AN ANALYSIS OF THE PERCENTAGE OF WOMEN COLLEGIATE COACHES AT DIVISION III SCHOOLS

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Mary Edman
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On my honor
I have neither given nor received
unauthorized aid on this thesis.

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Mary Edman
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ABSTRACT

Since the passage of Title IX in 1972, women's sports have been working to gained equal stature to men's sports**.** However, in the past ten years, male coaches have begun to outnumber the number of women coaching certain women's sports. This study focuses on the percentage of female coaches at 126 Division III schools in 1974, 1994 and 2014. The gender of the athletic director, the school's religious affiliation, the size of the undergraduate class, the region and the prestige of the school were selected as independent variables. The descriptive statistics show a decrease in the percentage of female coaches in certain sports but an increase in other sports. A relationship between the prestige of a soccer program and the gender of the coach was also found.

Women's collegiate athletics existed long before the passage of Title IX. In the early 1800s, colleges provided only intramural and club sports for women. The first varsity-sporting event for women was a basketball game held at Smith College in 1892. Women's basketball gained popularity and women's sports started to be viewed in a positive light (Bell 2008). The Association for Intercollege Athletics for Women (AIAW) was founded in 1971, not long before the passage of Title IX, to manage women's sports while the National Collegiate Athletic Association (NCAA) continued to monitor men's sports (Welch and Sigelman 2007). Before this time, women who pursued athletics after high school were the exception, not the rule, and were expected to drop sports for homemaking when the time came (Morrison 1993). This was accepted as the status quo because the only sports career available for women was gym teacher. In 1971, there were fewer than 30,000 women competing in intercollegiate athletics (Murray 2005: 115), and women coached 90 percent of women's intercollegiate sports (Buzuvis 2010: 24). The AIAW fought for the passage of Title IX to increase the prestige and gain equality for women sports. Women's sports were only receiving about two percent of the overall athletic budgets, and scholarships were nonexistent (Suggs 2003).

Title IX states "No person in the United States shall, on the basis of sex, be excluded from the participation in, be denied the benefit of or be subjected to discrimination under any education program or actively receiving Federal financial assistance" (The United States Department of Justice 1972: 1). There are ten key areas to which Title IX applies: higher education, career education, education for pregnant and parenting students, employment, learning environment, math and science, sexual harassment, standardized testing and technology and athletics. However, out of these ten areas, athletics has been the

most recognized (Title IX 2014). There are three tests to see if a school is compliant with Title IX in their athletic program. Schools must demonstrate that the percentage of athletes and resources is proportional to the share of students by gender, there must be ongoing improvements with regard to the underrepresented gender, and the school must effectively accommodating the interests and abilities of the discriminated sex (Zimbalist 2005). Along with monitoring the proportion of the gender of athletes, schools are required to give proportionate athletic-based financial aid to both female and male athletes. Schools must also offer equal athletic opportunities for students through maintenance of equipment, playing facilities, travel expenses, locker room maintenance and recruiting (Judge and O'Brien 2011). Title IX increased the available playing options for female athletes and participation soared. The AIAW was no longer able to manage sponsoring the end-of-season tournaments with this increase and starting in 1981, the NCAA began to play a role in women's athletics (Welch and Sigelman 2007). In 1982, the AIAW was disbanded and the NCAA took over full responsibility for collegiate athletics.

The women who coached women's sports before the NCAA takeover were trained specifically for these roles. With the inauguration of the Sargent Normal School and the Boston Normal School in the 1880s, women were trained to be leaders for the next generation of female athletes. However, when the NCAA took over and expanded women's sports, the job of coaching women's teams began to be seen as more professional, more profitable, and therefore more desirable (Wushanley 2004). Women sports were finally able to compete in NCAA tournaments and could bring in a small amount of revenue for the athletic departments. Men were viewed as more desirable candidates to coach critical teams, and many women in leadership positions were pushed into the background (Welch

and Sigelman 2007). The 90 percent of women coaches that coached in 1971 has now decreased to only 43.4 percent. On the men's side only about two percent of men's teams have a female coach (Carpenter and Acosta 2014: 18).

LITERATURE REVIEW

The liberal feminist movement led to Title IX; their goal was and remains moving women into occupations and professions that are dominated by men, thereby eliminating the glass ceiling that holds women down (Lorber 2010). Working women also face the challenge of the glass escalator in which men, despite their desires, face inevitable pressure to move up in their professions as they are believed to be better supervisors (Williams 1992). Between the two (glass ceiling and glass escalator) coaching has remained a male dominated profession for men's sports and has become one for women's as well. Before the passage of Title IX, women coaches coaching women sports outnumbered men, but now in 2014, the opposite is true.

Home and Work

In the early 70s, it was believed that if women wanted to pursue a career, they first had to take care of business at home because their primary job was as a wife and mother. Liberal feminists claimed that gender differences were based on reproductive biology, which should not affect their capabilities in the workplace. Therefore women and men should not be treated differently at work or by the law. Their goal was to take gender out of the equation and assess only the accomplishments of a person. The assumption that a women's primary job is as a caretaker undermines gender equality since employers then assume that a mother will not be fully committed to her work (Lorber 2010).

Coaching can be demanding, making it a "greedy workplace" because of the long hours and the extensive travel (Bruening and Dixon 2007: 11). Those coaches that go above and beyond to work long days are seen as committed, productive and motivated to make a sports program the best it can be (Bruening and Dixon 2007). Coaching is not a family friendly job. Depending on the sport, coaching can be a year-round commitment especially with the addition of recruiting trips during the off-season. An athletic director has grounds for terminating a coach if s/he believes that the coach is not dedicated enough to making the program the best. This puts a tremendous amount of pressure on a mother to figure out how best to fit in the travel schedule and family time. Only 30 percent of full-time women coaches are married compared to 55 percent of other women working full-time, and 18 percent of women coaches have children compared to 45 percent of others in the workforce (Welch and Sigelman 2007: 1430). The college athletic system was built for men who can leave their children at home with a caretaker who is assumed to be a woman. If women do get jobs as coaches, their spouses or partners must make sacrifices to accommodate their schedules. Bruening and Dixon (2007) found through their interviews that many times, spouses and partners took demotions in their jobs in order for their spouse to take a better coaching job. Women coaches felt the need to take any opportunity offered to them because they were not sure when the next job would become available.

The flexibility of the job and the support of the athletic director are important in a woman undertaking a head-coaching job. A head coach can be more flexible with his/her own schedule compared to an assistant coach, but it helps when the athletic department is willing to accommodate parenting needs (Bruening and Dixon 2007). Women head coaches have a hard time figuring out the balance of home and work as evidenced by the meager 18

percent of women coaches who have children. Women often prioritize their family as caretaker over breadwinner, which limits their attention to a high-responsibility job and their time, spent trying to advance their careers (Welch and Sigelman 2007). Women are at a disadvantage in any time demanding field and find it difficult to pursue careers, such as coaching. Women are more likely to pursue careers that work around a family schedule, such as education (Lorber 2010).

Male Dominated Departments

Sexist patterns of hiring and promotion are still prevalent in many workplaces, especially when men hold the supervisor positions. Women find it difficult to pass through this glass ceiling and gain top positions (Lorber 2010). The athletic department at any university or college is no different. Women represent fewer than a quarter of athletic directors and in Division I, there are only 29 women athletic directors (Burton et al. 2009: 417). The athletic department still truly represents an "old boys network" (Brake 2010: 201). However, since the passage of Title IX, athletic departments are now required to have a senior woman administrator as part of the managerial staff. She works alongside a male director and a male associate director in most cases (NCAA 2013). This position was created in the hopes of preserving a powerful female's voice within the athletic department (Fagan and Cyphers 2012).

Athletic directors continually cite the lack of qualified and interested women and the heavy work schedule as reasons they hire men (Robertson 2007). However, it is not the lack of qualifications that keeps women from rising up in the ranks but an often-unconscious bias or a glass ceiling.

Men are particularly more likely to coach a revenue producing sport. Football and men's basketball remain two of the most popular and therefore biggest cash generating sports for universities. Men exclusively coach both of these sports. Women do not participate in football after high school, so they cannot continue to develop their knowledge about the sport leaving them unqualified to coach at a higher level. Becky Hammon made a big step for women coaches when she was hired to be one of the assistant coaches for the San Antonio Spurs, a professional men's basketball team, this past summer (NBA 2014). All eyes will be on her to see if she can hold up to the pressures of the job, and if she succeeds it could possibly open more doors for women. However, if she fails it will be interpreted that women should not hold such positions. That is a lot of pressure that men never face. Although her hiring is a great step for women coaches, she still represents a very small percentage of women coaching male sports in the old boys network.

Women coaches are evaluated in terms of masculinity, which leads to competition among women coaches. Men have the option to apply to coach both men's and women's teams. In this case, there is a glass wall where women can see all the jobs available but cannot access them (Fagan and Cyphers 2012). This leads to even stiffer competition for the few jobs available to women (Theberge 1993). Fierce competition between women and men for coaching jobs can persuade women to pursue a different career path. As the prestige of women sports has risen since the NCAA takeover, men have become more intrigued by these jobs. On a Division I campus, there are usually eight basketball coaching jobs available, four for men's teams and four for women's teams. Men apply to both teams and on average receive about six of the eight jobs leaving only two for female coaches (Fagan and Cyphers 2012: 3). Men have almost complete control over the high revenue

sports, like football and basketball, which are seen as the gateway into leadership positions in the athletic department (Brake 2010). As long as these sports keep earning revenue, the coaches are protected by the athletic director (Knopper et al. 1990). This protection has given men a kind of revolving door in college athletics. They are usually able to find another job at a different school while women feel they only have one shot to make an impact (Fagan and Cyphers 2012). If a woman does not produce solid results in her first few years as head coach, then she could be easily replaced. The glass ceiling for women coaches has become revenue earning sports and the difficulty to prove their capabilities of handling the responsibility required by these sports.

Women, who do, however, break through this glass ceiling, are relegated to Division II and III schools which are considered less powerful and esteemed. These sports make less money, if any, compared to a Division I powerhouse. The lack of revenue leaves coaches vulnerable in their jobs. In addition, women coaches are usually assigned to "female appropriate sports" at these schools (Burton et al. 2009: 417). Even when a woman works her way up into a Division I school, she will face even stronger competition and has to provide winning results every year to protect her job. Not only is she competing with capable women coaches but she also has to compete with men who want her job. So even if a woman is fortunate enough to break the glass ceiling, there is little guarantee she will stay there.

Prestige

The rising prestige of women's sports has made it difficult for women to earn a job coaching female college sports. It is still believed by athletic departments that winning in athletics is the most effective way to promote a school (Wushanley 2004). This promotion

is huge because big name schools can attract a stronger coaching staff and receive more funding from alumni as their prestige grows. Sigelman and Bookheimer (1982) found a connection between the success of an athletic program and alumni giving. Those coaches that produce the most revenue have the most power. They receive the biggest budgets, more media, better staff, and possibly better playing facilities (Knopper et al. 1990). The coaches that can produce a bigger name for the school have a clear path to a promotion and control some of the decision making within the department. It has become an assumption that if a school wishes to make a program successful, it should hire a male coach, as men are more capable of leading a powerful and financially successful program (Robertson 2007).

Any woman seeking to move up in the ranks in an athletic program has to create a powerful program and gain the respect of her colleagues. While a Division I program already has automatic prestige, there are still sports that find it difficult to gain visibility. Sports like tennis, swimming and diving, and track and field struggle to gain prestige regardless of the division because they do not earn revenue and do not have as rich a collegiate athletic history.

Bigger schools tend to have more sports, which means more opportunities to coach and it is the revenue earning programs that earn enough money to help with other sports budgets.

> Success brings in money, money makes it easier to succeed, and success brings in more money still; as the process feeds itself, the rich get richer and the poor get poorer (Sigelman and Bookheimer 1982: 358).

Success allows public schools to receive more state support and this support allows for more freedom within an athletic department (Brooker and Klastorin 1981). This success

creates power conference schools such as the Pac-12, Big 10, and the Southeastern Conference schools. Women coaches are found more in these power conference schools coaching women's basketball or softball (Welch and Sigelman 2007). While public schools receive funding from the state, private schools are able to attract more money in the form of donations from alumni. Alumni of public schools tend not to give as much to their alma mater based on the belief that their school is adequately funded by taxes (Brooker and Klastorin 1982). There is not as much job opportunity for women coaches because they have to follow the resources. Even with the creation of more jobs by resources, women still lose out. Since 2000, the NCAA has added 1,774 women's head coaching jobs but men have filled 1,220 of these, leaving only 554 jobs for women (Fagan and Cyphers 2012: 2). This has made the competition even stiffer at the Division II and III level.

Glass Escalator

Males are less likely to enter a female-dominated occupation such as nursing or teaching than a woman is to enter a male dominated field (Williams 1992). Women in a male dominated workspace have a token status. They work in a minority position and are made very much aware of their status (Theberge 1993). While token status for a man is an advantage, for a women it is a disadvantage. The glass escalator moves men up from a minority position to management positions (Williams 1992). Regardless of male's intentions, they are seen as the best supervisors, so they "escalate" up to management with relative ease, especially notable in female fields. Women have to work harder to prove themselves capable of leadership and therefore they have to take the stairs. This has led to the male leadership structure in most university athletic departments. Men are often viewed as the better supervisors and therefore emerge as the coaches of women's teams,

which then provide a constant reinforcement of the male coach image and the reality that athletics are a male dominated industry (Brake 2010).

While women face extreme competition and discrimination within the office, men tend to face it from outsiders. Men who are nurses and teachers are seen as doing something that is not masculine enough. They could be considered failures or sexual deviants and this pushes some men out of these industries. However, it also channels men into more legitimate practice areas such as management, and pushes them up the glass elevator (Williams 1992). They unintentionally get better paying jobs and promotions because they do not want to be seen, as deviants by society and their supervisors believe they can do a better job as a leader than a woman. On the other hand, women face a more difficult road because even when they work in their own gender-specific job, they have to compete with men for promotions. A majority of the time, women cannot get a promotion in an athletic department once they are a head coach of a women's program. That is as far as they can go.

Sports are equated with masculinity which leads to a common view that women's sports are inferior to male sports (Welch and Sigelman 2007). Men's sports were created much before women's sports and have gained prestige and popularity among the public. Women's sports only started to gain their popularity after the 1999 Women's World Cup (Leyden 2013). As women's sports gained prestige, men started to want to coach them to learn the ropes of coaching and work their way up to coaching men's teams. The glass escalator would take them up through different schools or sports until they had reached the highest point. It takes a longer period of time for women to solidify themselves as successful leaders and to coach a top Division I program. Rarely can a woman get further

into an athletic department than a senior women administrator, which is a highly competitive job because there is only one per school (NCAA 2013). On average, women have to work with smaller budgets, worse facilities, fewer assistant coaches and very little opportunity for promotion (Murray 2005).

Women coaches are less likely to stay in coaching as they age because once they hit the glass ceiling, they cannot keep moving up. Women assistant coaches see the frustrations that their coaches face and express less of a desire to follow in their footsteps (Welch and Sigleman 2007). Career advancement is difficult because they are found not to be the best "man" for the job (Brake 2010: 203). People seek jobs with the possibility of career advancement and assistant coaches watch their supervisors struggle and lose the motivation to continue with coaching. This has created fewer female role models for female athletes, which in turn dissuades younger women from pursuing a career as a coach (Fagan and Cyphers 2012). With the discrimination that is faced within the office and the lack of promotions, women athletes find other careers to pursue.

Men in women's occupations are seen as a positive addition to the workforce and are sought out by their superiors, while women can face stigmas (Williams 1992). For example, women who follow an athletic career path face anti-lesbian stereotypes. Many times women have to hire a male assistant coach to combat the appearance of a gay program. This helps parents feel more comfortable in the recruiting process if they are able to work with both a male and female (Fagan and Cyphers 2012). Women's entrance into sport led to a crisis in masculinity and a backlash in the public sphere (Robertson 2007). Men are picked to be supervisors because they have supposedly "natural" managerial characteristics where as women are associated with communal attributes. There are

women with managerial qualities but they are perceived as not having the ability to engage them like men (Burton et al. 2009). Women have to work harder to gain acceptance from men in the workplace and they also have to prove that they can display managerial qualities (Brake 2010).

Athletics remains a setting where gender and gender differences are still powerfully expressed (Theberge 1993). Women still have to prove themselves even in coaching women sports and have to compete with men working their way up through athletic departments. Women are highly visible within an athletic department and they experience high pressures to perform. They have to fit into the dominant male culture and be successful (Theberge 1990). With 1 out of every 4.5 women's teams coached by a female, women have to compete to get any available coaching job, while qualified men take the majority of jobs. Since 1977, sports like tennis, track and field, volleyball, archery and badminton have faced a dramatic drop in women head coaches. Women's basketball and softball remain the two sports most commonly coached by women (Carpenter and Acosta 2014). There are few jobs given to women who want to work in an athletic department and there is substantial competition to obtain a job at a Division I school. The road to a prestigious program is not simple for a woman. However, only 44 percent of the women's teams in Division III are coached by a women coach, which is the same percentage as Division I (Welch and Sigelman 2007: 1416). Even with less prestige, women still have to work hard to prove themselves capable of coaching a Division III program. Division III schools are considered one of the lowest of the NCAA established divisions and have little research done on them. Most women coaches start their coaching careers at Division III

level schools, so it is important to understand under what conditions the glass escalator plays a role in men coaching women's team at that level?

METHODS

The list of conferences for Division III schools was taken from the Division III Commissions' website. From there, stratified sampling was used and simple random sampling was used within the strata. Three schools were selected from each conference to be part of the sample. With 42 conferences and 3 schools from each, the total sample size was 126 schools.

Out of the sports offered across the country at the Division III level, 10 female and male sports were chosen to be the focus. Bowling, fencing, football, gymnastics, men's ice hockey, rifle, rowing, skiing, water polo, and wrestling were excluded because some of these sports were offered only at a small number of schools and others did not have any history of a women coach. Every school's athletic website was accessed to collect the gender of the coaches in the years 1974, 1994, and 2014. These years illustrate the progression of Title IX through time at it origin, at a midpoint, and in the present. The gender of the athletic director was also collected through those same years. Many of the athletic websites did not keep archives before the 2000 season. In those cases, the sports information directors or the athletic directors were contacted. About half (n=51) of the schools responded with data. All 126 schools were kept in the sample to be used in calculating the prestige scores. The independent variables that were also collected were the schools endowment through 2014, the athletic administrative staff numbers, undergraduate student body size and the religious affiliation of the school if any.

A prestige scale was created for each school. For every year with a winning record, the sport received one prestige point. Every time they won their conference tournament they received an additional two points and when they won more than one round at the NCAA tournament regionally or nationally they received three more points. If a team won a NCAA tournament, they received five points. Any sport that had no winning record or no data available received a zero on the scale. The assumption was made that if there were no data available then the school had not had a winning record before. Prestige scores were based on the previous five years before 1974, 1994 and 2014. The prestige scores ranged from zero to thirty.

Because no women coaches were coaching men's sports, men's sports were removed from the data. Cross-country, golf, swimming and diving, and track and field's prestige scores were not included in the analysis. The majority of the schools do not keep head-to-head records for these sports so there was no easy way to count their winning seasons. Many keep track of only individual NCAA team accomplishments and records.

To create a variable that represented the total number of women in each year, a variable for the percentage of women coaches in 1994 and 2014 was created. Too little data was available for 1974 to create a variable. Prestige scores by sport were also created by using the average prestige score per school based on their prestige scores from all sports.

T-tests and chi-squares were run to determine if there was a difference in means or association between the gender of the coaches and the independent variables.

RESULTS AND DISCUSSION

The descriptive statistics shown below in Tables 1 and 2 illustrate some of the story behind the changes that have taken place in coaching over the past 40 years. While certain sports have seen an increase in female head coaches, others have seen a decline. A baseline measure statistic of the year 1974 was used because many of the schools added the majority of their women's sports starting in the 1990s. Table 1 reveals that cross-country, track and field, and swimming and diving have seen drastic increases in the number of male coaches running the programs. This may be because these women's programs are usually combined with their male counterparts, and as discovered, during data collection no male programs of any sport have a female head coach. On the other hand, women coaches remain dominant in basketball, field hockey, lacrosse and softball. Other than basketball, the other three sports are qualitatively different than the male. The rules in women's lacrosse are quite different than men's lacrosse making it difficult for men to coach a sport they have never played. Softball and baseball are also different in their rules and techniques. It may be that the differences in these sports allow women to dominate those coaching fields. Just as women have not branched into football or men's lacrosse, men find it difficult to break into these sports. Women have also made strides moving into the athletic director position in Division III schools. Although males still manage the majority of front offices, there has been growth for women since 1974, from 9 percent women to 28 percent. The arrows in Table 1 show the change in the percentage of women coaches over the years. The red increasing arrow means that the percentage of women have continued to increase over the years while the blue arrow means the percentage has decreased. Golf shows an interesting trend where in 1974, the percentage of women coaches was 20 and

then dropped down to 7, but now in 2014 is back to 20 percent, which is why the symbol is an equal sign. Although basketball, softball and volleyball remain predominately coached by women, the percentage in comparison to male coaches is dropping

Table 1. Percent (n)s of Athletic Director/ Coaches by Year

		1974	1994	2014	Change in Women
Athletic Director	Male	91 (41)	87 (49)	72 (91)	
	Female	9 (4)	13 (7)	28 (35)	↑
Basketball	Male	28 (13)	30 (21)	34 (42)	
	Female	71 (33)	70 (48)	66 (81)	↓
Cross Country	Male	82 (18)	81 (39)	73 (88)	
	Female	18 (4)	19 (9)	27 (32)	↑
Field Hockey	Male	19 (5)	19 (6)	23 (11)	
	Female	81 (21)	81 (26)	77 (36)	↓
Golf	Male	80 (4)	93 (14)	80 (44)	
	Female	20 (1)	7 (1)	20 (11)	=
Ice Hockey	Male	100 (3)	75 (3)	78 (14)	
	Female	0 (0)	25 (1)	22 (4)	↑
Lacrosse	Male	33 (3)	25 (5)	22 (17)	
	Female	67 (6)	75 (15)	78 (61)	↑
Soccer	Male	75 (3)	67 (43)	64 (78)	
	Female	25 (1)	33 (21)	36 (44)	↑
Softball	Male	11 (2)	28 (13)	32 (36)	
	Female	89 (16)	72 (34)	68 (76)	↑
Swimming/Diving	Male	44 (7)	76 (29)	75 (58)	
	Female	56 (9)	24 (9)	25 (19)	↓
Tennis	Male	23 (15)	51 (23)	75 (58)	
	Female	56 (9)	49 (22)	25 (19)	↓
Track & Field	Male	60 (9)	74 (25)	82 (69)	
	Female	40 (5)	26 (9)	18 (15)	↓
Volleyball	Male	23 (6)	19 (10)	33 (40)	
	Female	77 (20)	81 (44)	67 (80)	↓

Table 1 shows the specific percentages broken down sport-by-sport, but it is also necessary to look at the overall change by year. Figure 1 shows a boxplot of the total percentages of head women coaches in 1994 and 2014. The median percent of women head coaches in 1994 is slightly higher than in 2014, but there were also more schools with

no female coaches at all in 1994. From the boxplot, both distributions are symmetrical; neither year has an emphasis on either end. Women head coaches in 1994 represent about 50 percent of the staff while in 2014 that percentage has moved down to around 40 percent.

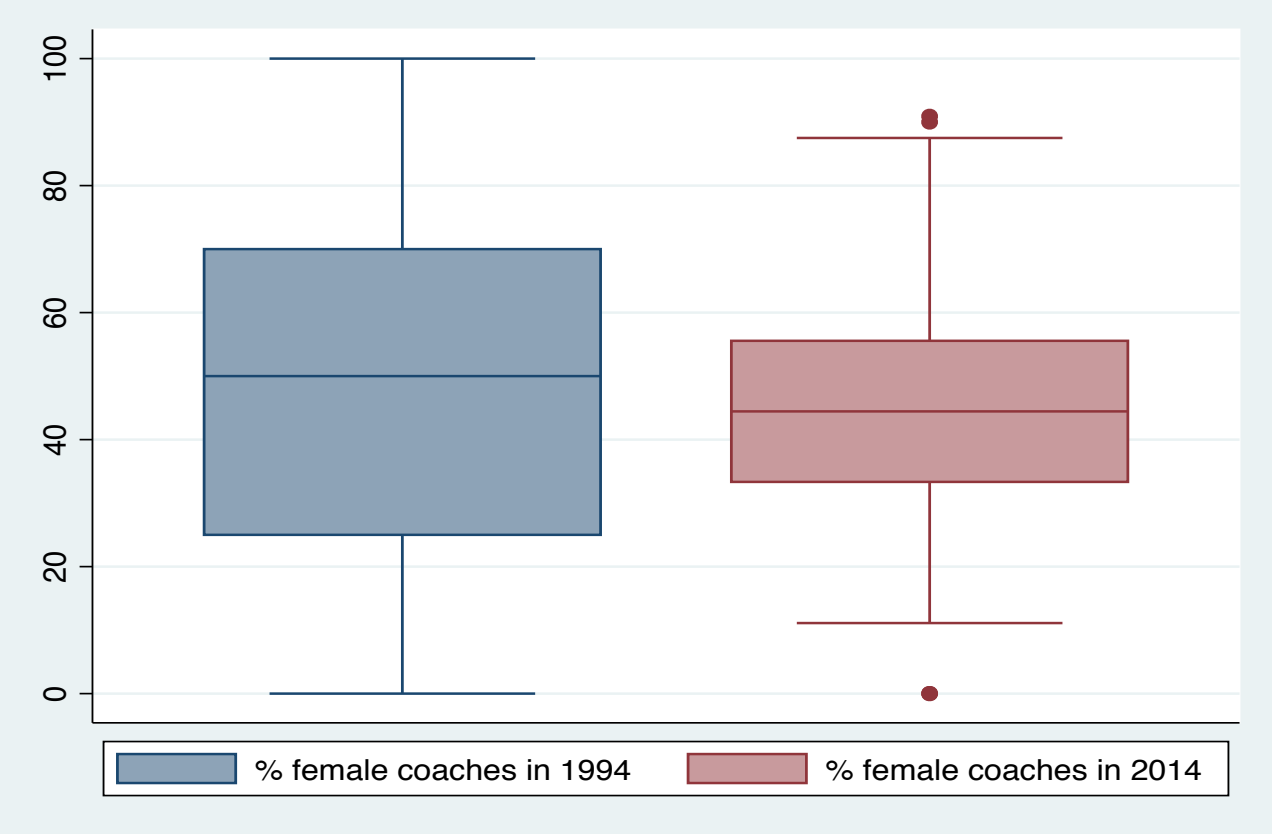

Figure 1. Boxplot of the Percentage of Head Women Coaches in 1994 and 2014

The comparison of these boxplots is important because it shows that there have been some changes to the proportion of women coaching women's college sports in the past ten years. The interquartile range in 2014 is smaller. Compared to 1994, the ends of the 2014 boxplot are moving closer towards the center. In 2014, there are no schools with a 100 percent female coaching staff, but having a coaching staff that is 0 percent female is now an outlier. The total number of female coaches coaching women's sports has increased from 133 in 1974 to 239 in 1994 and now is 411. Although this increase shows that women

still have positions coaching their own sports and it is growing year by year, the number of men coaches has increased even more notably, from 75 in 1974 all the way up to 573 in 2014. At one point in time, women outnumbered the men coaching women's sports but now the opposite has occurred.

Table 2 shows the percentage of women coaches by specific schools. Selected in the table are the top five and the bottom five schools for each year. Newbury College is an extreme example of the changes that have taken place. They have moved from 100 percent women coaching women's sports in 1994 to now having a staff that is 0 percent female. Two of the top three schools in 2014 with a strong female coach presence are all-women schools (Smith College and Meredith College). This is not surprising because with only women's sports available there is a lack of opportunity for a male coach to eventually move up to coaching a male sports program. With the exception of Newbury, none of the same schools were shown in both years, which indicate that changes were clearly made to coaching staffs within the last ten years.

Table 2. Total Percentages of Head Women Coaches by School in 1994 and 2014

Top 5 1994		Top 5 2014	
Newbury College	100%	Tufts University	90.9%
Hartwick College	100%	Smith College	90%
Eureka College	100%	Meredith College	87.5%
University of Rochester	100%	Massachusetts College of Liberal Arts	85.7%
Capital University	100%	Thomas College	85.7%
Bottom 5 1994		**Bottom 5 2014**	
Gordon College	20%	Crown College	14.2%
New Paltz University	14.2%	Spalding University	14.2%
Purchase College	0%	UW-Superior	14.2%
Baruch College	0%	Manchester University	11.1%
Carroll University	0%	Newbury University	0%

As shown in Table 1 and 2, there are differences between the percentage of male and females coaching women's Division III sports. To see if there were any variables that had a significant correlation with the percentage of female coaches, multiple statistical tests were run.

Table 3 shows the t-tests run on the difference of means of selected independent variables between the years 1994 and 2014. The gender of the athletic director, the school's religious affiliation, and the size of school were selected as independent variables. Athletic directors control much of the hiring process for coaches, and the athletic department is still an "old boys network" (Brake 2010). Fagan and Cyphers (2012) discussed sexist patterns of hiring that still exist within an athletic department. Religious affiliation could have a similar effect because many times the school will have to follow certain guidelines in its hiring process. In an email sent back during data collection, a sports information director noted that Roman Catholic schools hire a bishop as their athletic director and he must be a male. A larger school means more coaching opportunities and resources, which means an ability to build up the strength of their program. If the previous research on these independent variables hold true, there would be a decrease in the percentage of female coaches in 2014.

The difference in means shows that in almost all cases, there was a negative change in the mean percentage of women coaches though no differences were statistically significant. The only exception was in the South. Taking a look at the mean for the South in 1994, it is the lowest mean so although the percentage between 1994 and 2014 increases, it now falls within the range of the other independent variables. Perhaps the more conservative South was slower to implement Title IX, but is now catching up.

Table 3. Mean Percentages of Women Coaches in Division III Schools on Selected Independent variables

		1994	2014	Change
Director	Male	53.77	44.18	-9.59
	Female	50.27	49.90	-.37
Religious	Yes	49.77	46.99	-2.78
	No	51.89	43.13	-8.76
Size	Small	50.75	45.56	-5.19
	Large	48.86	46.78	-2.08
Region	Midwest	51.71	39.97	-11.74
	Northeast	49.81	48.02	-1.79
	South	48.08	52.93	4.85
	West	54.17	46.39	-7.78
Prestige	High	56.62	44.68	-9.30
	Medium	49.83	45.25	-5.01
	Low	52.08	51.11	-1.01

* No differences of mean were statistically significant

Table 3 more specifically shows what is taking place within the boxplots from Figure 1. Looking across the means in 2014, nothing drops below 40 percent except for the Midwest region, but there is still a decrease in the percentages from 1994. This shows the ends of the 2014 boxplot moving closer together. At the Midwestern schools and at schools with a male athletic director, there are the biggest decreases in means. The decrease in means with male athletic directors is not surprising, supporting Brake's (2010) claim about "old boys networks" remaining strong even within Division III athletic departments. The drop in the percentage of coaches at Midwestern schools is interesting because the schools went from having one of the highest percentages of female coaches to having the lowest percentage in 2014. This could be due to the culture around sports in the Midwest. Although the school's prestige scores based on their winning seasons may not be high, people love collegiate athletics at all levels, so in general, athletics are prestigious, even sports played by women.

To look more specifically at the prestige of a specific sport and the relationship with the gender of the coaches, chi-square tests of association were run. Ice hockey, basketball, soccer and tennis were chosen only in 2014 because there was a lack of sufficient data in the previous years. These sports were chosen because looking at Table 1, ice hockey, soccer and tennis were three sports that had large differences between the men and women coaching the sports. On the other hand, all four sports also have very little difference between the female and male rules. This means that either a man or women could coach, leading to more competition for the job. As Fagan and Cyphers (2012) discussed, men can apply to both teams and receive more than half of the available jobs. Basketball and soccer also tend to be considered prestigious sports at the collegiate level and have the biggest fan base other than football. Robertson (2007) found that schools believe a male coach will be more capable of leading a successful program.

Table 4 shows the chi-square tests run on the four sports. There was no significant association for ice hockey, basketball and tennis. However, there was a significant association at the $p<.05$ level for soccer.

Table 4. Chi-square test of Association between Gender of Coaches and the Prestige of the Chosen Sports

		Low Prestige	High Prestige	X^2	p
Ice Hockey	Male	42.86% (6)	57.14% (8)	-	-
	Female	100% (4)	0% (0)		
Basketball	Male	26.19% (11)	73.81% (16)	-	.48
	Female	23.46% (19)	76.54% (39)		
Tennis	Male	90.79% (69)	9.21% (7)	-	.29
	Female	82.14% (23)	17.86% (5)		
Soccer	Male	88.46% (69)	11.54% (9)	3.96	.046*
	Female	75% (35)	25% (11)		

*$p<.05$

Ice Hockey

Out of the sample of 126 schools, only 18 of these schools have a Division III hockey team. Of these 18, 14 of these coaches are male and only 4 are female. Their prestige scores ranged from zero to six.

Women's collegiate ice hockey is a relatively new sport with the first NCAA championship held in 2002 (NCAA 2013). This could be an explanation for why women coaches have barely broken the surface of coaching in ice hockey. With the sport being new, women have barely graduated from college and are working their way up to becoming a head coach. Division III men's hockey was founded 1984 (NCAA 2013), so there are more men available with experience. With only 46 Division III colleges competing in women's hockey there is room for expansion. This will be an interesting sport to watch in the future to see if the trend changes or if it will remain a male coach dominated sport.

Basketball

Women's basketball has a rich history within the NCAA; the first tournament was played in 1982, but the first women's college basketball game was played in 1892 at Smith College (Lewis 2008). Women's collegiate basketball has remained predominately coached by women. In 2014, there were 81 female coaches and 42 male coaches in this sample.

The difference between men and women's basketball as a game is minimal. At the college level, the only difference is the size of the ball. This means that either a man or women coach can apply for the job. Unlike the other three sports tested, women predominantly coach Division III basketball. Basketball has a long history with successful high profile women coaches like Pat Summitt and Vivian Stringer. They proved that a woman coach can hold her own against the best male collegiate basketball coaches.

However, even with great women coaches, jobs are still extremely competitive between men and women. With Becky Hammon becoming the first woman to be an assistant coach for a male NBA team (NBA 2014), this could lead to more changes in the world of collegiate basketball.

Soccer

Women and men's soccer are identical games. However, as discovered no women are at the moment coaching a Division III men's soccer program. This means that every woman who wants to coach a women's soccer team must compete with a larger pool for a limited number of jobs. Out of these 126 schools, 48 women coach a soccer team.

In 2014, there is a significant association between a soccer coach's gender and the prestige of the program (x^2=.046). At a high prestige program, 25 percent are female coaches compared to the 11 percent that are male. While 88 percent of male coaches coach at a low prestige program, 75 percent of women also coach at a low prestige school. Soccer was the only sport that showed a significant relationship between the gender of the coach and the prestige. The high percentage of women coaches at high prestige programs may be because the women who coach them have been involved at the school for many years. Soccer and basketball programs have the longest history at the majority of these schools and the coaches have not changed often. Male coaches who move up the glass escalator work in a women's program for a few years then move up to coach a men's team, while women stay and continue to coach the women's team.

Tennis

Tennis is the fourth sport that is highly male-coach dominated. Identical to soccer and basketball, the rules in men and women's tennis are the same. Like cross country and

swimming, men and women's tennis tends to be a combined program with the same coach. Since the programs are combined and no women are coaching male programs, there is high majority of male coaches. Out of the sample, 76 of the coaches are male while 28 are female and the prestige scores ran from zero to 30.

It will be interesting to see over the next few years if more tennis programs continue to combine their men and women's teams under one coach or if schools separate them. At a majority of Division I schools, the programs are kept separate because the travel schedule is more difficult to coordinate, while at Division III schools, teams travel to the same schools and tournaments together. If programs continue to combine, women could lose out on their fair share of tennis coaching jobs.

Looking through the data, the independent variables showed no significant difference in means and the chi-square tests show only a significant association between the gender of the soccer coach and its prestige. This means that we cannot generalize these differences to all Division III schools. The descriptive statistics for this sample though show the drop in women coaches by specific sports. The sports that have maintained a dominance of women coaches have different rules or have a rich history. Women have maintained their dominance as coaches in volleyball, basketball, field hockey and softball. This defends what Welch and Sigelman (2007) found in their study of Division I schools. Both field hockey and softball have a small number of men who have experience playing them. This leads to challenges for males in pursuing a coaching job in a sport that they know little about. Carpenter and Acosta (2014) found similar findings in their research of Division I programs. Not only is the percentage of women coaches dropping in tennis and track and field in Division I schools but also this same phenomena is occurring at Division

III schools. Division I and III schools seem to be following similar trends with both divisions having an average of 44 percent women coaches (Welch and Sigelman 2007).

FUTURE RESEARCH

Collegiate women sports have gained prestige and popularity in the past 40 years, which has had an effect on the number of women collegiate coaches. The current study reflected the changes that have occurred over the past 40 years. Future research should continue to follow the trends in the next few years specifically with the sports that have a declining number of female coaches. The four sports in this study should continuously be examined because the male and female rules are the same, which makes them highly competitive jobs for male and female coaches. Ice hockey is the newest of all the sports and could see the biggest changes in the next few years as more schools decide to add a Division III hockey team. It would be interesting to look at the sports that have seen a decline in the percentage of female coaches such as basketball. There is a great history behind women's basketball, so it would be interesting to delve more into why changes are taking place.

Future research should look deeper into the differences by region of the school. How might culture play into the prestige and popularity of a sport or are there outside factors? It would be interesting to compare the culture of sports within each region because the South has seen an increase in the percentage of women coaches but that may be because Division I schools reign supreme in that region especially with the SEC schools so women have been able to coach at Division III schools, while the Midwest schools may have a different culture and follow sports at any division.

The prestige of the sport's program should be looked into in depth. Although the prestige scale in this study was useful, it only looked at the school's history of winning records. Future research should find a way to analyze the prestige of the school as well as the sport. Some schools have a long history which would boost their prestige score because people just know the name of the school. It is important to analyze not only the prestige of the sport's program but of the school as well. More than just the winning records of the school should be taken into consideration.

Interviews could be conducted with athletic directors to see how the hiring process works with coaches. Also interviews should be done with past and present women coaches to see why some have stayed in coaching and others have not and their experience working in an athletic department. This would examine the decision-making process done by the athletic director and could discover if there is unintentional bias happening within the athletic departments. These interviews could be done with coaches throughout the different college divisions to see if any differences exist between Division I, II and III.

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