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A Profile of Strength and Conditioning Coaches at National Collegiate Athletic Association
Division II and III Member Institutions

A thesis presented to
the faculty of the Department of Physical Education, Exercise and Sport Sciences
East Tennessee State University

In partial fulfillment
of the requirements for the degree
Master of Arts in Physical Education

by

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December 2005

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Keywords: Strength and Conditioning Coach, Certification, Demographics,
Education, Duties, NSCA, CSCS

ABSTRACT

A Profile of Strength and Conditioning Coaches at National Collegiate Athletic Association
Division II and III Member Institutions.

by

Leonard Haggerty

The purposes of this study were to compile demographic characteristics, educational backgrounds, coaching experiences and duties of strength and conditioning (STC) coaches at NCAA Division II and III institutions, and compare the profile of Division II and III STC coaches to the Martinez (2004) study of Division I-A STC coaches. NCAA Division II and Division III athletic personnel ($N=578$) received an electronic survey for this study. The return rate from Division II and Division III STC coaches were as follows: Division II, 23 responses ($n=175$), Division III, 34 responses ($n=403$). Descriptive statistics were used to examine each item. STC coaches at NCAA Division II and III institutions are white, male, approximately 35 and 34 years of age respectively, earn an annual salary of \$30,001-\$40,000, hold the CSCS certification, and received a master's degree. The results indicated differences between this study and Martinez's (2004) study of NCAA Division I-A STC coaches.

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CHAPTER 1

INTRODUCTION

Most sports fans have some familiarity with the three classifications of the National Collegiate Athletic Association (NCAA) membership: Division I, II and III. In the United States, larger universities are affiliated with the NCAA and are classified as being in Division I-A or I-AA and are perceived as having elite athletic programs. Their athletic events fill stadiums and revenues are received from television broadcasts of their athletic events (Pullo, 1989). Division I members are required to provide funding for most of the sports at their respective universities and provide financial aid for student athletes (National Collegiate Athletic Association [NCAA], Division II at a glance, n.d.).

The NCAA (2004) declared that members of Division II are required to sponsor at least four men's sports and four women's sports, with two team sports for each gender and offer at least a limited amount of athletic related financial aid. However, the obligation is much less than what is required of Division I schools. At the other end of the spectrum, NCAA Division III members have to sponsor at least five sports for men and five for women, with two team sports for each gender, and each playing season represented by each gender. Division III members are prohibited from providing athletic-related financial assistance.

It is clear that the level of athletic competition is much higher at Division I schools compared to either Division II or Division III schools. However, all levels of collegiate athletics demand high levels of physical performance from their athletes. At such high levels of athletic competition, a demand for organized strength and conditioning programs for men and women's sports exists (Roozen, 1996). This demand places an emphasis on strength and conditioning professionals to oversee the planning, implementation, and administration relative to day-to-day

operation of strength and conditioning programs. To a great extent, this has been facilitated by the efforts of the National Strength and Conditioning Association (NSCA) “to educate, communicate, analyze, promote, and develop the strength and conditioning profession” (National Strength and Conditioning Association [NSCA], *The National Strength and Conditioning Association: A Brief History*, n.d., ¶3).

At one time, personal weight training experience was sufficient to qualify an individual as a strength coach. However, as the study of exercise science progressed, more and more individuals with a desire to work with athletes made the effort to acquire a more extensive educational background to parallel their informal experiences in weight training and athletic participation (Eider, 1985).

Individuals considering a career as a strength and conditioning coach may have many questions about what it takes to enter and excel in the field. The most common questions focus on the level and type of education, professional certifications, and strength training and conditioning experience that is required of collegiate strength training and conditioning professionals (Dooman, Titlebaum, & DeMarco, 1998).

In 1992 Pullo published a profile of strength and conditioning (STC) coaches at NCAA Division I-A and I-AA football institutions, (See Table 1). The average STC coach was a white male, 33 years of age at the Division I-A level and 32 at the Division I-AA level. Salaries were between \$30,00-\$39,000 at the Division I-A level and \$20,000-\$29,000 at the Division I-AA level. Forty-six percent of STC coaches in Division I-A and 63% in Division I-AA had no professional strength and conditioning certification of any kind (Pullo, 1989). Sixty-three percent and 70%, respectively, of the coaches in Division I-A and Division I-AA had completed a master’s degree.

Table 1.

Comparative Profile of Division I-A and I-AA Strength and Conditioning (STC) Coaches

Item	Division I-A		Division I-AA	
	1992	2004	1992	2004
Gender	Male	Male	Male	Male
Ethnic origin	White	White	White	White
Age	33	37	32	34
Salary	\$30,000-\$39,000	\$50,000-\$59,000	\$20,000-\$29,000	\$30,000-\$39,000
CSCS Certification	No	Yes	No	Yes
Masters Degree	Yes	Yes	Yes	Yes

Indicated response represents the highest rate measured to show the characteristic a coach was most likely to demonstrate. From “Study of the Key Determining Factors for the NCAA Division I Head Strength and Conditioning Coach,” by D. Martinez, 2004, *Journal of Strength and Conditioning Research*, 18(1), p. 14. Copyright 2004 by the National Strength and Conditioning Association.

Recently, Martinez (2004) conducted follow-up research of the Pullo (1992) study and compared the results and identified changes had occurred in the profile for head STC coaches at the Division I levels. He reported that coaches were still predominantly white males, 37 years old at Division I-A and 34 at Division I-AA with salaries between \$50,000-\$59,999 at Division I-A and \$30,000-\$39,999 at Division I-AA. Martinez also found that approximately 70% of the coaches in both Division I-A and I-AA were certified through the NSCA as Certified Strength and Conditioning Specialists (CSCS). Sixty-seven percent and 79% of the coaches, respectively, in Divisions I-A and I-AA had completed a master’s degree.

In Division II and III athletic programs, the strength and conditioning program is an area often deprived of adequate supervision and/or support staff (Roozen, 1996). At these smaller schools, it is not uncommon for one member of the athletic staff to fill different roles during the year. For instance, a member of the collegiate athletics staff may be the strength coach, player recruiter, and also teach classes (Roozen). Unlike the Pullo (1992) and Martinez (2004) profiles of Division I STC coaches, there are no published profiles of either Division II or III STC coaches.

Statement of Problem

Currently there are no published data identifying the demographics, educational backgrounds, coaching experiences, and duties associated with strength and conditioning coaches at the NCAA Division II and III levels. There are approximately 706 Division II and III athletic programs. Many individuals who wish to pursue a career as a strength and conditioning coach at Division I institutions may commence their careers at the NCAA Division II or III level. Therefore, it is important for these individuals, as well as strength and conditioning educators and athletic program administrators, to be aware of the profile of head strength and conditioning coaches at NCAA Division II and III institutions.

The primary purpose of this study was to compile the demographic characteristics, educational backgrounds, coaching experiences, and duties of head strength and conditioning coaches at NCAA Division II and III institutions. The secondary focus of this study was to compare the profile of Division II and III STC coaches to the Martinez (2004) profile of NCAA Division I-A strength and conditioning coaches. The survey developed by Pullo in 1992 and used by Martinez was adapted to acquire data for both Division II and III STC coaches in this study.

Questions to be Answered

1. What are the demographic characteristics (i.e. sex, age, ethnicity, salary) of head strength and conditioning coaches at NCAA Division II and III member schools?
2. What are the educational backgrounds of head strength and conditioning coaches at NCAA Division II and III member schools?
3. What are the strength and conditioning coaching experiences of head strength and conditioning coaches at NCAA Division II and III member schools?
4. What are the professional duties of head strength and conditioning coaches at NCAA Division II and III member schools?
5. What are the certification characteristics of head strength and conditioning coaches at NCAA Division II and III member schools?
6. How do the demographic characteristics, educational background, coaching experiences, and duties of head strength and conditioning coaches at NCAA Division II and III institutions, compare to the data at NCAA Division I schools identified by Martinez (2004)?

Delimitations

The research pertains to a population of strength and conditioning coaches who administer strength and conditioning programs for NCAA Division II and III member institutions throughout the United States. The population was recruited through use of the 2003-04 NCAA web site. The NCAA has approximately 282 Division II member institutions and 424 Division III institutions. All Division II and Division III institutions were sent survey instruments via electronic mailings directed to the head strength and conditioning coach requesting data relating

to demographic characteristics, educational background, coaching experiences, duties, facilities, and career goals.

Assumptions

The assumptions of this study were:

1. That only strength and conditioning coaches who administer strength and conditioning programs completed the survey.
2. That all strength and conditioning coaches who completed the survey responded to each question in an honest and accurate fashion.

Limitations

1. The number of NCAA Division II and III institutions who did not have electronic media available limited this research.
2. The number of strength and conditioning coaches who did not respond to the survey limited this research.

Definitions

1. National Collegiate Athletic Association (NCAA): A voluntary association of about 1,200 colleges and universities, athletic conference and sports organizations devoted to the sound administration of intercollegiate athletics (NCAA, What is the NCAA?, n.d.).
2. Certification: Wherein a group evaluates members within an organization to assure competence and subsequently licenses or certifies them (Baechle, 1981).
3. National Strength and Conditioning Association (NSCA): A nonprofit tax-exempt educational organization whose goal is to unify members and facilitate a professional

exchange of ideas in strength development as it relates to the improvement of athletic performance and fitness (NSCA, Mission Statement, n.d.).

4. Strength Coach: An individual who works directly with athletes to develop the physical quality of strength that improves athletic performances and prevents injuries related to specific qualities of strength. This responsibility is performed under the direction of the head coach of a specific sport (Kontor, 1989).
5. Strength and Conditioning Coach: An individual who works directly with athletes to develop all physical qualities such as speed, strength, power, agility, cardiovascular/muscular endurance, and flexibility, including nutritional and drug-free restorative considerations that improve athletic performance and prevent injuries specific to the performance of a given sport. This responsibility is performed under the direction of the head coach of a specific sport (Kontor, 1989).
6. Strength and Conditioning Coordinator: An individual who works directly with athletes to develop all physical qualities such as speed, strength, power, agility, cardiovascular/muscular endurance, and flexibility, including nutritional and drug-free restorative considerations which improve athletic performance and prevent injury in all sports. In addition, this individual organizes and administers the resources of the training facility to obtain aforementioned goals and objectives including the integration of these activities within the entire athletic department community. This responsibility together with the head coach, other members of the coaching staff, athletic trainers, team physician and athletic department dietician is performed under the direction of the director of athletics (Kontor, 1989).
7. Certified Strength and Conditioning Specialist (CSCS): Individual certified by the NSCA through successful completion of a minimum competency examination to perform the duties of a strength and conditioning coordinator (Kontor, 1989).

CHAPTER 2

REVIEW OF LITERATURE

The primary purpose of this study was to compile the demographic characteristics, educational backgrounds, coaching experiences, and duties of head strength and conditioning coaches at NCAA Division II and III institutions. The secondary focus of this study was to compare the profile of Division II and III STC coaches to the Martinez (2004) profile of NCAA Division I strength and conditioning coaches. The survey developed by Pullo (1992) and used by Martinez has been adapted to acquire data for both Division II and III STC coaches in this study.

It is likely the demographics, educational background, coaching experiences, and duties associated with strength and conditioning coaches at the NCAA Division I level are different from those at the NCAA Division II and III levels. There are approximately 706 Division II and III athletic programs. Additionally, many individuals who wish to pursue a career as a strength and conditioning coach at Division I institutions commence their careers at the NCAA Division II or III level. Therefore, it is important for these individuals, as well as strength and conditioning educators and athletic program administrators, to be aware of the profile of head strength and conditioning coaches at NCAA Division II and III institutions.

In the United States, larger universities are affiliated with the NCAA and are classified as being in Division I. "Division I members are required to sponsor the most sports and provide the athletically related financial aid for student athletes" (NCAA, Division II at a glance, n.d.). Differing from Division I is Division III which, according to the NCAA, do not provide financial aid to student-athletes related to their athletic ability (NCAA, Division II at a glance). In the middle is Division II, where the NCAA requires members to sponsor at least four men's sports

and four women's sports, with two team sports for each gender and offer at least a limited amount of athletically related financial aid; however, the obligation is much less than Division I.

The importance of strength and conditioning training as part of athletic programs is highly recognized among colleges and universities because "there is little doubt that when two athletes of equal skill and physical ability meet head to head, the one with superior conditioning will come up on top" (Schweighert, 1996, p. 7). At many institutions a specific position is created to oversee the strength and conditioning program for the athletes. However, in order to control costs and meet budgets, colleges and universities look to staff and faculty to oversee their athletic departments' strength training programs. Instances where faculty and staff take on weight room supervision responsibilities more often occur at smaller institutions at the NCAA Division II and III levels (Roozen, 1996).

The characteristics, qualifications, and backgrounds of NCAA Division I strength and conditioning coaches has been conducted. The characteristics, qualifications, and backgrounds of strength and conditioning coaches at NCAA Division II and III institutions have not previously been determined.

National Collegiate Athletic Association (NCAA)

The National Collegiate Athletic Association (NCAA) was established in 1910 in order to enforce rules and fair play among colleges and universities that participated in athletics (NCAA, It was the flying wedge, n.d.). In 1973, the NCAA restructured its membership into three legislative competitive divisions; Division I, Division II, and Division III. The NCAA specifies Division I member institutions have to sponsor at least seven sports for men and seven for women (or six for men and eight for women) with two team sports for each gender. Each playing season has to be represented by each gender as well. There are contest and participant

minimums for each sport as well as scheduling criteria. Division I schools must play 100% of the minimum number of contests against Division I opponents. Fifty percent of the contests played over the minimum number of contests have to be against Division I opponents. Men and women's basketball teams have to play all but two games against Division I teams. Male teams must play at least one third of all their contests in the home arena. Schools that have intercollegiate football programs are classified as Division I-A or I-AA. Division I-A football schools are usually fairly elaborate programs. Division I-A teams have to meet minimum attendance requirements; Division I-AA teams do not need to meet minimum attendance requirements. Division I schools must meet minimum financial aid awards for their student-athletes, and there are maximum financial aid awards for each sport that a Division I school cannot exceed (NCAA, What's the difference between Divisions I, II, and III?, n.d.). Division I-AAA is comprised of NCAA member institutions not sponsoring a football program (Martinez, 2004).

NCAA Division II institutions have to sponsor at least four sports for men and four for women, with two team sports for each gender, and each playing season represented by each gender. There are contest and participant minimums for each sport as well as scheduling criteria. Football teams and men and women's basketball teams must play at least 50% of their games against Division II or I-A or I-AA opponents. For sports other than football and basketball there are no scheduling requirements. There are no attendance requirements for football or arena game requirements for basketball. There are maximum financial aid awards for student-athletes that Division II schools must not exceed. Division II teams usually feature many local or in-state student-athletes. Many Division II student-athletes fund their tuition through a combination of scholarship money, student loans, and employment earnings. Division II athletic programs are financed in the institution's budget like academic departments on campus. Traditional rivalries

with regional institutions dominate schedules of many Division II athletics programs. Many coaches and administrators perform other jobs or functions at Division II institutions, including teaching (NCAA, What's the difference between Divisions I, II, and III?, n.d.).

Division III institutions have to sponsor at least five sports for men and five for women, with two team sports for each gender, and each playing a season represented by each gender. There are minimum contest and participant minimums for each sport. Division III athletics feature student-athletes who receive no financial aid related to their athletic ability and athletic departments are staffed and funded like any other department in the university. Division III athletic departments place special importance on the impact of athletics on student-athletes rather than either revenue generated by the athletic events or on spectator satisfaction. The student-athletes' experiences are of paramount concern. Division III athletics encourage participation by maximizing the number and variety of athletic opportunities available to students, placing primary emphasis on regional in-season and conference competition (NCAA, What's the difference between Divisions I, II, and III?, n.d.).

National Strength and Conditioning Association (NSCA)

At all levels of collegiate athletic competition there exists a demand for an organized strength and conditioning program for men's and women's sports (Roosen, 1996). This demand places a high regard for strength and conditioning professionals to oversee the planning, implementation, and administration of day-to-day operations of strength and conditioning programs. To a great extent, this has been facilitated by the efforts of the National Strength and Conditioning Association (NSCA) and their established goals "to educate, communicate, analyze, promote, and develop the strength and conditioning profession" (NSCA, The National Strength and Conditioning Association: A Brief History. n.d., ¶3).

The National Strength Coaches Association was established in 1978 by 76 founding members. It was renamed the National Strength and Conditioning Association (NSCA) in 1981 and had increased to 2,250 members. In 1982, the NSCA acquired its non-profit status as an educational association. It had not formally developed a mission statement; however, the goal of the organization was to bridge the gap between science and practice. This included professional improvement opportunities and promoting camaraderie (Taylor, 2001). In 1993, the NSCA developed the following mission statement: “The National Strength and Conditioning Association, as a non-profit, worldwide authority on strength and conditioning for improved physical and athletic performance, creates and disseminates related knowledge and enhances the careers of its members” (p. 110). In the mid-1980s, the NSCA began distribution of the *NSCA Journal* and was ready to greet 700 members at its national convention in New Orleans. It also launched the Certified Strength and Conditioning Specialist (CSCS) program. By the late-1980s the NSCA expanded worldwide. Japan and Australia began active chapters on the international level. At that time, the NSCA introduced the *Journal of Applied Sport Science Research* later to be known as the *Journal of Strength and Conditioning Research* (NSCA, The National Strength and Conditioning Association: A Brief History. n.d.).

During the 1990s, the NSCA continued to grow. Due to increases in member base and staff expansion, the organization relocated its headquarters in Colorado Springs, Colorado. The NSCA initiated more hands-on instruction when they introduced the *Sport Specific Training Conference* and the *Coaches’ College*. In an effort to keep up with members needs the NSCA also went on-line (NSCA, The National Strength and Conditioning Association: A Brief History, n.d.).

By 2000, a worldwide membership base of 25,000 collectively worked to provide objective strength and conditioning information (NSCA, The National Strength and Conditioning

Association: A Brief History, n.d.). In order to serve in the capacity of a non-profit educational association, the NSCA redefined its mission statement, “As the worldwide authority on strength and conditioning we disseminate research-based knowledge and its practical application to improve athletic performance and fitness” (Taylor, 2001, p. 110). Most recently, the NSCA has begun to offer two certification tracks, the Certified Strength and Conditioning Specialist and the NSCA Certified Personal Trainer (NSCA-CPT). Additionally, educational conferences, clinics and seminars, career services, scholarships and grants, certification insurance, and even business contract review services are available through membership in the NSCA.

Defined Roles of Strength and Conditioning Professionals

Before defined roles were developed by the NSCA, individuals who worked with athletes to improve their athletic potential were most commonly referred to as strength coaches. An example of the pre-NSCA strength and conditioning coach scenario is the story of George Eider, who attended the University of New Hampshire in 1971 as a student majoring in Pre-Physical Therapy. After Eider discovered there was not a good weight room on campus in which to train, he set up his own gym in his college dormitory with 600 pounds of weight, a bench, and a squat rack that he had brought with him. Eventually, his entire dormitory was using the gym and he was being paid by work-study funds to serve as supervisor. The head football coach also approached Eider to work with the team. Eider accepted the role, thus beginning his career as a strength coach (Eider, 1985).

In 1988, the NSCA conducted a study that assessed the entry-level strength and conditioning specialist’s job description. The purpose of the study was to develop a job analysis identifying significant content for their Certified Strength and Conditioning Specialist

examination. What resulted from that study were distinctly descriptive definitions of a profession that Kontor described as follows (Kontor, 1989):

Strength Coach: An individual who works directly with athletes to develop the physical quality of strength which improves athletic performances and prevents injuries related to specific qualities of strength. This responsibility is performed under the direction of the head coach of a specific sport.

Strength and Conditioning Coach: An individual who works directly with athletes to develop all physical qualities such as speed, strength, power, agility, cardiovascular/muscular endurance and flexibility, including nutritional and drug-free restorative considerations which improve athletic performance and prevent injuries specific to the performance of a given sport. This responsibility is performed under the direction of the head coach of a specific sport.

Strength and Conditioning Coordinator: An individual who works directly with athletes to develop all physical qualities such as speed, strength, power, agility, cardiovascular/muscular endurance and flexibility, including nutritional and drug-free restorative considerations which improve athletic performance and prevent injury in all sports. In addition, this individual organizes and administers the resources of the training facility to obtain aforementioned goals and objectives including the integration of these activities within the entire athletic department community. This responsibility in concert with the head coach, other members of the coaching staff, athletic trainers, team physician and athletic department dietician, and is under the direction of the director of athletics.

Certified Strength and Conditioning Specialist (C.S.C.S.): An individual certified by the NSCA through successful completion of a minimum competency examination to perform the duties of a strength and conditioning coordinator. (p. 75)

However, even with specifically defined roles for strength and conditioning specialists, there have been misconceptions of the strength and conditioning profession. Layden (1998), a writer for *Sports Illustrated*, highlighted this misconception when he suggested an idea of strength and conditioning coaches as trainers, dietitians, spies, counselors, and surrogate parents for student-athletes.

Characteristics of Strength and Conditioning Professionals at NCAA Division I Institutions

Regardless of their defined roles, strength and conditioning professionals are on the staff at many colleges and universities. In 1982, the NSCA conducted a membership survey of its

then 3,700 professional, high school, and other student members. Analysis of the survey indicated that:

The strength and conditioning field is young and emerging.... Slightly more than half of NSCA professional members are employed at the college or university level... NSCA members show great optimism for their profession; 98% said the profession has either improved or improved significantly. (“Results and Analysis”, 1983, p. 54)

Few investigations of the strength and conditioning profession at the collegiate level have been published. However, a study by Pullo (1992) and later by Martinez (2004) profiled NCAA Division I strength and conditioning coaches. From Pullo’s 1992 study the demographics of strength and conditioning coaches at NCAA Division I institutions were described. Pullo’s study provided a realistic profile for aspiring professionals who were uncertain of the skills and credentials needed to become a strength and conditioning (STC) professional at that level. His study specifically explained demographic characteristics, educational background, experience levels, and duties of strength and conditioning coaches within NCAA Division I-A and Division I-AA sanctioned football programs. In 2004, Martinez took the same approach as Pullo and reported demographics, educational background, competitive experiences, coaching experience, duties, and opinions of head STC coaches at NCAA Division I-A, I-AA and I-AAA institutions. Martinez compared the three Division I subdivisions along with differences to comparable items in Pullo’s 1992 study. Results of those studies are presented below.

Demographic Characteristics

Age. Trends in both demographic and professional characteristics are evident in both the Pullo (1992) and Martinez (2004) studies. Additionally, some differences exist between head strength and conditioning coaches in the three NCAA Division I subdivisions. The age of strength coaches of I-A and I-AA programs were similar, 33 and 32 years old respectively. In roughly in the same time frame Baechle and Earle (1992) reported similar findings when they

surveyed the age of professionals with the CSCS certification. Brooks, Ziatz, Johnson, and Hollander (2000) found the age of NCAA Division I STC coaches, 31 years, was slightly younger than that discovered almost a decade earlier. In 2004, Martinez stated that coaches averaged 37 years of age in Division I-A; however, Division I-AA and I-AAA coaches were younger, averaging 34 years of age.

Sex. Two studies (Pullo, 1992; Todd, Lovett, & Todd, 1991) discovered the strength and conditioning profession was incredibly saturated with males. Research conducted by Todd et al. regarding the status of women in the strength and conditioning profession reported 99% of head coaches were male and only a few listed having women assistant strength and conditioning coaches. Similarly, Pullo reported “only one female strength coach in Division I” (p. 56). When Brooks et al. (2000) studied leadership behavior and job responsibilities of NCAA Division I-A STC coaches they identified eight female coaches; all at the assistant coach level. Similarly, Martinez (2004) reported that head STC coaches were 98-100% male in all three NCAA Division I subdivisions. Baechle and Earle (1992) cited only 9% of those with the CSCS distinction were females. According to Todd et al., due to a rapid growth in the number of people with a professional interest in athletic conditioning combined with a similar growth in women’s athletics, a significant increase might be expected in the number of women serving in the profession. However, it appeared women were not accepted in the profession due to traditional and societal beliefs during the late 1980s. What they found interesting was there also seemed “to be considerable resistance to the hiring of women to oversee the training programs of female athletes...” (p. 35) even though opposition toward female athletes participating in strength training programs was decreasing. They further commented on the NSCA’s 1989 position paper *Strength Training for Female Athletes* that discussed the importance of female role models as

strength coaches for female athletes. The position paper, according to Todd et al., contained proposals on the need for female role models; however, these suggestions were dismissed when the committee decided to recommend only research-based proposals. Only anecdotal evidence had been offered because there had not been any statistical study performed on the gender of strength coaches at American universities.

Ethnicity. Low numbers of employed minorities as strength and conditioning coaches at NCAA Division I universities had been regularly documented (Brooks et al, 2000; Martinez, 2004; Pullo 1992). Brooks et al. also reported there was a lack of ethnic minorities in their investigation of strength and conditioning coaches. They cited “2 Hispanic men, 1 Asian or Pacific Islander, and 1 women listed as ‘other’ (German, English, Spanish)” (p. 486). Other studies (Cunningham, Sagas, & Ashley, 2001; Latimer & Mathes, 1985) have discussed the issue of black coaches among the Division I coaching ranks of revenue sports such as basketball and football, respectively. Latimer and Mathes put forth pattern characteristics of black coaches that indicated:

They came from a lower socioeconomic family backgrounds and small hometowns in the Southeastern, Midwestern, and West Coast states. They attended as student athletes, Division I colleges with enrollments of 5000 or more students in the same NCAA district in which the high school they attended was located.... in relation to the area of study, they tended to major in physical education, all obtained bachelor degrees, and approximately one-half went on to complete a master’s degree. (p.160)

Cunningham et al. discussed how “coaching positions within the NCAA have long been, and continue to be, filled predominantly by white males” (p. 131). Additionally, they suggested that because ethnic minorities make up a large percentage of the athletes in collegiate athletics, it might be more likely they will acquire a coaching position; however, it is more likely if one is white. Cunningham et al. discussed figures from a 1998 NCAA race demographics study substantiate these claims

For instance, Blacks constitute 20.7 percent of all athletes in intercollegiate athletics, excluding historically Black colleges and universities (HBCUs). The proportion of Black assistant coaches declines, however, when compared to the participation numbers, as 13.6 percent of the assistant coaches of men's teams and 9.6 percent of the assistant coaches from women's teams are Black. Disturbingly, the proportion of Black head coaches for both men's and women's teams is lower still (4.2 and 4.1 percent, respectively), and the proportion decreased a total of 0.1 percent from 1995 to 1997. (Both sets of statistics exclude coaches at HBCUs.) (P. 132)

Cunningham et al. proposed possible reasons for variance of black head coaches in the NCAA. First, black coaches may leave the occupation more so than white coaches. Second, black coaches do not contemplate coaching as their primary career pathway. Third, "societal and/or occupational variables (i.e. discriminatory administrative hiring practices, limited career opportunities, etc.)" (p. 132).

Salary. While demographic characteristics such as sex and ethnicity of college head strength and conditioning coaches have not changed significantly between 1992 and 2004, there was an increase in the average annual salary earned. Pullo (1989) reported the average salary for STC coaches at the Division I-AA level was \$20,000 to \$29,999 and \$30,000 to \$39,999 at the Division I-A level. Similarly, Todd et al. (1991) reported that head STC coaches at Division I institutions earned a median of \$20,000 to \$25,000. Furthermore, Todd et al. mentioned "ten percent of the head coaches made less than \$10,000, and 11 percent made more than \$35,000" (p. 36) suggesting a professional standard had not been established. In 2000, Brooks et al. reported 18 out of 25 (72%) head STC coaches who replied to their questionnaire made a salary of \$40,000 or more. Todd et al. discovered that 74% of their assistant strength and conditioning coach research population were actually paid and their salaries ranged from \$7,000 to \$19,000. Brooks et al. (2000) found assistant strength and conditioning coaches salaries increased roughly \$10,000 to \$12,000 between 1991 and 2000, having mentioned, "in general, assistant coaches make \$20,000 to \$30,000 annually" (p. 488). Comparatively, female assistant strength and

conditioning coaches received equal compensation as their male counterparts (Brooks et al.; Todd et al). In 1989, when Pullo reported information gathered comparing salaries of certified versus non-certified strength and conditioning coaches “The salaries were comparable to those for all strength coaches” (p. 37). Additionally, Pullo also found there were no significant differences in salaries between strength and conditioning coaches with NSCA certifications and those coaches without NSCA certification. Most recent research identified STC coaches salaries to be \$50,000-\$59,999 at Division I-A and \$30,000-\$39,999 at Division I-AA and I-AAA (Martinez, 2004).

Educational Background

From the early development of the profession, college STC coaches recommended that aspiring professionals better educate themselves and learn as much as possible in the subjects of exercise physiology, anatomy, kinesiology, and other related areas that would provide a better knowledge base for strength and conditioning (Eider, 1985; Pullo, 1992). Many strength and conditioning coaches had done just so by majoring in physical education/exercise science as undergraduates; 63% among Division I-A STC coaches and 50% among the Division I-AA STC coaches (Pullo). Although academic programs sometimes go by different names while offering similar courses, Martinez (2004) reported “Division I-AAA coaches cited exercise science as the highest undergraduate major at 26.08%, whereas, Division I-A and I-AA coaches indicated physical education as the highest undergraduate major at 22.54 and 31.88%” (p.8). Brooks et al. (2000), reported that STC coaches had begun to consider the importance of having obtained a graduate degree. Fifteen out of 53 college STC coaches had completed Master of Arts or Master of Science degrees. Findings suggested that whether an individual was of ethnic minority or white and coached in the college Division I ranks, an undergraduate degree in physical education

or some aspect of education was very common as well as completion of a masters' degree (Latimer & Mathes, 1985). When NSCA Certification Committee Chairperson, Baechle (1981), distributed *An Analysis of Attitudes Concerning the Topic of Establishing Certification Standards for Strength Coaches: A National Survey*, he reported that 90% of those who replied to the survey thought that either a bachelor's or master's degree should be required for certification. In a survey ("Results and Analysis," 1983) introduced a year later to members of the NSCA, 40% of those who responded indicated they had obtained a bachelor's or master's degree. Most recently, Durell, Pujol, and Barnes (2003) published finding that of the 137 usable questionnaires received from college strength and conditioning coaches, all respondents had earned a baccalaureate degree, with 69% having achieved completion of a master's degree. Martinez also concluded that high percentages of the coaches surveyed held a master's degree, specifically, 79% of Division I-AA coaches held a master's degree, and 67% and 68% of Division I-A and I-AAA, respectively, held a master's degree.

Certifications

Baechle (1981) defined the concept of certification as "wherein a group evaluates members within an organization to assure competence and subsequently licenses or certifies them" (p. 34). As the NSCA questioned if that was the direction they wanted to go, a questionnaire (Baechle) was sent to 1,200 members to gather their attitudes pertaining to the establishment of certification standards. Baechle's results showed strong support for the concept of certification, yet a bachelor's degree was suggested to be a minimum educational requirement and that the educational degree required should emphasize course work pertaining to human performance. As a result, the NSCA went on to establish CSCS certification standards and soon thereafter became known for its creditability (Taylor, 2001). Taylor mentioned the hard work of

the NSCA Certification Commission, which achieved accreditation for the CSCS certification through the National Commission for Certifying Agencies, making it the only accredited certification of its kind.

A profile of certification candidates became more distinct when Baechle in 1989 declared in the *NSCA's Bulletin*, Certified Strength and Conditioning Specialist Survey Report, that 56% of the candidates obtained an undergraduate degree, 38% obtained a master's degree, while the remaining 5% either earned a doctoral or "other" degree. Further profiling showed that 37% of the candidates currently held athletic trainer certification. Lastly, he reported in his Certified Strength and Conditioning Specialist (CSCS) survey that 20% of the full-time employed professionals who sat for the CSCS exam were employed at universities and 4.5% at colleges. Research conducted by Pullo (1989) indicated a fair amount of the head strength and conditioning coaches in the research population had not earned a strength and conditioning certification of any kind, specifically 46% in Division I-A, and 63% in Division I-AA had no certification. Research by Brooks et al. (2000) yielded different results reporting 6 out of the 27 head strength and conditioning coaches surveyed had not earned the CSCS certification. Of all the college STC coaches surveyed (Brooks et al.; Durrell et al., 2003; Pullo) the CSCS certification was the most widely held certification.

In 1992, Baechle and Earle questioned whether being CSCS certified was of professional importance. Factors that were in question related to job opportunities, income, and prestige. At that time, results showed that being CSCS certified did not make a "significant difference in professional opportunities, especially speaking engagements for payment. However, the fact that 22% or more survey respondents said the CSCS designation has had positive influence on speaking requests, contacts for expertise, opportunities to write articles, or to make outside income strongly suggests that the CSCS certification program does enhance professional

opportunities” (p. 24). Questions regarding job status revealed that job security did increase due to CSCS certification. Mixed responses were obtained when individuals were questioned as to how CSCS certification influences their income. Forty-five percent replied it had no influence, 22% replied their CSCS was financially beneficial, and 34% answered with a neutral response. Finally, Baechle and Earle (1992), reported that three quarters of those who replied indicated the CSCS was highly respected among their colleagues, and 95% of those certified were proud to have the CSCS certification.

As the “NSCA certification is often a required credential of any coach responsible for designing and implementing an athletes training program” (Dooman et al., 1998, p.32), strength and conditioning coaches have identified other important certifications. Martinez (2004) reported the second most identified credential behind the CSCS was the Strength and Conditioning Coach Certified (SCCC) at 36% and 14% respectively at the NCAA Division I-A and I-AA levels. The origin of the SCCC is as follows:

On May 20th, 2000 a group of full-time, collegiate strength & conditioning coaches from around the country met in Las Vegas and organized a new professional organization. This new organization was named the Collegiate Strength & Conditioning Coaches association (CSCCa). It is designed to represent and promote the collegiate strength & conditioning coach. (CSCCa, About the CSCCa, n.d., ¶ 4)

USA Weightlifting (USAW) is another important organization to the strength and conditioning coaches. As Martinez (2004) noted, the USAW certification was the second most cited credential 16% behind the CSCS for head STC coaches at the NCAA Division I-AAA level. The USAW organization is the governing body for Olympic-style weightlifting in the United States. As of 1998, 45 local weightlifting committees (LWC) were under its direction. These LWC’s promote weightlifting programs and develop athletes in their region. The USAW offers many coaching courses, athlete symposia, and other programs about weightlifting that are conducted annually.

Staffing

McClellan and Stone (1986) mailed questionnaires to strength and conditioning coaches at 80 NCAA Division I football schools in order to research various domains of their strength and conditioning programs. Of the coaches that responded, 96% were employed as full-time head strength and conditioning coaches and the majority of the institutions employed assistant STC coaches on a full or part-time basis. Thirty-two percent of the institutions employed at least one full-time assistant, and 26% had part-time assistants. Of the 103 returned questionnaires for Todd et al. (1991) study, 67% of the schools indicated they had full-time STC strength coaches. Many programs used graduate assistants whereas some programs reported volunteers and student workers assisted the coaches (Todd et al.). In 1989, Pullo identified a desire for assistant strength coaches by head STC coaches. The number of full-time assistant STC coaches on staff among all NCAA Division I institutions ranged from 1 to 10. Pullo (1989) reported 50% of Division I-A STC coaches used at least one full-time assistant; however only 5% of Division I-AA STC coaches reported having any full-time assistant coaches. In 2004, Martinez reported that 85% of Division I-A institutions staffed full-time assistants, whereas, 52.5% of the NCAA Division I-AA schools staffed full-time assistants. Another trend discovered by Pullo (1992) was the number of part-time assistant STC coaches at NCAA Division I-A institutions. The reported number of part-time assistant coaches on staff ranged between 1 and 15, with 55% of the coaches reported having part-time assistants. However, this trend has declined over the years with 41% of all NCAA Division I-A head strength and conditioning coaches reporting part-time assistants (Martinez, 2004). Of the Division I-AA coaches, 30% had part-time assistants, as reported by Pullo, whereas Martinez reported 31% of Division I-AA coaches had part-time assistants.

Graduate and volunteer assistants have also played an important role in the staff makeup of strength and conditioning departments. McClellan and Stone (1986) described how “one or more graduate assistants were used in 60 percent of the programs, and 30 percent had two or more, the maximum being six” (p. 34). Thirty-seven percent of the institutions reported use of volunteers who assisted the head strength and conditioning coaches. Student workers were found in 43% of the programs (McClellan & Stone). Pullo’s (1989) results were different from McClellan and Stone’s, and Pullo indicated that over 90% of NCAA Division I strength and conditioning programs used graduate assistants and 78% of NCAA Division I institutions benefited from the help of volunteer assistants. Martinez (2004) concluded the percentage of NCAA Division I-A STC coaches who utilized graduate and volunteer assistants was 52% and 60%, respectively. Division I-AA STC coaches reported using graduate assistants and volunteers 30% and 44% respectively.

Duties and Responsibilities

As Dooman et al. (1998) stated, “becoming involved in the creation, execution, and supervision of an athlete’s conditioning program is essential to securing a career as a strength and conditioning coach” (p. 33). However, being able to handle a variety of duties and responsibilities is a key factor. Brooks et al. (2000) reported that the typical head strength and conditioning coach tends to spend a significant part of the week performing administrative duties along with providing strength and conditioning services for revenue sports. Massey, Vincent, and Manveal (2004), in addition to Martinez (2004), agreed that the head strength and conditioning coach’s primary responsibility is working with revenue sports such as football and basketball. Massey et al. and Martinez reported that of all the head STC coaches surveyed, the primary sport they were responsible for was football. Martinez reported that at those institutions

that did not have a football program, men and women's basketball were the primary sport of responsibility. In addition to working with athletes in the weight room, Massey et al. found that strength and conditioning coaches worked with football teams on game days. Duties included conducting pre-game stretching routines, insuring the team was on schedule in preparation for kick-off, serving as sideline managers, attending football staff meetings, and handling discipline in various forms. The STC coaches were also a professional scout contact; providing information to professional scouts regarding athletes eligible for the National Football League draft, setting up pro-scout testing days, along with providing feedback regarding an athletes character and work ethic. Administratively, Massey et al. reported that half of the coaches developed and implemented budgets for the strength and conditioning program and made purchases for equipment, while others would submit purchase requests. Lastly, all the coaches involved with Massey's et al. research had responsibilities in recruiting players. The strength and conditioning coaches were not allowed to recruit off campus; however, the coaches did meet with prospective players when the players came on campus for their recruiting visit.

Interestingly, Martinez (2004) described how most STC coaches at all three NCAA Division I subdivisions believed their primary responsibility was testing athletes. Secondary was supervising and maintaining the weight room. Counseling athletes on supplements and diet was reported for strength and conditioning coaches at NCAA Division I-AAA. Martinez also found a limited number of STC coaches at all the NCAA division institutions surveyed had published articles on strength and conditioning. While most of the strength and conditioning coaches had presented at the local level, almost half of the NCAA Division I-A STC coaches have presented at the national level. Scientific research by strength and conditioning coaches has been fairly narrow. Fifty-one percent of the NCAA Division I-AA strength and conditioning coaches have

conducted scientific research while less than 40% of NCAA Division I-A and I-AAA have performed scientific research (Martinez).

Coaching Experience

A lack of applied experience is often what puts people at a disadvantage for entry into the profession compared to those individuals who have experience participating in a strength and conditioning program, such as athletes who have competed at the collegiate or professional level (Dooman et al., 1998). In a recent survey (Martinez, 2004), STC coaches at NCAA Division I institutions confirmed that it is essential for prospective head STC coaches to have: (a) served as an assistant strength and conditioning coach at a Division I school, (b) served as assistant strength and conditioning coach at any school level, and (c) served as a graduate assistant strength and conditioning coach at any school level. Additionally, the head STC coaches surveyed (Martinez) identified their personal coaching experience. Some STC coaches had bodybuilding coaching experience at the collegiate or amateur level. Similarly, many STC coaches had coaching experience with power and Olympic lifting, some at the collegiate level and others at the amateur level. Sixteen percent of STC coaches at NCAA Division I-AAA had experience coaching at the professional level, while more than half of all STC coaches in NCAA Division I had previous experience as an assistant strength and conditioning coach at the collegiate level. However, a relatively small number of coaches had experience as an assistant strength and conditioning coach at the professional level. A majority of the head strength and conditioning coaches at NCAA Division I-A and I-AA had graduate assistant experience, while slightly less than half of the NCAA Division I-AAA STC coaches had graduate assistant experience (Martinez). Thus, it should not go unnoticed that applied experience plays a significant role in gaining entry as a head strength and conditioning coach. As Dooman et al.

stated, “From a career-seeking perspective, ... gaining experience in a strength and conditioning program can help one get the necessary practical experience....” (p. 33).

Characteristics of Strength and Conditioning Professionals at
NCAA Division II and III Institutions

There are known characteristics regarding NCAA Division II and III athletic programs (NCAA, Division II at a glance., n.d.; NCAA, What’s the difference between Divisions I, II, and III?, n.d.). Division II and III teams usually feature many local or in-state student-athletes. Division II student-athletes fund their tuition through a combination of scholarship money, student loans and employment earnings. Division III student-athletes receive no financial aid related to their athletic ability. Division II and III athletic programs are financed in the institution's budget like academic departments. Past and present publications have informed readers of the characteristics determining NCAA Division I STC coaches. However, characteristics of STC coaches at NCAA Division II and III institutions have not been published.

Summary

The NCAA enforces competitive rules and fair play among college and universities in Divisions I, II, and III. Previous research has indicated that a common profile of demographics, educational background, coaching experiences, and duties of head STC coaches exists at NCAA Division I institutions. It is important for individuals associated with the STC profession at the collegiate level to be aware of the profile of head strength and conditioning coaches at NCAA Division II and III institutions.

An accredited program such as the CSCS encourages a higher level of competence among practitioners that raises the quality of strength training and conditioning programs

provided by those who are CSCS certified (National Strength and Conditioning Association Certification Commission [NSCA-CC], The Credentials: the CSCS Credential., n.d.). Currently, the majority of head strength and conditioning coaches possess the CSCS credential and have found it essential to have in order to gain entry into the field (Martinez, 2004; Pullo, 1992). Applied coaching experience, such as having been an assistant STC coach has been indicated as a major path to becoming a head strength and conditioning coach at the NCAA Division I level (Martinez). However, it is undocumented as to what the pathways for head strength and conditioning coaches at the NCAA Division II and III level have been.

CHAPTER 3

RESEARCH METHODS

The primary purpose of this study was to compile the demographic characteristics, educational backgrounds, coaching experiences, and duties of head strength and conditioning coaches at NCAA Division II and III institutions. The secondary focus of this study was to compare the profile of Division II and III STC coaches to the Martinez (2004) profile of NCAA Division I strength and conditioning coaches. The survey developed by Pullo in 1989 and used by Martinez again in 2004 has been used to acquire data for both Division II and III STC coaches in this study.

Participants

Participants in this study were strength and conditioning (STC) coaches at NCAA Division II and III institutions. Five hundred seventy-eight Division II and III athletic personnel were asked to participate in this research. The STC coaches participated on a volunteer basis and received no earnings of monetary value or other compensation.

Instrumentation

A survey instrument measured demographics characteristics, educational characteristics, coaching experience, facility characteristics, and staffing (See Appendix E). In order for comparisons between NCAA Division I-A STC coaches to Division II and III STC's, the survey instrument for NCAA Division II and III STC's was adapted from the survey for Division I-A, I-AA and I-AAA STC's constructed by Pullo (1989) and adapted by Martinez (2004). The survey consisted of open and closed-ended questions. The survey was developed for electronic mail delivery.

Procedures

Development of Survey Instrument

The survey instrument was adapted from Pullo's (1989) survey instrument that profiled strength and conditioning coaches at NCAA Division I-A and I-AA member institutions. Changes to Pullo's survey instrument were made in order to better suit the population. The survey instrument was transferred into electronic format through Prezza Technologies software, Ultimate Survey v7.1 Advanced Edition - ©2004 . Prezza Technologies software pooled and tabulated all data returned by the established deadlines for the survey instrument.

Population, Distribution, and Return of Pilot Study and Survey Instrument

A pilot survey instrument (See Appendix: A) was distributed via electronic mail to five individuals willing to participate in the pilot study. These individuals were asked to review the survey instrument and identify any items that needed to be added or removed. Additionally, they were asked to identify any items that should be modified and propose improvements. Upon reception of the pilot survey responses, the survey instrument was modified and made ready for distribution.

Electronic mail addresses for athletic personnel were obtained by each institution's athletic department's web site directory. The *2003-04 NCAA Web Site Directory* provided the uniform resource locator (URL) for all NCAA Division II and III institution's athletic department's web site. If electronic mail addresses were unavailable for the head STC coach, an attempt was made by email or telephone to obtain an electronic mail address for the appropriate staff contact. The initial electronic mailing included a cover letter introducing the researcher, purpose of the study, directions in order to complete the survey instrument, informed consent,

confirmation that all data will be kept confidential with no identifiable information requested, and an attachment to the survey instrument (See Appendices B, D, E).

Four weeks following the response deadline of the initial survey a follow-up invitation (See Appendix C) was sent to those who had not responded. This electronic mailing was to offer STC coaches an additional opportunity to participate in this research. For purposes of this study, data were analyzed only if received within four weeks after the survey was sent. Based on the Pullo (1992) and Martinez (2004) studies, which had 81% and 67% response rates, respectively. It was anticipated that greater than 60% of the surveys would be completed.

Design and Analysis

Data analysis was performed with Statistical Package for the Social Science, Version 12. Frequency distribution and descriptive statistics were used to analyze the data. Based upon results, data that represents the most frequent response were used to report answers to the research questions.

CHAPTER 4

RESULTS

The primary purpose of this study was to compile the demographic characteristics, educational backgrounds, coaching experiences, and duties of head strength and conditioning coaches at NCAA Division II and III institutions. The secondary focus of this study was to compare the profile of Division II and III STC coaches to the Martinez (2004) profile of NCAA Division I-A strength and conditioning coaches.

Subjects

The *2003-04 NCAA Web Site Directory* identified 706 institutions that participated as either Division II or Division III NCAA member institutions. Only 578 NCAA Division II and III institutions had electronic media available to receive electronic surveys for this study.

Total Responses

Of the total number of surveys delivered ($N=578$) 66 (11.4%) responses were completed for this study, 9 (1.5%) institutions indicated there was not a STC position to identify. Fifty-seven (9.8%) surveys were completed and usable for this study. Of the total number of surveys delivered ($N=578$) 22 (3.8%) failed to reach the recipient because of inactive electronic mail addresses. Separately, an “out of office” reply was received from 4 (0.7%) of the total number of surveys delivered. The return rate for Division II and Division III is as follows: Division II, 23(13%) responses of a possible 175, Division III, 34 (8.4%) of a possible 403 responses. Comparisons are based on the total number of completed questionnaires that were returned by the due date. Other responses were not included in the comparison totals.

Demographic Characteristics

Demographic characteristics of Division II and III STC Coaches are listed in Table 2. Results of demographic items for Division II and III STC coaches included age, ethnicity, sex, salary, and certification.

Thirty-five years of age was the mode for Division II coaches, while the mode for Division III coaches was 34 years of age. Males made up 91.3% of the Division II coaches, and 94.1% of Division III STC coaches. All (100%) Division II coaches identified themselves as white, whereas 94.1% of the Division III coaches reported to be white while the remaining Division III population (5.9%) identified themselves as black. The average annual salary range for both Division II and Division III coaches was \$30,001-\$40,000. Both Division II and Division III coaches' predominately held the National Strength and Conditioning Association's (NSCA), Certified Strength and Conditioning Specialist (CSCS) certification, 73.9% and 70.6% respectively. The Strength and Conditioning Coach Certified (SCCC) certification offered by the College Strength and Conditioning Coaches association (CSCCa) was the second most held certification (17.4%) for the STC coaches at Division II institutions. However, 23.5% of the Division III STC coaches held the USA Weightlifting's, Club Coach certification.

Educational Background

The educational background of Division II and III STC Coaches are listed in Table 3. There was a smaller percentage of Division II coaches whose highest degree earned was a bachelor's degree versus those coaches at Division III NCAA member institutions, 26% and 50% respectively. Consequently, the number of coaches who indicated their highest degree earned was a master's degree was 56.5% of Division II coaches and 47.1% of Division III

Table 2.

Demographic Characteristics of Division II and III STC Coaches

Item	Division	
	II	III
Age	35 ^a	34 ^a
Gender (male)	91.3 ^b	94.1 ^b
Ethnicity (white)	100 ^b	94.1 ^b
Salary	\$30,001-\$40,000 ^a	\$30,001-\$40,000 ^a
Certification		
CSCS	73.9 ^b	70.6 ^b
SCCC	17.4 ^b	2.9 ^b
USAW Club Coach	13.0 ^b	23.5 ^b

CSCS = Certified Strength and Conditioning Specialist.

SCCC = Strength and Conditioning Coach Certified.

USAW Club Coach = United States of America Weightlifting Club Coach.

^a The values represent the mode

^b The values represent a percentage

coaches. Additionally, a small percentage of both Division II and Division III coaches indicated that their highest degree earned was a doctoral degree, 8.7% and 2.9% respectively. The coaches were also asked if they were currently enrolled in a degree program, 8.7% of the Division II coaches were enrolled in a master's degree program and another 8.7% of the Division II coaches indicated they were enrolled in a doctoral degree program. No response was received from 8.7% of the Division II STC coaches in regards to their highest degree earned. Of the Division III coaches 17.6% indicated they enrolled in a master's degree program, while zero were currently enrolled in a doctoral degree.

Table 3.

Educational Background of Division II and III STC Coaches

Item	Division	
	II	III
Highest degree earned		
Bachelor's	26.1	50.0
Master's	56.5	47.1
Doctoral	8.7	2.9
No response	8.7	
Currently enrolled		
Master's	8.7	17.6
Doctoral	8.7	0

Note. Results are indicated as percentages.

Professional Experience

Professional experiences of Division II and III STC coaches are listed in Table 4. When asked about experience as an assistant STC coach, zero percent of the Division II coaches had done so at the high school level whereas 8.8% of the Division III STC had worked as an STC at the high school level. Regarding their experience as an assistant STC at the collegiate level, 39.1% of the Division II STC coaches and 29.4% of Division III coaches had experience working as an assistant STC at the collegiate level. Only 5.9% of the Division III STC coaches indicated they had experience as an assistant STC coach at the professional level.

Table 4.

Professional Experiences of Division II and III STC Coaches

Item	Division	
	II	III
Assistant STC Coach		
High School	-	8.8
College	39.1	29.4
Professional	-	5.9
Head STC Coach		
High School	13	20.6
College	60.9	79.4
Professional	4.3	-
Graduate Assistant		
College	40.3	17.6

Note. STC coaches were asked to respond to all items that apply. Results are indicated as percentages.

- Indicates data not received.

Coaches at Division II (13%) and Division III (20.6%) had worked as a head STC coach at the high school level, 60.9% of the Division II coaches had been head STC coaches at the collegiate level and 79.4% of the Division III coaches had been head STC coaches at collegiate level. Responding to whether they had worked as a head STC coach at the professional level, only 1 individual (4.3%) responded that he/she had. No data were received from the Division III STC coaches indicating they had worked as a head STC coach at the professional level.

In particular, 40.3% of the Division II STC coaches responded as having worked as a graduate assistant STC coach at the college level and 17.6% of the Division III STC coaches identified they had worked as a graduate assistant STC coach.

Responses for coaching amateur athletes are listed in Table 5. Approximately 25% of respondents among Division II (4.3%) and Division III (20.6) coaches indicated they had served as a STC coach for bodybuilders. Division II and Division III coaches had served as a STC coach for power lifters and Olympic lifters, 21.7% and 29.4% respectively for power lifters, 17.4% and 8.8% for Olympic lifters. Additionally, a greater percentage, 55.9%, of Division III coaches had worked with youth athletes than Division II coaches, 47.8%. Likewise, a greater percentage, 67.6%, of Division III coaches served as a STC coach for adult athletes versus, 56.5% of STC coaches at Division II institutions. Lastly, a greater percent (58.8%) of the Division III coaches had worked with senior athletes whereas 47.8% of the Division II STC coaches had worked with senior athletes.

Table 5.

Professional Experiences of Division II and III STC Coaches with Amateur Athletes

Item	Division	
	II	III
Body Builders	4.3	20.6
Power Lifters	21.7	29.4
Olympic Lifters	17.4	8.8
Youth Athletes	47.8	94.1
Adult Athletes	56.5	67.6
Senior Athletes	47.8	58.8

Note. STC coaches were asked to respond to all items that apply. Results are indicated as percentages.

Staffing

Division II and Division III STC coaches, 17% and 5.9% respectively, reported to have paid full-time assistants on their STC coaching staff. While 23.8% of the Division II coaches staffed two or more paid part-time assistant coaches, 10.8% of Division III coaches staffed two or more paid part-time assistant coaches. Graduate assistants and volunteer assistants, 45% and 35% respectively, were a part of the STC coaching staff at Division II institutions versus Division III institutions, which had fewer graduate assistants and volunteer assistants, 11.7% and 29.4% respectively.

Job Description

Head strength and conditioning coach was the job title of 31.8% of the Division II STC coaches and 26.4% of the coaches at Division III institutions. The remaining STC coaches for both Division II and Division III recognized themselves as having multiple job titles. Most Division II and Division III STC coaches reporting having the title of head STC coach as well as another employment position title, such as an assistant athletic coach, 30.4% and 52.9% respectively, instructor of Physical Education, 17.4% and 35.3% respectively or, instructor of other college classes, 8.7% and 17.6% respectively. Other job titles included wellness/fitness coordinator or director, director of athletics, and athletic trainer. Division II STC coaches, 60.9%, indicated they were full-time employees with 12 month contracts, 65.2% of Division II respondents had staff status. Twenty-one (61.8%) Division III STC coaches were full-time STC coaches, 64.7% of Division III respondents had 12 month contracts and 67.6% of Division III respondents had staff status.

Duties

Duties of STC coaches at Division II and III institutions are listed in Table 6. Division II STC coaches (69.9%) and Division III STC coaches (94.1%) indicated they performed duties in addition to their strength training and conditioning assignments. Testing the physical performance of the athletes was the greatest responsibility reported from Division II STC coaches (87%) and Division III STC coaches (91.2%). Division II and III STC coaches listed counseling athletes regarding proper nutrition, 78.3% and 88.2% respectively, and recruitment of athletes, 78.3% and 82.4% respectively. Other duties and responsibilities indicated by Division II and III STC coaches included counseling athletes about drugs/substance abuse, 73.9% and 73.5% respectively; maintenance, 73.9% and 76.5% respectively; facility supervision when not

Table 6.

Duties of STC Coaches at Division II and III Institutions

Duties	Division	
	II	III
Performance Testing	87	91.2
Counsel athletes Nutrition	78.3	88.2
Counsel athletes Drugs/substance abuse	73.9	73.5
Maintenance	73.9	76.5
Facility supervision when not coaching	52.2	52.9
Athlete Recruitment	78.3	82.4

Note. Results are indicated as percentages.

coaching, 52.2% and 52.9% respectively.

Facilities and Equipment

At Division II institutions 52.2% reported having a weight room exclusively for the athletic department while 26.1% reported having no weight rooms exclusive to the athletic department, and 21.7% reported having two or more weight rooms specifically for the athletic department. At Division III institutions 67.6% of the programs did not have weight rooms solely for the athletic department, while only 2.9% indicated having two or more weight rooms for the athletic department.

Equipment used by the STC coaches was reported as plentiful. Division II and III STC coaches, 91.3% and 91.2% respectively, used free-weight equipment. Division II and III STC coaches had free-weights and equipment designed for Olympic lifts, 82.6% and 88.2% respectively. In addition to offering free-weights, 82.6% of the Division II institutions and 76.5% of the Division III institutions possessed variable resistance machines. Assistive devices were popular at Division II institutions where 91.3% of the STC coaches used them; compared with 76.5% of the STC coaches at Division III institutions. Other training devices such as agility ladders, running harnesses and hurdles were used by 91.3% of Division II STC coaches and 94.1% of Division III STC coaches.

Career Goals

Career Goals of STC Coaches at Division II and III Institutions are indicated in Table 7. Remaining a STC coach at their current NCAA Division level was desired by 21.7% of Division

Table 7.

Career Goals of STC Coaches at Division II and III Institutions

Career Goal	Division	
	II	III
Current Level	21.7	26.5
Division I STC Coach	26.1	8.8
Professional Level	8.7	11.8
Athletic Coach	17.4	35.3
Athletic Administrator	17.4	17.6
College Teacher	4.3	-
Private Business Sector	-	5.9
Private Business Owner	8.7	2.9
Other	13	20.6
Uncertain	8.7	11.8

Note. STC coaches were asked to respond to all items that apply. Results are indicated as percentages.

- Indicates data not received

II STC coaches and 26.5% of Division III STC coaches. Division II STC coaches, 26.1%, and Division III STC coaches, 8.8%, had set goals to become a Division I STC coach while 8.7% of Division II STC coaches and 11.8% Division III STC coaches indicated becoming a STC coach at the professional level. While 17.4% of the Division II STC coaches indicated a desire to have a career as an athletic coach, 35.3% of the Division III coaches have a career goal of being an athletic coach. At Division II and III levels, 17.4% and 17.6% respectively, of the STC coaches expressed a desire to become an athletic administrator. Other career goals indicated in this study

were, college teacher (4.3%) for Division II coaches, private business sector (5.9%) for Division III coaches and private business owner, 8.7% and 2.9% for Division II and III respectively. Indicated by 13% of the Division II STC coaches and 20.6% of the Division III coaches was the response “other”. Those who were uncertain about their career goals at the Division II institutions were 8.7% and 11.8% at the Division III institutions.

Division II and Division III STC Coaches Compared to Martinez Study

The profile of Division II and Division III STC coaches did differ compared to the profile of Division I-A STC coaches studied by Martinez (2004) when considering demographics, educational background, coaching experience, and additional duties. Martinez compared data from the three Division categories: Division I-A, Division I-AA, and Division I-AAA. Because Division I-A institutions and athletes are considered the most elite, it was with this category that comparisons are made. The items in this study that were compared to Martinez included demographic characteristics, educational background, coaching experiences, and professional duties.

In regards to demographic characteristics, for coaches in this study the modal age of Division II STC was 35 years, and the modal age of Division III STC coaches was 34 years, Division I-A STC coaches reported by Martinez (2004) was 37 years. In this study, both Division II and III STC coaches, over 90%, reported to be white, male, and earning salary's between \$30,001-\$40,000. The Division I-A STC coach showed to be white, male, and earning between \$50,000-\$59,999. The most identified certification for STC coaches in this study and in the Martinez study was the NSCA's, CSCS certification.

The highest degree earned for Division II STC coaches in this study and Division I-A STC coaches (Martinez, 2004) was a master's degree, 56.5% and 67.5% respectively. Division III coaches (50%) in this study identified the highest degree earned as bachelor's degree.

Only 39.1% of the Division II STC coaches and 29.4% of the Division III coaches in this study had been assistant STC coaches at the collegiate level. While 76.25% of Division I-A STC coaches (Martinez, 2004) had been assistant STC coaches at the college level. Zero percent of Division II STC coaches and 5.9% of Division III STC coaches in this study reported experience as assistant STC coaches at the professional level, while Division I-A STC coaches (Martinez) reported 5%. Compared to Division II coaches (4.3%) and Division III coaches (0%) in this study, Martinez did not indicate the exact number of coaches who had been head STC coaches at the high school and college level; however, he did report that 6.25% of Division I-A STC coaches had served as head STC coach at the professional level. Division II and III STC coaches in this study, 40.3% and 17.6% respectively, had graduate assistant coaching experience versus what was reported by Martinez. He reported, in excess of 62% of the Division I-A STC coaches had graduate assistant coaching experience. Many Division II and III STC coaches in this study reported not having served as a STC coach for body builders, power lifters, and Olympic lifters, which is similar to Martinez's findings for Division I-A STC coaches.

All Division I-A (Martinez, 2004), II and III STC coaches reported having support staff such as full-time, part-time, and volunteer and graduate assistants. In this study, Division II and III, 17% and 5.9% respectively, reported having full-time assistants, versus Division I-A (Martinez), which reported the highest percentage of full-time assistants at 85%. Response rates for part-time assistants were, 41.25%, 26%, and 35.29% for Division I-A (Martinez), II, and III respectively. Graduate assistants were used most by 39.13% of Division II STC programs and 11.67% of the Division III institutions in this study, and by 52.5% of the Division I-A STC

coaches (Martinez). The response rate for the use of volunteer assistants was 60%, 30.43%, and 20.58% for Division I-A (Martinez), II, and III respectively.

STC coaches at Division I-A (Martinez, 2004) are most likely to have the title of Head Strength and Conditioning Coach. The Division II and III levels STC coaches in this study were more likely to have the job title of Head Strength and Conditioning Coach in conjunction with another job title, such as assistant athletic coach, class instructor, director of athletics, or athletic trainer. All Division I-A STC coaches (Martinez) were full-time employees with 92% reporting contracted periods at least 10 months and 72% reporting staff status. Full-time status made up 60.9% of the Division II STC coaches in this study, with 60.9% having annual contract length of 12 months and 65.2% reporting staff status. Division III STC coaches in this study reported 61.8% as full-time employees with 64.7% reporting 12 month annual contracts and 67.65% reporting staff status.

Approximately, 91.2% of Division III STC coaches in this study reported sport-specific testing of athletes while 87% of the Division II STC coaches tested athletes. Martinez (2004) reported that most Division I-A STC coaches believed sport-specific testing of athletes was their most essential performed job task. Division II STC coaches in this study (73.9%) listed facility maintenance as a job task, while Division I-A STC coaches reported facility maintenance and supervision as a necessary job task (Martinez). Division III STC coaches (88.2%) in this study reported counseling athletes on proper nutrition as a job task.

Division II institutions (52.2%) in this study were most likely to have one weight room exclusively for athletic department while Division III institutions (67.6%) did not have any weight rooms reserved exclusively for the athletic department. Division I-A institutions (Martinez, 2004) were most likely to have two weight rooms exclusively for athletic department use.

In this study, at the Division II level 26.1% of those responding reported interest in seeking strength and conditioning positions at the Division I level while 21.7% indicated they were interested remaining at the Division II level. However, 35.3% of Division III STC coaches in this study desired to become a coach of a specific sport while remaining a STC coach at the Division III level was indicated as their second most desired career goal. Most Division I-A STC (Martinez, 2004) coaches reported to be content as remaining as head strength and condition coach at the college level, while becoming a head strength and conditioning coach at the professional level was the second-most career goal.

CHAPTER 5

DISCUSSION

Individuals considering a career as a strength and conditioning coach may have many questions about what it takes to enter and excel in the field. The most common questions focus on the level and type of education, professional certifications, and strength training and conditioning experience that is required of collegiate strength training and conditioning professionals (Dooman et al., 1998). Research has been conducted (Martinez, 2004; Pullo, 1992) on the key determining factors of STC coaches at NCAA Division I institutions, yet, no research has been published regarding STC coaches at NCAA Division II and III institutions. Therefore, it is important for individuals considering a career as a strength and conditioning coach, as well as strength and conditioning educators and athletic program administrators, to be aware of the profile of head strength and conditioning coaches at NCAA Division II and III institutions.

The primary purpose of this study was to compile the demographic characteristics, educational backgrounds, coaching experiences, and duties of head strength and conditioning coaches at NCAA Division II and III institutions. The secondary focus of this study is to compare the profile of Division II and III STC coaches to the Martinez (2004) profile of NCAA Division I strength and conditioning coaches

The following chapter will discuss the results of the current study as they pertain to the following research questions:

1. What are the demographic characteristics (i.e. sex, age, ethnicity, salary) of head strength and conditioning coaches at NCAA Division II and III member schools?
2. What are the educational backgrounds of head strength and conditioning coaches at NCAA Division II and III member schools?

3. What are the strength and conditioning and/or coaching experiences of head strength and conditioning coaches at NCAA Division II and III member schools?
4. What are the professional duties of head strength and conditioning coaches at NCAA Division II and III member schools?
5. What are the certification characteristics of head strength and conditioning coaches at NCAA Division II and III member schools?
6. How do the demographic characteristics, educational background, coaching experiences, and duties of head strength and conditioning coaches at NCAA Division II and III institutions compare to the data at NCAA Division I schools identified by Martinez (2004)?

Table 8 is provided to indicate comparisons of Division II and III STC coaches' responses to the survey instrument. Table 9 is provided to indicate comparisons of Division I-A, II and III STC coaches' responses to their respective survey instrument.

Demographic Characteristics

This section will discuss the comparison of Division I-A, II, and III STC coach's demographic characteristics, as they are relevant to age, ethnic origin, salary, and professional certification.

Age

Early studies of STC coaches at NCAA institutions (Pullo, 1992) reported the mean age of Division I-A and I-AA STC coaches ($M= 33$ and 32 years, respectively). Thirty-seven ($M = 37$ years) was most recently (Martinez, 2004) reported as the mean age of Division I-A STC coaches. The modal age of Divisions II and III STC coaches in the current study was 35 years and 34 years, respectively.

Table 8.

Comparative Profile of Division II and III STC coaches

Item	Division	
	II	III
Age	35	34
Gender	Male	Male
Ethnicity	White	White
Salary	\$30,001-\$40,000	\$30,001-\$40,000
Certification	CSCS	CSCS
Degree	Master's	Bachelor's
Assistant STC experience (College)	Yes	Yes
Graduate Assistant experience	Yes	No
Number of full-time assistants	0	0
Number of part-time assistants	0	0
Number of graduate assistants	0	0
Number of volunteer assistants	0	0
Title	Head STC Coach/ Additional title	Head STC Coach/ Additional title
Full-time status	Yes	Yes
Contract (mo)	12	12
Employment status	Staff	Staff

Table 8. (continued)

Item	Division	
	II	III
Primary job responsibility	Test athletes	Test athletes
Number of weight rooms	1	0
Career Goals	College STC coach	Athletic coach

Indicated response represents the most frequent response. CSCS = Certified Strength and Conditioning Coach; STC coach = Strength and conditioning coach; Additional title = staff member has at least one other job title in addition to STC coach

Table 9.

Comparative Profile of Division I-A, II, and III STC Coaches

Item	Division		
	I-A ^a	II	III
Age	37	35	34
Gender	Male	Male	Male
Ethnicity	White	White	White
Salary	\$50,001-\$59,999	\$30,001-\$40,000	\$30,001-\$40,000
Certification	CSCS	CSCS	CSCS
Degree	Master's	Master's	Bachelor's
Assistant STC experience (College)	Yes	Yes	Yes
Graduate Assistant experience	Yes	Yes	No

Table 9. (continued)

Item	Division		
	I-A ^a	II	III
Number of part-time assistants	0	0	0
Number of graduate assistants	1	0	0
Number of volunteer assistants	1	0	0
Title	Head STC Coach	Head STC Coach/ Additional title	Head STC Coach/ Additional title
Full-time status	Yes	Yes	Yes
Contract (mo)	12	12	12
Employment status	Staff	Staff	Staff
Number of weight rooms	2	1	0
Career Goals	Status Quo	College STC coach	Athletic coach
Primary job responsibility	Test athletes	Test athletes	Test athletes

Indicated response represents the most frequent response. CSCS = Certified Strength and Conditioning Coach; STC coach = Strength and conditioning coach; Additional title = staff member has at least one other job title in addition to STC coach.

^aFrom “Study of the Key Determining Factors for the NCAA Division I Head Strength and Conditioning Coach,” by D. Martinez, 2004, *Journal of Strength and Conditioning Research*, 18(1), p. 14. Copyright 2004 by the National Strength and Conditioning Association.

Sex

Todd et al. (1991) reported the strength and conditioning profession was incredibly saturated with males. The results of the current study were similar. NCAA Division II and III STC

coaches were predominately males. Similar to Pullo's (1992) report, which identified "only one female strength coach in Division I" (p. 56), the current study identified two female STC coaches in Division II and two female STC coaches in Division III. Todd et al. detailed that due to a rapid growth in the number of people with a professional interest in athletic conditioning combined with a similar growth in women's athletics, a significant increase might be expected in the number of women serving in the profession. The results of the current study do not suggest that women have been able to break into the profession even at a less competitive level, such as NCAA Division II and III.

Ethnicity

White (96.5%), was the foremost ethnic group identified in the current study. Two STC coaches at Division II institutions (3.5%) identified themselves as black, which was the only other ethnic group to have reported in the current study at Division II institutions. This report was consistent with the low numbers of employed minorities as strength and conditioning coaches at Division I universities, which had been regularly documented (Brooks et al., 2000; Martinez, 2004; Pullo 1992). Perhaps reasons proposed by Cunningham et al. (2001), as to the discrepancy of black coaches in the NCAA are applicable to the profession of strength and conditioning. Cunningham et al. proposed, black coaches may leave the occupation more so than white coaches, black coaches do not contemplate coaching as their primary career pathway, or occupational and/or societal variables.

Salary

The salary of Division I-A head STC coaches changed significantly between 1991 and 2004 (Brooks et al., 2000; Martinez, 2004; Pullo, 1992; Todd et al., 1991); \$20,000-\$25,000 in 1991 to \$50,000-\$59,999 in 2004. Division I-A STC coaches (Martinez) earned an annual salary that

ranged \$10,000-\$20,000 more than STC coaches at Division II and III schools in this study. Salary's for STC coaches at Division II and III institutions ranged from \$30,001-\$40,000. Instances where faculty and staff take on weight room supervision responsibilities at the NCAA Division II and III institutions (Roozen, 1996) may explain why STC coaches at the smaller institutions earn a competitive salary. Because NCAA Division I-A athletic programs are revenue generating programs (Pullo, 1989), greater success is demanded thus enabling NCAA institutions to provide higher salaries in order to attract elite STC coaches.

Certifications

The National Strength and Conditioning Association (NSCA) offers the Certified Strength and Conditioning Specialist (CSCS) certification, which is often a required credential of any coach responsible for designing and implementing an athletes training program (Dooman et al., 1998). STC coaches from Divisions II (73.9%) and III (70.6%) reported the CSCS certification through the NSCA to be the most widely held credential, which is similar to Martinez's (2004) study where 72.5% of Division I-A STC coaches listed the CSCS credential. The Collegiate Strength & Conditioning Coaches association (CSCCa) Strength and Conditioning Coach Certified (SCCC) credential and the USA Weightlifting (USAW) club coach credential, were the second and third most reported certifications held by Division II STC coaches, respectively. Division III STC coaches indicated the USAW, club coach credential and the CSCCa, Strength and Conditioning Coach Certified (SCCC) credential, as the second and third most reported certifications held, respectively.

Educational Background

NSCA Certification Committee Chairperson, Baechle (1981), distributed *An Analysis of Attitudes Concerning the Topic of Establishing Certification Standards for Strength Coaches: A*

National Survey, which reported that 90% of those who replied to the survey reported that either a bachelor's or master's degree should be required for certification. If that were to be an established standard many STC coaches would qualify. Sixty-seven percent of Division I-A STC coaches held a master's degree (Martinez, 2004). Just over half (56.5%) of the Division II STC coaches indicated that a master's degree was their highest degree earned and 8.7% of all Division II STC coaches surveyed acknowledged they were currently enrolled in a master's degree program. Under half (47.1%) of the Division III STC coaches indicated that a master's degree was their highest degree earned and 17.6% of all Division II STC coaches surveyed acknowledged they were currently enrolled in a master's degree program.

Professional Experience

A lack of applied experience is often what puts people at a disadvantage for entry into the profession compared to those individuals who have experience participating in a strength and conditioning program (Dooman et al., 1998). Division II and III STC coaches, 39.1% and 29.4% respectively, had experience as an assistant STC coach, which is different from Division I-A STC coaches (Martinez, 2004), 76.25% of STC coaches had experience as an assistant STC coach at the college level. A low amount, less than 6%, of STC coaches at all division levels reported having been an assistant or head STC coach at the professional level. Most of the Division I-A STC coaches (Martinez) had experience as a graduate assistant versus less than half of Division II and III STC coaches. This is important because Martinez also reported that STC coaches at NCAA Division I institutions confirmed that it is essential for prospective head STC coaches to have: (a) served as an assistant strength and conditioning coach at a Division I school, (b) served as assistant strength and conditioning coach at any school level, and (c) served as a graduate assistant strength and conditioning coach at any school level. Based on Martinez's

report and results of the current study Division II and III STC coaches may have difficulty becoming a head STC coach at Division I institutions.

Similar to Martinez's (2004) findings for Division I-A STC coaches, Division II and III STC coaches did not report having served as a STC coach for body builders, power lifters, and Olympic lifters. Not indicated by Division I-A STC coaches, more than half of the Division II and III STC coaches served as a STC coach for youth and adult athletes; however, few served as a STC coach for senior athletes.

Staffing

Head STC coaches at Division I-A institutions indicated a need for assistant strength coaches (Pullo, 1989) assistant strength coaches. Most STC coaches at Division I-A institutions (Martinez, 2004) reported having support staff of two full-time assistants while most Division II and III STC coaches in this study indicated having zero full-time assistants. Most STC coaches in all divisions indicated zero part-time assistants. McClellan and Stone (1986) described how "one or more graduate assistants were used in 60 percent of the programs, and 30 percent had two or more, the maximum being six" (p. 34). Martinez reported Division I-A STC coaches having one graduate and one volunteer assistant while STC coaches at Division II and III institutions in this study reported no help from neither graduate nor volunteer assistants.

Job Description

The most frequently identified job title for Division I-A STC coaches was Head Strength and Conditioning Coach (Martinez, 2004), while the most frequently identified job title for Division II and II STC coaches in this study was Head Strength and Conditioning Coach, plus an additional title indicating multiple employment responsibilities at the same institution. Most

coaches in all three divisions reported being full-time, having an annual 12-month contract, and staff status.

Most coaches in all divisions were responsible for multiple duties. Testing the physical performance of the athletes was reported by most STC coaches in Division I (Massey et al., 2004; Martinez, 2004), and Divisions II and III in this study. Division II and III STC coaches also listed job tasks such as counseling athletes regarding proper nutrition and recruitment of athletes, respectively.

Facility

STC coaches at Division I-A institutions exhibited the ability to use two weight rooms that were exclusively for the athletic department (Martinez, 2004). Perhaps, Division I-A institutions have the ability to provide multiple weight rooms because of profits generated through ticket sales from revenue generating athletic events such as football and/or basketball. The NCAA requires Division I-A football programs teams to meet minimum attendance obligations (NCAA, What's the difference between Divisions I, II, and III?, n.d.). However, in the current study Division II STC coaches reported the use of one weight room exclusively for the athletic department, whereas Division III STC coaches reported zero weight rooms exclusively for the athletic department.

As more and more strength and conditioning research is reported, STC coaches have the resources to develop and execute well designed strength and conditioning programs based on significant data. If research identifies particular equipment and training devices to be superior to other training methods, multiple types of equipment may be used in strength and conditioning programs. Almost all Division II and III STC coaches reported using free weights, free weights designed for Olympic lifts, variable resistance machines, assistive devices such as stability balls, bands, or tubing, medicine balls, and other training devices similar to agility ladders, hurdles,

and running harnesses. If STC coaches can create and manipulate training programs with multiple types of training equipment in order to elicit desired effects, career advancement may be obtained. As Dooman et al. (1998) stated, “becoming involved in the creation, execution, and supervision of an athlete’s conditioning program is essential to securing a career as a strength and conditioning coach” (p. 33).

Career Goals

Most Division I-A STC coaches were content with remaining a STC coach at the college level (Martinez, 2004). Though several Division II STC coaches wanted to remain coaching at the college level, many wanted to remain specifically at the Division II level or move to the Division I level. Several Division III STC coaches identified the desire to stay at the Division III level rather than moving to the Division I-A or II level. Different from Division II STC coaches, many Division III STC coaches had a career goal to become an athletic coach. Lastly, Division II and III STC coaches reported the desire to become an athletic administrator.

Conclusions

The most common questions for individuals considering a career as a strength and conditioning coach focus on the level and type of education, professional certifications, and strength training and conditioning experience that is required of collegiate strength training and conditioning professionals (Dooman et al., 1998). Research answering these questions has been conducted on STC coaches at the NCAA Division I level (Martinez, 2004; Pullo, 1989) but not at the NCAA Division II and III level. Individuals looking to become a STC professional may commence their career at the Division II or III level; therefore it is necessary for these individuals, as well as strength and conditioning educators and athletic program administrators,

to be aware of the profile of head strength and conditioning coaches at NCAA Division II and III institutions.

Individuals who seek to become STC professionals will find it essential to have a formal college education (Martinez, 2004), achieve a professional certification such as the NSCA's, CSCS certification (Martinez; Pullo, 1992), and be prepared to have multiple job responsibilities (Brooks et al., 2000; Martinez; Massey et al., 2004; Pullo). In conclusion, individuals should become well equipped with knowledge and experience in order to open opportunities for whatever their career goals may be as a STC coach.

The number of NCAA Division II and III institutions who did not have electronic media available and the number of strength and conditioning coaches who did not respond to the survey limited this research. Due to these limitations the findings and conclusions of this study could be affected. Further assessment of NCAA Division II and III STC coaches is encouraged.

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APPENDIXES

Appendix A: Invitation to Pilot Study Participants

Dear Strength and Conditioning Coach,

I am a master's candidate in the Exercise Physiology and Performance program at East Tennessee State University. I am conducting research pertaining to the characteristics of all strength and conditioning coaches at NCAA Division II and III member institutions. Strength and conditioning coaches at all Division II and III are being asked to participate.

Although you may or may not have coached at the NCAA Division II or III level you have been recognized as a strength and conditioning professional who has participated or is familiar with the strength and conditioning profession at the collegiate level. Considering your familiarity, I request your participation in a pilot study in order to refine the survey instrument designed for conducting such research.

Upon accepting this invitation to participate in this pilot study please connect using the highlighted link and copy and paste the username and password below to log into the survey.

I would appreciate receiving your responses by **Monday April 4th, 2005**

Be assured that your responses will be kept in **complete confidentiality.**

If you have any questions or problems, please email me at stcsurvey@yahoo.com.

Thank you in advance for your time and willingness to participate.

Sincerely,

Leonard P. Haggerty, CSCS

Appendix B: Invitation to Research Population

Dear Institution Athletic Personnel,

I am a master's candidate in the Exercise Physiology and Performance program at East Tennessee State University. I am conducting research pertaining to the characteristics of today's strength and conditioning coaches at NCAA Division II and III institutions. Strength and conditioning coaches at all NCAA Division II and III are being asked to participate.

I anticipate the results of this research to provide an enhanced representation of the profession at the collegiate level for inquiring individuals. I understand this is a hectic time of year and ask of only a few minutes of your time to complete the attached survey instrument. If there is an individual for whom it would be more appropriate to complete this survey, please forward this invitation to them.

Based on the pilot study, I estimate that it will take approximately 5-10 minutes for you to complete the survey. Upon accepting this invitation to participate in this research please connect using the highlighted link.

I would appreciate receiving your responses by Wednesday June 1st, 2005.

Be assured that your responses will be kept in complete confidentiality and that only aggregate results will be reported.

If you have any questions or problems, please email me at stcsurvey@yahoo.com.

Thank you in advance for your time and willingness to participate.

Sincerely,

Leonard P. Haggerty, CSCS

Appendix C: Follow Up Invitation to Research Population

Dear Institution Athletic Personnel,

I am a master's candidate in the Exercise Physiology and Performance program at East Tennessee State University. Provided is a follow up invitation to participate in research pertaining to the characteristics of today's strength and conditioning coaches at NCAA Division II and III institutions. Strength and conditioning coaches at many NCAA Division II and III programs are participating.

I anticipate the results of this research to provide an enhanced representation of the profession at the collegiate level for inquiring individuals. I understand this is a hectic time of year and ask of only a few minutes of your time to complete the attached survey instrument. If there is an individual for whom it would be more appropriate to complete this survey, please forward this invitation to them.

Based on the pilot study, I estimate that it will take approximately 5-10 minutes for you to complete the survey. Upon accepting this invitation to participate in this research please connect using the highlighted link.

I would appreciate receiving your responses by Friday August 5th, 2005.

Be assured that your responses will be kept in complete confidentiality and that only aggregate results will be reported.

If you have any questions or problems, please email me at stcsurvey@yahoo.com.

Thank you in advance for your time and willingness to participate.

Sincerely,

Leonard P. Haggerty, CSCS

Appendix D: Informed Consent

INFORMED CONSENT

By proceeding to the highlighted link of this informed consent you, the research population acknowledges that the investigators of this research are making every effort possible to keep all survey responses confidential. Survey responses will be pooled and it will not be possible to attribute a particular survey response to a specific study participant.

The research data will be available for inspection by both the study PI and Co-PI, and as designated by the ETSU IRB. Again, all identifiers about the subject/participant's will be removed from the database, will be treated confidentially, and will not be revealed.

Due to the nature of the Internet it is possible for outside parties to intrude on information being relayed from research population to research investigators.

If you wish NOT to participate in this research please delete this message from your mailbox system. At that time you will be directed away from the research invitation.

You have been invited to take the survey Profile of Head STC Coaches at ETSU College of Education Survey System. Please proceed to

<http://coe.etsu.edu/UltimateSurvey/takeSurvey.asp?surveyID=8&invid=x>

Appendix E: Survey Instrument

Demographic Characteristics:

1. Indicate the NCAA classifications of your school.

Division II Division III Other Don't know

2. What year were you born: _____

3. I am: Female Male

4. I consider myself?

Alaskan Native American Indian

Asian or Pacific Islander Black

Hispanic White Other

5. What is your annual salary? \leq \$20,000 \$20,001-\$30,000

\$30,001-\$40,000 \$40,001-\$50,000 \$50,001-\$60,000

\$60,001-\$70,000 \$70,001-\$80,000 \$80,001-\$90,000

\$90,001-\$100,000 $>$ \$100,000

6. Which of the following certifications do you currently hold, mark all that apply:

American College of Sports Medicine (ACSM)

Health Fitness Instructor

Exercise Specialist

Registered Clinical Exercise Physiologist

College Strength and Conditioning Coaches association (CSCCa)

SCCC

MSCC

National Athletic Trainers Association (NATA)

National Strength and Conditioning Association (NSCA)

CSCS

C-PT

USA Weightlifting

Club Coach

Level I

Level II

Senior Coach

_____ Regional Coach
_____ International Coach
_____ Senior International Coach

_____ Other _____

Educational Background:

1. Please indicate the highest degree you have earned:

_____ High school diploma
_____ Associate's Degree
_____ Bachelor's Degree major _____ minor _____
_____ Master's Degree major _____ minor _____
_____ Doctoral Degree major _____ minor _____

2. If you are currently enrolled in a degree program, please indicate the type of degree below.

_____ High school diploma
_____ Associate's Degree
_____ Bachelor's Degree major _____ minor _____
_____ Master's Degree major _____ minor _____
_____ Doctoral Degree major _____ minor _____
_____ Not currently enrolled in a degree program.

Professional Experience:

Please complete the following questions about your experiences as an **assistant** strength and conditioning coach.

1. Have you ever worked as an **assistant** strength and conditioning coach. __NO __ YES
If YES, please answer questions 2-4. If NO, please go to question 5.
2. Have you ever worked as an **assistant** strength and conditioning coach at the high school level? ___NO ___YES ___Currently # of years _____
3. Have you ever worked as an **assistant** strength and conditioning coach at the college level? ___NO ___YES ___Currently # of years _____
4. Have you ever worked as an **assistant** strength and conditioning coach at the professional level? ___NO ___YES ___Currently # of years _____

Please complete the following questions about your experiences as **head** strength and conditioning coach.

5. Have you ever worked as a **head** strength and conditioning coach? NO YES

If YES, please answer questions 6-8. If NO, please go to next section, questions 9-10.

6. Have you ever worked as a **head** strength and conditioning coach at the high school level? NO YES Currently # of years _____

7. Have you ever worked as a **head** strength and conditioning coach at the college level? NO YES Currently # of years _____

8. Have you ever worked as a **head** strength and conditioning coach at the professional level? NO YES Currently # of years _____

Please complete the following questions about your experiences as a graduate assistant strength and conditioning coach.

9. Have you ever worked as a graduate assistant strength and conditioning coach?

NO YES Level _____ # of years _____

10. Have you ever worked as a graduate assistant strength and conditioning coach at the college level? NO YES Currently # of years _____

11. Have you ever served as a strength and conditioning coach for any of the following?

Body Builders NO YES Level _____

Power lifters NO YES Level _____

Olympic lifters NO YES Level _____

Youth athletes NO YES Level _____

Adult athletes NO YES Level _____

Senior athletes NO YES Level _____

Staffing:

Please indicate the number of full-time and/or part-time staff, graduate assistants, and/or volunteer strength and conditioning **assistants** in your strength and conditioning program?

1. Paid full-time assistances

0 1 2 3 4 5 MORE _____

2. Paid part-time assistants

0 1 2 3 4 5
 MORE _____

3. Number of your graduate assistants?

____0 ____1 ____2 ____3 ____4 ____5 ____MORE____

4. Number of volunteer assistants?

____0 ____1 ____2 ____3 ____4 ____5 ____MORE____

Job Description:

1. What is your current job title? _____

2. Are you a full-time or part-time strength and conditioning coach?

____Full-time

____Part-time

3. What is the length of your annual contract (in months)?

____6 ____9 ____12 ____ Don't know

4. What is your employment status?

____Faculty

____Staff

____Independent Contractor

____Other_____

____Don't know

5. Indicate whether you perform duties in addition to your strength training and conditioning assignments (indicate all that apply)?

____NO ____YES

If YES, continue below. If NO, go to question 6.

____ Athletic coach (please indicate sport(s)) _____

____ Teach college physical education classes

____ Teach other college classes

____ Other _____

6. Are you responsible for testing the physical performance of athletes?

____NO ____YES

7. Do you counsel athletes on proper nutrition?

____NO ____YES

8. Do you counsel athletes regarding substance and/or drug abuse?

____NO ____YES

9. Are you responsible for weight room(s) equipment maintenance?

____NO ____YES

10. Are you responsible for facility supervision when **NOT coaching** athletes?

____NO ____YES

11. Do you help with recruitment of athletes?

____NO ____YES

Facility:

1. How many weight rooms at your institution are reserved exclusively for the athletic department?

____0 ____1 ____2 ____3 ____other how many____

2. Indicate the type of equipment your athletes train with? (Mark all categories that apply)

____Free weights

____Free weights and equipment designed for Olympic lifts

____Variable resistance machines (type)_____

____Assistive devices (e.g. Stability balls, resistance bands or tubing, medicine balls)

____Other training devices (e.g. Agility ladders, running harnesses, hurdles)

Career Goals:

1. What are your career goals?

____Remain a strength and conditioning coach at the NCAA Division II level

____Remain a strength and conditioning coach at the NCAA Division III level

____Become a strength and conditioning coach at the NCAA Division I level

____Become a strength and conditioning coach at the NCAA Division II level.

____Become a strength and conditioning coach at the professional level

____Become a college teacher

- _____ Become an athletic administrator
- _____ Work in the private business sector
- _____ Become a private business owner
- _____ Coach (sport) _____
- _____ Other _____
- _____ Uncertain

Thank you for taking the time to complete this survey.

VITA

Leonard P. Haggerty, CSCS

Personal Data: Date of Birth: April 21, 1976
 Place of Birth: Northampton, MA

Education: Public School, Northampton, MA
 Keene State College, Keene, N.H.
 Physical Education, B.S., 1998
 East Tennessee State University, Johnson City, Tennessee
 Physical Education, M.A., 2005

Professional
Experience: Owner/Operator; APEX Sports Performance
 Northampton, MA, 2004-Present
 Volunteer Graduate Assistant, East Tennessee State University,
 Strength and Conditioning, 2003-2004

Certifications: Certified Strength and Conditioning Coach
 National Strength and Conditioning Association