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Assessment of first aid knowledge and decision-making of high school coaches

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ASSESSMENT OF FIRST AID KNOWLEDGE
AND DECISION-MAKING OF HIGH SCHOOL COACHES

A Thesis

Presented to

The Faculty of the Department of Human Performance

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Lisa Renee Dunn

August 1995

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APPROVED FOR THE DEPARTMENT OF HUMAN PERFORMANCE

A handwritten signature in cursive script, appearing to read "Jack Ransone", written over a horizontal line.

Dr. Jack Ransone

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ABSTRACT

ASSESSMENT OF FIRST AID KNOWLEDGE AND DECISION-MAKING OF HIGH SCHOOL COACHES

by Lisa Renee Dunn

The purpose of this study was to assess the first aid knowledge and decision-making of interscholastic athletic coaches. One hundred four coaches completed test packets containing a brief demographic survey, First Aid Assessment, and Game Situation Data Sheet. The First Aid Assessment had 38 multiple choice questions; the Game Situation Data Sheet had nine scenarios that required a yes or no response. Thirty-eight (36%) coaches achieved passing scores, with a range of 19 to 34. Chi square analysis was performed on two scenarios from the Game Situation Data Sheet. Results of this investigation found differences between: (a) first aid knowledge of coaches and accredited standards of first aid competency, and (b) decisions made by coaches in one game situation. From this, two conclusions were drawn:

1. Coaches did not adequately meet first aid standards.
2. In one scenario a conflict of duties affected the decision coaches made.

ACKNOWLEDGMENTS

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I acknowledge the faculty and staff of Campbell Union High School District, East Side Union High School District, and San Jose Unified School District for their participation.

I acknowledge the American Red Cross for supporting this project.

I thank my friends and fellow graduate students for their assistance and encouragement throughout the process.

I thank my mom for teaching me perspective and her continual support and prayers. You mean the world to me.

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CHAPTER 1

INTRODUCTION

Annually millions of individuals participate in athletics to some degree. Injuries are part of athletic participation. Although the severity and nature of injuries vary, athletes in all sports at every level of ability are susceptible to injury (Powell, 1987; Stopka & Kaiser, 1988). Therefore, quality medical assistance should be readily available for all athletes (Abraham, 1970; Hage & Moore, 1981; Rowe & Miller, 1991; Stopka & Kaiser; Weidner, 1989; Whieldon & Cerny, 1990).

High school athletic programs are one level of athletics which have undergone much scrutiny over the past two decades for their medical care provision. District and high school administrators, coaches, as well as team physicians, are being held liable for injuries sustained during athletic participation. Unlike ever before, courts expect higher standards of medical care to be provided by high schools (Culpepper, 1986; Flint & Weiss, 1992; Hage & Moore, 1981; Rowe & Miller, 1991; Stapleton, Tomlinson, Shepard, & Coon, 1984).

JUSTIFICATION

Due to budgetary constraints, fewer and fewer high schools can afford to hire team physicians and certified athletic trainers to provide medical assistance for athletic competitions. As a result, the burden to provide first aid is often passed on to coaches (Bell, Cardinal, & Dooley, 1984; Blomberg, 1981; Culpepper, 1986; Lindaman, 1991; Porter, Noble, Bachman, & Hoover, 1980; Redfearn, 1980; Rowe & Miller, 1991; Rowe & Robertson, 1986; Sherman, 1985; Wrenn & Ambrose, 1980). The impact of this in conjunction with litigation trends then becomes even greater.

Coaches are being held to higher medical care standards by the courts; as such, it is important they have the knowledge and expertise in medical care for which they are being held accountable. However, the educational background of coaches varies greatly (Abraham, 1970; Rowe & Miller, 1991; Rowe & Robertson, 1986). Therefore, a need exists to ensure that coaches possess a minimum level of knowledge in first aid.

Most states have yet to address this issue of first aid knowledge of coaches. A few states require coaches to have a

degree in physical education or completion of specialized courses (Bell et al., 1984; Blomberg, 1981; Culpepper, 1986; Hage & Moore, 1981; Lindaman, 1991; Porter et al., 1980; Redfearn, 1980; Rowe & Miller, 1991; Rowe & Robertson, 1986; Sherman, 1985; Wrenn & Ambrose, 1980). Other states, including California, require coaches to maintain current certification in first aid and cardiopulmonary resuscitation (CPR) (Hage & Moore; Rowe & Miller).

However, even if coaches possess adequate first aid knowledge, this does not ensure they will provide first aid. Coaches have many roles to fulfill; including developing a winning team, issuing and collecting equipment, maintaining practice and event facilities and equipment, and providing first aid for injuries (Abraham, 1970; Porter et al., 1980). As a result, a conflict of duties is likely to occur for the coach. If a conflict of duties exists, then the quality of medical care provided by coaches may decrease.

Since California Interscholastic Federation requires coaches to maintain current first aid and CPR certification, these individuals should be knowledgeable in first aid.

Therefore, they should be capable of making appropriate first aid decisions.

Statement of Problem

The problem of this study was to measure the first aid knowledge of high school coaches. In addition, the decisions made by high school coaches in hypothetical athletic situations involving competition and injured athletes were assessed.

Approach

After obtaining permission from selected school districts (Appendix A), the test packet was developed. In addition to a brief demographic survey, two questionnaires were given to coaches from participating high schools (Appendixes B, C, and D). A 38-item test assessed basic first aid knowledge. The second questionnaire, which lists nine hypothetical situations involving competition and injury, assessed decisions made by coaches to determine if a duty conflict exists.

Analysis of the first aid questionnaire included descriptive interpretation to determine overall level of first aid knowledge and identify areas of deficiency. Descriptive

analysis of the decision-making questionnaire was also conducted. Descriptive information about demographic data was also completed.

Delimitations

While designing this study, certain delimitations were accepted which could possibly compromise the outcome.

1. Only coaches who attended the meetings selected for questionnaire administration were tested. Coaches not in attendance were excluded.
2. Only coaches employed by the Campbell Union High School District, East Side High School District, and San Jose Unified School District were included. Thus, the subjects were not selected by random sampling techniques.
3. Due to time constraints of the investigator, test administration only occurred in the fall semester. This potentially limited the sample size.
4. In order to complete testing in an efficient manner and include a greater number of coaches, time elapsed since coaches were certified or recertified in first aid and CPR varied.

5. Based on time allotment and expert review, test length was established; therefore, all aspects of first aid were not thoroughly assessed.

6. To maximize sample size, the amount and type of previous first aid experience of coaches was not controlled.

7. Since a previously developed decision-making test was used, scenarios were not coach and sport specific.

Limitations

The limitations of this study reflected the effect of delimitations on the collection and interpretation of the data and on the ability to expand the scope of inference beyond the sample population. Generalizations made from the results will be compromised by the following limitations:

1. Coaches of spring sports were not as represented as were coaches of fall and winter sports due to the time of year the testing occurred.

2. Results cannot be inferred beyond the study sample.

3. Scores could have been affected as time elapsed since coaches' certification or recertification in first aid and CPR.

4. Additional decision-making scenarios were possible; however, the Game Situation Data Sheet was used as designed by Flint and Weiss (1992) to test basketball coaches and athletic trainers of high school and university programs.

5. Differences in first aid and CPR certification course content and experience may exist. Coaches' first aid knowledge or experience was not in areas assessed.

6. Coaches might not have been experienced or educated in assessed aspects of first aid, which may be reflected in scores.

7. Other modes of testing may demonstrate significant difference in results, so particular caution should be taken in generalizing results of the study.

8. Flaws in recall or truthfulness, as well as previous test bias, may have resulted with the inclusion of subjects with biases which could have compromised the outcome of this investigation.

Assumptions

The following assumptions were made for the study:

1. Coaches answered honestly and gave their best efforts when completing the questionnaires.
2. Coaches' responses to decision-making scenarios simulated actual situations.
3. The questionnaires used in the study were reliable and valid tools for measuring coaches' first aid knowledge.
4. The investigator's attitude and assistance was not biased towards a particular group.

Hypotheses

No difference exists between accredited standards of competency in basic first aid and high school coaches knowledge of first aid. In addition, decisions made by coaches are not affected by a conflict of duties.

Definition of Terms

Throughout the study several terms were used repeatedly. Although the terminology may be familiar, specific definitions were developed for use in this study. These definitions are as follows:

Athlete: High school student who participates in organized activities supervised by one or more coaches with the intent to compete in interscholastic competitions (Whieldon & Cerny, 1990).

Athletic Trainer: Individual, certified or non-certified, designated by high school to provide immediate medical care and rehabilitation services for its athletes (Lacklund, Testor, Akers, Hirata, Knight, & Mason, 1985).

Certified Athletic Trainer: Individual certified by the National Athletic Trainers' Association, Inc. Board of Certification to provide care and prevention of athletic injuries (Drowatzky, 1985).

Coach: Individual designated by high school to work with a specific group of athletes and perform associated duties and is compensated financially for fulfillment of those duties.

Duty: Designated function, role, or responsibility an individual is legally obligated to perform (Nygaard & Boone, 1989).

First aid: Immediate medical care given to a person who has been injured (Advanced First Aid and Emergency Care, 1979).

Injury: Tissue damage resulting from direct or indirect trauma.

CHAPTER 2

LITERATURE REVIEW

To fully understand the issue of first aid provision at the high school level, it is essential to know what duties coaches are expected to fulfill, qualifications they have to carry out those duties, and their perceptions of those duties.

Numerous studies have investigated the roles assigned to high school coaches. Typically these studies surveyed coaches in one state, but a few have limited the population to a major metropolitan area. Research has also examined coaches' knowledge and abilities to handle responsibilities related to providing first aid. This chapter provides a review of this literature. The following four sections address: 1) Identified Duties; 2) First Aid Duty; 3) Role Conflict; and 4) First Aid Knowledge and Confidence.

Identified Duties

In his 1970 study of New York high schools, Abraham discovered a coach's duties encompass many areas. The following were listed as duties in over 85% of the responses:

1. Coach.

2. Collect and issue equipment.
3. Supervise locker room.
4. Inspect all injuries and provide first aid.
5. Arrange for injured athletes to be taken to physician.
6. Tape and apply protective equipment.
7. Maintain equipment.

Similarly, in a survey of Chicago high schools by Porter et al. (1980), approximately 75% of responding coaches indicated they perform the following duties:

1. Coach athletes.
2. Administer conditioning programs.
3. Educate athletes about diet/nutrition.
4. Issue and maintain equipment.
5. Provide first aid.
6. Apply protective tape and equipment.

The duties identified by Abraham (1970) and Porter et al. (1980) are now considered standard (Bell et al., 1984; Blomberg, 1981; Flint & Weiss, 1992; Mathews & Esterson, 1983; Stapleton et al., 1984). However, the emergence of athletic trainers and sports medicine in the 1970s as well as increased

litigation involving coaches and school districts served as an impetus for research specifically investigating a coach's duty to provide first aid. Generally, these studies sought to determine if coaches were still required to perform first aid (Culpepper, 1986; Hage & Moore, 1981; Lindaman, 1991; Redfearn, 1980; Rowe & Robertson, 1986; Sherman, 1985; Wrenn & Ambrose, 1980).

First Aid Duty

In 1980, Wrenn and Ambrose conducted a statewide study of health care practices in Maryland public high schools. They received 128 responses from 149 principals. According to their findings, coaches were the individuals most responsible for first aid care for 85% of the schools.

Bell et al. (1984) investigated medical coverage in Illinois high school athletic programs. Their survey was sent to 602 athletic directors. Bell et al. found that coaches in 92% of 397 schools reporting were responsible for performing first aid.

A demographic survey was included in Rowe and Robertson's 1986 study of medical care in Alabama's public and private

high schools. Of the 479 athletic directors who received survey packets, 127 returned completed surveys. Results indicated that 86% of coaches were responsible for providing first aid.

Thirty San Francisco area coaches participated in a study by Stapleton et al. in 1984. Each coach was interviewed and completed a demographic questionnaire. Of the 30 participants, 77% of the coaches stated they were responsible for providing first aid.

In 1985, Sherman investigated 211 high schools in Wisconsin. Forty-four percent of the 153 respondents indicated that coaches were responsible for providing medical coverage.

Finally, Lindaman (1991) conducted a survey of 711 Michigan athletic directors of public and private high schools. For nearly 75% of the 407 respondents, coaches were the only medical care providers.

These studies overwhelmingly indicate the majority of high school coaches are responsible for providing first aid. As the responsibility of coaches to provide higher standards of first aid care increases, the potential for a duty conflict

to occur increases. This possibility provided the impetus for research to determine if a role conflict exists for coaches (Flint & Weiss, 1992; Hage & Moore, 1981; Stapleton et al., 1984).

Role Conflict

Several studies have alluded to the potential for conflict between coaches' duties. As early as 1970, Abraham perceived conflict could develop between a coach's duty to provide first aid and all of the other duties combined. Time constraints, inadequate first aid education, and actual duty to coach are among the reasons suggested for the role conflict (Abraham; Flint & Weiss, 1992; Lindaman, 1991; Porter et al., 1980; Stapleton et al., 1984). However, role conflicts were not directly investigated until the 1980s (Flint & Weiss; Stapleton et al.).

Stapleton et al. (1984) included questions pertaining to role conflict in their research addressing athletic injury management. Nearly two-thirds (63%) of the coaches surveyed indicated injury care duties did not interfere with other coaching responsibilities. However, the study revealed that

providing first aid took coaches away from the task of coaching.

Flint and Weiss (1992) developed the Game Situation Data Sheet (Appendix C) for their study of Oregon coaches. The questionnaire was used to assess the decisions made by coaches regarding injured athletes. The scenarios involved various game situations and players of differing ability. The results indicated game situation and player status significantly influenced coaches' injury management decisions. The authors concluded a role conflict existed between the duty to coach and duty to provide first aid.

First Aid Knowledge and Confidence

In addition to conflicts related to duties and time constraints, other factors have been identified which impact first aid provision by coaches. Those most frequently cited are a lack of first aid knowledge and low confidence level (Abraham, 1970; Culpepper, 1986; Hage & Moore, 1981; Lindaman, 1991; Stapleton et al., 1984; Weidner, 1989). Research concerned with emergency medical education and knowledge of coaches has been conducted, both separately and in conjunction

with studies investigating how capable coaches feel they are to administer first aid.

Research results suggest a low level of confidence is directly related to inadequate first aid knowledge (Culpepper, 1986; Redfearn, 1980; Rowe & Miller, 1991; Rowe & Robertson, 1986; Sherman, 1985; Stapleton et al., 1984). The following studies demonstrate this relationship.

In 1980, Redfearn examined the first aid capabilities of 35 Michigan high school coaches. A simple questionnaire was used to survey their education in medical care. Fifty-five percent had American Red Cross first aid training; 30% had CPR education; 2.7% had received emergency medical technician training. However, of the surveyed coaches, only 44% felt capable of managing an emergency medical situation.

Stapleton et al. found similar results in their 1984 study. According to their demographic data, 50% of the coaches had current first aid certification and 37% had CPR certification. Additionally, based on their interview portion, they found more than half (57%) of all coaches were uncomfortable with the duty to perform first aid. The primary

reason indicated by those coaches was a lack of knowledge pertaining to injury care.

Similarly, Culpepper (1986) distributed a questionnaire to Alabama high school coaches to investigate how competent they felt to provide first aid. Nearly 50% of the coaches responded they felt incapable of handling emergency injury care. As anticipated, the primary reason coaches indicated was a lack of training.

One part of Sherman's 1985 survey, which examined medical coverage of high school athletics in Wisconsin, investigated the educational requirements for coaches. Of the 153 responding schools, only 17% required coaches to be certified in basic first aid.

Unlike previous studies, Rowe and Robertson (1986) studied more than demographic information of their sample population. They assessed coaches' knowledge using the Modified Inventory of Recent Knowledge in Physical Education. Coaches needed to answer 21 of 30 items correctly to pass the test. A mere 27% of the 127 responding Alabama coaches had passing scores.

In 1991, the Modified Inventory of Recent Knowledge in Physical Education was again used, by Rowe and Miller, to survey high school coaches throughout Georgia. Scores were slightly higher than those of the Alabama coaches. Still, only 38% of the 130 respondents achieved a passing score. An interesting demographic note was that 89% of the coaches had current first aid certification.

Summary

Review of the literature consistently demonstrates coaches have an inadequate level of emergency medical education (Flint & Weiss, 1992; Rowe & Miller, 1991; Rowe & Robertson, 1986). Coaches believe they are not adequately trained for providing first aid and, therefore, do not feel capable of administering emergency medical care (Abraham, 1970; Culpepper, 1986; Hage & Moore, 1981; Lindaman, 1991; Stapleton et al., 1984; Weidner, 1989). Based on these findings, educating coaches in first aid should enhance their knowledge, confidence, and ability, as related to injury management. Since the coaches used in the following research project were required to have current first aid certification,

this study was designed to determine if acceptable standards were met.

CHAPTER 3

METHODS

The problem of this study was to measure the first aid knowledge of high school coaches and assess their decisions in hypothetical athletic situations involving competition and injured athletes. Information regarding the subjects, data collection, and statistical analysis follows.

Subjects

Coaches from 23 high schools in the Blossom Valley Athletic League were selected for this study. The League encompasses public and private high schools in three school districts: Campbell Union High School District; East Side High School District; and, San Jose Unified School District. Subjects were male and female coaches of boys' and girls' interscholastic athletic teams. The years of coaching experience varied in the subject group. Coaches belonged to one of two classes of high school coaches identified by Hage and Moore (1981):

1. Teacher-Coach: This individual is a high school teacher, with or without physical education background, who receives a financial supplement for coaching.

2. "Walk-on": This individual, not necessarily an employee of the school district, is considered "knowledgeable and competent" (p.142) and receives financial compensation for coaching.

Both classifications require the individual to have current certification in first aid and CPR.

Questionnaire Selection

For this study two questionnaires were selected. The First Aid Assessment was used to assess first aid knowledge. The Game Situation Data Sheet developed by Flint and Weiss (1992) was used to examine the decisions coaches make in hypothetical athletic situations. Also included was a demographic survey which addressed years of coaching experience, education, gender, first aid providers at high school, coach which sport(s).

The First Aid Assessment (Appendix B) was adapted from the American Red Cross Basic First Aid Competency Examination

and Sports Injury: Emergency First Aid Care and Prevention Final Exam. The original tests are currently used by the American Red Cross for determining proficiency after completion of the Basic First Aid and Sports Injury courses (American Red Cross, 1988). Permission to adapt the exams was obtained from the American Red Cross.

The 38-item test consists of statements which require an objective response. The test assessed competency in six areas identified as responsibilities of individuals who provide first aid (American Red Cross, 1988). The six areas are anatomy, care and treatment, prevention, assessment, equipment, and environmental factors. A score of 75% or greater was required to pass. This percentage was based on the various scores required by the American Red Cross tests and previous studies.

The decision-making questionnaire, Game Situation Data Sheet (Appendix C), had only been used by Flint and Weiss for their 1992 study on role and ethical dilemmas. Permission was obtained to use the Game Situation Data Sheet from the creator (M. R. Weiss, personal communication, June 4, 1994).

Nine scenarios are presented in this questionnaire that require coaches to indicate whether they would return the injured player to the game. Injured athletes are either starting players, first substitutes, or bench players. Game situations include winning, losing, and close scores. All combinations of the two variables are represented in the questionnaire.

A separate survey was used to obtain demographic information (Appendix D). This brief survey was developed by the researcher to obtain data regarding:

1. Sport(s) and athletes' gender(s) participant will coach in the 1994-1995 academic year.
2. Teacher or "Walk-on" status.
3. Gender of coach.
4. Years of coaching experience.
5. Educational background.
6. Date (month/year) of most recent first aid and CPR certification.
7. Certified athletic trainer/team physician coverage at high school.

This information was used to identify trends. Examples of possible trends are years of coaching experience and questionnaire scores or sport coached and questionnaire scores.

Validity and Reliability of Questionnaires

The First Aid Assessment was developed to measure first aid knowledge and each item on the questionnaire pertains to specific first aid competencies. The Game Situation Data Sheet was designed to assess decisions made by coaches in different athletic situations. By using nine different combinations of players and game situations, decisions are made for all possible scenarios a coach could encounter.

Content validity and reliability of the First Aid Assessment were established by expert review. Reviewers were medical professionals with extensive first aid education backgrounds and affiliated with interscholastic athletics. However, none of the reviewers were directly involved with the chosen study sample. Reviewers determined if test questions adequately covered and represented the aspects of first aid

selected for this study. Reviewers also considered the level of difficulty, applicability, and scope of the questions.

Once the First Aid Assessments were returned, all comments from the reviewers were considered and recommended changes were made. Changes to test items were made when the same recommendations were made by a majority of the reviewers. Changes were primarily grammatical rather than conceptual.

Validity and reliability of the Game Situation Data Sheet were established in the study by Flint and Weiss (1992). Results were replicated when the questionnaire was administered to two separate groups of coaches (Flint & Weiss).

Administration of Questionnaires

Verbal permission from the Blossom Valley Athletic League commissioners and school districts was obtained. Written permission (Appendix A) was then provided by: (a) Elias Chamarro, BVAL President and East Side Union High School District Representative; (b) Steve Hansen, Health and Safety Services Director of American Red Cross; (c) Bruce Samples, Campbell Union High School District Representative; and, (d) Ken Johnson, BVAL Commissioner and San Jose Unified School

District Representative. After written permission was granted, principals and athletic directors of the 23 individual high schools were contacted. Arrangements were made to administer the questionnaires.

Test sessions were conducted by certified athletic trainers. The same procedures for administration of the questionnaires (Appendix E) were given to each proctor. The first part of the procedures was read aloud to the coaches. This portion provided an introduction of the proctor and a brief explanation of the study, including the purpose, justification, and methodology. In the next section, proctors were instructed to distribute two consent forms (Appendix F) to each coach and read an explanation about the forms to the coaches. The consent form met Human Subjects-Institutional Review Board approval. Subjects were informed that participation was strictly voluntary and anonymous.

Once signed consent forms were returned, questionnaires were distributed. A letter of explanation and instructions (Appendix G) accompanied the questionnaires. In addition, the proctor read the test procedures aloud. The proctor was also

prepared to clarify the purpose, significance, and confidentiality of the study.

Completed questionnaires were collected by the proctor and returned to the investigator for analysis.

Statistical Procedures

Descriptive statistical procedures were used to analyze responses on the First Aid Assessment. Total score, as well as percentages, means, and standard deviations were determined. The Statistical Package for the Social Sciences (ver. 4.0) was used for analysis procedures.

Chi Square analysis was performed at the .05 level of significance on the Game Situation Data Sheet. The analysis was used to determine the interaction between the First Aid Assessment and Game Situation Data Sheet.

In addition, demographic data was descriptively presented as frequency distributions, means, standard deviations, and percentages.

CHAPTER 4

RESULTS

This investigation measured the first aid knowledge of high school coaches and assessed their decisions in hypothetical injury situations. Each subject completed three questionnaires: (a) a demographic survey to provide background information, such as years of coaching experience and education; (b) the First Aid Assessment to test first aid knowledge; and (c) the Game Situation Data Sheet to assess decision-making. Presentation of the results follows.

Sample Overview

Seventeen of the 23 Blossom Valley Athletic League high schools participated in the study. Of the remaining schools, four did not respond to inquiries and two elected not to take part.

Questionnaires were completed by 104 subjects from the participatory schools. Fifteen different athletic teams were represented in the sample. Thirty coaches (29%) worked with more than one team during the year (see Table 1).

Table 1

Sports Represented

	% of coaches in study sample
Badminton	2.9
Baseball	7.7
Basketball-boys	7.7
Basketball-girls	3.8
Cross country	3.8
Football	12.5
Golf	1.0
Multiple	28.8
Soccer-boys	2.9
Soccer-girls	3.8
Softball	1.0
Swimming/Diving	5.8
Tennis	1.9
Track/Field	2.9
Volleyball	2.9
Wrestling	4.8

Male subjects comprised 83% ($n=85$) of the sample. Years of coaching experience ranged from first year coaches to those with more than 28 years of experience. Coaches with limited experience (<10 years) comprised 44% ($n=46$) of the subjects. Coaches with decades (>20 years) of experience represented 26% ($n=27$) and the remaining 30% ($n=31$) were coaches with 10 to 20 years of coaching experience. The majority, 61% ($n=63$), of coaches investigated were teachers and the remaining subjects

were walk-on coaches. Seventy-seven percent ($n=79$) of coaches surveyed possessed at least a baccalaureate degree. Current first aid and CPR certification was held by nearly 92% ($n=88$) of the sample. Sixty percent ($n=62$) of the coaches indicated an athletic trainer worked on staff; and, 16% ($n=15$) of the coaches had a team physician available. A complete demographic profile is presented in Table 2.

Table 2

Demographic Profile

	n	% of total respondents
Gender		
Male	85	83
Female	18	17
Coaching experience		
Less than 10 years	46	44
10 - 20 years	31	30
More than 20 years	27	26
Position type		
Teacher	63	61
Walk-on	40	39
Education level		
No degree	19	19
BS/BA	53	52
Advanced	26	26
First aid/CPR current	88	92
High school has athletic trainer	62	61
High school has team physician	15	16

Statistical Analyses

This study tested two hypotheses. The first hypothesis stated no difference exists between accredited standards of competency in basic first aid and high school coaches' knowledge of first aid. The second hypothesis stated

decisions made by coaches are not affected by a conflict of duties.

Descriptive analysis was performed on the demographic data and First Aid Assessment. Chi square analysis was performed on the Game Situation Data Sheet at the .05 level of significance.

First Aid Assessment

Responses from the first test section, the First Aid Assessment, were objectively scored. A score of 29 or higher was required to pass the section. Thirty-eight coaches (36%) achieved passing scores, with a range of 19 to 34. The mean was 27 and standard deviation, 3. The mode and median were both 27. A summary is presented in Table 3.

Table 3

First Aid Assessment Results

	<u>Raw Data</u>	<u>Percentage</u>
Range	19 - 34	50 - 89
Mean	27	71
Median	27	71
Mode	27	71
Standard deviation	3	8

Game Situation Data Sheet

Coaches responded "Yes" or "No" to each of the nine items on the Game Situation Data Sheet. For seven questions more than 75% ($n=78$) of the coaches selected the same response to the scenario. However, on Questions 4 and 8 coaches were more divided between the two choices. On Question 4, 63% ($n=65$) of the coaches made the same choice in returning an injured player to a close, losing game. On Question 8, 58% ($n=60$) of the subjects responded the same when returning an injured player to a close, winning game. Therefore, Chi square analysis was performed on those two questions at the .05 level

of significance. Results from the analysis are shown in Table 4.

The scenario presented in Question 4 involved a starting player sustaining injury when losing a close game. Analysis was done to determine whether coaches who passed the First Aid Assessment responded differently than those who did not. The significant Chi square value of 4.88 shows that a difference exists. Thus, coaches who passed tended to return the injured starter to the game, whereas those who failed decided to keep the player out of the game.

Chi square analysis was performed on Question 8. In this question, the team is winning a close game, when a regular player is injured. A nonsignificant Chi square value of .73 was found. Therefore, no tendency for passing and failing coaches to respond differently was shown.

Table 4

Chi Square Results

<u>Test performance</u>	<u>Responses</u>		<u>Chi square value*</u>
	<u>Yes</u>	<u>No</u>	
Question 4			4.88
Pass	29	9	
Fail	36	30	
Question 8			.73
Pass	24	14	
Fail	36	30	

*p<.05, df=1

Summary

The purpose of this investigation was to measure the first aid knowledge of high school coaches and assess their decisions in hypothetical injury situations. Thirty-six percent ($n=38$) of the coaches passed the First Aid Assessment in this study. Chi square analysis of Question 4 of the Game Situation Data Sheet indicated coaches who passed the First Aid Assessment returned the player to the game in that situation more than those coaches who failed. On Question 8, Chi square analysis revealed no significance in the decision to return an injured player between coaches who passed and those who failed.

A difference was found between the subjects' first aid knowledge and accredited standards of first aid competency in Question 4. Therefore, the stated hypothesis of no difference was not retained for this instance. With respect to the decision-making hypothesis, a significant difference ($p<.05$) was found between coaches who passed the First Aid Assessment and those who did not on Question 4. Thus, the second hypothesis was rejected for this particular question.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

The purpose of this study was to measure the first aid knowledge of high school coaches and assess their decisions in hypothetical athletic injury situations. Discussion, conclusions, and recommendations for further research follow.

Introduction

Every year athletes of all ages and abilities participate in sports. During athletic activity the potential for injury exists (Powell, 1987; Stopka & Kaiser, 1988). Therefore, quality medical care needs to be available to those participating in athletics (Abraham, 1970; Hage & Moore, 1981; Rowe & Miller, 1991; Stopka & Kaiser; Weidner, 1989; Whieldon & Cerny, 1990).

High school athletic programs are not exempt from the provision of first aid. The increase in litigation over the years has led the courts to expect these programs to provide higher standards of first aid (Culpepper, 1986; Hage & Moore, 1981). This expectation has served as an impetus for investigation of the quality of the medical care available to

high school athletes (Flint Weiss, 1992; Rowe & Miller, 1991; Stapleton et al., 1984).

Discussion

Prior to this investigation, first aid knowledge had only been investigated in two studies (Rowe & Miller, 1991; Rowe & Robertson, 1986). Rowe and Robertson developed a first aid test for their study on Alabama athletic coaches. Of the 127 respondents, only 27% ($n=34$) passed the first aid test. Rowe and Miller gave the same test to coaches in Georgia finding only 38% ($n=50$) of the 130 coaches achieved passing scores, even though 89% ($n=116$) of the coaches had current first aid certification. Similarly, in the present study of 104 coaches, 36% ($n=38$) passed the first aid test and 92% ($n=88$) were certified in first aid.

Although similar results were attained in all three investigations, a couple differences between the studies exist. First, the test used in the present investigation is not the same test used in the previous studies (Rowe & Miller, 1991; Rowe & Robertson, 1986). Also, unlike the two earlier studies which mailed the test to coaches, the testing process

in the present study was overseen through personal contact. Additionally, the previous studies did not include demographic information; therefore, further comparison between the study groups was not possible.

Regarding the Game Situation Data Sheet, responses of the coaches in this study were similar to those investigated by Flint and Weiss (1992). Flint and Weiss found that game situations influenced coaches' decisions. Three scenarios overwhelmingly prompted coaches to return injured players to the game. If the team was losing a close game, coaches returned starting players. When the team was clearly losing, coaches returned injured bench players to the game. And, when winning a close game, coaches returned regular players.

In this present study, coaches' decisions on the Game Situation Data Sheet were consistent with the Flint and Weiss (1992) study for the two close game scenarios. The coaches in this study chose to return the players to the game. Thus, Chi square analysis was conducted on those two situations for the present study to determine whether First Aid Assessment performance was related to the decision made. Chi square analysis indicated decisions were related to test score in

Question 4. Therefore, this decision was not necessarily based on first aid knowledge but other factors influenced the decision.

This agrees with the findings of Flint and Weiss (1992) which showed the duty to coach conflicts with the duty to provide first aid. This supports implications made by researchers in the past that coaches' decisions are based on other factors, such as player's ability and game situation (Abraham, 1970; Lindaman, 1991; Porter et al., 1980; Stapleton et al., 1984).

Given this information, it is clear that changes must be made to ensure coaches make sound decisions with regard to the injured players. Coaches need first aid knowledge to set a foundation for making decisions. They must also understand the ramifications associated with returning an injured player to competition.

Requiring first aid and CPR certification is not enough to guarantee retention or acquisition of information about athletic injury care, especially since 8% ($n=8$) of this sample did not have current certifications. Coaches need courses that update first aid and CPR certification, as well as

provide supplemental information related to athletics and special considerations for high school athletes.

The supplemental information related to athletics should encompass liability issues. Coaches should know that when an injured athlete is returned to competition, not only is the athlete at risk for sustaining additional injuries or aggravating the current injury, but the other athletes are put at risk because the injured athlete is not focussed on the game. For all of these situations liability would fall on the coaches, high school and district administration.

Although this additional education should enable coaches to make more objective decisions, as well as provide proper first aid, other solutions exist. One option is to have someone other than a coach provide first aid and make necessary decisions about how and when to return an athlete to participation. Preferably this individual would be a qualified medical professional, such as physician, certified athletic trainer, or emergency medical technician. If not, then have an unbiased person, someone who is not influenced by the game situation, specifically trained to handle athletic injuries fulfill the duty. This would alleviate the conflict

for the coach and allow for quality medical care for the athletes.

Based on the above recommendations, suggestions for the present study group can be made. Only 16% ($n=15$) of the subjects in this study have team physician available and 61% ($n=62$) of this sample have certified athletic trainers on site available for medical support. Having a qualified medical professional would be desirable at all athletic events. Educating the present sample would also be beneficial. Nearly one-fifth of the subjects ($n=19$) did not have a college degree and walk-on coaches comprised 39% ($n=40$) of the subjects. These two demographic variables should be considered together because the remaining coaches who are teachers have college degrees and have had courses that instruct them on how to work with adolescents. Therefore, educating the former groups of coaches about special concerns associated with high school athletes is strongly recommended.

Conclusions

Statistical analysis found only 36% ($n=38$) of the subjects achieved a passing score on the First Aid Assessment.

Based on this performance, coaches in the chosen sample do not adequately meet accredited standards of first aid.

Chi square analysis revealed that when losing a close game and a starting player gets injured, coaches who passed the first aid section were more likely to return the player to the game than coaches who failed. However, in all other scenarios, similar decisions were made by all coaches.

Recognizing that caution should be observed in generalizing from these results, it was concluded: (a) coaches did not adequately meet first aid standards, and (b) in one scenario a conflict of duties affected the decision coaches made.

Summary

The results of this study are similar to that of previous research (Flint & Weiss, 1992; Rowe & Miller, 1991; Rowe & Robertson, 1986). As shown in the Discussion section of this paper, First Aid Assessment scores attained by coaches in this study are comparable to scores of coaches in other studies. Similarly, results from the Game Situation Data Sheet made by

coaches in this study coincided with those in the original study conducted by Flint and Weiss.

Two conclusions were drawn from the statistical analysis:

1. Coaches failed the First Aid Assessment established for this study.
2. Coaches' decisions in one scenario were affected by a conflict of duties.

Recommendations for Future Research

The following recommendations are made based on the realization that this study could have been conducted differently in many ways. In the hope that future research will further explore the problem at hand, it is recommended that:

1. Selection of the sample from broader population might be beneficial for increasing sample size and ability to further generalize the results.
2. Development of a test to identify areas of deficiency and expertise in first aid could build on the existing research.

3. A subjective interview or survey of participating coaches could glean opinions about duty and confidence and ability.
4. Use of sport specific decision-making scenarios may evoke different responses from coaches.
5. Gender equity in sample composition may provide additional information.
6. Gender-based scenarios could be developed to identify if the athlete's gender influences decisions made by coaches of the same and different sex as the athlete.

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Appendix A. Permission Letters

WILLOW GLEN EDUCATIONAL PARK

2001 Cottle Avenue, San Jose, California 95125

(408) 998-6330 or (408) 998-6277

A. MICKEY LONG, Principal

March 13, 1994

Mr. Ken Johnson
Willow Glen High School
2001 Cottle Ave
San Jose, CA 95125

Dear Mr. Johnson:

I spoke with you February 2nd with regard to a research project I would like to conduct to assess the first aid knowledge of coaches associated with the Blossom Valley Athletic League (BVAL). Since our telephone conversation, I have obtained verbal permission from BVAL President Elias Chamarro and Bruce Samples of the Campbell Union School District. Additionally, arrangements have been made with Steve Hansen, Health and Safety Director of the American Red Cross, to develop an assessment instrument for this study.

Pending formal approval of my proposal by my committee and the Human Subjects Review Board of San Jose State University, this research is scheduled to be conducted this Fall. Times and dates for administration will be scheduled with each high school individually. Coaches will be asked to take approximately 20 minutes to voluntarily complete a 25 - 50 item questionnaire. Results will be confidential; and, individual coaches and high school will not be identifiable.

As part of the approval process, I need to obtain written permission and acknowledgement. If your verbal commitment still stands, please sign in the space provided below and fax this letter to me. The facsimile telephone number is (408) 379-1720. If you have questions, please contact me at (408) 866-8586.

Thank you very much for assisting me as I strive to complete my Master's thesis.

Lisa R. Dunn, A.T.,C.
Graduate Student
San Jose State University

Ken W Johnson
Signature

9-12-94
Date

KEN W JOHNSON
Print Name

PROSPECT HIGH SCHOOL

18500 Prospect Road, Saratoga, CA. 95070 408-253-1662

September 19, 1994

Ms. Lisa R. Dunn, A.T., C.
1568 Capri Drive
Campbell, California 95008

Dear Ms. Dunn,

As discussed last spring, if permission by San Jose State University and Blossom Valley Athletic League was obtained, you have permission to test coaches at Prospect High School for your Master's thesis.

Sincerely,

A. Bruce Samples
Principal

Steven G. Hansen
Director, Health and Safety Services

American Red Cross

Mr. Steven Hansen
Health and Safety Services Director
American Red Cross
2731 North First Street
San Jose, CA 95134

American Red Cross

Santa Clara Valley Chapter
2731 North First Street
San Jose, CA 95134
Tel: (408) 577-1000 Dir: (408) 577-2175
FAX (408) 577-2110

Dear Mr. Hansen:

I met with you March 11th with regard to a research project I would like to conduct to assess the first aid knowledge of coaches associated with the Blossom Valley Athletic League (BVAL). Prior to our meeting, I obtained verbal permission from Bruce Samples of the Campbell Union High School District, Ken Johnson of the San Jose Unified School District, and Elias Chamarro of the East Side Union High School District. These three school districts comprise the BVAL.

During our meeting we discussed using an American Red Cross assessment instrument for this study. A test consisting of 25 - 50 items addressing sport injury management was mentioned.

Pending formal approval of my proposal by my committee and the Human Subjects Review Board of San Jose State University, this research is scheduled to be conducted this Fall. Times and dates for administration will then be determined with each high school individually. Coaches will be asked to voluntarily complete the test. Individual coaches and high schools will not be identifiable. Results will be confidential.

In addition, a verbal agreement was made for you to serve as a member of my thesis committee. You will receive drafts of my proposal and requested to attend my proposal meeting. Following data collection and analysis, you will receive a draft of my completed thesis to review for my defense meeting. Also, I will be asking for your input on various aspects of the project throughout the entire process as necessary.

As part of the approval process, I need to obtain written permission and acknowledgement. If your verbal commitment still stands, please sign in the space provided below and fax this letter to me. The facsimile telephone number is (408) 379-1720. If you have questions, please contact me at (408) 866-8586.

Thank you very much for assisting me as I strive to complete my Master's thesis.

Lisa R. Dunn, A.T., C.
Graduate Student
San Jose State University

Steven Hansen
Signature

9/21/94
Date

Steven Hansen
Print Name

A United Way Agency

South County Branch, Gilroy: (408)842-4414

ELIAS CHAMORRO, JR.
Principal

ART DARIN
Associate Principal

SAMUEL E. DAVIS
Associate Principal

PAUL M. WILSON
Associate Principal

WILLIAM C. OVERFELT HIGH SCHOOL

1835 Cunningham Avenue, San Jose, California 95122

Telephone (408) 259-0540

FAX (408) 272-4908

East Side Union High School District

JOE COTO, Superintendent

1988 California School Board Golden Bell Award

1988 California State Department of Education Distinguished High School Recognition Award

November 3, 1994

Lisa R. Dunn, A.T., C.
1568 Capri Drive
Campbell, CA 95008

Dear Lisa Dunn:

You have my permission to test coaches at W. C. Overfelt High School for your research project. This authorization is based on submitted questionnaire and our previous telephone conversation on Thursday, October 27, 1994.

Sincerely,

Elias Chamorro
Principal

EC:par

Appendix B. First Aid Assessment

First Aid Assessment

1. Water should be
 - a. withheld during practices, available during games.
 - b. withheld during games, available during practices.
 - c. available only on hot days.
 - d. available at all times.
2. The behavior of the first aid provider
 - a. should be calm and reassuring.
 - b. should be hurried and tense.
 - c. does not matter because it has no effect on the injured athlete.
 - d. both a and b
3. Ice should always be used _____ after an injury occurs, unless otherwise directed by a physician or athletic trainer.
 - a. After the first 48 hours
 - b. During the first 48 hours
 - c. During the first 24 hours only
 - d. During the first 12 hours only
4. Shock is
 - a. not life-threatening.
 - b. possible with all types of injuries.
 - c. possible with head and heat-related injuries only.
 - d. more likely in chronic injuries.
5. An athlete who is knocked unconscious may return to play if he or she
 - a. regains consciousness within 2 minutes.
 - b. presents no signs and symptoms of a head injury.
 - c. is cleared by a physician.
 - d. feels capable of returning to play.
6. Twisting or stretching a joint beyond its normal range of motion is the most common cause of
 - a. sprains.
 - b. fractures.
 - c. strains.
 - d. contusions.

7. Heat stroke can result from
 - a. too little salt.
 - b. too high carbohydrates.
 - c. dehydration.
 - d. hyperhydration.
8. A musculotendinous tissue injury is a
 - a. fracture.
 - b. sprain.
 - c. strain.
 - d. contusion.
9. Contusions occur most frequently to the
 - a. chest.
 - b. quadriceps.
 - c. abdomen.
 - d. shin.
10. The greatest danger for an athlete who has mononucleosis is
 - a. seizures.
 - b. a punctured liver.
 - c. a ruptured spleen.
 - d. shock.
11. Proper treatment for chronic problems, such as shin splints, is
 - a. ice before activity, ice after activity.
 - b. heat before activity, heat after activity.
 - c. ice before activity, heat after activity.
 - d. heat before activity, ice after activity.
12. Standard first aid for a sprained ankle does not include
 - a. ice.
 - b. compression.
 - c. percussion.
 - d. elevation.
13. Pregame meals should contain foods
 - a. high in carbohydrates.
 - b. high in protein.
 - c. low in carbohydrates.
 - d. balanced in protein and carbohydrates.

14. Mouth guards protect an athlete against
 - a. tooth fractures and tongue lacerations.
 - b. jaw fractures.
 - c. concussions.
 - d. both a and c
15. Characteristics of heat exhaustion include
 - a. slow pulse.
 - b. pale, cool, clammy skin.
 - c. red, hot, sweaty skin.
 - d. bounding pulse.
16. Heat stroke is
 - a. preventable.
 - b. unpreventable.
 - c. not life-threatening.
 - d. seldom seen in athletics.
17. Heat stroke is best prevented by
 - a. limited salt intake.
 - b. limited water breaks.
 - c. unlimited water intake.
 - d. no way to prevent it.
18. Dressings and bandages are used to
 - a. reduce pain.
 - b. reduce internal bleeding.
 - c. help control bleeding and prevent infection.
 - d. make it easier to move the injured athlete.
19. You have tried to control bleeding with direct pressure and elevation, but bleeding does not stop. Where would you apply pressure to slow the flow of blood to a wound on the forearm?
 - a. Outside of the arm midway between the shoulder and elbow
 - b. On the inside of the elbow
 - c. Inside of the arm midway between the shoulder and elbow
 - d. Any of the above will slow the flow of blood

20. How can you reduce the risk of disease transmission when caring for open, bleeding wounds?
- a. Wash your hands immediately after giving first aid.
 - b. Avoid direct contact with blood and other body fluids.
 - c. Use protective barriers such as gloves or plastic wrap.
 - d. All of the above.
21. Which is the **first** step in caring for bleeding wounds?
- a. Apply direct pressure on the wound with a clean or sterile dressing.
 - b. Apply pressure at a pressure point.
 - c. Apply bulky dressings to reinforce blood-soaked bandages.
 - d. Elevate the wound above the level of the heart.
22. What should you do if you think an athlete has internal bleeding?
- a. Apply heat to the injured area.
 - b. Call your local emergency phone number for help.
 - c. Place the victim in a sitting position.
 - d. Give fluids to drink to replace blood loss.
23. Which should be part of your care for a severely bleeding open wound?
- a. Allow the wound to bleed in order to cleanse it and minimize infection.
 - b. Apply direct pressure and elevate the injured area, if no broken bones.
 - c. Use a tourniquet to stop all blood flow.
 - d. Both b and c.
24. After being tackled, an athlete does not get up. The conscious athlete is face down and appears badly hurt. First, you send someone for help. Then, you
- a. roll the athlete to his side, in case he starts to vomit.
 - b. roll the athlete to his back and elevate the head and chest.
 - c. position the athlete so he is in a comfortable position.
 - d. have the athlete remain still.

25. Which should you do when caring for someone having a seizure?
- a. Remove nearby objects that might cause injury.
 - b. Place small object, such as a rolled-up piece of cloth between the individual's teeth.
 - c. Try to hold the person still.
 - d. All of the above.
26. Generally, a splint should be
- a. loose, so that the injured athlete can still move the injured limb.
 - b. snug, but not so tight that it slows circulation.
 - c. tied with fasteners directly over the injured area.
 - d. none of the above
27. An athlete who is diabetic is drowsy and seems confused. He is not sure if he took his insulin today. What should you do?
- a. Suggest he rest for an hour or so.
 - b. Tell him to go take his insulin.
 - c. Give him some sugar.
 - d. Both a and b.
28. Two soccer players collide on the field. Although there is no visible bleeding, the upper left leg of one player is very red and swelling fast. She probably has what type of wound?
- a. Abrasion
 - b. Bruise
 - c. Strain
 - d. Sprain
29. When caring for an athlete with hypothermia, you should
- a. rewarm the body gradually.
 - b. remove wet clothes.
 - c. give warm fluids if fully conscious.
 - d. all of the above

30. What should you do for an athlete who is experiencing heat exhaustion?
- a. Force the athlete to drink lots of cool water.
 - b. Get the athlete into a cooler environment.
 - c. Have the athlete rest until the feeling passes.
 - d. All of the above.
31. An athlete has a severe muscle cramp in the calf. Proper care would be to
- a. bend the knee and point the toes and foot.
 - b. bend the knee and flex toes and foot.
 - c. straighten the knee and point the toes and foot.
 - d. straighten the knee and flex the toes and foot.
32. An athlete's front teeth are knocked out during practice. The teeth should be
- a. washed in water and replaced in the sockets.
 - b. stored in saline until dentist can replace.
 - c. stored in milk until dentist can replace.
 - d. any of above is acceptable.
33. An athlete comes to you after being stepped on by an opponents spikes. The type of injury you suspect is a(n)
- a. abrasion.
 - b. puncture.
 - c. avulsion.
 - d. laceration.
34. Before attempting to resuscitate an athlete using CPR, which of the following conditions must exist?
- a. Dilated pupils
 - b. Absence of breathing
 - c. Unconscious
 - d. Irregular respirations
35. At what rate should chest compressions be performed during CPR efforts on an adolescent?
- a. 50 - 70 compressions per minute
 - b. 80 - 100 compressions per minute
 - c. 100 - 120 compressions per minute
 - d. 60 - 80 compressions per minute

36. What is the breath(ventilation) to compression ratio when performing CPR on an adolescent?
- a. 12 compressions to 2 ventilations
 - b. 5 compressions to 1 ventilation
 - c. 15 compressions to 2 ventilations
 - d. 10 compressions to 2 ventilations
37. The first action that should be taken when approaching a collapsed, injured athlete is to
- a. move the athlete off of playing surface.
 - b. determine responsiveness.
 - c. check for breathing.
 - d. check for pulse.
38. Complications which may occur as a result of external chest compressions when properly performed include
- a. rib and sternum fractures.
 - b. punctured lungs and liver lacerations.
 - c. both a and b
 - d. none of the above

Appendix C. Game Situation Data Sheet

Game Situation Data Sheet

Game Situations

Return to the Game

1. During the last 10 minutes in the game with your team clearly losing, your 8th player (usually 3rd into the game) gets a hand in the way of a hard pass and hyperextends an elbow. It is checked and taped. The player is eager to get back on the floor.	<u>Yes</u>	<u>No</u>
2. One of your starters, during a game you are winning easily, suffers a dislocated finger. After reduction (being returned to its normal position) the finger is checked for fractures. It doesn't appear as if there are any fractures present. The finger is given some support and the player asks to return to the game.	<u>Yes</u>	<u>No</u>
3. One of the bench players, who rarely sees the floor, finally gets a chance to play during a game you are winning easily. After two minutes on the floor the player suffers a hamstring strain. It doesn't appear to be a serious problem after some treatment on the bench. The player is eager to return and shows that the muscle injury only causes a minor limp.	<u>Yes</u>	<u>No</u>
4. In a game in which you are only down by 5 points, your starting guard goes down with a sprained ankle. It appears to be a mild sprain and taping has given it some support. The player assures you everything is fine and can perform cuts and turns with only minor discomfort.	<u>Yes</u>	<u>No</u>
5. The game is close and your team is down by 4 points. You have a "bench player" on the floor replacing a tired starter when the bench player begins hyperventilating. After being helped at the bench, the player indicates everything is okay.	<u>Yes</u>	<u>No</u>
6. Your team is winning handily when your backup center grabs a rebound, but comes down awkwardly on a teammates foot. It appears as if the center has a strained achilles tendon. After being checked and a mild strain indicated, taping is used for support. The player appears eager to play again.	<u>Yes</u>	<u>No</u>
7. Your starting guard dives after a loose ball and bruises the right kneecap. The game is far out of your team's reach at this point. The knee is slightly stiff and is showing some signs of a bruise, but the player can move fairly well without too much problem. The player indicated a readiness to return to the game.	<u>Yes</u>	<u>No</u>

8. With 10 minutes to go in a close game, and your team up by only 3, your starting guard needs a rest. The backup player at that position had gone out with a strained lower back muscle. The backup player has been moving around behind the bench and appears fine. It appears to be only a mild strain and isn't causing the player a great deal of problems. The backup player wants to play again in the game.
<u> </u>	<u> </u>
Yes	No
9. In a losing cause, you want to platoon in all 5 of the players who have seen less than 2 minutes in the game. Your 10th player had played very briefly early in the game, but suffered a "groin pull". The muscle strain appears to be mild and isn't causing more than some minor discomfort at this point. The player wants a chance to play more in the game.
<u> </u>	<u> </u>
Yes	No

Appendix D. Demographic Survey

Demographic Survey

Please provide the following information in the indicated spaces.

1. Sport(s) and athletes' gender(s) coaching in the 1994-95 academic year

2. Gender: M F (Circle one)

3. Years of Coaching Experience _____

4. Type of Position:

"Walk-On" Coach _____

Teacher-Coach _____

5. Educational Background

Do you have a B.S. or B.A.? Y N (Circle one)

If yes, what was your major? _____

Do you have an advanced degree? Y N (Circle one)

If yes, in what field? _____

Please specify any additional first aid or emergency medical training you have. (EMT, ATC, paramedic)

6. Date (month/year) of most recent certification in first aid and cardiopulmonary resuscitation _____

7. Does the high school where you coach:

have an athletic trainer? Y N (Circle one)

have a team physician? Y N (Circle one)

Appendix E. Proctoring Procedures

Proctoring Procedures

Assessment of First Aid Knowledge and Decision-Making of High School Coaches

Procedures for Proctors

1. Introduction

Read aloud:

I am a certified athletic trainer selected to request your participation in research currently being conducted by a San Jose State University graduate student. The research involves surveying area high school coaches to assess their first aid knowledge.

2. Explanation of Study

Read aloud:

The purpose of the study is to determine if the need to provide quality medical care in high school athletics is being met. The primary purpose is to determine if high school coaches possess adequate first aid knowledge to act as first aid providers. A second purpose is to assess decisions made by coaches in hypothetical athletic situations involving competition and injured athletes to determine if a conflict of duties exists.

Your input is greatly needed for the project to be successfully completed.

Approval has been granted by the league commissioners, as well as the individual high school principals and athletic directors.

Information obtained from the study will be used to make recommendations to each of the participating school districts and leagues.

You are not obligated to complete any of the questionnaires. Participation is strictly voluntary. Your responses will be kept confidential. Maintaining your anonymity is vital for the study. High school, district, and league personnel associated with the study will receive composite data only. They will not be able to identify individual leagues, districts, schools, or coaches.

With this in mind, we hope you will take 15-20 minutes to complete the three questionnaires.

3. Consent Forms

Read aloud:

Consent forms are being distributed. For those who volunteer to be part of the study, please take a few minutes to read and sign the forms. For those coaches who would rather not participate, please hold on to the consent forms and they will be collected momentarily. Once forms are distributed, read aloud:

Each of you should have two copies of the consent form. This form is a formal agreement between the investigator and each participant. As you read through it, you will notice it provides a summary of the purpose and procedures of the research. The form indicates: no risks are part of the research; lists possible benefits; and provides the names and telephone numbers of three individuals you may contact with any comments, concerns, or questions pertaining to any aspect of the research project.

4. Read the statement below aloud. Then, collect one copy of consent form from participating coaches. At the same time, give each participant one copy of the questionnaire packet.

As consent forms are collected, those who chose to abstain from the study can return both copies and take a 15 minute break outside of the room. Those who signed the forms will receive one questionnaire packet and keep one copy of the signed consent form.

Each packet contains three questionnaires. Instructions for each are listed on the cover page. If you have any questions, please do not hesitate to ask.

You may begin completing the packet as soon as you receive it. When you have finished, please place the packet in the envelope by the door and wait outside until all have finished.

6. Place all returned consent forms and questionnaire packets in envelope provided. Return the envelope and any extra materials to the investigator.

Appendix F. Consent Form

College of Applied Sciences and Arts • Department of Human Performance
One Washington Square • San José, California 95192-0054 • 408/924-3010 • FAX 408/924-3053

Agreement to Participate in Research

Responsible Investigator: Lisa R. Dunn, Graduate Student

Title of Study: Assessment of First Aid Knowledge and Decision-Making of High School Coaches

I, _____, volunteer to participate in this research study assessing the first aid knowledge of high school coaches to determine if it is at acceptable standards for fulfillment of their roles as first aid providers. The study is also assessing coaches' decisions regarding participation of injured athletes in various hypothetical game situations. I will be asked to complete three questionnaires upon providing my signed informed consent form.

I understand that no risks are associated with completing the questionnaires. Potential benefits from my participation in this study are: (a) determination if first aid and cardiopulmonary resuscitation certification adequately prepares coaches to provide first aid; (b) recommendations for changes in coaches' requirements and duties presented to school district and league personnel based on results.

No alternative procedure is available for this study.

I am aware that the results of the present study may be published but **confidentiality** will be maintained.

I understand that any questions, comments, or concerns may be directed to the Responsible Investigator at (408)866-8586. Dr. J. Bryant, Human Performance Department Chair, can be reached at (408)924-3010 for any complaints about the study. Questions, concerns, or complaints about the research or subjects' rights should be directed to Serena Stanford, Ph.D., Associate Academic Vice President for Graduate Studies and Research, at (408)924-2480.

I know that should I decide to participate in the study, I can withdraw from the study at any time without penalty.

By signing and dating this form of consent, I indicate that I have received a copy of the consent form and agree to participate in this study.

Subject's Signature

Date

Investigator's Signature

Date

Appendix G. Participant Instructions

Participant Instructions

Assessment of First Aid Knowledge and Decision-Making of High School Coaches

Instructions to Participants

The participation of many coaches is necessary for this research project to be successful. Each completed questionnaire greatly contributes to the quality of the project. Your time and effort are appreciated.

Remember participation is strictly voluntary. All responses will remain confidential and anonymous. Please provide a response for each item as indicated. The packet will take approximately 15 minutes to complete. Return completed questionnaires to the proctor as instructed.

Questionnaire #1: First Aid Assessment

Please circle one response for each item.

Example:

Athletes should not drink water during practice or competition. T F

Questionnaire #2: Game Situation Data Sheet

Please place an X on the line above response selected.

Example:

Return to Game

During the game, one athlete comes to you with obvious deformation of his forearm and wrist. Athlete has an apparent fracture of radius and ulna.

_____	_____X_____
Yes	No

Questionnaire #3: Demographic Survey

Follow the instructions provided at the top of the survey.

Once again, thank you for your participation in this study.