



The status of womens athletic training programs in selected colleges and universities
by Peggy Jo Pedersen

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE
in Physical Education

Montana State University

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Abstract:

The purpose of this study was to determine the status of women's athletic training programs in selected colleges and universities. Specifically, the study attempted to determine the range of care and supervision provided to female athletes by training personnel, the qualifications of health care personnel, and the facilities and equipment available for use.

The study was delimited to 73 selected head women's athletic trainers in the Region Six A.I.A.W., Division III institutions, for the 1980-81 school year. It was further delimited to the use of data collected through the use of a questionnaire designed by Meyer and the researcher. Questionnaires were sent to 73 institutions and 52 responded, for a 71 percent return.

Results from the questionnaire supported the following conclusions: 1) the student trainer was the primary health care personnel employed at games and practices, 2) less than one-third of the institutions employed a certified athletic trainee, 3) on-call personnel were employed more frequently than personnel present at actual competitions and practices, 4) most institutions had a physician on call during competitions and practices, 5) basketball teams had the services of the greatest percentage of qualified health care personnel, 6) attendance by health care personnel was higher at games versus practices, 7) physician services were available at the majority of schools, 8) all responding institutions offered protective taping, 9) preventive taping, rehabilitation, first aid and injury evaluation, and transport of the injured were provided by most institutions, 10) not all institutions provided first aid and injury evaluation, 11) the whirlpool was the most widely possessed therapy unit, 12) the majority of institutions did not have electrotherapy modalities, 13) most schools had an ice machine, 14) the majority of equipment and supplies surveyed were on hand in the training facilities, 15) the quality of women's athletic training programs varied greatly, 16) the quality of health care and personnel assigned was inconsistent from sport to sport, 17) 31 percent of the institutions had no safety breaker outlets for hydrotherapy equipment, and 18) health care for female athletes seemed less than adequate at some institutions.

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June 3, 1982

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IN SELECTED COLLEGES AND UNIVERSITIES

by

PEGGY JO PEDERSEN

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of the requirements for the degree

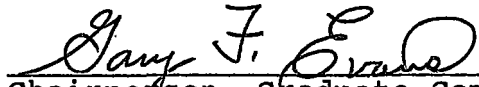
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Chairperson, Graduate Committee


Head, Major Department


Graduate Dean

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ABSTRACT

The purpose of this study was to determine the status of women's athletic training programs in selected colleges and universities. Specifically, the study attempted to determine the range of care and supervision provided to female athletes by training personnel, the qualifications of health care personnel, and the facilities and equipment available for use.

The study was delimited to 73 selected head women's athletic trainers in the Region Six A.I.A.W., Division III institutions, for the 1980-81 school year. It was further delimited to the use of data collected through the use of a questionnaire designed by Meyer and the researcher. Questionnaires were sent to 73 institutions and 52 responded, for a 71 percent return.

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CHAPTER 1

INTRODUCTION

Sports, competition, and injury go hand-in-hand in regard to intercollegiate athletics. According to Calvert and Clarke (1979:445), it is widely accepted that injuries do occur when highly skilled and motivated athletes compete against time, space, and other highly skilled and motivated athletes. In recent years the rapid growth of sports facilities, equipment, and participants has far exceeded the means by which we venture to make play safe, health promoting, and yet enjoyable. (Borozne 1977:9)

The need to reduce the inherent risks of sport is not a new concept. Recognition and development of a philosophy of safety in sport dates back to ancient times. The existence of trainers and physicians in athletics can be traced back to the works of Herodotus and Galen in the days of ancient Rome and Greece. From the time of Galen, however, until the Nineteenth Century and the advent of intercollegiate athletics in the United States, there was an absence of athletic training specialists. (Meyer 1979:12-13)

Despite its early beginnings, the multifaceted approach to athletic training programs that we see today in varying degrees in educational institutions throughout the

country, is realistically quite young. A national organization to promote unity of purpose and exchange of ideas and information concerning the care and prevention of athletic injuries did not become a reality until 1950 when the National Athletic Trainers Association (N.A.T.A.) was founded. It was not until 1956 that the American Medical Association (A.M.A.) expressed concern towards the problem of sports, competition, injuries, and the resulting medical aspects by forming the Committee on Sports Injuries. This body later became known as the Committee on the Medical Aspects of Sports. In 1957, the National Collegiate Athletic Association (N.C.A.A.) recognized the importance of sports safety by accepting the N.A.T.A. as an affiliate member of their organization. The "Bill of Rights for the Athlete" was drafted by the A.M.A. in 1959. It included the rights of "good coaching, good officiating, good equipment and facilities, and good health supervision." In keeping with the times, the American Association of Health, Physical Education, and Recreation (A.A.H.P.E.R.) recognized and also accepted the N.A.T.A. as an affiliated association. By 1966, a Joint Commission on Sports and Medical Aspects of Sports Committee was formed and included the following organizations:

1. American College Health Association
2. N.A.T.A.
3. N.C.A.A.
4. National Federation State High School Athletic Association (O'Shea 1980)

The concept of sports medicine and a philosophy of safety in sport has rapidly gained in importance and acceptance. A major boost towards the goal of wide-spread athletic training programs occurred in 1967 when the A.M.A. endorsed the role of a professionally prepared athletic trainer as a crucial part of the multidisciplinary approach to responsible health care for athletes. The A.M.A. further endorsed the cooperation of the Committee on the Medical Aspects of Sports with the N.A.T.A. In 1969, the A.M.A. again encouraged quality health care for athletes by urging all institutions offering sports programs to establish Athletic Medical Units. (Meyer 1979:1-3)

With the tremendous growth and influx of women's athletic programs, the National Association of Girls and Women in Sport (N.A.G.W.S.) endorsed a position paper in 1977 discussing the utilization of qualified athletic trainers by all institutions which sponsored athletic teams. The publication stated that although limited numbers of certified personnel were available and

difficulties may arise due to financial limitations involved in the hiring of certified individuals, it was, nonetheless, the obligation and responsibility of every sports program to do everything within its power to prevent injury whenever possible and lessen the severity of injury when it does occur through prompt and proper treatment and with total rehabilitation the goal. (Wilson and Albohm 1978:66)

Despite all the literature and organizations in support of quality athletic training programs, the status of existing programs in today's institutions is not readily known or evaluated on a regular basis.

Statement of the Problem

The general problem of this study was to determine the status of women's athletic training programs in selected colleges and universities. More specifically, through the use of a questionnaire, this study attempted to determine the range of care and supervision provided to female athletes by training personnel, the qualifications of personnel providing the care and supervision, and the facilities and equipment available for use by the athletes and training personnel.

Definition of Terms

Women's Athletic Training Program. In this study, women's athletic training program referred to the care, supervision, personnel, equipment, facilities, and policies employed in maintaining the health care of women collegiate athletes.

Training Personnel. Training personnel referred to any person actively involved in the health care of the female collegiate athlete.

Head Women's Athletic Trainer. In this study, head women's athletic trainer was defined as the person designated as most qualified and responsible for the health care of the female collegiate athletes.

Region Six. Region Six was a divisional breakdown of the Association of Intercollegiate Athletics for Women (A.I.A.W.) that included the member institutions in the states of Kansas, South Dakota, Missouri, Minnesota, Iowa, Nebraska, and North Dakota.

Division III. Division III was an A.I.A.W. declaration of sport status. An A.I.A.W. institution making a declaration of Division III in any sport may not award financial aid based on athletic ability in excess of ten percent of A.I.A.W. maximal permissible limits in that sport.

Delimitations

This study was delimited to 73 selected head women's athletic trainers in the Region Six Association of Inter-collegiate Athletics for Women, Division III institutions, for the 1980-81 school year. Division III classification was based on the sports of volleyball and basketball. It was further delimited to the use of data collected through a questionnaire designed by Meyer and the author (Appendix A).

Limitations

This study was limited by the interpretation of the head women's athletic trainers in reply to the questionnaire and also by the percentage of questionnaires returned.

Justification of the Study

In this day and age of intense sports competition for both men and women, the role of the athletic training program has rapidly gained in importance. In discussing injuries and college athletes, Calvert and Clarke stated:

...injuries can be anticipated whenever people are active; the existence of policies for minimizing injuries by providing good coaching, conditioning, and equipment for handling the injury properly when it occurs is a reasonable expectation of all colleges. (1979:463)

Fairbanks further stated, "A sportsmedicine program can help minimize time lost due to injury and maximize safety." (1979:71)

It was the scope of this study to determine the status of collegiate athletic training programs for women. With the advent of Title IX and the rapid increase in competition levels in women's sports, the resulting rise in intensity can be expected to produce more injuries. This increase in injuries indicates that women's as well as men's needs must be conscientiously considered when implementing an athletic training program to maintain the health care of athletes. (Calvert and Clarke 1979:448) This has not always been the case. According to The First Aider (1977), when female athletes got hurt, often there was no trainer or competent person to give proper first aid and follow-up treatment. As a result, some female athletes undoubtedly suffered needlessly and their recoveries were delayed or even incomplete.

It appears that we have much work ahead of us in educating the public and community involved in athletics in order to bring about an awareness that prevention and care of athletic injuries are rights of an athlete and not chance occurrences. (Bell 1978:200) It was the investigator's hope that this study will help identify problem areas in health

care for the emerging female athlete in order that recommendations may be made for future needs and improvements. The data and suggestions obtained in this study should be of genuine interest and concern to athletes, parents, coaches, administrators, and communities. It matters little to the female athlete involved in competition which sport has the highest frequency of injury. What is important is that each athlete, whether she be a gymnast or a basketball player, is pursuing the benefits of her sport and assuming that expedient, appropriate, and effective injury control measures are being applied. (Clarke and Buckley 1980:191)

Population

With the assistance of Ruth Lauver, A.I.A.W. Region Six President, 73 institutions were identified as being A.I.A.W. Division III in regard to the sport of volleyball or basketball. Questionnaires were sent to 73 women's athletic administrators with the request that the questionnaire be routed to the person on their staff best acquainted with the resources of their women's athletic training program. Questionnaires were coded for follow-up purposes only. Assurances were made regarding confidentiality and anonymity. The questionnaire was returned by 52 women's

athletic administrators, for a return of 71 percent.

Data Collection

Data were collected through the use of a questionnaire (Appendix A) to determine the status of women's athletic training programs in selected colleges and universities. The questionnaire was developed by Meyer and the researcher. Permission to use portions of Dr. Meyer's dissertation, "Development of a Scorecard to Evaluate Intercollegiate Athletic Training Facilities and Services," was granted via telephone conversation in December of 1980 and later verified in writing (Appendix B).

A pilot study to identify problem areas in answering the questionnaire and also to validate the questionnaire was conducted on the 1980 Autumn Quarter class of P.E. 512 (Research in Physical Education) at Montana State University. The questionnaire and introductory letter were also given to five members of the athletic training staff and the women's athletic director at Montana State University to elicit their responses. Upon completion of the pilot study, page one of the questionnaire was revised for increased clarity.

The revised questionnaire was mailed April 17, 1981 to selected women's athletic administrators in A.I.A.W. Region

6 with the request that the questionnaire be forwarded to the person on staff best acquainted with the resources of their women's athletic training program. Also included in the initial mailing was an introductory letter including instructions for completing and returning the questionnaire (Appendix C) and a stamped, self-addressed envelope for returning the questionnaire.

A follow-up letter (Appendix D) was sent May 5, 1981 along with another questionnaire to those who failed to respond to the first mailing.

A total of 34 responses were received from the initial mailing. Eighteen additional responses were received from the follow-up, for a total of 52 responses, or an overall return of 71 percent.

Results of the Data

The data collected were transferred to computer code sheets and cards were key punched by the Montana State University Testing Service. With the assistance of Dr. Al Suvak, the cards were then tabulated and totaled. Percentage of those responding yes, percentage of those responding no, and percentage of those omitting a question, were computed for each item on the questionnaire.

The results were grouped into 13 categories: (1) personnel, game coverage, (2) personnel, practice coverage, (3) training room availability and accessibility, (4) general training room characteristics, (5) athletic training services available, (6) physician services available, (7) taping area, (8) hydrotherapy area, (9) physical and thermal therapy area, (10) electrotherapy area, (11) training room office, (12) general training room supplies, and (13) general training room equipment.

The data obtained from the questionnaire is presented and analyzed in Chapter 3.

CHAPTER 2

SURVEY OF RELATED LITERATURE

Although athletic training programs have been in existence for a number of years, many people not directly involved with athletics, are unaware of the purpose, the function, and the need for such programs. It was, therefore, the intent of this review of literature to inform the reader as to the historical background of the athletic training profession, the nature and incidence of injuries to female collegiate athletes, and the standards and status of women's collegiate athletic training programs currently in operation.

Athletic Training: A Historical Perspective

Concern with prevention and care of injuries resulting from physical activity has existed since the beginning of time. The origin of sport and medicine can be traced back to the Panhellenic Games of ancient Greece, the most famous of which were the Olympic Games. Athletic trainers of that time were called paidotribes, aleittes, and gymnastes. Their role was to help athletes attain their ultimate potential by advising them in regard to performance factors such as nutrition, rest, and physical training. The use of

massage was also a major part of their job. Herodicus of Megura is believed to be the greatest of the Greek trainers. He was also known as a doctor and the advisor of Hippocrates, the "father of modern medicine." (O'Shea 1980:3-4)

The gladiatorial schools of ancient Rome also utilized professional trainers. Claudius Galen was working as a trainer and physician as early as 160 A.D. After the time of Galen and concomitant with the fall of Rome, interest in athletics died.

A resurgence in athletic training was not seen until the 1900's when intercollegiate athletics, and football in particular, began to flourish and a need arose for trainers to care for the inevitable injuries. The profession of athletic training, as we know it today, came into being during this time. As more and more trainers took to practicing their skills, they began to meet and exchange ideas, treatments, and future goals they saw for their profession. In 1938, a national organization for athletic trainers was formed, but by 1944 it had dissolved due to war-time conditions of low finances and dwindling membership. Athletic trainers were not disorganized for long. In 1950 the structure of the National Athletic Trainers Association (N.A.T.A.) was completed and is still in

existence today. The N.A.T.A. chose an official emblem, adopted a code of ethics, and began an official publication entitled Athletic Training, The Journal of the NATA.

(O'Shea 1980)

As concern regarding athletic training grew through the years, so did the membership of the N.A.T.A. Competency and professionalism were continually stressed as was evidenced by the development of approved educational curriculums in 1969 and the implementation of a national certification test in 1970. Soon the N.A.T.A. began to be recognized and respected by other associations promoting and maintaining safety in sport.

In 1974, the N.A.T.A. committee on professional education officially defined athletic training as "The art and science of prevention and management of injuries at all levels of athletic activity" and an athletic trainer as "one who is a practitioner of athletic training." (O'Shea 1980:80) Today athletic training is a vital and growing profession and the nationally certified athletic trainer is recognized as an essential and fundamental part of the athletic health care team.

Injuries to Women: Nature and Incidence

Before any practical application of athletic training programs for women can be put into action, it is necessary that the nature and incidence of injuries that occur to women in sport be understood. In 1973 the American Medical Association Committee on the Medical Aspects of Sport delivered its judgement that women should be able to participate in any type of sport. In concurrence with that announcement, they encouraged researchers to examine the potential for injuries and also the character of such injuries.

(Haycock 1980:411-412) It is only within the past decade that attempts have been made to investigate this problem.

Kosek (1973) conducted a two-year study at the University of Washington on injuries sustained by women participating on competitive club teams. The sports of field hockey, basketball, and track and field were chosen for study. Injury rates were computed as number of injuries per 10 participants per 100 exposures to adjust for the variables of season length and number of team participants. An injury was defined as the inability of an athlete to participate fully in a practice or game. Results showed that track and field athletes sustained the greatest number of injuries, followed by basketball and field hockey participants. The five most prevalent

injuries reported were sprains, muscle strains, tendonitis, contusions, and patellar problems. Due to the findings of this study, the University of Washington has placed greater emphasis on preseason conditioning programs for all athletes.

In 1974, Graham and Bruce studied 28 colleges in Virginia with the purpose of determining the injuries that occurred during the 1974-75 intercollegiate sports season. The sports of archery, basketball, fencing, golf, lacrosse, swimming, tennis, field hockey and volleyball were surveyed and reported. At the time of the survey, only two Virginia colleges employed certified athletic trainers and, as a result, student trainers completed 53 percent of the forms and coaches completed 26 percent of the survey materials. Graham and Bruce suggested that the lack of certified trainers schooled in injury recognition may have lessened the validity of the injury reporting. Their results, based on the percentage of injuries per player, showed basketball had the highest injury rate. Field hockey and volleyball ranked second and third, respectively. The four most commonly reported injuries were sprains, strains, contusions, and simple fractures. Although basketball tallied the greatest percentage of injuries per player, it was found that volleyball players exhibited the highest percentage of

disabling injuries. A disabling injury was defined by Graham and Bruce as one resulting in nonparticipation for seven or more consecutive days. It was also noted that 44.1 percent of all injuries in all sports were reinjuries.

Gillette (1975) surveyed 781 colleges and universities during the 1973-74 school year to find out the number and types of injuries that were sustained by the participating female varsity athletes. Data were collected on 19 sports. Based on the total number of injuries reported per sport, basketball had the most injuries, followed by volleyball, field hockey, and gymnastics. Sprained ankles and knee injuries were cited as the two most common impairments. Gillette suggested that injuries could be reduced by improving training techniques to include weight training preseason, in season, and postseason, and also the utilization of women's athletic trainers.

In 1976, Haycock collaborated with Gillette to present the combined results of three independent surveys. The three studies included Gillette's survey of 781 institutions, a second survey by Gillette of 300 certified athletic trainers eliciting specific injuries per sport, and a third survey by Haycock of the same 300 certified athletic trainers asking opinions on sports injuries as related to the sex of the athlete. Responses indicated

that the greatest variety of injuries occurred in basketball, volleyball, and gymnastics, but the most serious injuries, such as major fractures, head injuries, and dislocations, occurred in basketball, field hockey, softball, and gymnastics. Those surveyed stressed the need for qualified women coaches and trainers at all levels. Haycock and Gillette concluded that female athletes experience the same type of injuries at a similar rate to male athletes competing in sports activities. Only patellar problems seem to be seen more frequently in the female population. (1976:165)

Eisenberg and Allen (1978) followed 110 varsity female athletes participating in eight sports over a single season. Data indicated that softball recorded the highest number of injuries per week followed by gymnastics, volleyball, track and field, and basketball. Sprains and strains were the most common impairments reported and the most frequent sites of injury were the knee/leg and the ankle/foot.

The findings of the National Athletic Injury/Illness Reporting System (NAIRS) for the first three years of operation, were reported by Clarke and Buckley in 1980. The NAIRS program was founded in 1974 by Dr. Kenneth S. Clarke and established a long awaited tool for collecting, storing, retrieving, and interpreting data on athletic

injuries and accidents on a continual basis. The NAIRS differed from previous systems designed to collect information in several ways. It required no specially trained investigators, no game film analysis, and it utilized the already present certified athletic trainer as the recorder of injuries or as the supervisor of a competent student trainer for that function. Those institutions employing NAIRS submitted weekly reports of individual injury cases. These, in turn, were stored in a computer bank and computer profiles of individual cases were sent on a monthly basis to the cooperating schools. The profiles served as a medical record as well as a double check of the data submitted. Yearly summaries of injury frequency and patterns were also made available through the NAIRS.

As defined in NAIRS reporting, a significant injury is one causing an athlete to miss one week of participation. Based on the NAIRS data collected from 1975-1978, in the sport of gymnastics, 28.4 out of every 100 athletes suffered a significant injury. Basketball reported 20.3 injuries per 100 participants, track and field 12 per 100, volleyball 10.9 per 100, and softball 8.7 per 100 athletes. Field hockey, swimming, and tennis recorded 5.5, 2.3, and 5.7 significant injuries per 100 athletes, respectively.

Data were also analyzed per "athletic exposure" which provided an equalizer for comparing sports of varying seasonal length. When utilizing significant injuries per 1000 athletic exposures, gymnastics once again recorded the highest frequency (2.7) followed by basketball (2.5), track and field (2.2), volleyball (2.1), softball (1.8), and field hockey (1.0). Tennis and swimming reported less than one significant injury per 1000 athletic exposures. When comparing injury frequency among men's and women's sports, one interesting finding was the similarity between women's gymnastics, a noncontact sport, with men's contact sports, such as football and ice hockey. In general, women tended to have a higher number of injuries to the lower extremities. Clarke and Buckley summarized by saying that injuries to women were sport-related, not sex-related.

(1980:190)

Whiteside (1978:69) also used data from the NAIRS from 1975-77 to conduct an epidemiological examination of injuries related to the sports of basketball, field hockey, gymnastics, and softball. The purpose of her study was to gain knowledge of mechanism of injuries and illnesses in order to form a basis for preventive steps. Whiteside listed the ankle/foot, hip/leg, knee, and forearm/hand as the four areas of greatest injury incidence. The study

also reported that the highest frequency of injuries to female basketball players occurred during the fourth quarter of a game and the last half of practice. In field hockey, the first quarter of a game and the last half of practice resulted in the greatest injury levels. The highest incidence of gymnastic injuries were displayed during the second event of a meet and the midportion of practice. Softball injuries were greatest during the last half of games and the first and third quarters of practice time. Whiteside concluded by stating:

...the number of injuries was generally higher in practice as opposed to a game situation. However, the relative frequency reflected that the number of injuries that occurred in practice were in proportion to the amount of time the athlete was at risk. Overall, the incidence of injury was higher in a game situation for both men and women according to 1,000 athletic exposures.

Current Athletic Training Programs: Status

Although the need for athletic training programs has been firmly established, the status of existing programs is unclear in regard to the literature available. On the high school level, a study published by Yeager (1974) concerning the evaluation of health care for the high school athlete in 18 states, summarized the situation as "barbaric." In a study of 216 Michigan High Schools, Redfearn (1975) reported the majority provided "no care at all" with regard

to athletic injuries. Marshall's studies indicated that less than ten percent of the nation's 22,000 high schools provided adequate medical care for student athletes.

(Kegerreis 1979:78) Studies by Deglow (1969), Bowers (1976), Martin (1977), and Wren and Ambrose (1980)

substantiate the inferiority of athletic health care at the high school level.

The situation at the collegiate level was difficult to document.

The void, however, has been in data that would discern patterns of injury for guiding preventive courses of action, and reveal the immediate availability of health supervisory personnel to athletes for minimizing the trauma of injury. (Calvert and Clarke 1979:445)

The National Association for Girls and Women in Sport (NAGWS) Athletic Training Council surveyed all A.I.A.W. institutions during the 1979-80 school year in regard to their athletic training services available to women. To date, the results of that survey have not been published and were unavailable.

In 1979, Calvert and Clarke reported the results of a United States Department of Health, Education and Welfare (HEW) survey of injuries and deaths in secondary schools and colleges as pertaining to athletics. The study was mandated by Section 826 of Public Law 93-380 and was signed

into law by President Ford in August of 1974. The intent of the study was twofold. It was hoped to determine the extent of sports' injuries in order to examine how they might be prevented or reduced, and Congress was also interested in the qualifications of the people caring for athletes and the relationship, if any, the quality of personnel had on injury rates. The resulting survey was the first to collect data on relative incidence of injuries and deaths in sports programs conducted by educational institutions on both a state-by-state and national basis.

Results showed that at the time of the survey (1974-76), 450,000 people were participating in varsity athletics at two- and four-year colleges and universities. Of those 450,000 participants, 27 percent constituted women at two-year schools and 29 percent were women at four-year institutions. In regard to the status of personnel, the HEW study stated that the coach or assistant coach was the most frequently used emergency health care resource person and that this condition occurred most often in the smaller institutions. Larger schools and those offering football had much higher percentages of athletic trainers. Eighty-five percent of all injuries to women occurred when a health care person was available. It was also noted that availability of health care personnel was equal at

practices and competitions. Clarke and Calvert stated that as a whole, institutions were not prepared for a study of athletic injuries, as few had orderly or systematic records of accidents and injuries. They also pointed out that, "despite the expectation of injuries in any sport, many colleges seem ill-prepared for minimum readiness; that is, the presence of a person delegated and qualified to render emergency first-aid care." (Calvert and Clarke 1979:463)

Concerning injury prevention, Calvert and Clarke stated that institutions must dedicate themselves to planned health care and quality supervision of all sports programs. They further recommended that coaches and assistant coaches not be depended upon as the major source of emergency first-aid care and that qualified athletic trainers were available and should be employed. An emergency care plan should be designed for all sports and the costs of quality health care personnel and injury recording should be considered a normal and necessary part of the operating budget at all institutions.

The study also yielded several recommendations regarding the role of government in sports safety. These included:

1. Sports medicine should be recognized and supported by private and government funding as a genuine field for qualified researchers.
2. Those states that intended to better sports health care and supervision, with the assistance of institutions of higher education, should have funding available on a matching or competitive basis.
3. Each institution should design and implement a health care system that would include emergency first aid plus transportation to a better health care facility, should the need arise.
4. Colleges and universities should be advised to keep quality health care records of accidents and injuries that could be readily available for periodic evaluation and study. (Calvert and Clarke 1979:465-66)

Current Standards

Marge Albohm, A.T.C., developed standards for minimal sports medicine coverage for women's competitions in the Big Ten Conference. They included the presence of a certified athletic trainer (A.T.C.) with a physician in attendance or on call for the sports of basketball,

gymnastics, volleyball, field hockey, track, softball, and swimming and diving. For the sports of tennis and golf, a qualified student trainer in attendance with an A.T.C. on call was required. The minimal services to be provided by the host team included: (1) emergency transportation on call, (2) availability of ice, (3) accessibility to area for taping, (4) accessibility to treatment modalities and, (5) availability of water. (Indiana University 1981)

Standards for on-court equipment for practices and games, equipment to be located in the training room, first-aid kit items, and additional procedures, were developed and endorsed for all institutions by the NAGWS Special Committee on Athletic Training.

To this researcher's knowledge, the N.A.T.A. has no formal standards for minimal equipment, services, or personnel to aid in the health care of athletes. This presents a problem when attempting to determine the status of existing programs. The lack of a standard tool for evaluation that was comprehensive, as well as reliable, was also a problem. In 1979, Meyer developed a tool specifically designed for athletic training program evaluation. In her dissertation entitled, "Development of a Scorecard to Evaluate Intercollegiate Athletic Training Facilities and Services," Meyer reiterated the need for formal guidelines

for use in evaluating existing programs and also to serve as an aid in the development of new programs. In designing her scorecard, Meyer sent athletic training item checklists to the program directors of 50 N.A.T.A. approved athletic training educational programs. Those trainers who completed the item checklists made up the national panel of athletic training experts. Each item listed was assigned a point value. Those items assigned a 20 point value were rated as absolutely essential; items given a 15 point rating were highly desirable; those assigned a ten point value were desirable; and those items worth five points were considered nonessential to the establishment of a quality athletic training program. The national panel of athletic training experts checked those items that were included in the athletic training facilities and/or services at their institutions. The data obtained from the panel of experts were analyzed to develop the final scorecard. (Meyer 1979) Through the development of her scorecard, Dr. Meyer may well prove to be a leader in the field of establishing norms and formal guidelines for intercollegiate athletic training programs.

CHAPTER 3

ANALYSIS OF DATA

Data presented in this chapter were collected from 52 colleges and universities within the A.I.A.W. Division III, Region Six classification. Questionnaires were sent to 73 institutions and the resulting data were collected, tabulated, totaled, and percentages computed. Fifty-two respondents returned the questionnaire, for a 71 percent response.

The data obtained from the questionnaire were presented in 13 areas: (1) personnel, game coverage, (2) personnel, practice coverage, (3) training room availability and accessibility, (4) general training room characteristics, (5) athletic training services available, (6) physician services available, (7) taping area, (8) hydrotherapy area, (9) physical and thermal therapy area, (10) electrotherapy area, (11) training room office, (12) general training room supplies, and (13) general training room equipment.

The first page of the questionnaire surveyed personnel employed during the game and practice situations. Data obtained regarding this area are presented in Tables 1-18.

Table 1 indicates the percentage of institutions having a certified athletic trainer (A.T.C.) in attendance at competitive events. Thirteen, or 25 percent, of those responding had a certified trainer present at basketball games. Volleyball, softball, and track and field had comparable A.T.C. attendance with 15, 13, and 12 percent, respectively. Of the five institutions responding to gymnastics, only one had a certified athletic trainer in attendance during meets.

Table 1. Certified Trainer Present at Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	13	25	25	48	14	27
Volleyball	8	15	32	62	12	24
Gymnastics	1	2	4	8	47	91
Track & Field	6	12	25	48	21	41
Softball	7	13	22	42	23	45

Total Number of Responses = 52

Table 2 shows the percentage of institutions having a certified athletic trainer present during practice sessions. As was the case in competitive situations, basketball had the greatest percentage of A.T.C. attendance at practices with 17 percent. Percentage of softball practices attended by an athletic trainer was six percent, at volleyball and track and field, practices four percent, and at gymnastics, practices two percent.

Table 2. Certified Trainer Present at Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	9	17	27	52	16	31
Volleyball	2	4	34	65	16	31
Gymnastics	1	2	4	8	47	91
Track & Field	2	4	26	50	24	47
Softball	3	6	23	44	26	51

Total Number of Responses = 52

Table 3 illustrates the percentage of institutions having a certified athletic trainer on call during competitions. Of those responding, volleyball had the greatest percentage of certified trainers on call, with 27 percent. Basketball and track and field followed closely, both with 25 percent. Trainers on call during softball competitions totaled 17 percent and gymnastics reported eight percent.

Table 3. Certified Trainer On Call During Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	13	25	22	42	17	33
Volleyball	14	27	23	44	15	29
Gymnastics	4	8	4	8	44	85
Track & Field	13	25	18	35	21	41
Softball	9	17	18	35	25	49

Total Number of Responses = 52

The percentage of institutions having a certified athletic trainer on call during practice sessions is shown in Table 4. Thirty-seven percent of the institutions responding to volleyball had an A.T.C. on call during practices. Basketball and track and field each tallied 31 percent, followed by softball with 21 percent and gymnastics with 10 percent.

The percentage of schools having a certified trainer on call during practice sessions was greater, in relation to each of the five sports, than the percentage of institutions having an A.T.C. on call during competitive events.

Table 4. Certified Trainer On Call During Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	16	31	21	40	15	29
Volleyball	19	37	20	38	13	26
Gymnastics	5	10	3	6	44	85
Track & Field	16	31	14	27	22	43
Softball	11	21	17	33	24	47

Total Number of Responses = 52

Table 5 denotes the percentage of institutions having a student trainer present during competitive events. Forty institutions, or 77 percent of those responding, had a student trainer in attendance at basketball games.

Seventy-five percent of those schools offering volleyball had a student trainer in attendance, followed by track and field with 52 percent, and softball with 40 percent.

Table 5. Student Trainer Present at Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	40	77	7	13	5	10
Volleyball	39	75	9	17	4	8
Gymnastics	6	12	2	4	44	85
Track & Field	27	52	10	19	15	29
Softball	21	40	11	21	20	39

Total Number of Responses = 52

Table 6 indicates the percentage of institutions having a student trainer present at practice sessions. The results very closely parallel those seen in Table 5. Sixty-nine percent of those responding had a student trainer in attendance at volleyball practices, and 67 percent had a student trainer present during basketball practice sessions.

Table 6. Student Trainer Present at Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	35	67	12	23	5	10
Volleyball	36	69	12	23	4	8
Gymnastics	7	13	1	2	44	85
Track & Field	26	50	11	21	15	29
Softball	18	35	14	27	20	39

Total Number of Responses = 52

The percentage of institutions having a student trainer on call during competitions is presented in Table 7. Track and field respondents totaled 15 percent, basketball and volleyball 12 percent, softball ten percent, and gymnastics six percent.

Table 7. Student Trainer On Call During Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	6	12	20	38	26	51
Volleyball	6	12	19	37	27	52
Gymnastics	3	6	3	6	46	89
Track & Field	8	15	16	31	28	54
Softball	5	10	14	27	33	64

Total Number of Responses = 52

Table 8 shows the percentage of institutions having a student trainer on call during practice sessions. Schools responding to basketball, track and field, softball, and volleyball all exhibited similar totals.

Table 8. Student Trainer On Call During Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	9	17	18	35	25	49
Volleyball	8	15	17	33	27	52
Gymnastics	3	6	3	6	46	89
Track & Field	9	17	14	27	29	56
Softball	9	17	13	25	30	58

Total Number of Responses = 52

The percentage of institutions having a physician present at competitive events is indicated in Table 9. Percentages were very low. Respondents to basketball stated only five institutions, or ten percent, had a physician present during competitions. Volleyball, track and field, and softball tallied two percent and no institution responded yes in regard to the sport of gymnastics.

Table 9. Physician Present at Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	5	10	31	60	16	31
Volleyball	1	2	35	67	16	31
Gymnastics	0	0	5	10	47	91
Track & Field	1	2	28	54	23	45
Softball	1	2	26	50	25	49

Total Number of Responses = 52

Table 10 shows the percentage of institutions having a physician present during practice sessions. As can be seen, this use of personnel is nearly nonexistent.

Table 11 illustrates the proportion of schools having a physician on call during competitive events. Thirty-eight, or 73 percent, of those responding had a physician on call during basketball and volleyball competitions. A physician was on call during 54 percent of those competitive events held in the sports of softball and track and field.

Table 10. Physician Present at Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	1	2	33	63	18	35
Volleyball	1	2	34	65	17	33
Gymnastics	0	0	5	10	47	91
Track & Field	1	2	27	52	24	47
Softball	1	2	27	52	24	47

Total Number of Responses = 52

Table 11. Physician On Call During Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	38	73	7	13	7	14
Volleyball	38	73	9	17	5	10
Gymnastics	5	10	2	4	45	87
Track & Field	28	54	8	15	16	31
Softball	28	54	6	12	18	35

Total Number of Responses = 52

Table 12 indicates the percentage of institutions having a physician on call during practice sessions. The results are nearly identical to those exhibited in Table 11.

Table 13 shows the proportion of schools having a nurse on call during competitive events. Once again, basketball and volleyball led the way, with 48 percent responding yes.

The percentage of institutions having a nurse on call during practice sessions is shown in Table 14. The results closely correspond to those found in Table 13.

Table 12. Physician On Call During Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	38	73	7	13	7	14
Volleyball	36	69	9	17	7	14
Gymnastics	5	10	2	4	45	87
Track & Field	27	52	7	13	18	35
Softball	28	54	6	12	18	35

Total Number of Responses = 52

Table 13. Nurse On Call During Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	25	48	15	29	12	24
Volleyball	25	48	16	31	11	22
Gymnastics	2	4	4	8	46	89
Track & Field	16	31	14	27	22	43
Softball	17	33	12	23	23	45

Total Number of Responses = 52

Table 14. Nurse On Call During Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	24	46	13	25	15	29
Volleyball	25	48	13	25	14	27
Gymnastics	3	6	3	6	46	89
Track & Field	15	29	13	25	24	47
Softball	17	33	11	21	24	47

Total Number of Responses = 52

Table 15 displays the percentage of institutions having an orthopedic surgeon on call during competitive events.

The percentage of institutions having an orthopedic surgeon on call during practice sessions is presented in Table 16. Data is nearly identical to that reported in Table 15.

Table 15. Orthopedic Surgeon On Call During Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	21	40	16	31	15	29
Volleyball	20	38	18	35	14	27
Gymnastics	2	4	4	8	46	89
Track & Field	13	25	15	29	24	47
Softball	13	25	13	25	26	50

Total Number of Responses = 52

Table 16. Orthopedic Surgeon On Call During Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	21	40	14	27	17	33
Volleyball	20	38	16	31	16	31
Gymnastics	2	4	4	8	46	89
Track & Field	14	27	14	27	24	47
Softball	15	29	13	25	24	47

Total Number of Responses = 52

Table 17 denotes the percentage of institutions having personnel, other than those previously listed, responsible for first aid and the health care of female athletes. The majority of those responding "other" named that person as a coach or assistant coach. One institution responded that an Emergency Medical Technician was responsible for first aid and health care of athletes at competitive events.

Table 18 shows the percentage of schools having personnel, other than those previously listed, responsible for first aid and health care of female collegiate athletes during practice sessions. The percentage of positive responses are identical to those displayed in Table 17.

Table 17. Other Personnel Responsible at Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	9	17	5	10	38	74
Volleyball	9	17	4	8	39	76
Gymnastics	0	0	4	8	48	93
Track & Field	7	13	4	8	41	79
Softball	7	13	2	4	43	83

Total Number of Responses = 52

Table 18. Other Personnel Responsible During Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Basketball	9	17	4	8	39	76
Volleyball	9	17	3	6	40	77
Gymnastics	0	0	4	8	48	93
Track & Field	7	13	3	6	42	81
Softball	7	13	2	4	43	83

Total Number of Responses = 52

Tables 19-28 summarize the utilization of all categories of personnel at practices and competitions relative to a specific sport.

A summary of health care personnel utilized by institutions during basketball games is given in Table 19. The person employed by the greatest percentage of institutions was the student trainer. A student trainer was in attendance at 77 percent of the basketball games of those schools responding. A physician on call was employed by 73 percent of the institutions.

Table 19. Health Care Personnel for Basketball Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	13	25	25	48	14	27
Certified Trainer On Call	13	25	22	42	17	33
Student Trainer Present	40	77	7	13	5	10
Student Trainer On Call	6	12	20	38	26	51
Physician Present	5	10	31	60	16	31
Physician On Call	38	73	7	13	7	14
Nurse On Call	25	48	15	29	12	24
Orthopedic Surgeon On Call	21	40	16	31	15	29
Other	9	17	5	10	38	74

Total Number of Responses = 52

Table 20 summarizes the health care personnel responsible during basketball practices at the responding institutions. As was the case concerning basketball games, the student trainer and the physician on call were the most widely employed personnel.

Table 20. Health Care Personnel for Basketball Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	9	17	27	52	16	31
Certified Trainer On Call	16	31	21	40	15	29
Student Trainer Present	35	67	12	23	5	10
Student Trainer On Call	9	17	18	35	25	49
Physician Present	1	2	33	63	18	35
Physician On Call	36	69	9	17	7	14
Nurse On Call	24	46	13	25	15	29
Orthopedic Surgeon On Call	21	40	14	27	17	33
Other	9	17	4	8	39	76

Total Number of Responses = 52

Table 21 shows the health care personnel responsible for the athletes participating in volleyball competitions as reported by the cooperating institutions. Only two percent of volleyball competitions were attended by a physician and only 15 percent of competitions had a certified athletic trainer in attendance.

Table 21. Health Care Personnel for Volleyball Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	8	15	32	62	12	24
Certified Trainer On Call	14	27	23	44	15	29
Student Trainer Present	39	75	9	17	4	8
Student Trainer On Call	6	12	19	37	27	52
Physician Present	1	2	35	67	16	31
Physician On Call	38	73	9	17	5	10
Nurse On Call	25	48	16	31	11	22
Orthopedic Surgeon On Call	20	38	18	35	14	27
Other	9	17	4	8	39	76

Total Number of Responses = 52

A summary of health care personnel employed by the responding institutions during volleyball practice sessions is presented in Table 22. A certified athletic trainer was present at only four percent of all volleyball practices.

Table 22. Health Care Personnel for Volleyball Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	2	4	34	65	16	31
Certified Trainer On Call	19	37	20	38	13	26
Student Trainer Present	36	69	12	23	4	8
Student Trainer On Call	8	15	17	33	27	52
Physician Present	1	2	34	65	17	33
Physician On Call	36	69	9	17	7	14
Nurse On Call	25	48	13	25	14	27
Orthopedic Surgeon On Call	20	38	16	31	16	31
Other	9	17	3	6	40	77

Total Number of Responses = 52

Table 23 summarizes the data collected in regard to the health care personnel employed during gymnastics competitions by the responding institutions. The student trainer was the most frequently used personnel.

Table 23. Health Care Personnel for Gymnastics Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	1	2	4	8	47	91
Certified Trainer On Call	4	8	4	8	44	85
Student Trainer Present	6	12	2	4	44	85
Student Trainer On Call	3	6	3	6	46	89
Physician Present	0	0	5	10	47	91
Physician On Call	5	10	2	4	45	87
Nurse On Call	2	4	4	8	46	89
Orthopedic Surgeon On Call	2	4	4	8	46	89
Other	0	0	4	8	48	93

Total Number of Responses = 52

The health care personnel utilized by the cooperating institutions during gymnastics practice sessions is outlined in Table 24. The results closely parallel those found in Table 23.

Table 24. Health Care Personnel for Gymnastics Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	1	2	4	8	47	91
Certified Trainer On Call	5	10	3	6	44	85
Student Trainer Present	7	13	1	2	44	85
Student Trainer On Call	3	6	3	6	46	89
Physician Present	0	0	5	10	47	91
Physician On Call	5	10	2	4	45	87
Nurse On Call	3	6	3	6	46	89
Orthopedic Surgeon On Call	2	4	4	8	46	89
Other	0	0	4	8	48	93

Total Number of Responses = 52

Table 25 shows the health care personnel responsible for female athletes during track and field competitions at the responding institutions. The personnel utilized most often were the student trainer and the physician on call.

Table 25. Health Care Personnel for Track and Field Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	6	12	25	48	21	41
Certified Trainer On Call	13	25	18	35	21	41
Student Trainer Present	27	52	10	19	15	29
Student Trainer On Call	8	15	16	31	28	54
Physician Present	1	2	28	54	23	45
Physician On Call	28	54	8	15	16	31
Nurse On Call	16	31	14	27	22	43
Orthopedic Surgeon On Call	13	25	15	29	24	47
Other	7	13	4	8	41	79

Total Number of Responses = 52

Table 26 indicates the personnel employed by the institutions to maintain the health care of female athletes during track and field practice sessions. The certified athletic trainer was present at only four percent of track and field practices, as compared to 12 percent of competitions.

Table 26. Health Care Personnel for Track and Field Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	2	4	26	50	24	47
Certified Trainer On Call	16	31	14	27	22	43
Student Trainer Present	26	50	11	21	15	29
Student Trainer On Call	9	17	14	27	29	56
Physician Present	1	2	27	52	24	47
Physician On Call	27	52	7	13	18	35
Nurse On Call	15	29	13	25	24	47
Orthopedic Surgeon On Call	14	27	14	27	24	47
Other	7	13	3	6	42	81

Total Number of Responses = 52

The health care personnel employed by the responding institutions during softball competitions to maintain the health care of athletes is summarized in Table 27. Notice that the percentage of health care persons that were present at the actual competition was 40 percent in regard to the student trainer, and dropped to 13 percent for the certified athletic trainer, and two percent for the physician.

Table 27. Health Care Personnel for Softball Competitions

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	7	13	22	42	23	45
Certified Trainer On Call	9	17	18	35	25	49
Student Trainer Present	21	40	11	21	20	39
Student Trainer On Call	5	10	14	27	33	64
Physician Present	1	2	26	50	25	49
Physician On Call	28	54	6	12	18	35
Nurse On Call	17	33	12	23	23	45
Orthopedic Surgeon On Call	13	25	13	25	26	51
Other	7	13	2	4	43	83

Total Number of Responses = 52

Table 28 outlines the health care personnel employed during softball practices by the responding institutions. The student trainer was the person most often present at softball practices and only then, at 35 percent of the institutions responding. A physician or certified athletic trainer was present at less than ten percent of the institutions surveyed at softball practices.

Table 28. Health Care Personnel for Softball Practices

Response	Yes		No		Omit	
	N	%	N	%	N	%
Certified Trainer Present	3	6	23	44	26	51
Certified Trainer On Call	11	21	17	33	24	47
Student Trainer Present	18	35	14	27	20	39
Student Trainer On Call	9	17	13	25	30	58
Physician Present	1	2	27	52	24	47
Physician On Call	28	54	6	12	18	35
Nurse On Call	17	33	11	21	24	47
Orthopedic Surgeon On Call	15	29	13	25	24	47
Other	7	13	2	4	43	83

Total Number of Responses = 52

Table 29 summarizes the availability and accessibility of the training rooms included in the study. Forty-eight, or 92 percent of those responding stated that their training room was available to all athletes before practice and games. Seventy-nine percent said their training room was accessible from the hallway, and 38 percent stated their facility was accessible from both the men's and women's locker room areas.

Table 30 shows the responses related to general training room characteristics. A curtained off area or private examination room was lacking in the majority of training rooms. Forty-six percent of the responding institutions indicated that their training facility did not have adequate ventilation. Twenty-five percent of the schools responded they did not have good nonglare overhead lighting.

The percentage of institutions offering various athletic training services is outlined in Table 31. All responding institutions offered protective taping and 96 percent utilized preventive taping. Only 52 percent offered nutritional guidance and 23 percent had electrotherapy services. Of particular interest was the fact that ten percent of the responding schools stated they did not offer first aid and injury evaluation.

Table 29. Training Room Availability/Accessibility

Response	Yes		No		Omit	
	N	%	N	%	N	%
Available to all athletes before games	48	92	2	4	2	4
Available to all athletes before practice	48	92	2	4	2	4
Available for rehabilitative work throughout the school day	28	54	20	38	4	8
Available for rehabilitative work during specific hours (ex: 2:00-4:00 pm)	28	54	9	17	15	29
Available to all athletes for all services only during specific hours	20	38	17	33	15	29
Appointment scheduling for specific needs	30	58	8	15	14	27
Accessible from hallway	41	79	6	12	5	10
Accessible from outside	9	17	34	65	9	18
Accessible from men's and women's locker room areas	20	38	24	46	8	16
Accessible from men's and women's locker room areas and from the hall	17	33	24	46	11	22
Accessible from men's locker room only	7	13	31	60	14	27
Accessible from women's locker room only	6	12	36	69	10	20

Total Number of Responses = 52

Table 30. General Training Room Characteristics

Response	Yes		No		Omit	
	N	%	N	%	N	%
Well ventilated	25	48	24	46	3	6
Doors wide enough to permit easy passage of wheel-chairs and stretchers	33	63	16	31	3	6
Good, nonglare overhead lighting	37	71	13	25	2	4
Sufficient outlets for all equipment	35	67	15	29	2	4
Cupboards and storage cupboards for supplies	41	79	9	17	2	4
Adequate source of hot and cold running water	40	77	10	19	2	4
Refrigerator/ice machine	40	77	10	19	2	4
Sink and drainboard areas	32	62	17	33	3	6
Areas that can be curtained off for special procedures	9	17	39	75	4	8

Total Number of Responses = 52

Table 31. Athletic Training Services Available

Response	Yes		No		Omit	
	N	%	N	%	N	%
Conditioning/Evaluation/ Program Development	36	69	13	25	3	6
Accident Reporting/ Record Keeping	39	75	13	25	0	0
Electrotherapy	12	23	37	71	3	6
Hydrotherapy	38	73	12	23	2	4
Preventive Taping	50	96	2	4	0	0
Protective Taping	52	100	0	0	0	0
Massage	32	62	18	35	2	4
Rehabilitation	44	85	8	15	0	0
Nutritional Guidance	27	52	24	46	1	2
First Aid/Injury Evaluation	47	90	5	10	0	0
Preseason Physical Examinations	37	71	15	29	0	0
Physical Therapy	23	44	25	48	4	8
Medication: Do's and Dont's	26	50	21	40	5	10
Transportation of Injured Athletes From Court, Field, Etc.	44	85	7	13	1	2

Total Number of Responses = 52

Table 32 summarizes the physician services available at the cooperating institutions. Physician services were widely used by the majority of responding schools. The physician service available in only 38 percent of the surveyed institutions was administration of first aid to injured athletes. This low percentage directly correlates to the low percentage of physicians in attendance at competitive events and practice sessions.

Table 32. Physician Services Available

Response	Yes		No		Omit	
	N	%	N	%	N	%
Administer first aid to injured athletes	20	38	28	54	4	8
Administer preseason medical examinations	45	87	6	12	1	2
Decide when injured athlete may resume competition	49	94	2	4	1	2
Diagnose injuries	49	94	2	4	1	2
Recommend rehabilitation programs to the trainer	44	85	7	13	1	2
Serve as an advisor to coaches and athletes	39	75	10	19	3	6

Total Number of Responses = 52

Tables 33-39 show the availability of equipment and supplies as they relate to specific training room areas.

Table 33 shows a summary of responses concerning the taping area in those institutions that replied.

The equipment available in the hydrotherapy area of the responding institutions is shown in Table 34. While 48, or 92 percent, responded yes to having a whirlpool, only 50 percent indicated having electrical outlets four to five feet above floor level, and 31 percent stated they did not have safety breaker outlets for equipment.

Table 33. Taping Area

Response	Yes		No		Omit	
	N	%	N	%	N	%
Adequate tables for taping	38	73	13	25	1	2
Supply cabinets accessible for each table	30	58	20	38	2	4

Total Number of Responses = 52

Table 34. Hydrotherapy Area

Response	Yes		No		Omit	
	N	%	N	%	N	%
Contrast baths	28	54	21	40	3	6
Cyrotherapy	31	60	18	35	3	6
Electrical outlets 4 or 5 feet above floor level	26	50	25	48	1	2
Foot tubs	19	37	29	56	4	8
Ice machine	36	69	16	31	0	0
Raised border curb to prevent water from spilling into other areas	14	27	34	65	4	8
Towels	42	81	9	17	1	2
Whirlpools	48	92	4	8	0	0
Floor drains	39	75	13	25	0	0
Safety breaker outlets for equipment	34	65	16	31	2	4

Total Number of Responses = 52

Table 35 summarizes the furnishings available in the physical and thermal therapy areas of the corresponding schools. Exercise weights were found in 75 percent of the training rooms, while only 37 percent indicated having a hydrocollator. Over one-half of the institutions responded to having equipment to exercise the knee.

Table 35. Physical and Thermal Therapy Area

Response	Yes		No		Omit	
	N	%	N	%	N	%
Exercise Weights	39	75	12	23	1	2
Shoulder Wheel	5	10	43	83	4	8
Knee Exercisers	16	31	33	63	3	6
Ankle Exercisers	16	31	33	63	3	6
Paraffin Baths	5	10	43	83	4	8
Hydrocollator	19	37	29	56	4	8
Traction Unit	5	10	43	83	4	8

Total Number of Responses = 52

The availability of electrotherapy equipment in the replying institutions is presented in Table 36. The general existence of electrotherapy modalities was low.

Table 36. Electrotherapy Area

Response	Yes		No		Omit	
	N	%	N	%	N	%
Treatment Tables	24	46	27	52	1	2
Ultrasound	15	29	35	67	2	4
Diathermy	5	10	44	85	3	6
Infrared	12	23	37	71	3	6
Electric Muscle Stimulator	9	17	40	77	3	6

Total Number of Responses = 52

Table 37 examines the furnishings of the training room office in the responding institutions. Fifty-eight percent indicated having a campus telephone, but only 40 percent answered yes to having a direct outside telephone line. Files for treatment and accident reports were found in 56 percent of the schools.

Table 37. Training Room Office

Response	Yes		No		Omit	
	N	%	N	%	N	%
Located within the training room	26	50	22	42	4	8
File cabinets for treatment and accident reports	29	56	20	38	3	6
Desk and chairs	27	52	22	42	3	6
Direct outside telephone	30	58	18	35	4	8
Lockable cabinet	34	65	15	29	3	6

Total Number of Responses = 52

Table 38 summarizes the general training room supplies available at the institutions surveyed. The most widely utilized items, with over a 90 percent response rate, were sterile gauze pads, massage ointments and lotions, applicators, tape adherent, antiseptic ointment, assorted band-aids, adhesive tape, elastic tape, protective padding, and analgesic ointments. Six percent of the institutions responding stated they had neither adhesive or elastic tape.

Table 38. General Training Room Supplies

Response	Yes		No		Omit	
	N	%	N	%	N	%
Sterile gauze pads	50	96	1	2	1	2
Unsterile gauze pads	34	65	16	31	2	4
Gauze rolls	40	77	10	19	2	4
Massage ointments/lotions	49	94	2	4	1	2
Applicators	50	96	1	2	1	2
Disposable drinking cups	41	79	10	19	1	2
Ammonia capsules	46	88	4	8	2	4
Tape adherent	50	96	0	0	2	4
Eye wash	37	71	14	27	1	2
Salt tablets	40	77	11	21	1	2
Antiseptic ointment	50	96	1	2	1	2
Assorted bandaids	49	94	1	2	2	4
Lubricants	50	96	0	0	2	4
Various medications	36	69	15	29	1	2
Adhesive tape	48	92	3	6	1	2
Elastic tape	48	92	3	6	1	2
Slings	40	77	11	21	1	2
Protective padding	51	98	0	0	1	2
Analgesic ointments	51	98	0	0	1	2
Heel cups	42	81	9	17	1	2

Total Number of Responses = 52

The general training room equipment available at the responding colleges and universities is shown in Table 39. Those pieces of equipment available to 80 percent or greater included stretchers, tape cutters, bandage scissors, field kits, towels, tweezers, and waste baskets.

Table 39. General Training Room Equipment

Response	Yes		No		Omit	
	N	%	N	%	N	%
Stretchers	43	83	7	13	2	4
Spine boards	29	56	20	38	3	6
Cardiopulmonary resuscitation equipment	11	21	38	73	3	6
Wall clock	35	67	15	29	2	4
Timers	15	29	34	65	3	6
High counter with storage space below and wall cabinets above	27	52	22	42	3	6
Tape cutters	48	92	2	4	2	4
Bandage scissors	48	92	3	6	1	2
Nail cutters	40	77	10	19	2	4
Fire extinguisher	26	50	24	46	2	4
Adjustable crutches	40	77	9	17	3	6
Blankets	30	58	21	40	1	2
Field kits	47	90	3	6	2	4
Oral thermometers	33	63	18	35	1	2
Tourniquet	22	42	28	54	2	4
Towels	49	94	2	4	1	2
Tweezers	43	83	8	15	1	2
Eye droppers	34	65	17	33	1	2
Eye cups	31	60	20	38	1	2
Waste baskets	50	96	1	2	1	2
Pen flashlights	27	52	24	46	1	2
Pillows	22	42	29	56	1	2
Oral screw	41	79	9	17	2	4
Goniometer	11	21	39	75	2	4
Tape measures	30	58	20	38	2	4
Anatomical charts/models	27	52	22	42	3	6
Tongue seizing forceps	17	33	31	60	4	8

Total Number of Responses = 52

CHAPTER 4

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the status of women's athletic training programs in selected colleges and universities. More specifically, through the use of a questionnaire, this study attempted to determine: (1) the range of care and supervision provided to female athletes by training personnel, (2) the qualifications of the personnel providing the care and supervision and, (3) the facilities and equipment available for use by the athletes and training personnel.

This study was delimited to seventy-three head women's athletic trainers in the Region Six Association of Inter-collegiate Athletics for Women, Division III institutions, for the 1980-81 school year. It was further delimited to the use of data collected through a questionnaire designed by Meyer and the researcher. The study was limited by the percentage of returned questionnaires and also by the interpretation of the head women's athletic trainers in reply to the questionnaire.

Data for this study was obtained from fifty-two returned questionnaires for a response rate of seventy-one

percent. Responses were tabulated, totaled, and percentages computed by the Montana State University Testing Service for presentation in table form. Data was organized into 13 categories: (1) personnel, game coverage, (2) personnel, practice coverage, (3) training room availability and accessibility, (4) general training room characteristics, (5) athletic training services available, (6) physician services available, (7) taping area, (8) hydrotherapy area, (9) physical and thermal therapy area, (10) electrotherapy area, (11) training room office, (12) general training room supplies, and (13) general training room equipment. The questionnaire responses and the review of related literature provided the basis for drawing conclusions and making recommendations.

Personnel, Game Coverage

Of the five sports surveyed, basketball teams were attended to by the highest percentage of quality health care personnel. The most widely employed personnel for all sports was the student trainer, followed by the physician on call. A certified athletic trainer was present at 25 percent of the basketball competitions and present at less than 20 percent of all other sports competitions. On-call personnel were indicated as being employed much more

frequently than personnel present at actual competitions, with the exception of the student trainer.

Personnel, Practice Coverage

The presence of a certified athletic trainer was a scarcity at practice sessions in regard to all sports. Basketball recorded 17 percent attendance. Softball had six percent attendance, four percent of all volleyball and track and field practices were attended by a certified trainer, and gymnastics reported two percent attendance. The student trainer in attendance and the physician on call were utilized most often by the responding institutions. Personnel categorized as "other" were responsible for health care of athletes more often than a certified athletic trainer in attendance. In most instances, "other" referred to a coach or assistant coach.

Training Room Availability/Accessibility

Ninety-two percent of the respondents indicated the availability of a training room to all athletes before all games and practices. The majority of training rooms were accessible from the hallway and 38 percent were accessible from both the men's and women's locker room areas. Fifty-eight percent responded that appointment scheduling was necessary for specific needs.

General Training Room Characteristics

A curtained off area or private examination area was lacking in the majority of the training rooms surveyed. Forty-six percent indicated that their training facility did not have adequate ventilation and 25 percent replied they did not have good nonglare overhead lighting. Seventy-seven percent did respond yes to having an ice machine or refrigerator.

Athletic Training Services Available

The services available at 85 percent or more of the responding institutions included protective taping, preventive taping, rehabilitation first aid and injury evaluation, and transportation of injured athletes from the court, field, etc. Ten percent of the schools indicated they did not provide first aid and injury evaluation. Physician services were widely used by the majority of institutions.

Specific Areas

Ninety-two percent possessed whirlpools but only 50 percent had electrical outlets four to five feet above the floor level and 31 percent did not have safety breaker outlets for equipment in hydrotherapy area.

The majority of institutions had exercise weights and 63 percent had exercisers specifically for the knee. Thirty-seven percent had a hydrocollator present in the physical and thermal therapy area.

Electrotherapy modalities were present in less than 30 percent of the schools.

A training room complete with record files, telephone, and lockable cabinet was present in over half of the institutions.

The vast majority of equipment and supplies listed were on hand in the training facilities surveyed.

Conclusions

Data obtained from the questionnaire supported the following conclusions in regard to the status of women's athletic training programs at A.I.A.W. Region Six, Division III institutions:

1. Most institutions employed the student trainer as the primary health care personnel present during both competitive events and practice sessions.
2. A certified athletic trainer was a member of the health care team at less than one-third of the institutions.
3. On-call personnel were indicated as being employed much more frequently than personnel present during the

actual competitions and practices, with the exception of the student trainer.

4. The majority of institutions had a physician on call during both games and practices.

5. Basketball teams had the services of the greatest percentage of qualified health care personnel.

6. The attendance of health care personnel, and a certified athletic trainer, in particular, was higher at games than at practice sessions.

7. Physician services were available at the majority of institutions.

8. All responding institutions offered protective taping.

9. Most of the schools offered preventive taping, rehabilitation, first aid and injury evaluation, and transportation of injured athletes from the field or court.

10. Not all responding institutions provided first aid and injury evaluation.

11. The whirlpool was the most widely possessed therapy unit.

12. Thirty-one percent of the responding institutions did not have safety breaker outlets for equipment in the hydrotherapy area.

13. Electrotherapy modalities were not present in the majority of institutions.

14. The majority of institutions had an ice machine or refrigerator.

15. The majority of equipment and supplies surveyed were on hand in the training facilities included in the study.

16. The quality of women's athletic training programs varied greatly from institution to institution.

17. The quality of health care and personnel assigned was inconsistent from sport to sport.

18. Health care provided for female athletes at A.I.A.W. Region Six, Division III institutions seemed less than adequate at some institutions.

Recommendations

Based on the review of related literature and the results of this study, the following recommendations were proposed:

1. The review of related literature pointed out the dearth of information regarding the status of women's athletic training programs currently in existence. It is recommended that further research be conducted in this area to determine the quality and quantity of facilities,

services, and personnel available at institutions of all sizes.

2. Information obtained from the review of related literature indicated that the nature and incidence of injury to female athletes warrant quality health care programs. It is, therefore, recommended that minimal standards and guidelines be developed for all sports programs at all levels.

3. It is recommended that health care programs for student athletes be evaluated at all institutions on a regular basis.

4. Results from this study indicated that quality health care for student athletes was inconsistent from institution to institution and lacking in others. It is recommended that institutions making a commitment to a quality sports program through recruitment of student athletes, financing of athletic scholarships, hiring of quality coaching staffs, and maintenance of quality playing facilities, also make a fundamental commitment to quality health care for each and every athlete.

5. Based on the results of the data, it is recommended that institutions identify the nature and incidence of injury associated with each sport and assign health care personnel based on need rather than visibility

or popularity of sports programs.

6. In reviewing the related literature, the importance of qualified personnel to care for athletic injuries was constantly reiterated. The certified athletic trainer was repeatedly singled out as an essential component of the health care team. It is, therefore, recommended that the employment of a certified athletic trainer be a priority at every institution, not a luxury for a few.

7. Results of the data indicated that on-call personnel were employed much more frequently than personnel present at both games and practice sessions. Because the potential for life threatening emergencies does exist in sports and the potential for catastrophic injury is greater in some sports than others, it is recommended that qualified personnel be in attendance during games, as well as practice sessions, at those sports presenting the greatest risk to athletes.

8. The results of this study indicated that the student trainer was the primary health care personnel present during both competitive events and practice sessions. It is recommended that future studies be done to determine the competency of student trainers by exploring their educational backgrounds. More importantly, it is

recommended that the experiential backgrounds and practical skills of student trainers be thoroughly investigated.

9. This study indicated the attendance of quality health care personnel was higher at games as compared to practice sessions. Although the incidence of injury is higher in a game situation, the total number of injuries that occur is greatest during practice sessions. This reflects the amount of time an athlete is at risk. It is, therefore, recommended that quality personnel be assigned to cover practice sessions, as well as competitions.

10. Data obtained from this study indicated equipment, supplies, and modalities were more often available at institutions than quality personnel. It is, therefore, recommended that institutions develop priorities and devote their resources towards obtaining quality personnel in lieu of supplies, equipment, and modalities.

11. Based on the data collected, 31 percent of the responding institutions did not have safety breaker outlets for equipment in the hydrotherapy area. It is recommended that this lack of attention to safety standards be remedied as soon as possible.

12. It is recommended that the questionnaire used in this study be further tested and refined in the hope that inconsistent and fragmented replies could be eliminated.

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REFERENCES CITED

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APPENDICES

APPENDIX A
Questionnaire

Please check the appropriate yes/no response. If any of the following sports are not included in your intercollegiate program, please leave those areas blank.

PERSONNEL/GAME COVERAGE	BASKETBALL		VOLLEYBALL		GYMNASTICS		TRACK & FIELD		SOFTBALL		GOLF/TENNIS		OTHER:	
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Certified Trainer, Present											/	/		
Certified Trainer, On Call*											/	/		
Student Trainer, Present											/	/		
Student Trainer, On Call											/	/		
Physician, Present											/	/		
Physician, On Call											/	/		
Nurse, On Call											/	/		
Orthopedic Surgeon, On Call											/	/		
Other:**											/	/		

PERSONNEL/PRACTICE COVERAGE	BASKETBALL		VOLLEYBALL		GYMNASTICS		TRACK & FIELD		SOFTBALL		GOLF/TENNIS		OTHER:	
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
Certified Trainer, Present											/	/		
Certified Trainer, On Call*											/	/		
Student Trainer, Present											/	/		
Student Trainer, On Call											/	/		
Physician, Present											/	/		
Physician, On Call											/	/		
Nurse, On Call											/	/		
Orthopedic Surgeon, On Call											/	/		
Other:											/	/		

*On Call

- A. In relation to certified trainers, nurses, and student trainers, the term refers to personnel available on campus, but not specifically in the gymnasium or on the practice field at the time of the practice or game.
- B. In relation to physicians, the term refers to the availability by phone of the physician, with the possibility of meeting the injured athlete at the hospital.

**Other

Other refers to personnel responsible for first aid and health care of athletes other than those listed. Please specify. Examples: Coach, E.M.T.

TRAINING ROOM AVAILABILITY/ACCESSIBILITY	YES	NO
Available to all Athletes Before Games		
Available to all Athletes Before Practice		
Available for Rehabilitative Work Throughout School Day		
Available for Rehabilitative Work During Specific Hours (example 2-4 p.m.)		
Available to all Athletes for all Services Only During Specific Hours		
Appointment Scheduling for Specific Needs		
Accessible from Hallway		
Accessible from Outside		
Accessible from Men's and Women's Locker Room Areas		
Accessible from Men's and Women's Locker Room Areas and from the Hall		
Accessible from Men's Locker Room Only		
Accessible from Women's Locker Room Only		

GENERAL TRAINING ROOM CHARACTERISTICS	YES	NO
Well Ventilated		
Doors Wide Enough to Permit Easy Passage of Wheelchairs and Stretchers		
Good Non-Glare Overhead Lighting		
Sufficient Outlets for All Equipment		
Cupboards and Storage Cabinets for Supplies		
Adequate Source of Hot and Cold Running Water		
Refrigerator/Ice Machine		
Sink and Drainboard Areas		
Areas that Can Be Curtained Off for Special Procedures		

GENERAL TRAINING ROOM SUPPLIES	YES	NO
Sterile Gauze Pads		
Unsterile Gauze Pads		
Gauze Rolls		
Massage Ointments/Lotions		
Applicators		
Disposable Drinking Cups		
Ammonia Capsules		
Tape Adherent (Benzoin Based)		
Eye Wash		
Salt Tablets		
Antiseptic Ointment		
Assorted Band-aids		
Lubricants (Amojell, Dermalube)		
Various Medications		
Adhesive Tape, Varying Widths		
Elastic Tape, Varying Widths		
Slings		
Protective Padding (Foam Rubber, Felt)		
Analgesic Ointments		
Heel Cups		

TRAINING ROOM OFFICE	YES	NO
Located Within the Training Room		
File Cabinets for Treatment and Accident Reports		
Desk and Chairs		
Direct Outside Line Telephone		
Campus Telephone		
Lockable Cabinet		

GENERAL TRAINING ROOM EQUIPMENT	YES	NO
Stretchers		
Spine Boards		
Cardiopulmonary Resuscitation Equipment		
Wall Clock		
Timers		
High Counter with Storage Space Below and Wall Cabinets Above		
Tape Cutters		
Bandage Scissors		
Nail Cutters		
Fire Extinguisher		
Adjustable Crutches		
Blankets		
Field Kits		
Oral Thermometers		
Tourniquet		
Towels		
Tweezers		
Eye Droppers		
Eye Cups		
Waste Baskets		
Pen Flashlights		
Pillows		
Oral Screws		
Goniometer		
Tape Measures		
Anatomical Charts/Models		
Tongue Seizing Forceps		

ATHLETIC TRAINING SERVICES AVAILABLE	YES	NO
Conditioning/Evaluation/Program Development		
Accident Reporting/Record Keeping		
Electrotherapy		
Hydrotherapy		
Preventive Taping		
Protective Taping		
Massage		
Rehabilitation		
Nutritional Guidance		
First Aid/Injury Evaluation		
Preseason Physical Examinations		
Physical Therapy		
Medications: Do's and Don'ts		
Transportation of Injured Athletes from Field, Court, etc.		

PHYSICIAN SERVICES AVAILABLE	YES	NO
Administer First Aid to Injured Athletes		
Administer Preseason Medical Examinations		
Decide When Injured Athlete May Resume Competition		
Diagnose Injuries		
Recommend Rehabilitation Programs to the Trainer		
Recommend Specialists		
Serve as an Advisor to Coaches and Athletes		

TAPING AREA	YES	NO
Adequate Tables for Taping		
Supply Cabinets Accessible for Each Table		

HYDROTHERAPY AREA	YES	NO
Contrast Baths		
Cryotherapy		
Electrical Outlets 4 or 5 Feet Above Floor Level		
Foot Tubs		
Ice Machine		
Raised Border Curb to Prevent Water from Spilling into Other Areas		
Towels		
Whirlpools		
Floor Drains		
Safety Breaker Outlets for Equipment		

PHYSICAL AND THERMAL THERAPY AREA	YES	NO
Exercise Weights		
Shoulder Wheel		
Knee Exercisers-Please List or Describe		
Ankle Exercisers		
Paraffin Baths		
Hydrocollator		
Traction Unit		

ELECTROTHERAPY AREA	YES	NO
Treatment Tables		
Ultrasound		
Diathermy		
Infrared		
Electric Muscle Stimulator		

APPENDIX B

Letter From Dr. Meyer



THE CITY UNIVERSITY
OF NEW YORK

SUNNYSIDE CAMPUS
715 OCEAN TERRACE
STATEN ISLAND, NEW YORK 10301

HEALTH & PHYSICAL
EDUCATION DEPARTMENT

June 22, 1981

Ms. Peggy Pedersen
3121 Sourdough Road
Bozeman, Montana 59715

Dear Ms. Pedersen:

The original topic for my dissertation was quite similar to the one you have chosen. Since I was unable to locate any assessment tool I was forced to alter my plans.

I am very happy to grant you permission to utilize any part or parts of the "Scorecard to Evaluate Intercollegiate Athletic Training Services and Facilities" which would be helpful in your study. Also, I would appreciate receiving information concerning the findings and conclusions of your study.

My very best wishes for a successful project.

Sincerely,

A handwritten signature in cursive script, reading "Gladys C. Meyer".

Gladys C. Meyer, Ph.D.
Associate Professor

APPENDIX C
Introductory Letter



DEPARTMENT OF HEALTH, PHYSICAL EDUCATION & RECREATION

COLLEGE OF EDUCATION

MONTANA STATE UNIVERSITY, BOZEMAN 59717

April 17, 1981

Dear Athletic Administrator:

I am presently a Master's candidate at Montana State University, serving an apprenticeship in athletic training under the direction of Chuck Karnop, A.T.C., and Dana Gerhardt, A.T.C. Because of my interest in athletic training, I am conducting my graduate research on the status of women's athletic training programs in selected colleges and universities in Region 6. I have chosen Region 6 because I am a former athlete, student, and student trainer of a Region 6 institution and would like to relocate in the area after I have received my degree and certification.

If you would devote a few minutes of your time to respond to the enclosed questionnaire, it will be greatly appreciated. It should require approximately fifteen minutes to complete. If there is some other person on your staff who you feel is better acquainted with the resources of your women's athletic training program, please feel free to pass the questionnaire on to him or her.

All questions can be answered by checking the appropriate yes/no response in regard to your program. All responses will be compiled in group statistics only. School names will not be associated with the information on the questionnaire, and data will in no way be used as an evaluation of the safety of your women's athletic program.

A summary of the findings of my study will be available upon request. Please feel free to comment on any portion of the questionnaire. A self-addressed stamped envelope is enclosed for your convenience. Your cooperation is most important to my study and if you would complete and return the enclosed questionnaire by April 30, I shall be very grateful for your response.

Sincerely,

Peggy Pedersen

Dr. Gary Evans

Coordinator of Graduate Studies

APPENDIX D

Follow-Up Letter



COLLEGE OF EDUCATION

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION & RECREATION

MONTANA STATE UNIVERSITY, BOZEMAN 59717

May 5, 1981

Dear Athletic Administrator:

Recently you received a questionnaire regarding the status of your women's athletic training program. We are all very busy these days as the school year winds down, but if you would devote a few minutes of your time to complete and return the questionnaire, I would be very grateful.

If for some reason your questionnaire has been misplaced or miscarried in the mail, I am enclosing a second copy for your convience.

Thank you for your cooperation. It is greatly appreciated.

Sincerely,

Peggy Pedersen
Peggy Pedersen

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