1998

A descriptive study of non-accredited athletic training programs

Donald Lee Bishop
University of Northern Iowa

A DESCRIPTIVE STUDY OF NON-ACCREDITED ATHLETIC TRAINING PROGRAMS

An Abstract of a Thesis

Submitted

In Partial Fulfillment for the Degree

Master of Arts

Donald Lee Bishop

University of Northern Iowa

May 1998

ABSTRACT

The purpose of the study was to describe the current status of non-accredited athletic training programs at four-year colleges and universities in relation to receiving future accreditation by the Commission on Accreditation of Allied Health Education Programs (CAAHEP).

Since it was first organized, the National Athletic Trainers' Association, Inc. (NATA) has continually sought to elevate the standards of its members. There were no certification or education requirements for athletic trainers until 1970. These requirements, once very broad and open-ended, have since been refined and delimited to ensure the highest quality for athletic trainers. The NATA has once again raised their standards by delimiting eligibility for the NATABOC's certification examination to only those candidates who have successfully completed a CAAHEP accredited athletic training education program. However, this requirement, which will take effect in the year 2004, could delimit the number of educational opportunities for future athletic trainers.

The study sample included 116 head athletic trainers of four-year colleges and universities which did not have an NATA or CAAHEP accredited approved athletic training educational programs and were in District V of the NATA. Data were collected by mailing a questionnaire. There were 64 (55.2%) returned surveys out of the 120 that were mailed.

The following conclusions were drawn from this study. For any institutions considering pursuing CAAHEP accreditation in athletic training there are a number of items that must be considered. Programs may need to increase the number of

certified athletic trainers (ATCs) that they employ or limit the number of students that they admit to their programs in order to keep their ratios of student athletic trainers to clinical instructors at the 8:1 ratio. A program director will be needed to be designated. Prospective institutions also may need to locate physicians and other allied health personnel who are willing to be involved in the classroom and clinical aspects of their athletic training education programs. Finally, most prospective institutions will have to draft standards for admission into the program.

A DESCRIPTIVE STUDY OF NON-ACCREDITED ATHLETIC TRAINING PROGRAMS

A Thesis

Submitted

In Partial Fulfillment for the Degree

Master of Arts

Donald Lee Bishop

University of Northern Iowa

May 1998

This Study by: Donald Lee Bishop

Entitled: A Descriptive Study of Non-accredited Athletic Training Programs

has been approved as meeting the thesis requirement for the Degree of Master of Arts.

4/23/98
Date — Dr. Nancy Hamilton, Chair, Thesis Committee

4/23/98
Date — Dr. Sharon Huddleston, Thesis Committee Member

4/23/98
Date — Dr. Susann Doody, Thesis Committee Member

6/26/98
Date — Dr. John W. Somervill, Dean of Graduate College

Acknowledgments

I would like to convey my deepest thanks to the chair of my thesis committee, Dr. Nancy Hamilton, for her professional leadership, guidance, and assistance with my thesis. Thanks are also due to Dr. Sharon Huddleston, Dr. Susann Doody, and Micki Austin, MA, ATC for their assistance and guidance on my thesis committee. I would also like to thank Kent Falb, PT, ATC, for inspiring me to enter the profession of athletic training.

Thanks to Upper Iowa University and its administration, coaches, athletes, and student athletic trainers whose patience during this long project was greatly appreciated.

Finally I would like to thank my spouse, Sheri, and my family for their continuous love and support of all my endeavors. I will always be grateful for your support, understanding, and sacrifices during this project.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Athletic training has attained a significant level of professional acceptance in the field of athletics and sports medicine in recent years and has grown rapidly as a profession. During approximately the past 35 years, educational competencies and requirements in athletic training education have continually progressed and been made more rigorous.

Athletic trainers are considered a paramedical specialist in sports medicine. Many organizations such as the American Medical Association (AMA), the American Orthopedic Society for Sports Medicine, the American Academy of Family Physicians and the American Academy of Pediatrics have formally recognized the athletic training profession (Arnheim & Prentice, 1997). A subcommittee of the AMA, the Commission on Accreditation of Allied Health Educational Programs (CAAHEP) has assumed representation as the accrediting body for academic programs in athletic training (Anderson & Hall, 1995).

A prospective athletic trainer may choose between two educational routes. A student athletic trainer must either be a graduate of a CAAHEP accredited curriculum or must have completed an athletic training internship at a non-accredited college or university in order to become an eligible candidate for the National Athletic Trainers' Association (NATA) certification examination. Upon successful completion of the certification examination, the athletic training candidate, whether from a CAAHEP

accredited program or non-accredited program, is assumed to have the same entry level skills.

CAAHEP accredited programs provide a blend of formal classroom instruction and clinical experience in athletic training (Watson, 1992). Students in these programs are required to complete a total of 14 specific content areas in the classroom. These students must serve a total of 800 hours of clinical experience in the athletic training facility under direct supervision of a certified athletic trainer as well. Candidates who have completed a non-accredited program must have completed seven courses in specific areas related to athletic training. Students in the non-accredited programs are also required to serve 1500 hours of clinical experience under the direct supervision of a certified athletic trainer. The 1500 hours of clinical experience is expected to give the student the educational background and experiences necessary to pass the certification examination. The NATA defines the clinical experience of both of these routes as an opportunity for the student to "develop specified technical skills and knowledge through direct application of comprehensive athletic health care services" (Professional Education Committee, 1987, p. 13).

An accredited athletic training program's administration and the content of the program itself is strictly regulated and undergoes periodic scrutiny by the NATA Professional Education Committee (Watson, 1992). In contrast, other than the established requirements for certification, a non-accredited program's administration and content are not evaluated by any NATA board or committee. Because of this dual set of standards, many athletic trainers have called for the abolishment of the non-

accredited program as a route to certification. As of December 1995, the NATA's Educational Task Force announced to the NATA membership a set of preliminary recommendations to improve athletic training education. The most obvious change was the recommendation that by the year 2004 all candidates for NATA certification must complete a CAAHEP accredited athletic training educational program. However, there are many athletic training professionals who are of the opinion that the lack of national standards for non-accredited programs does not mean that all internship settings lack "curricula and professional preparation guidelines" (Stoddard, 1981, p. 232).

Outcome differences have been recently found on the certification exam between students from accredited programs and students from non-accredited programs. Students from accredited athletic training educational programs scored significantly higher on all three components of the certification examination as compared to students from non-accredited athletic training educational programs (NATA, 1996). For the entire test a passage rate of 32% was found for students from accredited programs in contrast to a passage rate of 24% for the students from non-accredited programs. According to the NATA Educational Task Force, graduates of accredited programs passed all three sections of the certification examination on the first attempt at higher rates than graduates from non-accredited programs (NATA, 1996).

Draper (1989) found that the number of clinical experience hours accumulated by a student athletic trainer has had little influence on the level of performance on the certification examination. Student athletic trainers with 2000 hours of clinical

experience had scores no higher on any of the three sections of the exam than the student athletic trainers with less than 2000 hours of clinical experience.

In December 1995 the NATA's Educational Task Force developed a set of recommendations to improve athletic training education. These recommendations were sent to the entire NATA membership and published in the February 1996 issue of the NATA News. The most controversial of these recommendations was Recommendation I. This recommendation states that by the year 2004, all candidates for NATA certification must have successfully completed a CAAHEP accredited program. Without question, the results of this recommendation will have a tremendous impact on the current non-accredited athletic training educational programs.

Statement of The Problem

The purpose of the study was to describe the current status of non-accredited athletic training programs at four-year colleges and universities in relation to receiving future accreditation by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The subproblems of this study were the following:

1. The number and professional qualifications of athletic training personnel, which include certified trainers, graduate assistants who serve as assistants to the certified trainers, team physicians, and student trainers.

2. A description of the personnel who make up the sports medicine team.

3. A description of the involvement of the team physician in the athletic training education program.

4. A description of any academic programs in athletic training available including curriculum in both classroom and practical experiences for student athletic trainers.

5. A description of the employment, the number of the professionals who are active in the athletic training program, and the ratio of student athletic trainers to clinical supervisors.

6. A description of the details regarding the educational program of study, including the major courses required within the program and the staff who are responsible for teaching them.

7. A description of any application process for the athletic training program.

8. The success rate of student athletic trainers taking the NATA certification examination.

9. The plan for pursuing CAAHEP-accreditation by the year 2004.

Significance of the Study

In order for a student athletic trainer to sit for the NATA certification examination they must graduate from either a CAAHEP accredited athletic training program or must complete the internship requirements of a non-accredited educational program (see Appendix A Eligibility Requirements To Sit For the Certification Examination By Route). In a non-accredited program the internship is essentially a contract between a certified athletic trainer and a student athletic trainer. Past studies indicated that the NATA certification exam was taken more often by graduates of non-accredited programs than graduates of accredited programs (Hayez, 1986, 1989).

According to Watson (1992), this may be due to a greater number of graduates from non-accredited programs taking the exam or a greater number of graduates from non-accredited programs retaking the exam a second or third time or a combination of these factors. One would assume there are a greater number of graduates from non-accredited programs due to the fact that there were 573 institutions utilizing the internship route to certification as compared to 84 accredited undergraduate institutions for the years 1993 and 1994 (NATA, 1996). A total of 3,014 (66% of all certifies) were certified via the non-accredited route as compared to 1,561 (34% of all certifies) through accredited programs for the same years of 1993 and 1994 (NATA, 1996). No matter what the reasoning, graduates of non-accredited programs make up a significant portion of the total number of candidates seeking certification.

Even though a large number of graduates of non-accredited programs become candidates for certification, the NATA has offered minimal guidance to supervising athletic trainers or student athletic trainers as compared to the CAAHEP accredited programs. Research regarding athletic training education has been concentrated strictly on the NATA approved curriculum programs or what is known today as CAAHEP accredited programs (Stewart, 1986). The information available from the NATA on the structure of non-accredited programs has been limited strictly to the requirements of the Board of Certification. The content or context of clinical instruction has not been touched upon. There is also no present standard or guideline describing the appropriate professional preparation activities for student athletic trainers. Non-accredited programs are often left to the student's own design without a clear understanding of

what is the best way to prepare the student for entry into the profession of athletic training.

Often the primary concern of many non-accredited schools is having an adequate number of staff to provide adequate care to the school's athletes. These programs are thought of as more of a "service program to athletes and coaches," than an educational program (Watson, 1992, p. 17). Altering the focus of non-accredited programs from a service program to an educational setting would not require drastic alterations in the services provided. The role of the student athletic trainer would also not be altered. The immediate change needed would be changing the role of the certified athletic trainer from serving as a "taskmaster to that of teacher and mentor" (Watson, 1992, p. 18). The NATA is basing the elimination of non-accredited athletic training programs for a number of reasons. The first reason is the confusion created by having two different routes to certification. According to Chad Starkey, Ph.D., ATC, who sits on the NATA Educational Task Force as well as on the Board of Certification, "This change will give the profession a senses of solidarity (NATA, 1996, p. 17). It is hoped by the NATA that this solidarity will also assist in the pursuit of third-party reimbursement.

Another major factor the NATA is basing the decision to eliminate non-accredited programs is due to the disparity among courses students take from one university to another. Along the same lines, the recent differences found in the outcome of the NATA certification exam between students from accredited and non-accredited athletic training educational programs illustrates this point (NATA, 1996).

The additional pressure from the program directors of accredited programs has also contributed to the NATA Educational Task Force's recommendation. However, it is important to note that there are employers who still feel strongly that the clinical experience of the students from non-accredited programs outweighs the more didactic preparation within the accredited programs. There is no defined way to know how well a program, either accredited or non-accredited, meets the expectations for the students in regards to the NATA Competencies, nor how these competencies are met and assessed through professional preparation (Watson, 1992).

It is the intent of this study to provide an up-to-date description of non-accredited athletic training educational programs at colleges and universities within District V of the NATA. The tool developed from this study will serve as a working description of a non-accredited athletic training educational program. With the increased movements towards elimination of the accredited programs as a means to qualify for the certification examination, more should be known about these non-accredited athletic training educational programs. This study may provide an additional means for further investigation and better understanding of the complexities of preparing student athletic trainers for a career in athletic training.

Delimitations

This study was delimited to the following:

1. Non-accredited Athletic Training programs within colleges and universities in District V of the NATA.

2. The use of a mailed, self-reported questionnaire containing questions regarding to athletic training personnel, athletic training academic programs and the curriculum used, student trainer responsibilities and requirements, student evaluation techniques, and success rates on the NATA certification examination.

Limitations

The research was limited by the following:

1. The validity and reliability of the questionnaire.

2. The accuracy and honesty of the responses to the questionnaire.

Assumptions

The study was based on the following assumptions:

1. The questionnaire was answered accurately and honestly by the respondents.

2. The questions were interpreted uniformly by all of the respondents.

3. The sample surveyed was representative of the total population of non-accredited CAAHEP athletic training programs at colleges and universities.

4. The completed questionnaire provided valid and reliable data.

Definition of Terms and Abbreviations

Accredited athletic training educational program: An athletic training educational program accredited by the Commission on Accreditation of Allied Health Educational Programs (CAAHEP).

Apprenticeship athletic training program: A non-accredited CAAHEP athletic training educational program. Used synonymously with "internship" athletic training programs (Starkey, 1988).

Athletic training: The art and science of the prevention and management of injuries at all levels of athletic injuries (O'Shea, 1980).

Certified Athletic Trainer (ATC): An individual who has met the educational and practical criteria established by the National Athletic Trainers' Association and has been awarded certification as a certified allied health care practitioner (CAHEA, 1992).

Clinical athletic training hours: Non-class room hours which are worked in connection with programs in which the supervising certified athletic trainer is employed. These acceptable hours have been established by the National Athletic Trainers' Association to be:

1. Hours spent at organized team practices and contests (professional, collegiate, or interscholastic).

2. Hours spent in practicums and labs related to athletic training.

3. Hours spent working in sports medicine clinics or centers.

4. Hours spent in other allied health areas, upon approval of the National Athletic Trainers' Association (Starkey, 1988).

Commission on Accreditation of Allied Health Educational Programs (CAAHEP): The current commission empowered by the American Medical Association to develop an accreditation program for educational programs preparing individuals for entry into the athletic training profession.

Competencies: A list of educational objectives delineated by the NATA Board of Certification divided into three components: cognitive, psychomotor, and affective (Watson, 1992).

District V National Athletic Trainers' Association: The Mid-America Athletic Trainers Association that is comprised of a 7 state membership that is part of the National Athletic Trainers' Association. The seven states are: North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Iowa, and Missouri.

Non-accredited athletic training program: An undergraduate athletic training program that is not formally accredited by CAAHEP also known as an apprenticeship athletic training program.

National Athletic Trainers' Association (NATA): The recognized national organization empowered with regulating the profession of athletic training. This organization was founded to primarily establish guidelines, requirements, and professional standards of athletic training (Watson, 1992).

Professional Education Committee (PEC): a committee of the NATA whose primary mission is to develop guidelines and regulate undergraduate and graduate educational programs in athletic training (Watson, 1992).

Student athletic trainer: An undergraduate student who is responsible for the care, prevention, evaluation, treatment, and rehabilitation of athletic injuries and who works under the supervision of a certified athletic trainer and/or team physician (Starkey, 1988).

CHAPTER 2

REVIEW OF LITERATURE

The purpose of the study was to describe the current status of non-accredited athletic training programs at four-year colleges and universities in relation to receiving future accreditation by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The subproblems of this study were the following:

1. The number and professional qualifications of athletic training personnel, which include certified trainers, graduate assistants who serve as assistants to the certified trainers, team physicians, and student trainers.

2. A description of the personnel who make up the sports medicine team.

3. A description of the involvement of the team physician in the athletic training education program.

4. A description of any academic programs in athletic training available including curriculum in both classroom and practical experiences for student athletic trainers.

5. A description of the employment, the number of the professionals who are active in the athletic training program, and the ratio of student athletic trainers to clinical supervisors.

6. A description of the details regarding the educational program of study, including the major courses required within the program and the staff who are responsible for teaching them.

7. A description of any application process for the athletic training program.

8. The success rate of student athletic trainers taking the NATA certification examination.

9. The plan for pursuing CAAHEP-accreditation by the year 2004.

A review of literature revealed a lack of information on the current status of non-accredited athletic training educational programs at colleges and universities. The lack of literature in this may be a result of most of the research being conducted in the accredited programs settings. This chapter will review the current literature regarding the structure of athletic training educational programs, differences between accredited and non-accredited athletic training programs, the role of student athletic trainers, as well as student athletic trainer selection and evaluation.

Modern History of Athletic Training

During the mid 1800s in the United States athletic training moved into the modern era. Dr. Edward Hitchcock, Jr., a professor of physical education and hygiene at Amherst College in Massachusetts began the study of anthropometric measurement and wrote extensively in the area of physical education and athletics. During this time he also kept records of illnesses and injuries of the university athletes under his supervision. He was the first to serve in the role of the team physician, setting the standards for the care of athletic injuries in the mid 1800s (American Academy of Orthopedic Surgeons, 1991).

In 1881, Harvard University hired the first recorded "college athletic trainer." In 1887, the University of Oklahoma hired its first athletic trainer, whose responsibilities were that of athletic trainer, manager, referee, public relations director, and athletic

director (O'Shea, 1980). By the late 19th Century, many intercollegiate and interscholastic athletic programs had athletic trainers on staff. Most of these individuals had multiple responsibilities (Arnheim & Prentice, 1997).

Dr. S. E. Bilik is known as the "father of modern athletic training" (O'Shea, 1980). He was a medical student in the early 1900s when financial problems caused him to leave school in search of employment. The University of Illinois hired him as a part-time athletic trainer, which eventually developed into a full-time position. He developed more advanced skills and techniques in the field of athletic training because of his strong interest and background in medicine. Bilik started the first athletic training supply business and in 1916 published the first text, Trainer's Bible, that was specifically designed for athletic trainers (O'Shea, 1980).

In 1918, Cramer Chemical , an athletic training supply company, opened for business. Cramer is known today for its athletic equipment and supplies, as well as its many contributions to the advancement of the field of athletic training. The First Aider was first published in 1932 by the Cramer Company. (The publication still provides practical information on various topics related to the athletic training and sports medicine field to high school and college students as well as coaches.) The Cramer Company currently is very involved in athletic training education. The Cramer Student Trainer Program, a self-programmed instructional text, as well as the Cramer Student Athletic Trainer Workshops are examples of their current involvement.

History of the N.A.T.A.

A group of athletic trainers working with intercollegiate athletics met at the Drake Relays in Des Moines, Iowa in 1938. This meeting resulted in the formation of the National Athletic Trainers' Association (Arnheim, 1993). The organization lasted six years until 1944 when World War II and other complications caused the organization to disband. The NATA members had published the NATA Bulletin, and joined with the Athletic Journal, a coaches' publication, to publish the Trainer's Journal (O'Shea, 1980). The Trainer's Journal was a series of monthly lessons for high school athletic trainers that lasted for four years and culminated with an exam. This program was to be carried out under the direct medical supervision at the student's school.

Athletic trainers formed regional associations in the late 1940s. The first such association was the Southern Conference Athletic Trainers Association, formed in 1947. Many of the other regions followed the lead and in 1950, representatives from nine of these regions met in Kansas City, Missouri to discuss a national organization. A new organization was formed using the same name as the first group, National Athletic Trainers' Association (NATA; O'Shea, 1980).

The NATA was founded to stimulate and promote the recognition of the athletic training profession by establishing closer professional relationships within the sports medicine discipline, facilitating ideas and knowledge, organizing meetings, establishing a unified standard of professionalism and providing a community for continuing education and fellowship. During the 1951 meeting of the NATA members a

constitution was adopted and the formulation of a code of ethics was discussed. The code of ethics was adopted in 1956 (O'Shea, 1980).

In 1968, the NATA membership took a more aggressive stand in educating the academic community and the public regarding the need for skilled and trained members within the athletic training profession. It took the members of the NATA 10 years to develop and promote a brochure that listed the guidelines for establishing a curriculum in athletic training (Whitehill, 1992).

History of the Professional Education Committee

At the NATA annual members meeting in 1958, a committee was formed to develop an educational curriculum for the college and university setting. A list of appropriate professional preparatory college academic courses was developed by the committee. In 1959, the first NATA curriculum was approved (O'Shea, 1980).

Very little progress was made toward implementing this program until 1969 (Kauth, 1984). The Professional Advancement Committee formed a sub-committee because no research had been conducted in the area of educational development or on the acceptability of an athletic training curriculum within physical education departments. This sub-committee was charged with the following: (a) identify the colleges and universities that were offering athletic training as a course of study, (b) investigate these programs to determine if the NATA curriculum requirements being met, and (c) establish procedures for colleges and universities offering athletic training programs to follow in order to obtain NATA approval (O'Shea, 1980). This sub-committee would later be named the NATA Professional Educational Committee.

In the fall of 1970, the American Association for Health, Physical Education, and Recreation (AAHPER) became the first educational organization to officially recognize the role of the athletic trainer in the school athletic program. The AAHPER Professional Preparation Panel endorsed the NATA members for their efforts in the development of athletic training educational programs, recommending that physical education departments become familiar with and consider the NATA's recommendations (Scwank & Miller, 1971).

In 1980, only two programs met the NATA requirements according to the Professional Education Committees' (PEC) investigation of all the colleges and universities that offered athletic training programs (O'Shea, 1980). By 1982, with upgraded and more clearly defined standards, 62 undergraduate programs and 9 graduate programs met the NATA requirements (Delforge, 1982). By 1989, 64 undergraduate programs, and 7 graduate programs were listed by the NATA as having approved curricula (Hayez, 1990).

The undergraduate and graduate curricula has continued to change over the course of time. One example would be the addition of athletic training/sports medicine research settings as an acceptable clinical setting for the graduate programs. Another would be the required 1200 clock hours of clinical experience for undergraduate curriculum students. This was modified to 800 clock hours and with an additional 400 clock hours during the graduate course of study. The graduate candidate would have to satisfy the undergraduate requirement before beginning to accumulate graduate clock hours (Whitehill, 1992).

The PEC has also proposed that all undergraduate athletic training education programs become major fields of study. This change effects the NATA-approved undergraduate programs. The internship and graduate programs are the next areas that will be considered by the PEC (Whitehill, 1992).

A major advancement in the field of athletic training took place in June of 1990 when the American Medical Association (AMA) and its Council on Medical Education formally recognized athletic training as an allied health profession (Arnheim & Prentice, 1993). The primary reason for this recognition was for accrediting educational programs. The AMA's Committee on Allied Health Education and Accreditation (CAHEA) was placed in charge of developing *Essentials and Guidelines* for academic programs to use in preparing students for entry into the profession through the Joint Review Committee on Athletic Training (JRC-AT). All entry-level athletic training educational programs were subject to the CAHEA accreditation process until recently when it was restructured and renamed to be the Commission on Accreditation of Allied Health Education Programs (CAAHEP; Anderson & Hall, 1995).

In December 1995 the NATA informed its membership that the NATA's Educational Task Force had developed a set of recommendations to improve athletic training education. The most significant recommendation was that by the year 2004 all candidates for NATA certification must complete a CAAHEP-accredited athletic training education program (NATA, 1996).

Athletic Training Education

The NATA approved an educational curriculum in 1959, however, it was not until 1969 that it actively provided direction and assistance in curriculum development in colleges and universities. Athletic training educational programs were approved in colleges and universities throughout the U.S. through the assistance of advisory committees of the NATA. Only two schools met the curriculum requirements for NATA approval in athletic training in 1969. In the early 1980s the PEC mandated that all approved education programs in athletic training must be an academic major, or equivalent, by 1990 (Delforge, 1982). In 1987, Perin and Lephart indicated that 30 programs had received approval by the NATA as academic majors under the old curriculum standards, and many internship programs offer both clinical and didactic experiences. According to Starkey in the late 1980s, (1988) there were only 65 undergraduate athletic training programs approved by the NATA. Currently there are only 84 accredited athletic training programs (NATA, 1996).

The purpose of a curriculum program is to provide a broad field of knowledge in the areas needed to be an effective athletic trainer. Competency is expected by the NATA in the following subject matter areas: (a) prevention of athletic injuries/illnesses, (b) evaluation of athletic injuries/illnesses, (c) first aid and emergency care, (d) evaluation of athletic injuries/illnesses, (e) therapeutic exercise, (f) administration of athletic training programs, (g) human anatomy, (h) human physiology, (i) exercise physiology, (j) kinesiology/biomechanics, (k) nutrition, (l) psychology, (m) personal/community health, and (n) instructional methods. The NATA Professional

Education Committee strongly recommends advanced and/or specialized courses in these subject areas be taught, as well as courses in chemistry, physics, pharmacology, statistics, and research design (PEC., 1983).

CAAHEP-Accreditation Standards

According to the recent CAHEA Essentials and Guidelines the preparation of the athletic trainer is directed toward developing specific competencies in the following domains: prevention, recognition and evaluation, management/treatment and disposition, rehabilitation, organization and administration, education, and counseling. By combining both formal classroom instruction and clinical experience the athletic trainer is prepared to apply a wide variety of health care skills and knowledge within each of these domains.

CAAHEP has the authority to grant accreditation to programs based upon the recommendation of the Joint Review Committee on Educational Programs in Athletic Training (JRC-AT; CAHEA, 1992). In 1992 CAHEA established the Essentials and Guidelines for accredited athletic training programs to follow. The essentials are basically the minimal standards of quality that will be used in an accredited program. A programs compliance in meeting the minimum requirements that make up the essentials determines its accreditation status. The guidelines are intended to provide examples that are used to assist in the interpretation of the essentials.

The American Academy of Family Physicians, The American Academy of Pediatrics, the NATA, and the American Medical Association have worked together to ensure that high standards for quality educational programs in Athletic Training are

established, maintained, and promoted. Accredited athletic training educational programs are to follow these standards for the development, evaluation, and self-analysis of their programs. Assistance in the evaluation of a program's compliance with the essentials is provided by an on-site review team. The General Requirements for Accreditation by CAAHEP can be found in the 1992 CAHEA Essentials and Guidelines.

The following subject matter areas must be taught to the student according to the Essentials and Guidelines: (a) prevention of athletic injuries/illnesses, (b) evaluation of athletic injuries/illnesses, (c) first aid and emergency care, (d) therapeutic modalities, (e) therapeutic exercise, (f) administration of athletic training, (g) human anatomy, (h) human physiology, (i) exercise physiology, (j) kinesiology/biomechanics, (k) nutrition, (l) psychology, and (m) personal/community health.

The listed subjects must make up the academic core of the curriculum. Formal instruction involves teaching of required subject matter in a structured classroom environment. In addition to the core subject matter areas, other learning experiences should be included. For example advanced and/or specialized courses in the core subject matter areas and courses in chemistry, physics, pharmacology, statistics and research design are recommended. The breadth and scope of the athletic training curriculum should be set up so that is complementary to an academic major in the educational unit in which it is under.

The athletic training curriculum must incorporate clinical experiences under the direct supervision of a qualified clinical instructor in an acceptable clinical setting. A

total of 800 clinical hours is required. It is very important that the clinical experience begin early in the student's program and be designed to provide the student with sufficient opportunity to develop specific competencies relating to the health care of the athlete. Clinical experience should include the athletic training room(s), athletic practices, and competitive events (CAHEA, 1992).

The student should be provided with many opportunities for coverage of athletic practices and competitive events in a variety of men's and women's sports. High risk activities include such sports as football, soccer, hockey, wrestling, basketball, gymnastics, volleyball, lacrosse, and rugby. This experience should allow adequate opportunity for observation and involvement of first aid and emergency care of a variety of acute athletic injuries and illnesses (CAHEA, 1992).

Non-Accredited Standards

Student athletic trainers who do not attend a CAAHEP-Accredited athletic training educational program may complete requirements for certification through an internship route. The requirements for this route were established by the NATA Board of Certification (NATABOC). The following subject areas are currently required (CAHEA, 1992): (a) health (i.e., nutrition, drugs/substance abuse, health education), (b) human anatomy, (c) human physiology, (d) kinesiology/biomechanics, (e) physiology of exercise, (f) basic athletic training, and (g) advanced athletic training (one course in therapeutic modalities and rehabilitative exercises are acceptable alternatives to satisfy the advanced athletic training requirement).

The CAAHEP non-accredited student athletic trainer is required by the NATABOC to have 1500 hours of clinical experience under the supervision of a NATA certified athletic trainer. At least 1000 of these hours must be attained in a traditional athletic training facility at the interscholastic, intercollegiate, or professional sports level. The 500 remaining hours may be attained under a certified athletic trainer in a sports medicine clinic, campus health center, industrial health facility, other health care facility, and/or sport camp setting. The hours are not to be accumulated in less than two years and no more than five years (CAHEA, 1992).

The lack of readily available published research and professional guidelines may be an indication that many athletic trainers do not consider the non-accredited setting (internship route) to be a viable professional setting. Many athletic trainers have expressed this position for many years. In 1980 Scierra expressed this opinion in the NATA Journal, Athletic Training. He stated that athletic training can not be considered a profession if individuals can become certified without completing a program of coursework. After this publication the NATABOC came up with the required seven courses in its certification requirements. The critics of non-accredited programs were still not satisfied, mainly because these courses are still fewer than the number required for accredited programs. In fact, one such author, Tovell (1981), suggested that students who graduate from non-accredited schools be required to complete a masters degree from an NATA approved curriculum (Accredited) before taking the NATABOC examination. Interestingly enough, this is very similar to one of the controversial

recommendations of the NATA Educational Task Force that was sent out to all of the NATA Membership in December of 1995.

Stoddard's 1981 letter to the editor of Athletic Training defended the non-accredited (internship) setting. In this letter to the editor examples of internship programs with rigorous educational components were cited. He suggested that research be conducted to first investigate the performance of internship graduates' on the NATABOC examination, secondly to examine the various educational offerings that exist within certain internship settings, and thirdly to establish guidelines for instruction within the internship (non-accredited) setting. No research or investigation has been conducted to determine the extent of agreement or disagreement among athletic trainers concerning the value of the athletic training internship setting in the professional preparation of future certified athletic trainers.

Clinical Experience

The clinical experience in athletic training education is defined by the NATA as an opportunity for the student to "develop specified technical skills and knowledge through direct application of comprehensive athletic health care services" (PEC, 1987). Clinical experience is considered to be an important part of athletic training professional preparation because each task involved in athletic training requires skills as well as knowledge. Of the educational competencies established by the PEC 36 of the 175 are categorized in the psychomotor domain (Starkey, 1988).

In 1988, the NATA dropped the number of clinical experience hours from 1,800 to 1,500 hours for internship schools largely due to Draper's research. Draper (1987)

found that the accumulation of a higher number of clinical hours does not affect the passing rate on the N.A.T.A. certification exam. According to Draper clinical experience was found to be more beneficial if the student is given feedback regarding his or her performance. While the PEC of the NATA recommends that student athletic trainers be evaluated regularly, no specific guidelines are given.

As stated previously the CAAHEP Accredited student athletic trainer is required to complete at least 800 hours of clinical experience whereas a non-accredited student athletic trainer is required to complete 1500 hours. The main purpose and objective of clinical experience is to provide the student with a quality learning experience in a practical setting. An important point to consider when looking at clinical experience is the quality of the clinical experience.

In the clinical setting, the student athletic trainer is given the opportunity to learn directly from certified athletic trainers (Chandler, 1988). To become a competent certified athletic trainer, a student must learn practical skills in all aspects of athletic training. The knowledge must not only be abstract in nature. Only clinical experience will produce skills necessary for competency in sports injury management and rehabilitation (Knight, 1990). Clinical experience is viewed to be more effective if the student trainer is given feedback regarding their performance (Draper, 1987). Feedback can be easily achieved by conducting student trainer evaluations regularly. A negative aspect of the clinical experience may be that students are not all exposed to the same injuries during their clinical experiences, and may not have the same opportunities to develop proper clinical skills creates a major possible problem (Knight, 1990).

An additional problem with clinical experiences is that during practices student athletic trainers often waste time. It is very typical that there is a rush of activity prior to and following practice. However, during practice many student athletic trainers wait for something to happen. According to Knight (1990), if student trainers are properly directed this time can be efficiently used to develop and refine skills.

A possible determinant of the quality of the clinical experience is the clinical instructors themselves. Foster and Leslie (1992) attempted to describe the clinical teaching roles of Midwest certified athletic trainers in a study and determine the effect of educational preparation on teaching activities and opinions of ATCs. A questionnaire with three sections, (demographic items, teaching activity items, and opinion item) was used. The survey was sent to 197 ATCs from the District 5 membership.

In the Foster and Leslie study student supervision items showed that 63% of the respondents supervised athletic training students and only 33% sponsored students for the NATA certification. Athletic training services combined with student athletic trainer supervision accounted for more than 20 hours weekly. Of the 80 ATCs who taught clinically, 89% of them taught student trainers for less than half of their work time.

Of the ATCs who taught in the Foster and Leslie study all of the six NATA Role Delineation Domains were used. These six domains were established by the NATA in 1992. It was found in the study that clinical teaching time averaged 21 hours per week. The ATCs in the study used three different teaching methods. The most

popular method reported was the Trainer-dominated Communication. The method was described as a combination of lecturing, telling, and presenting. The ATCs made use of an average of 6.1 audiovisual aids per course.

Foster and Leslie (1992) found demographic descriptions similar to the results of the Role Delineation study performed by Columbia Assessment Services in 1990. The Role Delineation respondents and the opinions of the Midwest ATC's who were surveyed by Foster and Leslie similarly cited clinical instruction as an important task, equal to other tasks they performed with athletes. They believed that education and counseling of student athletic trainers contributed to the critical success of the entry-level trainer. However, the Delineation respondents rated education and counseling the least important to successful performance. The Role Delineation respondents reported that typical entry level ATCs spend 9% of their time performing education and counseling tasks (Columbia Assessment Services, 1990). It is important to note that in 1995 the NATA updated the six domains in five domains (Columbia Assessment Services, 1995).

Other health care professionals devote 10% to 40% of their clinical service time to teaching students (Foster & Leslie, 1992). Some health care professionals, such as physical therapists, supervise only a few students during the time that they have patient care duties, but in Foster and Leslie's study ATCs supervised nine students or more. The ATCs who supervised a large number of students basically taught 20 hours per week, which is about the same as those who supervised fewer students. Foster and Leslie thought this could be due to a number of reasons. Possibly the ATCs may be

efficient with their contact time or may coordinate supervision with other ATCs. Another possibility is that the surveyed ATCs considered clinical teaching to mean daily exposure to injured athletes. According to Draper's works this daily exposure means allowing the students to work on their own without much supervision. The ATCs who approached clinical teaching in this way gave students minimal input to their professional and technical skills development. Foster and Leslie felt that most of the ATCs in their study who teach clinically present information about clinical subjects or instruct students to perform a certain task or a series of tasks. The method is very similar to instructional methods in the classroom setting.

Foster and Leslie (1992) agree that students be mentored in their clinical teaching and feel further investigation may determine the contribution of clinical instructor experience and instructional methods on student board examination scores and other performance evaluations of graduates.

Internship versus Curriculum Programs

The two previously described routes for undergraduate student athletic trainers to gain certification through the NATA have created much debate whether non-accredited programs are as successful as accredited programs and whether they are even adequate enough to properly prepare the student trainer for the certification exam or entry into the professional world.

Starkey (1988) found individual differences between students enrolled in the two program routes.

1. Students enrolled in accredited athletic training programs maintained a higher grade point average than did internship athletic training students.

2. Students enrolled in accredited athletic training programs placed a greater emphasis on the following variables as compared to non-accredited program students: (a) reputation of the athletic training program, (b) the quality of the athletic training course work, (c) quality of the athletic training practical work, (d) respect from the certified athletic trainers, coaches, and athletes, (e) meaningful work and/or responsibilities, (f) athletic training academic opportunities, and (g) employment opportunities.

3. Students who attended accredited athletic training programs showed a difference in their anticipated area of graduate study when compared with internship students. The majority of curriculum students were interested in graduate education in athletic training, exercise physiology, and physical therapy more frequently than the internship student.

4. A larger percentage of curriculum students took the NATA Certification Examination than did the internship athletic training students. The graduates of both accredited and non-accredited programs who do take the NATA Certification Examination perform equally, which Starkey feels is because there is a "natural selection process." Less than 48% of internship students take the exam as compared to 82% of the curriculum students. However, the NATA Educational Task Force recently reported that curriculum students outscore internship students in all areas on the certification examination (NATA, 1996). They also reported curriculum students pass

all three sections of the certification examination on the first attempt at higher rates than internship students.

Non-accredited programs account for the majority of certified athletic trainers (Starkey, 1988). According to a recent report from the NATA Educational Task Force for the years 1993 and 1994 a total of 3,014 (66% of all certifies) were certified by the NATA via the internship (non-accredited) route. During this same time period the accredited route produced 34% of all certifies (NATA, 1996). For the years 1993 and 1994 there were 573 internship programs as compared to the 84 accredited programs (NATA, 1996). The strength of these non-accredited programs is the clinical aspects of athletic training. Non-accredited programs are not required to adhere to strict, established procedures. The non-accredited institution is allowed to offer majors, minors, option, emphasis, or concentrations in athletic training, without the PEC of the NATA intervening. An institution may also provide an athletic training internship program with no formal education (Starkey, 1988).

Many authors and professionals that feel non-accredited programs provide an athletic program with a labor force of student athletic trainers which aids in the coverage of practices and performs many of the menial tasks of the profession. Because in some instances there is no educational component some type of financial assistance is provided to the student athletic trainers to entice them to continue to participate. Students who participate in this type of program may serve as a student athletic trainer as a means of earning an income while studying in another area, receive experience in

athletic training which allows them to take the NATA Certification Examination (Starkey, 1988).

The immediate future of non-accredited programs are in question. As previously stated the debate rages on regarding the possible elimination of the current non-accredited athletic training educational programs. One new idea was discovered in the literature proposed by Starkey (1988). He points out that there may be a possible new classification needed in the NATA. This classification would be Athletic Training Assistant, a very similar classification that is used in Physical Therapy, which could be earned by completing a bachelor's degree.

Educational/Professional Preparation

Certain educational and professional preparation issues in athletic training educational programs have a direct correlation to the effectiveness of a program. The following issues consist of (a) personnel, (b) students, and (c) academic curriculum.

Personnel

The concern of faculty student ratio is a very important aspect that needs to be investigated. According to the CAHEA Essentials and Guidelines (1992) the determination of an effective faculty student ratio should be based on the total work load of clinical instructors, availability, and adequacy of clinical instructors, and the nature and number of athletic programs being covered. For an accredited program if there are multiple faculty/ athletic trainers available a ratio which does not exceed eight students to one clinical instructor during the academic year is permitted by the NATA (CAHEA, 1992; Cramer, 1990;).

The personnel who are involved in any athletic training educational program impact the quality of education. Clinical instructors should have current NATA certification (Anderson & Hall, 1995). The teaching faculty in the athletic training program may be comprised from various academic backgrounds including medicine, biology, chemistry, physics, psychology, education, home economics, and physical education (CAHEA, 1992). These faculty members must be qualified through their professional preparation and experience in their respective academic areas. In an accredited program these faculty members should have an interest in the athletic training curriculum and the development of athletic training competencies. The medical and allied health personnel that make up the sports medicine team should be involved with as well as have an interest in the professional preparation of the student athletic trainer (CAHEA, 1992).

The Program Director serves an extremely vital leadership role within the accredited athletic training educational program. This individual must be a full-time employee of the institution as well as a member of the teaching faculty. The Program Director must also have current NATA certification and a minimum of three years experience as a NATA certified Athletic Trainer (CAHEA, 1992).

Students

CAHEA recommended in 1992 that the admission of student athletic trainers in accredited programs follow a clearly defined and published method. The specific academic and technical standards used for admission to the athletic training program be

clearly defined and published in some accessible manner in order for the public and prospective student athletic trainers can be easily made aware (CAHEA, 1992).

The student athletic trainers should be evaluated often in either types of programs in order to provide the student and members of the athletic training educational program with indications of the students progress and academic standing. By evaluating often the effectiveness of the athletic training course design and instruction will be evaluated as well (CAHEA, 1992).

The student should begin their clinical experience in both types of programs as early as possible. The clinical experience must be designed in a manner to provide the student an opportunity to develop specific competencies pertaining to the health care of the athlete as defined by the Competencies in Athletic Training (NATA, 1992).

The role of the student athletic trainer has been undergoing change, as has the athletic training educational process. In the past at large sports programs student athletic trainers were often considered a necessity to a successful program and not a luxury since a single athletic trainer could not cover all the sports that needed to be covered (Starkey, 1988). The role definition of the student athletic trainers range from "gophers" to individuals who have the primary responsibility for a sport (Watson, 1992). Often small colleges feel the necessity for student athletic trainers as "bodies" to assist in the coverage of sports (Starkey, 1988).

The students clinical experience includes work that includes physical labor, and a never-ending onslaught of "menial duties" (Starkey, 1988). This work ranges from professional duties such as assisting in the rehabilitation of athletic injuries and

completing and filing of paperwork to cleaning whirlpools and folding towels. In many athletic training programs the first year student's professional preparation strictly involves these types of menial duties (Watson, 1992).

There has been considerable research dedicated to the emotional stresses a certified athletic trainer is placed under that results in a syndrome commonly referred to as burnout (Starkey, 1988). This syndrome is not limited strictly to just the certified athletic trainer but also to the student as well. According to Starkey (1988) clinical instructors should make the student athletic trainers aware of and expose them to the stressful situations of the profession that may lead to burnout. The student is placed under a great deal of stress. Many of the stresses presented by Gieck (1984) are related to what the student experiences. Student athletic trainers must work many clinical hours and have many responsibilities given to them by a staff athletic trainer. With the demands of the student's academic school work and examinations along with the financial obligations the student may be placed in a stressful situation. Starkey (1988) points out these stresses may affect the student's retention in the athletic training program and their academic performance.

Academic Curriculum

The curriculum used within any type of athletic training program has a very obviously strong impact on the quality of the program. In an accredited program the statement of the goals and objectives should provide the basis for program planning, implementation, and evaluation. This should be compatible with both the mission statement of the sponsoring institution as well as the expectations of the athletic training

program as reflected in Section II, A, Description of the Profession as described in the document Competencies in Athletic Training (NATA, 1992).

The athletic training program should incorporate general education, liberal arts, and humanities studies with in their curricula, and to provide opportunities for later academic and career growth. The current curriculum proposed and required by the NATA has been developed over time. The courses chosen by the NATA were not chosen for the sole purpose of insuring the passing of the certification examination, but to allow the student athletic trainer to enter the profession of athletic training more easily (Cramer, 1990). As stated previously the accredited program has more of an academically based core of classes as compared to the non-accredited program (see Appendix A).

Summary

The athletic training profession is a rapidly growing profession which has attained a significant level of professional acceptance in the field of athletics and sports medicine. The NATA has gradually improved the status of the profession in the eyes of both the athletic and medical communities while raising the standards of education and performance of its members. In an attempt to maintain growth and professional recognition in athletic training it is essential that the profession continue to build on established principles.

The clinical teaching roles of certified athletic trainers need to be evaluated or studied because this has an obvious impact on the student athletic trainer's education and possible professional career. The question of developing regulations for athletic

trainers who wish to teach clinically may be needed. It has been established that athletic trainers with teaching backgrounds, a master's or higher degree and experience seem to develop broader clinical instruction activities resulting in better prepared students. Clinical teaching is not an easy task that many athletic trainers have problems with finding time to adequately teach their students.

Other health care professionals devote 10% to 40% of their clinical service time to teaching students. Some supervise a few students during the time that they have patient care duties, however research has shown many ATCs supervise nine students or more. It is extremely important that ATCs who supervised a large number of students be efficient with their contact time or coordinate supervision with other ATCs. Athletic Trainers who view clinical teaching as allowing the student athletic trainer to have daily exposure to athletes with the opportunity to work on their own gives the students minimal input to their professional and technical skills development. ATCs who teach clinically must present information about clinical subjects or instruct students to perform a certain task or a series of tasks in a similar fashion to instructional methods that would be used in the classroom setting.

According to the research there are differences in the results on the certification examination between the students enrolled in the two programs. A successful student athletic training program should match their strengths to the needs of the student athletic trainer. Because CAAHEP-accredited programs seem to place a greater emphasis on the students academic ability to be accepted into the program it is recommended that internship programs implement a similar emphasis on the students academic ability.

Non-accredited programs have been shown to place more attention on any clinical experience the student may have previously had for acceptance.

The fact that the grade point averages of students from accredited programs is typically higher than the grade point averages of students from non-accredited students may be due to two reasons. First, accredited program students have the opportunity to immediately apply the information which they gain in class; and second, accredited program students are accepted into the program later in their college career thus this student will place a greater emphasis on grade point average.

For smaller institutions becoming a CAAHEP-accredited athletic training educational program is very difficult and may be an impossibility for some. The key in becoming accredited is having the number and quality of faculty. Programs must also involve the interaction of the medical and athletic community in order to create a broader knowledge base for its students. Because athletic training has evolved so greatly in recent years so has the scope of athletic training education. For a functional and effective educational program to emerge it often needs to be re-structured. This re-structuring would involve dividing the duties of the head athletic trainer. The head athletic trainer would only be responsible for athletic training services. The program director would take over the responsibility for the athletic training academic duties.

CHAPTER 3

METHODS

Research Design

The design of this study was descriptive in nature The purpose of the study was to describe the current status of athletic training programs at four-year colleges and universities, whose students had to use the internship route to obtain certification from the National Athletic Trainers' Association Board of Certification, Inc. (NATABOC), in relation to the essentials for an athletic training education program to be accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The subjects of this study were the head athletic trainers at four-year colleges and universities in District V of the NATA that did not have CAAHEP accreditation or NATA approved athletic training education programs. The subjects were surveyed via a mailed questionnaire.

Subject Selection

The study's sample included the head athletic trainers of four-year colleges and universities which, in the 1996-1997 academic year, had athletic training education programs that were not accredited by CAAHEP or approved by the NATA. The sample included those colleges and universities in District V of the NATA; which includes the states of Iowa, Kansas, Missouri, Nebraska, North Dakota, Oklahoma, and South Dakota (see Appendix E). A listing of senior colleges and universities in District V was obtained by using the 1996 NCAA Directory and cross referencing this list with 1995-1996 list of accredited athletic training educational programs from the NATA. The

NATA does not keep a list of non-accredited programs. There were a total of 116 surveys mailed in this sample.

Research Apparatus

Data were collected using a questionnaire created by the author of this study (see Appendices B and C). The survey instrument included questions that requested the following information: (a) a description of the athletic training personnel, including the number of certified athletic trainers, team physicians, specialists, physical therapists, graduate assistants, and student trainers involved in the program and sports medicine team, (b) the involvement of the team physician within the athletic training educational program, (c) the number and type of professionals who actively contribute to the education of student athletic trainers, (d) the individuals currently on staff that serve in any administrative role, (e) whether the institution is private or a public school, (f) the length of the professional program, (g) the estimated average number of entering first year students the program could accommodate, the number of first year students who enter each year, and the total number of students in the athletic training program, (h) the certificate or degree awarded after completion of the program, (i) the definition of the employment of the head athletic trainer, (j) the status of the institutions tenure system, (k) the number and type of faculty assigned to the program, (l) the courses required or offered by the institution, who taught the courses, and whether the program was a major, minor, or emphasis, (m) details regarding the selection process for student athletic trainers, (n) the estimated percentages of student athletic trainers who passed the certification exam on the first, second, or third attempts within the last five years, (o) the

current ratio of student athletic trainers to staff athletic trainers, and (p) whether or not an institution was planning on pursuing CAAHEP-accreditation.

The content validity of the questionnaire was established through review of the instrument by a panel of the head athletic trainers of the following four-year colleges and universities: Buena Vista College, Central College (Iowa), Coe College, Luther College, Simpson College, and William Penn College. Suggestions and comments were incorporated into the questionnaire.

Procedures

Data were collected by mailing a packet of materials to each member of the study's sample, a total of 116. The packets included the questionnaire, a stamped return envelope addressed to the author of the study, and a cover letter (see Appendix B) introducing and explaining the purpose of the study and giving instructions on how to complete and return the questionnaire. Written assurance of confidentiality of subject responses was given. A response date of two weeks was requested, which provided adequate time for response from each head athletic trainer. Each questionnaire was numerically coded to assist the investigator with follow-up notices on non-returned questionnaires. Upon completion of the study, the list equating questionnaire codes with mailing labels was destroyed. Subjects were also asked not to place their names or any other identifying information on the questionnaire. Post cards were sent to the head athletic trainer at all of the programs that did not respond within the two week deadline as reminder to the subjects. Any responses returned up to one month after the two week deadline were included in the data.

Analysis Procedure

Once the data were collected, it was coded and analyzed in preparation for using descriptive statistics. Responses were tallied using frequencies and percentages to represent responses to each item in question.

CHAPTER 4

RESULTS

Introduction

The purpose of the study was to describe the current status of non-accredited athletic training programs at four-year colleges and universities in relation to receiving future accreditation by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The subproblems of this study were the following:

1. The number and professional qualifications of athletic training personnel, which include certified trainers, graduate assistants who serve as assistants to the certified trainers, team physicians, and student trainers.

2. A description of the personnel who make up the sports medicine team.

3. A description of the involvement of the team physician in the athletic training education program.

4. A description of any academic programs in athletic training available including curriculum in both classroom and practical experiences for student athletic trainers.

5. A description of the employment, the number of the professionals who are active in the athletic training program, and the ratio of student athletic trainers to clinical supervisors.

6. A description of the details regarding the educational program of study, including the major courses required within the program and the staff who are responsible for teaching them.

7. A description of any application process for the athletic training program.

8. The success rate of student athletic trainers taking the NATA certification examination.

9. The plan for pursuing CAAHEP-accreditation by the year 2004.

Findings

Of the 116 surveys that were mailed to the sample, 64 (55.2%) were returned. Of the 64 returned surveys, 13 were from public institutions while 51 were private. Seven of the respondents were from National Collegiate Athletic Association (NCAA) Division I institutions, 21 from NCAA Division II, 14 from NCAA Division III, and 22 from institutions affiliated with the National Association of Intercollegiate Athletics (NAIA). Table 1 displays this information.

Table 1

Type of Institution Responding

	Total	Public	Private	DI	DII	DIII	NAIA
Questionnaires sent	116	46	70	14	31	20	51
Percentage returned	55.2	50	44.0	50.0	67.7	70.0	40.0
Response n	64	23	41	7	21	14	22
Response percentage	100	35.9	64.1	10.9	32.8	21.9	34.4

Note. DI = NCAA Division I. DII = NCAA Division II. DIII = NCAA Division III.

There were 16 responses that indicated the approximate full-time student population of their institutions were less than 1,000 students. A total of 33 respondents indicated their population to be between 1,000 and 5,000 students, 6 were between 5,000 and 10,000 students, 7 were between 10,000 and 20,000 students, and 2 were greater than 20,000 students. Table 2 further displays this information.

Table 2

Approximate Full-Time Student Population of Responding Institutions

Population Ranges on Campus	n of Respondents	% of Respondents
Less than 1,000	16	25
1,000 - 5,000	33	51.6
5,000 - 10,000	6	9.4
10,000 - 20,000	7	10.9
Greater than 20,000	2	3.1
Total	64	100.0

When asked what type of staff made up the athletic training department, the majority of the responding institutions indicated at least a single NATA certified head athletic trainer. Only one program, a NAIA school, did not have a head athletic trainer.

Of the 64 respondents, only 32.8% had at least one NATA certified assistant athletic trainer. Of the programs with at least one certified assistant, 85.7% were Division I or II programs and the remaining 14.3% were Division III programs. Only NCAA Division I or II colleges or universities used graduate assistants. Table 3 further displays this information. The exact number of each type of personnel in each institution's athletic training program is presented in Table 4 according to school affiliation. NCAA Division I and II programs were the only programs with more than one head athletic trainer on staff. Along the same lines, Division I and II were the only responding athletic training programs that had certified and non-certified graduate assistant athletic trainers on staff.

Table 3

Type of Personnel in Internship Athletic Training Programs

Type of Personnel	Total	%	DI	DII	DIII	NAIA
Head ATC	63	98.4%	7	21	14	21
Assistant ATC	21	32.8%	7	11	3	0
G.A. ATC	14	21.9%	6	8	0	0
Non-certified G.A.	6	9.3%	1	5	0	0

Note. DI = NCAA Division I. DII = NCAA Division II. DIII = NCAA Division III. Head ATC = Head Certified Athletic Trainer. Assistant ATC = Certified Assistant Athletic Trainer. G.A. ATC = Certified Graduate Assistant Athletic Trainer. Non-certified G.A. = Non-certified Graduate Assistant Athletic Trainer.

Table 4

Number and Type of Athletic Training Staff per Responding Institution

Title	n	Total	%	DI	DII	DII	NAIA
Head ATC							
	0	1	1.6%	0	0	0	1
	1	60	93.7%	6	19	14	21
	2	2	3.1%	1	1	0	0
	3	1	1.6%	0	1	0	0
Assistant ATC							
	0	42	65.6%	0	9	11	22
	1	12	18.8%	1	8	3	0
	2	6	9.4%	3	3	0	0
	3>	4	6.3%	3	1	0	0
G.A. ATC							
	0	50	78.1%	1	13	14	22
	1	2	3.1%	0	2	0	0
	2	5	7.8%	1	4	0	0
	3>	3	4.7%	5	2	0	0
Non-certified G.A.							
	0	58	90.6%	6	16	14	22
	1	3	4.7%	1	2	0	0
	2	2	3.1%	0	2	0	0
	3>	1	1.6%	0	1	0	0

Note. DI = NCAA Division I. DII = NCAA Division II. DIII = NCAA Division III. Head ATC = Head Certified Athletic Trainer. Assistant ATC = Certified Assistant Athletic Trainer. G.A. ATC = Certified Graduate Assistant Athletic Trainer. Non-certified G.A. = Non-certified Graduate Assistant Athletic Trainer.

A total of 61 (95.3%) of the responding programs did have an active sports medicine team. Typically the sports medicine team of the responding programs included an orthopedic surgeon (91%). Every NCAA Division I program indicated an orthopedic surgeon is a member of their sports medicine team. The second most common member of the sports medicine team was a family practitioner. The NCAA Division I and II programs displayed the most diverse sports medicine teams. The data describing the sports medicine team according to school affiliation can be found in Table 5.

The exact involvement of the team physician within the athletic training program varied widely at each institution and can be found in Table 6. The majority of the team physicians do spend some time on site in the athletic training room, however this amount of time varies widely per institution. Only 3 of the 64 programs responding indicated that they have no involvement of a team physician in their athletic training program.

From the data collected, the head athletic trainer was found to be the primary active contributor to the education of student athletic trainers (95%). The assistant athletic trainer also played a very active role in the education of student athletic trainers, if the institution had one. Of the programs with team orthopedic surgeons 59% of them also actively participated in the education of students. This information is presented in Table 7.

Table 5

Type of Personnel Making Up the Sports Medicine Team

Type of Personnel	n	%	DI	DII	DIII	NAIA
Orthopedic Surgeon	58	90.6%	7	19	13	19
Family Practitioner	39	60.9%	6	14	8	9
Internist	8	12.5%	2	3	2	1
Other Physician	11	17.2%	6	4	1	0
Physical Therapist	23	35.9%	3	5	6	9
Sport Psychologist	10	15.6%	5	4	1	0
Nutritionist	7	10.9%	3	3	0	1
Dietitian	4	6.3%	3	0	0	1
Chiropractor	5	7.8%	0	1	2	2
Dentists	7	10.9%	1	3	1	2
Podiatrist	3	4.7%	1	2	0	0
Physicians Assistant	4	6.3%	0	3	1	0

Note. DI = NCAA Division I. DII = NCAA Division II. DIII = NCAA Division III.

Table 6

Involvement of Team Physicians in the Athletic Training Programs

Involvement	n	%
None	3	4.7%
Referrals of injured athletes strictly to physicians clinic	8	12.5%
Referrals and occasionally visits the a.t.r.	10	15.6%
Referrals and often visits the a.t.r.	7	10.9%
Referrals, occasionally visits the a.t.r., and spends occasional time with student athletic trainers	9	14.1%
Referrals, often visits the a.t.r., and spends occasional time with student athletic trainers	11	17.2%
Referrals, occasionally visits the a.t.r, and often spends time with student athletic trainers	11	17.2%
Other	5	7.8%

Note. a.t.r. = athletic training room.

Very few of the responding programs currently have individuals on staff serving in an administrative position. There were 12 (19%) programs with a program director (Table 8). Typically the administrative title of the individual at the institutions with a program director was the Head Athletic Trainer (50%). Only 10 (16%) programs indicated that they had a department chair in place. Finally, there were only 3 (5%) programs with a medical director/advisor in place.

Table 7

Active Contributors to the Education of Student Athletic Trainers

Personnel	n	%
NATA certified head athletic trainer	61	95%
NATA certified assistant athletic trainer	20	31%
Non-certified graduate assistant athletic trainer	0	0%
NATA certified graduate assistant athletic trainer	15	23%
NATA certified graduate or undergraduate student	2	3%
Non-certified graduate or undergraduate student	11	17%
Orthopedic Surgeon	23	36%
Family Practitioner	19	30%
Internist	3	5%
Chiropractor	1	2%
Physical Therapist	10	16%
Sport Psychologist	5	8%
Dietitian	4	6%
Other	12	19%

Table 8

Administrative Positions in the Athletic Training Program

Administrative Position	n	%
Program Director	12	19%
Administrative Title:		
Head Athletic Trainer	6	
Director of Athletic Training Services	3	
Director of Sports Medicine	2	
Director of Exercise Science	1	
Department Chair	10	16%
Administrative Title:		
Chair of Physical Education	4	
Athletic Director	2	
Department Chair	1	
Coordinator of Physical Education Dept.	1	
Director of Exercise Science	1	
Medical Director / Advisor	3	5%
Administrative Title:		
Team Physician	3	
Length of profession program:		
< 6 Semesters	19	29.7%
6 - 8 Semesters	34	53.1%
> 8 Semesters	2	3.1%
No Response	9	14.1%
Entering number of student athletic trainers the program could accommodate:		
<5	22	34.4%
5 - 10	27	42.2%
>10	10	15.6%
No Response	5	7.8%

(table continues)

Administration Position		n	%
Actual entering number of student athletic trainers in the program:			
	<5	28	43.8%
	5 - 10	19	29.7%
	>10	7	10.9%
	No Response	10	15.6%
Terms first year student athletic trainers enter the program:			
	Fall quarter	26	40.6%
	Fall/Winter quarter	3	4.7%
	Winter quarter	6	9.4%
	Spring quarter	3	4.7%
	Any quarter	8	12.5%
	Fall Sophomore year	3	4.7%
	No response	8	12.5%
Total number of student athletic trainers in the program:			
	<9	16	25%
	9 - 18	26	40.6%
	18>	14	21.9%
	No response	8	12.5%
Certificate or Degree awarded:			
	Bachelor of Science	25	39.1%
	Bachelor of Arts	7	10.9%
	Minor/Emphasis	10	15.6%
	Certificate	5	7.8%
	Bachelor of Science or Arts	2	3.1%
	None	2	3.1%
	Master of Science	1	1.6%
	No response	12	18.8%

The responding institutions were asked to indicate the details of the make-up of their athletic training educational programs, which can be found in Table 9. The typical length of the professional program was from 6 to 8 semesters (53.1%). The estimated average number of entering first year students programs could accommodate was between 5-10 (42.2%). The actual average number of entering first year students into programs over the last five years was five or less (44%). Typically the semester in which these first year students entered programs was the fall semester (40.6%). The most common total number of students currently enrolled in the program was between 9 and 18 (40.6%). Finally, the typical certificate or degree awarded upon completion of the professional program was a Bachelor of Science degree (39.1%).

Each responding institution defined the position of their head athletic trainer. 39.1% of the head athletic trainer positions were defined as full time in nature. A slightly smaller percentage of the head athletic trainers also indicated their position could be defined as full time non-tenure track faculty (29.7%). Of the responding programs, 81% indicated that their institution does have a tenure system, however in only 27% of the institutions were all full-time faculty in the athletic training program are eligible for tenure track appointments. Only 6 programs indicated that the head athletic trainer position is either a part-time or part-time non-tenure track faculty position. These results are broken down by school affiliation and are presented in Table 10.

Table 9

Professional Program Details

Program Detail	n	%
Length of professional program:		
< 6 semesters	19	29.7%
6 - 8 semesters	34	53.1%
> 8 semesters	2	3.1%
No response	9	14.1%
Entering number of student athletic trainers the program could accommodate:		
< 5	22	34.4%
5 - 10	27	42.2%
> 10	10	15.6%
No response	5	7.8%
Actual entering number of student athletic trainers in the program:		
< 5	28	43.8%
5 - 10	19	29.7%
> 10	7	10.9%
No response	10	15.6%
Semesters first year student athletic trainers enter the program:		
Fall semester	35	54.7%
Spring semester	3	4.7%
Any semester	8	12.5%
Fall sophomore year	3	4.7 %
No response	15	23.4%

(table continues)

Program Detail	n	%
Total number of student athletic trainers in the program:		
< 9	16	25%
9 - 18	26	40.6%
18 >	14	21.9%
No response	8	12.5%
Certificate or degree awarded:		
Bachelor of Science	25	39.1%
Bachelor of Arts	7	10.9%
Minor/Emphasis	10	15.6%
Certificate	5	7.8%
Bachelor of Science or Arts	2	3.1%
None	2	3.1%
Maser of Science	1	1.6%
No response	12	18.8%

When asked the number of full-time faculty that were assigned to the athletic training educational program, nearly half (45.3%) indicated one individual was assigned to the program. Surprisingly only 16.6% of the NCAA Division I institutions had at least one full-time faculty member assigned to the program. In 42.2% of the responding programs, no full-time faculty were assigned to the athletic training program. In over half (54.7%) of the responding programs there usually was not any part-time faculty assigned to the athletic training program as well. The clinical instructors assigned to the program were also absent at a number of the responding institutions (56.3%). NCAA Division I programs had the largest average number of clinical instructors assigned to

their programs. In fact, 67.7% of the Division I responding programs had 2 or more clinical instructors assigned to their program. Nearly half (46.2%) of the Division III programs had only 1 clinical instructor assigned to their athletic training program. This information can be found in Table 11.

Table 10

Definition of Head Athletic Trainers Position

Status	Total	%	DI	DII	DIII	NAIA
Full time	25	39.1%	6	7	3	9
Part time	5	7.8%	0	1	0	4
Full time staff	8	12.5%	1	3	2	2
Full time tenure track faculty	5	7.8%	0	1	1	3
Full time non-tenure track	19	29.7%	0	7	8	4
Part time non-tenure track	1	1.6%	0	1	0	0
Special Appointment	1	1.6%	0	1	0	0

Note. DI = NCAA Division I. DII = NCAA Division II. DIII = NCAA Division III.

Table 11

Number of Staff Assigned to the Athletic Training Educational Program

Type of Staff Assigned	Total	%	DI	DII	DIII	NAIA
Number of full-time faculty assigned:						
No Response	3	4.7%	1	1	1	0
0	27	42.2%	5	13	5	4
1	26	40.6%	1	4	6	15
2-3	5	7.8%	0	2	2	1
4>	3	4.7%	0	1	0	2
Number of part-time faculty assigned:						
No Response	3	4.7%	1	1	1	0
0	35	54.7%	1	13	9	12
1	21	32.8%	3	5	4	9
2-3	5	7.8%	2	2	0	1
4>	0	0%	0	0	0	0
Number of clinical instructors assigned:						
No Response	3	4.7%	1	1	1	0
0	36	56.3%	0	13	6	17
1	12	18.8%	1	1	7	3
2-3	10	15.6%	3	5	0	2
4>	3	4.7%	1	1	0	1

Note. DI = NCAA Division I. DII = NCAA Division II. DIII = NCAA Division III.

When the programs were asked to indicate if there program was a major and where it was housed, nearly half of the responding programs (48.4%) indicated that their program was best described as a major in another area with an emphasis in Athletic Training. There was no single major area this emphasis was highly associated with. The typical major areas indicated often consisted of a Health, Physical Education, and Recreation department (22.6%), Exercise Science (19.4%), or any possible major (19.4%). A total of six other majors or combinations of majors were indicated as well, although in very small numbers. Table 12 further displays this information.

Table 12

Description of Athletic Training Program

Program Description	n	%
Athletic Training Major	8	12.5%
Athletic Training Major / emphasis within another major	4	6.3%
Major in another area with a minor in Athletic Training	14	21.9%
Major in another area with an emphasis in Ath. Training	31	48.4%
Other / none	7	10.9%

In an attempt to determine the academic rigor at each institution the questionnaire included a question asking each institution to indicate what courses are major requirements within their programs. The courses used on the questionnaire are all of the required courses an accredited athletic training program must have as requirements within their major. These results are found in Table 13. Only 2 institutions (1 NCAA Division II and 1 Division III) did not respond to this question. The majority of the responding institutions require Human Anatomy (97%), Human Physiology, Exercise Physiology, Kinesiology/Biomechanics, and Prevention and Care of Athletic Injuries (all 95%). Administration of Athletic Training was the least required course (61%) according to the responding programs.

Of the responding programs, 36 (56%) use a selection process for admitting students into their programs. Table 14 presents the items and how much emphasis is placed upon these items in the selection of student athletic trainers. It was observed from the data collected that personal interviews (mean 5.9 / 7 point scale) and college grade point averages (mean 5.3 / 7 point scale) had the most impact upon the selection process. The most typically indicated minimum college grade point average for acceptance into the athletic training program was a 2.5. The items that played the least important role in the selection process of student athletic trainers was high school athletic experience (mean 3.2 / 7 point scale), being a minority student (mean 3.2 / 7 point scale), and academic honors (mean 3.4 / 7 point scale).

Table 13

Subject Areas of Classroom Instruction of Responding Programs (n = 62)

Subject Areas	Total	%	DI	DII	DII	NAIA
No response to question	2	-	0	1	1	0
First aid and emergency care	56	90%	6	19	13	18
Evaluation of athletic injuries	57	92%	7	20	13	17
Prevention of athletic injuries	61	98%	7	20	13	21
Therapeutic modalities	52	84%	7	17	11	17
Therapeutic exercise	49	79%	6	15	11	17
Administration of Programs	39	63%	6	15	7	11
Human Anatomy	62	100%	7	20	13	22
Human Physiology	61	98%	7	20	13	21
Exercise Physiology	61	98%	7	20	13	21
Kinesiology / biomechanics	61	98%	7	20	13	21
Personal / community health	60	97%	7	19	13	21
Nutrition	60	97%	7	18	13	22
Psychology	51	82%	7	16	11	17

Note. DI = NCAA Division I. DII = NCAA Division II. DIII = NCAA Division III.

Table 14

Description of the Selection Process

Criteria	(Much Emphasis) 7	6	5	4	3	(No Emphasis) 2	1	NA	Mean
High School Experience	3	2	3	8	4	3	6	7	3.6
High School GPA	3	7	7	1	2	0	7	9	4.2
Interview	14	8	7	3	0	1	0	3	5.9
Standardized Test Scores	2	5	4	3	3	1	9	9	3.6
College GPA	10	7	9	6	1	1	1	1	5.3
Observation	8	4	4	7	2	2	1	7	5.0
References	4	6	10	6	1	1	6	2	4.2
Extracurricular Activities	0	4	11	6	4	3	6	2	4.0
H.S. Athletic Experience	0	3	4	6	7	7	5	4	3.2
Academic Honors	0	4	7	6	3	7	6	3	3.4
Minority Students	2	1	3	6	2	3	10	9	3.2

Passing the NATA certification exam should be a goal of every student athletic trainer. The responding programs indicated that a total of 313 student athletic trainers from these programs had taken the NATA certification examination within the past 5 years. Of these 313 students only 113 (36%) passed the exam on their first attempt, 108 (35%) on the second attempt, and 43 (14%) on the third attempt. Out of the 313 students who originally took the certification exam, 49 of these students either took the exam at least one more additional time or never took the exam again.

The current ratio of student athletic trainers to staff athletic trainers varies per institution. Three institutions had the smallest ratio of 1 student athletic trainer to 1 staff athletic trainer. The largest ratio was 34 student athletic trainers to 1 staff athletic trainer. This data is presented in categories in Table 15. Of the responses who indicated that their student athletic trainer to clinical instructor ratio fell within the accepted CAAHEP standards of 8:1 or less; six were NCAA Division I institutions, sixteen were NCAA Division II, five were NCAA Division III, and twelve were NAIA institutions. Ratios between 9:1 and 15:1 consisted of one from NCAA Division I, four from NCAA Divisior II, 2 from NCAA Division III, and 8 from NAIA institutions. There were no NCAA Division I schools reported having a ratio of 16:1 or greater, while one NCAA Division II, seven NCAA Division III, and two NAIA institutions did.

Table 15

Student Athletic Trainer to Clinical Instructor Ratio of Respondents by Affiliation

Ratio Ranges	Total	%	D I	DII	DIII	NAIA
5:1 or less	25	39.1%	5	9	2	9
6:1 - 8:1	14	21.9%	1	7	3	3
9:1 - 15:1	15	23.4%	1	4	2	8
16:1 or greater	10	15.6%	0	1	7	2
Total	64	100.0%	7	21	14	22

Note. D I = NCAA Division I. D II = NCAA Division II. DII = NCAA Division III.

A large number (70%) of the responding institutions indicated that they do indeed plan to pursue accreditation by the year 2004. Only 14 (22%) institutions indicated that they would not pursue accreditation. It is important to note that 5 (8%) of the responding institutions indicated that they still were undecided as to whether or not they would be pursuing accreditation.

CHAPTER 5

DISCUSSION

Introduction

The purpose of the study was to describe the current status of non-accredited athletic training programs at four-year colleges and universities in relation to receiving future accreditation by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The subproblems of this study were the following:

1. The number and professional qualifications of athletic training personnel, which include certified trainers, graduate assistants who serve as assistants to the certified trainers, team physicians, and student trainers.

2. A description of the personnel who make up the sports medicine team.

3. A description of the involvement of the team physician in the athletic training education program.

4. A description of any academic programs in athletic training available including curriculum in both classroom and practical experiences for student athletic trainers.

5. A description of the employment, the number of the professionals who are active in the athletic training program, and the ratio of student athletic trainers to clinical supervisors.

6. A description of the details regarding the educational program of study, including the major courses required within the program and the staff who are responsible for teaching them.

7. A description of any application process for the athletic training program.

8. The success rate of student athletic trainers taking the NATA certification examination.

9. The plan for pursuing CAAHEP-accreditation by the year 2004.

There is not a lot of previous research in this area and much of what has been done is limited to athletic training education programs that are accredited, or comparing the results of accredited programs to non-accredited programs. However, the review of literature indirectly points to a need for an increase in the number of accredited athletic training programs.

It was encouraging to see 70% of those responding in this study were considering applying for CAAHEP accreditation in athletic training by the year 2004. From the results of this study it is obvious there are some areas of improvement or development that these programs will need to consider in preparation for CAAHEP accreditation. In many of the essential areas the NCAA Division I and II colleges or universities tended to meet a greater number of the essentials for CAAHEP accreditation more often than the NCAA Division III and NAIA programs. There are still some CAAHEP requirements for athletic training accreditation that needs improvement by almost all of the responding institutions. The following discussion will touch upon these essential areas.

In order for a non-accredited athletic training program to take the steps towards accreditation the literature points out many areas of needs and improvements that must

be considered by the institution. The results of this study seem to indicate the same thing.

The personnel who make up the athletic training program is one indicator of the quality of the program and is one of the essential areas (CAHEA, 1992) that will be investigated upon application for accreditation. Surprisingly, there was one responding institution that did not have a head athletic trainer. There was also a lack of support staff for the programs with a head athletic trainer. One would assume that many of the responding institutions must rely heavily on their student athletic trainers for coverage of their teams due to the obvious limited staff. The reason for these figures may be that more of the institutions were from smaller athletic departments that do not employ many certified athletic trainers. This is the first obvious area that needs to be addressed by the institution if they plan to pursue accreditation.

Having an active sports medicine team of medical and allied health personnel to support the athletic training program is another important aspect to any athletic training program. According to the CAHEA (1992) Essentials and Guidelines, an accredited athletic training program must assure adequate opportunity for its students to become familiar with the roles and responsibilities of various members of the sports medicine team. In this study, the majority of responding institutions did have an active sports medicine team. An active sports medicine team was typically made up of an orthopedic surgeon, a physical therapist, and a family practitioner. This is a positive step in the right direction for an internship athletic training program.

However, many of the responding programs team physicians had very minimal involvement with the education of the student athletic trainers. This is another one of the essentials and guidelines that must be met by an accredited athletic training program (CAHEA, 1992). From the results of this study this is an area many of the programs need to improve or develop.

It is also essential that an athletic training educational program have a variety of allied health personnel involved in the athletic training program. In this study this produced a low percentage of responses from the majority of the responding programs. Typically, programs indicated the head athletic trainer was the primary active contributor to the education of the student athletic trainers. If an institution did have an assistant athletic trainer, they too were very involved in the education of student athletic trainers. Orthopedic surgeons and family practitioners were indicated as professionals who also play an active role in the education process in a small number of the programs. It is important to keep in mind that according to the CAHEA Essentials and Guidelines the instructors in an accredited program may be from varied academic backgrounds as long as these instructors are qualified through their professional preparation and experience in their academic areas. It is also important that medical and allied health personnel that make up the sports medicine team have an interest in the professional preparation of the student athletic trainers. The lower response rate in this area could be a result of schools with lower student populations not having the demand for as wide variety of academic majors as larger schools, because they are not likely to have allied

health personnel involved in any program in the school including the athletic training program.

According to the CAHEA Essentials and Guidelines the program director serves an extremely vital leadership role within an accredited program. In internship programs surveyed, very few of the participating institutions had individuals on staff serving in a clearly defined administrative positions within the athletic training educational program. If any of the responding programs has plans of pursuing accreditation the institution will have to clearly define these administrative positions.

The Joint Review Committee on Educational Programs in Athletic Training (1991) suggests a student athletic trainer to clinical instructor ratio of 8:1 or less for institutions to be accredited by CAAHEP. It is important to note internship programs are not forced to follow this rule. Over half of the responding institutions (61%) indicated that the ratio of their athletic training program was 8:1 or less. Of the responding institutions there seemed to be an obvious link to the larger athletic departments meeting this essential more often. To illustrate this point, 85.7% of the NCAA Division I schools met this as compared to only 35.7% of the NCAA Division III schools. The smaller institutions seem to use the internship program to provide the athletic program with a labor force of student athletic trainers for the coverage of practices and the performance of menial tasks, which follows the similar results of Starkey's (1988) study in the review of literature.

The surveyed institutions were also asked how their institution defines the employment of the head athletic trainer. Typically the responding head athletic trainers

indicated their position would be defined as either full time or full time non-tenure track faculty. Only 7.8% of the responding head athletic trainer positions were defined as full time tenure track faculty. If these programs plan to pursue accreditation this is another area that must be addressed. According to the CAHEA Essentials and Guidelines the program director must be a member of the teaching faculty on a tenure track appointment. This creates an obvious problem for the program. It is huge expense and often very difficult for a college or university to create a new tenure track position. It seems obvious that this essential will prevent many programs from becoming accredited.

As for the number of full time faculty assigned to the athletic training programs, typically only one individual served in this capacity. The number of part time faculty assigned to the athletic training program was very low as well. Almost 60% of the respondents did not answer or reported no part time faculty assigned. Only 32.8% of the institutions indicated they did have one part time faculty member assigned. Once again, these findings could be a result of large number of small and private schools.

The ratio of student athletic trainers to clinical instructors (certified athletic trainers) of an accredited athletic training program is a ratio of 8:1. In this study the majority of the programs had a very legitimate ratio of student athletic trainers to clinical instructors. It has been assumed that the smaller private schools rely heavily on their students for coverage of their athletic teams, however the numbers do not show this study.

Rather surprisingly, 60.9% of the respondents reported no clinical instructors on staff. This result could be due to the fact that this question may not have been understood clearly by the responding athletic trainers.

As described in Chapter 2, internship programs have similar formal classroom instruction in the basic subject areas as is required by CAAHEP in order for its students to take the NATA certification examination. With this in mind, it was not surprising to find the most common subject areas to be covered by the responding institutions were human anatomy, human physiology, kinesiology/biomechanics, prevention and care of athletic injuries, personal/community health, and nutrition. It was not surprising that the least common subject areas to be provided were therapeutic modalities, therapeutic exercise, and administration of athletic training because these courses are not required for an internship student. However, it was surprising to find that psychology was not indicated by the responding programs as a commonly required course. This could be due to the fact that the question was not completely understood. Psychology is a requirement in general education in the majority of colleges and universities, so the responding athletic trainers may not have indicated this course due to this fact. The responding institutions were relatively consistent in providing adequate subjects to its students. The majority of the responding programs have the subjects needed for the academic core of the curriculum of an accredited program.

According to the CAAHEP Guidelines and Essentials, clearly defined and published standards for admission of students into the athletic training programs is required. However, for internship programs this is not a requirement. Many of the

responding institutions did not use a selection process. This is another area that the programs must consider and develop prior to applying for accreditation.

The end result of an athletic training program is having the student athletic trainer take the NATA certification examination. The national passage rate on the NATA certification examination was 32% for students from accredited programs. Students from non-accredited programs had a passage rate of 24%. The institutions in the present study were asked to indicate how many of their student athletic trainers did take the certification test in the past five years. The responding programs indicated that a total of 313 students did take the NATA certification exam within the last five years. Of these 313 students, 113 (36%) passed the exam on their first attempt (NATA, 1996). This number reflects extremely well on the responding programs when compared to these statistics. This creates somewhat of a concern regarding the NATA's Educational Task Force recommendation of eliminating non-accredited programs. The non-accredited programs within the NATA District V are doing a very good job of preparing their students for the certification exam, it is rather concerning that these programs will be eliminated.

Conclusions

Since it was first organized the NATA has continually sought to elevate the standards of its members. There were no certification requirements for athletic trainers until 1970. These requirements, once very broad and open-ended, have since been refined and delimited to ensure the highest of standards for athletic trainers. The NATA has once again raised their standards. They have delimited eligibility for their

certification examination to only those candidates who have earned a baccalaureate degree and have completed a CAAHEP accredited athletic training program. However, this could delimit the number of educational opportunities for future athletic trainers.

The results of this study have some implications for institutions considering CAAHEP accreditation in athletic training. Internship programs may need to increase the number of certified athletic trainers (ATCs) that they employ or limit the number of students that they admit to their programs in order to keep their ratios of student athletic trainers to clinical instructors at the 8:1 ratio. It may also be necessary to designate a program director who is a full-time member of the teaching faculty and responsible for the day-to-day supervision of the athletic training education program. Prospective institutions also may need to locate physicians and other allied health personnel who are willing to be involved in the classroom and clinical aspects of their athletic training education programs. Finally, most prospective institutions will have to draft standards for admission into the program.

Recommendations

In reviewing the responses from the non-accredited athletic training programs in District V conclusions were drawn. From these conclusions, the following recommendations were made.

Recommendations for Athletic Training Programs Pursuing Accreditation

1. For CAAHEP accreditation additional certified athletic trainers need to be hired at a majority of the institutions involved in this study. This will create more clinical supervisors for the student athletic trainers, creating a better clinical experience

for the student athletic trainer. The extremely low number of assistants show the need for the profession to continue to promote the field of athletic training.

2. Non-accredited programs need to incorporate the use of their sports medicine team within the education of their student athletic trainers. The medical and allied health personnel that make up the sports medicine team should be involved in the professional preparation of the student athletic trainer.

3. More program directors are needed in the non-accredited programs. By defining and creating this administrative position, better leadership for the program will result.

4. More faculty need to be assigned to these programs, especially if a program is considering moving towards accreditation. Without an adequate number of faculty contributing to the professional preparation of student athletic trainers, the student will not be prepared to take the NATA certification exam or will not be prepared to enter the professional work force.

5. The non-accredited programs who are considering pursuing accreditation by the year 2004 need to reflect on the feasibility of this decision. A large number of the responding institutions indicated that they do plan to pursue accreditation.

Recommendations for Further Study

1. A study of the qualifications of clinical instructors should be undertaken to develop a set of guidelines for qualification of a clinical supervisor.

2. Implement a descriptive study involving the program directors, department chairs, head athletic trainers, and athletic directors regarding their perception on the source of needs and funding for the possibility of moving towards accreditation.

3. Conduct a study of colleges and universities that are already accredited by CAAHEP to discover their demographic characteristics, such as what percentage of them are public institutions versus private and with which athletic division are they associated.

REFERENCES

American Academy of Orthopedic Surgeons. (1991). Athletic training and sports medicine. Rosemont, IL: Author.

Anderson, M. K., & Hall, S. J. (1995). Sports injury management. Media, PA: Williams & Wilkins.

Arnheim, D. D., & Prentice, W. E. (1997). Modern principles of athletic training (9th ed.). St. Louis, MO: Brown & Benchmark.

Chandler, J. A. M. (1988). A Survey of NCAA III athletic training programs. Unpublished master's thesis, University of Northern Iowa, Cedar Falls.

Columbia Assessment Services. (1990). Role delineation validation study for the entry-level athletic trainer's certification exam (2nd ed.). Raleigh, NC: National Athletic Trainers' Association (NATA) Board of Certification.

Columbia Assessment Services. (1995). Role delineation validation study for the Eentry-level athletic trainer's certification exam (3rd ed.). Raleigh, NC: National Athletic Trainers' Association Board of Certification.

Committee on Allied Health Education and Accreditation (CAHEA). (1992). Essentials and guidelines for an accredited educational program for the athletic trainer. Chicago: American Medical Association.

Cramer, C. R. (1990). A preferred sequence of competencies for athletic training education programs. Unpublished doctoral dissertation, Kansas State University, Manhattan.

Delforge, G. (1982). The athletic training major: A report from the professional education committee. Athletic Training, 17, 288-290.

Draper D. (1987). An evaluation model of the student athletic trainer's clinical experience. Athletic Training, JNATA; 22, 111-114.

Draper D. (1989, Fall). Students learning styles compared with their performance on the NATA certification exam. Athletic Training, JNATA: 234-235 and 275.

Foster D., & Leslie D. (1992). Clinical teaching roles of athletic trainers. Journal of Athletic Training, 27 (4) 298-302.

Gieck, J. (1984). Stress management and the athletic trainer. Athletic Training, JNATA; 19, 115-119.

Hayez, K. (1986). A report on the performance of the approved vs. non-approved schools on the National Athletic Trainers Association certification examination. New York: Professional Examination Services.

Hayez, K. (1989). A report on the performance on the National Athletic Trainers Association Board of Certification, Inc.'s certification examination. Raleigh, NC: Columbia Assessment Services.

Joint Review Committee on Educational Programs in Athletic Training. (1991). Essentials and guidelines for an accredited educational program for the athletic trainer. Terre Haute, IN: Author.

Kauth, B. (1984). The athletic training major. The Journal of Physical Education, Recreation, & Dance, 55 (8), 11-13 , 80-82.

Knight, K. L. (1990). Clinical experiences in athletic training [preface]. Champaign, IL: Human Kinetics Books.

National Athletic Trainers' Association (NATA). (1996, February). Renewing athletic training education-a step into the future. NATA News, 17-27.

National Athletic Trainers' Association (NATA). (1992). Competencies of athletic training. Dallas, TX: Author.

O'Shea, M. E. (1980). A history of the National Athletic Trainers' Association. Greenville, NC: NATA.

Professional Education Committee (PEC). (1983). Guidelines for development and implementation of NATA approved undergraduate athletic training education programs. Greenville, NC: National Athletic Trainers Association.

Professional Educational Committee (PEC). (1987). Recommendations for athletic training internship settings. Greenville, NC: National Athletic Trainers' Association.

Professional Educational Committee (PEC). (1988). Guidelines for development and implementation of NATA approved undergraduate athletic training education programs. Greenville, NC: National Athletic Trainers Association, National Athletic Trainers' Association.

Scwank, W., & Miller, S. J. (1971). New dimensions for the athletic training profession. The Journal of Physical Education, Recreation, & Dance, 42, 43.

Starkey, C. A. (1988). A descriptive study of student athletic trainers enrolled in curriculum and internship athletic training programs. Unpublished doctoral dissertation, Ohio University, Athens.

Stewart, P. W. (1986). A comparative study of performance and curriculums: Approved athletic training programs and the National Certification Exam. (Doctoral dissertation, Penn State University, 1986). Dissertation Abstracts International, 47, 1212A.

Stoddard, G. (1981). Educational reform [Letter to the editor]. Athletic Training, 16, p. 232.

Tovell, J. L. (1981). Educational reform [Letter to the editor]. Athletic Training, 16, p. 84.

Watson, M. (1992). Professional preparation activities for the student athletic trainer in a collegiate internship setting. Unpublished doctoral dissertation, University of North Carolina, Greensboro.

Whitehill, W. R. (1992). An examination of academic and professional preparation in NATA-approved graduate athletic training programs. Unpublished doctoral dissertation, University of Alabama, Tuscaloosa.

APPENDIX A

Eligibility Requirements To Sit For the Certification Examination By Routes

Route to Certification Requirements

	Accredited*	Non-accredited**
Academic		
	Human Anatomy	Human Anatomy
	Human Physiology	Human Physiology
	Exercise Physiology	Exercise Physiology
	Kinesiology/Biomechanics	Kinesiology/Biomechanics
	Health (personal or community)	Health (nutr., drug use, etc.)
	First Aid/CPR Card	First Aid/CPR Card
	Prev. of Athletic Injuries	Basic Athletic Training
	Eval. of Athletic Injuries	Advanced Athletic Training
	Therapeutic Exercise	
	Administration of Athletic Training	
	Nutrition	
	Psychology	
Clinical		
	800 supervised clock hours	1500 supervised clock hours
	200 hours with high risk	375 hours with high risk
	400 must be at host school	500 may be in allied settings

* *Requirements are based on course content*
** *Requirements are based on course titles*

(NATA NEWS Feb. 1996 pg. 21 "A Report From the Education Task Force")

APPENDIX B

Cover Letter

Athletic Training Educational Programs

within NATA District V

February 26, 1997

Dear Head Athletic Trainer,

As head athletic trainer of your athletic training program, you serve a vital role in the educational preparation of student athletic trainers at your college or university. Enclosed you will find a questionnaire which was created to obtain a better understanding of any possible steps being taken by non-accredited undergraduate athletic training educational programs in preparation for becoming an accredited program.

Participation in this study consists of completing the enclosed questionnaire and returning it in the postage paid addressed envelope provided. The questionnaire should only take 10 to 15 minutes of your time to complete. It is assumed that your completing and returning the questionnaire indicates your consent to participate in this study. All information you provide is confidential and questionnaires are anonymous. All data from completed surveys will be evaluated on the basis of group means and averages. No individual data will be evaluated on the basis of group means and averages. No individual data will be reported. **I ask that you please return the questionnaire by March 17th, 1997.**

Please do not place your name or any other identifying information on the questionnaire. The identification code on each survey is for the sole purpose of determining the return rate of the questionnaires and will be destroyed after the study is completed.

Your assistance in completing this questionnaire is greatly appreciated. If you would like the results of this survey, please complete the enclosed postcard with your name and address Should you have any questions please feel free to contact me.

Thank you in advance for your assistance and participation in this study.

Sincerely,

Donald L. Bishop, ATC
Athletic Trainer- Upper Iowa University
Masters Candidate- The University of Northern Iowa

Dr. Nancy Hamilton, Advisor
David Walker, Graduate College

APPENDIX C

Questionnaire for Non-accredited Athletic Training Educational Programs within NATA District V

ID. # _____

Athletic Training Educational Program Questionnaire

1. What is the nature of your institution? Public _____ Private _____

2. In which of the following categories best describes your institution?

__ NCAA Division I
__ NCAA Division II
__ NCAA Division III
__ NAIA

3. What is the approximate 1996-97 full-time student population of your institution?

__ less than 1,000
__ 1,000 - 5,000
__ 5,000 - 10,000
__ 10,000 - 20,000
__ greater than 20,000

4. Please indicate the number of each of the following personnel in your athletic training program. (ex. 1 NATA certified head athletic trainers).

__ NATA certified head athletic trainers
__ NATA certified assistant athletic trainers
__ Non-certified graduate assistant athletic trainers
__ NATA certified graduate and undergraduate student athletic trainers
__ Non-certified graduate and undergraduate student athletic trainers

5. Please indicate the number of each of the following personnel who make up the sports medicine team of your athletic training program. This question excludes athletic trainers (ex. 2 Orthopedic Surgeon).

__ Orthopedic Surgeon
__ Internist
__ Family Practitioner
__ Physical Therapist
__ Other Physician (specify specialty) _____
__ Sport Psychologist
__ Dietitian
__ Nutritionist
__ Other (specify) _____

6. Please indicate the exact involvement your team physician has with your athletic training program.

__ None (no team physician)
__ Referrals of injured athletes, strictly at physician's clinic
__ Referrals and occasionally visits the athletic training room
__ Referrals and often visits the athletic training room
__ Referrals, occasionally visits the athletic training room, and spends occasional time with student athletic trainers
__ Referrals, often visits the athletic training room, and spends occasional time with the student athletic trainers
__ Referrals, often visits the athletic training room, and often spends time with the student athletic trainers
__ Other (specify)_____

7. Please indicate the number of each of the following personnel who actively contribute to the education of your student athletic trainers in the formal classroom or clinical experience setting (ex. 2 NATA certified assistant athletic trainers).

__ NATA certified head athletic trainers
__ NATA certified assistant athletic trainers
__ NATA certified graduate assistant athletic trainers
__ Non-certified graduate assistant athletic trainers
__ NATA certified graduate & undergraduate student athletic trainers
__ Non-certified graduate & undergraduate student athletic trainers
__ Orthopedic Surgeon
__ Family Practitioner
__ Internist
__ Other Physician (specify specialty)_____
__ Physical Therapist
__ Sport Psychologist
__ Dietitian
__ Other (specify) _____

8. Please indicate if your program has any individuals currently on staff that serve in any of the following positions and list their administrative title.

__ Program Director (Administrative Title_____)

__ Department Chair (Administrative Title_____)

__ Medical Director / Advisor (Administrative Title_____)

9. Please indicate the following regarding your athletic training program:

a) Length of professional program in terms (i.e., semesters, quarters) _____

in semester hours _____

b) Estimated average number of entering (First Year) students the program could accommodate _____

c) Actual average number of entering (First Year) students per year over the last five years _____

d) terms (fall quarter, winter quarter, spring quarter, summer quarter) in which entering (First Year) students are admitted _____

e) Total number of students currently enrolled in the program _____

f) Certificate or Degree awarded _____

10. Indicate how your institution defines the employment of your position.

_____ full time _____ tenure track faculty _____ part time

_____ nontenure track faculty _____ staff

11. Does your institution have a tenure system?

____ Yes _____ No _____ Not Applicable

12. Are all full-time faculty in your program eligible for tenure track appointments?

____ Yes _____ No _____ Not Applicable

13. Specify the following:

a) Number of full-time faculty assigned to the program _____

b) Number of part-time faculty assigned to the program _____

c) Number of clinical instructors assigned to the program _____

14. Of the following which best describes your current athletic training educational program of study.

__ Athletic Training Major
__ Athletic Training Major / emphasis within another major (specify the Major _____)
__ Major in another area with a minor in Athletic Training within the department (specify the Major _____)
__ Major in another area with an emphasis in Athletic Training (specify the Major _____)

15. Please indicate which of the courses listed below (or courses similar to the ones listed) are major requirements for students in your athletic training educational program.

__ First Aid/Emergency Care
__ Prevention and Care
__ Therapeutic Exercise
__ Human Anatomy
__ Exercise Physiology
__ Personal/Community Health
__ Psychology
__ Evaluation of Athletic Injuries
__ Therapeutic Modalities
__ Administration of Ath. Training
__ Human Physiology
__ Kinesiology/Biomechanics
__ Nutrition

16. Do you use a selection process for admitting students into your program?

__ Yes __ No

17. If you responded "*YES*" to question 15 above, please weight how much emphasis you place on the following items in the selection of your student athletic trainers. (7 = Much emphasis, 1 = No emphasis; if an item does not apply to your program, please indicate NA - "Not Applicable".)

High school experience as an athletic trainer	7 6 5 4 3 2 1	NA
High school GPA (Minimum _____)	7 6 5 4 3 2 1	NA
Personal Interview	7 6 5 4 3 2 1	NA
Standardized Test Scores (Minimum ACT____SAT____)	7 6 5 4 3 2 1	NA
College GPA (Minimum _____)	7 6 5 4 3 2 1	NA
College practicum hours (Minimum _____)	7 6 5 4 3 2 1	NA
Letters of recommendation	7 6 5 4 3 2 1	NA
Extracurricular activities	7 6 5 4 3 2 1	NA
High school athletic experience	7 6 5 4 3 2 1	NA
Academic honors and awards	7 6 5 4 3 2 1	NA
Special consideration for minority students	7 6 5 4 3 2 1	NA

18. Within the last five years how many of your undergraduate and graduate student athletic trainers have taken the NATA certification exam?

_____

19. How many of your undergraduate and graduate student athletic trainers have passed the NATA certification exam on the first attempt in the past five years.

_____

20. How many of the student athletic trainers who failed to pass the certification exam on the first time, have passed on the second attempt during the past 5 years.

_____

21. How many of the student athletic trainers who failed to pass the certification exam on the second attempt passed it on the third attempt.

_____

22. What is the current ratio of student athletic trainers to staff athletic trainers?

____ (students) / ____ (staff)

21. Does your program plan on becoming accredited by the year 2004 if the NATA's Educational Task Force recommendations are upheld?

____ yes ____ no

APPENDIX D

List of Non-accredited Undergraduate Athletic Training Program Surveyed in District V

Iowa

Briar Cliff College
Buena Vista College
Central College
Coe College
Cornell College
Drake University
University of Dubuque
Graceland College
Grand View College
Grinnell College
Iowa State University
Loras College
Morningside College
University of Northern Iowa
Northwestern College
Simpson College
St. Ambrose University
Wartburg College
Upper Iowa University

Kansas

Baker University
Barclay College
Benedictine College
Bethany College
Emporia State University
Fort Hays State University
Kansas State University
Kansas Wesleyan University
University of Kansas
Manhattan Christian College
McPherson College
Mid-America Nazerene College
Pittsburg State University
Southwestern College
St. Mary College
Sterling College
Tabor College
Washburn University
Wichita State University

Missouri

Avila College
Central Missouri State University
Columbia College
Culver-Stockton College
Fontbonne College
Hannibal LaGrange College
Lincoln University
Lindenwood College
Maryville University of St. Louis
Messenger College
Missouri Baptist College
Missouri Southern State College
Missouri Western State College
University of Missouri-Columbia
University of Missouri-Kansas City
University of Missouri-Rolla
University of Missouri-St. Louis
Northeast Missouri State Univ.
Northwest Missouri State University
Park College
Sanford Brown College
Southeast Missouri State Univ.
Southwest Baptist University
St. Louis University
Washington University
Webster University
Westminster College
William Jewell College
William Woods University

Nebraska

Bellevue University
Chadron State College
Concordia College
Creighton University
Dana College
Doane College
Grace University
Hastings College
Midland Lutheran College
Nebraska Wesleyan University
University of Nebraska-Lincoln
University of Nebraska-Kearney
University of Nebraska-Omaha
Peru State University

Union College

Wayne State College

York College

North Dakota

Dickinson State University

Jamestown College

Mayville State University

Minot State University

North Dakota State University

University of North Dakota

Oklahoma

Cameron University

University of Central Oklahoma

East Central University

Langston University

Northeastern State University

Northwestern Oklahoma State .

Oklahoma City University

Oklahoma Panhandle State

Oklahoma State University

University of Oklahoma

Oral Roberts University

Phillips University

Southeastern Oklahoma State

Southwerstern Oklahoma State - Weatherford

University of Tulsa

South Dakota

Augustana College

Black Hills State University

Dakota State University

Dakota Wesleyan University

Huron University

Northern State University

University of Sioux Falls

South Dakota State University

University of South Dakota