influence of possible a priori differences (e.g., SES, parental education, family income, etc.) among the participants was not clearly addressed in the studies reviewed. Most of the studies reviewed focused on efficacy comparisons between the NCQ and cognitive predictors without any mention of statistical control for such differences. Despite these concerns, the research contributions of Sedlacek and his colleagues to the prediction of academic achievement in minority college students cannot be overlooked.

Other researchers have also considered the dynamics of college success, and the ways in which the concept was being assessed. Outcome measures assessing levels of adjustment, adaptation, and success of college student populations have varied over the

past 25 years depending primarily on the needs of the assessor. As stated earlier, much of the past research seemed to focus on academic issues alone, without much consideration for the developmental, social, and emotional aspects of college adjustment (Zitzow, 1984). However, in the early 1980's, a downward shift in minority retention and graduation rates lead to a change in focus from specific academic achievement criteria (e.g., GPAs, SAT scores, etc.) to overall college adjustment, paving the way for the broader assessment of minority student adaptation to college (Smedley et al., 1993).

College Adjustment. Zea et al. (1995) observed that successful adaptation to college was typically defined as "remaining in college, enjoying psychological well being, and performing well academically" (p. 511). Although academic issues are of central importance to newly matriculating students, the ability to adjust to college life and maintain enrollment is affected by a number of non-academic issues, such as finances, loneliness, health, interpersonal struggles, autonomy, and change (Kaczmarek, Matlock, & Franco, 1990). College adjustment may also differ across racial and ethnic lines. For example, in African American student populations, perceived social support was an important predictor of college retention, while for White students it was less important (Mallinckrodt, 1988).

Zea et al. (1995) reported differences in college adaptation criteria, utilizing the Student Adaptation to College Questionnaire (SACQ)(Baker & Siryk, 1984) as the outcome measure, across different racial / ethnic groups while also controlling for family income and parental education. They reported that social support and active coping were significant predictors of adaptation to college. These results partially supported their first

hypothesis that satisfaction with social support, internality (locus of control), and active coping would be linked to successful adaptation to college.

The variable of internality did not contribute to the prediction model as a main effect, as was hypothesized. However, a significant interaction between ethnicity and locus of control was found. This finding partially confirmed the authors' expectation that ethnicity would moderate relationships among satisfaction with social support, locus of control, and active coping. Further analysis of the interaction between locus of control and adaptation to college between the different ethnic groups revealed significant results. For the Asian American students, greater adaptation to college was linked with externality, whereas for the Latino, African American, and White student groups, greater adaptation was linked to internality. These findings suggested that ethnicity did indeed moderate the relationship between locus of control (internality vs. externality) and adaptation to college.

Race differences in the prediction of retention and graduation rates were also reported in the literature (Tracey & Sedlacek, 1988, 1989). In two studies, African American graduation rates were better predicted by noncognitive variables such as positive self-concept, realistic self-appraisal, academic familiarity, and planfulness than the graduation rates of their White counterparts. Although these studies employed retention and graduation rates as their outcome measures instead of college adjustment, the apparent differences in outcome across racial / ethnic populations cannot be overlooked in their findings. Clearly, additional research on college adjustment in diverse student populations is needed to better account for these differences.

The Student Adaptation to College Questionnaire. As theoretical interest in college adjustment grew, assessment research focusing on the social, emotional, and developmental aspects of college adjustment, in conjunction with academic success, increased. Results of these efforts lead to the development of instruments like the Student Adaptation to College Questionnaire (SACQ) (Baker & Siryk, 1984; Baker & Siryk, 1989).

The SACQ (formerly the Student Adjustment to College Questionnaire) is based on the view that adjustment implies multiple variables (Kaczmarek et al., 1990), and thus generates five different adjustment scores. The full-scale score depicts the overall level of adaptation to college. In addition, four subscales assess four specific areas of college adjustment. An academic subscale refers to aspects of the educational demands of college, a social adjustment subscale pertains to the interpersonal-societal demands of college, a personal-emotional subscale pertains to psychological distress and somatic complaints, and an institutional attachment subscale pertains to the student's feelings of attachment to their current college (Kaczmarek et al., 1990).

To date, the SACQ has been used in a number of studies with a variety of populations, although relatively few studies have employed large numbers of minorities or student athletes in their samples. As described earlier, Zea et al. (1995) employed the SACQ as their outcome measure in examining the roles of ethnicity, psychosocial competence, and social support in the adaptation to college of an ethnically diverse group of students.

Kaczmarek et al. (1990) utilized the SACQ with an ethnically diverse group of students as they distinguished between three groups of students representing three

educational tracks: a general comparison group, a peer counseling group, and an academically marginal remedial group. Results indicated that adaptation to college was lowest on all SACQ subscales, as well as the overall adaptation scale, for the academically marginal group. No significant effects were found for ethnicity or gender. In addition, the study provided additional normative data, suggesting the instrument is appropriate for use with diverse populations.

Young and Koplow (1997) reported significant differences between White and minority respondents across two SACQ subscales in their study exploring the validity of the SACQ, Noncognitive Questionnaire-Revised (NCQR)(Tracey & Sedlacek, 1984), and cumulative college GPA as predictors academic achievement of with White, African American, and Latino college seniors. A sample of 790 college seniors (233 African American, 193 Latino, and 364 White) was recruited from a large Mid-Atlantic state university and administered the SACQ and NCQR.

Findings revealed that minority students reported significantly greater difficulty in meeting the educational demands of college than did White students. In addition, White students reported significantly higher mean scores on the academic and personal-emotional subscales of the SACQ than did their minority counterparts. The SACQ was more effective than the NCQR in predicting cumulative GPA, and also demonstrated some construct and predictive validity for older (i.e., upperclassmen) students. The authors concluded that "the prediction of minority students cumulative GPAs can be significantly improved by the addition of a self-reported measure of academic adjustment" (p. 54).

Adan and Felner (1995) used the SACQ to assess the potential affects of student race, prior interracial experience, and predominant racial characteristics of the college

setting (predominantly Black vs. predominantly White university) on adaptive outcomes (SACQ scores). The purpose of their study was to more closely examine whether prior interracial experience interacted with setting or whether these variables were independently related to college adjustment in general. To accomplish this comparison, samples of African American students from predominantly Black and White universities, and White students from predominantly White universities were gathered. The predictor variables were race, prior interracial experience, family background, and college setting. Multivariate and univariate analyses were used to assess the influence of each predictor on the outcome variables of college adjustment, anxiety, depression, self-concept, and GPA.

The results revealed that, for African American students attending predominantly Black colleges, less prior exposure to Whites and greater connection to the African American community were related to higher levels of college adjustment. Conversely, for African American students attending predominantly White universities, increased levels of prior interracial experience were related to increased levels of college adjustment.

These results suggested that race-based experiential factors such as prior interracial experience, growing up in culturally mixed communities, or participating on integrated sports teams, have direct influences on college adjustment for minority (African American) students. The authors went on to say that their findings indicated African American students at predominantly White universities would have more adaptive difficulties than their White counterparts. In addition, these findings supported the importance of person-environment fit for freshman entering college. Furthermore they suggested that specific psychosocial variables may play a key role in the college adjustment of those students who do successfully manage the transition.

In an earlier study, Graham et al. (1985) used the SACQ to explore the role of prior interracial experience in the college adjustment of Black students on predominantly White college campuses. Prior interracial experience was conceptualized by the authors as the ethnic composition of each student's neighborhood, high school, and high school friends, and was categorized as mainly Black, integrated, or mainly White. The results revealed a positive relationship between the amount of prior interracial experience and the effectiveness of adjustment for the 42 Black freshmen included in the study. Findings also revealed that their groups differentially increased college adjustment over the course of the academic year.

Only three studies, all unpublished, were located that employed the SACQ with student athletes. Davis (1988) used the SACQ to assess the efficacy of a first semester ten-week seminar aimed at coping-skill development for student athletes. In this study, the SACQ was administered at three intervals (pretest, posttest, and follow-up assessments) during the course of the seminar and thereafter. Significant changes were found in college adjustment scores from pretest to posttest, and from posttest to follow-up that were attributed to the intervention. The decrease in SACQ adjustment scores (full scale and subscales) from the posttest to the follow-up assessment was particularly large, averaging almost 23% across the four subscales. No evidence was provided that could account for such a large drop in college adjustment scores.

Elsewhere, Ratta (1994) found that members of intercollegiate athletic teams reported better adjustment to college than non-team members in all areas tapped by the SACQ, while McCartney (1992) found no differences between in-state and out-of-state

student athletes on any SACQ variables (R. W. Baker, personal correspondence, June 12, 1998).

Although most of these studies did not employ student athletes or large numbers of ethnic minority students, their findings do lend support for the use of the SACQ as an appropriate outcome measure of college student adaptation and adjustment. These studies also highlighted the need for further research on college adjustment with traditionally "high risk" student populations, such as minority students and student athletes.

In sum, both cognitive and noncognitive variables have been employed to predict college student adjustment. Although findings have been inconsistent, noncognitive, psychosocial variables have demonstrated their efficacy in the prediction of college adjustment for special populations, such as ethnic minority students, and student athletes (Sedlacek & Adams-Gaston, 1992), whereas the predictive validity of the more traditional cognitive variables within these populations has been weaker.

Psychosocial Variables Effecting College Adjustment. As interest in college adjustment grew, more research focused on the psychosocial factors influencing the adjustment of minority students. In their review of this literature, Graham et al. (1985) reported that researchers seemed primarily interested in the social aspects of adjustment to predominantly White college campuses. Other researchers seemed concerned with academic adjustment and achievement, and a few seemed to focus on personal-emotional problems. Additional research foci included college satisfaction, university climate, and drop-out behavior as indexes of college adjustment.

Brooks and DuBois (1995) examined specific individual and environmental predictors of college adjustment within a sample of fifty-six first-year students.

Predictors included background demographics (age, gender, family income), individual (personality characteristics, problem solving, and ACT scores) and environmental (life events and social support) variables. Outcome variables included the student's anticipated GPA, psychological symptoms, and the full and subscale scores of the SACQ.

Findings indicated that although individual and environmental predictors were both important, environmental variables generally did not account for as much of the variance in adjustment outcomes as the individual predictors did. Individual variables such as ACT scores, problem solving, emotional stability, and intelligence were all significant as predictors of college adjustment. In addition, certain environmental variables, such as social support and daily hassles, were significantly related to college adjustment and symptomology respectively.

Although the growing literature on the psychosocial aspects of minority college adjustment is encouraging, more research on psychosocial factors potentially influencing minority college adjustment is needed in order to better understand the perspectives and experiences of this special student population. Indeed, continued expansion of this literature is necessary in order to implement effective interventions for supporting and nurturing these students.

Models of Minority College Adjustment. Based on such thinking, several authors have proposed models for explaining the interactions between environmental, social, and psychological factors in college student adjustment. Two such models, Smedley et al. (1993) and Solberg, Valdez, and Villarreal (1994), are specific to the college adjustment processes of minority students at predominantly White universities.

Smedley et al. (1993) proposed a multi-dimensional stress-coping model drawing upon different socio-cultural factors theorized as integral to the college adjustment of minority students attending predominantly White universities. The purpose of the study was to ascertain whether the hypothesized minority status stresses conferred an additional risk for poor college adjustment in minority students. In addition, the Minority Status Scale (MSS), developed for this study by the authors, was introduced.

One hundred and sixty-one minority students (Chicano, African American, Latino, and Filipino) filled out questionnaires assessing their background demographics, stress levels, levels of psychological distress, well-being, and academic achievement (GPA). Findings revealed significant between ethnic-group differences for the amount of minority status stress reported. Post-hoc analysis revealed that African American students reported significantly higher mean stress levels than the other ethnic groups. In addition, minority status stresses, operationalized as scores on the MSS, had a significant effect on general well-being, psychological distress, and GPA.

The findings lent support to the contention that minority status stresses would confer an additional burden of stress for minority students. The authors went on to state that "the effects of minority status stresses on well-being may be mediated by factors that help to maintain minority students' self-esteem and sense of positive health" (p. 448). These conclusions provide some support for the current study's examination of the moderating role of athletic participation and athletic identity on minority college adjustment.

Solberg et al. (1994) explored a theorized link between social support, stress, cultural pride, and college adjustment in Latino students. A diathesis-stress model of

Latino college adjustment was also proposed. Diathesis-stress models posit that mental health functions as an interaction between the levels of situational stress experienced, and individual or particular background characteristics. These background characteristics are expected to minimize or "buffer" a person from the negative effects of stress (p. 231). In their study, cultural pride and social support were the background characteristics believed to moderate the effects of stress on the college adjustment of Latino freshman and sophomores.

Although significant relationships between the predictor and outcome were observed, no significant moderators of the relationship between stress and adjustment were found. With all variables in the model, cultural pride, social support, stress, and the interaction of social support and stress accounted for 59% of the variance in college adjustment. In addition, social support proved to be directly related to college adjustment, with higher perceived availability of social support being related to higher adjustment scores. However, cultural pride was not directly related to college adjustment and the interaction of social support and stress was not significant. The authors therefore concluded that the diathesis-stress model of college adjustment was not supported.

Conceptually, the Solberg et al. (1994) study strengthened the rationale for the current study by lending support for further research in the areas social support and minority college adjustment. Although the results of their study revealed the importance of social support as an influential factor in the college adjustment of Latino students, the current study examined the importance of athletic participation, a specific form of social involvement and support, as an influential factor in the adjustment of minority students.

Summary. The college adjustment literature has only begun to explore the adjustment experiences of minority college students and student athletes. Although early research on cognitive and academic variables helped identify some important influences on college adjustment, these studies often yielded inconsistent findings and did not examine other social, emotional, and environmental forces that may be at work. This seemed especially true for minority students who often experience college as alienating and isolating when compared to their White counterparts. Subsequent research on noncognitive factors seemed to account for a greater percentage of the variance in college adjustment of minority students, resulting in the conceptualization of college adjustment as a multidimensional construct, not strictly an academic one. The development of assessment instruments along with specific models of minority college adjustment have set the stage for more in depth research into the college adjustment of specific minority populations, as well as specific populations within minority groups, such as student athletes.

Athletic Participation

Academic Adjustment and Achievement. Studies exploring the college adjustment experiences of student athletes are relatively few in number. Those that do focus on student athletes typically consider academic success rather than overall college adjustment as outcome variables (Ervin et al., 1985; Kiger & Lorentzen, 1988; Lang, Dunham, & Alpert, 1988; Petrie & Russell, 1995). Results generally reveal that minority student athletes tend to have lower grades, higher attrition rates, and lower graduation rates than majority student athletes (Adler & Adler, 1985; Siegel, 1996).

Several studies have addressed other factors involved in college adjustment and achievement. Kiger and Lorentzen (1988) found student athletes to be different from non-athletes on a variety of academic variables. Student athletes reported lower mean GPAs, lower ACT scores, and lower high school GPAs. In addition, student athletes were more likely to be placed on academic probation. The authors attributed some of these differences to academic unpreparedness and role conflict. For instance, they noted that, "If an athlete does not do well in the classroom, it is not unreasonable that he or she might turn to athletic participation as a way to gain status and maintain self-esteem and a positive self concept. This seems particularly true for male athletes, minority student athletes, and participants in revenue producing sports" (p. 292). Recommendations were made for special academic programs geared towards minority student athletes to help compensate for their poor academic performance in their study.

Ervin et al. (1985) found that, although the Black student athletes in their sample maintained higher high school GPAs than their White counterparts, Black SAT scores, number of high school courses completed, and college freshman GPAs were lower. The authors later discussed the possibility that placement of Black athletes into academically less challenging courses at the primary and secondary school levels set the stage for the academic struggles encountered in college. The ethics of such academic exploitation of Black athletes by competitive academic institutions was called into question by the authors.

Predictors of academic success for student athletes were another area of focus in the college adjustment literature. Sedlacek and Adams-Gaston (1992) examined the efficacy of noncognitive variables as predictors of academic success in student athletes.

Their results indicated that noncognitive variables, as measured by scores on the Noncognitive Questionnaire (NCQ) correlated with first semester grades for student athletes, while SAT scores did not. The authors also found that student athletes resembled other "nontraditional" student groups (e.g., Blacks, women, or other groups susceptible to discrimination) in their response patterns and may therefore benefit from programming geared towards improving their understanding of the effects of discrimination.

Young and Sowa (1992) used the NCQ to predict the academic success of Black student athletes at a predominantly White university. Cognitive (SAT scores, high school class rank, and high school grades) and noncognitive (NCQ full and subscale scores) variables were utilized as predictors. College GPA and credits earned, by semester and cumulatively by year, were utilized as outcome variables.

Results indicated that use of cognitive or academic variables alone to predict academic success for Black student athletes was questionable since very little of the variance in academic success was accounted for by these variables. High school grades were the only cognitive variable to significantly predict academic success. Self-concept, long-term goals, knowledge acquired, and understanding racism were significant noncognitive predictors. The authors recommended using cognitive and noncognitive variables together to better predict academic success for this population.

Petrie and Stoever (1997) examined the efficacy of academic and nonacademic predictors of academic performance in female athletes. In contrast to the previous studies, their results indicated that SAT scores were consistently related to fall and spring GPAs for the freshmen and upper class female student athletes. Furthermore, social support was

a significant predictor of academic performance for freshmen female athletes only. Unfortunately, no between ethnic-group comparisons were made (their sample was 85% White) making it difficult to assess how much of the variance in GPA was accounted for by the minority student athletes' SAT scores. The authors recommended that future studies include gender, race, year in school, and sport affiliation, as potential moderators of academic performance. This study also provides support for the inclusion of gender as a variable in the current study.

In addition to academic adjustment and performance issues, the literature has also generally revealed that minority student athletes have difficulty negotiating developmental and athletic demands in the university setting (Parham, 1993). Researchers frequently point to the lack of institutional support (Parham, 1996), the exploitive nature of athletic programs (Edwards, 1983), and the social unpreparedness of many minority student athletes as some of the underlying causes of these trends (Adler & Adler, 1985). Minority students and student athletes have been referred to in the literature as "high risk" populations in need of specialized interventions designed to improve academic adjustment (Russell & Petrie, 1993).

Although the academic achievement literature encompasses a range of theoretical and empirical studies, several inconsistencies exist. First, while there is evidence that student athletes graduate at rates lower than their non-athletic peers (Adler & Adler, 1985; Kiger & Lorentzen, 1988), this effect was not consistent across all studies, nor when examining the within-ethnic group data. As stated earlier, Siegel (1996) reported that African American male student athletes graduated from college at rates 6% higher than their non-athletic African American male peers from predominantly White Division I

institutions. Although both rates of graduation (Black athletes and non-athletes) were 20% lower than their White peers, the differences in Black athlete versus non-athlete graduation rates suggest that sport participation may have played a role in the college adjustment of minority (African American) students. This finding was particularly intriguing because it was the only study among all of the studies reviewed to explore within-ethnic group differences in graduation rates.

Other graduation rate research revealed intriguing findings as well. The National Collegiate Athletic Association (NCAA) has participated in on going graduation rate research since the implementation of higher initial-eligibility standards in 1992. Its most recent graduation-rate summary (NCAA, 1999) was based on student athletes who enrolled as freshman, received athletic scholarships, and who graduated within six years of initial enrollment. The 1999 summary revealed that student athletes entering in 1992 were graduating at rates slightly higher than student non-athletes of the same racial and gender groups.

Several NCAA findings lend support to current study. For example, Black male student athletes graduated at a significantly higher rate than their counterparts in the overall student body, with a graduation rate of 40% compared to 31% for the general Black student body. In addition, Black female athletes revealed the largest difference in graduation rates between athlete and non-athlete groups, graduating at a rate 12% higher than the general Black female population (53% versus 41%, respectively). Finally, White female athletes entering college in 1992 graduated at rate a rate 10% higher than the White female student body. (71% versus 61%, respectively). However, the news is not

entirely positive. Black male and female basketball players revealed decreased graduation rates when compared their peers attending college from 1985 to 1991.

Earlier research demonstrated a positive relationship between athletic participation and academic adjustment. In their review of the literature, Kiger and Lorentzen (1988) stated that, "the tenor of these studies indicated a qualified positive relationship between athletic participation and academic orientation (adjustment) in high school student athletes" (p. 288). The authors later stated that the magnitude of this relationship varied according to a number of other variables associated with academic performance, such as social class, gender, race, and degree of involvement with athletics.

Ryan (1989) examined the affective outcomes of intercollegiate athletic participation and concluded that athletic participation was positively associated with overall satisfaction with the college experience, motivation to earn a degree, and the development of interpersonal and leadership skills. He went on to state that, while the negative stereotypes concerning the exploitive nature of intercollegiate athletics may have their basis in fact, intercollegiate sport participation is a generally positive experience for students.

In sum, although much of the literature indicates that student athletes generally do not fair as well academically as their non-athletic counterparts, there are some studies that suggest otherwise. Minority athletes seem to be graduating college at rates higher than their non-athletic peers, suggesting that athletic participation may have some positive effects on student athletes and their adjustment to college. Minority students, whose experiences on college campuses are often marked by isolation, may find these effects offset somewhat by collegiate athletic participation.

Minority Student Athletes on Campus. Athletics is an integral part of the college experience at campuses across the country. As spectators or participants, many students derive a sense of pride and loyalty to their universities through involvement with the local sport culture. Furthermore, athletic participation at the collegiate level is often the pinnacle of the sports career for many student athletes.

Admittedly, participation in collegiate sport can also place student athletes at greater academic risk. According to Morrissey (1995), student athletes are at higher risk for experiencing psychological distress and developmental crises than the general student population. This may be due to the fact that athletes are often isolated from the rest of campus, and are not given the same opportunities for autonomy as non-athletes. Since social acceptance and autonomy are typically key developmental goals for adolescents, this does not bode well for the college adjustment of student athletes.

The issue becomes more problematic for minority student athletes. These athletes' (particularly African Americans) experiences on college campuses are truly unique from any other college population (Parham, 1996). Hill (1993) speaks of "minority athletes as a special population within a special population, the differentiating element being the racial / ethnic minority factor." He goes on to state that "the effects of being a minority athlete in America must be considered when using [therapeutic] approaches....because one size does not fit all" (p. 438).

Although minority athletes are often treated as valued and respected representatives of a university community, this recognition is often fleeting. When triumphant on the field, they are often the focus of admiration and even idolatry. Unfortunately, minority students athletes are often the victims of prejudice from White

students, faculty, and non-athletic minority students as well (Engstrom & Sedlacek, 1991; Engstrom, Sedlacek, & McEwen, 1997; Melendez, 1991). They are often viewed as academically less capable, as beneficiaries of athletic scholarships, and as students whose sole reasons for being in college is to play their sport. This often leaves minority student athletes feeling isolated, misunderstood, and unsupported (Melendez, 1991; Parham, 1993; Young & Sowa, 1992). Student athletes also tend to underutilize professional mental health services in college, such as psychotherapy and vocational counseling, although they experience much more psychological distress than non-athletes (Pinkerton, Hinz, & Barrow, 1989).

In addition, stereotypes regarding the academic abilities of student athletes in general, and minority student athletes specifically, can be particularly problematic (Burke, 1993). Engstrom et al. (1997) assessed 126 faculty members at a major research university regarding their beliefs about student athletes. Their results revealed that faculty members held prejudicial and stereotypical beliefs about revenue and non-revenue student athletes. Of particular interest were reports of disdain and anger toward athletes because of the perceived "special privileges" afforded to them, and negative faculty beliefs about student athletes' academic abilities.

In an earlier study, Engstrom and Sedlacek (1991) found that freshman students perceived student athletes negatively, particularly in the area of academic competence. The authors later recommended that student athlete culture be considered as susceptible to prejudice and discrimination as any other typically stereotyped groups on college campuses. Similar sentiments have been expressed elsewhere in the literature (Parham, 1996).

Poor relationships among non-athletic peers can also negatively effect college performance of student athletes. Lewis (1993) explored factors influencing academic performance by surveying social and demographic predictors among 220 Division I student athletes. Key findings revealed that lower satisfaction with interactions involving other students had a negative effect on academic performance in student athletes. This relationship continued to exist after controlling for the background variables of gender, race, and high school rank. SAT scores were also significantly related to academic performance with student athletes. Given these results, the author concluded that administrators and professors should endeavor to improve the social environment of student athletes while attending college.

However, participation in college sports also offers certain benefits for ethnic minorities that many minority student non-athletes never reap. The recognition and celebrity of being a college athlete often helps many students to feel connected and valued by their institutions. In addition, the opportunity to be part of a team, with unified goals, aspirations, and expectations, often creates an atmosphere of inclusion and support for those involved (Adler & Adler, 1991).

Sellars and Damas (1996) described the college lives of minority (African American) student athletes as being "somewhat rewarding" (p. 70). They stated that (African American) student athletes were provided with a number of opportunities for personal growth due to their status as athletes. These opportunities included the development of social skills, opportunities for travel, and a chance to become more assertive. Moreover, African American student athletes, in general, reported having

adequate levels of social support, and did not report a great deal of alienation or racial tension.

In sum, although college athletes acquire a certain level of prestige and status on campus by playing a sport, they are also frequent victims of negative stereotypes and prejudice. Still, for many student athletes, and especially for minority student athletes, sports teams provide greatly needed opportunities for growth, development, and social support that their non-athletic peers may not receive.

Impact of Athletic Participation. Taken together, these studies form part of the rationale for the current study. Although the literature generally reveals a negative relationship between athletic participation and academic achievement for student athletes, a case can be made in support of the psychosocial, emotional, and developmental benefits of athletic participation, particularly for minority student athletes. Collegiate sports teams may function as social compensatory mechanisms, thus helping minority student athletes to achieve higher levels of social acceptance, self-esteem, and eventually college adjustment and retention not as easily attained by their non-athletic minority brethren. Further research into the effects of athletic participation on the college adjustment of minority student athletes is needed to better understand these dynamics.

Little research into the positive social and developmental influences of athletic participation on minority college students has been conducted, thus reinforcing the perception of collegiate athletics as destructive, exploitive, and problematic for many of the minority student athletes involved. Research findings detailing the benefits of athletic participation for college students are often overlooked.

In a study comparing college athletic participants and non-participants on reported levels self-esteem, Taylor (1995) determined that athletic participation was one of several factors that lead to increased levels of self-esteem for college students. Although athletic participation did not prove to be a significant predictor of self-esteem on its own, several between group comparisons (athletic participants versus nonparticipants) narrowly missed reaching statistical significance. Taylor stated that "these finding suggest athletic participation had a positive effect on self-esteem (and) may be one of many college activities that contribute to a cumulative positive effect on a student's psychosocial development" (p.449).

Other research on athletic participation has revealed such benefits as increases in social involvement in college, development of interpersonal and leadership skills, increased satisfaction with college, increased motivation to achieve a degree, and the mastery of transferable skills (Danish, Petitpas, & Hale, 1993; Taylor, 1995). In addition, African American student athletes reported that their athletic status provided somewhat of an advantage in their personal development, and that they were more satisfied than dissatisfied with their lives (Sellars & Damas, 1996)

Collectively, these studies suggest that athletic participation may contribute to individual social and emotional development. Parham (1993) described the psychosocial benefits of athletic participation as follows: "Involvement in athletics seems to satisfy several basic human needs, including those having to do with success, approval, validation from others, recognition, and feeling a part of someone or something" (p. 417). For minority student athletes, this may be particularly important because of their experiences with racism and prejudice in society, and higher education (Spigner, 1993). Athletic teams

can help provide a culture within the university community that can be accepting and understanding of their unique perspectives. Furthermore, in an environment in which a healthy cultural paranoia towards the majority culture is often a learned defense for people of color (Grier & Cobbs, 1968; Thompson, Neville, Weathers, Poston, & Atkinson, 1990), subcultures in which trust, belonging, and acceptance are fostered can promote healthy development and adjustment.

Athletic Identity Development

The athlete role. How strongly individuals invest or identify themselves with the athlete role has been a recent focus of study within the sport psychology literature. However, concepts such as athletic identity have not been adequately researched as key variables in the college adjustment process. Athletic identity is defined as the degree to which an individual identifies with the athlete role. Athletic identity is presumed to be a function of cognitive, affective, behavioral, and social factors. According to Brewer et al. (1993), in its narrowest sense, athletic identity refers to a cognitive structure or self-schema, guiding and organizing self-related information processing. In its broadest sense, athletic identity refers to a social role or occupational self-image. Due to its social aspects, the extent to which one identifies as an athlete may be strongly influenced by family members, friends, coaches, teachers, and the media (Simons, Van Rheenan, & Covington, 1999). This influence may be reciprocal, as strongly athletically identified individuals may also influence their social networks.

Much of the literature on the academic achievement and college adjustment of student athletes fails to fully consider the developmental, psychological, and social aspects of athletic participation. Athletic participation has been theorized to influence

psychosocial development in general (Cornelius, 1995; Morrisey, 1995; Taylor, 1995), and may similarly influence college adjustment. The role of the student athlete and the athletic subculture is typically overlooked as key a developmental force on the college campus.

According to Brustad and Ritter-Taylor (1997), athletic subcultures exist when team members share common beliefs that distinguish members from the mainstream culture. Memberships in athletic subcultures often serve to reinforce collective values, beliefs, meanings, attitudes, rituals, language, and behavioral expectations for group members. These common perspectives have practical value because they serve to connect members of a subculture to each other and distinguish them from outsiders in society, or in other realms of sport (Nixon, 1992). However, this connection can be a double-edged sword for athletes who often look to the athletic subculture as the exclusive model for acceptable behavior.

For example, Adler and Adler (1991) reported that many college basketball players in their sample were ridiculed by teammates for studying and achieving good grades due to an anti-intellectual stance within that particular athletic subculture. This resulted in a role conflict between the academic and athletic roles for these players. The conflict was later resolved when players began to overidentify with the athletic role, to the exclusion of other academic and social roles. Unfortunately, such overidentification with the athlete role may serve to hinder college adjustment, and especially academic adjustment, for this population.

To date, there has been little research examining the role of athletic participation in college student development. Astin (1993) discussed the importance of sport involvement in his study on the influential factors of the college experience. He reported that more

hours per week of exercise and involvement in intramural sports were related to better physical and emotional health, development of leadership skills, growth of interpersonal skills, and fewer reports of feeling overwhelmed. Ryan (1989) reported similar findings.

Other studies, however, did not support a positive link between sport participation and college student development. Sowa and Gressard (1983) found varsity athletes to be significantly lower than their non-athletic peers on the accomplishment of specific developmental tasks, such as making educational plans, career plans, and the establishment of mature relationships with peers.

One important distinction between the Astin (1993) and Sowa and Gressard (1983) studies centered on the samples employed. Astin's inclusion criteria focused on simple participation versus nonparticipation in sports, regardless of level (intramural, club, etc.), whereas Sowa and Gressard specifically focused on varsity athletes versus non-athletes (Cornelius, 1995). This distinction seemed to be one of degree or level of athletic participation since varsity athletes typically dedicate more time and energy to their sports than do other athletes on college campuses. This suggests a differential relationship between the degree of athletic participation and college student development may exist. The level of physical and emotional investment in college sport may serve as a moderator for college adjustment.

Brewer et al. (1993) examined the construct of athletic identity within the framework of multidimensional self-concept theory. The authors stated that "the importance given to a specific self-concept domain determines the extent to which perceived competence in that domain influences self-esteem, affect, and motivation. Incompetence in a domain of low-perceived importance is unlikely to have an impact on

self-esteem, whereas incompetence in a domain of high-perceived importance can profoundly affect feelings of self-worth" (p. 238). Individuals who are athletically identified seem to place sport in the domain of high-perceived importance.

Assessment of athletic identity. The Athletic Identity Measurement Scale (AIMS)(Brewer et al., 1993) was designed to assess both the strength and exclusivity of identification with the athlete role. Supportive validity, reliability, and factor structure data was generated for the AIMS in three separate studies, utilizing three separate college student and student athlete samples. In addition, factor analysis revealed athletic identity to be a unidimensional construct. The authors concluded that the 10-item AIMS was a stable and reliable instrument that also exhibited some convergent and discriminant validity.

Cornelius (1995) placed the athlete role within the framework of multidimensional self-concept theory, stating that psychological identity as an athlete has been conceptualized as one domain of a multidimensional self-concept. He further asserted that "having 'athlete' as a central and salient dimension of the self-concept influences social relationships, the activities one seeks, and the way one's experiences are processed." He concluded that, "it is reasonable to postulate that psychological identification with the athlete role may be related to psychosocial developmental considerations" (p. 561).

Cornelius presented a model of college student developmental task accomplishment utilizing athletic identity (AIMS) and specific socialization factors (faculty and peer interactions) as predictors. Outcome variables consisted of three developmental task scales of the Student Developmental Task and Lifestyle Inventory (Winston, Miller, & Prince, 1987) and their respective subscales. The three developmental task scales

assessed (1) the establishment of a clarifying purpose (PUR), (2) the development of mature interpersonal relationships (MIR), and (3) academic autonomy (AA) of the participants. The sample was comprised of 228 undergraduate students who were involved with recreational athletics. Varsity athletes were excluded from the sample.

Results indicated that the AIMS significantly, although modestly, correlated with the life management (LM) subtask of the PUR developmental task scale. This was the only significant relationship reported in the model. The life management subtask was associated with successful management of time, relationships, and obligations without extensive support from others. In his discussion, Cornelius suggested that individuals reporting strong athletic identities must develop stronger life management and organizational skills in order to participate in their sports and related activities. This crossover of skills may equip student athletes to better plan and manage their lives as college students, in turn easing their adjustment to college. Although causation cannot be established from the data, these results point to the importance of sport involvement on college student development. However, in his conclusions, the author emphasized that athletic participation by itself was not associated with enhanced progress on developmental tasks, "but psychological identification with the role of athlete seemed to be the important factor" (p. 572).

Murphy et al. (1996) utilized the AIMS in a study to examine interrelationships between the variables of athletic identity, identity foreclosure, and career maturity in a sample of 224 student athletes at a Division I university. Identity foreclosure refers to making role commitments without engaging in exploratory behavior, while career maturity

refers to the exploratory and decision-making processes involved with career identity development.

Findings revealed that, as hypothesized, athletic identity and identity foreclosure were significantly and negatively related to career maturity. Three separate exploratory MANOVAs revealed significant multivariate effects for gender, playing status (varsity vs. nonvarsity), and sport status (revenue producing vs. nonrevenue producing) on identity foreclosure, athletic identity, and career maturity. Univariate analyses showed that women reported significantly higher career maturity scores than men. In addition, varsity athletes reported significantly higher identity foreclosure and athletic identity scores than non-varsity athletes. Non-varsity athletes, however, reported significantly higher career maturity scores than varsity athletes. Finally, athletes in revenue producing sports reported significantly higher identity foreclosure scores, and significantly lower career maturity scores than athletes in non-revenue producing sports.

The authors concluded that, "the physical and psychological demands of intercollegiate athletics, coupled with the restrictiveness of the athletic system, may isolate athletes from mainstream college activities, restrict their opportunities for exploratory behavior, and promote identity foreclosure" (p. 240). This may be especially true for minority athletes who historically perceive sport as one of the few avenues to upward mobility (Sellars & Kuperminc, 1997).

In a similar study, Brown and Glastetter-Fender (1999) explored relations between career decision-making self-efficacy, career locus of control, identity foreclosure, and athletic identity among 189 college student athletes. The AIMS was employed along with measures of locus of control, career decision-making self-efficacy, and identity foreclosure

status. Multivariate results revealed no significant gender effects for any of the career and self-identity variables. Correlational analyses revealed that hours of sport participation, identity foreclosure, and career locus of control were inversely related to career decision-making self-efficacy. However, no significant correlation between athletic identity and career decision-making self-efficacy was observed. Equally surprising, no significant relationship between athletic identity and identity foreclosure was observed. The authors went on to suggest that low self-efficacy for career decision-making was associated with extensive hours in sport participation, failure to explore alternative roles, and the belief that career outcomes were unaffected by decision-making tasks.

Brewer (1999) reviewed five years of athletic identity literature to determine what factors influenced, and were influenced, by athletic identity. Several important trends in the research were revealed that lend support to the current study. Gender differences in AIMS scores were reported in many studies, although these differences seemed to decrease at the higher (elite) levels of athletic activity. Age differences were also reported. Athletic identity seemed to decline with maturity and exposure to life experiences. Finally, race differences were reported, with African American student athletes reporting lower athletic identity scores than their Caucasian counterparts. The author went on to state that athletic identity might be less salient than other identities for African American student athletes. In turn, sport might serve a more functional purpose (e.g., as a vehicle for receiving a college education) for African American athletes than for Caucasians. In other studies, cross-cultural comparisons revealed inconsistent findings.

Although these studies suggested that athletic identity may play a role in psychosocial development and adjustment of student athletes, they have their limitations.

Few of the studies reviewed in this section conducted any racial / ethnic group comparisons regarding athletic identity. Moreover, none of the studies reported the racial / ethnic breakdowns of their samples. This seemed curious in light of NCAA statistics revealing that minorities (particularly African Americans) made up a much larger percentage of the student athlete population than the college student population (Siegel, 1996). In addition, no studies were found employing both college adjustment and athletic identity as variables. This may be partly due to the fact that athletic identity is a novel concept, and that the AIMS is a recently developed instrument.

Finally, the concept of athletic identity as a unidimensional or multidimensional concept is still under debate. Although Brewer et al. (1993) originally viewed athletic identity as a unidimensional construct, other researchers have proposed multidimensional models of athletic identity. More extensive psychometric research differentiating between the unidimensional and subsequent multidimensional models of athletic identity are needed before the AIMS proves useful for personality research in sport (Hale, James, & Stambulova, 1999; Martin, Eklund, & Mushett, 1997).

Summary. College adjustment has evolved theoretically from a concept emphasizing academic performance to a multidimensional concept comprised of social, psychological, academic, and developmental influences. Early research however focused primarily on the academic and cognitive factors, often overlooking potential noncognitive, developmental, and social influences. In addition, special populations, such as minority students and student athletes, face challenges unique to their college adjustment experiences and often report feelings of isolation, disillusionment, and academic difficulty. Although the current literature suggests that student athletes seem to struggle

academically, much less is known about the social and emotional adjustment of this population. Athletic participation may play a positive role in the college adjustment of this student population by providing positive social, emotional, and developmental experiences. However, overidentification with the role of athlete can prove troublesome for student athletes. Athletic identity may be a double-edged sword, maintaining a nonlinear relationship with college adjustment. The current study more closely examined these theorized links among ethnic status, athletic participation, athletic identity, and college adjustment.

Definitions

A number of terms and concepts needed to be operationally defined. First and foremost was the outcome variable of "college adjustment", which was operationally defined as scores on the Student Adaptation to College Questionnaire (Baker & Siryk, 1989). The four SACQ subscales each served as dependent variables in the current research design.

Second, the terms "minority" and "majority" were used to define the categories within the "ethnic status" variable in the current study. Minority was used to operationally define students self-identifying as members of a non-majority, racial, ethnic, or cultural group in the United States. Any individuals identifying as Black or African American, Asian, Asian American, or Asian Indian, Indian or Native American, or Hispanic or Latino, or any subgroup of these categorizations, were included in the minority group. In addition, Caucasian individuals self-identifying as members of another, non-American, non-majority culture were defined as minority for the purposes of this study (e.g., a French Canadian student born and raised in Quebec). Conversely, White and / or majority was

used to operationally define students not meeting the criteria for minority, and / or self-identifying as White. In the event a student met multiple criteria for race and / or ethnicity (e.g., Black Latino or bi-racial student), the student's preferred self-identification served as the critical inclusion criteria.

Third, the predictor variable of "athletic participation" was operationally defined as participation in a university sanctioned varsity level sport in a NCAA Division I or IAA athletic program. Male and female athletes, scholarship and non-scholarship athletes, and athletes participating in major revenue and non-revenue producing sports have all been included in this study. The sports included men's football, basketball, baseball, ice hockey, soccer, tennis, crew, lacrosse, wrestling, and track and field. Women's basketball, soccer, softball, ice hockey, field hockey, crew, gymnastics, lacrosse, tennis, and track and field were also included. These sports were chosen because they all demanded major commitments of time and effort and all provided scholarships for their athletes. In addition, many of these sport teams were usually comprised of diverse groups of student athletes. Club sports were not included, as they are not typically sanctioned by their home institutions. Junior varsity and intramural sports were also excluded because the focus of these programs is typically participation and recreation, not competition. Furthermore, club, junior varsity, and intramural programs are usually voluntary, while varsity programs require mandatory participation and greater levels of commitment.

Fourth, the term "student" in this study was defined as an individual enrolled with a full-time academic course load (typically four or more classes). Since NCAA regulations prohibit part-time students from participating in varsity athletics, participants who met the athletic participation criteria automatically met the student criteria.

Fifth, the term athletic identity in this study was operationally defined as scores on the Athletic Identity Measurement Scale (AIMS; Brewer et al., 1993).

Hypotheses

In the current study, several hypotheses related to the variables and population samples in question were tested. First, hypotheses concerning predicted main and interaction effects among the variables of ethnic status and athletic participation on college adjustment within the total sample are presented. Second, hypotheses concerning predicted relationships among gender, ethnic status, and athletic identity within the student athlete sample are presented.

Main effects. Hypothesis 1 states that ethnic status should significantly predict college adjustment for the total sample. More specifically, majority students should report higher adjustment scores across the four SACQ subscales than minority students. This hypothesis is derived from findings in the literature regarding lower graduation and retention rates among minority students compared to their majority peers (Astin, 1982; Padilla et al., 1997; Siegel, 1996; Zea et al., 1995). Hypothesis 2 states that athletic participation (athlete status) should significantly predict college adjustment. In particular, student non-athletes should report higher scores on the academic, social, and personal-emotional subscales of the SACQ than student athletes. However, student athletes are hypothesized to report higher scores on the institutional-attachment subscale than non-athletes. These hypotheses were derived from findings in the literature regarding lower academic performance of student athletes compared to their non-athletic peers (Ervin et al., 1985; Kiger & Lorentzen, 1988; Ryan, 1989), and increased satisfaction with college

and feelings of inclusion for student athletes compared to non-athletes (Danish, Petitpas, & Hale, 1993; Parham 1993; Taylor, 1995) .

Although gender has revealed significant effects as a predictor of college / academic adjustment for students and student athletes elsewhere in the literature (Kiger & Lorentzen, 1988; Smallman et al., 1991; Snyder, 1996), no hypotheses regarding gender were presented in the current study due to the primary focus on predicted ethnic differences.

Interaction effects. In addition to the main effect hypotheses presented above, interaction / moderator hypotheses were also being presented. Hypothesis 3 states that athlete status should significantly interact with ethnic status to predict college adjustment scores. More specifically, minority student athletes should report higher scores than minority student non-athletes on the social, personal-emotional, and institutional attachment subscales of the SACQ. No significant differences on the academic adjustment scores of minority student athletes and non-athletes are predicted.

A significant interaction of this type would indicate that athletic participation moderates the effects of ethnic status on college adjustment. The resulting college adjustment slopes for minority student athletes and non-athletes should be clearly intersecting, with minority student athletes showing increases in college adjustment scores and minority student non-athletes showing the opposite pattern.

In this moderator role, athletic participation would help buffer minority student athletes from many of the negative social and psychological experiences common to minority students on predominately White college campuses (Sedlacek, 1987). This hypothesis is based on findings in the literature indicating that athletic participation may

positively influence college experiences and graduation rates for minority student athletes (Pascarella & Smart, 1991; Siegel, 1996).

Within athlete sample effects. In addition to main and interaction effect hypotheses within the total sample, relationships among variables within the student athlete sample are also predicted. Hypothesis 4 states that ethnic status should significantly interact with athletic identity to predict college adjustment within the student athlete sample. In particular, majority student athletes reporting higher athletic identity scores should report lower adjustment scores across each of the four SACQ subscales, whereas minority student athletes reporting higher athletic identity scores should report higher adjustment scores across each of these indexes of college adjustment.

A significant interaction would indicate that the athletic identity moderates the effects of ethnic status on college adjustment. The resulting college adjustment slopes for minority and majority student athlete groups should thus intersect, with majority athletes reporting higher levels of athletic identity showing decreases in college adjustment, and minority athletes showing the opposite pattern across the four SACQ subscales.

Therefore, as a moderator, athletic identity would play a dual role within the student athlete sample. For majority student athletes, high levels of athletic identity would hinder college adjustment due to the potential for overidentification with the athlete role resulting in identity foreclosure (Brewer, 1999). For minority student athletes, high levels of athletic identity would serve as a buffer against many of the negative social and psychological experiences encountered on predominately White college campuses (Sedlacek, 1987).

CHAPTER III

METHOD

This chapter will describe the sample recruitment procedure, final sample, and data collection, followed by a detailed review of the measures employed in the current study. Finally, the research design will be detailed, followed by the data analysis procedures.

Participants and Procedures

Student athlete recruitment. Student athletes were recruited by contacting athletic directors, coaches, advisors, and other administrators within the athletic departments of three participating universities. A fourth university did not meet the athletic eligibility criteria and was therefore excluded from student athlete recruitment in the current study. Recruitment and survey administration took place during the second (spring) semester of the 1999-2000 academic year. The purpose of the proposed study was explained, as well as the potential benefits of participation for the athletic department. For example, one identified purpose was to generate recommendations for support programs and clinical interventions geared towards student athletes. A secondary goal was to improve the adjustment and retention rates for student athlete populations. Recruitment was negotiated with those administrators and coaches expressing an interest in participation.

Several strategies were used to recruit individual athletes. Whenever possible, whole teams were recruited as participants. In addition, departmental events, such as orientations, study halls, team meetings, and workshops were targeted as recruitment and data collection opportunities. Survey packets were administered onsite by the principal investigator at these events. A small number ($n < 10$) of surveys were administered by an athletic department official at one university acting on behalf of the principal investigator.

Participants were asked to take part in a study exploring how student athletes adjust to college life.

Access to student athlete records was negotiated before data collection. Student athlete academic records were obtained from each participating university, or from the NCAA when not otherwise available. Due to the access limitations placed on student records at one participating university, individual SAT scores and high school GPAs could not be obtained for this study. Therefore, at each university academic records consisted of group-mean high school GPAs and mean SAT scores of entering classes of freshman athletes from 1994-1999. These scores were used as estimates of the mean high school GPA and SAT scores for the current class of student athletes (1999-2000). No individual academic records were employed at any point in this current study. Permission to access records was secured from the participants via an informed consent form (Appendix B).

Non-athlete recruitment. Non-athletes were recruited through a similar strategy. Participants were recruited from undergraduate classes and freshman residence halls at each of the four universities participating in the study. Access to students was negotiated through university instructors and administrators, and through the Office of Residence Life. Flyers were also posted in residence halls offering a $50 cash prize for participation in a research study (Appendix A).

Data collection entailed distributing survey packets in undergraduate courses and in campus residence halls. Specific attention was given to classes in which student athletes were frequently enrolled. Approximately 75% of the surveys were administered onsite by instructors in their classes, or advisors in study halls, or other academic settings. Approximately 25% were administered in the residence halls by resident assistants (RAs)

acting on behalf of the principal investigator. All participants were asked to take part in a study exploring how students and student athletes adjust to college life. Completed surveys and consent forms were then returned to the principal investigator.

Access to non-athlete student records was negotiated through key gatekeepers at each participating university before data collection. Gatekeepers occupied high-level administrative positions (e.g., Asst. Dean of Students, Counseling Center Director, and University Registrar) at their respective universities, and all had the power to grant access to student records. As with the student athlete sample, group-mean high school GPAs and mean SAT scores were employed as estimates of obtained sample scores. However, for the non-athlete sample, group means for the current class of freshman and sophomores (1999-2000) were obtained. Permission to access records was secured from the participants via an informed consent form (Appendix C).

Only non-athlete participants were eligible for a random prize drawing of $50 in exchange for their participation. NCAA regulations forbade student athletes from participating in such prize drawings, and they were therefore excluded.

Final Sample. The final sample consisted of 207 freshmen and sophomores (97 males, 110 females) recruited from predominantly White universities in the Midwest and on the East Coast. All were asked to participate in a study of "how students and student athletes adjust to college". The final sample comprised 101 varsity student athletes (48.8% of final sample) and 106 student non-athletes (51.2%). The racial / ethnic breakdown of the sample revealed 108 majority students (52.2%) and 99 minority students (47.8%). Table 1 presents the number of minority participants within each ethnic

subgroup for the minority sample. In addition, 177 (85.5%) of the students were freshman, and 30 (14.5%) were sophomores.

Within the athlete group (63 males, 38 females), 52 of the participants (51.5% of athlete sample) were majority group members and 49 (48.5%) were minority group members. Table 2 presents the number and gender of participants within each sport for the student athlete sample. Within the non-athlete group (34 males, 72 females), 56 of the participants (52.8% of non-athlete sample) were majority group members and 50 (47.2%) were minority group members.

Table 1

Ethnic Group Distribution Within the Minority Sample

Ethnic group	Athletes	Non-athl.
Black	41	25
Asian	0	10
Latino	2	6
Multiracial	5	3
Biracial	0	4
Indian	0	1
Canadian	1	0
Irish	0	1

Note. N = 99.

The resulting athlete and non-athlete groups were compared along specific academic (SAT scores and high school GPA) and background (age and parental education) variables in an attempt to match groups on key a priori differences. T-tests were used to compare group mean SAT scores, high school GPAs, and age. A Chi-square

analysis was used to compare athlete and non-athlete groups along the parental education variable (number of parents who graduated from college).

Table 2

Sport Distribution Within the Athlete Sample

Sport	Men's	Women's
Basketball	0	6
Crew	1	1
Field Hockey	n/a	2
Football	40	n/a
Gymnastics	0	2
Ice Hockey	7	1
Lacrosse	1	5
Soccer	2	2
Softball	n/a	5
Tennis	1	1
Track	9	12
Wrestling	3	n/a

Note. N = 101. n/a = No equivalent team existed for this gender group.

Table 3 presents the between group comparisons of SAT scores, HS GPA, and age for the final sample. Relative to non-athletes, the institutional mean SAT scores of student athletes were significantly lower, t (205) = -11.88, $p < .001$. Groups were not significantly different with respect to institutional mean high school GPAs, or age.

Chi-square analysis did not reveal a significant difference between the athlete and non-athlete groups on parental education, indicating that the variables of athlete status and parental education were independent of each other in the current sample.

All academic records were obtained anonymously to preserve participants' anonymity. Participant's race and parental education information was obtained from a

demographics questionnaire (Appendix D) included in the survey packet. Table 2 presents the means, standard deviations, and frequency data for the total sample.

Table 3

SAT, HS GPA, and Age: Between Group Comparisons

	Athletes		Non-athletes		
	M	SD	M	SD	T statistics
SAT	918	98.30	1067	81.60	-11.88**
HS GPA	3.02	.14	2.95	.35	1.75
AGE	18.95	.93	18.93	2.75	.09

Note. ** $p < .001$.

The recruitment goal for the current study was to sample four distinct subgroups of college students, resulting in a total sample of approximately 200. The four subgroups were majority student athletes, majority student non-athletes, minority student athletes, and minority student non-athletes. Obtaining comparable numbers of male and female participants was a secondary recruitment goal. These goals were generally met by the current sample. The current sample allowed for between and within group comparisons. First, between group comparisons were conducted (athletes vs. non-athletes). Second, within group comparisons were conducted (majority student athletes vs. minority student athletes, majority student non-athletes vs. minority student non-athletes).

All survey packets distributed to the athlete and non-athlete groups included a Demographic Questionnaire (Appendix D), the Athletic Identity Measurement Scale (Appendix E), and the Student Adaptation to College Questionnaire (Appendix F).

Table 4

Total Sample Descriptive Data

Variable / Measure	Mean	SD
High School GPA	2.98	.27
SAT Scores	994.55	116.82
AGE	18.94	2.07
AIMS Scores	35.91	16.55
Academic adjustment	140.26	24.92
Social adjustment	130.59	23.17
Personal-emotional adjustment	84.27	21.91
Institutional attachment	103.62	18.24
Total adjustment	413.29	66.64

Note. N = 207.

Measures

The following measures were employed in this study.

Demographic Questionnaire. This brief questionnaire solicited information regarding participants' gender, age, racial / ethnic group membership, year in college, parental education, sport, scholarship status (scholarship or non-scholarship athlete), recreational sport participation, and high school sport participation. Additional information regarding participant's SAT scores and high school GPA was obtained through academic records. These variables have been well researched in the literature as both predictors and moderators of academic adjustment (Cornelius, 1995; Lang et al., 1988; Petrie & Stoever, 1997; Sellars, 1992; Young & Sowa, 1992; Zea et al., 1995). These demographic variables were used to examine a priori differences between groups that might predict college adjustment, thus increasing the study's internal validity.

Athletic Identity Measurement Scale (AIMS; Brewer, Van Raalte, & Linder, 1993). The AIMS is a 10-item instrument with possible responses ranging from "strongly agree" (1) to "strongly disagree" (7) on a 7-point Likert type scale. This instrument, which measures strength and exclusivity of identification with the athlete role, includes items such as "I have many goals related to sport" and "Sport is the only important thing in my life". Items were written with the input of undergraduate research assistants and former student athletes to encompass both strength and exclusivity of identification with the athlete role. The item pool was designed to be a face valid representation of the social, cognitive, and affective aspects of athletic identity (Brewer et al., 1993). The 10 items are summed for a total score, which is then reverse scored so that a higher AIMS score indicates stronger athletic identity (Cornelius, 1995).

The AIMS has demonstrated good internal consistency in several studies (Cronbach's alphas ranging from .80 to .93). In addition, stable test-retest reliability ($r = .89$) was reported over a 2-week period. AIMS scores correlated highly with a subscale of the Perceived Importance Profile (PIP; Fox, 1987) assessing the importance of sport competence ($r = .83$) and therefore providing some evidence of construct validity. AIMS scores were also significantly, albeit more moderately, correlated with other PIP scales assessing the importance of physical conditioning ($r = .56$), the importance of an attractive body ($r = .35$), and the importance of physical strength ($r = .53$). In the present study, obtained Cronbach alphas for the AIMS ranged from .82 for the non-athlete sample, to .91 for the athlete sample.

Additional support for the construct validity of the AIMS comes from significant differences in the AIMS scores across levels of athletic involvement. AIMS scores were

shown to increase with increasing levels of competitive athletic activity. Mean AIMS scores ranged from 19.57 for non-athletes to 54.49 for intercollegiate, nationally competitive athletes at a Division I university (Brewer et al., 1993; Cornelius, 1995).

Discriminant validity was demonstrated using the Self-Role Scale (Curry & Weiss, 1989), an instrument designed to measure the involvement of self in the sport role. The AIMS and the Self-Role Scale were significantly correlated ($r = .61$, $p < .01$), demonstrating that the two constructs are quite similar. However, because they share only 38% of the variance in common, they are not assessing the same underlying construct (Brewer et al., 1993).

Student Adaptation to College Questionnaire, (Baker & Siryk, 1989). The SACQ is a self-report measure of college adjustment consisting of 67 items. Students respond utilizing a nine-point Likert type scale anchored by the roots (1) "applies very closely to me" and (9) "doesn't apply to me at all." There are four SACQ subscales. The academic adjustment subscale (24 items) measures the student's success in coping with the various educational demands characteristic of the college experience (e.g., "I have been keeping up to date on my academic work"). The social adjustment subscale (20 items) measures the student's success in coping with the interpersonal-societal demands inherent in the college experience (e.g., "I am very involved with social activities in college"). The personal / emotional adjustment subscale (15 items) focuses on the student's intra-psychic state during his or her adjustment to college (e.g., "I have been feeling tense or nervous lately"). The institutional attachment subscale (15 items) measures a student's degree of commitment to educational goals, and the degree of attachment to the particular institution being attended ("I am pleased with my decision to attend this college in

particular"). Each of the four subscales generates a separate score, and the four subscale scores can be combined to create a total college adjustment score. Normative samples were derived from Clark University students between 1980 and 1984. Additional normative data on ethnically diverse student populations has also been collected (Kaczmarek et al., 1990; Young & Koplow, 1997).

Reliability data (Dahmus et al., 1992) reported internal consistency (coefficient alphas) values ranging from .81 to .90 for the academic adjustment subscale, from .83 to .91 for the social adjustment subscale, from .77 to .86 for the personal / emotional adjustment subscale, and from .85 to .91 for the institutional attachment subscale. The full-scale reliabilities ranged from .92 to .95. In the present study, the SACQ total scale obtained a Cronbach alpha of .90. Cronbach alphas in the present sample for the four SACQ subscales were as follows: .85 (academic adjustment); .84 (social adjustment); .79 (personal-emotional adjustment); and .88 (general institutional attachment).

Baker and Siryk (1989) reported that SACQ academic adjustment scores were significantly correlated with freshman GPA and membership in an academic honor society, thus providing some construct validity support. Scores on the social adjustment scale correlated with scores and the social activities checklist. Low scores on the personal / emotional adjustment scale predicted student use of counseling services (Gerdes & Mallinckrodt, 1994). Finally, Dahmus et al. (1992) found that institutional attachment scores were significantly correlated (negatively) with attrition.

Research Design

The current study employed a correlational field design, with three independent variables, and four dependent variables. As stated earlier, the dependent variables of

interest were the reported levels of academic adjustment, social adjustment, personal-emotional adjustment, and institutional attachment. These variables were operationalized as the four subscale scores on the Student Adaptation to College Questionnaire (Baker & Siryk, 1989).

The independent variables included: ethnic status, coded as majority or minority group membership on the Demographic Questionnaire; gender, coded as male or female on the Demographic Questionnaire; and athletic participation, operationalized as the participants' self-identification as a varsity collegiate athlete on the Demographic Questionnaire.

A 2 X 2 X 2 factorial design (ethnic status x gender x athlete / non-athlete status) was employed to allow for comparisons between groups along the independent and dependent variables of interest. In addition, a series of multiple regression analyses were used to conduct a within-group examination of the contributions of ethnic status, gender, and athletic identity scores to the college adjustment of student athletes.

Data Analysis

Data were analyzed in several steps. The first step involved computing descriptive statistics and frequencies for the total sample. In addition, an intercorrelation matrix containing the key demographic variables and research measures in the study was computed.

Analysis of main and interaction effect hypotheses (athletes vs. non-athletes). In order to test the predicted main and interaction effects described in the first three hypotheses, a 2 X 2 X 2 MANOVA of scores on the set of four SACQ subscales for all participants of the study was conducted.

Although a priori differences in SAT scores were revealed between the athlete and non-athlete groups, the nature of the SAT data (group mean data) made its inclusion as a covariate in the current analysis problematic. However, a lack of a priori differences in age, high school GPA, and parental education indicated that the two groups were reasonably matched along these variables.

This analysis allowed for the detection of any main and interaction effects on the set of college adjustment subscales. Follow-up univariate ANOVAs were used to test hypotheses in the presence of significant multivariate effects.

Moderator effects were also analyzed within the MANOVA. Utilizing the guidelines described by Baron and Kenny (1986), evidence of moderation was indicated by a significant interaction effect between the variables of athlete status and ethnic status in the current design.

Analysis of within athlete sample hypotheses. In order to test within athlete sample effects described in Hypothesis 4, a separate multiple regression analysis was conducted on scores of each of the four SACQ subscales for all athletic participants of the study. The predictor variables for these analyses were: the student athletes' ethnic status, coded as majority (White = 1) and minority (non-White = 0); the student athletes' gender, coded as male (1) and female (0); the student athletes' reported levels of athletic identity, operationalized as the participants scores on the AIMS; and a term representing the hypothesized interaction between ethnic status and AIMS scores. AIMS scores were "centered" before being entered into the model in order to minimize multicollinearity effects (Holmbeck, 1997).

Moderator effects were also predicted in Hypothesis 4. Evidence of moderation is indicated by a significant interaction after the main effects attributable to the predictor and moderator are controlled (Baron and Kenny, 1986). In the current study, interaction effects were analyzed within the series of four multiple regression analyses.

CHAPTER IV

RESULTS

This chapter will begin with a review of the correlational findings. Findings from the multivariate and moderator analyses will then be presented, followed by the presentation of several post hoc analyses.

Correlational findings

Table 3 presents the Pearson correlations of gender, ethnic status, athletic participation, and the key measures under investigation. Point-biserial correlations were employed for gender and ethnic status. As expected, the four subscales of the SACQ (academic, social, personal-emotional, and institutional attachment) were moderately to highly intercorrelated with one another (range of $\underline{rs}$ = .43 - .80, all $\underline{p}s < .01$). This pattern of SACQ subscale intercorrelations, which is consistent with findings from previous studies using this instrument (Baker & Siryk, 1989), was high enough to indicate that the subscales were indeed measuring a common construct, but moderate enough to support the conceptualization of that construct as having different facets as represented by the subscales. It is also important to remember that the subscale of institutional attachment contains one item from the academic subscale, and eight items form the social adjustment subscale, thus inflating these intercorrelations somewhat.

The variables of gender, social adjustment, and institutional attachment all revealed significant intercorrelations. Modest intercorrelations were found between gender and both the social adjustment ($\underline{r}$ = -.18, $\underline{p} < .05$), and the institutional attachment subscales ($\underline{r}$ = -.14, $\underline{p} < .05$). The directionality of these correlations indicated that women evidenced somewhat higher scores on these SACQ subscales.

Table 5

Intercorrelations of Key Demographic Variables and Measures

Variable / Measure	2	3	4	5	6	7	8
1. Gender	-.00	.31**	.41**	-.09	-.18*	-.06	-.14*
2. Ethnstat		-.01	.11	-.04	-.06	-.04	-.11
3. Varsathl			.77**	.09	.05	-.01	.14*
4. Aimscore				-.09	.04	-.19**	-.00
5. Acadadj					.43**	.58**	.54**
6. Socadj						.49**	.80**
7. Peadj							.58**
8. Attach							

Note. N = 207; Gender: (0 = Female; 1 = Male); Ethnstat: (0 = minority; 1 = majority); Varsathl = varsity athlete: (0 = no; 1 = yes); Aimscore = Athletic Identity; Acadadj = Academic adjustment; Socadj = Social adjustment; Peadj = Personal-emotional adjustment; Attach = Institutional attachment.

*$p < .05$.

**$p < .01$.

The institutional attachment subscale was also significantly correlated with the varsity athlete subscale ($r = .14$, $p < .05$) indicating that relative to non-athletes, student athletes reported stronger bonds with their home universities. In addition, gender was significantly correlated with athlete status ($r = .31$, $p < .01$) and scores on the AIMS ($r = .41$, $p < .01$). The directions of these correlations indicated that relative to males, female students were less represented in the athlete sample and reported lower scores on the AIMS.

A significant intercorrelation involving athlete status was also observed. Athlete status correlated with AIMS scores ($r = .77$, $p < .01$), indicating that athletes exhibited higher scores on the AIMS than non-athletes. Scores on the AIMS also correlated with scores on the personal-emotional adjustment subscale of the SACQ ($r = -.19$, $p < .01$), indicating that students reporting higher scores on the AIMS, reported lower scores on the personal-emotional subscale.

The impact of ethnic status, gender, and athletic participation on college adjustment: Total sample

The present study hypothesized that the variables of ethnic status, gender, and athletic participation all contributed to students' college adjustment. As the initial step in testing these hypotheses, a multivariate analysis of variance (MANOVA) utilizing the four SACQ subscales as dependent variables, and utilizing ethnic status, gender, and athletic participation as predictor variables, was conducted.

This section will begin with a review of the significant main and interaction effects. Findings specific to the hypotheses of the current study will then be presented, followed by a review of other unexpected findings.

Main and interaction effects. Table 4 presents the means and standard deviations of scores on the four SACQ subscales, according to the athletic, gender, and ethnic status of the participants. The 2 X 2 X 2 MANOVA revealed several significant multivariate effects. Significant effects were revealed for athletes status, Wilks' F (4, 196) = 3.86, p < .01, gender, Wilks' F (4,196) = 3.21, p < .01, and the interaction of ethnic status and gender, Wilks' F (4,196) = 2.66, p < .03. These results lend partial support to several of the hypotheses of the current study.

Hypotheses results. Hypothesis 1, which stated that ethnic status should significantly predict college adjustment for the total sample, was not supported. No significant multivariate main effects were revealed for ethnic status.

Hypothesis 2 stated that athletic participation (athlete status) should significantly predict college adjustment, with (a) non-athletes reporting higher scores than athletes on the academic, social, and personal-emotional subscales of the SACQ, and (b) athletes reporting higher scores than non-athletes on the institutional-attachment subscale of the SACQ.

As stated earlier, a significant main effect for athlete status was observed. However, Hypothesis 2a was not supported. Univariate ANOVAs revealed that the main effect for athlete status was limited to scores on the academic adjustment, F (1, 199) = 4.03, p < .05 and institutional attachment subscales, F (1, 199) = 8.95, p < 01.

Mean comparisons revealed that athletes scored higher than non-athletes on both the academic and institutional attachment subscales. Conversely, Hypothesis 2b, which predicted higher institutional-attachment scores among student athletes than non-athletes, was supported.

Table 6

Means and Standard Deviations of Scores on the Four SACQ Subscales Across Gender, Ethnic Status, and Athlete Status

Group		n	Acadadj	Socadj	Peadj	Attach
				Athletes (n = 101)		
Majority		52				
Male	M	32	141.53	124.88	83.25	101.34
	SD	--	22.21	28.01	23.23	18.04
Female	M	20	137.25	138.70	83.80	110.35
	SD	--	28.43	20.77	21.63	15.26
Minority		49				
Male	M	31	140.58	131.16	82.61	107.13
	SD	--	24.38	18.17	24.30	16.45
Female	M	18	153.28	136.89	88.61	109.27
	SD	--	23.89	24.45	25.05	17.16
Group		n	Acadadj	Socadj	Peadj	Attach
				Non-athletes (n = 106)		
Majority		56				
Male	M	18	139.94	125.00	86.44	97.00
	SD	--	26.05	21.34	15.37	17.21
Female	M	38	138.11	130.08	81.97	99.82
	SD	--	23.85	26.16	21.72	22.26
Minority		50				
Male	M	16	120.56	119.56	77.63	90.75
	SD	--	17.60	22.10	20.30	17.26
Female	M	34	145.47	136.06	89.26	109.44
	SD	--	25.76	18.26	21.28	14.83

Note. Acadj = Academic adjustment; Socadj = Social adjustment; Peadj = Personal-emotional adjustment; Attach = Institutional attachment.

Hypothesis 3, which stated that athlete status should significantly interact with ethnic status to predict college adjustment scores, was not supported. No significant multivariate interaction of ethnic status and athlete status on the set of SACQ measures was observed.

Other main and interaction effects. Several other significant findings emerged. As stated earlier, significant main effects for gender, and for the interaction of ethnic status and gender were observed. For the main effect of gender, univariate ANOVAs revealed that the effect was limited to student scores on measures of academic adjustment, F (1, 199) = 4.91, $p < .01$, social adjustment, F (1, 199) = 9.44, $p < .01$, and institutional attachment, F (1, 199) = 9.87, $p < .01$. Mean comparisons revealed that female students scored higher than males across all three SACQ subscales. For the interaction effect between ethnic status and gender, univariate ANOVAs revealed that the effect was limited to the academic adjustment subscale of the SACQ, F (1, 199) = 9.46, $p < .01$. Mean comparisons revealed that minority females reported higher academic adjustment scores than their peers. No other significant effects were found.

The impact of ethnic status, gender, and athletic identity: Athlete sample

It was hypothesized that the variables of ethnic status, gender, and athletic identity would each contribute to the college adjustment of student athletes. Due to the continuous nature of the AIMS scores, four separate multiple regressions were conducted, each utilizing one of the four SACQ subscales as the dependent variable. Ethnic status, gender, AIMS scores (centered), and the interaction of AIMS scores and ethnic status were employed as predictor variables. All predictors were entered simultaneously in the regression model.

Table 7 presents the means and standard deviations of scores on the AIMS according to the athletic, gender, and ethnic status of the participants. This section will begin with a review of the interaction and moderator effects, followed by findings specific to Hypothesis 4 of the current study.

Table 7

Means and Standard Deviations of Scores on the AIMS Across Gender, Ethnic Status, and Athlete Status

Group		n	Athletes	n	Non-athl.
Majority					
Male	M	32	52.34	18	28.78
	SD	--	8.17	--	13.70
Female	M	20	49.70	38	23.21
	SD	--	9.26	--	10.08
Minority					
Male	M	31	49.68	16	27.19
	SD	--	9.53	--	12.00
Female	M	18	40.83	34	19.26
	SD	--	8.71	--	9.78

Note. N = 207.

Interaction and moderator effects. Table 8 summarizes the results of this multiple regression. Overall, the model accounted for 11% of the variance in academic adjustment scores, total $R^2 = .11$, $p < .03$. In addition, a significant beta was observed for the interaction of ethnic status and AIMS scores ($\beta = -.29$, $p < .03$). Subsequent correlational analyses, utilizing majority student athlete SACQ scores, revealed that scores on the

AIMS were significantly, and inversely, related to scores on the academic adjustment subscale of the SACQ, r (52) = .41, $p < 01$. Similar analyses utilizing minority student athletes' SACQ scores revealed non-significant intercorrelations, indicating that the inverse nature of the athletic identity-academic adjustment relationship was specific to majority student athletes in the current study.

Table 8

Summary of Simultaneous Multiple Regression Analysis for Variables Predicting Academic Adjustment to College. (N = 101)

Variables	B	SE B	β
Ethnstat	-3.07	4.95	-.06
Gender	-1.97	5.15	-.04
AIMS scores	-3.22	.36	-.01
Ethn x AIMS	-1.15	.52	-.29*

Note. $R^2 = .11$.

*$p < .03$.

The negative beta associated with the interaction term indicates that, for majority student athletes, lower athletic identity scores predicted higher academic adjustment scores. The remaining regressions of SACQ subscale scores (i.e., social, personal-emotional, institutional attachment) did not account for significant variance in these adjustment indexes. As stated earlier, findings indicated a significant interaction between

the variables of ethnic status and AIMS scores. The significant interaction result indicates the presence of a moderator relationship (Baron & Kenny, 1986), and therefore lends partial support to the hypothesis that athletic identity would moderate the relationship between ethnic status and college (academic) adjustment within the athlete group.

However, the direction and nature of the relationship did not support the theorized role of athletic identity as a buffer of ethnic status on college adjustment for minority student athletes. Although higher levels of athletic identity among majority student athletes were associated (as expected) with lower levels of academic adjustment, there was no corresponding indication that higher levels of athletic identity among minority student athletes were associated with higher levels of academic adjustment. Figure 1 illustrates the moderator relationship between ethnic status and athletic identity on academic adjustment.

Hypothesis 4 stated that ethnic status should significantly interact with athletic identity to predict each of the four indexes of college adjustment. More specifically, (a) majority student athletes reporting higher athletic identity scores should report lower adjustment scores across each of the four SACQ subscales, and (b) minority student athletes reporting higher athletic identity scores should report higher adjustment scores across each of the four SACQ subscales.

Hypotheses 4 and 4a were partially supported due to the presence of a significant interaction between ethnic status and athletic identity on the academic adjustment subscale of the SACQ. Hypothesis 4b was not supported, indicating that there was no relationship between athletic identity and college adjustment for minority student athletes. Finally, as

stated earlier, the academic adjustment slopes for the minority and majority student athletes groups intersected (Figure 1), although not as predicted.

Together, these results indicate that the interaction of ethnic status and athletic identity was a significant, albeit modest, predictor of academic adjustment. In addition, ethnic status was a significant, albeit inverse, moderator of academic adjustment for majority student athletes.

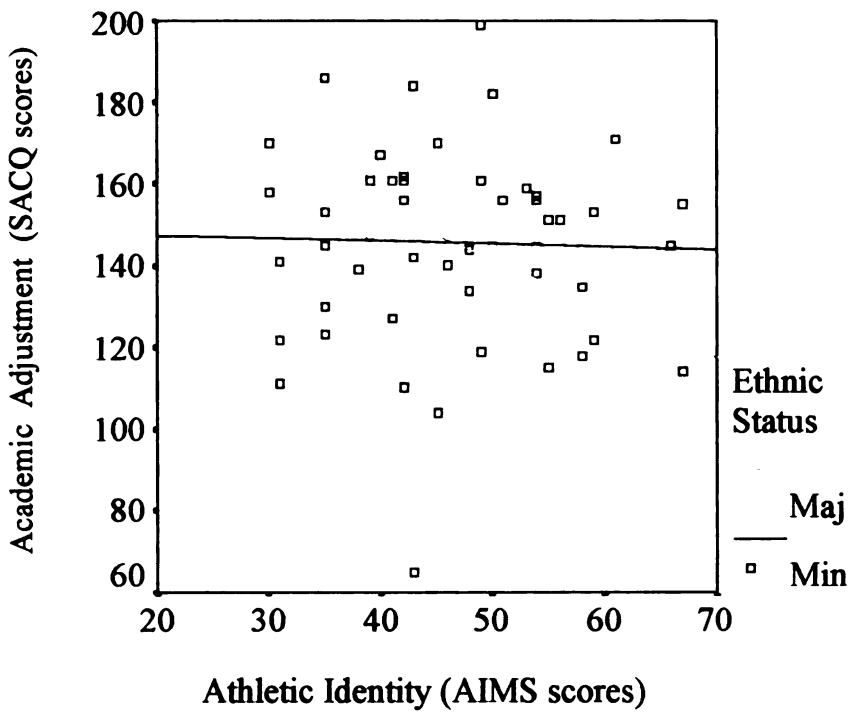

Figure 1. Interaction effects of athletic identity and ethnic status on academic adjustment.

Summary. In sum, a number of significant findings were observed, lending support to several hypotheses of the current study. Hypotheses 1 and 3 were not supported. Hypothesis 2, which stated that athletic participation should predict college adjustment, was partially supported for scores on the academic adjustment and institutional attachment subscales. Hypothesis 4, which stated that athletic identity should

significantly interact with ethnic status to predict college adjustment, was partially supported for majority student athlete scores on the academic adjustment subscale. In addition, athletic identity was partially supported as a moderator of ethnic status on college adjustment for student athletes, albeit in a direction opposite than predicted. Finally, although not hypothesized, significant main effects for gender, and for the interaction of gender and ethnic status on college adjustment were observed.

Post hoc analyses

In addition to the analyses presented above, some post hoc analyses were employed to explore unexpected or non-hypothesized results. First, the possible contributions of other background demographic variables (e.g., year in college, scholarship status, parental education, etc.) to college adjustment were tested. Similar variables have demonstrated their utility as potential contributors to college adjustment in the literature (Baker & Siryk, 1989; Zea et al., 1995). Second, the potential for curvilinearity between the variables of athletic identity and of college adjustment was tested.

Demographic factors contributing to college adjustment. Post hoc analyses were utilized to explore other potential contributors to college adjustment. Other background demographic variables, not included in the multivariate analyses presented earlier, were the focus of this analysis. These variables were chosen for the current study because of the potential influence they may have on college adjustment for student athletes.

Due to the high likelihood of correlation among these variables, four separate regression analyses were conducted to explore the potential contributions of each predictor on each outcome. Each subscale of the SACQ was employed as an outcome

variable. A "forward entry" regression procedure was utilized. The first variable entered at Step 1 had the highest simple correlation with the outcome. At each subsequent step, the remaining variable was entered with the next highest correlation with each index of college adjustment (SPSS Base 9.0, 1999). Predictors included: participation in a recreational sport (Recsport); participation in a high school sport (Hssport); participant year in college (Year), parental education (Pared), scholarship status (Schlrshp); and university affiliation (Univ). Dummy variables were used for all predictors in the model.

Results revealed several significant findings. However, none of the three regression models accounted for more than 2.5 % of the variance, total $\underline{R}^2$s = .022 - .024, indicating that all three were modest predictors. The variable of participation in a recreational sport (Recsport) significantly predicted social adjustment, $\beta = .15$, $\underline{p} < .04$, and institutional attachment, $\beta = .16$, $\underline{p} < .03$. The variable of university affiliation (Univ) significantly predicted academic adjustment, $\beta = .15$, $\underline{p} < .04$. No other significant results were revealed.

Together, these findings indicated that students involved in recreational sports reported higher levels of social adjustment and institutional attachment than those who were not. Furthermore, students attending certain universities in the current study reported higher levels of academic adjustment.

Curvilinearity between athletic identity and college adjustment. The rationale for a curvilinear relationship between athletic identity and college adjustment was based on the perceived social and emotional benefits of athletic identity. In theory, little or no athletic identity may leave student athletes feeling socially isolated and withdrawn, while an over-abundance of athletic identity may result in an over commitment to the athlete role relative

to the student role. Both scenarios were hypothesized to contribute negatively to college adjustment in the current study. Moderate levels of athletic identity however, may contribute positively to college adjustment because they would allow student athletes to more fully experience the social and emotional benefits of athletic participation (Danish et al., 1993; Parham, 1993; Sellars & Damas, 1996; Taylor, 1995), while avoiding the pitfalls of over- or under-identification with the athlete role.

The presence of a curvilinear relationship between athletic identity and college adjustment would suggest the existence of an "optimal zone" between the two variables. More specifically, extremely low and extremely high athletic identity scores would result in lower college adjustment scores, while more moderate scores on athletic identity would result in higher college adjustment scores. A graphic representation of such a relationship would resemble an inverted U, and in turn would create an optimal zone in which athletic identity and college adjustment were optimally correlated.

To test for curvilinearity, a separate post hoc analysis utilizing a quadratic regression equation was conducted. Athletic identity (utilizing centered AIMS scores) served as the predictor variable while the total college adjustment subscale of the SACQ was employed as the outcome variable. As part of the analysis, quadratic (curvilinear) and linear regression equations were compared. Support for a curvilinear relationship would be indicated if the quadratic regression equation accounted for a greater percentage of the variance (R^2) than the linear equation (Pedhazur, 1982).

Although the curvilinear regression analysis revealed significant results, the quadratic regression equation, total $\underline{R}^2 = .06$, $\underline{p} < .05$ accounted for only slightly more of the adjustment variance than the linear regression equation, total $\underline{R}^2 = .057$, $\underline{p} < .02$. Due

to the negligible effect size, curvilinearity between athletic identity (AIMS scores) and total college adjustment scores was not supported.

CHAPTER V

DISCUSSION

Drawing upon several literatures to form its theoretical foundation, the present study explored whether ethnic status, athletic participation, and athletic identity contributed to the college adjustment of student athletes and non-athletes. College adjustment in student athletes, particularly with minority student athletes, has yet to be adequately researched. The relatively meager literature that does exist tends to reveal lower graduation rates, lower retention rates, and other "achievement deficits" associated with this population. However, these studies typically limited their foci to student athletes' academic performance versus their non-athletic peers, rather than the multidimensional concept of college adjustment.

Siegel (1996) reported that although minority athletes (specifically Black males) did not graduate from Division I colleges at rates comparable to their majority counterparts, Black athletes were graduating at rates higher than their non-athletic male peers. In addition, NCAA (1999) student athlete graduation rate data revealed that Black male student athletes, and Black and White female student athletes graduated from Division I universities at significantly higher rates than their non-athletic peer groups. These findings suggested that athletic participation moderated racial / ethnic effects on college adjustment. The current study theorized that athletic participation played a positive role in the college adjustment of minority student athletes. This positive role was a result of the social and developmental benefits of athletic participation and helped to offset feelings of isolation and alienation typically reported by minority students on predominantly White college campuses.

Additionally, the present study hypothesized that the concept of athletic identity would also influence college adjustment by moderating the effects of ethnic status on student athletes' college adjustment. This hypothesis was based on the expectation that more strongly athletically identified minority athletes would be less likely to feel isolated on college campuses because of their focus on the athlete role, a role they were better suited to. Athletic identity was defined as the degree to which an individual identifies with the athlete role, and is a function of cognitive, affective, behavioral, and social factors. Although athletes generally report stronger levels of athletic identity than non-athletes, research has shown some variation attributable to other individual difference variables, such as gender, race, age, and personality (Brewer, 1999).

Results from the current study lend some support for the contention that athletic participation and athletic identity did indeed influence college adjustment, albeit in an unexpected direction. In addition, although ethnic status played a diminished role, gender played a more prominent role in the college adjustment of students and student athletes.

Overview of findings

The current study's hypotheses focused primarily on the influences of ethnicity, athletic participation, and athletic identity on college adjustment. Gender, while included as an independent variable, was not a focus of the current hypotheses.

Hypothesis 1: Main effect of racial / ethnic status on college adjustment for the total sample. The first hypothesis, which stated that ethnic status should significantly predict college adjustment for the total sample of college students, was not supported due to the absence of main effects for ethnic status on college adjustment. The rationale for Hypothesis 1 was derived from the literature revealing lower graduation and retention

among minority students compared to their majority peers (Astin, 1982; Padilla et al., 1997; Siegel, 1996; Zea et al., 1995). In addition, Young and Koplow (1997) revealed significant differences between White and minority respondents in mean scores on the academic and personal-emotional subscales of the SACQ.

However, the literature regarding race / ethnicity as a contributor to college adjustment yielded inconsistent findings. Kaczmarek et al. (1990) reported no significant effects for gender or ethnicity on college adjustment using the SACQ with a diverse sample of college students. Zea et al. (1995) also reported no significant differences in adaptation to college between ethnic groups utilizing the SACQ (total subscale) with a diverse group of college students. Together these findings indicate that the lack of significant main effects for ethnicity, while unexpected in the current study, is not uncommon in the literature.

The lack of main effects for ethnicity may also be attributable to limitations in the sampling procedures and / or research design of the current study. For example, when compared to a random sample of college students, minority students, student athletes, and minority student athletes were over sampled in the current study in order to create a more balanced total sample. In addition, the exclusive use of volunteer respondents may have resulted in a selection bias affecting the composition of majority and minority samples. Less adjusted minority respondents may have been less likely to participate in research than their majority counterparts due, in part, to feelings of isolation, alienation, and mistrust typically reported on predominately White college campuses (Graham et al., 1985; Melendez, 1991; Smedley et al., 1993; Stamps, 1987; Thompson et al., 1990). As a

result, the final sample of minority respondents may have presented as more highly adjusted than the actual population of minority students.

The coding of all respondents into majority and minority categorizations may also have introduced bias. Although the literature has reported differences in graduation and retention rates of Black and White college students and student athletes (Astin, 1982; Padilla et al., 1997; Sedlacek, 1989), fewer studies included other minority groups. However, within minority group differences have been reported. For example, Latinos have been reported to graduate at rates as low as 20% (Solberg et al., 1994). By contrast, Asian Americans have reported more academic success than Whites, Latinos, or African Americans (Zea et al., 1995). In the current study, due to limited numbers of Latino, Asian, and other non-White respondents, all minority respondents were grouped together, thus masking these potential differences.

The inability to statistically control for a priori demographic differences such as SAT scores, family income, prior interracial experiences (Graham et al., 1985), and generation in college, as well as other sport-related differences, such as revenue status may have increased the error variance. For example, minority student athletes were more heavily concentrated within the revenue producing sports in the current study, introducing a potential source of bias. Future research should control for these and other potential sources of error variance, as well as utilize captive samples of minority students. Such refinements would more clearly assess the influence of ethnicity on college adjustment.

Hypothesis 2: Main effect of athletic participation on college adjustment for the total sample. The second hypothesis stated that athletic participation should significantly predict college adjustment, with student non-athletes reporting higher scores on the

academic, social, and personal-emotional subscales of the SACQ than athletes (Hypothesis 2a), and with student athletes reporting higher scores on the institutional attachment subscale than non-athletes (Hypothesis 2b). This hypothesis was partially supported.

A significant main effect was revealed for athletic participation, indicating that athletic participation predicted college adjustment. Hypothesis 2a was not supported, as non-athletes failed to report significantly higher academic, social, and personal-emotional adjustment scores than student athletes. Interestingly, student athletes reported higher academic adjustment subscale scores than their non-athletic peers. This result was not hypothesized in the current study, and may seem perplexing given that student athletes were reported to be lower in several academic achievement indexes than their non-athletic counterparts in the literature (Adler & Adler, 1985; Ervin, 1985; Kiger & Lorentzen, 1988; Siegel, 1996).

One explanation may be that educational support programs typically provided for student athletes at many universities have offset differences in academic achievement in the past several years. Siegel's (1996) finding that Black student athletes graduated college at higher rates than their non-athletic Black peers from elite Division I institutions was based on NCAA data collected from freshmen beginning in the 1986-1987 academic year who were graduating with in 6 years. In the 10 years since that group of student athletes graduated (1991-1993), university athletic departments have realized the importance of specialized student athlete support programming and staff, and have increased their budgets (Anderson, 1998; Singer, 1998). The most recent NCAA graduation rate data (NCAA, 1999) revealed slight improvements (1% to 6%) in overall graduation rates from the 1993 data set depending on gender, sport, and ethnicity of the athletes. However, all

student athletes have shown improvement (9% to 12%) in graduation rates when compared to their non-athletic peers. In addition, two universities participating in the current study recently constructed multi-million dollar student athlete support centers to address the continuing need for improved support services.

Hypothesis 2b, which predicted student athletes would report higher institutional attachment scores than non-athletes, was supported, indicating that athletic participation contributed positively to the quality of bonds established between students and their institutions. Student athletes have traditionally reported greater feelings of inclusion, satisfaction with college, personal identity and ego linkage to their schools, and increased motivation to achieve a degree when compared to their non-athletic peers in the literature (Danish et al., 1993; Parham, 1993; Ryan, 1989; Taylor, 1995), all of which reflect greater institutional attachment (Baker & Siryk, 1989).

Consistent with Hypothesis 2, athletic participation did not predict social adjustment or personal-emotional adjustment to college in the current study. This result is inconsistent with the literature which, while meager, does suggest that athletic participation positively influences self-esteem, social involvement in college, development of interpersonal and leadership skills, and satisfaction with college (Danish, Petitpas, & Hale, 1993; Taylor, 1995). Perhaps the focus on varsity athletics, which typically requires greater commitments of time and energy (Simons et al., 1999), precluded these student athletes from experiencing the positive social and emotional benefits. In addition, the social and emotional benefits may depend on whether it is in-season, pre-season, or off-season for the athletes.

Hypothesis 3: Interaction of ethnic status and athletic participation in the total sample. The third hypothesis, which stated that athlete status should significantly interact with ethnic status to predict college adjustment, was not supported. Moreover, the absence of a significant interaction indicates that athletic participation did not moderate the effects of ethnicity on college adjustment as expected. This hypothesis was based on literature reporting higher graduation rates among minority student athletes compared to minority non-athletes at Division I colleges and universities (NCAA, 1999; Siegel, 1996).

Once again, this unexpected finding may be attributable to limitations in the sampling procedures or research design of the current study. For example, the exclusive use of freshman and sophomore respondents may have limited the potential to detect moderation. Athletic participation may have a more powerful moderating influence on more advanced students, who have already experienced some adjustment to college. This may especially be the case for junior and senior minority student athletes, given the lower retention and graduation rates of their younger peers when compared to majority students (Padilla et al., 1997; Zea et al., 1995).

Moreover, the focus on varsity athletes in the current study may also have hindered the role of athletic participation as a moderator of ethnic status to college adjustment. Athletic participation at the varsity level may too demanding to buffer minority student athletes from the adjustment stresses they experience on college campuses. For these reasons, recreational sport participation, which requires less commitment, may function as a stronger moderator. Future research may need to compare varsity athletes with club and intramural athletes along similar college adjustment outcomes.

Hypothesis 4: Interaction of ethnic status and athletic identity in the student athlete sample. The fourth hypothesis focused on the student athlete sample exclusively. It stated that ethnic status should significantly interact with athletic identity to predict college adjustment, with majority student athletes reporting higher athletic identity scores evidencing lower adjustment scores across each of the four SACQ subscales, and minority student athletes reporting higher athletic identity scores demonstrating the opposite pattern on each of the four SACQ subscales.

Findings revealed that athletic identity significantly interacted with ethnic status to predict academic adjustment scores of majority student athletes, partially supporting Hypothesis 4. This contribution was modest however, accounting for 11% of the total variance in the model. The remaining regressions of SACQ subscale scores did not account for significant variance. In addition, although the academic adjustment slopes among minority and majority student athletes did intersect as predicted, the moderator effect was limited to the majority student athlete sample. No corresponding increases in academic adjustment scores were observed for the minority athlete sample, indicating that majority athletes in the current study were more susceptible to the costs of a strong athletic identity than were their minority peers.

Taken together, these findings did not support the notion of athletic identity as a buffer of ethnic status in minority student athletes. However, higher levels of athletic identity were associated with lower academic adjustment among majority student athletes. This finding, while modest, is unique to the literature, and indicates that athletic identity can be a double-edged sword for majority student athletes. Brewer (1999) stated that there "may be both positive and negative consequences associated with a strong athletic

identity" (p. 12). In his review of the literature, Brewer discussed potential benefits, such as: acceptance of the body, establishing social networks, and developing life management skills. Potential costs of strong athletic identity seemed to be particularly problematic when athletes encountered sport career transitions. Adjustment to injury, adjustment to sport career termination, and career development and maturity were identified areas of risk for athletes in the literature.

Brewer's (1999) findings that athletic identity was negatively correlated with interest in academic achievement and positively correlated with identity foreclosure lends support to this contention. In both instances athletic identity served as a hindrance to developmental processes in student athletes. Career maturity proved to be significantly, and inversely, correlated with athletic identity in the literature (Murphy et al., 1993) as well. Although other studies have reported contradictory findings (Brown et al., 1999; Brown & Hartley, 1997), these two studies revealed inverse relationships between strong athletic identity and other educational and developmental constructs, and were consistent with the current findings.

Interestingly, these results reflected concerns expressed elsewhere in the literature regarding African American student athletes. Braddock's (1980) Sport-as-Impediment hypothesis specifically pointed to sport participation in African American student athletes as an impediment to future career attainment due to the tendency to be overly focused on athletics as a path to upward mobility at the expense of other skills (Braddock, 1980; Edwards, 1984; Sellars & Kuperminc, 1997). In the current study, higher levels of athletic identity were associated with lower levels of academic adjustment only among the majority student athletes in the sample.

In a related vein, Brewer (1999) reported that Caucasian student athletes scored higher on the AIMS than did African American student athletes. This finding was replicated in the current study, as majority student athletes reported significantly higher mean AIMS scores than minority student athletes (majority $\underline{M}$ = 51.3; minority $\underline{M}$ = 46.4). According to Brewer, the reasons for these differences may be a function of identity development. Athletic identity may be less salient than other identities (e.g., racial identity) for African American student athletes, whereas sport may serve a more functional purpose (e.g., as a vehicle for receiving a college education) for African American student athletes than for Caucasian student athletes. Athletic identity may therefore serve different purposes, or roles, for different racial and ethnic groups. Brewer went on to state that, "athletic identity has been inversely related to measures of identity development and psychosocial development for Caucasian athletes but not for African American athletes" (pp. 10-11).

The proposed differences in the influence of athletic identity across racial / ethnic groups may explain the lack of a significant moderator effect between athletic identity and ethnic status in the current study. As college student athletes adjust to college, differences in athletic identity across racial / ethnic groups may have differing effects on the adjustment process. For minority student athletes in the current study, athletic identity may have played a secondary role in identity development, therefore limiting its influence. For majority student athletes in the current study, athletic identity may have played a more central role in identity development, thus enhancing its potential to adversely affect their academic adjustment.

To better understand the scope of these findings, one must consider the circumstances under which most student athletes enter college. High school sport has become as competitive and pressure-packed as the college game in recent years, with rewards offered, in terms of athletic scholarships, for the best and brightest. High school students are increasingly encouraged by family, friends, coaches, and even the media to focus on their athletic pursuits, often at the expense of other academic, social, and development pursuits (Simons et al., 1999). Often, student athletes become identity foreclosed when the role of athlete becomes the preeminent and exclusive identity role (Murphy et al., 1993). College student athletes who become identity foreclosed may find the social, emotional, and academic demands of college life difficult to negotiate, and in turn may struggle to meet these demands (Anderson, 1998). In addition, college student athletes may encounter long-term developmental obstacles as their athletic abilities and opportunities to compete decline. Developing a more balanced "student athlete identity" stressing both academic and athletic pursuits may play a key role in the improvement of the college adjustment experience for student athletes. In light of the current findings, athletic identity should be considered a risk factor in college adjustment, with implications for retention and graduation.

Invariably, ethnicity also plays a role in the adjustment to college of students and student athletes (Ervin et al., 1985; Sedlacek, 1987; Smedley et al., 1993; Solberg et al., 1994; Tracey & Sedlacek, 1988; Young & Koplow, 1997; Young & Sowa, 1992). Although graduation rates for all student athletes improved slightly since 1992, they still lagged behind those of the general non-athletic student body. This was especially the case for majority males, who made up the largest percentage of the collegiate student athlete

sample in the United States (NCAA, 1999). Current findings suggest that majority student athletes' overidentification with the athlete role, as determined by high scores on the AIMS, may have hindered college adjustment and retention. Majority athletes seemed especially vulnerable to this effect in the current study. Equally pertinent was the lack of significant findings regarding the influence of athletic identity on college adjustment for minority student athletes.

One explanation for these findings may involve differences in the roles of athletic participation and college adjustment across racial / ethnic groups in different academic environments. Minority students attending predominantly White colleges and universities have reported feelings of isolation, mistrust, and decreased satisfaction consistently in the literature for many years (Adler & Adler, 1985; Melendez, 1991; Parham, 1993; Russell & Petrie, 1993; Young & Sowa, 1992). In contrast, majority (White) students attending predominately White colleges and universities will generally experience fewer social and emotional obstacles to college adjustment than their minority counterparts. For majority students, the college environment may seem less threatening, more welcoming, and in turn more likely to promote college adjustment. Given the absence of minority-status stressors as obstacles, majority students may be more vulnerable to other salient, though less conspicuous, threats to college adjustment. Overidentification with the athlete role may, therefore, play a more prominent role in impeding the college adjustment of majority athletes.

For minority student athletes, whose obstacles to college adjustment typically outnumber those of their majority counterparts, athletic identity may not play as prominent a role when compared to the myriad of minority-status stressors normally encountered.

For these athletes, athletic identity may be a less significant factor given the other obstacles in a culturally isolating environment that may be affecting their adjustment.

Further research utilizing Black student athletes at historically Black colleges and universities would be helpful in examining whether similar ethnic group differences in college adjustment are exhibited. Recruitment of student athletes at predominately White, and predominately non-White, universities is needed to better understand the influence of ethnicity, athletic participation, context differences, and athletic identity on college adjustment.

A second, more sociocultural explanation for this vulnerability among majority student athletes may lie in the mythology around race and sport. The myth of the "Black athlete" often views Black athletes as physically superior and intellectually inferior to their White counterparts (Edwards, 1983). Although created by White Western society, this racial myth may be hindering White athletes from achieving success on the playing field by limiting opportunities for competition, and negatively affecting their confidence. White athletes who find that they cannot be stars at the collegiate level may be left to struggle with their identities as athletes, and as students. Without an identity outside of the athletic realm, these athletes may face a difficult adjustment to college.

Black students may be hindered by the Black athlete myth as well. Black student athletes, who are typically perceived as academically inferior, are often encouraged to focus exclusively on their athletic roles by American society (Edwards, 1983; Melendez, 1991). The resulting neglect of the student role can result in reduced rates of retention and graduation for Black students and student athletes. Clearly, the relationship of athletic identity to college adjustment needs to be more rigorously researched.

Main and interaction effects of gender on college adjustment for the total sample. As stated earlier, results of the current study indicated that, relative to males, females demonstrated higher scores on three of the four SACQ subscales. Moreover, higher academic adjustment subscale scores reported by female students and student athletes are unique to the current study and inconsistent with prior findings that did not observe gender differences on this measure (Baker & Siryk, 1989). However, this result is consistent with the academic performance literature that indicates women typically outperform men in college and graduate school (Betz & Fitzgerald, 1987; Rosser, 1989).

This finding may be the result of the inherent differences in opportunities afforded men and women to compete beyond the collegiate level. Due to the ambition of many male collegiate athletes to compete at the professional level, men may be more likely to overidentify with the athlete role at the expense of the student role, thus hindering academic adjustment. Women's opportunities to compete beyond the collegiate level, while improving, are still vastly fewer in number. Therefore, a greater focus on educational opportunities may result, leading to increased academic adjustment. Female student athletes have demonstrated superior academic performance when compared to their male counterparts in the literature (Kiger & Lorentzen, 1988; Simons et al., 1999; Smallman et al., 1991; Snyder, 1996), indicating differences in the roles of athletics and academics for females compared to males.

The significant main effect for gender on institutional attachment scores demonstrates that female students and student athletes in this study exhibited higher degrees of commitment to educational-institutional goals and higher degrees of attachment to their respective universities. In addition, significant gender differences on the social

adjustment subscale indicated that female students and student athletes in this study coped better with the interpersonal-societal demands inherent in the college experience. These findings were partially supported by the literature, in that gender differences in social adjustment (favoring women) have been reported (Baker & Siryk, 1989).

In addition to the main effects, a significant interaction of ethnic status and gender limited to SACQ academic adjustment scores was observed. Minority females reported higher scores on the academic adjustment subscale of the SACQ than their majority peers. This unique finding may be attributable to the environmental and / or social experiences of the minority female subgroup within the current study. For example, all four of the participant universities in the current study were affirmative action, equal opportunity institutions with diverse student bodies, and were located near or within diverse communities. Moreover, three of the four universities were located within major cities on the East Coast. Due to the diversity within these university communities, feelings of isolation and decreased satisfaction typically reported by minority students on predominately White college campuses (Adler & Adler, 1985; Melendez, 1991; Parham, 1993; Russell & Petrie, 1993; Young & Sowa, 1992) may have been less salient for the current minority sample. This is especially so for the females, who have reported higher social adjustment scores in the literature (Baker & Siryk, 1989). Minority females in the current study may have benefited from a reduction in isolation and dissatisfaction with college attributable to their diverse campus communities. They may have felt safer, and more open to asking for help or seeking services when overwhelmed. Male students, who have reported lower social adjustment scores in the literature (Baker & Siryk, 1989) and in the current study, may not have been open to reaping the same benefits.

The presence of uncontrolled variables, such as social support, may have further facilitated the academic adjustment of minority females. Social support positively effects college outcomes such as retention, quality of college life, and college adjustment (Zea et al., 1995). Social support is especially important for minority students attending predominantly White colleges and universities (Gloria, Robinson-Kurpius, Hamilton, & Willson, 1999; Mallinckrodt, 1988; Solberg et al., 1994; Zea et al., 1995). Increased social support among the minority female participants from family and friends, or through involvement with social groups on campus such as sororities, support groups, or book clubs, may have enhanced the academic adjustment of this group beyond that of their majority counterparts and male peers.

Interpretations of this finding must be guarded given the design and sampling limitations of the minority sample. For example, different racial / ethnic groups have demonstrated different levels of academic success and rates of graduation in the literature (Astin, 1982; Padilla et al., 1997; Zea et al, 1993). As stated earlier, ethnicity was treated as a two-level variable, coded as either majority (White) or minority (non-White) in the current study. African American, Asian, Latino, and other non-White participants were coded as minorities regardless of ethnic group differences in academic performance, retention, or graduation rates, thus introducing error into the design. Future research will need to better control for within minority group variation by either sampling adequate numbers of participants to employ separate ethnic samples, or by employing ethnicity as a covariate in the research design.

Post hoc comparisons. In addition to the main contributors described in the previous sections, post hoc analysis revealed several secondary contributors to college

adjustment in the current study. The variable of participation in a recreational sport was a significant, albeit modest, predictor of scores on the social adjustment and institutional attachment subscales of the SACQ. This finding, although unexpected, lends some support to the tenets of the current study. Sport participation has been theorized to play an important role in the development of children and adolescents (Smith & Smoll, 1998). Furthermore, Parham (1993) described the psychosocial benefits of athletic participation as satisfying several basic human needs, including those having to do with success, approval, validation from others, recognition, and feeling a part of someone or something. Although participation in a varsity sport may sometimes lead to overidentification with the athlete role for many student athletes, recreational sport participation may maximize the psychosocial benefits of sport, while avoiding the potential developmental pitfalls associated with competition and varsity status. Therefore, club and intramural athletes may have profited more from the psychosocial benefits of sport participation, since those athletes were afforded the luxury of participation strictly for enjoyment, and not for financial obligation or career ambition.

In addition, university affiliation was a modest predictor of scores on the academic adjustment subscale, indicating that participants across the four participating universities differed significantly in their reported levels of academic adjustment. This finding should be expected, however, as no two universities offer the same educational experiences for their students.

Summary. Although only two of the four hypotheses presented were partially supported by the current findings, athletic participation significantly contributed to college adjustment in student athletes. In addition, athletic identity significantly moderated the

relationship between ethnic status and academic adjustment of student athletes. Significant main and univariate effects for gender, as well as other post hoc results, indicated that the relationship between ethnic status, gender, athletic participation, and college adjustment is complex, and has implications for future student athlete support programming and research.

Given these findings, recommendations for student athlete support programming, as well as implications for future research, are needed. Encouraging student athletes to embrace the social and emotional challenges of college, while also helping them reach appropriate developmental milestones needs to be a greater focus of university administrators. In addition, increasing student athlete retention and graduation rates may be a function of decreasing overidentification with the athlete role.

Implications for student athlete support services

As freshmen enter a university setting, they are vulnerable to a myriad of experiences and distractions that can ultimately affect their ability to succeed and thrive in college. For student athletes, the adjustment process becomes more complicated as they try to negotiate the demands of athletic participation, along with other more typical developmental, emotional, and academic demands. Although findings of the current study revealed that student athletes reported higher levels of academic adjustment and institutional attachment than their non-athletic peers, vulnerable areas for student athletes were also revealed. In particular, overidentification with the athlete role negatively predicted academic adjustment within the majority student athlete group, indicating that high athletic identity may counteract any positive influence that athletic participation has on academic adjustment.

Moreover, overidentification with the athlete role, while adaptive during the competitive years, can hinder student athletes from reaching key social and developmental milestones. Subsequently, many student athletes are ill equipped to handle the traumatic psychological and emotional changes that occur when sport termination issues arise due to graduation or injury (Petitpas, 1998). A more proactive approach to fostering college adjustment and emotional development of student athletes is warranted. Helping student athletes transition from identity foreclosing to more identity reintegrating behaviors is needed to develop healthy, well adjusted young adults.

Identity reintegration. According to Anderson (1998), "many student athletes identify more with the 'athlete' part than with the 'student' part." He goes on to say, "overidentification with the role of athlete may predispose a student-athlete to difficulties in several stages of a college career" (p. 319). Based on the results of the current study, university administrators will need to consider student athletes' overidentification with the athlete role as a long-term retention issue. In addition, strategies for fostering "identity reintegration," or the reintegration of social, academic, vocational, and / or other non-athletic roles and values in student athletes should be developed. Such strategies are best employed at the student support services level where specialists trained in adolescent development are commonly located.

As with many of the physical skills student athletes must learn to stay competitive on the playing field, relevant mental and emotional skills needed to stay competitive off of the playing field must also be promoted. Although most Division I athletic departments offer support programs designed to improve academic skills; such as study skills, time management, test taking, and paper writing (Pinkney, 1996), little emphasis has

historically been placed on helping student athletes develop non-academic skills that can further their overall adjustment to college and foster a more balanced student athlete identity. Recently, however, several authors have introduced comprehensive student athlete support programs designed to address the special educational and developmental needs of student athletes (Anderson, 1998; Denson, 1996; Fitch & Robinson, 1998). These programs combined academic, social, and emotional components in order to support the whole person, not simply the athletic part.

Fitch and Robinson (1998) addressed the special needs of male and female basketball players by creating a counseling intervention program model combining educational seminars, group and individual counseling, and program evaluation components. The educational seminar component was focused on the development of life skills and other topics relevant to student athletes. The counseling component was focused on the development of socializing techniques, group cohesiveness, and on fostering interpersonal learning. Other more personal issues such as dating, retirement from sports, and injury management were addressed in group, or individual, counseling. Program evaluation options were also considered to establish accountability for the program. The benefits of this program were its reliance on current university administration and staff, and its relative simplicity. Drawbacks included its reliance on a small group model, making larger teams more difficult to service.

Denson (1996) developed Student Services for Athletes (SSA) to provide a more comprehensive support program with an emphasis on enhancing student athlete's academic, personal, and social development. The SSA program incorporated academic mentoring, counseling, programs / workshops, consultation, research, and teaching

components. Each component contributed to the overall goal of providing "comprehensive services consonant with a holistic view of the student athletes" (p. 263). Accountability was established through the use of coach surveys, exit interviews, and other forms of usage documentation. Strengths of the program included its holistic approach to student athlete development, and the incorporation of coaches, teachers, administrators, and counselors into a team mindset. Limitations of the program included its heavy reliance on university wide cooperation, and its heavy drain on university resources.

Although these two programs by no means represent the totality of student athlete support service programs in existence, they offer several developmental components (e.g., educational seminars, group counseling) that speak to the identity development concerns addressed in the current study. The following sections present recommendations for support programming based on findings of the current study in conjunction with a more holistic view of student athletes. In addition, implications for future research will be addressed.

Recommendations for support services. Given the findings of the current study, future support programs should aspire to help student athletes develop a more rounded and reintegrated sense of self, one that is less focused on the athlete role and more focused on positive college experiences and appropriate developmental milestones. The following recommendations are intended to foster such developmental processes, while allowing student athletes to continue to perform at, or near, their athletic peaks.

Freshman seminars. One strategy to combat overidentification with the athlete role is to involve student athletes in a therapeutic self-exploration experience, in the form

of weekly freshman seminars for student athletes early in their college careers (Fitch & Robinson, 1998). Utilizing a group therapy model, these seminars would be co-facilitated by counselors knowledgeable in student athlete adjustment, in conjunction with former collegiate athletes who have successfully negotiated the demands of college and have moved on to successful non-sport careers.

The focus of the seminars would be twofold. First, they would give freshman athletes a safe and supportive place to voice their concerns about college life, athletic participation, or any other personal or academic issues. They would also provide student athletes with mentors who could help them develop a balanced student athlete identity, while also supporting them through their college experiences. Second, the co-facilitators would be helping athletes to work towards identity reintegration by utilizing group dynamics to elicit change. Furthermore, the seminars would give the co-facilitators a place to teach coping skills; to address pertinent campus issues, such as race, class, gender, and sexuality; and to explore the wide array of opportunities for learning and growth available on a college campus. The anticipated result of participation in such seminars would be more rounded and socially confident student athletes, who feel comfortable as members of the university community, and who are not fixated exclusively on the athlete role.

Increased access to specialists. Along a similar line, providing increased access to counselors and psychologists trained to work with student athletes can only help to further promote identity reintegration. Although most universities provide counseling and psychological services for students, few employ specialists trained to counsel student

athletes. This role is often left to coaches or athletic trainers, who may not have appropriate training in psychology and human development.

Specialists should be housed within the university counseling center, separate from the athletic department, to help foster a safe environment for athletes to seek help. However, coaches and trainers should be encouraged develop good working relationships with the specialists. Such relationships can ease the stigma of psychological services to student athletes, and help to support the referral process.

Increased exposure to campus life. Another area of concern for student athletes is their isolation from the general student body at most universities. For example, student athletes are typically housed in athletic residence halls, separate from their non-athletic classmates. In addition, practice and study hall schedules limit free time, which could be spent enjoying the opportunities for socializing afforded most college students. While such living and scheduling constraints can be a positive influence in helping freshmen feel supported and connected with their universities, they can also contribute to overidentification with the athlete role and hinder college adjustment.

For these reasons it is recommended student athletes be given every opportunity to experience college life, unencumbered by the burdens of athletic participation. This may entail housing student athletes in regular dormitories or cutting back on freshman practice schedules. Only through increased and consistent exposure to the general student population will student athletes be able to work towards identity reintegration, a more balanced student athlete identity, and a less chaotic adjustment to college.

Athletic identity as a diagnostic tool. As noted earlier, results indicated that athletic identity moderated the relationship of ethnic status and college adjustment. These

results were especially pertinent for majority student athletes for whom higher levels of athletic identity were related to lower academic adjustment. In light of this finding, athletic identity may be useful in assessing potential hindrances to college adjustment of majority freshman athletes, and maybe helpful in identifying athletes in need of support services. The Athletic Identity Measurement Scale (AIMS) (Brewer et al., 1993) can be a useful diagnostic tool for this purpose. In conjunction with other diagnostic instruments, the AIMS can help determine which individuals may be overidentified with the athlete role, and are in need of further support and guidance. In addition, the AIMS can be employed as an evaluation tool for programs designed to decrease overidentification with the athlete role. Further psychometric research may be necessary, however, before employing the AIMS as a personality research (Hale et al., 1998), or program evaluation tool.

Future Research

No research study can fully address all facets of a given research topic, therefore future research is the next logical step for broadening the knowledge base. Although the current study has helped to answer some questions regarding the influences among the variables in question, as is often the case, it has generated many more. The relationships among ethnic status, gender, athletic participation, and college adjustment are complex and require further exploration.

First, future research will need to incorporate larger and more balanced sample sizes. Although the current study incorporated a balanced sample with regards to athletic participation and racial / ethnic status, there was a gender imbalance across athlete and ethnic status. Moreover, the current study operationalized ethnicity as membership into

either the majority (White), or minority (non-White) sample. Although this strategy was necessary given the size of the current sample, future studies should endeavor to recruit separate African American, Latino, and Asian American samples.

Research studies would also benefit from obtaining and controlling ability indexes such as high school GPA, and SAT scores. The employment of individual scores, instead of the group mean scores employed in the current study, would allow for the statistical control of these predictors of adjustment, thus resulting in a more powerful research design.

Second, relationships among college adjustment, retention, and rates of graduation need to be more thoroughly researched. Although college adjustment has proven its utility as a viable outcome measure in educational research, it tells only part of a larger story. For many university administrators, improved graduation and retention rates are considered the "bottom line" for successful outcomes of the collegiate experience. Zea et al. (1995) stated that successful adaptation to college was "defined as, remaining in college, enjoying psychological well being, and performing well academically" (p. 511). Of these factors, "remaining in college" seems to suggest a link between adaptation to college (college adjustment) and retention.

In the present study, and elsewhere in the literature, it has been argued that improved adjustment to college should enhance retention and graduation rates. To fully comprehend how social, emotional, and psychological factors influence these relationships, researchers will need to more thoroughly explore the relationship between indexes of college adjustment and retention.

Third, racial / ethnic differences in the salience of athletic identity as an obstacle to college adjustment need to be more thoroughly researched. Although athletic identity proved to be a significant moderator for majority student athletes in the current study, the lack of significant results for minority student athletes suggests that different sociocultural dynamics may be at work. Because this study drew its sample from predominately White universities, no hypotheses could be generated regarding minority student athletes attending predominately non-White, or historically Black, universities. A similar study, drawing its sample from predominately non-White colleges and universities, could explore whether differences in majority / minority status at different universities influence the salience of athletic identity as a moderator of ethnic status.

Fourth, gender proved to be a significant contributor to college adjustment in both athletes and non-athletes in the current study. Future research into gender difference is needed to gain more insight into the complexity of college adjustment. In their review of the literature involving the SACQ, Baker and Siryk (1989) reported gender differences in several studies, but these differences were limited to the social adjustment and personal-emotional adjustment subscales. In contrast, the current study revealed significant main effects for gender (favoring women) on academic adjustment, social adjustment, and institutional attachment scores that were particularly prominent among minority females. More research is needed to better comprehend the role of gender in college adjustment.

Fifth, while athletic identity proved to be a moderator of the effects of ethnic status on academic adjustment for majority student athletes, little is known about the long-term effects of a strong athletic identity to adult development. Longitudinal research exploring

the stability of athletic identity across the life span may help to clarify its salience to college athletes, and its utility as a developmental influence across the life-span.

Finally, the concept of student athlete identity development needs to be more thoroughly researched. Introduced in the current study, this concept is based on a theorized equilibrium between academic preparation and athletic identity development. Theoretically, the development of an "unbalanced" student athlete identity may result in poor adjustment to college, whereas a more balanced student athlete identity may foster the college adjustment process. Given the findings of the current study, research examining the theoretical underpinnings and psychometric characteristics of student athlete identity development is warranted. In addition, the construction of a student athlete identity development scale is needed to more clearly assess the theorized influence of this concept to college adjustment, retention, rates of graduation, vocational development, and adult development.

Limitations

No study can control for all potential sources of error. In the current study, several potential confounding variables need to be considered when interpreting the results. For example, due to access limitations placed on student records by the participant universities, individual SAT scores and high school GPAs were not available for either athlete or non-athlete groups. While institutional group-mean data allowed for group matching on some variables, such as high school GPA, other potential sources of error could not be controlled for statistically in the current design. Future studies would benefit from the employment of individual SAT scores and high school GPAs as both group matching criteria, and potential covariates, to increase power and minimize error

variance in their designs. Other possible confounding variables included environmental factors such as geographic differences, individual variables such as intelligence or personality, and developmental variables such as ethnic identity development and social competence.

In addition, due to the correlational design, there was no random sampling or assignment of participants to groups, therefore increasing the risks of selection bias and other threats to internal validity. Moreover, the correlational design and single time point assessment precluded any cause-effect linkages. Prospective, longitudinal designs are needed to assess these relationships. However, because participants were recruited from multiple sites, generalizability of the findings to similar settings was enhanced. In addition, generalizability of the findings to other populations of minority students at other universities was also enhanced.

Admittedly, the variable nature of survey administration potentially introduced unknown error into to the current design. For example, surveys were administered by a variety of different people including professors, resident assistants, administrators, and the principal investigator. The use of a $50 cash prize as a recruitment tool for non-athletic participants may have also introduced bias into the design. Furthermore, the surveys were administered in a variety of different settings including, classes, residence halls, study halls, practices, and libraries. Finally, four different universities from the Midwest and East Coast participated in the study. Each university differed in size, geographic locale, reputation, campus life, diversity, and sport tradition; all of which potentially influenced college adjustment of students and student athletes. For example, academic adjustment was significantly, albeit modestly, correlated to university affiliation in the current study,

indicating that a priori differences existed among students across the participating universities. Future research should endeavor to better standardize procedures, in order to limit extraneous error sources.

Also to be considered was the exclusive use of self-report measures to collect data. Although the SACQ has been extensively used in prior research, its use with student athlete populations has been limited. In addition, the AIMS has limited reliability and validity support, and has limited use with minority samples.

Despite these limitations, the results of this study suggest that ethnic status, athletic participation, and athletic identity all contribute to college adjustment, albeit in complex and unexpected ways, thus supporting the need further exploration and research. Athletic policy and direct service recommendations intended to foster identity development and emotional fulfillment in student athletes should ultimately rest on a firm empirical foundation of research. Given the reality that collegiate sport has become big business, often at the expense of student athletes, it is hoped that these results will inspire further inquiry into the relationships highlighted in this study.

APPENDIX A

Who Wants to Win $50!!??

Students needed for a
doctoral research study on
college adjustment and sport participation

If you are:

- a full-time freshman or sophomore and
- **not** a varsity athlete

please contact Mickey Melendez, Ed.M. at

(617) 292-9274, ext. 3114
or
mickeymelendez@hotmail.com
Leave your name and phone # or e-mail address

All participants who complete the 20 minute questionnaire will be entered in a drawing for a **$50 cash prize.**

All inquiries and responses are strictly confidential.
This doctoral research is being conducted through
Michigan State University.

APPENDIX B

Informed Consent Form
Michigan State University

You are being asked to participate in a doctoral research study that will explore how college students and student athletes adapt to college life.

As a participant in this study, you will be asked attend one testing session in which you will complete three paper and pencil questionnaires. The questionnaires will be focusing on aspects of your college adjustment and sport participation. The total time needed to complete the three questionnaires will be about 25 minutes. All limits of strictest confidentiality will apply to any subsequent use of the data collected. Your privacy will be protected to the maximum extent allowable by law.

Participation in the study is voluntary and you are free to withdraw at any time without ramification or prejudice. You may also request a summary of the final results once the study is completed.

Your signature on this informed consent form indicates that you have read and fully understand the details relevant to your participation in this study and have been given the opportunity to discuss this project with the principal investigator. In addition, the above procedures and guidelines have been explained to your satisfaction. Any further questions regarding participation in this study may be directed to Frederick G. Lopez, Ph.D., Michigan State University, at (517) 355-8502.

If you choose to participate in this study please sign and print your name below.

Participant Signature	Participant Name (please print)	Date
_____	_____	_____

APPENDIX C

Informed Consent Form
Michigan State University

You are being asked to participate in a doctoral research study that will explore how college students and student athletes adapt to college life.

As a participant in this study, you will be asked attend one group testing session in which you will complete three paper and pencil questionnaires. The questionnaires will be focusing on aspects of your college adjustment and sport participation. The total time needed to complete the three questionnaires will be about 25 minutes. In addition to completing the three questionnaires, you are being asked to allow your SAT scores, ACT scores, high school GPA, high school class rank, and family income to be included in the study. This background information will be provided to the principal investigator without any other identifying information (names, student ID numbers, etc.), thus maintaining participant anonymity. All limits of strictest confidentiality will apply to any subsequent use of the data collected. Your privacy will be protected to the maximum extent allowable by law.

Participation in the study is voluntary and you are free to withdraw at any time without ramification or prejudice. While you will not be paid for your participation, all participants will be entered in a prize drawing. One winner will be chosen at random at the conclusion of the data collection and will receive 50 dollars (US). The prize will be sent via mail. You may also request a summary of the final results once the study is completed.

Your signature on this informed consent form indicates that you have read and fully understand the details relevant to your participation in this study and have been given the opportunity to discuss this project with the principal investigator. In addition, the above procedures and guidelines have been explained to your satisfaction. Any further questions regarding participation in this study may be directed to Frederick G. Lopez, Ph.D., Michigan State University, at (517) 355-8502.

If you choose to participate in this study please sign and print your name below.

Participant Signature Participant Name (please print) Date

_____ _____ _____

APPENDIX D

DEMOGRAPHICS QUESTIONNAIRE

This brief questionnaire will collect background information important to the purpose of this study.

1. What is your gender?
   a. Male b. Female

2. What is your age? _____

3. What is your race/ethnicity? (circle one)
   a. White/Caucasian b. Black/African-American
   c. Hispanic/Latino d. Asian e. other _____

4. What year are you in school? (circle one)
   a. freshman b. sophomore c. junior d. senior

5. Did your parents graduate from college? (circle one)
   a. both parents b. one parent c. neither parent

6. Do you currently play a recreational sport?
   a. yes b. no

7. Did you play a sport in high school?
   a. yes b. no

8. Are you currently a varsity athlete?
   a. yes b. no

9. What varsity sport(s) do you currently play? (write in)
   _____

10. Are you currently receiving an athletic scholarship?
    a. yes b. no

APPENDIX E

Athletic Identity Measurement Scale (AIMS)

Items

1. I consider myself an athlete.
2. I have many goals related to sport.
3. Most of my friends are athletes.
4. Sport is the most important part of my life.
5. I spend more time thinking about sport than anything else.
6. I need to participate in sport to feel good about myself.
7. Other people see me mainly as an athlete.
8. I feel bad about myself when I do poorly in sport.
9. Sport is the only important thing in my life.
10. I would be very depressed if I were injured and could not compete in sport.

Scale for items 1-10

strongly agree : ____ : ____ : ____ : ____ : ____ : ____ : ____ : strongly disagree

APPENDIX F

Student Adaptation to College Questionnaire (SACQ)

Robert W. Baker, Ph.D. and Bohdan Siryk, M.A.

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Publishers and Distributors
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Los Angeles, California 90025

Name:_____ Date: _____

ID Number: _____ Sex: ☐ F ☐ M Date of Birth: _____

Current Academic Standing: ☐ Freshman ☐ Sophomore ☐ Junior ☐ Senior

Semester: ☐ 1 ☐ 2 ☐ Summer *or* Quarter: ☐ 1 ☐ 2 ☐ 3 ☐ Summer

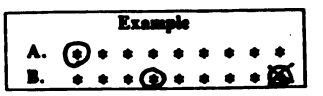
Ethnic Background (optional): ☐ Asian ☐ Black ☐ Hispanic
☐ Native American ☐ White ☐ Other

Directions

Please provide the identifying information requested on the right.

The 67 items on the front and back of this form are statements that describe college experiences. Read each one and decide how well it applies to you at the present time (within the past few days). For each item, circle the asterisk at the point in the continuum that best represents how closely the statement applies to you. Circle only one asterisk for each item. To change an answer, draw an *X* through the incorrect response and circle the desired response. Be sure to use a hard-tipped pen or pencil and press very firmly. Do not erase.

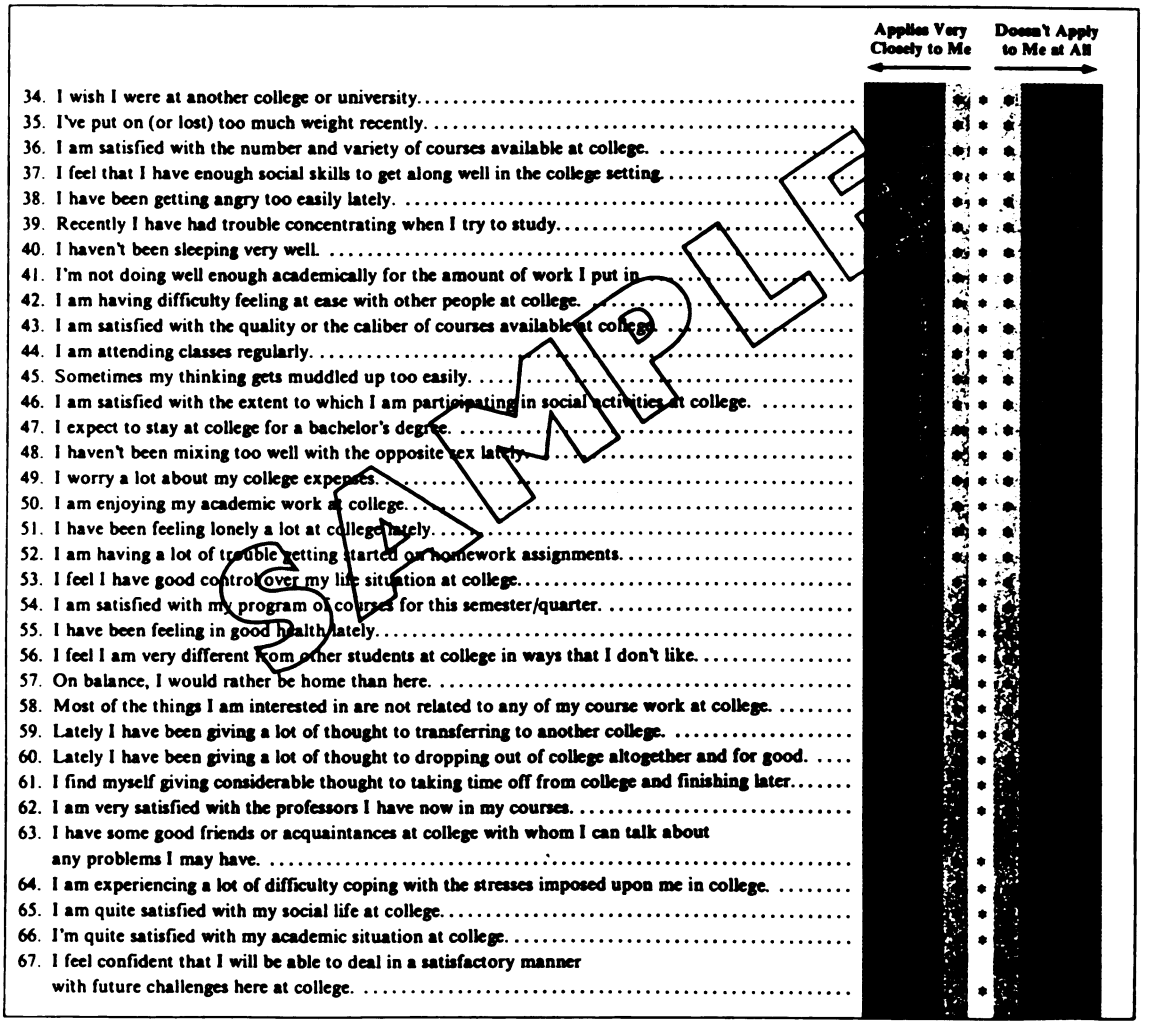
In the example on the right, Item A applied very closely, and Item B was changed from "doesn't apply at all" to "applies somewhat."



	Applies Very Closely to Me ←	→ Doesn't Apply to Me at All
1. I feel that I fit in well as part of the college environment.		
2. I have been feeling tense or nervous lately.		
3. I have been keeping up to date on my academic work.		
4. I am meeting as many people, and making as many friends as I would like at college.		
5. I know why I'm in college and what I want out of it.		
6. I am finding academic work at college difficult.		
7. Lately I have been feeling blue and moody a lot.		
8. I am very involved with social activities in college.		
9. I am adjusting well to college.		
10. I have not been functioning well during examinations.		
11. I have felt tired much of the time lately.		
12. Being on my own, taking responsibility for myself, has not been easy.		
13. I am satisfied with the level at which I am performing academically.		
14. I have had informal, personal contacts with college professors.		
15. I am pleased now about my decision to go to college.		
16. I am pleased now about my decision to attend this college in particular.		
17. I'm not working as hard as I should at my course work.		
18. I have several close social ties at college.		
19. My academic goals and purposes are well defined.		
20. I haven't been able to control my emotions very well lately.		
21. I'm not really smart enough for the academic work I am expected to be doing now.		
22. Lonesomeness for home is a source of difficulty for me now.		
23. Getting a college degree is very important to me.		
24. My appetite has been good lately.		
25. I haven't been very efficient in the use of study time lately.		
26. I enjoy living in a college dormitory. (Please omit if you do not live in a dormitory; any university housing should be regarded as a dormitory.)		
27. I enjoy writing papers for courses.		
28. I have been having a lot of headaches lately.		
29. I really haven't had much motivation for studying lately.		
30. I am satisfied with the extracurricular activities available at college.		
31. I've given a lot of thought lately to whether I should ask for help from the Psychological/ Counseling Services Center or from a psychotherapist outside of college.		
32. Lately I have been having doubts regarding the value of a college education.		
33. I am getting along very well with my roommate(s) at college. (Please omit if you do not have a roommate.)		

PLEASE TURN THE FORM OVER NOW AND COMPLETE ITEMS 34 THROUGH 67.

W-228A


Applies Very Closely to Me
Doesn't Apply to Me at All
34. I wish I were at another college or university.
35. I've put on (or lost) too much weight recently.
36. I am satisfied with the number and variety of courses available at college.
37. I feel that I have enough social skills to get along well in the college setting.
38. I have been getting angry too easily lately.
39. Recently I have had trouble concentrating when I try to study.
40. I haven't been sleeping very well.
41. I'm not doing well enough academically for the amount of work I put in.
42. I am having difficulty feeling at ease with other people at college.
43. I am satisfied with the quality or the caliber of courses available at college.
44. I am attending classes regularly.
45. Sometimes my thinking gets muddled up too easily.
46. I am satisfied with the extent to which I am participating in social activities at college.
47. I expect to stay at college for a bachelor's degree.
48. I haven't been mixing too well with the opposite sex lately.
49. I worry a lot about my college expenses.
50. I am enjoying my academic work at college.
51. I have been feeling lonely a lot at college lately.
52. I am having a lot of trouble getting started on homework assignments.
53. I feel I have good control over my life situation at college.
54. I am satisfied with my program of courses for this semester/quarter.
55. I have been feeling in good health lately.
56. I feel I am very different from other students at college in ways that I don't like.
57. On balance, I would rather be home than here.
58. Most of the things I am interested in are not related to any of my course work at college.
59. Lately I have been giving a lot of thought to transferring to another college.
60. Lately I have been giving a lot of thought to dropping out of college altogether and for good.
61. I find myself giving considerable thought to taking time off from college and finishing later.
62. I am very satisfied with the professors I have now in my courses.
63. I have some good friends or acquaintances at college with whom I can talk about any problems I may have.
64. I am experiencing a lot of difficulty coping with the stresses imposed upon me in college.
65. I am quite satisfied with my social life at college.
66. I'm quite satisfied with my academic situation at college.
67. I feel confident that I will be able to deal in a satisfactory manner with future challenges here at college.
SAMPLE

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