PHILLIPS, FREDERICK ROY. The Accuracy of Self-appraised Health Knowledge of Selected College Students in Eight Specific Areas of First Aid at the University of North Carolina at Greensboro. (1977)
Directed by: Dr. Glen Gordon Gilbert. pp. 111.

This study examined the relationships between the students' first aid background, self-appraised first aid knowledge, and tested first aid knowledge. The theme of this study was to determine if self-appraised knowledge of selected college students in eight specific areas of first aid could serve as an accurate measure of the students' first aid knowledge.

The four research questions under investigation were: (1) How accurate was self-appraised first aid knowledge prior to completing a course in first aid? (2) How accurate was self-appraised first aid knowledge after completing a course in first aid? The specific first aid areas investigated for both questions 1 and 2 were as follows: (1) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems, and (h) methods of transfer. (3) Was there a significant relationship between the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were and were not exposed to a pre-class first aid knowledge test? (4) Did considerable prior emergency care training or experience influence the accuracy of self-appraisal?

The target population for this study was university students enrolled in the Health Education classes for first aid at the University of North Carolina at Greensboro, Fall semester, 1976. Six first aid classes were investigated, with a total N of 150 (34 males and 116 females).

The administration of the testing instruments required the entire class period during the second class day to administer the First Aid Background Questionnaire, the First Aid Self-appraisal Inventory, and The Ohio State University First Aid and Personal Safety Achievement Test (OSU First Aid Examination; Reliability: Kuder-Richardson 20 = 0.804) for the pre-class testing. Approximately one hour

was required during the final examination time to administer the First Aid Self-appraisal Inventory and the OSU First Aid Examination for the post-class testing.

The administration of the instruments and the collection of the data was accomplished by each of the three instructors involved in the study. After the second class day through the last day of instruction, no data was gathered on any student. Beginning with the third class day, each instructor followed a syllabus with a topical progression based on the ANRC course outline.

On the basis of the data obtained in this study, the following basic conclusions were reached:

1. Considering the eight specific areas collectively, students can self-appraise their first aid knowledge accurately prior to completing a course in first aid. The .05 significance level was reached (prob. = 0.041) using the Pearson product-moment correlation coefficient. However, only two of the eight specific areas investigated were significant at the .05 level.

2. Considering the eight specific areas collectively, students can self-appraise their first aid knowledge accurately after completing a course in first aid. The .05 significance level was reached (prob. = 0.002) using the Pearson product-moment correlation coefficient. Five of the eight specific areas investigated were significant at the .05 level.

3. There was a significant relationship between the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were (prob. = .011) and were not (prob. = .026) exposed to the pre-class OSU First Aid Examination.

4. Prior emergency care training or experience did not increase the accuracy of self-appraised first aid knowledge for pre- or post-class self-appraisal rating.

THE ACCURACY OF SELF-APPRAISED HEALTH KNOWLEDGE OF SELECTED COLLEGE STUDENTS IN EIGHT SPECIFIC AREAS OF FIRST AID AT THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

by

Frederick Roy Phillips

A Thesis Submitted to
the Graduate Faculty of the
School of Health, Physical Education and Recreation at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Master of Education

Greensboro
1977

Approved by

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APPROVAL PAGE

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ACKNOWLEDGMENTS

The author wishes to express his sincere appreciation to the members of the faculty who consented to advise him during the development, execution, and evaluation of this study. Thanks are extended to Dr. Glen G. Gilbert (adviser), Dr. Raymond J. Vincent, Dr. Alexander W. McNeill, and Dr. Todd M. Mommsen.

A special debt of gratitude is owed to Miss Pat Beitel for her assistance in the statistical procedures employed in the study by the investigator.

Sincere gratitude is expressed to the Health Education Instructors, without whose help it would not have been possible to conduct the study. Thanks to Mr. Bruce Uhrich, Miss Holly Eisen, and Miss Susie Tuthill.

The author is remindful and thankful for the patience, tolerance, and encouragement extended to him by his sister and brother-in-law, Robin and John Shobert, throughout his graduate work at the University of North Carolina at Greensboro.

As an expression of gratitude for all her help, the author would like to dedicate this composite of research to Miss Madelyn Sossoman.

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CHAPTER I

INTRODUCTION

Is there a need for first aid training? Knowledge of first aid and emergency care is a valuable asset in the daily life of every individual. In 1975, 10.5 million citizens of the United States were involved in accidents that killed nearly 103 thousand persons and cost over 47.1 billion dollars (National Safety Council, 1976, p. 3-4). These incredible statistics emphasize the need for first aid training. However, for people to be "prepared to assist others wisely if they are stricken, to give them instruction in first aid, and to promote among them a reasonable safety attitude" (American National Red Cross, 1975, p. 13), one must possess basic first aid knowledge, and effective first aid training is essential to the acquisition of this knowledge.

As long as accidents continue to be the leading cause of death among children and young adults, ages 1 to 38 (National Center for Health Statistics, Accidents Facts: 1976, p. 8-9), there will be a continuing need for improved and expanded first aid education in our schools and colleges. To help provide this need for improved and expanded first aid education in colleges, instructors need assessment instruments. For example, if an instructor in first aid at the University of North Carolina at Greensboro had a self-appraisal instrument that could accurately measure the student's strengths and weaknesses in all areas of first aid, instructional time could be used more wisely. Far too often, the

instructors assume their students have achieved a certain level of knowledge, without substantial evidence. How much more proficient could these instructors be if they could assess their pupils' knowledge at the beginning of a course? The results of a self-appraisal inventory could yield insights into individual student knowledge needs and may encourage the planning and conduct of a richer course experience. A self-appraisal inventory of first aid knowledge, then, may prove to be useful.

As a result of these considerations, this study examined the relationships between the student's first aid background, self-appraised first aid knowledge, and tested first aid knowledge. The theme of this study was to determine if self-appraised health knowledge of selected college students in eight specific areas of first aid served as an accurate measure of the student's first aid knowledge.

It is hoped that this study adds to the total knowledge of the relationship of self-appraisal of one's knowledge and specifically self-appraisal of one's knowledge in the area of first aid.

STATEMENT OF THE PROBLEM

The purpose of this study was to investigate the accuracy of self-appraised health knowledge of selected college students in eight specific areas of first aid at the University of North Carolina at Greensboro, Greensboro, North Carolina. There were four basic questions examined in this study. The questions were as follows:

1. How accurate was self-appraised first aid knowledge prior to completing a course in first aid? The specific first aid areas investigated were as follows: (a) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems, and (h) methods of transfer.

2. How accurate was self-appraised first aid knowledge after completing a course in first aid? The specific first aid areas investigated were as follows: (1) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems, and (h) methods of transfer.

3. Was there a significant relationship between the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were and were not exposed to a pre-class first aid knowledge test?

4. Did considerable prior emergency care training or experience influence the accuracy of self-appraisal?

In answering these questions, the investigator analyzed various factors by comparing the scores on The Ohio State University First Aid and Personal Safety Achievement Test (hereafter referred to as the OSU First Aid Examination) with the self-appraisal ratings to determine if self-appraisal of first aid was accurate.

DEFINITION OF TERMS

It will be helpful to the reader to become familiar with the following terms utilized in the study.

American National Red Cross. A non-profit organization providing the majority of first aid training in the United States since 1910 (American National Red Cross, 1975, p. preface). It will hereafter be called ANRC.

First Aid. "The immediate care given to a person who has been injured or suddenly taken ill. It includes self-help and home care if medical assistance is not available or is delayed. It also includes well selected words of encouragement, evidence of willingness to help, and promotion of confidence by demonstration of competence" (ANRC, 1975, p. 11).

First Aid Background Questionnaire: Form A. An instrument, devised by Dr. Burton Hart, to collect demographic information. It will hereafter be called the First Aid Background Questionnaire.

First aid knowledge. The student's knowledge with regard to first aid topics which can be measured by a standardized test.

Health Education 236: First Aid. An ANRC standard first aid course offered at the University of North Carolina at Greensboro for one semester hour of credit. It will hereafter be called Health 236.

Health Education 338: First Aid and Personal Safety. A first aid and personal safety course offered at the University of North Carolina at Greensboro for three semester hours of credit, leading to possible instructor certification. It will hereafter be called Health 338.

First Aid Self-appraisal Inventory. An instrument devised by Dr. Glen Gilbert and modified by the investigator to meet the needs of this study. The instrument was used to measure the first aid knowledge as appraised by the

individual student in eight specific first aid areas.

Self-appraised First Aid Knowledge. First aid knowledge as appraised by the individual student of first aid topics or areas using the First Aid Self-appraisal Inventory.

BASIC ASSUMPTIONS

In order to carry out this study, it was necessary to make certain assumptions.

1. Students responded accurately, truthfully, and completely to the best of their knowledge when completing the First Aid Background Questionnaire, First Aid Self-appraisal Inventory and the OSU First Aid Examination.
2. The First Aid Self-appraisal Inventory, devised by Dr. Glen Gilbert, was appropriately modified to meet the needs of this study.
3, The OSU First Aid Examination was a valid and reliable instrument to test first aid knowledge.

LIMITATIONS OF THE STUDY

This investigation was limited as follows:

1. The accessible population was limited to those students taking first aid courses, Health 236 and Health 338, at the University of North Carolina at Greensboro at the time of the study, Fall semester, 1976.

2. The evaluation instruments were limited to a written self-appraisal instrument and a written knowledge test; no psycho-motor testing was attempted.

RATIONALE FOR THE STUDY

Due to the multitude of human interactions and the trials and tribulations of everyday life, an ever-increasing need is created for a practical working knowledge in first aid. As stated by the National Center for Health Statistics (Accident Facts: 1976, p. 9; and The World Almanac and Book of Facts: 1977, p. 953), accidents alone are the fourth largest cause of all deaths in the United States.

Because of the increasing awareness of the number of people involved in accidents in a year, the ANRC has recently (1973) published complete new editions of its textbooks in an attempt to meet these increasing needs for first aid knowledge. Presentation of course content alone, however, will not meet this great need for first aid understanding. If progress is to continue in advancing first aid competencies, added educational strategies are needed for assessing the current knowledge. One such approach might be the use of a self-appraisal inventory.

Since there is a wide variation in the experiences and training that college students possess, a self-appraisal inventory could prove to be appropriate for the following purposes:

1. *The First Aid Self-appraisal Inventory could serve as a means for the the instructor and the student to determine those first aid areas requiring additional instructional times as identified by low self-appraisal ratings.*

2. *The First Aid Self-appraisal Inventory could serve as a means for the instructor and the student to determine those first aid areas requiring minimal or no instructional time as identified by high self-appraisal ratings.*

3. *The First Aid Self-appraisal Inventory could serve as a means to determine course objectives and goals.*

4. *The First Aid Self-appraisal Inventory could serve as a means to determine worthwhile assignments.*

5. *The First Aid Self-appraisal Inventory could serve as a means to help each student realize his/her first aid strengths and weaknesses, which may motivate learning.*

6. *The First Aid Self-appraisal Inventory could serve as a means to help avoid detailed instruction in areas of special interest of the instructor.*

7. *If determined to be accurate in first aid, the self-appraisal may also be accurate in other areas of study.*

SUMMARY

The introduction of this study included the statement of the problem, definition of terms, basic assumptions, limitations of the study, and rationale for the study. The next chapter involves the review of literature for this study.

CHAPTER II

REVIEW OF RELATED LITERATURE

Chapter II presents a study of selected literature and research pertaining to self-appraisal of one's first aid knowledge as it relates to the concepts in this study. This chapter reviews (1) selected articles and books concerned with the rationale for first aid training, (2) selected studies and articles concerned with instructional evaluation methods in first aid, and (3) selected studies and articles concerned with the cognitive dimension of self-appraisal techniques.

RATIONALE FOR FIRST AID TRAINING

A tremendous amount of literature concerned with first aid was discovered in the search for first aid instructional evaluation methods. One of the major reasons for the voluminous amount of literature in first aid is probably due to the fact that there is a continuous need for improved first aid instruction.

Basic first aid training is recognized as an important factor contributing to the general welfare of mankind (Ludwig, 1960, p. 237-238). Researchers have demonstrated that first aid training contributes to accident and injury prevention and safety consciousness (Ludwig, 1960, p. 237-238; Kennedy, 1966, p.v.; National Academy of Sciences and National Research Council,

1966, p. 10; Henderson, 1969, p. 34). In the event of injury or sudden illness, correct first aid and emergency care procedures help to limit the extent of injury or seriousness of the illness (Henderson, 1969, p. 34) and often "make the difference between saving a life or permitting a person to die" (Annarino, Gurney and Kahms, 1968, p. 1).

> It has been demonstrated that with improved techniques in emergency medical care at all levels and in all disciplines, deaths may be reduced by approximately 60,000-80,000 per year and untold numbers of disabilities minimized or prevented (Barrick, 1975, p. 2-5).

The United States Federal Government has become concerned with first aid, specifically with occupational safety.

> Concern for occupational safety and health led to the Williams-Steiger Occupational Safety and Health Act of 1970, which authorizes the development and enforcement of standards to assure safe and healthful working conditions for employees. In general, the standards are rules for the avoidance of hazards that have been proved by research and experience to be harmful to personal safety and health. The act requires all employers and employees to become familiar with its standards and to abide by those standards that apply to them. The responsibility for promulgating and enforcing job safety and health standards has been assigned to the Secretary of Labor (ANRC, 1975, p. 41-42).

Kennedy (1966, p. v) stated that "basic first aid training . . . and the resulting knowledge should be a public responsibility of all citizens, not just the medical profession, public health officials, and educators." In 1966, the National Academy of Sciences and National Research Council (1966, p. 12) stated: "Beyond the fifth grade of elementary school, every American citizen should be trained in basic first aid."

Further, colleges and universities are implementing basic first aid training programs, as well as curriculums for emergency medical care and rescue to help minimize deaths and disabilities in the United States (Barrick, 1975, p. 2-5). For example, Dr. Glen Gilbert stated in a personal interview with the author that "there were approximately 540 students receiving first aid certificates a year at the University of North Carolina at Greensboro" (Gilbert, 1976, interview). Further, many of the emergency medical care and rescue curriculums, such as the curriculum at Mankato State College, are based on four employment and training levels for emergency care personnel. These training levels were established by the board of the National Registry of Emergency Medical Technicians (Barrick, 1975, p. 2-5), as follows:

1. EMT: Basic training for emergency medical technicians, 81 hours.

2. EMT-A: Basic 81-hour course and six months experience with an ambulance service.

3. EMT-Advanced: Advanced training for emergency medical technicians, 480 hours.

4. EMT-Hospital: A 2-year curriculum to train emergency medical technicians for working in hospital emergency departments.

INSTRUCTIONAL EVALUATION METHODS IN FIRST AID

There are few published materials dealing with the development, use, and/or evaluation of first aid instructional evaluation methods.

A possible explanation for this may be due to the rather complete control the American National Red Cross has on First Aid instruction. Since it is the only widely recognized authority on First Aid, the development and evaluation of instruction methods (and instructional evaluation methods) concerning First Aid per se is largely its responsibility (Gilbert, 1975, p. 11).

The ANRC awarded 1,891,140 first aid certificates from July, 1975 to June, 1976 (ANRC, 1976, p. 13).* Furthermore, "an impressive total of 39,883,344 certificates have been issued since the beginning of Red Cross First Aid instruction in 1910" (Gilbert, 1976, p. 10-12).

In his doctoral dissertation, Serdula (1957) developed a standardized First Aid and Emergency Care Knowledge Test for college students. In Serdula's statement of the "Purpose of the Study," he stated that there were no valid and reliable standardized first aid tests available to instructors of first aid at the college or university level. Serdula constructed a matrix of knowledge areas based on the 1957 edition of the ANRC text. He constructed a preliminary examination, field-tested it, and then revised it to a 75-item examination. Serdula's final version produced a college level first aid knowledge test with norms for the State of Indiana.

Casperson (1970) completed a similar study in his development of a First Aid and Emergency Care Knowledge Test for college students. Casperson's purpose was to construct and standardize two equivalent forms of a valid and reliable First Aid and Emergency Care Knowledge Test for students enrolled in a basic college level first aid course.

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*From July, 1975 to June, 1976, 1,826,091 first aid certificates have been awarded as stated by Mr. Richard M. Walter, Safety Programs Specialist, Carolinas Division, American National Red Cross (see Appendix E).

A table of specifications used to establish curricular content validity to maintain or establish content validity was developed with the assistance of a thirty-one-member jury of authorities actively engaged in first aid instruction at the college level. Following acceptable test construction procedures, items were developed, critically reviewed, revised, and divided into two equal preliminary test forms. The preliminary test forms were administered to 518 students at Indiana University who were enrolled in a basic first aid course. Analysis of the results revealed that 185 items met the established criteria for selection of items for the final test forms. From this pool of 185 items, 86 items were assigned to each of two final forms according to the table of specifications to maintain content validity, and they were designated as Form FA and Form FB.

Administration of the final test forms at 24 colleges and universities throughout the United States resulted in a total of 3,355 usable answer sheets. A total of 751 students completed both Form FA and Form FB. Analysis of the final testing resulted in similar measures of central tendency and variability with the means on Form FA slightly higher than Form FB, and the means for females slightly higher on both forms than for males. Correlation coefficients between Form FA and Form FB, and between first testing and second testing were found to be .849 and .850, respectively. It was concluded that the final test Forms FA and FB were valid and reliable instruments for measuring the first aid and emergency care knowledge of college students. However, the 1973 edition of the ANRC text largely invalidated the test.

Pre-course knowledge tests have also been designed for use in defining first aid training objectives. One of the few instructional systems developed for the American National Red Cross was completed by the American Institute for Research in Behavioral Sciences, under the sponsorship of American Telephone and Telegraph in 1967 (Markle, 1967). The project objective was to develop a basic First Aid course which would produce results in seven and one half instructional hours, equivalent to those produced by the standard ten-hour Red Cross course.

A set of test questions, defined as potential course objectives, was developed. These test questions were then pre-tested on trained and untrained members of nine randomly selected populations of varying ages and backgrounds to determine the actual objectives. Based on this performance, a revised subset of test questions was then used as a first draft of the course. Student performance guided the development of the final course through gradual alteration of the questions and additions of needed instructional materials. Instructional materials were added to the basic test questions only when the need was revealed through student try-outs. Response-time data and error data were used in the process.

A second major purpose of the project was to develop instruction materials which would aid students in fulfilling the selected course objectives. The selected strategy was the use of films to teach skills and the use of programmed texts to cover the necessary content. Empirical methods were used to develop the motion picture components of the course, as well as the printed

components. Data gathered from try-outs of brief segments of 16 mm black and white pilot footage were used to develop scripts for final filming in 35 mm color. The 35 mm films were in turn tested and revised on the basis of student performance. After viewing the films, the final film was approximately two and one-half hours in length.

The results claimed that the project attained the stated objectives. In addition to the desired increase in efficiency as a function of decreased time, the new seven and one-half hour course was found to be far more effective than the ten hour standard courses with which it was compared. On one wide range test used for comparisons, untrained subjects achieved a mean score of 85 and subjects trained in standard first aid courses achieved a mean score of 145, while subjects trained in the new course achieved a mean score of 270, out of a possible maximum of 326 points. Similar results were obtained with other tests and other subjects. This instructional development design was worth noting because rather than listing objectives and developing a program to meet them, the multi-media system objectives were a result of all possible questions derived from the ANRC text.

Since the Red Cross text was usually considered the only accepted text for first aid courses, this method seemed appropriate. However, although results cited appear favorable, by design, the course was obviously "teaching to the test," making comparisons based on such a test questionable.

Hart (1972) assessed the effectiveness of the programmed instruction component in the standard first aid course multi-media system adopted by

the ANRC. The sample in this study consisted of 123 students in six classes of Health Education 102 at The Ohio State University.

Hart randomly assigned the six classes to three treatment groups. The first group received the standard first aid course multi-media system entirely in the classroom. The second group received the identical treatment as the first except it had the programmed textbook component of the system assigned to be completed outside of class. The third group received the identical treatment of the second except it had comparable content assigned outside of class in lieu of the programmed textbook.

The effectiveness of the programmed instruction component in the multi-media system was ascertained by a comparison of the scores attained by the treatment groups on five dependent measures. The dependent measures were an achievement test, a practical examination, an attitude scale with the course as its object, an attitude scale with the instructor as its object, and an attitude scale with the programmed text as its object (Hart, 1976, p. 8-9). Hart found no significant differences between any of the treatment groups.

Furthermore, Hart came to the conclusion that there is no real difference between using the ANRC multi-media reading materials in the classroom or outside the classroom, or using other readings outside the classroom. In a previous study conducted by Markle (1967) and supported by the American Institute for Research in Behavioral Sciences for the ANRC, it was found that the multi-media system was far superior; this finding was quite discrepant from Hart's more recent findings.

Utilizing a junior high school, Franklin Greenburg (1972) completed a study in which he compared achievement gains in first aid courses using individualized methods with courses employing conventional group methods.

Male students enrolled in the ninth grade at Memorial Junior High School, Willingboro, New Jersey, during the 1971-72 school year were used as subjects for the study. The 311 subjects were assigned to one of twelve groups: (1) four experimental groups receiving individualized instruction; (2) four experimental groups receiving conventional instruction; and (3) four control groups receiving instruction in a different course of study. The experiment was replicated four times. Each replication consisted of a twelve-lesson block of instruction conducted by the investigator. The assignment of experimental treatment to groups was conducted by randomly rotating the treatments among the twelve treatment groups.

A first aid knowledge test constructed by Greenburg was also developed during the course of the pilot study. The forty-item knowledge test was subjected to curricular validity verification by a panel of five professors in the Department of Health and Physical Education at Temple University and two public school teachers. A series of three computerized item analyses were conducted to establish the test's statistical reliability.

The first aid knowledge test was administered to experimental and control subjects during the first and last class periods of each of the four treatment replications. Conclusions were based on comparisons of residual gain scores by means of analyses of variance and the Scheffé Test, and to compare

ability groupings, the t Test. Ability groups were established from SCAT scores (School and College Ability Tests).

Greenburg's study indicated statistically that conventional instruction was significantly more effective than individualized instruction in producing achievement gains. Greenburg thought that his personally developed individualized learning packets may have positively influenced student attitudes, but was unable to report such a result statistically.

Gilbert (1975) developed a manual of simulation methods for teaching and evaluating the required ANRC skills as contained in the 1973 edition of the Standard First Aid and Personal Safety Text. The investigator field-tested the methods to ascertain its effectiveness in terms of student achievement test scores and attitudes toward the first aid course.

Students enrolled in first aid classes at The Ohio State University, Spring quarter, 1975, were involved as the population for this study. The sample included twelve classes with a total population of 283. All students were randomly assigned to either of two treatment levels within each classroom unit. For the first two-thirds of the course, instructors taught the first aid course in the normal manner of instruction following a department syllabus. Approximately half of the class received treatment one, which involved the skill evaluation and teaching by simulation. The remaining half, the comparison group, received treatment two, which involved the skill evaluation and teaching by specific skill testing.

The achievement test scores were measured by using The Ohio State

University First Aid and Personal Safety Achievement Test. Student attitudes toward the course, the instructor, and the content were measured by the University of Illinois Course Evaluation Questionnaire.

The design Gilbert used to measure the effectiveness of the use of simulations was a Solomon Four-group Design for the achievement test scores and a post-test-only control group design for the attitude questionnaire. The dependent variables, the achievement test scores, and student attitudes were compared by utilizing analysis of variance to determine if significant differences occurred between treatment levels.

Gilbert stated that "the data collected in the study did not provide definite evidence that simulations were superior in producing higher achievement test scores" (Gilbert, 1975, p. 100). However, significance was approached and the demographic data showed that simulations may prove to be superior to specific skill testing methods. Gilbert suggested that there may not have been sufficient time for students and/or instructors involved in the study to become familiar with the methods or the procedures. Examining the data by individual classrooms showed that the results for two classrooms were significant. Gilbert explained that

> . . . this could be interpreted to say that simulations are an aid to some instructors and not to others. Also, both of these instructors had previous experience with this type of simulation. Therefore, it is possible that instructors need more training and experience than provided in this study to produce significant results (Gilbert, 1975, p. 100).

It was found that the simulation method did approach significance when used only for a short period of time, which may indicate that the method has potential use for teaching and/or evaluation in first aid. It was also reported that

> . . . students were highly motivated by the simulation situations which required actual diagnosis and first aid skill performance before a peer group. The simulations also served as a teaching device to the peer group who were able to observe the performance of fellow students and determine the correctness of their performance by the overhead projection (Gilbert, 1975, p. 100-101).

Although the simulation method was not shown to be statistically superior, it was shown that the specific skill testing did not produce higher achievement test scores. From this finding, Gilbert (1975, p. 101) suggested that "simulated situations can be used as a teaching and/or evaluation technique for first aid courses at the university level and work at least as well as methods now being employed."

There was no statistical evidence from the data collected in the study that showed the simulation method as superior in producing higher attitude ratings. Again, it was suggested that the simulation method was inadequate in producing any attitudinal differences because of the brevity of its use.

Gilbert recommended that further research be conducted to ascertain student self-confidence ratings in first aid abilities after they have been exposed to various instructional methods. This recommendation prompted this investigator's interest to research the cognitive dimension of self-appraisal.

COGNITIVE DIMENSION OF SELF-APPRAISAL

Most of the self-appraisal research found concerned the affective and psychomotor dimensions of self-appraisal. Very little published research investigating the cognitive dimension of self-appraisal (self-appraisal of one's knowledge) was found.

Researchers have determined that there are identifiable factors that influence the accuracy of self-appraised knowledge. For example, certain studies (Reader, 1955; Roth, 1959; and Shaw, 1960) have indicated that a student with a negative self-concept underrates himself and often achieves far below his potential. This study did not investigate the factors that affect self-appraisal accuracy, but rather the degree of accuracy of self-appraised first aid knowledge. Therefore, this section reviews selected studies and articles concerned specifically with the accuracy of self-appraisal methods and techniques.

Pollock (1970, p. 211-212) developed a combined knowledge test and self-reported behavior inventory to evaluate achievement of desirable behavioral objectives relevant to drug abuse education. It was not designed to discriminate among individual high and low achievers, but to evaluate educational program effectiveness. The objectives upon which it was based were derived from accepted state and national curriculum guides and textbooks. Test items were selected from a pool of related representative questions by a panel of expert health educators, physicians, and pharmacologists as being those

whose correct answers were most essential or desirable for a high school graduate or adult to know.

The test was designed to appraise the knowledge and actual practice of high school graduates. However, it could be used as early as the tenth grade to analyze effectiveness of prior instruction. Applications at the end of high school, college, or at adult levels could yield data by which practice, present knowledge, and total educational programs could be evaluated. Part I explored present drug-related behaviors as revealed by responses to a twenty-item self-report inventory; Part II appraised knowledge about use and effects of mood-modifying substances by means of a sixty-item inventory.

Validity of Part I was established through test, retest procedures, anonymous statements solicited from those who took the test, and personal interviews with randomly selected respondents. In addition, personal knowledge about the practices of certain students was used to verify their responses to the first twenty items as they handed in their papers.

Part II was validated by analysis of responses of 72 high school and 467 college students. All items discriminated positively and displayed difficulty ratings averaging .58. Reliability computed by the odd-even, split-half method, with application of the Spearman-Brown Prophecy Formula, was .682. This is considered an acceptable reliability for an instrument designed for use with groups. The standard error of measurement was 3.46.

Further evidence of validity was obtained by comparing performance of 26 upper division college students who were making an intensive study of drug

abuse, with the performance of lower division and standardization students. The hypothesis that a valid test would readily discriminate between these two groups was supported ($t = 29.54$, p less than $.001$).

Dalis (1961) developed an instrument designed to evaluate the effectiveness with which the objectives of a health education course have been met. By checking an inventory, students were asked to indicate what they had learned in a variety of health areas, and whether they believed additional instruction would be helpful. Although not suitable for individual student grading purposes, Dalis found this instrument might be helpful in determining the general level of knowledge of freshman and sophomore groups.

A study conducted by Juhasz (1967, p. 409-412) used a stratified sample of 893 students who were enrolled at the University of British Columbia. The composition of her sample was 365 males and 528 females. The study was based on the premise that many young people today do not have reliable, accurate information about sex and that they hold misconceptions about the subject. Data were collected by administering a two-part questionnaire which required freshmen and all education students of her sample to indicate their main source of sex information. The sample was also asked their opinion as to the adequacy of the sex information they received and the appropriateness of the age at which they received it.

The results of Juhasz's study revealed that when parents were given as the main source of sex information, 76 percent of the females and 54 percent of the males said the information was obtained at the right age, and 9

percent of the females and 24 percent of the males said it was offered too late. When other children were cited as the primary source of sex information, 33 percent of the females and 31 percent of the males believed the information was received at the right age, but 50 percent of the females and 36 percent of the males thought it was received too late.

Juhasz concluded that there was no significant relationship between the population's rating of their knowledge of sexually related topics and their scores on the questionnaire. It was her conclusion that there was a tendency toward overestimating and underestimating their knowledge of particular topics. The greatest underestimation of their knowledge was on the topics of menopause and contraceptives.

In comparing the male and female ratings of her study, Juhasz found that one-third of the males and two-thirds of the females had very little information about masturbation. The students' self-rating of their knowledge of masturbation was quite similar for both sexes. Her research also revealed that 60 percent of the females and 50 percent of the males were well-informed about menstruation, and over 80 percent of both sexes actually had very little information about the topic of venereal disease.

Juhasz concluded that there was no sexually related topic in her study about which all students were well informed. She also indicated that more than half of the students in her study thought their main source of information about human sexuality had been from printed materials and that this information had not been available to them at the best age. Furthermore, only

one-tenth of the students claimed that their parents provided information to them at the best age. Another conclusion reached by Juhasz was that two-thirds of the students tested did not have adequate knowledge of the sex topics.

Meerdink (1970) conducted a study similar to that of Juhasz. Meerdink attempted to (1) determine the junior high school students' self-rating of the extent of his knowledge of selected, basic human sexuality concepts; (2) determine the accuracy of the knowledge these students have of the selected concepts; and (3) determine the sources from which information about these concepts was obtained.

The total population of 3,891 boys and girls of grades 7, 8, and 9 enrolled in each of the four junior high schools of the Sioux Falls Independent School District Number One, Sioux Falls, South Dakota, were selected as the subjects in the investigation. The ages of these students generally ranged from 12 to 15, with a few students at ages 11 and 16.

The human sexuality concepts about which the students claimed they were the most informed were pregnancy, menstruation, and intercourse; and, concepts about which the students said they were least informed were venereal disease and masturbation. The students claimed they had only some or little information about the concepts of abortion, ejaculation, homosexuality, petting, and wet dreams.

Although analysis of the data showed that students underestimated their actual knowledge, tested knowledge tended to be in line with self-appraised

knowledge in seven of the ten human sexuality concept areas. The concepts in this study about which the students had more than adequate knowledge were pregnancy and menstruation. The concepts in this study about which the students were least knowledgeable were homosexuality and masturbation. The students did have some knowledge of abortion, ejaculation, intercourse, petting, wet dreams, and venereal disease; however, their knowledge did not appear to be adequate.

The teacher or school was indicated as the primary source of information for six of the ten concepts used in this study. These concepts were ejaculation, intercourse, masturbation, petting, wet dreams, and venereal disease. The primary source of information for the students of this study about the concepts of abortion and homosexuality was printed materials. The students of this study indicated that their primary source of information about menstruation and pregnancy was their mother. Also ranked high as a source of information were "other sources," a friend their age, and an older friend. The roles of the father and movies as a major source of information about the concepts were negligible. Among the sources from which the students of this study obtained the least information about the concepts were doctor, minister or church, sister, and brother.

SUMMARY

The review of literature presented (1) selected articles and books concerned with the rationale for first aid training; (2) selected studies and

articles concerned with instructional evaluation methods in first aid, and (3) selected studies and articles concerned with the cognitive dimension of self-appraisal techniques.

It was shown that there is a definite need for continued improved first aid training as many lives are saved and the effects of injury and illness are minimized because of first aid training.

Instructional evaluation methods in first aid were limited in number. It was suggested that the limited number of first aid instructional evaluation methods may be due to the control the ANRC has gained through the years. First aid knowledge tests were developed by Serdula (1957) and Casperson (1970) which are largely outdated. Hart (1972) disproved Markle's (1967) findings that a multi-media system was more effective and efficient in first aid training than traditional ANRC instructional methods. Greenburg (1972) found that conventional instruction was significantly more effective than individualized instruction in producing achievement gains. Also, Gilbert (1975) suggested that from his findings simulated situations can be used as a teaching and/or evaluation technique for first aid courses at the university level at least as effectively as methods now being employed.

Very little published research concerned specifically with the cognitive dimension of self-appraisal was found. Pollock (1970) developed a valid and reliable test and self-reported behavior inventory to evaluate achievement of desirable behavioral objectives relevant to drug abuse education. Although not suitable for individual student grading purposes, Dalis (1961) developed

a self-appraisal instrument designed to evaluate the effectiveness of a health education course in meeting its objectives.

Research conducted by Juhasz (1967) concerning sex information supported the premise that no relationships existed between the students' self-rating of knowledge of sex topics and their actual knowledge of those same topics. Meerdick (1970) conducted a study similar to that of Juhasz. The analysis of the data showed that students tended to underrate their knowledge of selected human sexuality concept areas.

CHAPTER III

PROCEDURES OF THE STUDY

Chapter III presents the methods and procedures used to conduct this study. The points of focus were selection of the sample, instruments used in the study, the pilot studies, the data collection procedures, and the treatment of the data. The purpose of this study was to investigate the accuracy of self-appraised first aid knowledge of selected college students at the University of North Carolina at Greensboro. The relationships examined were the students' first aid background, self-appraised first aid knowledge, and tested first aid knowledge.

SELECTION OF THE SAMPLE

The target population for this study were university students enrolled in the Health Education classes for first aid at the University of North Carolina at Greensboro, Fall semester, 1976. Six first aid classes were investigated, with a total N of 150. Of these six classes, there were four classes of Health 236 and two classes of Health 338. The three Health Education instructors who taught these first aid courses agreed to cooperate prior to the study.

INSTRUMENTS USED IN THE STUDY

The instruments used to assess the accuracy of self-appraised first aid knowledge of selected college students at the University of North Carolina at Greensboro included: (a) the First Aid Background Questionnaire: Form A, (b) the First Aid Self-appraisal Inventory, and (c) The Ohio State University First Aid and Personal Safety Achievement Test (OSU First Aid Examination).

The instrument used to obtain the demographic information on each student was the First Aid Background Questionnaire: Form A (see Appendix I), which was devised by Dr. Burton Hart (1972) for his doctoral dissertation in first aid. The background questionnaire was used with written permission (see Appendix D) from Dr. Hart.

The instrument used to obtain self-appraisal ratings of students was designed by Dr. Glen Gilbert (1974) and was modified by the investigator to meet the specific purposes and needs of this study. The First Aid Self-appraisal Inventory (see Appendix J) was used to determine the self-appraised first aid knowledge of the following first aid areas: (a) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems and (h) methods of transfer. These eight areas were those areas having a minimum of five questions on the OSU First Aid Examination. The selected areas were not intended to include all the material examined in the first aid course.

The instrument used to assess the first aid knowledge level of the students was The Ohio State University First Aid and Personal Safety Achievement Test (see Appendix N). Since the Self-appraisal Inventory was based on the first aid examination, it was necessary to use a standardized examination to make reliability measures possible.

The OSU First Aid Examination was produced by a committee in 1974 and 1975 which was directed by Dr. Richard Windsor, then Assistant Professor of Health Education at The Ohio State University. Summary statistics were ascertained from four field tests (N exceeding 1,000). The resulting statistics from the 100 multiple choice item test included: Kuder-Richardson 20 = 0.804, Mean = 79.12, Median = 80.0, Mean item difficulty = .207, Mean item discrimination = .193, and a range in scores of 52 (Gilbert and Windsor, 1977, p. 49).

The test was selected for the following reasons:

1. The test was recently constructed (1975).

2. The test was suitable for the target population of college students.

3. The administration of the test was relatively simple with no special qualifications required.

4. The reliability coefficient was high.

5. The content was derived from the ANRC text. The course as taught at the University of North Carolina at Greensboro was based primarily on the ANRC textbook.

6. The test was the only available valid and reliable examination aimed at this study's target population.

PILOT STUDY

During the first and second sessions of summer school, 1976, the investigator conducted pilot studies at the University of North Carolina at Greensboro. The purpose of the pilot studies was (1) to resolve any ambiguities with the directions and/or questions asked by the First Aid Background Questionnaire and the First Aid Self-appraisal Inventory, and (2) to obtain data that might show similar results to that of the actual study.

The target population was university students enrolled in health education classes for first aid. There were two classes of Health 338 each session. Four classes were investigated with a total N of 100.

The data collection procedures attempted to duplicate those proposed in this study. The administration of the instruments under close to identical experimental conditions enabled the investigator to delete, make additions to and revise the testing instruments as needed. The First Aid Background Questionnaire was modified slightly to ease the task of scoring the questionnaire.

Since no standardized test was available to measure self-appraised first aid knowledge of college students, the investigator modified Dr. Glen Gilbert's First Aid Self-appraisal Inventory to meet the needs of this study.

Revisions were made as a result of the pilot studies. Data collection procedures for the study were established as described in the next section, "Data Collection Procedures."

DATA COLLECTION PROCEDURES

The data collection procedures involved the administration of the testing instruments used in this study. One entire class period was required during the second class day to administer the First Aid Background Questionnaire, the First Aid Self-appraisal Inventory, and the OSU First Aid Examination for the pre-class testing. Approximately one hour was required during the final examination time to administer the First Aid Self-appraisal Inventory and the OSU First Aid Examination for the post-class testing.

The administration of the instruments and the collection of the data (see Table I, p. 34) was accomplished by each of the three instructors involved in the study. An integral part of the data collection procedures of this investigation was the health education instructors' cooperation in utilizing class time to administer the three instruments. Since the operation of the study depended heavily on the cooperation of the instructors in each class, every effort was made to offer assistance to the instructors and to present minimum disruption to their normal teaching routine.

Prior to the First Class Day

Written instructions for pre-class testing (see Appendix B) were distributed to all three health education instructors, and verbal explanation (see Appendix A) of the written instructions was given. It was stressed that at no time during the course were the instructors to indicate to the students that their first aid classes were involved in research. The instructors were also

TABLE I. RESEARCH PROCEDURE

SUMMER SESSION I, 1976:	1.	*Pilot study #1 (post-class testing)*
	2.	*Revisions of instruments and establishment of reliability of First Aid Self-appraisal Inventory.*
SUMMER SESSION II, 1976:	1.	*Pilot study #2 (pre- and post-class testing)*
	2.	*Revisions of instruments and establishment of reliability of First Aid Self-appraisal Inventory*
FALL SEMESTER, 1976:		*Study conducted*
Prior to the First Class Day:	1.	*Secure approval (from the three Health Education instructors)*
	2.	*Distribution of pre-class testing directions and instruments to the Health Education instructors*
	3.	*Verbal explanation of the pre-class testing directions*
The First Class Day:		*Normal course introduction*
The Second Class Day:	1.	*Administration of the First Aid Background Questionnaire and the First Aid Self-appraisal Inventory to total sample*
	2.	*Administration of the OSU First Aid Examination to half plus two students randomly selected in each first aid class*
The Third Class Day through the Last Day of Instruction:	1.	*Normal class instruction according to ANRC course outline*
	2.	*No data was gathered on any subjects*
Final Examination Day:		*Administration of the First Aid Self-appraisal Inventory and the OSU First Aid Examination to the total sample*

asked to inform students participating in the pre-class testing that the tests the students were to take would not be used in any way for grading purposes, but only to determine their present first aid knowledge.

The First Class Day

The first class day involved introductory procedures such as introduction of the instructor, notification of books needed, and a description of the course, as well as distribution of a course syllabus.

Since a great many students drop and add courses between the first and second days of classes, data collecting on the first day of class could lower the N of the study. Therefore, the instruments for collecting pre-class data information were administered on the second class day. Any students dropping or adding a first aid course after the second class day did not participate in the study.

Through the cooperation of the three health education instructors, the enrollment of the students in each class was determined. Prior to the second class day, every student in each class was assigned a number, starting with number "1" for the first student on the class listing, number "2" for the second student on the class listing, and so forth. Students were assigned numbers for several reasons: (1) to simplify tabulation of the data gathered; (2) to insure anonymity so no identification of individual students could be made; (3) to simplify the "computer language," and (4) to simplify randomization procedures of the target population.

Prior to the second class day, the instructors were given a pre-class testing packet for each of their classes. Each packet included directions for pre-class testing (see Appendix B), First Aid Background Questionnaire forms (see Appendix I), Self-appraisal Inventory forms (see Appendix J), OSU First Aid Examinations (see Appendix N), and computer answer sheets (see Appendix K), to accommodate the instructors' largest class.

The Second Class Day

The second class day involved the administration of the testing instruments to gather pre-class data information. The First Aid Background Questionnaire and the First Aid Self-appraisal Inventory were administered to the total sample involved in the study. Students were informed that the Self-appraisal Inventory would not be used in any way for grading purposes, but only to determine their self-appraised first aid knowledge. Students not involved in the pre-class first aid knowledge test were dismissed. These students were informed that they would have an activity to complete later in the semester.

The OSU First Aid Examination was administered to half plus two students in each of the six first aid classes. The students who received the OSU First Aid Examination were selected randomly (Weber and Lamb, 1970, p. 308). The students taking the first aid examination were informed that the test they were to take would not be used in any way for grading purposes, but only to determine their present first aid knowledge. Appropriate testing procedures were followed during the administration of all instructions (see Appendix B).

After the second class day through the last class day of instruction, no data was gathered on any student.

The Third Class Day Through the Last Day of Instruction

Beginning the third class day, each instructor followed a syllabus with a topical progression based on the ANRC course outline appropriate for Health 338 or Health 236 (see Appendices F and G).

Contrasting Health 338 and Health 236, differences existed in credit hours, time in class, and depth of content coverage as described in the "Definition of Terms" section (p. 3) of this study and in the appendix section of this study (see Appendices F and G). However, this study was not directed at knowledge gain, per se, but rather at the student's ability to accurately measure his/her self-appraisal of first aid knowledge. Basically, both courses covered all of the material in the Standard First Aid and Personal Safety text.

Prior to final examination time, the instructors were given a post-class testing packet for each of their classes. Each packet included directions for post-class testing (see Appendix C), First Aid Self-appraisal Inventory forms (see Appendix J), OSU First Aid Examinations (see Appendix N), and computer sheets (see Appendix K) to accommodate the instructor's largest class.

Final Examination Day

The final examination day involved the administration of the testing instruments to gather post-class data information. The First Aid Self-appraisal

Inventory and the OSU First Aid Examination were administered to the total sample in the study.

Appropriate testing procedures were followed during the administration of all instruments for the post-class testing (see Appendix C).

The Self-appraisal Inventory was administered during the first five minutes of the final examination time. Students were informed that the First Aid Self-appraisal Inventory would not be used in any way for grading purposes, but only to determine their self-appraised first aid knowledge. The OSU First Aid Examination was administered after the First Aid Self-appraisal Inventory was completed.

TREATMENT OF THE DATA

Four research questions were investigated in this study. To answer these four questions, data was collected on the following three variables:

1. The students' demographic information and first aid training and experience as answered on the First Aid Background Questionnaire.

2. The students' self-appraisal of first aid knowledge as shown by students' ratings on the First Aid Self-appraisal Inventory.

3. The students' actual first aid knowledge as shown by students' scores obtained on the OSU First Aid Examination.

The treatment of the data was conducted in the following manner.

Question #1 and Question #2

1. How accurate was self-appraised first aid knowledge prior to completing a course in first aid? The specific first aid areas investigated were: (a) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems, (h) methods of transfer.

2. How accurate was self-appraised first aid knowledge after completing a course in first aid? The specific first aid areas investigated were as follows: (a) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems, and (h) methods of transfer.

Question #1 (pre-class) and Question #2 (post-class) were computed by Kendall Tau b to show a linear relationship between the students' knowledge and his appraised knowledge for each of the eight specific first aid areas. Kendall Tau b uses the information about the ordering of categories of variables by considering every possible pair of cases in the table.

> *Each pair is checked to see if their relative order on the first variable is the same (concordant) as their relative ordering on the second variable or if the ordering is reversed (discordant) (Nie, 1975, p. 227).*

Interval- and ratio-level variables are usually unsuited for cross-tabulations since they are frequently composed of a large number of distinct categories. When this is the case, scatter-grams and the Pearson product-moment correlation (r) can demonstrate this type of relationship. The Pearson product-moment correlation and the scatter-gram are used to demonstrate

the correlation between the mean self-appraisal ratings and the total knowledge scores.

Question #3

Was there a significant relationship between the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were and were not exposed to the pre-class OSU First Aid Examination?

The Pearson product-moment correlation coefficient was used to determine if a significant relationship existed between the post-class mean self-appraisal ratings and the total first aid knowledge test scores for those students receiving the pre-class OSU First Aid Examination and those students who did not receive the pre-class first aid knowledge test.

Question #4

Did considerable prior emergency care training or experience influence the accuracy of self-appraisal?

The Pearson product-moment correlation was used to determine if having prior emergency care training or experience influenced the accuracy of self-appraisal. The students who had prior training or experience were computed separately from those who did take the pre-class first aid knowledge test and those who did not take the pre-class test.

SUMMARY

Chapter III presented the procedures of the study which included the selection of the sample, instruments used in the study, the pilot studies, the data collection procedures and the treatment of the data. The target population (N = 150) was university students enrolled in the Health Education classes for first aid at the University of North Carolina at Greensboro, Fall semester, 1976. Three instruments were used to collect the necessary data to assess the accuracy of self-appraised first aid knowledge. The instruments included: (1) the First Aid Background Questionnaire, (2) the First Aid Self-appraisal Inventory, and (3) the OSU First Aid Examination.

Pilot studies were conducted (N = 100) during the first and second sessions of summer school, 1976. Revisions of the instruments were made and data collection procedures were established for this study as a result of the pilot studies.

The data collection procedures involved the administration of the testing instruments used in this study. The First Aid Background Questionnaire, the First Aid Self-appraisal Inventory, and the OSU First Aid Examination were administered for pre-class testing. The Self-appraisal Inventory and the OSU First Aid Examination were administered for post-class testing. The administration of the instruments and the collection of the data was accomplished by each of the three instructors involved in the study. No data was collected after the second class day through the last day of instruction.

Four research questions were investigated in this study. Question #1 (pre-class) and Question #2 (post-class) were computed by Kendall Tau b to determine the accuracy of self-appraisal for each of the eight specific first aid areas. The Pearson product-moment correlation and scatter-grams were used to demonstrate the correlation between the mean self-appraisal ratings and the total knowledge scores for pre- and post-class data.

The Pearson product-moment correlation coefficient was used (for Question #3) to determine if a significant relationship existed between the post-class mean self-appraisal ratings and total first aid knowledge test scores when students were and were not exposed to the pre-class OSU First Aid Examination. The Pearson product-moment correlation coefficient was also used (for Question #4) to determine if prior emergency care training or experience influenced the accuracy of self-appraisal.

CHAPTER IV

ANALYSIS OF THE DATA

Chapter IV presents the collected data of the study. The data is presented in the following sequence: (1) presentation of the results of the demographic information and (2) presentation of the results of the self-appraised and tested first aid knowledge by specific first aid areas and by totals.

PRESENTATION OF THE RESULTS OF THE DEMOGRAPHIC DATA

The First Aid Background Questionnaire (see Appendix I) was administered during the second class day to the total sample (N = 150) to examine the demographic similarity of the six classes. The demographic questionnaire requested information such as age, sex, year in school, and current grade point average. In addition, questions were asked regarding first aid training, certification, and experience.

Examination of the First Aid Background Questionnaire revealed that the demographic data supports the premise that all classes were demographically similar on the collected characteristics (see Table II, p. 44). An exception to this general statement was class 03. The N (18) of class 03 was smaller than the mean class size ($\bar{x}$ = 25) which probably caused the lower results in the collected characteristics for class 03.

TABLE II. SUMMARY OF DEMOGRAPHIC DATA BY CLASS

Descriptive Data	Class 01	Class 02	Class 03	Class 04	Class 05	Class 06	$\bar{X}$	Total
N	26	23	18	26	29	28	25	150
GROUP								
Pre- & Post-Group	17	14	10	14	15	15		85
Post-group Only	9	9	8	12	14	13		65
AGE								
Mean	21.5	19.7	21.3	20.1	20.7	20.8	20.7	
Mode	21	19, 20	20	20	20	20		
Range	19-20	18-22	19-29	17-26	19-24	18-29		
SEX								
Males	4	4	5	5	10	6	5.7	34
Females	22	19	13	21	19	22	19.3	116
ANRC CERTIFICATION								
Yes	1	1	3	6	4	6	3.5	21
Year								
1971 and Before	1	0	3	2	4	4		14
1972	0	1	0	1	0	0		2
1973	0	0	0	2	0	1		3
1974	0	0	0	1	0	1		2
No	25	22	15	20	25	22	21.5	129
N BY COLLEGE YEAR								
Freshman	0	0	0	2	0	0	0.3	2
Sophomore	3	13	2	8	1	5	5.3	32
Junior	6	8	6	12	13	12	9.5	57
Senior	17	2	9	4	15	10	9.5	57
Graduate	0	0	1	0	0	1	0.3	2
CURRENT MEAN G.P.A.	2.95	2.75	2.80	2.69	2.83	3.00	2.84	
OTHER EMERGENCY CARE TRAINING								
Yes	4	5	2	7	6	7	5.2	31
No	22	18	16	19	23	21	19.8	119

PRESENTATION OF THE RESULTS OF THE SELF-APPRAISED AND TESTED FIRST AID KNOWLEDGE BY SPECIFIC FIRST AID AREAS AND BY TOTALS

The following section presents the data pertaining to each of the four research questions under investigation in this study.

Question #1

How accurate was self-appraised first aid knowledge prior to completing a course in first aid? The specific first aid areas investigated were as follows: (1) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems, and (h) methods of transfer.

Question #1 was tested by using Kendall Tau b and Pearson product-moment correlation coefficient. The results are shown in Table III, p. 46. A scatter-gram was also computed for the totals, and the summary results are shown in Table IV, p. 47.

Results of the Data Related to Question #1

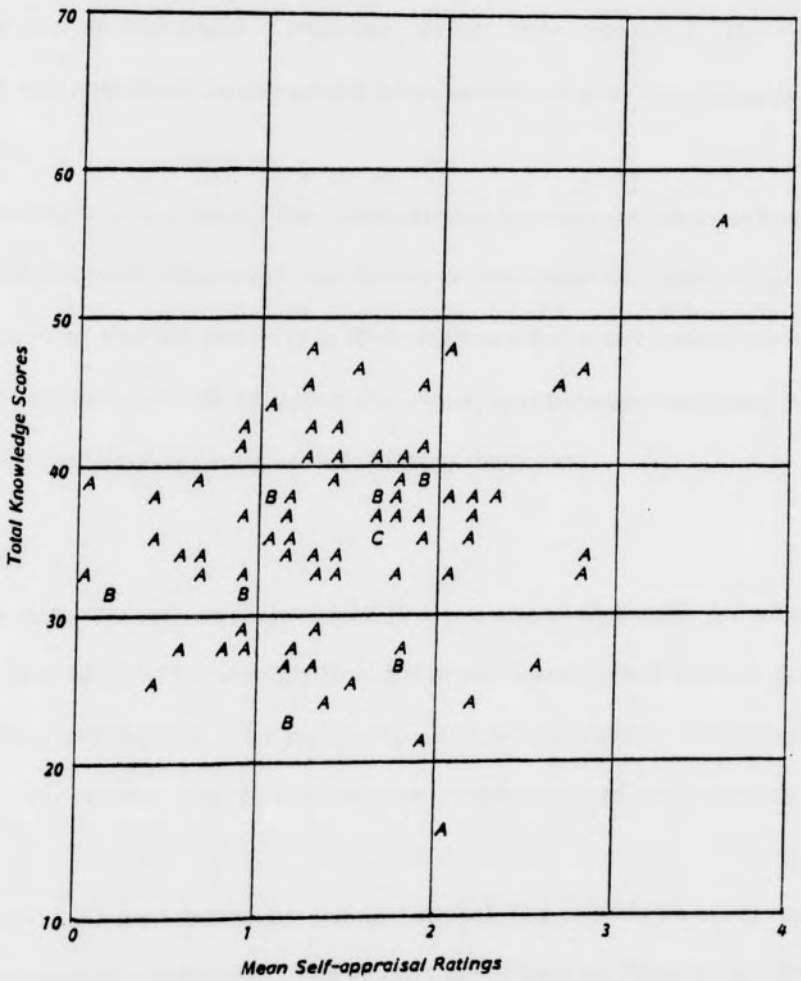
Significant Kendall Tau b correlations between self-appraisal and knowledge was observed in only two of the eight areas of the study, namely "breathing difficulties" and "cardiovascular problems." Despite there being only two significant Kendall Tau b correlations, it was determined that there was a significant Pearson product-moment correlation coefficient between the mean self-appraisal ratings and the total knowledge scores. (The level of

TABLE III. SUMMARY OF PRE-CLASS DATA INCLUDING CORRELATIONS

First Aid Area	Instrument	N	Mean	Standard Deviation	Variance	Minimum Correct	Maximum Correct	Tau b	Sig.
Breathing Difficulties	Knowledge	85	6.5	1.66	2.74	2	10	0.24	0.008*
	Self-appraisal	85	1.9	0.92	0.84	0	4		
Poisoning	Knowledge	85	6.5	1.99	3.95	2	11	0.15	0.073
	Self-appraisal	85	1.3	0.73	0.54	0	3		
Drug Problems	Knowledge	85	3.5	1.87	3.48	0	8	0.10	0.157
	Self-appraisal	85	1.1	0.85	0.72	0	4		
Wounds	Knowledge	85	5.7	2.72	7.39	0	10	0.15	0.059
	Self-appraisal	85	1.8	0.80	0.64	0	4		
Shock	Knowledge	85	3.6	0.88	0.77	1	5	0.08	0.204
	Self-appraisal	85	1.5	0.93	0.87	0	4		
Burns	Knowledge	85	2.9	1.28	1.63	0	5	-0.05	0.310
	Self-appraisal	85	1.4	0.81	0.66	0	4		
Cardiovascular Problems	Knowledge	85	3.6	1.31	1.71	1	7	0.25	0.008*
	Self-appraisal	85	1.1	0.93	0.87	0	4		
Methods of Transfer	Knowledge	85	2.5	1.04	1.08	0	4	0.10	0.162
	Self-appraisal	85	1.4	1.00	0.99	0	4		
								Pearson Correlation	
Totals	Total Knowledge	85	34.70	6.96	48.43	15	55	0.22	0.041*
	Mean Self-appraisal	85	1.4	0.65	0.42	0.13	3.5		

*Sig. $\leq$ .05

TABLE IV. A SCATTER GRAM SUMMARY OF PRE-CLASS MEAN SELF-APPRAISAL RATINGS AND TOTAL KNOWLEDGE SCORES



Legend: A = 1 observation; B = 2 observations; C = 2 observations; etc.

significance was set [Prob. = ≤ .05] as the acceptable level of significance for the purposes of this study.) It was interesting to note that only one Kendall Tau b correlation was negative. In this case, this would indicate that prior to a first aid course, the students thought that they knew less about "burns" than they did in fact know. However, in all other instances, their self-appraisal was relatively conservative when compared with their knowledge test scores.

A scatter-gram showing the relationships between the mean self-appraisal ratings and the total knowledge test scores is presented in Table IV, p. 47. It can be observed that the majority of first aid knowledge test scores lie between 25 and 45 correct with 34.70 being the mean, and between the 1 and 2 rating for the self-appraisal variable with 1.4 being the mean.

Question #2

How accurate was self-appraised first aid knowledge after completing a course in first aid? The specific first aid areas investigated were as follows: (1) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems, and (h) methods of transfer.

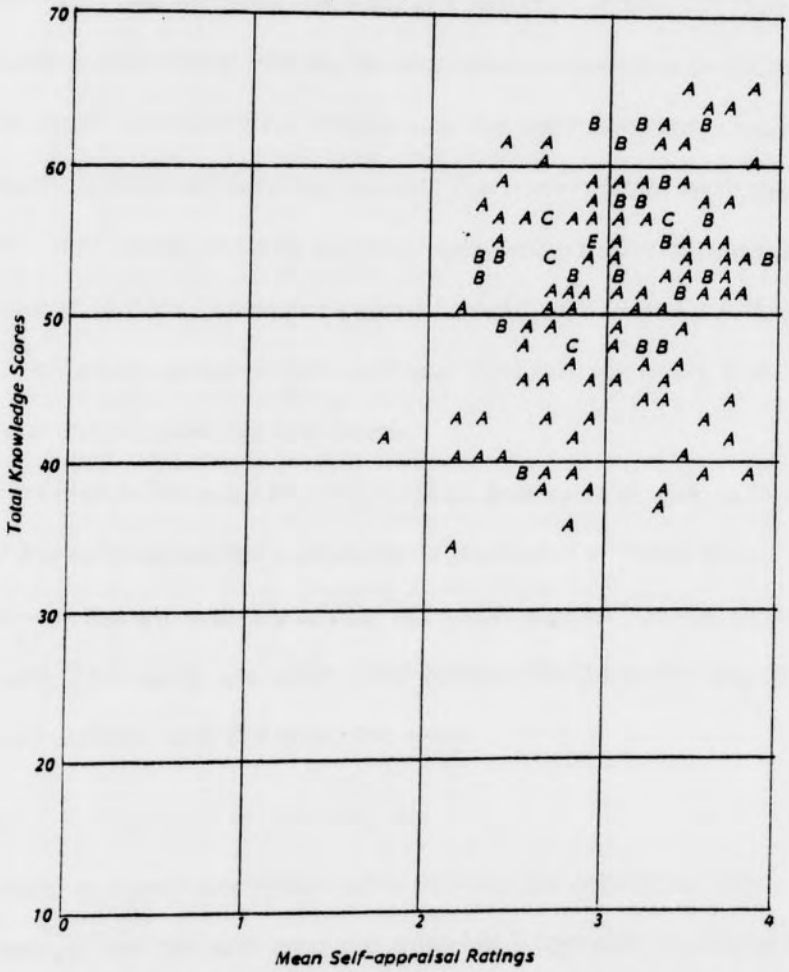
Question #2 was tested by using Kendall Tau b and Pearson product-moment correlation coefficient. The results are shown in Table V, p. 49. A scatter-gram was computed for the totals, and the summary results are shown in Table VI, p. 50.

TABLE V. SUMMARY OF POST-CLASS DATA INCLUDING CORRELATIONS

First Aid Area	Instrument	N	Mean	Standard Deviation	Variance	Minimum Correct	Maximum Correct	Tau b	Sig.
Breathing Difficulties	Knowledge	150	8.2	1.28	1.64	5	10	0.14	0.049*
	Self-appraisal	150	3.4	0.53	0.28	2	4		
Poisoning	Knowledge	150	9.9	2.42	5.87	3	14	0.20	0.006*
	Self-appraisal	150	2.8	0.64	0.41	1	4		
Drug Problems	Knowledge	150	5.6	1.96	3.83	1	10	0.20	0.004*
	Self-appraisal	150	2.5	0.73	0.53	0	4		
Wounds	Knowledge	150	9.1	1.17	1.37	4	10	0.07	0.179
	Self-appraisal	150	3.3	0.71	0.50	0	4		
Shock	Knowledge	150	4.4	0.85	0.73	2	5	-0.08	0.178
	Self-appraisal	150	3.2	0.62	0.39	2	4		
Burns	Knowledge	150	4.9	1.01	1.03	2	6	0.20	0.007*
	Self-appraisal	150	3.0	0.72	0.52	0	4		
Cardiovascular Problems	Knowledge	150	5.4	1.26	1.58	1	7	0.08	0.145
	Self-appraisal	150	2.6	0.76	0.58	0	4		
Methods of Transfer	Knowledge	150	4.1	1.06	1.12	0	5	0.15	0.032*
	Self-appraisal	150	3.0	0.72	0.52	1	4		
								Pearson Correlation	
Totals	Total Knowledge	150	51.7	7.17	51.44	34	65	0.25	0.002*
	Mean Self-appraisal	150	3.0	0.45	0.20	1.8	3.9		

*Sig. $\leq$ .05

TABLE VI. A SCATTER GRAM SUMMARY OF POST-CLASS MEAN SELF-APPRAISAL RATINGS AND TOTAL KNOWLEDGE SCORES



Legend: A = 1 observation; B = 2 observations; C = 3 observations; etc.

Results of the Data Related to Question #2

After completion of Health 338 or Health 236, it was demonstrated that there existed significant Kendall Tau b correlations for five of the eight knowledge areas being studied, namely "breathing difficulties," "poisoning," "drug problems," "burns," and "methods of transfer." It was also determined that there was a significant Pearson product-moment correlation coefficient between the mean self-appraisal ratings and the total knowledge scores. It was interesting to note that only one Kendall Tau b correlation was negative. In this case, this would indicate that after completing a first aid course, the students thought that they knew more about "shock" than they did in fact know. However, in all other instances their self-appraisal was relatively high when compared with their knowledge test scores.

A scatter-gram showing the relationships between the mean self-appraisal ratings and the total knowledge test scores is presented in Table VI, p. 50. It can be observed that the majority of first aid knowledge test scores lie between 39 and 66 with 51.7 being the mean, and between the 2 and 4 rating for the self-appraisal variable with 3.0 being the mean.

Question #3

Was there a significant relationship between the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were and were not exposed to the pre-class OSU First Aid Examination?

Question #3 was tested by using the Pearson product-moment correlation

coefficient to determine if a significant relationship did exist between the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were and were not exposed to the pre-class OSU First Aid Examination. The results are shown in Table VII, p. 53.

Results of the Data Related to Question #3

The Pearson product-moment correlation coefficient for this relationship was significant.

Question #4

Did significant prior emergency care training or experience influence the accuracy of self-appraisal?

Question #4 was tested by using the Pearson product-moment correlation coefficient to determine if prior emergency care training or experience influenced the accuracy of self-appraisal. The results are shown in Table VIII, p. 54.

Results of the Data Related to Question #4

The Pearson product-moment correlation coefficient for this relationship was low. Prior emergency care training and experience did not significantly affect the relationship between the mean self-appraisal ratings and the total first aid knowledge test scores for pre-class or post-class testing.

TABLE VII. A COMPARISON OF POST-CLASS MEAN SELF-APPRAISAL RATINGS AND TOTAL KNOWLEDGE TEST SCORES OF PRE-TESTED VERSUS NONPRE-TESTED STUDENTS AS COMPUTED BY PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENT.

Variable	N	Mean	Standard Deviation	Variance	Pearson	Sig.
RECEIVED PRE-TEST:						
Total Knowledge	85	51.28	7.35	54.02	0.25	0.011*
Mean Self-appraisal	85	2.91	0.44	0.19		
DID NOT RECEIVE PRE-TEST:						
Total Knowledge	65	51.92	7.35	54.02	0.24	0.026*
Mean Self-appraisal	65	3.08	0.44	0.19		

*Sig. $\leq$ .05

TABLE VIII. A COMPARISON OF PRE-CLASS AND POST-CLASS MEAN SELF-APPRAISAL RATINGS AND TOTAL KNOWLEDGE TEST SCORES OF STUDENTS HAVING PRIOR EMERGENCY CARE TRAINING OR EXPERIENCE AS COMPUTED BY PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENT.

Variable	N	Mean	Standard Deviation	Variance	Pearson	Sig.
RECEIVED PRE-CLASS TEST:						
Total Knowledge	23	38.09	4.15	17.22	0.12	0.332
Mean Self-appraisal	23	1.8	0.35	0.12		
RECEIVED POST-CLASS TEST:						
Total Knowledge	45	52.87	6.50	42.25	0.08	0.302
Mean Self-appraisal	45	3.07	0.45	0.20		

*Sig. $\leq$ .05

SUMMARY

Chapter IV presented the data collected concerning the sample employed in the study. It then proceeded to examine the data as it pertained to each question under investigation.

In general, questions #1, #2, and #3 were found to be significant at the .05 level. However, question #4 was found to not be significant at the .05 level.

The next chapter presents the summary, conclusions, and recommendations.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Chapter V summarizes the study and presents conclusions and recommendations for further study and research.

SUMMARY

This study examined the relationships between the students' first aid background, self-appraised first aid knowledge, and tested first aid knowledge. The theme of this study was to determine if self-appraised knowledge of selected college students in eight specific areas of first aid could serve as an accurate measure of the students' first aid knowledge.

The four research questions under investigation were:

1. How accurate was self-appraised first aid knowledge prior to completing a course in first aid? The specific first aid areas investigated were as follows: (a) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular problems, and (h) methods of transfer.

2. How accurate was self-appraised first aid knowledge after completing a course in first aid? The specific first aid areas investigated were as follows: (a) breathing difficulties, (b) poisoning, (c) drug problems, (d) wounds, (e) shock, (f) burns, (g) cardiovascular

problems, and (h) methods of transfer.

3. Was there a significant relationship between the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were and were not exposed to the pre-class OSU First Aid Examination?

4. Did considerable prior emergency care training or experience influence the accuracy of self-appraisal?

The literature was reviewed to provide a background and to determine the results of other investigations as they relate to the concepts in this study. A review of selected articles and books concerned with the rationale for first aid training disclosed a need for continuous improved first aid knowledge and training. The literature also revealed from selected studies and articles concerned with instructional evaluation methods in first aid that there were first aid tests and attitude questionnaires being developed. However, no valid and reliable first aid self-appraisal inventory was discovered. The review of literature also revealed from selected studies and articles that very little research is being done with the cognitive dimension of self-appraisal.

The target population for this study was university students enrolled in the Health Education classes for first aid at the University of North Carolina at Greensboro, Fall semester, 1976. Six first aid classes were investigated, with a total N of 150.

The data collection procedures involved the administration of the testing instruments used in this study. One entire class period was required

during the second class day to administer the First Aid Background Questionnaire, the First Aid Self-appraisal Inventory, and the OSU First Aid Examination for the pre-class testing. Approximately one hour was required during the final examination time to administer the First Aid Self-appraisal Inventory and the OSU First Aid Examination for the post-class testing.

The administration of the instruments and the collection of the data was accomplished by each of the three instructors involved in the study. Written instructions for pre-class and post-class testing were given to the instructors prior to each test day. Appropriate testing procedures were followed during the administration of all instruments.

After the second class day through the last day of instruction, no data was gathered on any student. Beginning with the third class day, each instructor followed a syllabus with a topical progression based on the ANRC course outline appropriate for the two first aid courses, Health 236 and Health 338.

CONCLUSIONS

On the basis of the data obtained from this study's sample population, the following conclusions were reached:

1. Considering the eight specific areas collectively, students can self-appraise their first aid knowledge accurately prior to completing a course in first aid. The .05 significance level was reached

(prob. = 0.041) using the Pearson product-moment correlation coefficient. (However, it should be noted that only two of the eight specific areas under investigation were significant at the .05 level.)

2. It was found that students can accurately self-appraise their first aid knowledge in the following specific areas prior to completing a course in first aid: (a) breathing difficulties (prob. = 0.008) and (b) cardiovascular problems (prob. = 0.008).

3. It was found that students can not accurately self-appraise their first aid knowledge in the following specific areas prior to completing a course in first aid: (a) poisoning, (b) drug problems, (c) wounds, (d) shock, (e) burns, and (f) methods of transfer.

4. Considering the eight specific areas collectively, students can self-appraise their first aid knowledge accurately after completing a course in first aid. The .05 significance level was reached (prob. = 0.002) using the Pearson product-moment correlation coefficient.

5. It was found that students can accurately self-appraise their first aid knowledge in the following specific areas after completing a course in first aid: (a) breathing difficulties (prob. = 0.049), (b) poisoning (prob. = 0.006), (c) drug problems (prob. = 0.004), (d) burns (prob. = 0.007), and (e) methods of transfer (prob. = 0.032).

6. It was found that students can not accurately self-appraise their first aid knowledge in the following specific areas after completing a

course in first aid: (a) wounds, (b) shock, and (c) cardiovascular problems.

7. There was a significant relationship between the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were (prob. = 0.011) and were not (prob. = 0.026) exposed to the pre-class OSU First Aid Examination.

8. Prior emergency care training or experience did not significantly affect the relationship between the mean self-appraisal ratings and the total first aid knowledge scores for pre-class or post-class testing.

Discussion of the Conclusions and Further Interpretations

The following interpretations and discussions of the conclusions are offered. The data collected in this study offers evidence that pre- and post-class (Sig. $\leq$ .05) self-appraisal of first aid knowledge was accurate. The pre-class data was examined with respect to the eight specific areas of first aid. The results indicated that the .05 significance level was reached or exceeded for "breathing difficulties" (prob. = 0.008) and "cardiovascular problems" (prob. = 0.008). The lack of significant relationships for the other areas examined might be interpreted to indicate that the pre-class problem areas were "poisoning," "drug problems," "shock," "burns," and " methods of transfer." However, "poisoning" and "wounds" approached the .05 significance level. Students self-appraised themselves lower than their tested first aid knowledge indicated.

Examining the post-class data from the eight specific areas of first aid showed that the .05 significance level was reached or exceeded for "breathing difficulties" (prob. = 0.049), "drug problems" (prob. = 0.004), "burns" (prob. = 0.007), and "methods of transfer" (prob. = 0.032); this might be interpreted as indicating that the post-class problem areas were "wounds," "shock," and "cardiovascular problems." Students self-appraised themselves higher than their tested first aid knowledge indicated.

A significant relationship was found to exist for the post-class mean self-appraisal ratings and the total first aid knowledge test scores when students were (prob. = 0.011) and were not (prob. = 0.026) exposed to the pre-class OSU First Aid Examination. The .05 significance level was reached for this relationship.

From analysis of the data, it appears that prior first aid knowledge was not an influence of self-appraised first aid knowledge for pre- or post-class testing. Furthermore, the .05 significance level was not approached for those students having prior first aid knowledge before and after having a first aid course.

RECOMMENDATIONS

The analysis of the data of the study prompts the investigator to make the following recommendations.

1. The use of this self-appraisal instrument may have desirable application in colleges and universities.

2. Replication of the experiment with larger groups, in the secondary school as well as college, and refinement of the research design so as to control for additional variables seem to be desirable directions for further research.

3. More research in the general area of first aid for college students is needed.

4. The sixty-minute time limitation for the OSU First Aid Examination should be extended to allow the slow reader an opportunity to score equally as well as the fast reader.

5. The true value of a self-appraisal instrument exists in the future. Essentially, the instruments will provide individual Health Education instructors the opportunity to examine their students for strengths and/or weaknesses concerning acceptable first aid knowledge and training.

6. Self-appraisal instruments in general could be developed to study other Health Education classes, and perhaps other academic fields, for the purpose of obtaining descriptive data on the status of health education knowledge at the collegiate level.

7. Further, self-appraisal of first aid knowledge should be investigated using a different research design and statistics to measure student prediction and postdiction.

8. Administering a first aid self-appraisal inventory before each unit test, students may be better able to align their actual first

aid knowledge with their self-appraised first aid knowledge.

When students leave the formal educational setting and enter the world of work and leisure, they are required to make many decisions based upon their own abilities and interests. Each of the decisions requires some assessment of the degree of success or enjoyment which may be derived from the prospective activity. Hopefully, the evaluation of the potential activity will be rational and knowledge-based. Self-appraisal of one's knowledge may be difficult to do, but it is needed and should be developed and used within the school curriculum.

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BIBLIOGRAPHY

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APPENDICES

APPENDIX A

SYLLABUS FOR MEETING WITH INSTRUCTORS HELPING TO OBTAIN DATA FOR THIS STUDY

Outline of information to be covered during meeting with instructors involved in the study:

I. Thanks for participating.

II. Distribution of directions.

III. Review of procedures for the pre-class administration of the First Aid Background Questionnaire, Self-appraisal Inventory, and the O. S. U. First Aid Examination.

IV. Review of procedures for the post-class Self-appraisal Inventory and O. S. U. First Aid Examination.

V. Questions.

VI. Thanks again.

APPENDIX B

DIRECTIONS FOR INSTRUCTORS: PRE-CLASS TESTING

Your cooperation in this study is greatly appreciated. The following directions are to be followed during the data gathering process.

First Day of Class

Present your normal course introduction.

Second Day of Class

1. Administer the First Aid Background Questionnaire to all students.
2. Administer the Self-appraisal Inventory to all students.
3. Administer the OSU First Aid Examination with the following directions: (a) dismiss the students not involved in taking the pre-class first aid examination, noting that they will have an activity to complete later in the semester; (b) tell the students who will be taking the pre-class first aid examination* that the test will not be used for grading purposes; (c) tell students taking the pre-class first aid examination that the test will be employed only to determine the students' first aid knowledge; and (d) stress that 60 minutes is the maximum time available and post the remaining time each ten minutes on the chalkboard.

Third Day of Class Through Last Day of Class Instruction

Begin your normal course instruction, keeping as close as possible to the American Red Cross suggested course sequence.

Please stress that attendance is very important according to the Red Cross and that you will take roll each day. At no time during the course are you to indicate to your students that they are involved in research.

Instructions for administering the final examination will be given later in the semester.

Thank you again for your cooperation, and please feel free to contact me if you have further questions.

Sincerely,

Fred Phillips
Hinshaw Dorm
Telephone: 379-5688

**The pre-class first aid examination will be administered to one-half plus two students in each class. Students taking the OSU First Aid Examination will be selected randomly by the investigator.*

APPENDIX C

DIRECTIONS FOR INSTRUCTORS: POST-CLASS TESTING

Your cooperation in this study is greatly appreciated. The following directions are to be followed during the final data gathering process.

Final Examination Day

During the regular final examination time, the Self-appraisal Inventory and OSU Final Examination will be completed. Tell students that the First Aid Self-appraisal Inventory will not be used in any way for grading purposes, only to determine their self-appraised first aid knowledge. Stress that 60 minutes is the maximum time available and post the time each ten minutes on the chalkboard.

Return the Self-appraisal Inventory and Final Examination Answer Sheet (after grading) and Final Examination Booklet to Room 105, Rosenthal Gymnasium.

Thank you for your cooperation, and please feel free to contact me if you have further questions.

Sincerely,

Fred Phillips
1665 Hinshaw Dorm
Telephone: 379-5688

APPENDIX D

1665 Hinshaw Dorm
University of North Carolina
Greensboro, N. C. 27412
September 13, 1976

Dr. Burton B. Hart
Assistant Professor
College of Health, Physical Education
and Recreation
White Building
The Pennsylvania State University
University Park, Pennsylvania 16802

Dear Dr. Hart:

As part of my graduate program in the Division of Health Education at the University of North Carolina at Greensboro, I am writing a thesis which relates to the area of first aid. I am interested in trying to ascertain the accuracy of self-appraised first aid knowledge prior to a course in first aid and after completing a course in first aid. I plan to explore this problem by administering a background questionnaire, a self-appraisal inventory and the Ohio State University First Aid and Personal Safety Achievement Test.

The background questionnaire will be administered only once to all students involved in the study. The self-appraisal inventory and OSU First Aid Achievement Test will be administered twice (pre-class and post-class testing).

In your doctoral dissertation, "The Effectiveness of the Programmed Instruction Component on the Standard First Aid Course Multimedia System Adopted by the American Red Cross," you used a background questionnaire, Form A, to gather demographic information from college students in a simplified, condensed way. Since the subjects I plan to use will be college students, I feel that the questionnaire which you have developed would be especially useful in my study.

I would be most grateful to have your permission to use your questionnaire. I plan to administer it to approximately 180 college students. If this meets with your approval, I would appreciate your consent in writing.

Thank you for your time and consideration in this request. I will be looking forward to hearing from you.

Sincerely yours,

Frederick R. Phillips

THE PENNSYLVANIA STATE UNIVERSITY
WHITE BUILDING
UNIVERSITY PARK, PENNSYLVANIA 16802

College of Health, Physical Education and Recreation

Area Code 814
863-0435

September 20, 1976

Frederick R. Phillips
1665 Hinshaw Dorm
UNC-G
Greensboro, NC 27412

Dear Mr. Phillips:

Thank you for your letter of September 13 requesting permission to utilize the questionnaire I developed to gather information from college students. This letter grants that permission.

Good luck!

Sincerely,

Burton B. Hart, Ph.D.
Assistant Professor
Health Education

BBH/mpc

1665 Hinshaw Dorm
University of North Carolina
Greensboro, N. C. 27412
September 28, 1976

Dr. Burton B. Hart
Assistant Professor
College of Health, Physical Education
and Recreation
White Building
The Pennsylvania State University
University Park, Pennsylvania 16802

Dear Dr. Hart:

Thank you for your letter of September 20, 1976, in answer to my request for permission to use the background questionnaire which you have developed.

I appreciate the time in sending your permission.

Sincerely yours,

Frederick R. Phillips

APPENDIX E

1665 Hinshaw Dorm
University of North Carolina
Greensboro, NC 27412
March 4, 1977

Mr. Thomas C. Wertz
Carolinas' Division Safety
Programs Director
American National Red Cross
2425 Park Road
P. O. Box 3507
Charlotte, NC 28203

Dear Mr. Wertz:

This correspondence is in reference to ANRC First Aid certification statistics.

Mr. John Burwell directed me to you, Mr. Wertz, to obtain information about National and North Carolina certification totals.

I am writing a thesis (which is due April 4, in its final form) on First Aid: "The Accuracy of Self-appraised First Aid Knowledge in Eight Specific Areas of First Aid."

The information I am requesting is the total number of certified first aiders and/or the percentages per 1,000 people in the United States and in North Carolina.

	North Carolina	United States
Total certified in 1976		
Total presently holding certificates		

Please accept my sincerest thanks for your time and consideration in this request.

Sincerely,

Frederick R. Phillips, A.T., C.
Head Athletic Trainer

CAROLINAS DIVISION

AMERICAN NATIONAL RED CROSS

TELEPHONE: 704-376-1661

2425 PARK ROAD / P. O. BOX 3607
CHARLOTTE, NORTH CAROLINA 28203

March 17, 1977

Mr. Fredrick R. Phillips
1665 Hinshaw
University of North Carolina - Greensboro
Greenboro, N.C. 27412

Dear Mr. Phillips:

Regarding your letter of March 4, we recently received the annual report from our National Headquarters for they year July, 1975 to June 1976. The following includes the information you requested on First Aid training:

	USA	Carolinas Division (NC & SC)
% Chapters reporting	75.6	79.4
# Of Courses	125,369	4,727
# Of certificates	1,826,091	65,634
% 1000 population	8.3	8.13
% Change from 1975	+7.1	-1.0

I hope this information will assist you. If you need additional data please let us know.

Sincerely,

Rick Walter

Richard M. Walter
Safety Programs Specialist

March 26, 1977

Mr. Richard M. Walter
Safety Programs Specialist
Carolinas Division
American National Red Cross
2425 Park Road
P. O. Box 3507
Charlotte, NC 28203

Dear Mr. Walter:

This correspondence is in reference to the information on first aid training that you sent to me. The current statistical data is extremely helpful and will be cited in my thesis.

Thank you very much for your time and consideration in this request.

Sincerely,

Frederick R. Phillips, A.T. C.
Head Athletic Trainer

FRP/kla

APPENDIX F

SAFETY AND FIRST AID HEALTH EDUCATION 338

Fall Term 1976

Instructor: Bruce A. Uhrich 379-5708 (office)
05 Rosenthal (office) 855-7621 (home)

Required Texts:

1. American National Red Cross, Standard First Aid and Personal Safety, Garden City, N. Y., Doubleday and Co., Inc., 1973. (Blue cover.)

2. Worick, W. Wayne, Safety Education, Englewood Cliffs, N. J., Prentice-Hall, Inc., 1975. (Green cover.)

Grading:

Three exams (40 pts., 50 pts., 50 pts.)	140 pts.
Final exam (cumulative)	100 pts.
Practical Skill Evaluation (Psychomotor)	
Situation #1	15 pts.
Situation #2	25 pts.
Course Project (will vary depending upon whether or not you choose the instructor certification track.)	20 pts.
	300 pts. possible

NOTES:

1. Section 1 meets 2-3 p.m. M W F - RG202/Final - 12/20/76, 12-3 p.m.
   Section 2 meets 3-4: 30 p.m. M W - RG202/Final - 12/14/76, 12-3p.m.

2. If at any time you have questions or problems, please contact me at either my office or home. Office hours are posted. Room 05 Rosenthal is located in the front basement of this building.

3. Final grades will be determined by an adjusted percentage scale constructed afer all of the course points have been totaled. The following information is presented as a guide to grade level approximations:

270 pts. - 90%	210 pts. - 70%
240 pts. - 80%	180 pts. - 60%

4. You will also be asked to purchase a 2" wide package of roller guaze. The cost is approximately 60¢, and they are available in the bookstore.

COURSE CONTENT AND READING ASSIGNMENTS:

	TOPICS	TEXT & READINGS
Safety	Introduction to Safety Accident Data, Content Areas	Worick 1 - 8
	--- Section 1 and 2 - Exam I ---	
	--- Wednesday, September 15, 1976, 40 points ---	
First Aid Part I	First Aid Responsibilities General Procedures/Shock Respiratory Emergencies/Choking Wounds & Bandaging/Specific Injuries	ARC 1, 4, 5, 6 2, 13, 3 Reserve Articles
	--- Section 1 - Exam II, Friday, October 15, 1976, 50 points ---	
	--- Section 2 - Exam II, Wednesday, October 13, 1976, 50 points ---	
First Aid Part II	Poisoning/Drugs/Burns Heat and Cold Injuries/Sudden Illness Bone and Joint Injuries Emergency Rescue/Diabetes	ARC 7, 8, 9, 10, 11 12, 14, 15 Worick 13 Reserve Articles
	--- Section 1 - Exam III, Friday, November 12, 1976, 50 points ---	
	--- Section 2 - Exam III, Wednesday, November 10, 1976, 50 points ---	
First Aid Practical	Practical Skill Evaluations Summary & Review	ARC 1 - 15 Worick 12, 14, 15 Reserve Article
	--- Final Exams as noted earlier ---	

RESERVE ARTICLES: All articles are photocopied and are in the Reserve Room in the Library.

First Aid - Part I

1. "Duty to Aid in Time of Peril"
2. "A Symbol May Save Your Life!"
3. "What's Wrong With First Aid?"
4. "Is Your First Aid Up To Date?"
5. "Research Probes the Mystery of Shock - A Major Killer"
6. "Tourniquet Misuse"
7. "If 'Dog Bites Man' That's News Today"
8. "First Aid Supplies"
9. "Emergency First Aid Supplies Should Include..."

First Aid - Part II

1. *"Poison In the Back Yard"*
2. *"Poison Control Centers and Their Functions"*
3. *"Beware the Brown Recluse"*
4. *"Ill Effects of Little Strokes Usually of Short Duration"/"Teacher Tips"*

First Aid - Practical

1. *Gilbert, Glen G., "A Working Model for Simulation Techniques," Health Education, May/June, 1975.*

SELECTED BIBLIOGRAPHY OF SAFETY AND FIRST AID REFERENCES:

1. *ANRC. Advanced First Aid & Emergency Care.*
2. *ANRC. Cardiopulmonary Resuscitation.*
3. *ANRC. First Aid for Foreign Body Obstruction of the Airway.*
4. *ANRC. Lifesaving: Rescue and Water Safety.*
5. *doCarmo and Patterson. First Aid: Principles and Procedures.*
6. *Fontana. A Parents' Guide to Child Safety.*
7. *Henderson. Emergency Medical Guide.*
8. *National Safety Council. Accident Facts.*
9. *Thyerson. Safety: Concepts & Instruction.*

HEALTH EDUCATION 338
INSTRUCTOR CERTIFICATION REQUIREMENTS*

NOTE: Point #1 is work a maximum of 10 points towards the course project requirement.

Point #2 is worth a maximum of 10 points towards the course project requirement.

Points #1 - #10 must be met before the student is certified as an instructor.

1. Presentation of a ten minute lesson including the use of a visual aid. The lesson topic will be assigned and you must submit a lesson plan for approval no later than two (2) days prior to the date it is to be presented. (10 pts. possible.)

2. Completion of Instructor's Notebook to include: dividers, notes, etc., which gives evidence that you would be ready to teach a class using this resource. Included in the notebook will be a paper on how you will evaluate your course in the event you become an instructor. This should be very specific (i. e., number and type of examinations, etc.) on what standards you will require to receive the Standard Red Cross Card. Two typed pages or three and a half handwritten pages will be adequate to present your evaluation ideas. (10 pts. possible.) Due November 12, 1976.

3. Completion of all requirements for Standard First Aid and Personal Safety course (75% or better in total course points.)

4. Exemplary attendance. (ARC enforces strict attendance requirement.)

5. A score of 80 or better on final examination (minimum).

6. A combined score of 27 or above on practical examinations.

7. Assist instructor in giving practical examinations.

8. Purchase of Instructor's Manual and Foreign Body Obstruction pamphlet.

9. 17 years of age.

10. Completion of all paperwork for the local Red Cross chapter.

*Please note that this certification enables you to teach standard first aid and personal safety only. You may not certify instructors as this course does.

HEALTH EDUCATION 338
NON-INSTRUCTOR SAFETY EDUCATION PROJECT

SAFETY RESEARCH PAPER - 20 pts. possible

You are to research an area of safety which is of interest to you and prepare a paper reporting the results of your research. Begin your paper with a paragraph explanation of why this topic is of special value and/or interest to you personally. This should employ (at minimum) four recent sources (1970 - present) of acceptable academic quality. 800 - 1000 words should allow you to cover the topic adequately. The following are examples of acceptable topics:

Automobile Restraints
Heimlich Maneuver
Food Poisoning
Lead Poisoning
College Dorm Safety

Bicycle Safety
Rife Safety
C. P. S. C.
Fire Work Safety
Fire-Safe Clothing
Rabies

Occupational Health and Safety Act
C. P. R. Programs
Fire Prevention
Boating Safely

For any other topic considerations, check with Instructor.

Please feel free to design an original safety project to fulfill the research needs of this paper. Please check with Instructor.

GENERAL DIRECTIONS FOR THE PAPER:

a. Type paper or do in ink - one side of the page only and please make it legible.

b. If handwritten, use every other line.

c. Attach pages together in some fashion.

d. Explain clearly in your title what you are doing. The title page should include section and date.

e. Proper credit for sources is required, including bibliography and footnotes. Encyclopedias are unacceptable sources.

f. Late papers will be graded down for each over-due day. Papers are due Monday, October 25, 1976.

APPENDIX G

HEALTH EDUCATION 236 - FIRST AID

Instructor: Holly Eisen
379-5708 (office)
275-3766 (home)

Required Text: Standard First Aid and Personal Safety
American Red Cross, Doubleday and Company, Inc.
Garden City, New York, 1975.

Evaluation:

One mid-term	50 pts. (Oct. 5, 6, 7)
One final	100 pts.
Unannounced quizzes	10 pts.
Practical skill evaluation	

FIRST AID AND PERSONAL SAFETY

Date	Topic	Readings in ARC
Aug. 31, Sept. 1, 2	Class Policies and Procedures Introduction and Shock	Chapters 1 & 4
Sept. 7, 8, 9	Resp. Emergencies & Art. Resp.	Chapters 5 & 6
Sept. 14, 15, 16	Resp. Emergencies & Art. Resp.	Chapters 5 & 6
Sept. 21, 22, 23	Wounds & Bandaging	Chapters 2 & 13
Sept. 28, 29, 30	Wounds & Bandaging	Chapters 2 & 13
Oct. 5, 6, 7	Mid-term	
Oct. 12, 13, 14	Specific Injuries	Chapter 3
Oct. 20, 21	Poisoning & Drugs	Chapters 7 & 8
Oct. 26, 27, 28	Burns	Chapter 9
Nov. 2, 3, 4	Heat & Cold Sudden Illness	Chapters 10, 11, 12
Nov. 9, 10, 11	Bone & Joint Injuries	Chapter 14
Nov. 16, 17, 18	Bone & Joint Injuries	Chapters 13 & 14
Nov. 23, 24	Emergency Rescue & Transfer	Chapter 15
Nov. 30, Dec. 1, 2	Emergency Rescue & Transfer	Chapter 15
Dec. 7, 8, 9	Review Final Exam & Practical	

HEALTH EDUCATION 236 - FIRST AID

Fall Semester, 1976
Monday - 1200 - Room 204

Instructor: Miss Susan E. Tuthill
Room 234, S. Spencer
Phone: 379-5030

Required Text: Standard First Aid & Personal Safety
Doubleday and Company, Inc., Garden City, New York (1973)

Evaluation: One mid-term
One final
Practical skill evaluation (psycho-motor)
Quizzes

To achieve First Aid Card:
a. Total grade, no lower than 80%.
b. No absences

*Student who misses more than one class will be asked to leave the course.

Aug. 30	Introduction	ARC Chapter 1
Sept. 13	Standard First Aid Procedures	ARC Chapters 4 & 5
	Shock	ARC Chapter 6
	Resp. Emergencies & Art. Resp.	
Sept. 20	Special Activity	ARC Chapters 2 & 13
	Wounds & Bandaging	
Sept. 27	Specific Injuries	ARC Chapter 3
Oct. 4	Poisoning, Drugs	ARC Chapters 7 & 8
Oct. 11	Mid-term #1	ARC Chapters 1 - 8
Oct. 25	Burns	ARC Chapter 9
Nov. 1	Heat & Cold	ARC Chapters 9, 10, 11
	Sudden Illness	
Nov. 8	Bone & Joint Injuries	ARC Chapters 12 & 14
Nov. 15	Bone & Joint Injuries	ARC Chapter 14
Nov. 22	Bone & Joint Injuries	ARC Chapter 14
Nov. 29	Emergency Rescue Transfer	ARC Chapter 15
Dec. 6	Emergency Rescue Transfer	ARC Chapter 15
Dec. 17	Exam: 1530 - 1830	ARC Chapters 1 - 15

APPENDIX H

Copies sent to:

Miss Holly Eisen, Instructor
Miss Susie Tuthill, Instructor

1665 Hinshaw Dorm
University of North Carolina
Greensboro, N. C. 27412
January 24, 1977

Mr. Bruce Uhrich, Instructor
School of Health, Physical Education
and Recreation
University of North Carolina at Greensboro
Greensboro, North Carolina 27412

Dear Mr. Uhrich:

This correspondence is in reference to the tremendous help you have given me in collecting data from your first aid classes for my thesis.

Presently, I am preparing the programming for the computer and punching data dards, which are both time consuming, as I am sure you are aware. Also, I am happy to say that the study has an "n" of 150 subjects.

For all your help, time and consideration in collecting data from your first aid classes for my thesis, please accept my sincerest thanks. I do hope that you were not inconvenienced in any way.

Kindest personal regards.

Sincerely yours,

Frederick R. Phillips

APPENDIX I

FIRST AID BACKGROUND QUESTIONNAIRE

This information will not be used in any way to determine any portion of your grade in this course. This background questionnaire is requesting information to obtain a general idea of your first aid background.

1. Name: _____
   Last First Middle initial
2. Instructor's name: _____
   Meeting time: _____
3. Age: _____
4. Sex: Male _____ Female _____
5. Do you hold a current valid American Red Cross First Aid Certificate?
   Yes _____ No _____
6. Have you ever been certified by the American Red Cross in the Standard First Aid Course?
   Yes _____ No _____
7. If you answered YES to question number 6, list the year when certified: ____
8. Year of college you are in:
   Freshman: _____
   Sophomore: _____
   Junior: _____
   Senior: _____
   Graduate: _____
9. Your major area of concentration: _____
10. Your approximate overall grade point average: _____
11. Based on your background and experience, rate yourself on knowledge of first aid practices and principles:
    Excellent: _____ Good: _____ Fair: _____ Poor: _____
12. If you rated yourself excellent or good, please state where and how you acquired your knowledge of first aid practices and principles.
    _____
    _____
13. Have you had any other type of emergency care training? Yes ____ No ____
14. If you answered YES to question number 13:
    Where did you receive this training: _____
    When (list the year): _____
    Describe briefly this training: _____
    _____

NOTE: This questionnaire, although modified, is used by permission of the author, Burton Hart, Pennsylvania State University.

APPENDIX J

SELF-APPRAISAL INVENTORY

Directions:

Please read and carefully follow these instructions.

Select the answer most closely associated with what you think you know about the specific first aid area. Mark the appropriate space with an "x" and do not mark more than one answer per question.

This inventory will be used to match the self-appraisal of knowledge in first aid with the test scores of knowledge in first aid and will not be used in any way for any portion of your grade.

The worth of this evaluation depends on the student responding fully and honestly to each part.

Please indicate the knowledge you have by marking the appropriate place with an "x."

4 = Superior knowledge in this area of first aid.
3 = Above average knowledge in this area of first aid.
2 = Average knowledge in this area of first aid.
1 = Below average knowledge in this area of first aid.
0 = Have no knowledge at all in this area of first aid.

Area of first aid:	4	3	2	1	0
1. Breathing difficulties: (including mouth-to-mouth resuscitation)					
2. Poisoning: (including stings, bites, poisoning by mouth)					
3. Drug problems: (including overdose)					
4. Wounds: (including open and closed wounds)					
5. Shock: (including detection and treatment)					
6. Burns: (including 1st, 2nd, and 3rd degree burns)					
7. Cardiovascular problems: (including heart attack and stroke)					
8. Methods of transfer: (transferring victim properly)					

APPENDIX K

PRINT YOUR NAME IN THE BLOCKS PROVIDED. BLACKEN THE CORRESPONDING LETTER IN EACH GRID.

LAST NAME | FIRST | MI

USE A #2 PENCIL ONLY

IDENTIFICATION NUMBER

DATE: MO | DATE | YR

1 2 3 4

INSTRUCTOR _____ DEPT. _____ COURSE _____

STANDARD ANSWER SHEET

DS 78198

APPENDIX L

THE OHIO STATE UNIVERSITY FIRST AID AND PERSONAL SAFETY ACHIEVEMENT EXAMINATION: QUESTIONS BY CONTENT AREA IN THE FIRST AID COURSES

Knowledge Area	Question Number on Final Examination	Number of Questions Asked
Chapter I - Introduction to First Aid		
General Directions to Giving First Aid	45, 48, 72, 92, 93	5
Chapter II - Wounds		
First Aid	12, 20, 28, 36, 44, 52, 76	7
Bites - Animal	68	1
Closed Wounds	60	1
Avulsed Part	4	1
Chapter III - Specific Injuries		
Eye Injuries	53, 89	2
Head Injuries	78, 87	2
Neck Injuries	96	1
Wounds of the Chest	63, 94	2
Back Injuries	69	1
Injuries to Genital Organs	56	1
Hand Injuries	61	1
Ear Injuries	91	1
Blisters	62	1

Knowledge Area	Question Number on Final Examination	Number of Questions Asked
Chapter IV - Shock		
Signs, Symptoms and Care	5, 13, 21, 29, 37	5
Chapter V - Respiratory Emergencies and Artificial Respiration		
Symptoms	1, 9, 17, 65, 73	5
Giving Artificial Respiration	25, 33, 41, 49, 57	5
Chapter VI - Swallowed Objects and Choking		
Signs and Symptoms, First Aid	95, 100	2
Chapter VII - Poisoning		
Signs and Symptoms	18, 99	2
First Aid	10, 26, 34, 42, 50	5
Contact Poisons	58	1
Marine Life	2	1
Insects	66, 74, 98	3
Venomous Snakes	82, 90	2
Chapter VIII - Drugs		
Alcohol - Signs and First Aid	51, 67	2
Depressants - Signs and First Aid	11, 19, 27, 35, 75	5
Stimulants - Signs and First Aid	3, 43, 59	3

Knowledge Area	Question Number on Final Examination	Number of Questions Asked
Chapter IX - Burns		
Classifications - Symptoms	22	1
First Aid	14, 30, 38, 46	4
Fire Safety	6	1
Chapter X - Frostbite and Cold Exposure		
Frostbite - Signs and Treatment	81, 83	2
Chapter XI - Heat Stroke, Heat Cramps, Heat Exhaustion		
Heat Stroke	85, 97	2
Heat Cramps	80	1
Heat Exhaustion	77, 86	2
Chapter XII - Sudden Illness		
Heart Attack	15, 39, 47	3
Stroke - Apoplexy	23, 31, 55	3
Fainting	7	1
Convulsions and Epilepsy	70, 79	2
Chapter XIII - Dressing and Bandages		
Application	54, 71	2

Knowledge Area	Question Number on Final Examination	Number of Questions Asked
Chapter XIV - Bone and Joint Injuries		
Fractures	88	1
Dislocations	64	1
Sprains	84	1
Chapter XV - Emergency Rescue and Short-Distance Transfer		
Methods of Transfer	8, 16, 24, 32, 40	5

APPENDIX M

THE OHIO STATE UNIVERSITY FIRST AID AND PERSONAL SAFETY ACHIEVEMENT EXAMINATION: SPECIFIC QUESTIONS USED IN THIS STUDY

1. Breathing Difficulties:

   01, 09, 17, 25, 33, 41, 49, 57, 65, 73

2. Poisoning:

   02, 10, 18, 26, 34, 42, 50, 58, 66, 74, 82, 90, 98, 99

3. Drug Problems:

   03, 11, 19, 27, 35, 43, 51, 59, 67, 75

4. Wounds:

   04, 12, 20, 28, 36, 44, 52, 60, 68, 76

5. Shock:

   05, 13, 21, 29, 37

6. Burns:

   06, 14, 22, 30, 38, 46

7. Cardiovascular Problems:

   07, 15, 23, 31, 39, 47, 55

8. Methods of Transfer:

   08, 16, 24, 32, 40

APPENDIX N

APPENDIX N

The Ohio State University First Aid and Personal Safety Examination is not contained in the Appendix because it is still being employed at the University of North Carolina at Greensboro. For information concerning the examination, write to the following:

Dr. Glen G. Gilbert
Health Education Division
School of Health, Physical Education, and Recreation
University of North Carolina at Greensboro
Greensboro, North Carolina 27412