A STUDY OF THE HEALTH INFORMATION, HEALTH PRACTICES AND PREVIOUS HEALTH INSTRUCTION IN SENIOR HIGH SCHOOL OF 200 FRESHMAN WOMEN IN TEXAS WOMAN'S UNIVERSITY, DENTON, TEXAS, AS DETERMINED AT THE BEGINNING OF THE FALL SEMESTER OF THE ACADEMIC YEAR OF 1958-1959

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BY

THERESA ANN MAGGIO, B. S.

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University Hill

Denton, Texas

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We hereby recommend that the thesis prepared under our supervision by THERESA ANN MAGGIO

entitled A STUDY OF THE HEALTH INFORMATION, HEALTH PRACTICES AND PREVIOUS HEALTH INSTRUCTION IN SENIOR HIGH SCHOOL OF 200 FRESHMAN WOMEN IN TEXAS WOMAN'S UNIVERSITY, DENTON, TEXAS, AS DETERMINED AT THE BEGINNING OF THE FALL SEMESTER OF THE ACADEMIC YEAR OF 1958-1959.

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Committee

Chairman

Accepted:

Director of Graduate Studies

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CHAPTER I

ORIENTATION TO THE STUDY

Introduction

Historians refer to the period of 1787 through 1865 as the period of Emerging Nationalism in the United States.[1] During the period, a gradual extension of democratic rights took place, whereby the restriction which gave the privilege of voting to property owners only was removed, and the education of poor children by charitable organizations became the duty of the taxpayers.[2]

Van Dalen, Mitchell and Bennett state:

> The popular concept of education during this period was expressed in the following constitutional provision carried over from the Northwest Ordinance of 1787: "Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall be forever encouraged."[3]

In addition to the extension of democratic rights, advancements were also made in education. Leaders in the field of education began to interpret education in terms " . . . of

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[1]Deobold B. Van Dalen, Elmer D. Mitchell and Bruce L. Bennett, A World History of Physical Education (New York: Prentice-Hall, Inc., 1953), p. 362.

[2]Ibid., p. 363.

[3]Ibid.

physical, intellectual, and moral culture of men . . ."[1] which paralleled the faculty psychology of that day. Faculty psychology placed emphasis on educating three attributes: physical, mental and moral; and furthermore, each could be developed separately. This psychology suggested that for the most part, the school should be responsible for the mental instruction of the children, the home and the church should be responsible for the moral instruction of the children, " . . . and the body apparently could take care of itself."[2]

Van Dalen, Mitchell, and Bennett in discussing the psychology of this period state:

> In addition to the ill-founded educational psychology . . . the life of the early settler was spent in the open air, and so many of his activities demanded the use of the big muscles, that there was no evident need to provide for physical exercise or even to teach habits of health.[3]

By the latter half of the period of Emerging Nationalism, educators became conscious of the atrocious conditions in school hygiene. Out of the realization of the discomforts of school children, caused by the crudely constructed school buildings and facilities, a school hygiene movement was inaugurated. This movement brought about the many improvements made on old school buildings, as well as the construction of new frame schools.[4]

These new buildings featured tighter windows; however, it was believed that this improvement caused the depletion of oxygen

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[1] Ibid., p. 363.

[2] Ibid.

[3] Ibid.

[4] Ibid., p. 374.

during classes. The supposedly " . . . vitiated air was held responsible for the listless attitudes of pupils, dimness of vision, weakness, difficulty of breathing, and even apoplexy and death."[1]

Besides the problems resulting from tighter constructed windows, a few superintendents concerned themselves with the problem of radiated heat from wood burning stoves which failed to circulate heat throughout the classrooms. They concerned themselves, also, over the harmful effects of benches, chairs built for adults, and stools without backs for growing children who were compelled to sit on them. In general school hygiene was considered; however, the consideration given was merely incidental to the general problems of education.

Van Dalen, Mitchell and Bennett refer to the years between 1865 and 1900 as a period of Nationalism in the United States. The Nationalization processes were affected by the peoples who lived over a wide geographical area from sea to shining sea. Attributing incidents which affected these processes within the thirty-five years of Nationalism were: (1) the admittance of 13,260,000 immigrants into the United States, (2) the reorientation of the South into the Union, and (3) the phenomenal growth of agriculture and industry. At the same time, the scope of education was broadened from its sole purpose of developing the intellect to that of developing the moral aspect of the child, which was previously the responsibility of the home and of the church. This period was marked by growth of cities, and as the population increased, crime

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[1] Ibid., p. 374.

increased proportionately.[1]

As a result of the effects of the nationalization processes and the broadening of education, Van Dalen, Mitchell and Bennett state:

> . . . a feeling grew that schools should do all in their power to become an elevating influence. In general, it was thought that the proper social ideals could be inculcated in the school children through the personal influence of the teacher, the atmosphere of the school room, the teaching of social subjects, and by bringing up moral lessons from history and the lives of great men.[2]

Rousseau, Pestalozzi, Froebel, and Herbart established theories to better understand child needs, as well as those pertaining to suitable educational methods to meet these needs. As a result, these theories slowly influenced earlier ones which maintained that education was largely for the transmission of knowledge.[3] As a result of these theories, Grout states: "Through the eighties and early nineties a child-study movement was inaugurated among educators, with the systematic study of physical needs as one part of the program."[4]

In the decade between 1880 and 1890 school health instruction received an unexpected boost through the powerful propaganda movement sponsored by the temperance interests.[5] "The WCTU . . . initiated

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[1] Ibid., p. 383.

[2] Ibid., p. 387.

[3] Ruth E. Grout, Health Teaching in Schools (Philadelphia: W. B. Saunders Co., 1958), p. 12.

[4] Ibid.

[5] Ibid.

a well-organized campaign to get state legislation passed requiring temperance instruction in schools."[1] By 1900, practically every state in the union passed laws requiring special instruction concerning the effects of alcohol and narcotics. Grout states, however, that " . . . most of the laws were so worded that this instruction became a part of a broader teaching program [and] school textbooks of the period 1890 to 1918 reflected this movement."[2] The WCTU and several other outside agencies are accredited with the marked influence of the formal method of teaching hygiene in schools, out of which modern health instruction has developed.[3]

A further development in school health was made toward the close of the nineteenth century. The determining of the health status of children for the purpose of controlling communicable diseases became a part of most school programs. These services were performed by officials of the Board of Health rather than by school authorities. Van Dalen, Mitchell and Bennett state that " . . . the exercise of this function was regarded mainly as a police power to safeguard the public's health against epidemics."[4] In practice, however, teachers were required to send pupils who were suspected of having a communicable disease and those who had been absent from school for several days into a separate room for an examination by a medical

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[1] Van Dalen, Mitchell, and Bennett, op. cit., p. 403.

[2] Grout, op. cit., p. 12.

[3] Van Dalen, Mitchell, and Bennett, op. cit., p. 403.

[4] Ibid., p. 402.

inspector from the Board of Health.[1]

In the period of 1900 through 1918, the purposes of American education advanced far beyond the three "R's" of the nineteenth century, as indicated by the aims of education published in the famous report, "Cardinal Principles of Secondary Education" by a commission of the National Education Association. These principles include:

1. Health
2. Command of fundamental processes
3. Vocation
4. Worthy home membership
5. Citizenship
6. Worthy use of leisure
7. Ethical character[2]

With the changing concepts of education, interest in health in the schools was increased and broadened. Educators had become concerned with the total environment in which children, lived, grew, played, and learned. As a result, health was placed at the top of the list of the seven major objectives of education.

Today, school health education is developed by use of a variety of interrelated activities which are conveniently grouped under three main areas, namely:

1. Provisions for healthful school living.

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[1] Ibid., p. 403.

[2] Commission on the Reorganization of Secondary Education, Cardinal Principles of Secondary Education (Washington, D. C.: U. S. Bureau of Education Bulletin, 1918, number 35.), p. 10ff, quoted in Rudyard K. Bent and Henry H. Kronenberg, Principles of Secondary Education (New York: McGraw-Hill Book Company, Inc., 1949), p. 56.

2. Health and safety instruction.

3. Health services.[1]

Each of the following three descriptions of the school health program includes:

1. Healthful school living, which is concerned with hygienic arrangement of the school day, safe and sanitary school plants, efficient maintenance and custodian service, planned operation of the school lunch program, adequate recreation facilities, and friendly teacher-pupil relationships.

2. School health services are concerned with observation and screening tests, periodic health examinations, referral health examinations, individual health guidance (including follow-through of defects), planned emergency care, special services for exceptional children, and medical supervision of students.

3. School health instruction is concerned with health classes, health instruction integrated with other classes, utilization of ongoing activities of the school day (planned and incidental) and, health instruction of parents and other adults.[2]

Areas of health information such as nutrition, rest, sleep, exercise, protection of the body against temperature change, disease control, self medication, and community resources for health, should

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[1]Charles C. Wilson, Health Education (Washington, D. C.: National Education Association, 1949), p. 83.

[2]Ibid., p. 82.

be understood by students and adults.[1]

Educators can impart a certain amount of health information without being consciously concerned about health behavior skills or attitudes. Information alone will not necessarily improve health; however, adequate supporting information together with the opportunity to perform desirable health practices in real-life situations will help students to live healthfully under varying environments.

Bucher states that health information " . . . does not necessarily insure good health practices."[2] An individual may be well versed in statistics regarding the results of driving at excessive speed; however, unless this information is assimilated and put into practice, it is of no value.

The school, through the untilization of appropriate techniques of instruction, helps each child to acquire desirable information, interests, attitudes, and health practices. Students, through learning to control environmental conditions and to use professional health services, and the many factors necessary to understand and appreciate good health will tend to develop desirable health practices.

Wilson, in interpreting health instruction states: "Health Education is a modern means of securing widespread understanding and utilization of present-day knowledge [information] concerning

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[1]C. E. Turner, School Health and Health Education (St. Lewis: The C. V. Mosby Co., 1952), p. 155.

[2]Charles A. Bucher, Administration of School Health and Physical Education Programs (St. Lewis: The C. V. Mosby Co., 1955), p. 124.

health maintenance and improvement, as well as, disease prevention."[1]

An often quoted definition, which recognizes health instruction as a continuing process occurring at all times and in all education, is defined in terms of end results: "Health education is the sum of experiences which favorably influence practices, attitudes, and information relating to health."[2]

Students who enter colleges and universities of the United States come from various social and economic strata. These students present not only strikingly diverse backgrounds in health information, but also a wide range of health practices.[3] In addition, college students come from high schools in which health instruction ranges from diluted courses to concentrated instruction. The high schools that scheduled classes to meet once or twice a week seemed to have produced dilatory results.[4] In relation to school health instruction, Wilson states:

> In schools where health instruction has been carried on through daily instruction for one-half or a full year in the freshman or sophomore years and for one-half or a full year in the junior or senior years, a dynamic, functional type of instruction has been possible and the practical outcomes have been great.[5]

Turner gives four reasons for the need and importance of health instruction in the curriculum: (1) present health practices of the American people are poor, (2) there are many faulty attitudes prevalent toward disease, (3) there is a lack of basic information

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[1] Wilson, op. cit., p. 4.

[2] Ibid.

[3] Ibid., p. 265.

[4] Ibid.

[5] Ibid., p. 243.

concerning health, and (4) poor health practices adversely affect the health of the individual.[1]

A definite cause and affect relationship is implied in the above four reasons which affect the health of an individual. Not only must these facts be known, but also they must be understood, believed, practiced, and utilized in everyday living.

Because of the interest of the investigator in the health instruction in high school on the possession of health information and health practices of university women, this study was undertaken to discover the health information and the health practices of entering freshman women enrolled in physical education activity classes in the Texas Woman's University at Denton, Texas.

Statement of the Problem

The investigator made a study of the relationship between the amount of time spent for health instruction in high school and the health information and health practices of 200 university freshman women enrolled in physical education activity classes at the beginning of the fall semester of the academic year 1958-1959.

Purposes of the Study

The purposes of this study were:

1. To determine the inter-relationship of health practices as measured by Moran's Health Practice Inventory, and health information as measured by Kilander's Health

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[1]Turner, op. cit., pp. 115-117

Knowledge Test designed for college students, of 200 university freshman women.

2. To determine the inter-relationship of the health information of 200 university freshman women and the amount of time spent for health instruction in high school.
3. To determine the inter-relationship of the health practices of 200 university freshman women and the amount of time spent for health instruction in high school.
4. To make a comparison of the responses of the 200 university freshman women participating in the present study with the responses of the 375 university women who were participants in the Moran study to the five classifications of health instruction based upon the amount of time spent for health instruction in high school.
5. To make recommendations for the health instruction of freshman women entering Texas Woman's University, Denton, Texas.

Definitions

To make clear certain terms used in this study, the following words and/or phrases are defined in the sense in which they were used in this study.

Health: " . . . a state of complete physical, mental, and social well-being and not merely the absence of infirmity."[1]

Health information: Health information is knowledge acquired

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[1]Thurman B. Rice and Fred V. Hein, Living (New York: Scott, Foresman and Co., 1954), p. 7.

through " . . . the formal teaching of hygiene,"[1] which " . . . aims to assist the student in acquiring desirable habits, wholesome attitudes, and adequate knowledge relating to personal, community, and racial health."[2] Health information is also gained through life experiences of youth and adults, and through the use of instruction guides these experiences toward intelligent self-direction and community group action for improved personal and social welfare.[3]

Health practices: " . . . the application of those habits which are best . . . to one's routine of living."[4] Health practices " . . . will not usually be applied to one's routine of living unless an incentive, interest, or attitude exists which impels [their] application."[5]

Health instruction: "Health instruction deals . . . with the materials by which children are helped to acquire health habits, learn health skills, master health knowledge, and develop health attitudes."[6]

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[1] Willian Leonard Hughes, The Administration of Health and Physical Education for Men in Colleges and Universities (New York: Bureau of Publications, Teachers College, Columbia University, 1932), p. 5.

[2] Clifford Lee Brownell (ed.), Principles of Health Education Applied (New York: McGraw-Hill Book Company, Inc., 1949), p. 239, citing J. F. Williams and C. L. Brownell, Health and Physical Education for Public School Administration--Secondary Schools (New York: Bureau of Publication, Teachers College, Columbia University, 1931, Adapted from definition proposed earlier by T. D. Woods.), p. 60.

[3] Clifford Lee Brownell (ed), Principles of Health Education Applied (New York: McGraw Hill Book Company, Inc., 1949), p. 239.

[4] Bucher, op. cit., p. 123.

[5] Ibid., p. 124.

[6] Jesse Feiring Williams and Clifford Lee Brownell, The Administration of Health Education and Physical Education (Philadelphia: W. B. Saunders Company, 1951), p. 16.

Limitations of the Study

In order to restrict this investigation to a reasonable field of study, certain limitations were found to be necessary. This study was specifically limited to:

1. Two-hundred university freshman women enrolled in physical education activity classes at the beginning of the fall semester, 1958, in Texas Woman's University, Denton, Texas.
2. Health practices as measured by Moran's Health Practice Inventory.
3. Health information as measured by Kilander's Health Knowledge Test designed for college students.
4. The amount of time spent for health instruction in high school.

Survey of Previous Studies

After a careful and thorough search of all the available references relating to health information and to health practices of university freshmen, the investigator found no studies identical with the proposed study. Of the numerous related studies, the following were reviewed and proved beneficial to the investigator in developing the present study.

Moran constructed a Health Practice Inventory and administered it to 375 undergraduate students enrolled at the Texas Woman's University (formerly known as Texas State College for Women) in

Denton, Texas, during the spring semester, 1946-1947.[1]

The inventory was used as a measuring device to evaluate the health practices of students enrolled in Texas Woman's University. Moran reviewed ten college hygiene books as sources for formulating the Health Practice Inventory. She established specific standards for the selection of health practices and the construction of 190 items included in the Health Practice Inventory. The inventory included desirable health practices essential to college women for healthful living, undesirable practices, and those practices which should be avoided. Moran considered only those practices of healthful living over which the resident university women of Texas Woman's University had control.

Moran concluded that the status of the health practices of the undergraduate students who participated in her study was fair as a whole. She ranked the answers of the 375 students according to their expressed possession of safe health practices from highest to lowest percentages in the following areas: (1) Safety, (2) Personal Grooming and Clothing, (3) Appraisal of Health Defects and Prevention of Diseases, (4) Nutrition, (5) Care of Special Organs, (6) Work, Exercise and Rest, and (7) Posture.

She further concluded that the seniors possessed more safe health practices when compared with the safe health practices of

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[1]Margaret Mary Moran, "A Study of Selected Health Practices of College Students Enrolled in the Texas State College for Women" (unpublished Master's thesis, Graduate Division Department of Health, Physical Education, and Recreation, Texas Woman's University, formerly Texas State College for Women, 1947).

students classified as freshmen, sophomores, and juniors. The freshmen, however, possessed the least safe health practices when compared with the safe health practices of the sophomores, juniors, and seniors. Moran states that:

> . . . responses indicated that the respondents who had good health instruction in both high school and college have the best health practices whereas the respondents who had little or no health instruction in both high school and college have the lowest percentage of safe practices.[1]

The present study is similar to that of Moran's in that she determined the status of the amount of time spent for health instruction of 375 freshman, sophomore, junior and senior university women and the investigator determined the status of the amount of time spent for health instruction of 200 university freshman women.

The present study differs from Moran's study in that Moran constructed the Health Practice Inventory whereas the present investigator used the Moran Health Practice Inventory. The present study differs further from that of Moran in that she determined the health practices of 91 freshman, 89 sophomore, 100 junior, and 100 senior college women students whereas the investigator determined the health practices of 200 university freshman women. In addition, the present investigation differs from Moran's study in that the investigator determined the health information possessed by 200 university freshman women by use of the Kilander Health Knowledge Test whereas Moran determined only health practices.

Cambron made an analytical study of the possession of health information of 625 freshman and 365 senior men and women enrolled at

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[1] Ibid., p. 163.

the North Texas State College in Denton, Texas, during the academic year 1949-1950.[1]

Cambron's study was limited to freshman and senior students enrolled at the North Texas State College in Denton, Texas, during the academic year 1949-1950, and to the 1948 revised edition of the Kilander Health Knowledge Test as the instrument of measurement. He administered the test on three occassions, to freshmen at the beginning of the fall semester in 1949, to second term freshmen at the end of the spring semester in 1950, and to graduating seniors in May, 1950. He selected these subjects in order to gain some information of the nature of health information possessed by men and women at the beginning of their college career and also to gain similar data for senior students approaching the time of graduation.

The purposes of Cambron's dissertation were: (1) to measure the health information possessed by college men and women at the beginning and end of their freshman year and to determine any relationship between the initial and final scores, (2) to determine any relationship between health information possessed by the subjects and previous instruction which might influence health information, (3) to determine the relationship between the possession of health information and intelligence of the subjects, (4) to compare health information scores of the students who graduated from high schools

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[1] Emmitt Fagg Cambron, "An Analytical Study of the Health Knowledge of Students in North Texas State College" (unpublished Ed. D. dissertation, Department of Physical and Health Education, University of Texas, June, 1951).

which participated in the Texas Extended Program with health information scores from students who graduated from high schools which did not participate in this program, (5) to measure the health information possessed by senior students nearing the date of their graduation, (6) to compare health information scores made by the seniors with those of the freshman subjects, (7) to determine the relationships between group health information scores made by senior subjects and the semester hours of work completed in selected fields of study, (8) to determine any relationship between students' possession of health information and their age, sex, intelligence, parents' occupation, and type of home community, and (9) to determine whether or not the curriculum at the North Texas State College promotes growth in the possession of health information on the part of the students.

Cambron sighted thirty-four conclusions, however, for the purposes of this study, only those conclusions that were pertinent to the present investigation are included below.

Although the second term freshmen scored higher than the freshmen enrolled in the fall term, the senior subjects scored still higher. Cambron also concluded that the superior mean K-score made by the seniors was not attributed to superior intelligence. Both groups of freshman women and senior women made higher over-all scores on the health information test when compared with the freshman men and senior men. On the other hand, the freshman men and senior men made slightly higher K-scores in the area of "Safety and First Aid". Cambron stated that the curriculum provided by the college tended to make a notable contribution to the possession of health information of the

students. The subjects majoring in the fields of physical education, home economics, biology, business, and elementary education possessed more accurate health information than those majoring in other fields. The mean K-scores obtained from freshmen at the end of the 1949-1950 academic year indicated that subjects majoring in art, journalism, mathematics, secondary education, pre-medical, and other pre-professional fields, and students who had not decided upon a major made no statistically significant gain in the possession of health information. Seniors majoring in biology were found to possess more health information when compared with seniors majoring in other areas of the curriculum at the North Texas State College. Seniors majoring in psychology, home economics, physical education, social science, elementary education, and secondary education, demonstrated superior health information when compared with seniors majoring in the fields of art, business, industrial arts, and music. Freshmen enrolled in the Schools of Arts and Science, Home Economics, and Music possessed more health information than freshmen majoring in the Schools of Business and Education. Cambron further concluded that graduates of larger high schools possessed more health information than those who graduated from smaller schools. The occupation of the subjects' parents had no effect upon their health information. Those subjects who studied health and science courses in high school possessed better health information when compared with students not studying health and science courses in high schools.

The present study and the study by Cambron are similar in that both used editions of the Kilander Health Knowledge Test, however, Cambron used the 1948 revised edition of the Kilander Health Knowledge

Test designed for high school and college students and in the present study the 1958 revised edition of the Kilander Health Knowledge Test designed for college students was used. The present study and the study by Cambron are similar in that both studied the effects of high school courses on the possession of health information of entering freshman college women.

The two studies differ in that Cambron compared the possession of health information of entering coeducation freshman students with the gain in health information at the end of one year's residence and the effect of four years study on the health information possessed by graduating coeducation seniors whereas only the health information possessed by entering university freshman women students were studied in the present study.

The present study differs further from Cambron's study in that Cambron compared the possession of health information of students with their intelligence, the possession of health information of students majoring in various areas of the curriculum, and the relationship of parents' occupation with the possession of health information by the students while in the present study the possession of health information was compared with health practices of entering university women students and recommendations were made for the improvement of health instruction in the service classes in the College of Health, Physical Education and Recreation, Texas Woman's University, Denton, Texas.

Taylor compared the health attitudes and practices of first-year college students. She compared 109 men and women enrolled in a required hygiene course and eighty-three men and women not enrolled in a personal hygiene course with respect to health attitudes

and health practices during the first semester of the 1956-1957 academic year at the Central State College in Edmond, Oklahoma.[1]

Taylor used the Byrd Health Attitude Scale and the Johns Health Practice Inventory as instruments for the collection of her data. She administered the tests at the beginning and end of the semester and compared the resulting scores.

The purposes of Taylor's study were to compare the health attitudes and practices of first-year college students enrolled in a required personal hygiene course with the health attitudes and practices of first year college students not enrolled in a required personal hygiene course, to study the influences of enrollment in a required course in personal hygiene on the health attitudes and practices of the experimental group with a control group not enrolled in a required course in personal hygiene, to compare the scores made on the Byrd Health Attitudes Scale and the Johns Health Practice Inventory administered at the beginning and end of the semester to the experimental and control groups, and to make recommendations to improve the required course in personal hygiene at the Central State College in Edmond, Oklahoma.

The findings presented in the study indicated that the experimental group possessed better health attitudes at the beginning and end of the semester and gained significantly more in health

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Mary Rose Taylor, "A Study of the Health Attitudes and Practices of 192 First-Year College Students during the First Semester of the 1956-1957 Academic Year at the Central State College in Edmond, Oklahoma" (unpublished Master's Thesis, Graduate Division, Department of Health, Physical Education, and Recreation, Texas Woman's University, Formerly Texas State College for Women, 1957).

attitudes and practices during the semester than the control group which manifested no improvement with respect to health attitudes and practices during the semester.

The present investigation is similar to Taylor's study in that Taylor studied health practices and the present investigator studied health practices. The present study differs from Taylor's study in that Taylor compared the health attitudes and practices of college freshman men and women enrolled in hygiene classes with the health attitudes and practices of college men and women not enrolled in hygiene classes whereas the present investigator studied the relationship of the possession of health information and health practices of university freshman women upon their entrance to Texas Woman's University. Taylor used the Byrd Health Attitude Scale and the Johns Health Practice Inventory whereas the present investigator used the Kilander Health Knowledge Test designed for college students and the Moran Health Practice Inventory. The present study differs further in that Taylor administered her tests at the beginning and end of the semester and the present investigator administered the Kilander Health Knowledge Test, the Moran Health Practice Inventory and an original check list entitled Check List of the Amount of Time Spent for Health Instruction in High School only at the beginning of the fall semester of 1958.

The methods of collecting the data and the procedures for developing the present study are presented in Chapter II.

CHAPTER II

PROCEDURES

The present study was undertaken as a result of the investigator's interest in the influence of health instruction in high school on the possession of health information and health practices of 200 university women enrolled in physical education activity classes at the beginning of their freshman year at Texas Woman's University in Denton, Texas. Factors such as home background, health attitudes, health interest, et cetera, were not determined in this study; whereas, factors which influence the health practices of students living on a residential campus were considered. The amount of time spent for health instruction in high school was determined by the use of the Check List of the Amount of Time Spent for Health Instruction in High School, the possession of health information was determined by the use of the Kilander Health Knowledge Test designed for college students, and the health practices were studied by the use of the Moran Health Practice Inventory. The procedures followed in making this study such as sources of data, methods of collecting data, selection of tests, selection of subjects, construction of the check list, administration of the tests, and statistical treatment of data are included in this chapter.

Sources of Data

Data used in this study were collected at the Texas Woman's

University in Denton, Texas, and includes both human and documentary sources. The human sources included 200 university freshman women residing on the Texas Woman's University campus and enrolled in physical education activity classes. Other human sources contributing in an advisory capacity to this study were faculty members in the College of Health, Physical Education and Recreation at the Texas Woman's University in Denton, Texas.

Books, pamphlets, periodicals, published and unpublished theses and dissertations, and manuals made available through the library of the Texas Woman's University were used in compiling documentary data.

Methods of Collecting Data

The data used in making this study were collected through a study of the available documentary sources and through the administration of selected measuring instruments to 200 university freshman women.

Selection of Tests

After a survey of available tests, the investigator selected the Moran Health Practice Inventory[1] and the Kilander Health Knowledge Test[2] designed for college students which will hereafter be referred to as the Kilander Health Knowledge Test. In addition,

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[1] Moran, op. cit., pp. 173-195.

[2] "Instructions for Kilander Health Knowledge Test for College Students," Prepared by H. F. Kilander, 33 Colonial Terrace, East Orange, N. J. (Mimeographed.)

a check list was constructed to determine the amount of time spent for health instruction in high school of freshman women entering the Texas Woman's University at Denton, Texas.

The selection of the tests was made on the basis of accepted criteria for test construction. The criteria are: (1) Validity, (2) Reliability, (3) Objectivity, (4) Simplicity, and (5) Standardization of Procedures.[1]

1. Validity.--Tests are considered valid when they measure what they are supposed to measure.

The validity of the Moran Health Practice Inventory was determined by: (1) a careful selection of the items from ten authoritative health education references,[2] and (2) a critical analysis of the inventory by faculty members in the College of Health, Physical Education and Recreation and the college physician, at the Texas Woman's University in Denton, Texas.[3]

The validity of the Kilander Health Knowledge Test was determined by an empirical selection of items from: (1) state courses of study, and (2) high school and college health textbooks.[4]

The validity of the Check List of The Amount of Time Spent for Health Instruction in High School was met by a critical analysis on the part of a committee of Health, Physical Education, and Recreation

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[1]Charles Harold McCloy, Tests and Measurements in Health and Physical Education (New York: F. S. Crofts and Co., 1939), pp. 7-9.

[2]Moran, op. cit., pp. 33-34.

[3]Ibid., pp. 56-57.

[4]"Instructions for Kilander Health Knowledge Test for College Students", op. cit., (Mimeographed).

authorities in the College of Health, Physical Education and Recreation, at the Texas Woman's University in Denton, Texas.

2. Reliability.--Tests are considered reliable when subsequent administrations of the same test to the same group will yield the same results.

Moran did not report a reliability coefficient for the Moran Health Practice Inventory. The investigator, however, chose the Moran Health Practice Inventory on the basis that 190 items covering seven areas of living over which the residential student had control to determine the health practices of students living on a residential university campus. In addition, the items were carefully constructed and were " . . . objective in that they (1) may be isolated as an act of doing, (2) may be subject to recall, and (3) may be disclosed by the responses requested on this inventory, that is, in terms of 'Always,' 'Usually,' 'Often,' 'Seldom,' and 'Never."[1]

The reliability coefficient of the Kilander Health Knowledge Test was determined by Kilander by using the odd-even method of correlation and applying the Spearman-Brown Prophecy Formula to obtain the reliability of the actual length of the test. Kilander determined the resulting reliability to be .80 for college freshman men and women.[2]

3. Objectivity.--Tests are considered objective when a number of people can administer a particular test to a certain group and obtain approximately the same results. The Moran Health Practice

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[1]Moran, op. cit., p. 54.

[2]"Instructions for Kilander Health Knowledge Test for College Students", op. cit., Mimeographed).

Inventory, the Kilander Health Knowledge Test, and the Check List of The Amount of Time Spent for Health Instruction in High School met the objectivity standards in that each measuring instrument was constructed as a self-administrative device. The only instructions given by the administrator were related to the proper marking of each measuring instrument.

4. Simplicity.—A test meets the criterion of simplicity if it is economical in cost and time and relatively easy to administer with a minimum of equipment. The cost of the Moran Health Practice Inventory and the Check List of the Amount of Time Spent for Health Instruction in High School involved the price of stencils and mimeographing which resulted in approximately twenty dollars or ten cents for each student for 200 copies of the two instruments. The Kilander Health Knowledge Test cost eight cents each. The cost of each measuring instrument was considered economical. The criterion of time was met in that the Moran Health Practice Inventory and the Check List of the Amount of Time Spent for Health Instruction in High School was administered in one class period, and the Kilander Health Knowledge Test was administered in a second class period to students enrolled in fifty minute class periods. In four classes, however, the three measuring instruments were administered in one class period to students enrolled in eighty minute class periods. In addition, these measuring instruments met the criterion of simplicity in that they required no equipment other than the inventory items, check list, test questions, answer sheets, and a pencil. The simplicity criterion was further met in that these measuring instruments are self-administering.

5. Standardization of Procedures.—Tests are considered to have

standardized procedures when procedures of administration are established. Instructions for the administration of the testing devices used in this study were established by Moran and Kilander and were followed by the investigator.

Selection of Participants

Permission was obtained from the Dean of the College of Health, Physical Education and Recreation at the Texas Woman's University in Denton, Texas, to administer the Moran Health Practice Inventory, the Kilander Health Knowledge Test, and the Check List of The Amount of Time Spent for Health Instruction in High School to 200 university freshman women. The battery of tests were administered to 214 participants, however, only 201 students completed the entire battery including the Moran Health Practice Inventory, the Kilander Health Knowledge Test, and the Check List of The Amount of Time Spent for Health Instruction in High School. One student did not complete the Moran Health Practice Inventory and twelve of the students did not complete the Kilander Health Knowledge Test. The test of the two-hundred and first subject was discarded for the purpose of facilitating the treatment of the data.

Construction of the Check List of The Amount of Time Spent for Health Instruction in High School

The Check List of The Amount of Time Spent for Health Instruction in High School occupied one legal size mimeographed page. An attempt was made through the construction of the check list to construct

an instrument which would serve to evaluate previous health instruction objectively. The Check List of The Amount of Time Spent for Health Instruction in High School, was designed to secure information concerning the amount of time spent by the respondents in high school health instruction. In preparing the Check List of The Amount for Time Spent for Health Instruction in High School, the writer made an attempt to provide for soliciting sufficient personal data which might affect health practices in such a way that there would be no reluctance on the part of the student to check items on the Moran Health Practice Inventory and the check list accurately and truthfully.

Directions were formulated for guiding the respondents in marking the check list according to: (1) the time spent for health instruction, (that is, daily, three times a week, two times a week, once a week, occasionally or other time spent in class), (2) the type of health instruction, (that is, as a separate health course, as a part of physical education, or as a part of another high school course, (3) the respondent's high school classification at the time each student was enrolled in a health course or courses, and (4) the number of weeks or semester(s) the respondents spent for health instruction. An explanation and an example of how to check each item was included on the Check List of The Amount of Time Spent for Health Instruction in High School. A designated place was provided to be checked by participants who had no previous health instruction in high school. A copy of the Check List of The Amount of Time Spent for Health Instruction in High School may be found in the Appendix, page 73.

Administration of the Tests

The Moran Health Practice Inventory, the Kilander Health Knowledge Test, and the Check List of The Amount of Time Spent for Health Instruction in High School were administered to 200 university freshman women enrolled in physical education activity classes at the beginning of the fall semester of the academic year, 1958-1959.

In order to study the influence of health instruction in high school on health practices and health information, 200 university freshman women were scheduled to be tested at the beginning of the fall semester of the academic year, 1958-1959. In order to obtain the 200 university freshman women as participants to be tested, it was necessary to schedule nine activity classes in physical education. The number of sections and type of activities in which the participants were enrolled included: one section each, badminton, bowling, fencing, folk dance, and golf; and two sections each, swimming and tennis. Eight of the classes were scheduled during the class hours the students were not scheduled for health examinations. The sections of badminton and fencing, and one section each of swimming and tennis were fifty-minute class periods. The sections of bowling, folk dance, golf, and one section each of swimming and tennis were eighty-minute class periods. The students in the one activity class which was not tested during the health examination week and the students who missed the scheduled examinations were administered the tests during the third week of the fall semester.

An explanation of the purposes of the study and a request for cooperation on the part of the respondents was prepared and attached to the Check List of The Amount of Time Spent for Health

Instruction in High School. The participants were asked to read the prepared explanation before taking the test. In addition, the investigator orally explained the purposes of the study, requested cooperation on the part of the participants, and explained the procedure for responding to the items on the check list. The participants then marked the Check List of The Amount of Time Spent for Health Instruction in High School. As soon as the students completed marking the check list, the administrator read the directions for checking the Moran Health Practice Inventory orally as the students silently read the mimeographed directions. The participants were assured that their responses would remain confidential with the administrator, and that the test scores would not be used to influence the semester grade earned in their physical education courses. An answer sheet was not constructed for the Moran Health Practice Inventory. The answers, however, were recorded on the test by the participants checking in one of the five columns (to the right of each inventory item) using that column describing the extent to which each of the health habits were practiced.

The same administrative procedures were followed in administering the Kilander Health Knowledge Test. Again, the participants were assured that their scores would remain confidential with the administrator, and that the test results would have no effect upon the semester grade in physical education. In administering the Kilander Health Knowledge Test, each respondent was given a test booklet and an answer sheet to record her answers.

Treatment of the Data

Raw scores obtained from the Moran Health Practice Inventory

and the Kilander Health Knowledge Test were converted into T-scores. The responses obtained from the administration of the Check List of The Amount of Time Spent for Health Instruction in High School were organized into classifications according to the amount of time spent for health instruction in high school and the time factor was used as a basis upon which type of health instruction in high school could be defined. The T-scores obtained from the Moran Health Practice Inventory and the Kilander Health Knowledge Test and the amount of time spent according to classifications in health instruction in high school were treated statistically in order to facilitate the interpretation of the findings.

A random sampling of the scores of 100 participants was obtained by drawing every second test paper for the Moran Health Practice Inventory and for the Kilander Health Knowledge Test from the 200 test papers of the university freshman women. Reliability coefficients of correlation were determined from:

1. The raw scores made on the odd numbered items and the even numbered items of 100 randomly selected tests of the Moran Health Practice Inventory administered to 200 participants.

2. The raw scores made on the odd numbered items and the even numbered items of 100 randomly selected tests of the Kilander Health Knowledge Test administered to the 200 participants.

Frequency distributions of the T-scores made by the 200 university freshman women on the Moran Health Practice Inventory and the Kilander Health Knowledge Test were constructed. The means, standard deviations, standard errors of the means, difference between the means,

standard error of the difference between the means, critical ratio, and the probability level of significance were computed for comparison of the Moran Health Practice Inventory with the Kilander Health Knowledge Test. The coefficient of correlation was determined between the T-scores made by the 200 university freshman women on the Moran Health Practice Inventory and the T-scores made by the same participants on the Kilander Health Knowledge Test.

In addition, the results obtained from the administration of the Check List of The Amount of Time Spent for Health Instruction in High School by 200 university freshman women were organized into five classifications using the time factor as a basis upon which type of health instruction received by the participants could be defined and were: (1) a good amount of time spent for health instruction in high school and described as good health instruction, (2) a fairly good amount of time spent for health instruction in high school and described as fairly good health instruction, (3) less than a fairly good amount of time spent for health instruction in high school and described as less than fairly good health instruction, (4) occasional or poor health instruction in high school, and (5) no health instruction in high school. The numbers and per cents were computed for comparison of the amount of the amount of time spent by classifications in health instruction in high school for the present study with the amount of time spent by classifications in health instruction in high school for the Moran study.

Frequency distributions for each of the five classifications of time spent for health instruction in high school were constructed from the T-scores obtained for the Moran Health Practice Inventory and the

Kilander Health Knowledge Test of the 200 university freshman women. The means, standard deviations, standard errors of the difference between the means, critical ratios, and the probability levels of significance were computed for comparison of the T-scores of the Moran Health Practice Inventory with the T-scores of the Kilander Health Knowledge Test according to the five classifications of time spent for health instruction in high school. The coefficients of correlation were determined between the T-scores for the Moran Health Practice Inventory and the T-scores for the Kilander Health Knowledge Test for each of the five classifications of time spent for health instruction in high school.

The findings and interpretations of the study are presented in Chapter III.

CHAPTER III

FINDINGS

A study was made of the relationship of health practices, health information, and previous high school health instruction of 200 university freshman women enrolled in physical education activity classes at the Texas Woman's University in Denton, Texas.

The data obtained from the administration of the Moran Health Practice Inventory were compared with the data obtained from the administration of the Kilander Health Knowledge Test. In addition, the data obtained from the responses reported on the check list designed to determine the amount of time spent for health instruction in high school were compared with scores obtained from both the Moran Health Practice Inventory and the Kilander Health Knowledge Test, and with the findings in reference to previous health instruction in high school obtained by Moran.[1] The following findings were derived from the statistical treatment of the data as described in the preceding chapter.

The reliability coefficients and Spearman-Brown coefficients obtained from the administration of the Moran Health Practice Inventory and the Kilander Health Knowledge Test for a randomly selected sampling of 100 of the 200 university freshman women participating in the present study are presented in Table I.

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[1] Moran, Op. Cit., p. 116.

TABLE I

RELIABILITY COEFFICIENTS, AND SPEARMAN-BROWN COEFFICIENTS OBTAINED FROM THE ADMINISTRATION OF THE MORAN HEALTH PRACTICE INVENTORY AND THE KILANDER HEALTH KNOWLEDGE TEST TO THE RANDOM SAMPLING OF 100 UNIVERSITY FRESHMAN WOMEN

Tests	Random Sampling	Reliability Coefficients	Spearman-Brown Coefficients
Moran Health Practice Inventory	100	.94	.97
Kilander Health Knowledge Test	100	.66	.80

A randomly selected sample of 100 test papers was used to estimate the reliability of the responses to the health practices and the health information possessed by 200 university freshman women as determined through the administration of the Moran Health Practice Inventory and the Kilander Health Knowledge Test.

The odd and even raw scores made on the Moran Health Practice Inventory by the 100 randomly selected respondents were used to estimate the reliability of the health practices for the total group of 200 university freshman women completing the Moran Health Practice Inventory. A coefficient of .94 was obtained by determining the coefficient of correlation between the odd and even raw scores. The coefficient was raised to .97 by the use of the Spearman-Brown Prophecy Formula to estimate the reliability of performances of the 200 participants to whom the inventory was administered. The coefficient of .97 indicates that the group had a very high degree of reliability in

performing the health practices.

The odd and even raw scores made on the Kilander Health Knowledge Test by the 100 randomly selected respondents were used to estimate the reliability of the health information possessed for the total group of 200 university freshman women completing the Kilander Health Knowledge Test. A coefficient of .66 was obtained by determining the coefficient of correlation between the odd and even raw scores. The coefficient was raised to .80 by the use of the Spearman-Brown Prophecy Formula to estimate the reliability of the responses to the health information possessed by the 200 participants to whom the test was administered. The coefficient of .80 indicates that the group had a relatively high degree of reliability in responding to the possession of health information.

One of the purposes of this study was to determine whether any relationship exists between health practices as measured by the Moran Health Practice Inventory and health information as measured by the Kilander Health Knowledge Test. The Moran Health Practice Inventory and the Kilander Health Knowledge Test administered to the 200 university freshman women who were participants in this study supplied the data for this comparison. The raw scores obtained from the Moran Health Practice Inventory and the Kilander Health Knowledge Test were converted into T-scores and reported in the Appendix, pages 75 and 76.

The tests, numbers, and mean T-scores, standard deviations, error of the means, difference between the means, standard error of the difference between the means, critical ratio, probability level of significance, and coefficient of correlation for comparing the

T-scores for the Moran Health Practice Inventory with the T-scores for the Kilander Health Knowledge Test administered to the 200 university freshman women are presented in Table II.

The standard deviation is a measure of the scatter of scores calculated from the arithmetical mean.[1] The standard deviations obtained from the T-scores of the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test were determined to be 9.70 and 10.12 respectively, indicating a difference of .42. A comparison of the standard deviation of 10.12 obtained for the Kilander Health Knowledge Test with the standard deviation of 9.70 obtained for the Moran Health Practice Inventory reveals a slightly greater variability in the T-scores for the Kilander Health Knowledge Test. The variability of the T-scores obtained from the two measuring instruments, for all practical purposes, may be considered similar.

The standard error of the difference between the mean is a measure of the reliability of the difference between the means. In order to determine whether a difference between the means is large enough to be significant, the difference between the means is divided by the standard error of the difference to obtain the critical ratio.

The critical ratio is used as a basis on which to retain or reject the null hypothesis. The null hypothesis exists when no significant difference is found between the two tests administered to the same group. By the same token, the null hypothesis is rejected when a difference between the means of the two tests is found which is

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[1]Henry E. Garrett, Statistics in Psychology and Education (New York: Longmans, Green and Co., 1953), p. 50.

TABLE II

MEAN T-SCORES, STANDARD DEVIATIONS, STANDARD ERROR OF THE MEANS, DIFFERENCE BETWEEN THE MEANS, STANDARD ERROR OF THE DIFFERENCE BETWEEN THE MEANS, CRITICAL RATIO, PROBABILITY LEVEL OF SIGNIFICANCE AND COEFFICIENT OF CORRELATION ARE PRESENTED FOR COMPARING THE T-SCORES OF THE MORAN HEALTH PRACTICE INVENTORY WITH THE T-SCORES FOR THE KILANDER HEALTH KNOWLEDGE TEST ADMINISTERED TO 200 UNIVERSITY FRESHMAN WOMEN

Test	Number	Mean T-Scores	S. D.	σ_m	$Dm_1 - Dm_2$	σ_D	C. R.	P	r
Moran Health Practice Inventory	200	50.66	9.70	.69	.66	.99	.66	.51	-.03
Kilander Health Knowledge Test	200	50.00	10.12	.72					

acceptable at a certain level of confidence.[1]

The critical ratio is interpreted in terms of probability levels of significance. The probability levels of significance are expressed in the percentage of cases which lie to the right and to the left of the critical ratio in a normal distribution. The .05 level of significance is sufficiently exacting for most investigators.[2] The .05 level of confidence indicates that the obtained mean will not diverge from the population means more than five times in 100 trials.

The standard error of the difference between the two means obtained from the T-scores of the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test was found to be .99. The mean T-score of 50.66 obtained from the Moran Health Practice Inventory and the mean T-score of 50.00 obtained from the Kilander Health Knowledge Test resulted in a difference of .66 between the means for the 200 university freshman women. The difference between the means of .66 divided by the standard error of the difference between the means of .99 resulted in a critical ratio of .66. The critical ratio of .66 with a probability level of .51 indicates that the difference of .66 between the means was not large enough to be considered statistically significant.[3] Therefore, it may be stated that the difference obtained was not a true difference and the null hypothesis must be retained. It may be assumed, therefore, that the health

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[1] Ibid., p. 213.

[2] Henry E. Garrett, Statistics in Psychology and Education (New York: Longmans, Green and Co., 1955), p. 187.

[3] Ibid., pp. 215-216.

practices and the health information possessed by the 200 university freshman women were similar. A probability level of .51, however, indicates that forty-nine times out of 100 a difference that great or greater would be obtained.

A coefficient of correlation obtained from the scores for the Moran Health Practice Inventory and the Kilander Health Knowledge Test administered to 200 university freshman women was determined to be -.03. Garrett states that correlations ranging from zero to ±.20 denotes indifferent or negligible relationship.[1] It is indicated that, for the 200 university freshman women, health practices as determined by the Moran Health Practice Inventory and health information as determined by the Kilander Health Knowledge Test are not related.

A second purpose of this study was to determine the amount of time spent for health instruction in high school by 200 university freshman women participating in the present study and to compare these findings with those found by Moran in her investigation of time spent for health instruction, in high school, by the 375 participants in her study. In order to make this comparison, it was necessary to use the time factor as a basis upon which types of health instruction in high school could be defined. The Check List of The Amount of Time Spent for Health Instruction in High School administered to 200 university freshman women who were participants in this study supplied the data for the comparison.

It was also necessary to classify the present participants'

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[1] Ibid., p. 173.

responses into five classifications describing the amount of time spent for health instruction in high school as developed by Moran.[1] The present investigator used Moran's five classifications of time spent for health instruction in high school and interpretations of each classification as an available factor upon which health instruction could be defined. The classifications and interpretations were: one, good health instruction; two, fairly good health instruction; three, less than fairly good health instruction; four, poor or occasional health instruction; and five, no designated health instruction.[2] It was not assumed however, that the quality of health instruction could be judged solely on the basis of time. The number of class periods per week of health instruction in high school and the five classifications of time spent for health instruction in high school are presented in Table III.

Classification one includes daily health instruction for four semesters, or health instruction two or three times a week for six semesters and two or three times a week for four semesters, or the equivalent and is described as good health instruction.[3]

Classification two includes daily health instruction for two semesters, or health instruction two or three times a week for four semesters, or the equivalent, and is interpreted as fairly good health instruction.[4]

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[1] Moran, op. cit., pp. 114-115.

[2] Ibid., pp. 115-118.

[3] Ibid., p. 117.

[4] Ibid., p. 115.

TABLE III

NUMBER OF CLASS PERIODS PER WEEK SPENT FOR HIGH SCHOOL HEALTH INSTRUCTION AND THE CLASSIFICATIONS DEFINING THE AMOUNT OF TIME SPENT FOR HEALTH INSTRUCTION IN HIGH SCHOOL

Number of Class Periods Per Week of High School Health Instruction	Classification*				
	1	2	3	4	5
Health Instruction Daily	4 Sem	2 Sem	Less Than 2 Sem	Occasionally	None
Health Instruction 2 or 3 Days Per	6 Sem	4 Sem	2 Sem	Occasionally	None
A Combination of Health Instruction 1. Daily and 2. 2 or 3 Days Per Week	2 Sem and 4 Sem			Occasionally	None

*According to Moran's Classification of the responses of students revealing the amount of time spent for health instruction in high school.

Classification three includes health instruction for less than two semesters, or the equivalent, and is described as less than fairly good health instruction.[1]

Classification four includes health instruction as taught on an occasional basis and is described as poor health instruction.[2]

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[1] Ibid., p. 115.

[2] Ibid., pp. 115, 117.

Classification five includes no health instruction in high school.[1]

Classifications, numbers, per cents, and difference in the per cents for comparing the type of health instruction received in high school based upon the amount of time spent for health instruction in high school as revealed by the responses of 375 participants according to Moran's study with the type of health instruction received in high school based upon the amount of time spent for health instruction in high school as revealed by responses of the 200 university freshman women participating in the present study are presented in Table IV.

The responses of the 375 participants in Moran's study and the responses of the 200 university freshman women participating in the present study reveals that the largest per cent of responses in both studies for the five classifications of time spent for health instruction in high school fell within classification four. One hundred, thirty-two or 35.2 per cent of the 375 participants in Moran's study and fifty-three or 26.5 per cent of the 200 university freshman women participating in the present study indicates that they received health instruction in high school occasionally. A comparison of the larger per cent of 35.2 of the total responses received in Moran's study with the smaller per cent of 26.5 of the total responses received in the present study indicates a difference of 8.7 per cent, disclosing that fewer respondents in the present study received poor or occasional health instruction in high school.

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[1] Ibid., p. 115.

TABLE IV

CLASSIFICATIONS, NUMBERS, PER CENTS, AND THE DIFFERENCES IN THE PER CENTS FOR COMPARING THE MORAN STUDY OF THE AMOUNT OF TIME SPENT FOR HEALTH INSTRUCTION IN HIGH SCHOOL WITH THE PRESENT STUDY OF THE AMOUNT OF TIME SPENT FOR HEALTH INSTRUCTION IN HIGH SCHOOL

Classifications[a]	Amount of Time Spent for High School Health Instruction		Difference in Per Cents Between the Two Studies
	Moran's Study	Present Study	
Classification 1			
Number	103	25	
Per cent	27.5	12.5	15.0[b]
Classification 2			
Number	51	27	
Per cent	13.6	13.5	0.1[b]
Classification 3			
Number	22	49	
Per cent	5.9	24.5	18.7
Classification 4			
Number	132	53	
Per cent	35.2	26.5	8.7[b]
Classification 5			
Number	67	46	
Per cent	17.9	23.0	5.1
TOTAL			
Number	375	200	
Per cent	100.0	100.0	

[a]See pages 41-43 for description of classifications.

[b]Larger differences in per cents of time spent for health instruction in high school in Moran's study.

Classification five represents the numbers and per cents of the responses of all the participants in the Moran study and in the present study who specified no previous health instruction in high school. Forty-six or 23.0 per cent of the 200 participants in the present study and sixty-seven or 17.9 per cent of the 375 participants in the Moran study indicated that they had no previous health instruction in high school. A comparison of the responses in Moran's study with the responses in the present study shows a difference of 5.1 per cent, indicating that more respondents in the present study had no previous health instruction in high school.

In Moran's study the smallest number and per cent, that is, twenty-two or 5.8 per cent, of the 375 participants responding to the five classifications of health instruction in high school was found in classification three. Forty-nine or 24.5 per cent of the 200 participants in the present study responded to the same classification. A comparison of the responses in Moran's study with the responses in the present study shows a difference of 18.7 per cent indicating that more respondents in the present study received less than fairly good health instruction in high school.

In the present study the smallest number and per cent, that is, twenty-five or 12.5 per cent, of the 200 university freshman women participants responding to the five classifications of time spent for health instruction in high school was found in classification one. One hundred, three or 27.5 per cent of the 375 participants in the Moran study responded to the same classification. A comparison of the responses in Moran's study with the responses in the present study shows

a difference of fifteen per cent indicating that more respondents in the Moran study received good health instruction in high school.

Classification two represents the numbers and per cents of the responses of all the participants in the Moran study and in the present study who specified a fairly good amount of time spent for health instruction in high school. Fifty-one or 13.6 per cent of the 375 participants in the Moran study and twenty-seven or 13.5 per cent of the 200 participants in the present study indicated fairly good health instruction in high school. A comparison of the responses in Moran's study with the responses in the present study shows a difference of 0.1 per cent indicating that more respondents in the Moran study received fairly good health instruction in high school. A difference of 0.1 per cent between the responses from the two groups for classification two, for all practical purposes, may be considered the same.

A comparison of the five classifications of health instruction in high school described as good, fairly good, or less than fairly good of 46.9 per cent of the 375 responses in the Moran study with the 50.5 per cent of the 200 responses in the present study shows a difference of 3.6 per cent, indicating more participants in the present study responded to classifications one, two, and three.

A comparison of the five classifications of health instruction in high school described as occasional or poor, or no health instruction of 53.1 per cent of the 375 responses in the Moran study with the 49.5 per cent of the 200 responses in the present study shows a difference of 3.6 per cent, indicating fewer participants in the present study responded to classifications four and five.

A final purpose of this study was to determine whether any relationship exists between the five classifications of time spent for health instruction in high school and health practices and health information. The Check List of The Amount of Time Spent for Health Instruction in High School, the Moran Health Practice Inventory, and the Kilander Health Knowledge Test administered to the 200 university freshman women who were participants in this study supplied the data for this comparison.

The classifications, mean T-scores, standard deviations, standard error of the means, differences between the means, standard error of the difference between the means, critical ratios, probability levels of significance, and coefficients of correlation for comparison of the data obtained from the Moran Health Practice Inventory with the data obtained from the Kilander Health Knowledge Test which fell within each of the five classifications of time spent for health instruction in high school by the 200 university freshman women, are presented in Table V.

Twenty-five of the 200 participants responding to the Check List of The Amount of Time Spent for Health Instruction in High School indicated a good amount of time spent for health instruction. The standard deviations obtained from the T-scores of these twenty-five participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test for classification one (described as good health instruction in high school), were determined to be 8.90 and 10.46, respectively, indicating a difference of 1.56. A comparison of the standard deviation of 8.90 obtained from the Moran Health Practice Inventory with the

TABLE V

CLASSIFICATIONS, MEAN T-SCORES, STANDARD DEVIATIONS, STANDARD ERROR OF THE MEANS, STANDARD ERROR OF THE DIFFERENCE BETWEEN THE MEANS, CRITICAL RATIOS, PROBABILITY LEVELS OF SIGNIFICANCE AND COEFFICIENTS OF CORRELATION ARE PRESENTED FOR COMPARISON OF CLASSIFICATIONS ACCORDING TO TIME SPENT IN HEALTH INSTRUCTION IN HIGH SCHOOL WITH THE DATA OBTAINED FROM THE MORAN HEALTH PRACTICE INVENTORY AND WITH THE DATA OBTAINED FROM THE KILANDER HEALTH KNOWLEDGE TEST ADMINISTERED TO 200 UNIVERSITY FRESHMAN WOMEN

Classifications and Tests	Numbers	Mean T-Scores	S. D.	σ_m	Dm_1-Dm_2	σ_D	C. R.	P	r
Classification One									
Moran Health Practice Inventory	25	52.18	8.90	1.78	.88	2.67	.33	.73	.15
Kilander Health Knowledge Test	25	51.30	10.46	2.09					
Classification Two									
Moran Health Practice Inventory	27	48.61	10.50	2.02	.89	2.86	.31	.76	-.13
Kilander Health Knowledge Test	27	49.50	10.52	2.02					

TABLE V—Continued

Classification Three									
Moran Health Practice Inventory	49	52.13	9.08	1.30	1.29	1.85	.69	.49	.08
Kilander Health Knowledge Test	49	50.85	9.27	1.32					
Classification Four									
Moran Health Practice Inventory	53	51.02	9.61	1.32	.09	1.93	.04	.97	-.06
Kilander Health Knowledge Test	53	51.11	10.30	1.41					
Classification Five									
Moran Health Practice Inventory	46	49.57	9.96	1.47	1.91	2.08	.92	.36	-.09
Kilander Health Knowledge Test	46	47.66	9.96	1.47					

standard deviation of 10.46 obtained from the Kilander Health Knowledge Test indicates that a slightly greater variability of the twenty-five respondents' T-scores was found for the Kilander Health Knowledge Test. The variability of the twenty-five T-scores obtained from the Moran Health Practice Inventory may be considered slightly more homogeneous than the twenty-five T-scores obtained from the Kilander Health Knowledge Test for classification one.

The mean T-scores of 52.18 and 51.30 were obtained from the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test, respectively, for the twenty-five respondents who indicated a good amount of time spent for health instruction in high school. A difference of .88 between the mean T-scores of 52.18 and 51.30 was found to be in favor of the twenty-five students possessing slightly better health practices than health information. To determine the reliability of the difference between the two means, the difference of .88 was divided by the standard error of the difference of 2.67 which yielded a critical ratio of .33.[1] A critical ratio of .33 at the level of confidence of .73 is not significant and shows that the health practices were similar to health information for the twenty-five students who indicated good health instruction in high school.[2]

Twenty-seven of the 200 participants responding to the Check List of The Amount of Time Spent for Health Instruction in High School indicated a fairly good amount of time spent for health instruction in

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[1]Henry Garrett, op. cit., pp. 222-225.

[2]Ibid.

high school. The standard deviations obtained from the T-scores of these twenty-seven participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test for classification two (described as fairly good health instruction in high school) were determined to be 10.50 and 10.52, respectively, indicating a difference of .02. A comparison of the standard deviation of 10.50 obtained from the Moran Health Practice Inventory with the standard deviation of 10.52 obtained from the Kilander Health Knowledge Test indicates that a slightly greater variability of the twenty-seven respondents' T-scores was found for the Kilander Health Knowledge Test. The variability of the T-scores obtained from the two measuring instruments for all practical purposes may be considered the same for classification two.

The mean T-scores of 48.61 and 49.50 were obtained from the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test, respectively, for the twenty-seven respondents who indicated a fairly good amount of time spent for health instruction in high school. A difference of .89 between the mean T-scores of 48.61 and 49.50 was found to be in favor of the twenty-seven students possessing slightly better health information than health practices. To determine the reliability of the difference between the two means, the difference of .89 was divided by the standard error of the difference of 2.86 which yielded a critical ratio of .31. A critical ratio of .31 at the level of confidence of .76 is not significant and shows that health practices were similar to health information for the twenty-seven students who indicated fairly good health instruction in high school.

Forty-nine of the 200 participants responding to the Check List of The Amount of Time Spent for Health Instruction in High School indicated less than a fairly good amount of time spent for health instruction in high school. The standard deviations obtained from the T-scores of these forty-nine participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test for classification three (described as less than fairly good health instruction in high school) were determined to be 9.08 and 9.27, respectively, indicating a difference of .19. A comparison of the standard deviation of 9.08 obtained from the Moran Health Practice Inventory with the standard deviation of 9.27 obtained from the Kilander Health Knowledge Test indicates that a slightly greater variability of the forty-nine respondents' T-scores was found for the Kilander Health Knowledge Test. The variability of the T-scores obtained from the two measuring instruments for all practical purposes may be considered similar for classification three.

The mean T-scores of 52.13 and 50.85 were obtained from the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test, respectively, for the forty-nine respondents who indicated less than a fairly good amount of time spent for health instruction in high school. A difference of 1.29 between the mean T-scores of 52.13 and 50.85 was found to be in favor of the forty-nine students possessing slightly better health practices than health information. To determine the reliability of the difference between the two means, the difference of 1.29 was divided by the standard error of the difference of 1.85 which yielded a critical ratio of .69. A

critical ratio of .69 at the level of confidence of .49 is not significant and shows that health practices were similar to health information for the forty-nine students who indicated less than fairly good health instruction in high school.

Fifty-three of the 200 participants responding to the Check List of The Amount of Time Spent for Health Instruction in High School indicated an occasional or poor amount of time spent for health instruction in high school. The standard deviations obtained from the T-scores of these fifty-three participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test for classification four (described as occasional or poor health instruction in high school) were determined to be 9.61 and 10.30, respectively, indicating a difference of .69. A comparison of the standard deviation of 9.61 obtained from the Moran Health Practice Inventory with the standard deviation of 10.30 obtained from the Kilander Health Knowledge Test indicates that a slightly greater variability of the fifty-three respondents' T-scores was found for the Kilander Health Knowledge Test. The variability of the T-scores obtained from the two measuring instruments for all practical purposes may be considered similar for classification four.

The mean T-scores of 51.02 and 51.11 were obtained from the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test, respectively, for the fifty-three respondents who indicated an occasional or poor amount of time spent for health instruction in high school. A difference of .09 between the mean T-scores of 51.02 and 51.11 was found to be in favor of the fifty-three students possessing slightly better health information than health

practices. To determine the reliability of the difference between the two means, the difference of .09 was divided by the standard error of the difference of 1.93 which yielded a critical ratio of .04. A critical ratio of .04 at the level of confidence of .97 is not significant and indicated that health practices were similar to health information for the fifty-three students who indicated occasional or poor health instruction in high school.

Forty-six of the 200 participants responding to the Check List of The Amount of Time Spent for Health Instruction in High School indicated no health instruction. The standard deviations obtained from the T-scores of the forty-six participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test for classification five (described as no health instruction in high school) was determined to be 9.96 and 9.96, or zero, respectively. The difference of zero found between the two standard deviations indicates that the variability of the T-scores obtained from the Moran Health Practice Inventory and the Kilander Health Knowledge Test was the same for classification five.

The mean T-scores of 49.57 and 47.66 were obtained from the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test, respectively, for the forty-six respondents who indicated no health instruction in high school. A difference of 1.91 between the mean T-scores of 49.57 and 47.66 was found to be in favor of the forty-six students possessing slightly better health practices than health information. To determine the reliability of the difference between the two means, the difference of

1.91 was divided by the standard error of the difference of 2.08 which yielded a critical ratio of .92. A critical ratio of .92 at the level of confidence of .36 is not significant and indicated that health practices were similar to health information for the forty-six students who indicated no health instruction in high school.

In order to determine the relationship between the two variables, health practices and health information, for the five classifications of time spent for health instruction in high school, coefficients of correlation ranging from negative .13 to positive .15 were found between the T-scores of the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test. McCloy and Young stated that correlations ranging from .00 to ± .20 should be interpreted as having negligible relationship.[1] It is indicated that for the 200 university freshman women, health practices as determined by the Moran Health Practice Inventory and health information as determined by the Kilander Health Knowledge Test were not related.

A summary of the findings, conclusions and recommendations for further study are presented in Chapter IV.

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[1]Charles Harold McCloy and Norma Dorothy Young, Tests and Measurements in Health and Physical Education (New York: Appleton-Century-Crofts, Inc., 1954), p. 19.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The present study was undertaken to determine the relationship between the amount of time spent for health instruction in high school and the health information and health practices of 200 university freshman women enrolled in physical education activity classes at the beginning of the fall semester of the academic year, 1958-1959. The Check List of The Amount of Time Spent for Health Instruction in High School, the Kilander Health Knowledge Test, and the Moran Health Practice Inventory served as measuring instruments to obtain the data needed for this investigation. Through this study, an attempt was made to accomplish the following purposes:

1. To determine the inter-relationship of health practices as measured by Moran's Health Practice Inventory and health information as measured by Kilander's Health Knowledge Test of 200 university freshman women.
2. To determine the inter-relationship of the health information of 200 university freshman women and the amount of time spent for health instruction in high school.
3. To determine the inter-relationship of the health practices of 200 university freshman women and the amount of time spent for health instruction in high school.

4. To make a comparison of the responses of the 200 university freshman women participating in the present study with the responses of the 375 university women who were participants in the Moran study to the five classifications of health instruction based upon the amount of time spent for health instruction in high school.
5. To make recommendations for the health instruction of freshman women entering Texas Woman's University, Denton, Texas.

A survey of available literature pertaining to health practices and health information revealed no investigation has been made identical to the present study.

The Moran Health Practice Inventory, constructed by Moran, was selected to measure health practices; the Kilander Health Knowledge Test, constructed by Kilander, served to measure health information; and the Check List of The Amount of Time Spent for Health Instruction in High School, constructed by the investigator, was used to determine the amount of health instruction received in high school. The investigator used the criteria established for valid and reliable measuring instruments in selecting the tests.

The data which resulted from the administration of the Moran Health Practice Inventory, the Kilander Health Knowledge Test, and the Check List of The Amount of Time Spent for Health Instruction in High School were tabulated and analyzed. A summary of the findings, conclusions, recommendations for the conduct of health instruction of students enrolled in required physical education at Texas Woman's University in Denton, Texas, and recommendations for further study are

presented in this chapter.

Summary of the Findings

The means, standard deviations, standard errors of the means, differences between the means, standard errors of the differences between the means, critical ratios, and the probability levels of significance were computed for comparison of the Moran Health Practice Inventory, the Kilander Health Knowledge Test, and the Check List of The Amount of Time Spent for Health Instruction in High School by the 200 university freshman women enrolled in physical education activity classes.

The summary of the findings from the present study appears below in reference to the comparison of:

1. The raw scores made on the odd numbered items with the raw scores made on the even numbered items for a randomly selected sampling of 100 of the 200 university women completing the Moran Health Practice Inventory and the Kilander Health Knowledge Test to determine the reliability coefficients of correlation of the total group.
2. The T-scores of the Moran Health Practice Inventory and the T-scores of the Kilander Health Knowledge Test were used to determine:
   a. The reliability of the difference between the means obtained for health practices and health knowledge of the 200 university freshman women.
   b. The degree of relationship between health practices and health knowledge of the 200 university freshman women.

3. The classification, number, per cents, and difference in per cents of students who participated in the present study of the amount of time spent for health instruction in high school with the classification, number, per cents, and difference in per cents of students who participated in the Moran study of the amount of time spent for health instruction in high school.

4. The T-scores of students for the Moran Health Practice Inventory which fell within each of the five classifications of the amount of time spent for health instruction in high school were compared with the T-scores of students for the Kilander Health Knowledge Test which fell within each of the same five classifications of the amount of time spent for health instruction in high school were used to determine the effect of time spent for health instruction and health practices.

A reliability coefficient of correlation between the odd and even raw scores obtained from the administration of the Moran Health Practice Inventory to 200 university freshman women was determined to be .94 for 100 randomly selected inventories. The coefficient was raised to .97 by the use of the Spearman-Brown Prophecy Formula to estimate the reliability of the responses in indicating the performance of health practices for the total group of 200 participants. The coefficient of .97 indicated that the group had a very high degree of reliability in performing health practices.

A reliability coefficient of correlation between the odd and

even raw scores obtained from the administration of the Kilander Health Knowledge Test to 200 university freshman women was determined to be .66 for 100 randomly selected knowledge tests. The coefficient was raised to .80 by the use of the Spearman-Brown Prophecy Formula to estimate the reliability of the responses in indicating the health knowledge possessed by the total group of 200 participants. The coefficient of .80 indicated that the group possessed a relatively high degree of reliability in responding to the Kilander Health Knowledge Test.

The mean T-scores obtained from the participants' responses to the Moran Health Practice Inventory were compared with the mean T-scores obtained from the participants' responses to the Kilander Health Knowledge Test in order to determine the reliability of the difference between the means for the 200 university freshman women completing the two measuring instruments.

A critical ratio of .66 indicated that the difference between the means of .66 was unreliable and that there was no significant difference between the health practices and health information of the 200 university freshman women who were participants in this study at the beginning of the fall semester of the academic year, 1958-1959.

A coefficient of correlation was determined between the T-scores of the Moran Health Practice Inventory and the Kilander Health Knowledge Test to measure the relationship between health practice and health information as possessed by the 200 university freshman women who participated in the present study. A coefficient of -.03 was determined which indicated no relationship existed between health practices and health information possessed by the 200 participants.

Five classifications were made by determining the percentages of the participants' responses to the amount of time spent for health instruction in high school by the 200 university freshman women in the present study and the 375 respondents in Moran's study. Classification one, included the per cent of students whose responses indicated that they participated in a good amount of time for health instruction in high school and is interpreted as good health instruction; classification two, included the per cent of students whose responses indicated that they participated in a fairly good amount of time for health instruction in high school and is interpreted as fairly good health instruction; classification three, included the per cent of students whose responses indicated that they participated in less than a fairly good amount of time for health instruction in high school and is interpreted as less than fairly good health instruction; classification four, included the per cent of students whose responses indicated that they participated in an occasional or poor amount of time for health instruction in high school and is interpreted as occasional or poor health instruction; and, classification five, included the per cent of students whose responses indicated that they received no health instruction in high school.

In Moran's study 27.5 per cent of the 375 students' responses and in the present study 12.5 per cent of the 200 students' responses indicated a good amount of time spent for health instruction in high school. It is indicated that for the participants in the Moran study, fifteen per cent more responses showed good health instruction than the participants' responses in the present study.

A difference between the two studies of 0.1 per cent of the participants responding to classification two, fairly good health instruction in high school, was obtained in favor of the 13.6 per cent of the 375 students' responses in Moran's study when compared with the 13.5 per cent of the 200 students' responses in the present study. For all practical purposes it may be stated that the same number of students in both studies indicated fairly good health instruction in high school.

In the present study 24.5 per cent of the 200 participants responded to classification three of the amount of time spent for health instruction in high school. Moran's study revealed that 5.8 per cent of the 375 participants' responses fell within this classification. A comparison of the responses received in the present study with the responses received in the Moran study, revealed that 18.7 per cent more students in the present study indicated less than fairly good health instruction in high school.

A difference between the two studies of 8.7 per cent of the participants responding to occasional or poor health instruction in high school was obtained in favor of the 26.5 per cent of the 200 students' responses in the present study when compared with the 35.2 per cent of the 375 students' responses in Moran's study. For all practical purposes it may be stated that the small per cent of 26.5 is the better percentage since occasional or poor health instruction is not the most desirable.

In Moran's study 17.9 per cent of the 375 participants' responses and in the present study twenty-three per cent of the 200 participants' responses showed that they spent no time for health instruction in high

school. It is indicated that for the participants in the present study, 5.1 per cent more responses showed no health instruction in high school when compared with the participants' responses in the Moran study to the same classification indicating no health instruction.

The effect of time spent for health instruction in high school on health practices and health information by the 200 university freshman women in the present study was determined by the use of the mean T-scores obtained from the participants' responses to the Moran Health Practice Inventory and the Kilander Health Knowledge Test which fell within each of the five classifications.

Twenty-five of the 200 university freshman womens' responses indicated that they participated in a good amount of time for health instruction in high school. A critical ratio of .33 indicated that the difference between the means of .88 was unreliable and that there was no significant difference between health practices and health information when comparing the responses of the twenty-five students who indicated good health instruction in high school.

Twenty-seven of the 200 university freshman womens' responses indicated that they participated in a fairly good amount of time for health instruction in high school. A critical ratio of .31 indicated that the difference between the means of .89 was unreliable and that there was no significant difference between health practices and health information when comparing the responses of the twenty-seven students who indicated fairly good health instruction in high school.

Forty-nine of the 200 university freshman womens' responses indicated that they participated in less than a fairly good amount of

time for health instruction in high school. A critical ratio of .69 indicated that the difference between the means of 1.29 was unreliable and that there was no significant difference between health practices and health information when comparing the responses of the forty-nine students who indicated less than fairly good health instruction in high school.

Fifty-three of the 200 university freshman womens' responses indicated that they participated in an occasional or poor amount of time for health instruction in high school. A critical ratio of .04 indicated that the difference between the means of .09 was unreliable and there was no significant difference between health practices and health information when comparing the responses of the fifty-three students who indicated occasional or poor health instruction in high school.

Forty-six of the 200 university freshman womens' responses indicated that they participated in no health instruction in high school. A critical ratio of .92 indicated that the difference between the means of 1.91 was unreliable and there was no significant difference between health practices and health information when comparing the responses of the forty-six students who indicated no health instruction in high school.

Coefficients of correlation were determined between the T-scores obtained for the Moran Health Practice Inventory and the Kilander Health Knowledge Test for the five classifications of time spent for health instruction in high school by the 200 university freshman women who participated in the present study. The coefficients of correlation were:

(1) .15 for twenty-five of the 200 respondents who indicated that they participated in a good amount of time for health instruction in high school, (2) -.13 for twenty-seven of the 200 respondents who indicated that they participated in a fairly good amount of time for health instruction in high school, (3) .08 for forty-nine of the 200 respondents who indicated that they participated in less than a fairly good amount of time for health instruction in high school, (4) -.06 for fifty-three of the 200 respondents who indicated that they participated in an occasional or poor amount of time for health instruction in high school, and (5) -.09 for forty-six of the 200 respondents who indicated that they received no health instruction in high school. These coefficients of correlation indicated that no relationship existed between health practices and health information.

Conclusions

From the findings presented in this study, the following conclusions were drawn:

1. The responses of the 200 university freshman women to the Moran Health Practice Inventory indicated a high degree of reliability. This is substantiated by the reliability coefficient of .97 obtained from a randomly selected sampling of 100 of the 200 participants completing the inventories.
2. The responses of the 200 university freshman women to the Kilander Health Knowledge Test indicated a relatively high degree of reliability. This is substantiated by the reliability coefficient of .80 obtained from a randomly selected sampling of 100 of the 200 participants completing the tests.

3. The health practices and health information possessed by the 200 university freshman women had no relationship. This is substantiated by the fact that the coefficient of correlation of -.03 was determined from the responses to health practices and health information by the 200 university freshman women who participated in this study.

4. The 200 university freshman women participating in the present study received slightly more health instruction in high school than the 375 participants in the Moran study. This is substantiated by the fact that 50.5 or 3.6 per cent more of the 200 students in the present study participated in good health instruction, or fairly good health instruction, or less than fairly good health instruction in high school when compared with the 46.9 per cent of the 375 participants in Moran's study in the same three descriptive areas of time spent for health instruction in high school. In addition, 53.1 per cent of the 375 students' responses to Moran's study indicated that the time spent for health instruction in high school represented occasional or poor or no health instruction when compared with the 49.5 or 3.6 per cent fewer students' responses to the present study of the same two descriptive areas of time spent for health instruction in high school.

5. Health practices and health information for the five classifications of time spent for health instruction in high school have no relationship. This is substantiated by the

fact that the coefficients of correlation of .15, -.13, .08, -.06, and -.09 for the five classifications of time spent for health instruction in high school revealed through the responses of the 200 university freshman women who participated in the present study.

Recommendations for Health Instruction of Freshman Women Entering Texas Woman's University, Denton, Texas

The following recommendations are made as a result of the findings of the present study for the conduct of health instruction for freshman women entering Texas Woman's University, Denton, Texas.

1. It is recommended that a course in health information be required each year for all entering freshman enrolled in physical education at the Texas Woman's University, with emphasis placed upon developing favorable health attitudes toward personal health practices.
2. It is also recommended that experimental teaching be undertaken to determine best teaching methods conducive to the development of most favorable attitudes and practices on the part of students enrolled in health instruction.
3. The investigator recommends that students be administered measuring devices at the beginning and the end of the required course to determine health attitudes, health practices, health information, and health interests possessed for evaluation of the course and needed curricular changes.
4. It is recommended that class instruction include motivating factors in the form of student challenge and to allow time

for:

a. Student self analysis of their own health practices.

b. Student-teacher conferences to discuss personal health problems of the individual.

c. Students to understand the reason for the importance of forming good health habits.

d. Determining and meeting the changing health information needs of university women.

5. It is further recommended that prospective teachers majoring in Health and Physical Education be advised of the relationship between health practices and health information so that special consideration may be directed to those areas in future high school health instruction courses.

6. Finally, it is recommended that the Moran Health Practice Inventory or a similar device be administered to university women enrolled in the upper educational levels periodically, as reminders of the importance of good health practices throughout their university career.

Recommendations for Further Study

The following recommendations are made for further study as a result of the present study:

1. A comperative study of health practices and physical fitness of freshman women enrolled in physical education.

2. A comparative study of the effectiveness, on the basis of information and behavior modifications, of various methods of teaching patterns of healthy living.

3. A comparative study of the twenty-five per cent of entering freshman women making below average scores on health information and health practices with the twenty-five per cent of entering freshman women making above average scores on health information and health practices at the beginning and end of enrollment in a three hour course in patterns of healthy living.
4. A comparative study of the health information and health practices of students majoring in Health, Physical Education and Recreation with the health information and health practices of students majoring in other academic areas.
5. A comparative study of the health information and health practices of students enrolled in ten Texas high schools which employ health counselors with the health information and health practices of students enrolled in ten Texas high schools which do not employ health counselors.

BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

BOOKS:

Commission on the Reorganization of Secondary Education, Cardinal Principles of Secondary Education. Washington, D. C.: U. S. Bureau of Education Bulletin, 1918, number 35, quoted in Rudyard K. Bent and Henry H. Kronenberg Principles of Secondary Education. New York: McGraw-Hill Book Company, Inc. 1949.

Brownell, Clifford Lee. Principles of Health Education Applied. New York: McGraw-Hill Book Co., Inc., 1949.

Brownell, Clifford Lee. Principles of Health Education Applied. New York: McGraw-Hill Book Co., Inc., 1949, citing J. F. Williams and C. L. Brownell, Health and Physical Education for Public School Administration--Secondary Schools. New York: Bureau of Publications, Teachers College, Columbia University, 1931, Adapted from definition proposed earlier by T. D. Woods.

Bucher, Charles A. Administration of School Health and Physical Education Programs. St. Lewis: The C. V. Mosby Co., 1955.

Garrett, Henry E. Statistics in Psychology and Education. New York: Longmans, Green and Co., 1953.

Grout, Ruth E. Health Teaching in Schools. Philadelphia: W. B. Saunders Co., 1958.

Hughes, William Leonard. The Administration of Health and Physical Education for Men in Colleges and Universities. New York: Bureau of Publications, Teachers College, Columbia University, 1932.

McCloy, Charles Harold. Tests and Measurements in Health and Physical Education. New York: F. S. Crofts and Co., 1939.

McCloy, Charles H. and Young, Norma D. Tests and Measurements in Health and Physical Education. New York: Appleton-Century-Crofts, Inc., 1954.

Rice, Thurman B. and Hein, Fred V. Living. New York: Scott, Foresman and Company, 1954.

Turner, C. E. School Health and Health Education. St. Lewis: The C. V. Mosby Co., 1952.

Van Dalen, Deobold B., Mitchell, Elmer D., and Bennett, Bruce L. A World History of Physical Education. New York: Prentice-Hall, Inc., 1953.

Williams, Jesse Feiring and Brownell, Clifford Lee. The Administration of Health Education and Physical Education. Philadelphia: W. B. Saunders Company, 1951.

Wilson, Charles C. Health Education. Washington: National Education Association, 1949.

MANUALS:

Kilander, H. F. "Instructions for Kilander Health Knowledge Test for College Students," 33Colonial Terrace, East Orange, N. J. (Mimeographed).

TESTS:

Kilander, H. F. Kilander Health Knowledge Test. Michigan: Edwards Brothers, Inc., 1958.

Moran, Margaret Mary. Moran Health Practice Inventory. Unpublished, 1947.

UNPUBLISHED MATERIAL:

Cambron, Emmitt. "An Analytical Study of the Health Knowledge of Students in North Texas State College" Unpublished Ed. D. Dissertation, Department of Physical and Health Education, University of Texas, June, 1951.

Moran, Margaret Mary. "A Study of Selected Health Practices of College Students Enrolled in the Texas State College for Women." Unpublished Master's Thesis, Graduate Division, Department of Health, Physical Education and Recreation, Texas Woman's University, formerly Texas State College for Women, Denton, Texas, 1947.

Taylor, Mary Rose. "A Study of the Health Attitudes and Practices of 192 First-Year College Students During the First Semester of the 1956-1957 Academic Year at the Central State College in Edmond, Oklahoma." Unpublished Masters Thesis, Graduate Division, Department of Health, Physical Education and Recreation, Texas Woman's University, formerly Texas State College for Women, Denton, Texas, 1957.

APPENDIX

CHECK LIST OF THE AMOUNT OF TIME SPENT FOR HEALTH INSTRUCTION IN HIGH SCHOOL

Name _____ Class _____ Day _____ Hour _____

I. Please check (✓) "Item A" according to whether you received or did not receive health instruction in high school.

ITEM A. I received health instruction in high school. Yes___ No ___.

II. If you checked "Item A", "Yes", proceed to "Item B" and place a check (✓) according to class time spent for health instruction as a separate course in health instruction, or as part of a course in physical education, or as a part of another course according to the number of weeks or the number of semesters in one or more years in high school.

EXAMPLE of how to check "Item B", below.

(1) If you received health instruction daily as a part of a separate course in health instruction, during your junior year for 9 weeks you would check the squares as indicated in "1", below.

(2) If you received health instruction three times a week as a part of another course during your freshman and senior year for one semester each, you would check the squares as indicated in "2", below.

CLASS TIME SPENT FOR HEALTH INSTRUCTION	As a course in health	As a part of Phy. Ed.	As part of another course		Freshman year	Sophomore year	Junior year	Senior year		3 weeks each	6 weeks each	9 weeks each	12 weeks each	1 semester each	2 semesters each	other
1. DAILY	✓			DURING MY			✓		FOR			✓				
2. THREE TIMES A WEEK			✓	DURING MY	✓			✓	FOR					✓		

CHECK LIST—Continued

ITEM B. Check the table below as given in instruction "II" above.

CLASS TIME SPENT FOR HEALTH INSTRUCTION	As a course in health	As a part of Phy. Ed.	As part of another course		Freshman year	Sophomore year	Junior year	Senior year		3 weeks each	6 weeks each	9 weeks each	12 weeks each	1 semester each	2 semesters each	Other
1. DAILY				DURING MY					FOR							
2. THREE TIMES A WEEK				DURING MY					FOR							
3. TWO TIMES A WEEK				DURING MY					FOR							
4. ONCE A WEEK				DURING MY					FOR							
5. OCCASIONALLY				DURING MY					FOR							
6. OTHER				DURING MY					FOR							

T-SCALE FOR THE MORAN HEALTH PRACTICE INVENTORY

T-Score	Moran Health Practice Inventory Raw Scores	T-Score	Moran Health Practice Inventory Raw Scores	T-Score	Moran Health Practice Inventory Raw Scores
80	1043	57	901	34	760
79	1037	56	895	33	754
78	1031	55	889	32	747
77	1025	54	883	31	741
76	1018	53	877	30	735
75	1012	52	871	29	729
74	1006	51	864	28	723
73	1000	50	858	27	717
72	994	49	852	26	710
71	988	48	846	25	704
70	981	47	840	24	698
69	975	46	834	23	692
68	969	45	827	22	686
67	963	44	821	21	680
66	957	43	815	20	673
65	951	42	809	19	667
64	944	41	803	18	661
63	938	40	797	17	655
62	932	39	790	16	649
61	926	38	784	15	643
60	920	37	778	14	637
59	914	36	772	13	630
58	908	35	766	12	624

T-SCALE FOR THE KILANDER HEALTH KNOWLEDGE TEST

T-Score	Kilander Health Knowledge Test Raw Scores	T-Score	Kilander Health Knowledge Test Raw Scores	T-Score	Kilander Health Knowledge Test Raw Scores
80	96	57	73	34	51
79	95	56	73	33	50
78	94	55	72	32	49
77	93	54	71	31	48
76	92	53	70	30	47
75	91	52	69	29	46
74	90	51	68	28	45
73	89	50	67	27	44
72	88	49	66	26	43
71	87	48	65	25	42
70	86	47	64	24	41
69	85	46	63	23	40
68	84	45	62	22	39
67	83	44	61	21	38
66	82	43	60	20	38
65	81	42	59	19	37
64	80	41	58	18	36
63	79	40	57	17	35
62	78	39	56	16	34
61	77	38	55	15	33
60	76	37	54	14	32
59	75	36	53	13	31
58	74	35	52	12	30