

RELATIONSHIP OF HEALTH INSTRUCTION TO CURRENT HEALTH
AND SAFETY MISCONCEPTIONS AMONG
JUNIOR HIGH SCHOOL STUDENTS

A THESIS

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BY

M. JANE BRADFORD, B.S.

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DEDICATION

To the students of the Denton Independent School District, I dedicate this thesis with the hope that it may make a positive contribution to their future good health and happiness.

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The writer wishes to acknowledge all those persons who gave their interest, time, and effort to make this study possible, including the administration and faculty of the Denton Independent School District.

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CHAPTER I

INTRODUCTION

The habits that we follow, the beliefs that we hold, and the attitudes that we display are the result of knowledge gained in our past experiences. "The type of knowledge desired in health education is that which stimulates self-analysis and serves as a motivating force. A person cannot practice what he does not know!"¹

Health Educators are constantly striving to improve the total well-being of our students. They are utilizing the most effective methods known in their attempt to alleviate current health and safety misconceptions. Today the health educator's job is many fold. Along with their present practice of dealing with current problems their focus for the future is the prevention of disease through the acquisition of knowledge.

The drive to maintain good health or to seek remedies for real or imagined illnesses has made man vulnerable to all sorts of devices, notions, and cures. In this quest many misconceptions, often harmful, have taken root. This is a challenge facing those who are concerned with health education in our schools.²

¹

Gale E. Stephens, "Misconceptions in Health Education," The Clearing House, XLVII (March, 1973), p. 434.

²

Joseph Green, ed., "Misconceptions in Health Education," by Gale E. Stephens, The Clearing House, XLVII (March, 1973), editor's note p. 434.

The health educator's goal is to aid the student in the decision making process by encouraging him to practice desired behavior. Concepts formulated early in a student's educational training provide the foundation for his future decisions regarding his health behavior. The possibility that health instruction may not be providing adequate training has prompted this investigation of the relationship of previous health instruction to current health and safety misconceptions.

Statement of the Problem

The present investigation was a study to determine the relationship of previous health instruction to current health and safety misconceptions held by selected eighth grade students of Denton, Texas. The evaluative instrument used in the study was the American Association for Health, Physical Education, and Recreation, (AAHPER) Cooperative Health Education Test, Form 3A.¹ One hundred and twenty male and 120 female eighth grade students served as subjects in the study. They were all enrolled in the Denton Independent School District during the spring of the academic year 1973-1974.

Rationale for the Study

Health Education, as a discipline, concerns itself with

¹American Association for Health, Physical Education and Recreation, "Cooperative Health Education Test, Form, 3A," (Cooperative Tests and Services, Educational Testing Service: Berkeley, California, 1971).

changes in behavior that take place as a result of knowledge, practice, attitudes, and values.^{1,2} Generally, it is accepted that the goal of health education is to "help people learn to live well--to live scientifically, efficiently, economically, and with satisfaction."³ In order to reach this objective it is necessary to educate the student about health facts and concepts and attempt to eliminate any misconceptions or misinformation. Health misconceptions as an area of research interest have been widely noted in the literature. Studies by Boronze,⁴ Dzenowagis,⁵ and Synovitz,⁶ report misconceptions pertaining to health and safety among various age groups.

¹James M. Rosser, "Values and Health," The Journal of School Health, XL (September, 1971), pp. 386-90

²Cyrus Mayshark and Leslie W. Irwin, Health Education in Secondary Schools (2nd ed.; Saint Louis, Missouri: The C. V. Mosby Company, 1968), p. 6.

³Delbert Oberteuffer, Orvis A. Harrelson, and Marion B. Pollock, School Health Education (5th ed.; New York: Harper and Row Publications, 1972), p. 71.

⁴Joseph Borozne, "A Determination of the Prevalence of Certain Harmful Health Misconceptions Among Freshman Prospective Elementary School Teachers Attending State Teachers Colleges in New England" (unpublished Ph.D. dissertation, Boston University, 1957).

⁵Joseph G. Dzenowagis, "A Determination of the Harmful Health and Safety Misconceptions Among Fifth and Sixth Grade Children" (unpublished Ph.D. dissertation, Boston University, 1957).

⁶Robert J. Synovitz, "Use of Harmful Health Misconceptions as a Basis for the Selection of Subject Matter Areas and Course Content in College Health Classes," Research Quarterly, XXX (December, 1960), pp. 650-57.

As a result of teaching experiences with middle school males and females, the investigator became increasingly aware of the differences in previous health instruction which existed among the individual students.

Educating students to reach established goals of health education involves both the teaching of the basic concepts and facts and the elimination of any erroneous beliefs that could be harmful to health and safety. This is done in an effort to provide a total positive educational experience.

Synovitz¹ found that ethnic origin was a major factor in misconceptions held by college students. Jackson,² Jenkins,³ and Sears⁴ reported studies in which ethnic origin was a significant factor in misconceptions exhibited by adults and children.

During the summer of 1966 the University of Oregon sponsored a program for economically-deprived males whose grade point average did not meet the University admission level requirements. The program was designed to change the males poor attitudes about them

¹Ibid., p. 656.

²Vicki Diane Jackson, "Relationships of Harmful Health Misconceptions Among the Negro and Caucasian Ethnic Groups of Texas," (unpublished Master's thesis, Texas Woman's University, 1973).

³C. David Jenkins, "Group Differences in Perception: A Study of Community Beliefs and Feelings About Tuberculosis," The American Journal of Sociology, LXXI (January, 1966), pp. 417-29.

⁴Barbara Anne Sears, "A Comparative Study of the Prevalence of Health Misconceptions Among Students in Selected Components of the Texas Woman's University." (unpublished Master's Thesis, Texas Woman's University, 1967).

selves and others. Jordan¹ concluded that desirable psychological changes had occurred among the males. He observed that the physical activity the program provided served as a catalyst for the improvement of self image and in particular for initiating desirable behavioral changes.

Another investigator, Pishel,² noted that high school students who had poor grades might take the attitude that they have not been successful in school and, therefore, would not be successful in society thus self-perpetuating their previous poor performance. A study to determine the predictability of high school success as measured by one's needs and wants was undertaken by Pishel.³ There were 397 subjects participating in the study. They were given a questionnaire containing five index components that had been established as being significantly related to performance in high school. Results showed that high school grades could be predicted by a paper-pencil test. It was concluded that teachers could alter learning experiences to meet the evaluated needs of the students in high school.

¹David Jordan, "To Change a Negative Self Image," Journal of the American Association for Health, Physical Education, and Recreation, XXXVII (October, 1966), pp. 28-31.

²Robert G. Pishel, Jr., "Achieved Grades as a Function of Self-Perceived Adaptability," Journal of Educational Research, LXVII (December, 1973), p. 166.

³Ibid. pp. 166-70.

Both Jordan¹ and Pishel² have shown behavior and attitudes can be changed through a knowledge of ones needs. It follows, then, that undesirable health behavior caused by misconceptions can possibly be changed through health instruction if the extent of the misconceptions held by the student and observed differences among students are understood.

Therefore, it seems worthwhile to identify the relationship of previous health instruction to current health and safety misconceptions held by students so that future health programs may give attention to observed differences in these areas of concern. Focusing on areas where misconceptions exist is fundamental to the selection of strategies by the teacher for the class. This also serves as an initial step in the student's eventual acquisition of positive attitudes and habits of health.

Definitions and/or Explanation of Terms

For the purpose of clarification, the following definitions and/or explanations of terms have been established for use in the present study.

A. Health Misconception: The investigator accepts the definition by Borozne:

¹Jordan, "To Change a Negative Self Image," pp. 28-31.

²Pishel, "Achieved Grades as a Function of Self-Perceived Adaptability," pp. 166-70.

A health misconception is defined as an inaccurate or erroneous concept relating to health which is unsubstantiated by current scientific research and which may adversely affect total human well-being.¹

B. Health Instruction: The investigator accepts the definition by Mayshark and Irwin:

Instruction in health provides formal classroom experiences for the purpose of favorably influencing knowledge, habits, attitudes, practices, appreciations and conduct pertaining to individual and group health.²

Purpose of the Study

The purpose of the study was to determine whether health instruction influenced the extent of health and safety misconceptions held by eighth grade students in the Denton Independent School District as evidenced by their scores on the AAHPER Cooperative Health Education Test, Form 3A.³ Specifically, the following hypotheses were tested:

A. There will be no significant difference between the group that has had previous health instruction as compared to the group that has not had previous health instruction with respect to health knowledge in the area of total scores determined by true responses on the AAHPER Cooperative Health Education Test, Form 3A at the 0.05 level.

¹Borozne, "A Determination of the Prevalence of Certain Harmful Health Misconceptions Among Freshman Prospective Elementary School Teachers Attending State Teachers' Colleges in New England," p. 1.

²Mayshark and Irwin, Health Education in Secondary Schools, p. 7.

³American Association for Health Physical Education, and Recreation, "Cooperative Health Education Test, Form 3A."

- B. There will be no significant difference between the group of female subjects that has had previous health instruction as compared to the group of female subjects that has not had previous health instruction with respect to health knowledge in the area of total scores determined by true responses on the AAHPER Cooperative Health Education Test, Form 3A at the 0.05 level.
- C. There will be no significant difference between the group of male subjects that has had previous health instruction as compared to the group of male subjects that has not had previous health instruction with respect to health knowledge in the area of total scores determined by true responses on the AAHPER Cooperative Health Education Test, Form 3A at the 0.05 level.

Delimitations of the Study

The present study was subject to the following delimitations:

- A. The number of schools participating in the study.
- B. The number of subjects participating in the study.
- C. The degree to which the responses on the instrument truly reflect the health knowledge of subjects.
- D. The similarity of environmental conditions with respect to the manner in which the instruments are administered.
- E. The degree of cooperation of the subjects in answering the test questions.

- F. The degree to which the subjects are representative of the population from which they were selected.
- G. The degree of cooperation of those administering the test, recording the data, and checking the permanent records of the students.

Sources of Data

The data utilized in the present study were acquired from the following documentary and human sources:

A. Documentary Sources:

- 1. AAHPER Cooperative Health Education Test, Form 3A¹
- 2. Subject information sheet for supplying individual data and answers.
- 3. Subjects' permanent school records.

B. Human Sources:

- 1. Eighth grade male subjects enrolled in the Denton Independent School District.
- 2. Eighth grade female subjects enrolled in the Denton Independent School District.
- 3. Administrative staff of the Denton Independent School District.

Summary

This study was undertaken to determine whether a relationship

¹American Association for Health, Physical Education, and Recreation, "Cooperative Health Education Test, Form 3A".

exists between previous health instruction experiences of eighth grade students and their current health and safety misconceptions as evidenced by their responses to the AAHPER Cooperative Health Education Test, Form 3A.

If health education is to supply our students with the working knowledge for making their own choices about their health behavior then we as educators and parents must be willing to evaluate the health instruction system in our schools to determine its effectiveness.

Misconceptions, which are sometimes harmful, are common among children as well as adults and have been widely noted in the literature as an area of research interest. However, sufficient research on misconceptions at the junior high school level is lacking, particularly in the area of health and safety misconceptions as they relate to previous health instruction.

Chapter II will be concerned with a survey of literature available pertaining to health and safety knowledge and misconceptions.

CHAPTER II

SURVEY OF RELATED LITERATURE

A review of the literature revealed that the proposed study did not duplicate any preceding studies specifically related to previous health instruction and health and safety misconceptions of eighth grade students in Denton, Texas. Several related studies furnished background information for this study. The following review of completed research is confined to those studies which were of particular significance to the investigator in the development and execution of the present study.

In a book published in 1925, J. L. Nichols, the editor, states:

Fight social diseases with facts, not sentiments, study the problems of venereal infection for information, not sensation; combat social evils with science, not mystery. This is the keynote of our campaign to train men, women, and children to think straight along the line of social hygiene.¹

In the book, the editor expresses the point of view that human happiness is based on an understanding of the essential facts of life. The book's purpose was to:

.....wipe out some medieval bigotry, to disperse some entangling misunderstandings, and to increase to some extent, at least, the happiness of the human race....²

¹ J. L. Nichols, ed., *Safe Counsel* (Nashville, Tennessee: The Southwestern Company, 1925), p. 55.

²Ibid., p. 1.

Today as in 1925, it is still our responsibility to disperse misunderstandings that might lead to misconceptions.

Johns¹ conducted a five-year study in the Los Angeles area schools to evaluate: 1) the school health programs; 2) the student's health knowledge, attitudes, and practices; and 3) the processes of evaluation. The findings revealed that the study itself had contributed to the success of health education as a part of the curriculum. A significant finding was that students had knowledge of health information which they did not incorporate into their daily lives. In addition, their attitudes toward health were weak in comparison to their knowledge of health information.

Dzenowagis² did a study in 1957 to construct an instrument that would evaluate the prevalence of harmful health and safety misconceptions held by fifth and sixth grade students. Using numerous books, articles, and other media along with previous studies and human resources he formulated his instrument. A surgeon, two psychiatrists, two pediatricians, five physicians, and three health educators validated the instrument through

¹Edward B. Johns, "The School Health Education Evaluation Study, Los Angeles Area: An Example of a Modern Evaluation Plan," Journal of School Health, XXV (January 1962), pp. 5-11.

²Dzenowagis, "A Determination of the Harmful Health and Safety Misconceptions Among Fifth and Sixth Grade Children."

examination. The instrument was then administered to 2,210 subjects enrolled in the fifth and sixth grade. An index of discrimination for each grade level was established.

Dzenowagis found that 50 per cent of the fifth grade subjects subscribed to almost three-fourths of the 216 harmful health and safety misconceptions. Fifty per cent of the sixth grade subjects believed that 69 of the 216 misconceptions were "true" or "sometimes true".

Dzenowagis¹ completed a second study to determine dangerous safety misconceptions prevalent among sixth grade students. The validity of his instrument had been established by authorities in the field of safety education. The actual testing was done in May 1961 on a group of 881 grade school subjects in Michigan.

The findings revealed that approximately 30 per cent of the sixth grade subjects subscribed to 19 of the 50 dangerous safety misconceptions.

Harrison² in 1961, conducted research using a group of 4,852 junior high school subjects with the purpose of validating an instrument that would measure the prevalence of harmful health and safety misconceptions. Also he wanted to determine the extent of

¹Dzenowagis, "Misconceptions Among a Group of Sixth Grade Children," pp. 26-32.

²Price E. Harrison, "A Determination of the Prevalence of Certain Harmful Health Misconceptions Among Junior High School Students Attending Public Schools in Metropolitan Areas," (unpublished Ph.D. dissertation, Boston University, 1962).

these misconceptions among the junior high group. Validation was made by jurors and the Pearson Product-Moment correlation technique yielded a reliability coefficient of 0.793. The final instrument contained 246 misconceptions.

From the 4,852 original subjects, 1,215 were actually tested. The results revealed that many junior high school subjects accepted harmful health misconceptions as "true". The sex, grade level, semesters of health instruction, and metropolitan area where the subject lived had no significant influence on the subjects' subscription to harmful health misconceptions.

Dzenowagis, McPherson, and Irwin¹ administered a harmful health and safety misconceptions inventory containing 216 health and safety misconceptions to a group of 250 subjects in 1954. The subjects were females enrolled in the tenth grade. The instrument was validated by physicians and health educators. The inventory was found to have a reliability factor in the 70's. According to the findings, 25 per cent of the subjects believed 111 of the 126 misconceptions.

Stephens² conducted a study to determine the extent to which twelfth grade subjects subscribed to health misconceptions.

¹Joseph G. Dzenowagis, Patricia V. McPherson, and Leslie W. Irwin, "Harmful Health and Safety Misconceptions of a Group of Tenth Grade Girls," Journal of School Health, XXIV (November 1954), pp. 240-45.

²Gale E. Stephens, "Prevalence of Harmful Health Misconceptions in Colorado High School Seniors," Journal of School Health, XLI (March, 1971), pp. 161-63.

The subject's sex, grade-point average, their parent's educational level, their fathers' occupations and their previous public school health instruction were compared to the prevalence of their health misconceptions.

After construction and evaluation of an instrument, it was administered to 349 Colorado high school subjects from 33 schools of varied sizes. Thirty per cent or more of the subjects subscribed to 38 of the 85 misconceptions. The sex of the subject was not found to be a significant factor. However, there was a significant relationship between the grade point average of the subjects and their misconception scores; the higher the grade point the fewer misconceptions they had. Health misconception scores tended to decrease as the size of schools increased. Also, the responses related to the areas of consumer health and nutrition had the highest number of inaccurate responses while the responses related to the areas of habit forming substances, rest, and exercises had the highest number of accurate responses.

In 1971, Campbell and Foster¹ studied the differences in responses made on the Kilander Health Knowledge test among those of varying socioeconomic area, sex, and grade level. High school students enrolled in the ninth and twelfth grade were used in the comparison.

¹Donald E. Campbell and Roy A. Foster, "Health Knowledge of Young Adults From Two Socioeconomic Levels," Research Quarterly, XLIII (December, 1972), pp. 399-408.

The findings revealed that those subjects that lived in the higher socioeconomic area had a better knowledge of health matters than did those from the lower socioeconomic area. The researchers noted, however, that as the subjects from the lower socioeconomic area grew older, as was shown by their grade level, that their health knowledge increased. It was noted that the seniors had taken health instruction courses in the tenth grade and that these units of instruction may have added to their health knowledge. Females scored higher than males irrespective of socioeconomic area or grade level.

Jackson¹ conducted a study in 1973 to identify harmful health misconceptions among Negro and Caucasian tenth grade male and female students in the Garland Independent School District. A sample of forty-two Negro and forty-two Caucasian subjects participated in the study using Harrison's Health Knowledge Inventory. There was a significant difference at the 0.05 level in the number of misconceptions believed to be true when the Negro ethnic group was compared to the Caucasian ethnic group denoting that the Caucasians had a higher level of health knowledge than did the Negroes.

Waldmann² surveyed the health superstitions of students at

¹Jackson, "Relationships of Harmful Health Misconceptions Among the Negro and Caucasian Ethnic Groups of Texas".

²Flora Gannon Waldmann, "Survey of Health Superstitions Believed By Students at the Texas State College for Women," (unpublished Master's Thesis, Texas State College for Women, 1946).

the Texas State College for Women in 1946. Her questionnaire was validated by six professionals in the field of Health. It contained 100 items compiled from other studies, books, and personal experiences. The findings of the study revealed that subjects were more knowledgeable in areas concerning body symbolism and oral health than in the areas of nutrition.

Powell¹ studied the relationships between health practices, adjustment, and physical performance using a group of freshman women from Sam Houston State Teachers College, Huntsville, Texas. The instruments used were: John's Health Practice Inventory, Bell's Adjustment Inventory, and the Physical Performance Level Battery designed by the Research Committee of the National Section on Woman's Athletics. She found that the relationship that existed between physical performance and adjustment and between physical performance and health practice was insignificant; however, she did find a significant relationship between health practices and physical performance at the five per cent level of confidence indicating that those who performed well physically also had good health practices.

¹Margaret Powell, "An Analysis of Relationships Existent Between Health Practice, Adjustment, and Physical Performance of Freshman Women," Research Quarterly, XVIII (October, 1947), pp. 176-86.

Dzenowagis, Borozne, and Irwin¹ studied the harmful health and safety misconceptions held by a group of 55 subjects who planned to be elementary teachers. The instrument, constructed by Dzenowagis, was made up of 187 health misconceptions and 29 safety misconceptions. A jury of experts substantiated the validity of the instrument.

Findings revealed that 82 of the 216 misconceptions were subscribed to by from 5 to 60 per cent of the prospective teachers. The possible harmful effects that might have resulted from the teachers' misconceptions included: the abusive use of drugs; needless worry, anxiety and fear; expense and loss of time; improper use of medication; delay in obtaining necessary treatment; subscribing to false concepts; poor health practices; promotion of false security and hypochondriasis. The investigation concluded that prospective elementary teachers were not aware of the harmfulness of various health and safety statements.

In 1957 Borozne² studied a group of prospective elementary school teachers in 17 colleges in New England. A health opinionnaire

¹Joseph G. Dzenowagis, Joseph Borozne, and Leslie Irwin, "Prevalence of Certain Harmful Health and Safety Misconceptions Among Prospective Elementary Teachers," Research Quarterly, XXIV (March, 1955), pp. 44-48.

²Borozne, "Misconceptions Among Freshman Prospective Elementary School Teachers Attending State Teachers Colleges in New England".

was developed and validated by jurors who were considered experts in the field of health misconceptions. The instrument contained 130 harmful health misconceptions covering the areas of nutrition, exercise, first aid, hygiene, drugs, consumer health, mental health, and disease. It was administered to 1044 prospective teachers. Of the 130 misconceptions presented in the opinionnaire 72 were subscribed to by 100 or more of the subjects.

Synovitz¹ investigated 630 subjects enrolled in basic health information classes at four-year colleges in Indiana. Borozne's Health Information Opinionnaire was used to determine the relationship between health misconceptions and age, grade level, sex, race, course background, rural or urban background, marital status, major area of scholastic preparation, school attended, geographic location, and religion.

A major finding indicated that although the subjects selected more health related courses (exercise, first aid, personal hygiene) than other curricular courses, they were least familiar with questions relating to health education on the opinionnaire. Subjects studying science, religion, and elementary education had fewer misconceptions than subjects majoring in liberal arts, physical education, business, or secondary education.

Sears² did a comparative study at Texas Woman's University in

¹Synovitz, "Selection of Subject Matter Areas and Course Content in College Health Classes," pp.650-57.

²Sears, "A Comparative Study of the Prevalence of Health Misconceptions Among Students in Selected Components of the Texas Woman's University."

1967 to determine the extent to which junior and senior students subscribed to health misconceptions. A group of 555 subjects participated in the study using Borozne's Health Opinionnaire as the instrument. Ten per cent of the subjects tested subscribed to 113 of the 130 total misconceptions. No significant differences were found between academic classification and the nature of the misconceptions. However, she found that the subjects majoring in Nursing held the least number of misconceptions.

Summary

Chapter II dealt with a survey of literature related to health and safety misconceptions. Studies were reviewed that related to health and safety misconceptions at the elementary, secondary, and college grade levels. The studies revealed the prevalence of health and safety misconceptions among children and adults.

Chapter III will detail the procedures followed in the development of the study.

CHAPTER III

PROCEDURES FOLLOWED IN THE DEVELOPMENT OF THE STUDY

The present study was designed and undertaken to determine the relationship of previous health instruction to current health and safety misconceptions held by students at the eighth grade level. During the academic year, 1973-1974, selected eighth grade students enrolled in the Denton Independent School district were tested. It was expected that the most representative grade level for junior high school research would be the eighth grade since it includes both middle school and junior high school levels.

The procedures followed in the construction of this study were:

1) preliminary procedures, 2) selection of the subjects, 3) selection of the instrument to be administered, 4) preparations for administering the instrument, 5) administration of the instrument and collection of data, 6) treatment of the data, and 7) preparation of the final written report.

Preliminary Procedures

The investigator made a comprehensive review of the literature related to health and safety misconceptions prior to the beginning of the study. After this documentary analysis, the investigator

determined that there was a need for the present study and based upon the findings, constructed a rationale. The investigator prepared a tentative outline of the study and submitted it to the thesis committee for approval. It was presented in a Graduate Seminar of the College of Health, Physical Education, and Recreation at the Texas Woman's University in Denton, Texas. The final approval of the thesis committee was obtained and a prospectus of the study was filed in the office of the Dean of Graduate Studies at the Texas Woman's University in Denton, Texas.

Selection of the Subjects

The Denton Independent School District was chosen as the district to be utilized in the present study on the basis of administrative feasibility and because it had the "junior high school" rather than "middle school" concept. Both junior high schools in the Denton Independent School District, Congress and Strickland, were chosen for the study. The thesis advisor made initial contact with the administrative office of the Denton Independent School District. Oral permission, rather than the usual written permission was granted to do the study due to the lateness of the school year. The investigator was referred to the two building principals to work out the administrative details of the study. These individuals were contacted in order to familiarize them with the study and arrange time and setting for the administration of the instrument.

The study included an original sample of 325 eighth grade subjects from both schools who happened to be present on the testing day. A statistical sample of 120 eighth grade subjects from each school was randomly selected on the basis that 30 female and 30 male subjects who had had previous health instruction and 30 female and 30 male subjects who had not had previous health instruction would be a sufficient number for performing statistical computations. The statistical sample of 120 eighth grade subjects from Congress Junior High School was randomly selected in the following manner. The answer sheets were separated into four groups. The first group contained 45 female students who had had previous health instruction, the second group contained 33 female students who had not had previous health instruction, the third group contained 63 male students who had had previous health instruction, and the fourth group contained 34 male students who had not had previous health instruction. The answer sheets for each of the four groups were numbered independently. Corresponding numbers for the number of answer sheets in each group were made and placed in a hat. Thirty numbers to represent 30 subjects were then drawn from the hat, randomly with replacement, resulting in four separate groups of 30 answer sheets each for Congress Junior High School. The same procedure was followed for Strickland Junior High School. The four original groups of samples for Strickland Junior High School were as follows: 1) 39 female students who had had previous health instruction, 2) 36 female students who had not had

previous health instruction, 3) 40 male students who had had previous health instruction, and 4) 35 male students who had not had previous health instruction.

Selection of the Instrument to be Administered

The selection of the instrument to be administered was based on the commonly accepted criteria outlined by Sheehan¹ as follows:

1) the instrument should be valid, 2) the instrument should be reliable, and 3) the instrument should be economical. According to Bean², validity is the extent to which an instrument measures what it was intended to measure; reliability is whether or not an instrument yields consistent results. The economy of an instrument, or administrative feasibility, is defined by Sheehan³ as a test which, to be practical, requires the least amount of time to administer and interpret along with the smallest cost.

The American Association for Health, Physical Education, and Recreation Cooperative Health Education Test, Form 3A best met these criteria and was selected to be used in this study to measure health knowledge of the eighth grade subjects. The AAHPER Cooperative Health Education Test, Form 3A contains sixty multiple response

¹Thomas J. Sheehan, An Introduction to the Evaluation of Measurement Data in Physical Education (Reading, Massachusetts: Addison-Wesley Publishing Company, 1971) pp. 47-55.

²Kenneth L. Bean, Construction of Educational and Personnel Test (New York: McGraw Hill Book Company, Inc., 1953), p. 160.

³Sheehan, Measurement Data in Physical Education, p. 54.

questions with four foils; one is a true statement and three are erroneous. The content validity of the AAHPER Cooperative Health Education Test, Form 3A was established by experts in the field. The Kuder-Richardson Formula 20 yielded a reliability coefficient of .93 indicating that the test is highly reliable. The cost of the test was relatively economical; it was easily administered and scored by taking the total number of correct responses and tabulating them. It required about forty minutes of actual testing time. The AAHPER Test and a booklet of its statistical characteristics can be obtained from the Educational Testing Service, Berkeley, California.

Preparations for Administering the Instrument

After the instrument had been selected and sufficient copies for testing received, the investigator confirmed plans for the test administration with the junior high school principals. A date was set to administer the AAHPER Cooperative Health Education Test, Form 3A during the physical education classes at Congress Junior High School. It was agreed that the investigator would do the testing with the assistance of the physical education teachers. Strickland Junior High School preferred to have the eighth grade physical education teachers administer the instrument to their own classes at a selected time during the physical education classes under the supervision of the guidance personnel. Written instructions were distributed to the guidance personnel explaining the purpose of the test and the methods to be used in administration.

Administration of the Instrument
and Collection of the Data

At each junior high school the instrument was distributed face down, the subjects were informed that the test was for research purposes, that they would not be graded on it, and their parents or teachers would not see their individual scores. They were told to place their names, grade, sex and the name of the school they attended on the answer sheet. The subjects were asked to turn the test booklets over and read the instructions privately as the instructions were read aloud. The subjects were then instructed to begin. All tests were collected at the end of forty minutes even though most of the subjects completed it in twenty to twenty-five minutes. The test papers were scanned as they were returned and any information the subjects neglected to supply was obtained. At Strickland, the guidance staff supervised the administration of the instrument and the transfer of the test responses from the subjects' answer sheet to the answer sheet that was to be used for statistical analysis.

Members of the administrative staff of the Denton Independent School District consulted the subjects' permanent records to determine the presence or absence of previous health instruction on each subjects' record. They also supplied information for determining the percentage of male and female subjects from each elementary school in Denton who had or did not have health instruction. The amount and type of health instruction received in the elementary school were not factors in this study and were not supplied. The investigator was

interested only in whether the subject had been given credit for health instruction on his permanent record. This information was used in determining the two groups that were used for statistical computations. In each case where testing for significant differences was done, there was one group that had had previous health instruction and a second group that had not had previous health instruction.

Treatment of the Data

After the tests had been administered, each answer sheet was scored by hand two times, once by the investigator and once by an assistant, with the total number of correct responses serving as the total score. The subjects were divided into the following groups for statistical analysis:

GROUP 1. Males and females who had previous health instruction.

Males and females who had not had previous health instruction.

GROUP 2. Females who had had previous health instruction.

Females who had not had previous health instruction.

GROUP 3. Males who had had previous health instruction.

Males who had not had previous health instruction.

An analysis of variance was performed to test the hypotheses as stated in Chapter I. The above groupings were identified in the hypotheses. Hypothesis one corresponded with group one, hypothesis two corresponded with group two, and hypothesis three corresponded with group three.

Descriptive data is presented on other variables such as, the number of subjects in each sample, the sex of the subjects, the elementary school the subjects attended, and the total scores made by the subjects on the AAHPER Cooperative Health Education Test, Form 3A.

Preparation of the Final Written Report

The following procedures were followed in the preparation of the final written report of the study: 1) presentation and approval of the tentative outline filed in the form of a prospectus of the proposed study in the office of the Dean of Graduate Studies at Texas Woman's University, Denton, Texas, 2) analysis of data, 3) development of each chapter including conclusions and recommendations, 4) preparation of a bibliography and 5) preparation of an appendix. Each chapter was written in accordance with the tentative outline and submitted to the thesis committee members for suggestions and corrections. Revisions were made, and the final written report of the investigation was submitted to the office of the Dean of Graduate Studies at Texas Woman's University, Denton, Texas. An abstract of the written report was prepared along with the conclusions and recommendations for further research and was submitted to the office of the Dean of Graduate Studies. The Bibliography and Appendixes were assembled.

Summary

This chapter was concerned with the procedures in the study. These procedures were as follows: 1) preliminary procedures, 2) selection of the subjects, 3) selection of the instrument to be administered, 4) preparations for administering the instrument, 5) administration of the instrument and collection of the data, 6) treatment of the data, and 7) preparation of the final written report.

The comprehensive review of the literature related to health and safety misconceptions was conducted and led to development of a tentative outline which was presented to the thesis committee for approval. It was approved and was presented at a Graduate Seminar of the College of Health, Physical Education, and Recreation at the Texas Woman's University, Denton, Texas. The approved outline was filed in the office of the Dean of Graduate Studies in the form of a prospectus.

The eighth grade students who served as subjects were randomly selected from an accidental selection group that happened to be present in the physical education classes in the junior high schools of the Denton Independent School District on the testing days.

The AAHPER Cooperative Health Education Test, Form 3A, was selected as the instrument to be used in the study on the basis of its validity, reliability, and economy. Preparation for the administration of the instrument included obtaining the permission

of the principals and the cooperation of the teachers at Congress and Strickland Junior High Schools in Denton, Texas. Copies of the AAHPER Cooperative Health Education Test, Form 3A were purchased along with answer sheets. Instructions for administering the tests were distributed to the guidance personnel. At the beginning of the testing period each student was given a test face down. Each student supplied his/her personal data on the answer sheet, turned the test booklet over and followed along as the instructions were read aloud. Forty minutes were allowed for completing the test. The data were treated by an analysis of variance which was used to test the major hypotheses of the study.

Preparation of the final written report included the development of each chapter, listing of the conclusions and recommendations, and the compilation of the Bibliography and Appendix. The final report was revised in accordance with the suggestions and corrections of the thesis committee and filed in the office of the Dean of Graduate Studies.

Chapter IV will be concerned with the presentation of the findings according to the statistical analyses as described in this chapter.

CHAPTER IV

PRESENTATION OF THE FINDINGS

The major purpose of this study was to determine the relationship of previous health instruction to current health and safety misconceptions of eighth grade students in the Denton Independent School District. In this chapter the investigator will present an analysis of the results obtained through the use of the AAHPER Cooperative Health Education Test, Form 3A data. This chapter is organized in the following manner: 1) description of the subjects, 2) background information of subjects, 3) discussion of the findings.

Description of the Subjects

Two hundred and forty eighth grade subjects participated in the study to determine whether there was a relationship between previous health instruction and current health and safety misconceptions. The sample was comprised of 60 female subjects who had had previous health instruction, 60 female subjects who had not had previous health instruction, 60 male subjects who had had previous health instruction, and 60 male subjects who had not had previous health instruction. Accidental selection was made of those students who happened to be in the physical education classes at the time and on the day that the testing was done.

Background Information of Subjects

The subjects used in the study represented a sample of students from schools in the Denton Independent School District. The percentage of male and female subjects who attended each elementary school and their previous health instruction background are shown in the following table:

TABLE 1. Percentage of subjects with respect to health instruction, the elementary school attended, and sex.

Health Instruction					No Health Instruction				
School	Sex	%	Sex	%	School	Sex	%	Sex	%
*Jackson	M	10	F	13	*Ginnings	M	18	F	13
**Lee	M	18	F	28	**Rayzor	M	23	F	22
**Davis	M	40	F	27	*Wilson	M	23	F	32
**Houston	M	32	F	32	*Borman	M	36	F	33

*Feed into Strickland Junior High School

**Feed into Congress Junior High School

A review of Table 1 reveals that Jackson, Lee, Davis and Houston Elementary Schools had health instruction and that Ginnings, Rayzor, Wilson and Borman Elementary Schools did not. Also, Ginnings, Wilson, Borman, and Jackson Elementary Schools feed into Strickland Junior High School while Rayzor, Lee, Davis and Houston Elementary Schools feed into Congress Junior High School. Therefore, Strickland Junior High School had a larger number of students who had not had previous

health instruction than did Congress Junior High School. Rayzor Elementary School is the only school that feeds into Congress Junior High School that does not have health instruction. Table 1 also reveals that Davis Elementary School has the highest percentage of students who have had health instruction while Jackson Elementary School has the lowest percentage. More males than females had health instruction at Houston Elementary School. Looking at those students who did not have health instruction, Borman Elementary School which feeds into Strickland Junior High had the highest percentage of subjects who had not had health instruction.

Since the percentages of subjects having or not having health instruction at elementary schools was so unequal, this study concentrated on whether the subjects had or had not had health instruction and not specifically on which elementary school the subjects had attended.

Discussion of the Findings

Table 2 describes the means, standard deviations, and F levels obtained when statistical treatment was performed on the test data.

Table 2 reveals that an analysis of variance computed on the total scores obtained on the AAHPER Cooperative Health Education Test, Form 3A yielded significant results when the combined sample of male and female students who had had previous health instruction was compared to the combined sample of male and female students who had not had previous health instruction. Indications are that health instruction in the

TABLE 2. Results of ANOVA for AAHPER Cooperative Health Education Test, Form 3A.

Health Instruction				No Health Instruction				F level
Number of Subjects	Sex	Mean	Std.D.	Number of Subjects	Sex	Mean	Std.D.	
120	M&F	27.617	14.185	120	M&F	21.867	12.638	10.42**
60	F	28.500	14.297	60	F	23.783	12.767	3.57*
60	M	26.733	14.016	60	M	19.950	12.204	7.24*

**F (.05,1,238)=3.88

*F (.05,1,118)=3.92

elementary schools tended to increase the health knowledge of those students who took it, lessening their health and safety misconceptions as evidenced by the AAHPER Cooperative Health Education Test, Form 3A scores. However, the statistical findings on this group are brought into perspective when the subjects are analyzed according to the variable of sex as well as health instruction. Table 2 also reveals that when the females who had had previous health instruction were compared to the females who had not had previous health instruction there was not a significant difference at the 0.05 level.

On the other hand, as is shown in Table 2, when the males who had had previous health instruction were compared to the males who had not had previous health instruction a significant difference on the AAHPER Cooperative Health Education Test, Form 3A at the 0.05 level was found. This indicates that the male students who had

had previous health instruction had fewer misconceptions, as evidenced by their total scores on the AAHPER Cooperative Health Education Test, Form 3A than did those who had not had health instruction.

Summary

Chapter IV was concerned with the presentation of the findings of the present study. Two hundred and forty eighth grade students participated in the study. Three major comparisons were used to test the three hypotheses as stated in Chapter I. The first analysis was a comparison of 120 female and male students who had had previous health instruction with a sample of 120 female and male students who had not had previous health instruction. A second analysis consisted of one sample of 60 female students who had had previous health instruction compared to a second sample of 60 female students who had not had previous health instruction. The third analysis contained a sample of 60 male students who had had previous health instruction compared with a sample of 60 male students who had not had previous health instruction. The subjects were from eight elementary schools which fed into either Congress or Strickland Junior High Schools in the Denton Independent School District.

The statistical treatment of the data, as shown in Table 2, revealed that there was no significant difference between the females who had had previous health instruction and the females who had not have previous health instruction. Therefore, hypothesis number 2 was accepted as stated.

An analysis of variance did reveal significant differences at the 0.05 level when the combined male and female sample who had had previous health instruction was compared to the male and female sample who had not had previous health instruction and when the males who had had previous health instruction were compared to the males who had not had previous health instruction. On the basis of the statistical findings hypotheses 1 and 3 were rejected as stated.

Chapter V will include the summary, conclusions, and recommendations.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATION

Summary

Man has long been concerned with improving the quality of his life by trying to maintain good health. One's attitudes, beliefs, and practices are the result of presumptions gained from others or through our own personal experiences. Unfortunately, there are times when these presumptions are incorrect. The results may be misconceptions about our health and safety that may prove harmful or dangerous to us or to those around us. One of the major purposes of health education is to eliminate harmful misconceptions about health and safety.

The purpose of the study was to determine whether health instruction influenced the extent of health and safety misconceptions held by eighth grade students in the Denton Independent School District as evidenced by their scores on the AAHPER Cooperative Health Education Test, Form 3A. Chapter I provided an introduction to the study along with a statement of the problem and rationale for the study. The three hypotheses for the study, the delimitations, sources of data, and definitions and/or explanations of terms were also stated.

Chapter II included the review of literature pertinent to the study revealing that the present study did not specifically duplicate any previous studies. The completed research in the area of health

and safety misconceptions was not extensive. Particular lacking was research in the area of the relationship between health and safety instruction and health and safety misconceptions. Among the studies reviewed were those by Dzenowagis,¹ Harrison,² Stephens,³ Borozne,⁴ and Synovitz,⁵ which revealed the prevalence of health and safety misconceptions at all grade levels from elementary school through college.

Chapter III was concerned with the procedures followed in the development of the study. The preliminary procedures consisted of a review of the literature related to the study. A tentative outline was then prepared and submitted to the thesis committee for approval. After presentation and approval by the faculty of the College of Health, Physical Education, and Recreation, it was submitted to the office of the Dean of Graduate Studies. The subjects for the study were selected from the Denton Independent School District on the basis of administrative feasibility. The original sample of eighth graders included the two junior high

¹Dzenowagis, "A Determination of the Harmful Health and Safety Misconceptions Among Fifth and Sixth Grade Children".

²Harrison, "A Determination of the Prevalence of Certain Harmful Health Misconceptions Among Junior High School Students Attending Public Schools in Metropolitan Areas".

³Stephens, "Prevalence of Harmful Health Misconceptions in Colorado High School Seniors".

⁴Borozne, "Misconceptions Among Freshman Prospective Elementary School Teachers Attending State Teachers Colleges in New England".

⁵Synovitz, "Selection of Subject Matter Areas and Course Content in College Health Classes".

schools in Denton. Oral permission to do the study was granted and the principals of both Congress Junior High School and Strickland Junior High School were contacted to work out the administrative details.

The AAHPER Cooperative Health Education Test, Form 3A, was selected for use in the study based upon the criteria of validity, reliability, and economy. Statistical analysis of the data was performed by grouping the subjects according to total scores, sex, number within each sample, and whether they had had previous health instruction. The means and standard deviations were determined and an analysis of variance was performed to test the three hypotheses stated for the study.

Chapter IV dealt with the findings of the study. An analysis of the responses, in the form of total scores, on the AAHPER Cooperative Health Education Test, Form 3A revealed: 1) significant results at the 0.05 level when the male and female samples that had had previous health instruction were compared to the male and female samples that had not had previous health instruction, 2) significant differences at the 0.05 level were not found when female students who had had previous health instruction were compared to female students who had not had previous health instruction, and 3) significant differences at the 0.05 level were found when male students who had had previous health instruction were compared to male students who had not had previous health instruction.

On the basis of the findings the following hypotheses were either accepted or rejected:

1. There will be no significant difference between the group that had had previous health instruction as compared to the group that had not had previous health instruction with respect to health knowledge in the area of total scores determined by true responses on the AAHPER Cooperative Health Education Test, Form 3A at the 0.05 level. REJECTED
2. There will be no significant difference between the group of female subjects that had had previous health instruction as compared to the group of female subjects that had not had previous health instruction with respect to health knowledge in the area of total scores determined by true responses on the AAHPER Cooperative Health Education Test, Form 3A at the 0.05 level. ACCEPTED
3. There will be no significant difference between the group of male subjects that had had previous health instruction as compared to the group of male subjects that had not had previous health instruction with respect to health knowledge in the area of total scores determined by the responses on the AAHPER Cooperative Health Education Test, Form 3A, at the 0.05 level. REJECTED

Conclusions

The conclusions for this study are as follows:

1. Male students at the elementary levels appear to be more influenced by health instruction than do females.
2. Males and females differ in health knowledge as evidenced by their scores on the AAHPER Cooperative Health Education Test, Form 3A.

Recommendations

As a result of the present study, the investigator makes the following recommendations:

1. Health instruction should be geared more toward the stages of development of both sexes to provide for differences in readiness.
2. The quality of health instruction should be investigated in a longitudinal study from elementary through high school.
3. This study should be replicated with different populations in order to substantiate or refute the findings of this study.

APPENDIX

CONGRESS MALES' TOTAL SCORES ON THE MAHPER TEST

Health Instruction		No Health Instruction		Health Instruction		No Health Instruction	
Subject Number	Total Score	Subject Number	Total Score	Subject Number	Total Score	Subject Number	Total Score
1	54	1	47	16	40	16	26
2	54	2	46	17	40	17	26
3	53	3	43	18	38	18	26
4	51	4	43	19	38	19	26
5	47	5	43	20	36	20	24
6	47	6	42	21	34	21	24
7	47	7	42	22	34	22	21
8	47	8	42	23	33	23	21
9	47	9	40	24	31	24	19
10	47	10	40	25	27	25	17
11	45	11	35	26	22	26	17
12	43	12	32	27	22	27	15
13	40	13	32	28	19	28	13
14	40	14	26	29	19	29	10
15	40	15	26	30	17	30	10

CONGRESS FEMALES' TOTAL SCORES ON THE AAHPER TEST

Health Instruction				No Health Instruction			
Subject Number				Total Score			
1	56	1	53	16	43	16	33
2	53	2	53	17	43	17	33
3	53	3	49	18	41	18	33
4	51	4	47	19	40	19	29
5	47	5	46	20	39	20	28
6	47	6	44	21	39	21	27
7	46	7	44	22	38	22	26
8	46	8	43	23	37	23	25
9	46	9	42	24	37	24	24
10	46	10	40	25	36	25	21
11	45	11	39	26	33	26	19
12	44	12	39	27	32	27	15
13	44	13	36	28	26	28	14
14	44	14	35	29	26	29	12
15	44	15	35	30	26	30	11

STRICKLAND MALES' TOTAL SCORES ON THE AAHPER TEST

<i>Health Instruction</i>		<i>No Health Instruction</i>		<i>Health Instruction</i>		<i>No Health Instruction</i>	
Subject Number	Total Score	Subject Number	Total Score	Subject Number	Total Score	Subject Number	Total Score
1	22	1	18	16	15	16	10
2	21	2	17	17	15	17	10
3	19	3	14	18	14	18	10
4	18	4	14	19	14	19	10
5	17	5	14	20	14	20	10
6	17	6	13	21	14	21	9
7	17	7	13	22	14	22	9
8	17	8	12	23	13	23	9
9	17	9	12	24	13	24	9
10	16	10	12	25	12	25	9
11	16	11	11	26	12	26	9
12	16	12	11	27	12	27	7
13	15	13	11	28	12	28	7
14	15	14	10	29	11	29	7
15	15	15	10	30	9	30	6

STRICKLAND FEMALES' TOTAL SCORES ON THE AAHPER TEST

<i>Health Instruction</i>		<i>No Health Instruction</i>		<i>Health Instruction</i>		<i>No Health Instruction</i>	
Subject Number	Total Score	Subject Number	Total Score	Subject Number	Total Score	Subject Number	Total Score
1	21	1	22	16	16	16	14
2	20	2	20	17	15	17	14
3	19	3	18	18	15	18	14
4	18	4	18	19	15	19	14
5	18	5	18	20	14	20	13
6	18	6	17	21	14	21	13
7	18	7	17	22	14	22	13
8	18	8	16	23	14	23	12
9	17	9	16	24	13	24	12
10	17	10	16	25	13	25	12
11	17	11	16	26	12	26	10
12	16	12	15	27	11	27	10
13	16	13	15	28	11	28	10
14	16	14	15	29	11	29	10
15	16	15	14	30	9	30	8

INSTRUCTIONS FOR TEST ADMINISTRATION

1. Carefully read the instructions on the test booklet. At the time of testing these instructions should be read aloud as the students follow along.
2. Inform the students that they will be taking this test for research purposes and that they should answer every question to the best of their knowledge.
3. Inform the students that their grade in Physical Education is not influenced by this test and that their parents and teachers will not see their test scores.
4. Supply pencils to those who do not have them. Ask them to erase any mistake and then to darken in their selected response.
5. Pass out the answer sheets first and have them supply the necessary information at the top of the answer sheet.
6. Hand out the test booklets, face down. Have all students turn the booklet over and follow along as you read the instructions.
7. Collect all the tests at the end of forty minutes.

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