



5-5-1969

A Study of the Degree of Health Awareness Among Members of the Class of 1972 at Illinois Wesleyan University

Ruth A. Mohr
Illinois Wesleyan University

Follow this and additional works at: https://digitalcommons.iwu.edu/nursing_honproj



Part of the [Nursing Commons](#)

Recommended Citation

Mohr, Ruth A., "A Study of the Degree of Health Awareness Among Members of the Class of 1972 at Illinois Wesleyan University" (1969). *Honors Projects*. 20.
https://digitalcommons.iwu.edu/nursing_honproj/20

This Article is protected by copyright and/or related rights. It has been brought to you by Digital Commons @ IWU with permission from the rights-holder(s). You are free to use this material in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/ or on the work itself. This material has been accepted for inclusion by School of Nursing faculty at Illinois Wesleyan University. For more information, please contact digitalcommons@iwu.edu.

©Copyright is owned by the author of this document.

A Study of the Degree of Health Awareness Among
| Members of the Class of 1972 at
Illinois Wesleyan University

by
Ruth Ann Mohr

//

ARCHIVES
613.07
M699A

Submitted for Honors Work
In the Department of Nursing
Illinois Wesleyan University
Bloomington, Illinois

1969

Accepted by the Department of Nursing of Illinois
Wesleyan University in fulfillment of the requirement for
departmental honors.

5/5/69
Date

Mary D. Shanks
Department Head

Max A. Pope
Out of Department Reader

Patricia A. Goppner
Project Advisor

Acknowledgements

I wish to thank Dr. Max Pape for the assistance given in the statistical analysis of this study.

A Study of the Degree of Health Awareness Among
Members of the Class of 1972 at
Illinois Wesleyan University

I.	Statement of the Problem	1
II.	Introduction	2
III.	Survey of Literature	17
IV.	Method of Research	23
V.	Analysis of Data	27
VI.	Conclusion	52
VII.	Bibliography	54
VIII.	Appendix	56

Statement of the Problem

Problem:

College students appear to lack knowledge in areas involving individual and community health.

Hypothesis:

Health instruction in elementary and secondary schools today is inadequate to meet the needs of our rapidly expanding complex society. Students entering the universities lack a knowledge of basic health principles and facts.

Assumptions:

With good health and an understanding of the principles upon which good health is founded, an individual should be able to enjoy life at its fullest with a satisfactory emotional and social adjustment.

Individual health attitudes are incorporated into family structures which, in turn, shape the health attitudes of other individuals.

Improved community health is desirable.

Qualified leadership is needed in the area of community health due to new and intensified problems of urbanization and industrialization.

Introduction

Americans today are, generally, better educated and more knowledgeable in respect to medicine and illnesses than their forefathers were. They continue, however, to have unrealistic expectations for treatment of disorders. They are fascinated by abstract theory but too busy to transfer theory into practice.

Thus, a nation has developed which is obsessed with physical fitness, youth and diets. Inhabitants of this nation smoke in defiance of the implications of all research done on cigarette smoking and habitually overeat. It is a nation willing to spend many dollars on disease treatment, but unwilling to take the time or trouble necessary to learn good health habits.

Today's young adults (college students particularly) do not see health as a continuing process but as something about which to be concerned when one does not have it. Since young adults are seldom sick, they are seldom concerned about their health. This lack of concern carries over into the years when they are starting their families. In the families, the attitudes of each of these persons are incorporated, for better or worse, into other individual's ideas about health.

Thus, as Shattuck, an early leader in American education, stated, health is more than a personal problem. It has social implications and the individual owes it to society, no less than to himself, to keep his health and energy at a peak.

Young adults often have misconceptions or show a lack of knowledge about health matters. The few studies that have been done to determine the degree of health knowledge among high school graduates in the United States have concluded that elementary and secondary health education is either virtually non-existent or totally inadequate to meet the needs of an ever growing and increasingly complex society.¹ The content of the high school health course seems to be forgotten when it has existed. Poor understanding of modern health concepts shows in willingness to diagnose and treat oneself with home remedies, drug store medicines or to ignore the illness. Emotional and sexual problems are increasingly troublesome for young adults. Meaningfulness and insight for life are sought through drugs, alcoholism, and abortion. (An increasing number, failing to find either, commit suicide.) Many

¹ Henry B. Bruyn, "Medical and Health Evaluation Upon Enrollment in College: A Foundation for the Ideal Program in Student Health," The Journal of the American College Health Association, Vol. 17, (February 1969), p. 202.

young adults have failed to come to grips with problems of maturation successfully and to assume responsibility for their own actions. Accidents and suicide are the leading causes of death during college years and the years immediately following.²

On the basis of studies done with high school students, the assumption can be made that students are not receiving the health education in the secondary schools that they need to assume responsibility for their own health, much less leadership in community health education. Therefore, if it is the aim of a college experience to educate every student to take his place in society as a contributing member, as has been stated by educators; and if this is to be done not only through the development of skills and abilities in the individual's field of choice but also through the development of interests in other areas so that the college graduate may take his place at the leadership level in social, political and economic issues plus community health, then the question is "are colleges and universities meeting the challenge of responsibility in this area?"

²Ralph S. Paffenberger, Jr., M.D., "Chronic Disease in Former College Students; Implications for College Health Programs," The Journal of the American College Health Association, Vol. 16, (October 1967), p. 52.

If, as one study has shown, freshmen can, by a single health course move to the level of senior college students in health awareness, the question may be asked, "Where could seniors stand if they had the benefit of formal health education?"

Because (a) student attitudes and assumptions about health education constitute obstacles to health education programs; (b) students are generally healthy and do not see the relevance of continuous preventive health care; (c) interest in health when generated is often impulsive and faddish; and (d) Americans distrust institutionalized medicine, health education must first stimulate and challenge the student to realize that he has needs in this area. Telling him so in a required class will not necessarily convince him that he should change his attitude toward preventive health measures.

To make students aware of their needs and how they can be met, the health educator must first determine the health needs of the student(s). Some suggestions made for determining the needs of students are: (1) informal discussions with students to identify what they feel are their health needs; (2) conduction of a survey of student interests, hopes, fears and aspirations (example-money problem check list); (3) tabulation of critical incidents; (4) analysis of major

health and social problems at the time they affect students; (5) evaluation of medical examinations and analysis of other reports from the student health service; (6) evaluation of the results of written health knowledge and attitude tests which can be given upon entrance to the university or as part of a health education course; (7) evaluation of the living conditions of students; (8) conduction of interviews and correspondence with parents as well as studying the home backgrounds from admission information; (9) evaluation of the response of adults to the community as a healthful place in which to live and how they view their role in community health; and (10) consideration of the facts of human growth and development, the basic body of scientific health information which arises from racial and national experiences and the principles of healthful living which are essential to solving present day problems.³

While creating effective leaders for community health programs is important, health education can help many others develop the understanding, insight, and values necessary to make wise decisions in the area of health. Health education can assist in the solution of problems surrounding self understanding, friendship, courtship, marriage and family estab-

³Frederick H. Kilander, School Health Education, (New York: MacMillan Company, 1962), p. 421.

lishment. Education can help individuals plan for the most efficient and profitable--health wise--use of time, energy and money. Today's society also has new implications for health due to increased occupational hazards including a more sedentary life and an increased life span.

Each individual needs to become a more intelligent consumer of health information which should, in turn, stimulate the seeking of and advancement of modern provisions for medical care and treatment and make each person more aware of the vocational opportunities available in the field of health as well as more aware of the importance of the public health role played by voluntary and professional health agencies on local, state, national and international levels.⁴

It has been assumed by educators that these objectives may be met through the use of formal and informal health education.

Formal health education consists of curricular provisions for health education, which are often in the form of a required subject. The National Conference on College Health Education has recommended that required health education courses constitute not less than two and one-half per cent of the total hours required for graduation and not less than three semester hours or three to four quarter hours.⁵

⁴ Ibid., p. 424.

⁵ Ibid., p. 426.

Of 442 schools polled by the National Conference on College Health Education, 358 offered a general course in health education. Seventy-two per cent required the course for all students, twenty-eight per cent made exceptions for music, engineering and liberal arts students. Class size is usually twenty to thirty students. The course is usually a Freshman course and is recommended for this year because of its adjustment value.⁶

Teaching techniques included lecture, discussion, problem solving, audio-visual aids, projects and special activities, group techniques, counseling, resource persons and printed materials. The trend now is away from lecture and lecture/discussion to the problem solving approach.⁷

Informal health teaching is specifically the responsibility of the university health service. Most universities determine the student's physical state with a thorough medical examination and follow through to correct any remedial defects revealed by the examinations. Many health services include counseling and guidance services and are responsible for inspection of sanitary living conditions and the enforcement of safety measures to reduce the possibility of accidents.

⁶Ibid., p. 426.

⁷Ibid., p. 428.

Table I⁸
Results of Poll by National
Conference in College Health Education

Number of class hours per week	1 hour 14%	2 hours 44%	3 hours 35%	4-5 hours 7%
Credit hours given	$\frac{1}{2}$ credit 5 schools	2 credits 53%	3 credits 54%	5 credits 7%
Department offering course	Phys. Ed. 73%	Biology 17%	Health 14%	Gen. Ed. 7%
	Science 4%	Nurs. Ed. 3%	Col. of Med. 2%	
	Ho. Econ. 1%	Col. Health Service 1%		
Instructor of Course	Phys. Ed. 211	Health Ed. 149	Biology 69	Phys. 27
	Nurse 27	Other 15		

⁸Ibid., p. 426-427.

In the Bloomington-Normal Community there exist two examples of different types of health education programs. Illinois State University is a large State supported institution and Illinois Wesleyan University is a small private institution.

Differences in the two programs show how different circumstances, such as number of students and money available for such a program, affect the health education programs.

Illinois Wesleyan University's Health Service is responsible to the Dean of Students's Office. Confidential health information sheets must be completed by all students before date of entry into the university. Diphtheria and tetanus immunizations are required for all students in the school of nursing. All students must have smallpox and polio immunizations. All food handlers, students majoring in nursing, and student teachers must have tuberculin tests each year.

If any physical defects are noted during physical examinations for sports activities or picked up from the completed information sheet, a report is sent to the student's family doctor for follow-up and the student is counseled by the university nurse about this disability.

The nurse offers general counseling according to the time she has available.⁹ Anyone needing psychiatric coun-

⁹Miss Velma Arnold, R.N., private interview held during April, 1968.

seling is referred through the Dean of Women's Office to a psychologist connected with the university on a part-time basis.

Any formal health education is delegated to the Physical Education Department. Safety Education 401 is open to anyone who elects it. It is offered in alternate years.¹⁰ First Aid and Athletic Training is open to men only and offered in alternate years. During the fall semester of 1968, a non-credit first aid course was sponsored by Civil Defense and the Illinois Wesleyan Security Department for hall safety managers and other interested persons.

Any other courses which possibly hold health information are scattered throughout the biology, sociology and home economics departments. Most courses in the School of Nursing are restricted to students majoring in nursing.

The health service is staffed by two registered nurses and a secretary. Two examination rooms are available. Student health insurance is required unless the student's parents sign a permit releasing the student from this requirement.

¹⁰ Safety Education 401 is a study of the four phases of safety: home, traffic, recreational and industrial hazards and their remedies, Illinois Wesleyan University Bulletin, 1969-70, p. 74.

The Safety and Traffic Committee is responsible for checking on environmental conditions, although the university nurse can make reports of any conditions observed by her on occasions, such as house calls.

The health center is open 8-12 p.m. and 1-5 p.m. Monday, Tuesday, Thursday and Friday and 8-11 a.m. and 1-5 p.m. Wednesday. The university nurse may be called for emergencies outside of these hours. An area doctor serves as the university physician. Students are free to choose their own doctor. When necessary, special rates are available for rooms at Brokaw Hospital.

Illinois State University's Health Service is responsible to the Dean of Students. A confidential dispensary record is sent to all students registered for more than six semester hours and all graduate assistants. This must be returned before the date stamped on the envelope which is approximately six weeks before registration. The student must be immunized against tetanus and smallpox and have a chest x-ray or skin test for tuberculosis.

Any abnormalities found on this report are followed up by the school health service.

The staff includes three doctors. Dr. I.W. Salowitz, Professor, is director of the health service. Dr. R.A. Eliot, Professor, is assistant director. Dr. L.H. Frigo,

Associate Professor, is a staff physician. A number of nurses are employed between the twenty-four bed infirmary, which includes a four bed isolation unit, where a nurse is in charge at all times and the outpatient department. The evening nurses take care of any illnesses between 5 p.m. and 8 a.m. Two aides are employed during the week with students filling this capacity on weekends. The aides do no charting and little patient care. Also employed are lab and x-ray personnel.

Due to the heavy load of cases (usually 150-180 students are seen each day) little time is left for counseling. Three clinical psychologists from the psychology department do some counseling. Referrals are made to the McLean County Mental Health Clinic.

The student health insurance is compulsory unless the student can show that he has comparable coverage. The cost is \$9 a semester.

No charge is made for the majority of services--medications, laboratory tests, x-rays, or infirmary, etc. Diathermy, whirlpool and ultraviolet treatments are also performed free of charge. Unusual medications usually carry a minimal charge.

In the area of formal health instruction, a two credit health course is required for graduation. Hygiene is clas-

sified in the biological sciences department and is taught by a professor with his doctorate in this area. It is a large lecture class which covers anatomy as well as principles of health.

The Safety and Environmental Health Committee, made up of faculty members, is responsible for inspecting the residence halls and other buildings and enforcing safety regulations. A sanitarian from the health department inspects the food handling conditions.

The Rachel Cooper Health Service is open 8 a.m.-11:50 a.m. and 1 p.m.-4:30 p.m., Monday through Friday and 8 a.m.-11:50 a.m. Saturday morning. As stated before, the nurse on duty in the infirmary handles any after-hours illnesses. The student is free to choose his own doctor; however, all cost for off campus medical care, not covered by his insurance, becomes the student's responsibility.¹¹

When a college or university forms the philosophy and objectives for the health service, decisions must be made concerning priorities. Ususally medical care for emergency and minor illnesses receives precedence over health education, although more emphasis on prevention and edu-

¹¹ Dr. I.W. Salowitz, private interview held during April, 1968.

cation can decrease the time and energy necessary for the first area.

Colleges and universities are, in general, not fulfilling their obligations to students in the area of formal health education programs although most do have a good informal health education program. Too many schools are satisfied to meet their obligations in this one area, and then view their responsibility as fulfilled. Admission requirements are met, although students may not understand why the requirements were made in the first place, only that it's "for their own good." This attitude does not encourage individuals to take responsibility for their own health but encourages them to continue to view health as a series of crises, an attitude which they will pass on to other individuals. As college graduates, their opinions will carry some weight even if health or medicine was not their major field of study. They will set examples for the rest of the community just by the way they live.

As a practical consideration, insurance costs are rising and will continue to rise as long as individuals neglect their health. Students, especially, are notorious for their lack of concern for a good diet, a sufficient amount of sleep and enough of the right kind of exercise. They have nothing to build health practices on after they graduate. Increased

education can lessen the medical care necessary in the community as principles learned on campus are transferred to community living.

Survey of Literature

During the period of time from September 1966 through January 19 67, the University of Massachusetts evaluated the importance of a general health course for the university through the use of pre and post tests administered to students taking a general health course. No general health course had been offered prior to this course.

The assumptions of this study were based on the conclusions of a study done in 1962 in Los Angeles by Ruth Rich which involved 959 tenth and eleventh graders from eight high schools. The conclusions were: 1) the ways that people feel toward health instructors determine to a large extent their health behavior; 2) health knowledge responses will be better than health attitudes and health practice responses in most instances; and 3) instructors exert a great deal of positive influence on attitudes concerning the use of health services.¹²

¹²Clayton T. Shaw, "A Before and After Analysis of the Increase in Health Knowledge--A Basic Evaluation of an Elementary College Health Course," The Journal of School Health, xlix #1, (January, 1969) p. 64.

The basic assumption of the Massachusetts study was that Freshmen have less health knowledge than upper classmen and will increase their knowledge of basic health principles after formal instruction. The hypothesis was that after formal instruction in the university, which has had no general mandatory health course for the student body, the level of health knowledge of the Freshmen and Sophomores taking the course would be statistically equal to the knowledge of upper classmen before the course was presented to them.

The pre-test consisting of 150 questions was administered at the first meeting of the class. The following null hypotheses were proposed. (1) No difference exists between each of the following at the beginning and end of the course: (a) any of the sections, (b) Freshmen and Sophomores of any section, (c) Juniors and Seniors of any section, and (d) all Freshmen-Sophomores and Junior-Seniors; (2) No difference exists between each of the following at the beginning and the end of the course: health levels of (a) the entire class, (b) Freshmen and Sophomores, (c) Juniors and Seniors, (d) levels of Juniors-Seniors at the beginning and Freshmen-Sophomores at the end, and (e) the health level of the entire health class or individual sections.

Descriptive analysis of the Massachusetts study shows that a significant difference was present in all classes

and subject matter at the end of the course except that Junior-Senior scores on the health and weight sections did not show a significant difference.

Table II¹³

Scores of Entire Class on Health
Knowledge Examinations

Before course		After course	
N	148	N	140
MS	85.1	MS	119.8 (pos. 150 questions)

Significant differences at .05 level

Table III

Scores on Health Knowledge Examination
Divided According Classes

Upper classmen		Lower classmen	
Before	After	Before	After
N 36	N 34	N 112	N 106
MS 93.9	MS 124	MS 82.1	MS 118.1

Significant difference at .05 level

Before the course the difference in health levels of underclassmen to upperclassmen was T .05-5.36. After the course the difference was T .05-3.94.¹⁴

¹³N=Number of students. MS=Mean Score.

¹⁴T=T Scale, similar to standard deviation.

Analysis of data for determination of benefit of the course to underclassmen showed: Underclassmen after the course: Upperclassmen before the course = N 106, MS 118.1: N 36, MS 93.9. Significant difference was at .05 level.

Before the health course, a significant difference existed between sections and underclassmen. After the course, these differences had disappeared.

Conclusion of the Massachusetts study: the health knowledge levels of Juniors and Seniors higher than Freshmen and Sophomores before the formal education course, remained high but the difference was less after a single course in health. Therefore, the course was beneficial.¹⁵

In 1959, Shirley Adams studied health misconception among students enrolled in Freshman health courses at the University of Oregon.

Table IV¹⁶

General Misconceptions Among Students

Order of Descendence		Question
Women	Men	
Rank #	Rank #	
1. 82%	1. 78%	1. Continuous bad pos-

¹⁵Shaw, Op. Cit., p. 64-68.

¹⁶Shirley Lou Adams, "Health Misconceptions Among Students Enrolled in Freshman Health Classes at the University of Oregon," (Master's thesis, University of Oregon, 1959) p. 18-20.

		ture will not produce bone changes in adults.
2. 68%	4. 57%	2. Wheat germ oil and yogurt have exceptional health values.
3. 54%		3. The blind have a keener sense of touch and hearing because the strength normally in eyes moves to the other sense organs,
4. 60%	3. 62%	4. Best treatment for weak arches is well-fitted arch supports.
5. 48%	5. 53%	5. Bruises can cause cancer.
6. 48%		6. Dentifrice kills bacteria.
7. 48%	2. 63%	7. Listerine is valuable as a mouthwash and promptly kills germs.
	6. 48%	8. Poor posture may result from poor eyesight.

The average number of items missed constituted 25.8% of the test. The items on the preceeding page are the seven most frequently missed by the women and the six most frequently missed by the men included in the study. Females made higher per centage of errors in foods, diet, and nutrition.

A correlation was found of .744 between the grade point average and the number missed by the women. A correlation of

.485 was found between the number of items missed and the grade point average of the men.

Table V¹⁷

Women GPA: Items Missed

Grade point average	Items Missed				Total
	7-13	14-20	21-27	28-30	
3.50-4.00	2	4	1	0	7
2.50-3.49	6	12	8	0	26
1.50-2.49	7	5	12	5	29
.50-1.49	0	0	1	0	1
	<u>15</u>	<u>21</u>	<u>22</u>	<u>5</u>	<u>63</u>

Table VI¹⁸

Men GPA: Items Missed

Grade point average	Items Missed				Total
	7-15	16-24	25-33	34-42	
3.50-4.00	5	0	0	0	5
2.50-3.49	11	10	4	0	25
1.50-2.49	8	13	8	4	33
.50-1.49	0	0	0	0	0
	<u>24</u>	<u>23</u>	<u>12</u>	<u>4</u>	<u>63</u>

¹⁷Ibid., p. 35.

¹⁸Ibid.

Method of Research

The purpose of this study is to determine if a need for health education exists among the members of the class of 1972 of Illinois Wesleyan University. Because the university has certain requirements which must be met by individuals entering the university and because most students are drawn from the same geographical areas, year after year, (mainly the Midwest) the results of this pre-test can be generalized to other students entering Illinois Wesleyan University as Freshmen.

To test the degree of health awareness among Freshmen at Illinois Wesleyan University, a pre-test of fifty, true and false questions was constructed. A preliminary section with questions concerning areas to be used for classifications, such as age, was also constructed.¹⁹

The true-false testing method was chosen because of the ease with which it may be objectively scored. It also allows a large amount of subject matter to be sampled in a small amount of time.

¹⁹Copy of pre-test in Appendix.

Disadvantages are that it does not allow for gradations of knowledge and the person taking the test may guess and mark the correct answer.

Due to the lack of time, a pilot study was not conducted. If this had been done, possibly some of the questions would have been reworded and the confusion some participants acknowledged in this area would have been eliminated.

The questions were prepared mainly from pamphlets, generally available to any layman, which have been available on a table in the basement of Illinois Wesleyan University's library. Other questions were drawn from studies done in this area involving college Freshmen. The questions covered six general areas of health knowledge: (1) organic function and disorder, (2) prevention of disease and treatment of injury, (3) first aid and medical treatment, (4) foods, diet, and nutrition, (5) mental health, and (6) eyes, ears, teeth, hair and skin.

The number of questions was kept to fifty for ease in calculating per centages and to keep the test short enough time-wise that persons would be likely to complete and return it. The estimated time of completion was thirty minutes.

Because the number of questions was limited to fifty, the researcher decided which areas included more material important for testing and allotted the number of questions to each category accordingly.

The pre-tests were distributed to each hall and through the mailboxes to each Freshman in the hall. After completion, the forms were returned to either the hall's president or the desk depending on the hall. One week's time was allotted for completion. Even though the forms were distributed during December, health knowledge should not have noticeably increased since high school graduation. Even the biology courses are concerned mainly with botany first semester and no freshman nursing courses are offered this semester. Any health knowledge exchange would have most likely occurred on a student to student or health service to individual student basis.

To present a totally accurate picture, a study should also be conducted to determine the degree of health knowledge among seniors who have spent four years at Illinois Wesleyan University which has no formal health education course required for all students. Students in the School of Nursing would not, of course, be included in this type of study. A comparison of the Freshman study and a Senior study would show whether a student's health knowledge would most likely be positively or negatively influenced by the intervening four years and the degree to which the student would most likely be influenced.

Some idea of which variables might affect a person's score on a health examination were derived from a review

of other studies conducted in this area. Most of the studies conducted in this area have been conducted on a high school or elementary level; however, so they were not necessarily applicable to this study. The conclusion of these studies, that need does exist for improved health education in elementary and secondary schools can be generalized; if students lack health knowledge while in secondary school, they must also lack health knowledge after they graduate and, in this study, enter college as Freshmen.

Five questions were asked before the pre-test in order to gain information about variables which could have influenced the individual's degree of health knowledge and, in turn, his score. The variables were: 1) age, 2) area of major interest, 3) parent's occupation-professional or non-professional, 4) sex, and 5) if the individual had had a health course in high school. The data have been computed in each area except age which did not vary enough to cause any significant difference (s) in the data and therefore, was not considered in analyzing the data.

Analysis of Data

A total of four hundred thirty-three Freshmen registered for the 1968-69 Fall Semester at Illinois Wesleyan University. Two hundred thirty-one students were women and two hundred twelve were men. Four hundred twenty-one pre-tests were distributed. All Freshmen living in University housing received a pre-test. The thirteen students not accounted for would include those living at home, and any who had dropped out of school by December when the pre-test was distributed.

One hundred two women completed and returned the pre-test. This was 43.7% of the total Freshman women registered and 24.2% of pre-tests distributed. Four returned pre-tests were not completely filled out. Ninety-eight were usable in all areas of analysis. For breakdown see Table VII.

Forty-four men returned the form. This was 20.8% of the total Freshmen men registered and 10.5% of the persons completing and returning the pre-tests. Three forms were incomplete. Forty-one were usable for all areas analyzed. For breakdown see Table VIII.

Of the 421 pre-tests distributed, 34.7% were completed and returned.

The age range was further analyzed as it appeared insignificant. Everyone fell between seventeen and nineteen years of age, with the majority at eighteen years of age.

Standard deviation was computed with $\sqrt{\frac{\sum (x - \bar{x})^2}{N-1}}$. Correlations were calculated with $\frac{\sum xy}{N - m_x m_y}$. Chi square, $\frac{\sum (O - E)^2}{E}$, was used to test the probability of distribution in the scores of students in the College of Fine Arts.

Table VII
Women Returning Pre-test

Major Area	Women Answering		% of Total in	% of Total
	% of Total	% of Area	Area Answering	Answering
Liberal Arts	45.1	52.3	56.0	38.4
Fine Arts	13.1	22.3	66.7	9.6
Nursing	27.5	25.4	100.0	19.1
Incomplete	3.9			2.7

Table VIII
Men Returning Pre-test

Major Area	Men Answering		% of Total in	% of Total
	% of Total	% of Area	Area Answering	Answering
Liberal Arts	77.3	84.0	34.0	23.3
Fine Arts	15.9	18.0	33.3	4.8
Nursing	00.0	00.0	00.0	00.0
Incomplete	6.8			2.1

The questions fell into six categories although the categories were mixed during the testing. Comparing the

per centage of questions allotted each section and the per centage of questions missed per section, students scored best on Group II-Prevention of Disease and Treatment of Injury-with 28.6 per cent of the pre-test devoted to this material. The women incorrectly answered an average of 22.3 per cent of the questions, the men 23.2 per cent and considering both, and of average of 22.8 per cent of the questions were missed.

Students scored least well in Group V-First Aid and Medical Treatment. With only 8 per cent of the pre-test allotted to this material, women averaged 13.7 per cent of their total wrong answers. In Group V, the men averaged 11.1 per cent and both considered together averaged 12.2 per cent of total wrong answers in this area. This, however, was one of two areas in which the men scored better than the women. The other was Group IV-Eyes, Ears, Teeth, Skin and Hair.

The greatest number of errors was made on question 6 in Group III-Foods, Diet and Nutrition-with 85.1 per cent of the women missing it and 84.0 per cent of the men missing it. The second most highly missed question for the men was number ten in Group II, the group with the best overall scores. Seventy-two point-six per cent of the men missed it and 71.5 per cent of the women. It was the third

most often missed for the women. The second most highly missed question for the women was number 18 in Group V-First Aid and Medical Treatment. Eighty-four point two per cent of the women missed it and 66.0 per cent of the men. Question 18 was third highest with incorrect responses for the men.

Table IX
Persons Missing Each Question

Ques.	Total Missed	Women	% Total Women	% Total M&W	Men	% Total Men	% Total M&W
1	30	16	15.7	53.3	14	36.4	46.7
2	11	8	7.8	72.7	3	6.8	27.3
3	11	9	8.8	81.8	2	4.6	18.2
4	3	3	2.9	100.0	0	0.0	00.0
5	30	26	25.4	86.8	4	9.1	13.2
6	123	86	85.1	69.9	37	84.0	30.1
7	36	18	17.6	50.0	18	40.9	50.0
8	38	29	28.4	76.5	9	21.9	23.5
9	23	13	12.5	56.5	10	22.8	43.5
10	105	73	71.5	69.6	32	72.6	30.4
11	5	2	2.0	40.0	3	6.8	60.0
12	28	18	17.6	64.3	10	22.8	35.7
13	24	14	13.7	58.3	10	22.8	41.7
14	16	10	9.8	62.6	6	13.6	37.4
15	7	2	2.0	48.6	5	11.3	51.4
16	54	37	36.2	67.6	17	38.6	32.4

(Table IX, cont.)

Ques.	Total Missed	Women	% Total Women	% Total M&W	Men	% Total Men	% Total M&W
17	3	1	1.0	33.3	2	4.6	66.7
18	115	86	84.2	74.7	29	66.0	25.3
19	19	13	12.5	68.4	6	13.6	31.6
20	50	37	36.3	73.9	13	28.5	26.1
21	37	23	22.5	62.6	14	31.8	37.8
22	6	3	2.9	50.00	3	6.8	50.0
23	59	42	41.2	77.6	17	38.6	22.4
24	54	40	39.2	74.0	14	31.8	26.0
25	79	60	58.8	76.0	19	43.4	24.0
26	4	2	2.0	50.0	2	4.6	50.0
27	54	38	37.2	70.4	16	36.4	29.6
28	76	53	51.9	69.6	23	52.2	30.4
29	12	8	7.8	66.7	4	9.1	33.3
30	7	2	2.0	28.6	5	11.4	71.4
31	10	6	5.9	60.0	4	9.1	40.0
32	56	34	33.4	66.7	22	50.0	33.3
33	12	6	5.9	50.0	6	13.6	50.0
34	65	44	43.1	45.1	21	47.8	54.9
35	19	13	12.6	68.4	6	13.6	31.6
36	85	57	55.8	67.2	28	63.6	32.8
37	6	4	3.9	66.7	2	4.6	33.3
38	42	30	29.4	71.4	12	27.3	28.6
39	58	37	36.3	63.8	21	47.8	36.2
40	53	37	36.3	69.8	16	36.4	30.2
41	31	20	19.6	64.5	11	25.0	36.5
42	42	27	26.4	64.2	15	34.2	35.8
43	21	16	15.7	76.3	5	11.5	23.7
44	33	19	18.8	57.5	14	31.9	42.5
45	77	56	54.8	72.7	21	47.8	27.3
46	128	92	90.2	72.7	36	81.9	27.3

(Table IX, cont.)

Ques.	Total Missed	Women	% Total Women	% Total M&W	Men	% Total Men	% Total M&W
47	69	44	39.2	63.8	25	56.9	36.2
48	13	10	9.8	76.9	3	6.8	24.1
49	7	4	3.9	57.1	3	6.8	42.9
50	21	15	14.7	71.4	6	13.6	28.6

Table X
Breakdown According to Area of Content

Group I-Organic Functions and Disorders

Ques.	Women		Men		Both	
	#	% Total	#	% Total	#	% Total (Ques.missed)
7	18	17.6	18	40.9	36	24.6
23	42	41.2	17	38.6	59	40.8
24	40	39.2	14	31.8	54	36.8
42	27	26.4	15	34.2	42	28.6
43	16	15.7	5	11.5	21	14.4
44	19	18.8	14	31.9	33	22.6
45	56	54.8	21	47.8	77	52.6
49	4	3.9	3	6.8	7	4.8

Group II-Prevention of Disease and Treatment of Injury

1	16	15.7	14	36.4	30	22.8
2	8	7.8	3	6.8	11	7.5
4	3	2.9	0	0.0	3	2.1
8	29	28.4	9	21.9	38	26.0
9	13	12.5	10	22.8	23	15.8
10	73	71.5	32	72.6	105	71.9
11	2	2.0	3	6.8	5	3.4
22	3	2.9	3	6.8	6	4.1
25	60	58.8	19	43.4	79	54.2
33	6	5.9	6	13.6	12	8.2
37	4	3.9	2	4.6	6	4.1
38	30	29.4	12	27.3	42	28.8
39	37	36.3	21	47.8	58	39.6
41	20	19.6	11	25.0	31	21.2

(Table X, cont.)

Group III-Foods, Diet and Nutrition

Ques.	Women		Men		Both	
	#	% Total	#	% Total	#	% Total (Ques.missed)
3	9	8.8	2	4.6	11	7.5
6	86	85.1	37	84.0	123	84.3
12	18	17.6	10	22.8	28	16.4
28	53	51.9	23	52.2	76	52.0
30	2	2.0	5	11.4	7	4.8
31	6	5.9	4	9.1	10	67.4
32	34	33.4	22	50.0	56	38.2

Group IV-Eyes, Ears, Teeth, Skin and Hair

16	37	36.2	17	38.6	54	36.9
17	1	1.0	2	4.6	3	2.3
21	23	22.5	11	31.8	37	25.2
27	38	37.2	16	36.4	54	37.0
29	8	7.8	4	9.1	12	8.2
40	37	36.3	16	36.4	53	36.2
46	92	90.2	36	56.9	128	87.6
48	10	9.8	3	6.8	13	8.9
50	15	14.7	6	13.6	21	14.4

Group V-First Aid and Medical Treatment

18	86	84.2	29	66.0	115	78.6
20	37	36.3	13	28.5	50	34.2
26	2	2.0	2	4.6	4	2.7
47	44	39.2	25	56.9	69	46.2

(Table X, cont.)

Group VI-Mental Health

Ques.	Women		Men		Both	
	#	% Total	#	% Total	#	% Total (Ques.missed)
5	26	25.4	4	39.1	30	20.6
13	14	13.7	10	22.8	28	19.2
14	10	9.8	6	13.6	16	10.9
15	2	2.0	5	11.3	7	2.0
19	13	12.5	6	13.6	19	13.0
34	44	43.1	21	47.8	65	44.5
35	13	12.6	6	13.6	19	13.0
36	57	55.8	28	63.6	85	58.2

Women missed from 8 to 48 per cent of the items contained in the pre-test. The average number of items missed was 27 per cent. The mean number of items missed was 13.5. The median was 14. The standard deviation was 5.76.

Table XI
Number of Items Missed by Women

Number of Ques. Missed	Number with This Score	% With This Score
4	1	.97
5		
6		
7		
8	5	4.90
9	2	1.96
10	7	5.86
11	13	12.70
12	17	13.70
13	10	9.90
14	11	10.90
15	8	7.90
16	8	7.90
17	5	4.90
18	5	4.90
19	4	3.90
20	1	.97
21	2	1.96
22		
23	1	.97
24	2	1.96

Men missed from 10 to 32 per cent of the items on the pre-test. The average number of items missed was 30.6 per cent. The mean number of items missed was 15.3. The median was 15. Standard deviation was 6.19.

Table XII
Number of Items Missed by Men

Number of Ques. Missed	Number with This Score	% with This Score
10	3	6.8
11	4	9.1
12	1	2.3
13	7	15.9
14	4	9.1
15	7	15.9
16	6	13.6
17	4	9.1
18	1	2.3
19	3	6.8
20	2	5.9
21		
22		
23		
24	1	2.3
25		
26		
27		
28		
29		
30		
31		
32	1	2.3

Table XIII²⁰
 Women with Fathers in
 Non-professional Occupations

# Ques. Missed	# Women Missing Ques.	% of Total Non.	% of Total Fathers
4			
5			
6			
7			
8	4	6.56	3.96
9			
10	3	4.94	2.85
11	9	14.75	8.82
12	13	21.15	12.80
13	7	11.45	6.85
14	3	4.94	2.85
15	6	9.83	5.94
16	6	9.83	5.94
17	1	1.64	.99
18	3	4.94	2.85
19	3	4.94	2.85
20	1	1.64	.99
21			
22			
23	1	1.64	.99
24	1	1.64	.99

²⁰Non.=fathers in non-professional occupations

Table XIV²¹
 Women with Fathers in
 Professional Occupations

# Ques. Missed	# Women Missing Ques.	% of Total Pro.	% of Total Fathers
4	1	3.33	.99
5			
6			
7			
8	1	3.33	.99
9	2	5.00	1.99
10	3	10.00	2.85
11	4	13.32	3.96
12	1	3.33	.99
13	2	5.00	1.99
14	6	20.00	5.94
15	1	3.33	.99
16	2	5.00	1.99
17	3	10.00	2.85
18	2	5.00	1.99
19	1	3.33	.99
20			
21			
22	1	3.33	.99

²¹ Pro.=fathers in professional occupations

Table XV
Men with Fathers in
Non-professional Occupations

# Ques. Missed	# Men Missing Ques.	% of Total Non.	% of Total fathers
10	3	8.83	7.46
11	4	11.75	10.00
12	1	2.94	2.50
13	7	20.60	20.28
14	3	8.83	7.46
15	5	14.70	14.69
16	4	11.75	10.00
17	2	5.89	5.00
18	1	2.94	2.50
19	3	8.83	7.46
20			
21			
22			
23			
24	1	2.94	2.50

Table XVI²²
Men with Fathers in
Professional Occupations

# Ques. Missed	# Men Missing Ques.	% of Total Pro.	% of Total fathers
15	2	33.3	5.00
16	1	16.7	2.50
17	2	33.3	5.00
18			
19			
20	1	16.7	2.50

²²Liberal Arts students only, no Fine Arts students returning the pre-test had fathers in this occupational group. There are no male Freshmen majoring in nursing.

Table XVII
Students' Scores and Fathers' Occupations

Students	Mean	Median	Standard Deviation
Women			
Pro.	12.60	12.00	4.92
Non.	13.70	12.00	5.30
Men			
Pro.	16.70	16.50	5.66
Non.	14.90	14.25	6.94
All			
Pro.	14.65	14.25	5.29
Non.	14.30	13.13	6.12

Fifty-seven Freshmen women had previously taken a health course. Thirty-eight had not taken a previous health course. Table XVIII shows how many persons in each category missed each question. The questions, which those who had taken a previous health course, more often answered correctly are marked by an asterisk in the difference in per cent column.

Students with no previous health course scored better on 28 out of 50 questions and missed none on two questions. Those with a previous health course missed none on one question.

Table XVIII
Freshmen Women

No Previous Health Course			Previous Health Course		
Ques.	# Missing Ques.	%	# Missing Ques.	%	Dif. in %
1	5	13.2	11	19.3	6.1
2	3	8.9	5	8.8	.1*
3	4	10.5	5	8.8	1.7*
4	1	2.6	2	3.5	.9
5	9	23.7	17	29.8	6.1
6	32	84.2	54	94.7	10.5
7	7	18.4	11	19.3	.9
8	12	31.6	17	29.8	1.6*
9	5	13.2	8	14.0	.8
10	27	71.1	46	80.7	9.6
11	1	2.6	1	1.6	1.0*
12	11	28.9	7	12.3	6.6*
13	4	10.5	10	17.5	7.0
14	3	8.9	7	12.3	3.4
15	1	2.6	1	1.6	1.0*
16	14	36.8	23	40.4	3.6
17	1	2.6	0	0.0	2.6*
18	34	89.5	52	91.2	1.7
19	7	18.4	6	10.5	7.9*
20	11	28.9	26	45.6	6.7
21	7	18.4	16	28.1	9.7
22	0	0.0	3	5.3	5.3
23	155	49.5	27	47.4	2.1*
24	16	42.1	24	42.1	0.0
25	29	76.3	31	54.4	21.9*

(Table XVIII, cont.)

No Previous Health Course			Previous Health Course		
Ques.	# Missing Ques.	%	# Missing Ques.	%	Dif. in %
26	1	2.6	1	1.6	1.0*
27	14	36.8	24	42.1	5.3
28	18	47.4	35	61.4	14.0
29	4	10.5	4	7.00	2.5*
30	0	0.0	2	3.5	3.5
31	4	10.5	2	3.5	7.0*
32	14	36.8	20	35.1	1.7*
33	3	8.9	3	5.3	3.6*
34	18	47.4	26	45.6	1.8*
35	6	15.8	7	12.3	3.5*
36	21	55.3	36	63.2	7.9
37	1	2.6	3	5.3	2.7
38	11	28.9	10	33.3	4.4
39	12	31.6	25	43.9	12.3
40	19	50.0	18	31.6	18.4*
41	8	21.1	12	21.4	.3
42	10	38.0	17	29.8	10.8*
43	7	18.4	9	15.8	2.6*
44	7	18.4	12	21.4	3.0
45	24	63.2	32	56.1	7.1*
46	36	94.2	56	98.2	4.0
47	15	49.5	29	50.9	1.4
48	4	10.5	6	10.5	0.0
49	2	5.2	2	3.5	1.7*
50	4	10.5	11	19.3	8.8

Twenty-eight Freshmen men had a previous health course. Thirteen men had not taken a health course. Table XIX shows how many men in each category missed each question. The questions, which those who had taken a previous health course, answered correctly more often are marked by an asterisk in the difference in per cent column.

Those with no previous health course scored better on 24 out of 50 questions and none on eight questions. Those with a previous health course missed none on one question.

Table XIX
Freshmen Men

No Previous Health Course			No Previous Health Course		
Ques.	# Missing	%	# Missing	%	Dif. in %
1	11	39.3	3	23.1	16.2
2	1	3.6	2	15.4	11.8*
3	2	7.2	0	0.0	7.2
4	0	0.0	0	0.0	0.0
5	3	10.7	1	7.6	3.1
6	24	85.7	13	100.0	14.3*
7	11	39.3	7	53.8	14.5*
8	8	28.6	1	7.6	21.0
9	7	25.0	3	23.1	1.9
10	22	78.6	10	76.9	1.7
11	3	10.7	0	0.0	10.7
12	9	32.1	1	7.6	24.5
13	6	21.4	4	30.8	9.4*
14	2	7.1	4	30.8	23.7*

(Table XIX, cont.)

Ques.	Previous Health Course		No Previous Health Course		
	# Missing Ques.	%	# Missing Ques.	%	Dif. in %
15	5	14.3	0	0.0	14.3
16	11	39.3	6	46.2	6.9*
17	2	7.2	0	0.0	7.2
18	21	75.0	8	61.5	13.5
19	4	14.3	2	15.4	1.1*
20	8	28.6	5	38.5	9.9*
21	9	32.1	5	38.5	6.4*
22	2	7.1	1	7.6	.5*
23	10	35.7	7	53.8	18.1*
24	10	35.7	4	30.8	4.9
25	14	50.0	5	38.5	21.5
26	2	7.2	0	0.0	7.2
27	12	42.1	4	30.8	11.3
28	16	57.1	7	53.8	3.3
29	3	10.7	1	7.6	3.1
30	3	10.7	2	15.4	4.7*
31	2	7.2	2	15.4	8.2*
32	15	53.6	7	53.8	.2*
33	5	14.3	1	7.6	6.7
34	13	46.4	8	61.5	15.1*
35	5	14.3	1	7.6	6.7
36	19	67.9	9	69.2	1.3*
37	1	3.6	1	7.6	1.0*
38	9	32.1	3	23.1	9.0
39	12	42.1	9	69.2	27.1*
40	10	35.7	6	46.2	10.5*
41	8	29.6	3	23.1	6.5

(Table XIX, cont.)

Ques.	Previous Health Course		No Previous Health Course		
	# Missing	%	# Missing	%	Dif. in %
42	9	32.1	6	46.2	14.1*
43	5	14.3	0	0.0	14.3
44	10	35.7	4	30.8	4.9
45	13	46.4	8	61.5	15.1*
46	24	85.7	12	92.3	6.6*
47	16	57.1	9	69.2	12.1*
48	3	10.7	0	0.0	10.7
49	1	3.6	2	15.4	11.8*
50	4	14.3	2	15.4	1.1*

Students were divided into three main categories according to major area of academic interest and also according to previous instruction in the area of health.

Women students majoring in Fine Arts had both the highest (14.4) and the lowest (12.8) means. Those with no previous health education course had the mean of 12.8.

Correlation for liberal arts students and nursing students was very high, .911. Correlation for male or female was .549 or moderate. Correlation for previous or no previous health course was .241 or no correlation.

Fine Arts students had a chi square of 4.339 with 64 degrees of freedom. The results could not be due to chance at any level.

Table XX
Women in Liberal Arts

Ques.	Prev.	%	No	%	Dif.	Total	% of Total
4			1	4.4	4.4	1	1.1
5							
6							
7							
8	3	9.1			9.1	3	5.4
9							
10	2	6.1	1	4.4	1.3	3	5.4
11	7	21.2	2	8.7	12.5	9	16.1
12	5	15.1	6	26.1	11.0	11	19.6
13	2	6.1	3	13.0	6.9	5	8.9
14	3	9.1	3	13.0	3.9	6	10.7
15	3	9.1	3	13.0	3.9	6	10.7
16	2	6.1	3	13.0	6.9	5	8.9
17	1	3.0			3.0	1	1.1
18	2	6.1	1	4.4	1.7	3	5.4
19	1	3.0			3.0	1	1.1
20							
21							
22							
23	1	3.0			3.0	1	1.1
24	1	3.0			3.0	1	1.1

Women in Fine Arts

9			1	16.7	16.7	1	4.2
10	2	12.5			12.5	1	4.2
11	2	25.0	1	16.7	8.3	3	21.4
12			2	33.3	33.3	2	14.3
13	1	12.5			12.5	1	4.2

(Table XX, Women in Fine Arts, cont.)

Ques.	Prev.	%	No	%	Dif.	Total	% of Total
14	1	12.5	1	16.7	4.2	2	14.3
15							
16	1	12.5			12.5	1	4.2
17							
19	1	12.5	1	16.7	4.2	1	4.2
21	1	12.5			12.5	1	4.2

Women in Nursing

8	1	5.0			5.0	1	3.6
9			1	12.5	12.5	1	3.6
10	4	20.0			20.0	4	14.3
11	1	5.0	1	12.5	7.5	2	7.1
12	2	10.0	2	25.0	15.0	4	14.3
13	4	20.0	1	12.5	7.5	5	17.9
14	1	5.0			5.0	1	3.6
15	1	5.0			5.0	1	3.6
16	1	5.0	2	25.0	20.0	3	10.7
17	2	10.0	1	12.5	2.5	3	10.7
18							
19	1	5.0			5.0	1	3.6
20							
21	1	5.0			5.0	1	3.6
22							
23							
24	1	5.0			5.0	1	3.6

Table XXI
Men in Liberal Arts

Ques.	Prev.	%	No	%	Dif.	Total	% of Total
10	1	4.8	1	7.7	2.9	2	4.5
11	3	14.3			14.3	3	6.8
12			1	7.7	7.7	1	2.5
13	4	19.0	1	7.7	11.3	5	11.4
14	2	9.5			9.5	2	4.5
15	2	9.5	5	38.5	29.0	7	16.0
16	3	14.3	1	7.7	6.6	4	9.1
17	1	4.8	3	23.1	18.3	4	9.1
18	1	4.8			4.8	1	2.5
19	1	4.8			4.8	1	2.5
20	1	4.8	1	7.7	6.9	2	4.5
21							
22							
23							
24	1	4.8			4.8	1	2.5
25							
26							
27							
28							
29							
30							
31							
32	1	4.8			4.8	1	2.5

Men in Fine Arts²³

11	1	14.3				1	14.3
12							
13	1	14.3				1	14.3
14	2	28.6				2	28.6
15							

²³All men returning the pre-test in the College of Fine Arts had previously taken a health course.

(Table XXI, Men in Fine Arts, cont.)

Ques.	Prev.	%	No	%	Dif.	Total	% of Total
16	1	14.3				1	14.3
17							
18							
19	2	28.6				2	28.6

Table XXII²⁴
Health Education and Major

Students	Mean	Median	Standard Deviation
Women	13.25	12.50	5.65
Liberal Arts			
Prev.	13.50	12.00	5.24
No	13.00	13.00	4.14
Fine Arts	13.60	12.80	4.08
Prev.	14.40	13.50	3.70
No	12.80	12.00	3.81
Nursing	13.55	12.75	5.18
Prev.	13.80	13.30	6.76
No	13.30	12.50	3.59
All Prev.	13.90	12.80	5.23
All No	13.55	12.75	5.18
Male			
Liberal Arts	15.45	15.00	6.98
Prev.	15.80	15.00	6.26
No	15.10	15.00	3.36
Fine Arts.	15.10	14.00	3.49
(Prev. only)			
All Prev.	14.70	13.50	4.88
All No	15.10	15.00	3.36
All Women and Men			
Liberal Arts	14.35	13.75	6.32
Fine Arts	14.35	13.50	3.78
Nursing	13.55	12.75	5.18
(Women only)			
Prev.	14.30	13.15	5.05
No	14.33	13.88	4.27

²⁴Prev.=students who had a previous health education course. No=those not having a previous health education course.

Conclusion

Five variables were considered when the pre-test was formulated. After the pre-tests were returned, age of the students varied so little that this was not considered further as a factor which would influence the scores.

Women, on the whole, scored better than the men with 13.5 mean: 15.3 mean and standard deviation 5.76: 6.19.

Persons with fathers in a professional occupation scored slightly better than those whose fathers were not members of a profession with 14.65 mean: 14.30 mean and standard deviation 5.29: 6.12.

All students with a previous health course scored just slightly better than those not having a previous health course with 14.3 mean: 14.33 mean and standard deviation 5.05: 4.27. There was no correlation since the value was .241%

All persons majoring in liberal arts and all persons majoring in fine arts scored the same mean, 14.35. Students majoring in nursing scored the lowest of the three categories of women but since there were no men in this category they had the highest overall mean, 13.55, with standard deviation 5.18. Correlation for liberal arts and nursing students

was very low and very high for fine arts students. According to Chi square, the correlation for fine arts students was not due to chance alone.

In the researcher's opinion, the pre-test covered material the students should have known. In another study of this type conducted at the University of Oregon in 1959, an average of 25 per cent of the items were missed. Freshmen at Illinois Wesleyan University averaged 28.8 per cent errors. Having previously taken a health course in high school does not seem to have a significant positive effect on the individual's health knowledge. A study conducted on senior students, excluding nursing students, could be compared with the results of this study to discover if the amount of health knowledge gained informally in four years would eliminate the need for more health education which seems evident in the incoming Freshman student at Illinois Wesleyan University.

BIBLIOGRAPHY

Articles

- Adams, Shirley Lou. "Health Misconceptions Among Students Enrolled in Freshman Health Classes at the University of Oregon." (Master's Thesis, University of Oregon, 1959).
- Bruyn, Henry B., M.D. "Medical and Health Evaluation Upon Enrollment in College: A Foundation for the Ideal Program in Student Health." The Journal of the American College Health Association, Volume 17 (February, 1969) pp. 198-206.
- Farnsworth, Dana L., M.D. "The College Community Health Service-Impact on Lifelong Vitality and Fitness." The Journal of the American College Health Association, Volume 16 (February, 1968) pp. 228-232.
- Fitzgerald, Helene, R.N. "Some Factors to be Considered in Implementing a Comprehensive Care Program in a University Health Center." The Journal of the American College Health Association, Volume 17 (February, 1969) pp. 261-263.
- Gist, Anne L. "Health Misconceptions Subscribed to by Freshmen in Selected Negro Colleges, New York." (Thesis, Ed.d., New York University, 1955).
- Humphrey, James H. "Health Problems of Interest to College Men." The Research Quarterly, Volume 23 (October, 1952) pp. 319-321.
- Kilander, Frederick H. "Health Knowledge of High School and College Students." The Research Quarterly, Volume VIII#3 (October, 1937) p.3.
- Paffenberger, Ralph S., M.D. "Chronic Disease in Former College Students; Implications for College Health Programs." The Journal of the American College Health Association, Volume 17 (February, 1969) pp. 51-55.
- Samp, Robert J., M.D. "Health Education Activities on a Large University Campus." The Journal of the American College Health Association, Volume 16 (April, 1968) pp. 333-334.

Shaw, Clayton T. "A Before and After Analysis of Increase in Health Knowledge: A Basic Evaluation of an Elementary College Health Course." The Journal of School Health, xxix#1 (January, 1969) pp. 64-68.

Sills, Joe Fred. "Coordination of Health Resources in the Campus Community." The Journal of the American College Health Association, Volume 16 (April, 1968) pp. 330-332.

Terry, Luther L., M.D. "Colleges Educate for Health." The Journal of the American College Health Association, Volume 16 (October, 1967) pp. 47-50.

Whiteley, William. "Health Problems of Selected College Students." (H.S.D. thesis at Indiana University, 1957).

Books

Ahmann, J. Stanley and Marvin D. Glock. Evaluating Pupil Growth. Boston: Allyn and Bacon, Inc., Third edition, 1967.

Fox, David J. Fundamentals of Research in Nursing. New York: Appleton-Century-Crofts, 1966.

Franzblau, Abraham N. A Primer of Statistics for Non-Statisticians. New York: Chicago, San Francisco and Atlanta: Harcourt, Brace and World, Inc., 1958.

Green, John A. Teacher-made Tests. Evanston, Illinois: Harper and Row, Publishers, 1963, pp. 28-31.

Kilander, Frederick H. School Health Education. New York: MacMillan Company, 1962, pp. 418-429.

Wrightstone, J. Wayne, Joseph Justman and Irving Robbins. Evaluation in Modern Education. New York: American Book Company, 1956, pp. 79-85, 136-148.

Young, Robert K. and Donald J. Veldman. Introductory Statistics for the Behavioral Sciences. New York, Chicago, San Francisco: Holt, Rinehart and Winston, 1965.

Interviews

Arnold, Velma, R.N., private interview during April, 1968.

Salowitz, I.W. M.D., private interview during April, 1968.

APPENDIX

December 9, 1968

As a Senior enrolled in the school of nursing at Illinois Wesleyan University, I am interested in discovering the degree of health knowledge the Freshmen who enter IWU bring with them. I have chosen to research this area and write a departmental honors paper based on the data. I will need your co-operation to do this. Please complete the following pages of questions and return them to the president of your hall by December 16, 1968. Please do not use outside sources of any kind, including discussion with friends, to help answer the questions as this will give false data. False data will make my entire study inaccurate and needlessly time consuming.

No One will ever know how you answered the questions unless you tell them. I am not interested in learning how a specific person responded but in the overall campus picture. The questions concerning major interests, etc., before the Pre-test will serve only to help me know if one type of student is stronger in the area of health knowledge as a Freshman and possibly why.

Anyone who is interested-faculty, administration, or student-may know the results of this study. The results will be posted sometime next Spring in each residence hall which houses Freshmen.

Thank you for your time.

Ruth Mohr

Please answer the following items accurately. When given a choice, please circle the answer which pertains to you.

1. Age ____ 2. Male Female 3. Father's occupation _____
4. Did you have a health course in high school? Yes No
5. My area of major interest is in the 1) College of Fine Arts; 2) College of Liberal Arts; 3) School of Nursing.

Pre-Test

The Pre-test consists of fifty true or false questions. Each question is either true or false. Please circle the response that you believe is correct.

1. The old saying "stuff a cold and starve a fever" has been found to have scientific basis. T F
2. Gonorrhea and syphilis are different names for the same disease. T F
3. Energy requirements and the number of calories necessary for good health remain fairly constant throughout a person's lifetime. T F
4. Syphilis can be cured if treated by a physician in the early stages. T F
5. Smoking marihuana leads to physical dependence on it. T F
6. Wheat germ oil and yogurt have a high health value. T F
7. Bruises can cause cancer. T F
8. The extra saliva caused by sucking a coughdrop lubricates and soothes a sore throat. T F
9. Mononucleosis will be contracted by anyone coming in contact with a person having this disease. FF
10. Continuous bad posture will cause bone changes in adults. T F

11. If all the signs of syphilis-sore throat, skin rash, swollen glands, and inflamed eyes-disappear, the disease has disappeared. T F
12. Under normal conditions, everyone should drink 6-8 glasses of water a day. T F
13. The use of LSD has been proven to increase a person's creativity. T F
14. Alcoholism is a treatable disease. T F
15. All persons with cerebral palsy are mentally retarded. T F
16. Any noise, which requires raising the voice to be heard, is a threat to hearing if prolonged. T F
17. Dietary, emotional, bacterial and endocrine factors all contribute to acne. T F
18. When a person has a convulsion, force a padded tongue blade into his mouth to prevent him from biting his tongue. T F
19. Mental illness is incurable. T F
20. Salt tablets can irritate the stomach. T F
21. The condition of the hair tells much about the general physical condition of an individual. T F
22. When water from a stream is clear, cold and sparkling, its safety for drinking can be taken for granted. T F
23. Blood flows from the right side of the heart through the lungs to the left side of the heart and then out of the heart to the rest of the body. T F
24. A person with diabetes may appear to be drunk. T F
25. Persistent indigestion is an early warning sign of cancer. T F
26. An injured person should be moved from the site of the accident. T F

- | | | |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 27. | Wearing glasses when they are prescribed will prevent a person's eyes from becoming worse. | T F |
| 28. | Vitamin tablets or liquids should be taken each day to make sure that the body receives the necessary amounts each day | T F |
| 29. | Boils should be squeezed to relieve the pressure. | T F |
| 30. | Emotional and psychological problems may be caused by overweight as well as lead to it. | T F |
| 31. | Processing and packaging may effect a change in the vitamin content of foods. | T F |
| 32. | Vitamin A is important for skeletal growth. | T F |
| 33. | Tiny drops of spray from a cough or sneeze carry disease causing germs or viruses. | T F |
| 34. | Mental illness is most often inherited through social rather than generic heredity. | T F |
| 35. | Barbituates are physically addicting. | T F |
| 36. | Genuises have more of a tendency to become mentally ill than persons of average intelligence. | T F |
| 37. | Carbon monoxide interferes with the transport of oxygen to cells in the body. | T F |
| 38. | Infections hepatitis is transmitted through food, milk, or water. | T F |
| 39. | Death rates from heart attacks vary directly with the amount a person smokes. | T F |
| 40. | When a person loses one sense, such as hearing, the other senses are strengthened because strength from the lost sense goes to the other senses. | T F |
| 41. | General and frequent use of antibiotics is the best way to fight a cold and prevent pneumonia. | T F |
| 42. | The kidneys regulate the delicate balance of chemical substances in the body. | T F |

- | | | |
|-----|----------------------------------------------------------------------------------------------------|-----|
| 43. | At this time, leukemia is incurable. | T F |
| 44. | If the blood supply to heart muscle is cut off, the person has a heart attack. | T F |
| 45. | All forms of cancer are uncontrolled growths which can spread to other parts of the body. | T F |
| 46. | The need for reading or distance vision glasses is a common cause of headache. | T F |
| 47. | When a person stops breathing, the very first thing one should do is start artificial respiration. | T F |
| 48. | Proper care of baby teeth is important to the health of permanent teeth. | T F |
| 49. | Once brought under control, diabetes will disappear. | T F |
| 50. | Fluoridation of water decreases tooth decay. | T F |