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## **Athletic Identity and Student Involvement of Female Athletes at NCAA Division III Women's and Coeducational Colleges**

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Over the last 40 years, coeducation has widely replaced single-sex education. The number of women's colleges in the United States decreased from 268 in 1960 to 70 in 2002 (Women's College Coalition, 2002). Smith (1990) determined that institutions were not convinced that women benefited from attending a single-sex school. The closing of women's colleges was supported by the assumption that coeducation provides equitable education for men and women (Tidball, Smith, Tidball, & Wolf-Wendell, 1999). Researchers have demonstrated the opposite effects; not only do women's colleges provide a more effective academic climate, but coeducation is potentially detrimental to the success of female students (Smith, Wolf, & Morrison, 1995).

Student involvement in the academic and extracurricular domains has been cited repeatedly as a key factor differentiating the women's and coeducational environments (Astin, 1977; Kim, 2001; Smith, 1990; Smith et al., 1995). Taking into consideration precollege traits and background demographics, Smith et al. found that attending a women's college was positively associated with student involvement. Women's colleges were found to offer and encourage opportunities for involvement to a greater extent than coeducational colleges. Attending a women's

college was also positively correlated with students' perceptions of their institution as student-centered, which itself was a positive predictor of academic and extracurricular involvement (Smith et al.).

Women's colleges offer students a chance to interact with female role models in multiple academic fields (Tidball, 1976, 1980, 1986). Tidball et al. (1999) argued that students at women's colleges are not only exposed to a culture that supports women pursuing any field they choose, but they also have professors who confirm that women are capable of doing so. When students perceive that their school is supportive of their education, they are more likely to increase their academic involvement by spending more time studying, conducting research, and interacting regularly with professors (Smith, 1990; Smith et al., 1995). Astin (1977) and Smith et al. have found that the academic involvement of the students at women's colleges is significantly greater than that of the women on coeducational campuses.

Similar results have been found when comparing the extracurricular involvement of women on these campuses (Astin, 1977; Kim, 2001; Smith et al., 1995). Astin found that students at women's colleges are more likely to engage in artistic interests and political liberalism, attain positions of leadership,

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become involved with student government, and develop high aspirations. Tidball et al. (1999) proposed that women's colleges provide opportunities for women to explore multiple roles, many of which are male-dominated at coeducational colleges. "At women's colleges, whatever roles students perform—from managing the physics laboratory, to maintaining audiovisual equipment, to running student investment portfolios, to performing in athletic competitions—must be handled by women" (Tidball et al., p. 109). Research has shown that women are encouraged to explore multiple roles and embrace leadership positions to a greater extent at women's colleges than at coeducational colleges (Astin; Kim; Tidball et al.).

One potentially salient role for many college students that has yet to be examined in terms of the comparison between women's colleges and coeducational colleges is that of student-athlete. Although athletic identity (i.e., the degree of identification with the athlete role) has been investigated extensively among intercollegiate athletes (e.g., Brewer, Van Raalte, & Linder, 1993; Brown & Hartley, 1998; Good, Brewer, Petitpas, Van Raalte, & Mahar, 1993), research has focused exclusively on student-athletes attending coeducational colleges. Differences in the athletic identity of student-athletes in the women's and coeducational environments is of particular concern due to previous studies that have indicated that strong identification with the athletic role was inversely related to career maturity (Murphy, Petitpas, & Brewer, 1996) and adjustment to sport transitions such as injury (Brewer, 1993) and sport career termination (Grove, Lavalley, & Gordon, 1997).

Given the higher levels of student involvement (and, as a consequence, role exploration) among students at women's colleges than at

coeducational colleges (Astin, 1977; Kim, 2001; Kim & Alvarez, 1995; Smith, 1990; Smith et al., 1995), it might be anticipated that identification with the athlete role would be stronger for student-athletes at women's colleges than coeducational colleges. Conversely, because athletic identity is affected by the relative salience of other identities (Stryker, 1968), student-athletes at women's colleges might be expected to have lower levels of athletic identity than those at coeducational colleges by virtue of the elevated commitment to other nonathletic (academic and extra-curricular) activities available at women's colleges (Astin; Kim; Smith; Smith et al.). The current study was conducted to test these competing hypotheses with respect to the levels of athletic identity among student-athletes at National Collegiate Athletic Association (NCAA) Division III women's and coeducational colleges. Division III institutions were selected because with respect to intercollegiate athletic affiliation, women's colleges are predominantly Division III members. Within the NCAA, Division I and Division II institutions are permitted to award financial aid and scholarships on the basis of athletic participation, whereas Division III institutions are not (NCAA, 2004a). Relative to Division I and Division II institutions, Division III institutions have restricted schedules of training and competition (NCAA, 2004b).

## METHOD

To achieve the aims of the study, a sample of female athletes was recruited for participation, measures of key variables were administered, and statistical analyses were conducted.

## Participants

Female athletes were selected from four small, very competitive to highly competitive

(College Division of Barron's Educational Series, 2000), private, NCAA Division III, liberal arts colleges in New England. The participants were 145 members of varsity intercollegiate soccer ( $n = 40$ ), field hockey ( $n = 20$ ), volleyball ( $n = 42$ ), basketball ( $n = 22$ ), and lacrosse ( $n = 21$ ) teams. These sports were selected based on their team sport status to control for possible differences between athletes who participate in team or individual sports. Seventy-three of the participants attended coeducational institutions and 72 participants attended women's colleges. The participants had a mean age of 19.28 ( $SD = 1.26$ ) years, with a range of 17 to 22 years. The sample consisted of 58 first-year students (40%), 36 second-year students (25%), 26 third-year students (18%), and 25 fourth-year students (17%). The majority of the sample reported their race or ethnicity as White (85%). The remaining participants reported their race or ethnicity as Asian (4%), Black (1%), Hispanic (4%), Native Hawaiian or Pacific Islander (1%), and other (5%).

## Measures

Questionnaires were used to measure demographic characteristics, athletic identity, and student involvement.

*Demographic Questionnaire.* A demographic questionnaire was used to obtain information on the age, class, number of academic credits, and race or ethnicity of the participants. The participants were asked to identify in which sport they were currently participating, as well as how many hours per week they devoted to their sport. The demographic questionnaire also included three items about the emphasis of their college on academics, out-of-class activities, and athletics. Respondents answered on a 7-point Likert-type scale with anchors of *lowest* and *highest* for these three items.

*Athletic Identity Measurement Scale.* The Athletic Identity Measurement Scale (AIMS) (Brewer & Cornelius, 2001) was used to assess athletic identity. The AIMS consists of 7 items that are intended to reflect the social, cognitive, and affective components of athletic identity. Items include statements such as, "I have many goals related to sport," and, "Sport is the most important part of my life." Responses are given on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The AIMS is internally consistent ( $\alpha = .81$ ), and AIMS scores increase with level of athletic involvement (Brewer & Cornelius).

*Student involvement items.* To assess the number of hours students devoted to out-of-class activities, participants were asked to identify how much time per week they devoted to the following: participating in activities related to their academic program, participating in intramural sports, working for pay, participating in campus activities, and volunteering in an internship or job. The number of hours spent in activities related to their academic program represents academic involvement; participation in all other activities represents extracurricular involvement. The number of hours spent in academics and extracurricular activities were added to obtain an overall student involvement score.

## Procedures

Data were collected at team meetings. Participants completed an informed consent form, the demographics questionnaire, the AIMS, and the student involvement items.

## Statistical Analysis

In the main analyses, separate  $2 \times 4$  (college type  $\times$  class) analyses of variance (ANOVAs) were performed on AIMS and student involvement scores to compare the mean AIMS and overall student involvement scores of the

TABLE 1.  
Means and Standard Deviations of Athletic Identity Measurement Scale and Student Involvement Scores for Female Student-Athletes at Women's and Coeducational Colleges by Class

Variable	Women's Colleges		Coed Colleges	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>Athletic Identity Measurement Scale by Class</i>				
1	37.23	5.24	34.48	7.71
2	33.62	7.85	33.87	5.02
3	39.00	5.55	33.08	9.75
4	41.79	5.19	35.19	6.68
<i>Student Involvement by Class</i>				
1	28.20	14.31	20.61	8.30
2	29.65	18.31	26.00	14.03
3	34.50	22.18	22.31	10.31
4	26.58	10.91	36.42	15.06

student-athletes from women's colleges with those from coeducational colleges across classes (i.e., years in college). In supplemental analyses, a Pearson product-moment correlation coefficient was computed between AIMS and student involvement scores and a series of independent groups *t* tests was carried out to compare the scores of the student-athletes from women's colleges with those of student-athletes from coeducational colleges on (a) their respective institutions' emphases on academics, out-of-class activities, and athletics, and (b) the amount of time spent each week involved in academics, athletics, and extracurricular activities, respectively.

## RESULTS

Findings from main and supplemental analyses provide information with respect to the primary research questions of the study and additional questions of interest, respectively.

## Main Analyses

Means and standard deviations of AIMS and student involvement scores are presented in Table 1. In the AIMS analysis, the class main effect,  $F(3, 137) = 2.47, p .05$ , and the college type  $\times$  class interaction,  $F(3, 137) = 1.70, p .05$ , were not statistically significant. The college type main effect, however, was statistically significant,  $F(1, 137) = 10.11, p < .005$ , with the mean AIMS score for student-athletes attending women's colleges significantly higher than that for female student-athletes attending coeducational colleges.

In the student involvement analysis, neither the college type main effect,  $F(1, 137) = 1.83, p .05$ , nor the class main effect,  $F(3, 137) = 1.58, p .05$ , were statistically significant. The college type  $\times$  class interaction,  $F(3, 137) = 2.96, p .05$ , however, was statistically significant. Separate one-way ANOVAs

performed on the student involvement scores of the two college types indicated a significant class effect for student-athletes attending coed colleges,  $F(3, 69) = 5.74, p < .005$ , but not for student-athletes attending women's colleges,  $F(3, 68) = 0.59, p .05$ . Bonferroni post hoc comparisons indicated that among the student-athletes attending coed colleges, fourth-year student-athletes had significantly ( $p < .05$ ) higher student involvement scores than first- and third-year student-athletes. The student involvement scores of second-year student-athletes did not differ significantly from those of first-, third-, and fourth-year student-athletes.

The Pearson correlation between athletic identity and student involvement was not statistically significant,  $r = -.04, p .05$ . As shown in Table 2, the mean emphasis placed on academics was significantly higher at women's colleges than at coeducational colleges,  $t(143) = -4.02, p < .01$ , and the mean emphasis placed on athletics was significantly lower at women's colleges than at coeducational colleges,  $t(142) = 4.49, p < .01$ .

Although no significant differences were found between women's and coeducational colleges in the amount of emphasis placed on student involvement and in the number of hours spent on activities related to their sport, the mean amount of time spent on activities related to academics for athletes attending women's colleges was significantly higher than that for female athletes attending coeducational colleges,  $t(143) = -2.77, p < .05$ .

## DISCUSSION

In the current investigation, student-athletes playing team sports at Division III attending women's colleges were found to identify more strongly with the athlete role than those at Division III coeducational colleges. Significant class differences in overall student involvement were found for the female student-athletes attending coeducational colleges, but not for those attending women's colleges. There was no discernible pattern to the differences, however, suggesting that the finding may be an artifact of the particular sample being studied.

TABLE 2.

Means and Standard Deviations of Emphasis and Activity Variables for Female Student-Athletes at Women's and Coeducational Colleges

Variable	Women's Colleges		Coed Colleges	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Hours Academic Involvement	23.32	14.15	17.68	10.13
Hours Extracurricular Involvement	6.08	6.32	7.49	6.79
Emphasis on Academics	6.83	0.44	6.44	0.71
Emphasis on Athletics	3.90	1.29	4.87	1.29
Emphasis on Student Involvement	4.67	1.38	4.42	1.33
Hours Traditional Season	22.93	6.32	22.96	6.66
Hours Nontraditional Season	9.06	5.72	9.38	4.57
Hours Off-Season	7.26	4.45	6.89	2.91

The finding for athletic identity is similar to the difference in role exploration that has been found between students at women's colleges and female students at coeducational colleges (Astin, 1977; Kim, 2001; Tidball et al., 1999), a difference that may occur in part because of the way in which resources are allocated at women's colleges as compared to coeducational colleges. At women's colleges, all financial and other resources and efforts are dedicated to female students achieving excellence; this occurs without competition from male students. Previous research has shown that the benefits of women not competing with men are particularly evident when examining leadership roles on campus (Tidball et al., 1999). Females on women's college campuses are able to aggressively pursue leadership positions and strongly identify with those roles regardless of social pressures suggesting that the roles are more suited for males.

Athletes are typically described as having qualities that society labels as masculine, such as aggressive, strong, competitive, courageous, and determined (Clasen, 2001). At women's colleges, there are no male students to dominate athletics or to be perceived as being more appropriately aggressive, strong, or competitive. Female athletes in a women-only environment can fully embrace their athletic role, rid themselves of societal pressures to be stereotypically feminine, and receive full support for their athletic pursuits. Athletes attending women's colleges are supported by 100% of the athletic resources. Every athletic facility, administrator, coach, athletic trainer, and fan at women's colleges is dedicated to the female athlete. Every effort from contest management to field maintenance is to increase or maintain the quality of the collegiate athletic experience for the female athlete. When an environment strongly supports a particular identity, a person is more

likely to incorporate that identity as an important part of who they are (Cantor, Markus, Niedenthal, & Nurius, 1986). Perhaps the full dedication of college resources to women, coupled with the existing attitude at women's colleges that women can explore multiple types of roles (Astin, 1977; Kim, 2001; Tidball et al., 1999), including those that are traditionally masculine, have paved the way for female athletes to have stronger athletic identities at women's colleges than at coeducational colleges.

Although women's colleges may offer an environment where female athletes can strongly identify with the athlete role, there is a clear indication from the current study that women's colleges emphasize athletics less and academics more than coeducational colleges. Female athletes at women's colleges also reported spending substantially more time on academically related activities than female athletes attending coeducational colleges. These findings support earlier studies in which students at women's colleges were more involved in academics than students at coeducational colleges (Kim, 2001; Smith, 1990; Smith et al., 1995; Tidball et al., 1999). Interestingly, female athletes in the current study did not differ in the amount of time spent in extracurricular activities and in the total amount of student involvement (time spent in extracurricular activities plus time spent on academically related activities) as a function of whether they attended a women's college or a coeducational college. These results differ from the findings of Kim, Smith, Smith et al., and Tidball et al., who found that students at women's colleges had greater student-involvement and were more involved in extracurricular activities when compared to students at coeducational colleges. The difference in results may reflect the population surveyed in this study. That is, these results

may be specific to female athletes playing team sports on small, private, Division III campuses, a population that differs from the general college student population that has been previously studied.

Another limitation to this study that should be considered when interpreting the results is that there were no controls for the characteristics of participants prior to entering college. Even in studies where precollege traits have been controlled (Smith, 1990; Smith et al., 1995; Tidball et al., 1999), however, researchers have been able to demonstrate that factors unique to the women's college environment contribute to the differences in achievement and behavior between students at women's colleges and those at coeducational colleges. Nevertheless, although it appears from the results of the current study that women student-athletes playing team sports at Division III women's colleges develop slightly stronger athletic identities than those at Division III coeducational colleges, future longitudinal research in which precollege traits are controlled is needed to validate this assertion. Sampling a more diverse array of academic institutions (e.g., larger Division I and Division II colleges and universities) and sports (e.g., individual sports) is also recommended to determine the generalizability of the current findings.

Further investigation is also needed to explore the unique women's college environment, where academics are heavily emphasized and female athleticism is truly supported. At women's colleges, athletes seem to be able to highly identify with the athlete role, yet maintain a strong commitment to their education, a feature that most educational institutions strive to achieve. Indeed, colleges and universities that are working to help student-athletes balance academics and athletics might turn to women's colleges for

strategies to implement change. Similarly, Division III coeducational colleges that are struggling to increase athletic interest among female college students may be able to use women's colleges as a model of providing support for female athletes. Athletic directors and other staff of coeducational colleges can examine how women's colleges obtain and maintain participation rates (e.g., through environments that support female athleticism) and then, if possible, apply those principles to the coeducational setting.

Additionally, student affairs personnel, such as career counselors, academic advisors, and mental health counselors, should be aware of the potential for student-athletes with strong athletic identities to experience a negative transition out of sport. This transition may happen expectedly (e.g., graduation) or unexpectedly (e.g., career-ending injury), with the potential for significant psychological consequences that could affect the student-athletes' academic performance, social relationships, and overall quality of life (Brewer, Van Raalte, & Petitpas, 2000). Programs that could help students prepare for an expected or unexpected transition out of intercollegiate sport participation include identifying skills learned through sport involvement that can be transferred to other domains (Shiina, Brewer, Petitpas, & Cornelius, 2004), developing positive coping strategies for the negative feelings associated with the ending of sport participation, and finding ways to continue a form of sport involvement (e.g., coaching) beyond college (Shachar, Brewer, Cornelius, & Petitpas, 2004). These programs, which embrace rather than detract from student-athletes' athletic identity, may be more likely to capture the attention of student-athletes with strong athletic identities and reduce the risk of student-athletes experiencing a difficult transition.



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