PATIENT ATTITUDES WITH VARIATION IN INSTRUCTIONAL METHOD AND MATERIAL AND STUDY KNOWLEDGE

A THESIS

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BY

MARTHA ANN KOPERWHATS, B.S.

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DEDICATION

This thesis is dedicated to my understanding husband, Bob, and to my loving daughters, Laura and Leslie, for all the love, confidence, and understanding they gave me during this period. Their love and support helped me to persevere.

Let me not to the marriage of true minds
Admit impediments. Love is not love
Which alters when it alteration finds,
Or bends with the remover to remove:
O, no! it is an ever-fixed mark
That looks on tempests and is never shaken;
It is the star to every wandering bark,
Whose worth's unknown, although his height be taken.
Love's not Time's fool, though rosy lips and cheeks
Within his bending sickle's compass come;
Love alters not with his brief hours and weeks,
But bears it out even to the edge of doom.
If this be error and upon me proved,
I never writ, nor no man ever loved.

(William Shakespeare)

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A special debt of gratitude is also acknowledged to Anne Peter, R.N., M.S. and to Paula Fisher for all their support and help with this study. This project would not have been possible without their help. Mrs. Peter devoted many hours to this study as the specially trained nurse who instructed patients. My secretary, Mrs. Fisher, spent many late hours typing and retyping numerous revisions of this paper.

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CHAPTER I

INTRODUCTION

One of the most important facets of patient care is health education. This function traditionally has been the physician's (Somers 1971:80). Only in recent years have other workers in the health field, such as nurses, entered into health education (Pohl 1978; Fischer 1978:124). The goals that such health professionals have in this role are to help the patient to understand his disease process, the therapies involved, and the patient's own role in his therapy (Gulko and Buthrus 1978). One rationale of the health professional for this role is obtaining the patient's cooperation. Dodge (1972:1953) stated that the patient who understands his treatment more clearly is better able to cooperate in his recovery. Patient care requires a cooperative effort from both the patient and the deliverer of health care.

The patient's rights recently have become well identified and are presented in American philosophy and the health care literature with centrality in patient information. Any patient has a right to obtain information about his health status and his treatment (Quinn and Summers

1974). The Supreme Court in Schloendorff vs Society of New York Hospital (1914) declared that every adult of sound mind has a right to determine what shall be done with his own body (Southwick 1978:204). This determination cannot be made without information. Sparer (1971:29) stated the feelings of many who work in the field of health education. She said,

> It is the patient's human right (soon to be, I hope, his fully recognized legal right) to know his condition, receive information, and decide more, if he wishes, among alternative treatments or no treatment.

The patient's right to information was recognized by the American Hospital Association (1973) through the association's declaration of the patient's bill of rights. Two of the twelve items in this document concern the patient's right to obtain information about his status and his treatment. These two items are:

> . . . to obtain from the physician information necessary for informed consent before any procedure or treatment is begun; to receive information on significant alternatives; and to know the name of the person responsible for the treatment.
>
> . . . to refuse treatment to the extent permitted by law and to be informed of the medical consequences of refusal. . . (American Hospital Association 1973:1; Miller 1976:397)

Patient education, as a physician's function, has met with varying degrees of success, and is problematic for the medical profession. Pratt (1975:4) states that some physicians have developed a nihilistic philosophy toward

patient education due to little or no success with patients while the physician pursues the idea in practice. Some physicians are earnestly making an effort to incorporate patient education into their daily patient contacts, but many find themselves too busy to take on this extra burden (Somers 1971:84). The medical profession, at the medical school level, is reevaluating the idea behind this teaching role and its importance in patient care (Currie and Renner 1977; Johnson 1978; and Levin 1978).

The idea of patient education as a part of any comprehensive health care system (Somer 1971:79; Lewis 1976:21, 27) was the catalyst for this study, and was supported by observation over a number of years. The investigator had observed that hospitalized patients exhibited negative attitudes when they had not received instructions concerning their various treatments and/or tests. Patients who had received some information about their treatments and/or tests demonstrated a more positive attitude.

An example of a patient's negative attitude involved a seventy-year-old man who received two intravenous pyelograms in as many days. The patient had no history of allergies and had never experienced any allergic reaction, yet he felt that his life was being put into jeopardy by

being injected twice. This misunderstanding evolved into a negligence liability suit.

Remembering the observed negative and positive reactions of patients, the investigator designed this study initially to ascertain which of two particular sets of instructional materials would offer better instruction for hospitalized patients undergoing an intravenous pyelogram. The investigator's purpose was to give more precise information to the patients. The clearer the information the patient receives, the easier it is for the patient to understand his health-illness situation. Better instructional materials could relieve stress in some patients. An intravenous pyelogram was chosen because of the myth that this examination is extremely dangerous due to the reactive characteristics of a contrast material. The contrast material that is injected intravenously can cause some patients to experience an allergic reaction. The possibility of such an allergic reaction could cause some patients anxiety and stress.

CHAPTER II

STUDY DESIGN

Introduction

This section presents an experimental design that involves three variables related to an intravenous pyelogram. These factors are instructional materials, instructors, and patient knowledge of being in a study. There are two sets of instructional materials. The instructor was either a specially trained nurse or nursing personnel on the floors not specially trained. The patients in this study either had knowledge of being in the study or were unaware that data concerning them will be analyzed for this study. These variables were evaluated as to effect in a three-factor (Cochran and Cox 1957:148-152; Drew 1976:48) experimental design, and were related to one another in eight, randomized blocks (cf. Cochran and Cox 1957:106-107). This section describes the problems to be studied, the purposes of the study, the hypotheses, the population and sample, the limitations and delimitations of the study, the experimental blocks and their formation, the background and significance of the study, the assumptions made, and the definitions of terms used.

Statement of the Problems

The problems studied were as follows: Are there significant differences or variations in the attitudes of hospitalized patients undergoing an intravenous pyelogram when:

1. The patients receive one of two different instructional materials?

2. The patients are instructed by a specially trained nurse as opposed to nurses not specially trained?

3. The patients know they are part of a study as compared with patients who have no knowledge that they are part of a study?

Purposes

The purposes of this study were the following:

1. The investigator wanted to identify the better of two materials (appendixes A and B) for instructing patients about an intravenous pyelogram through the identification of a statistical difference in attitude, using a three-way analysis of variance (ANOVA) (cf. Cox 1958:28; Nie, Hull, Jenkins, Steinbrenner, and Bent 1975:398-433) for independent comparisons or differences (Nie et al. 1975:422; Drew 1976:193). The patients' attitudes were evaluated statistically after receiving one

of the two different instructional materials (appendixes A and B). The results of an ANOVA are the sum of squares, degrees of freedom, mean squares, F ratio, and level of significance (see table 1). An F ratio tests the significance of the interaction of variables. The F test of the two teaching materials, the F test interaction between teaching materials and a specially trained nurse, and the F test interaction between teaching materials, nursing instruction, and knowledge of being in a study provided the test of the significance of the interactions of the variables. The source for the data was an attitude survey instrument (appendix C), administered to the sample subjects. A multiple classification analysis (MCA) (see table 2), another method to analyze the results of an ANOVA, expresses the relationship of each factor to the criterion variable. The better of the two materials is shown in the MCA table as having a significant F ratio. The MCA table will display the means of each category expressed as deviations from the grand mean which can be interpreted regarding which material was favored over the other

2. The investigator wanted to identify whether the patient's knowledge of being in a study affected his attitudes, the so-called Hawthorne effect (definition of

TABLE 1

ANALYSIS OF VARIANCE OF FACTOR, ATTITUDE TO TEACHING MATERIALS, BY THREE VARIABLES, TEACHING MATERIALS, TYPE OF INSTRUCTORS, AND KNOWLEDGE OF STUDY WITH COVARIATES, AGE, PREVIOUS HOSPITILIZATION, PREVIOUS I.V.P.. AND SEX

FACS2 - Attitude to Teaching Material
by VARA - Teaching Material
VARB - Type of Instructor
VARC - Knowledge of Study
with AGE
HOSP
IVP
SEX

Source of variation			Sum of Squares	df	Mean Square	F	Signif of F
Covariates			2.002	4	0.500	1.080	0.372
AGE			0.620	1	0.620	1.337	0.251
HOSP			1.406	1	1.406	3.036	0.085
IVP			0.061	1	0.061	0.132	0.718
SEX			0.901	1	0.901	1.945	0.167
Main effects			48.362	3	16.121	34.795	0.000
VARA			45.296	1	45.296	97.768	0.000
VARB			0.620	1	0.620	1.338	0.251
VARC			1.987	1	1.987	4.289	0.041
2-way interactions			5.093	3	1.698	3.664	0.016
VARA	VARB		0.112	1	0.112	0.241	0.625
VARA	VARC		4.797	1	4.797	10.354	0.002
VARB	VARC		0.217	1	0.217	0.469	0.495
3-way interactions			0.627	1	0.627	1.352	0.248
VARA	VARB	VARC	0.627	1	0.627	1.352	0.248
Explained			56.083	11	5.098	11.005	0.000
Residual			38.917	84	0.463		
Total			95.000	95	1.000		

Covariate	Raw regression coefficient
AGE	-0.050
HOSP	-0.554
IVP	0.058
SEX	-0.216

TABLE 2

MULTIPLE CLASSIFICATION ANALYSIS OF FACTOR, ATTITUDE TO TEACHING MATERIAL, BY THREE VARIABLES, TEACHING MATERIALS, TYPE OF INSTRUCTORS, AND KNOWLEDGE OF STUDY, WITH COVARIATES, AGE, PREVIOUS HOSPITILIZATION, PREVIOUS I.V.P., AND SEX

*** MULTIPLE CLASSIFICATION ANALYSIS ***

FACS2 - Attitude to Teaching Materials
by VARA - Teaching Materials
VARB - Type of Instructors
VARC - Knowledge of Study
with AGE
HOSP
IVP
SEX

* *

Grand mean = 0.00

Variable + category	N	Unadjusted Dev'n	Unadjusted Eta	Adjusted for independents Dev'n	Adjusted for independents Beta	Adjusted for independents + covariates Dev'n	Adjusted for independents + covariates Beta
VARA							
1	48	-0.70				-0.71	
2	48	0.70				0.71	
			0.70				0.71
VARB							
1	47	0.09				0.09	
2	49	-0.08				-0.08	
			0.08				0.08
VARC							
1	48	0.13				0.15	
2	48	-0.13				-0.15	
			0.13				0.15
Multiple R squared							.530
Multiple R							.728

terms). The statistical tool of ANOVA (Nie et al. 1975:423), described in Purpose 1, provided the means to complete this purpose. The resulting difference or variation was computed as an F test of the interaction between patients who know they are in a study and those who do not. An F test was used, also, to determine the degree of significance existing between different teaching materials and patient knowledge of being in a study; or between specially trained nurses and knowledge of being in a study; and between different teaching materials, knowledge of being in a study, and specially trained nurses. The source for the data was an attitude survey instrument (appendix C) administered to the sample subjects. A multiple classification analysis (MCA) (see table 2) is a method to analyze the results of an ANOVA, giving the relationship of each factor to the criterion variable. For the factor of knowledge or no knowledge of study, an MCA table was used to express the deviation of the category from the grand mean regarding whether knowledge of being in a study or not was of significance

3. The investigator wanted to question the importance of having nursing personnel who are especially informed to instruct patients concerning test procedures.

The patients' attitudes were evaluated statistically, using the statistical tool of ANOVA. The results (sum of squares, mean squares, F ratio, and level of significance) (see table 3) were computed to show whether there is a significant difference or interaction between specially trained nurses and those not specially trained. An ANOVA F test demonstrated, also, whether a significant relationship existed between different teaching materials and specially trained nurses; or between different teaching materials, knowledge of being in a study, and specially trained nurses. The source for the data was an attitude survey instrument (appendix C), administered to the sample subjects. A multiple classification analysis (MCA) (see table 4) is a method to display another analysis of the results of an ANOVA, giving the relationship of each factor to the criterion variable. The better of the two types of instructors was shown as having a significant F ratio

4. The investigator wanted to determine if there may be any differences or variations in the subjects' attitudes due to the patient characteristics of sex, age category, previously being in a hospital, and previously experiencing an intravenous pyelogram provided there was a statistically significant difference in the subjects'

TABLE 3

ANALYSIS OF VARIANCE OF FACTOR, ATTITUDE TO INSTRUCTORS, BY THREE VARIABLES, TEACHING MATERIALS, TYPE OF INSTRUCTORS, AND KNOWLEDGE OF STUDY, WITH COVARIATES, AGE, PREVIOUS HOSPITILIZATION, PREVIOUS I.V.P., AND SEX

* * * * * * * * * ANALYSIS OF VARIANCE * * * * * * * * *

FACS1 by VARA - Teaching Material
VARB - Type of Instructor
VARC - Knowledge of Study
with AGE
HOSP
IVP
SEX

* *

Source of variation	Sum of Squares	df	Mean Square	F	Signif of F
Covariates	7.437	4	1.859	2.831	0.030
AGE	0.068	1	0.068	0.103	0.749
HOSP	1.983	1	1.983	3.019	0.086
IVP	6.150	1	6.150	9.364	0.003
SEX	0.020	1	0.020	0.031	0.861
Main effects	26.381	3	8.794	13.390	0.000
VARA	0.008	1	0.008	0.013	0.910
VARB	24.652	1	24.652	37.535	0.000
VARC	1.624	1	1.624	2.473	0.120
2-way interactions	4.352	3	1.451	2.209	0.093
VARA VARB	3.558	1	3.558	5.418	0.022
VARA VARC	0.040	1	0.040	0.060	0.806
VARB VARC	0.795	1	0.795	1.210	0.274
3-way interactions	1.661	1	1.661	2.529	0.116
VARA VARB VARC	1.661	1	1.661	2.529	0.116
Explained	39.832	11	3.621	5.514	0.000
Residual	55.168	84	0.657		
Total	95.000	95	1.000		

Covariate	Raw regression coefficient
AGE	-0.016
HOSP	-0.658
IVP	0.585
SEX	-0.032

TABLE 4

MULTIPLE CLASSIFICATION ANALYSIS OF FACTOR, ATTITUDE TO INSTRUCTORS, BY THREE VARIABLES, TEACHING MATERIAL, TYP OF INSTRUCTORS, AND KNOWLEDGE OF STUDY, WITH COVARIATES, AGE, PREVIOUS HOSPITILIZATION, PREVIOUS I.V.P., AND SEX

*** MULTIPLE CLASSIFICATION ANALYSIS ***

FACS1 - Attitude to Instructors
by VARA - Teaching Materials
VARB - Type of Instructors
VARC - Knowledge of Study
with AGE
HOSP
IVP
SEX

* *

Grand mean = -0.00

Variable + category	N	Unadjusted Dev'n	Unadjusted Eta	Adjusted for independents Dev'n	Adjusted for independents Beta	Adjusted for independents + covariates Dev'n	Adjusted for independents + covariates Beta
VARA							
1	48	0.01				0.01	
2	48	-0.01				-0.01	
			0.01				0.01
VARB							
1	47	-0.57				-0.54	
2	49	0.54				0.52	
			0.56				0.54
VARC							
1	48	0.10				0.13	
2	48	-0.10				-0.13	
			0.10				0.13
Multiple R squared							.356
Multiple R							.597

attitudes toward the three factors described above (see figure 1). These patient characteristics were analyzed, using the statistical analysis of variance with covariates, ANOVA (Nie et al. 1975:398; Drew 1976:180). The covariates are shown as a beta score. The beta score is a partial-correlation ratio for each factor, and is viewed as a standardized partial regression coefficient (Nie et al. 1975:417). This information was used to describe the sample regarding its representation of the population and to see what relationship existed between these characteristics and the three independent variables. The source of the data was a patient characteristic survey (appendix D), administered to the sample subjects. The questions in the patient characteristic questionnaire (appendix D) dealt with whether the patient had previous hospital admissions, whether the patient had experienced a previous intravenous pyelogram, the sex of the patient, and the age category of the patient. This information was used to determine statistically whether previous admissions or previous experiences (Wallace 1971:31) influenced the patients in this study (Fischer 1978:122). If the subjects showed no significant interaction between the three independent

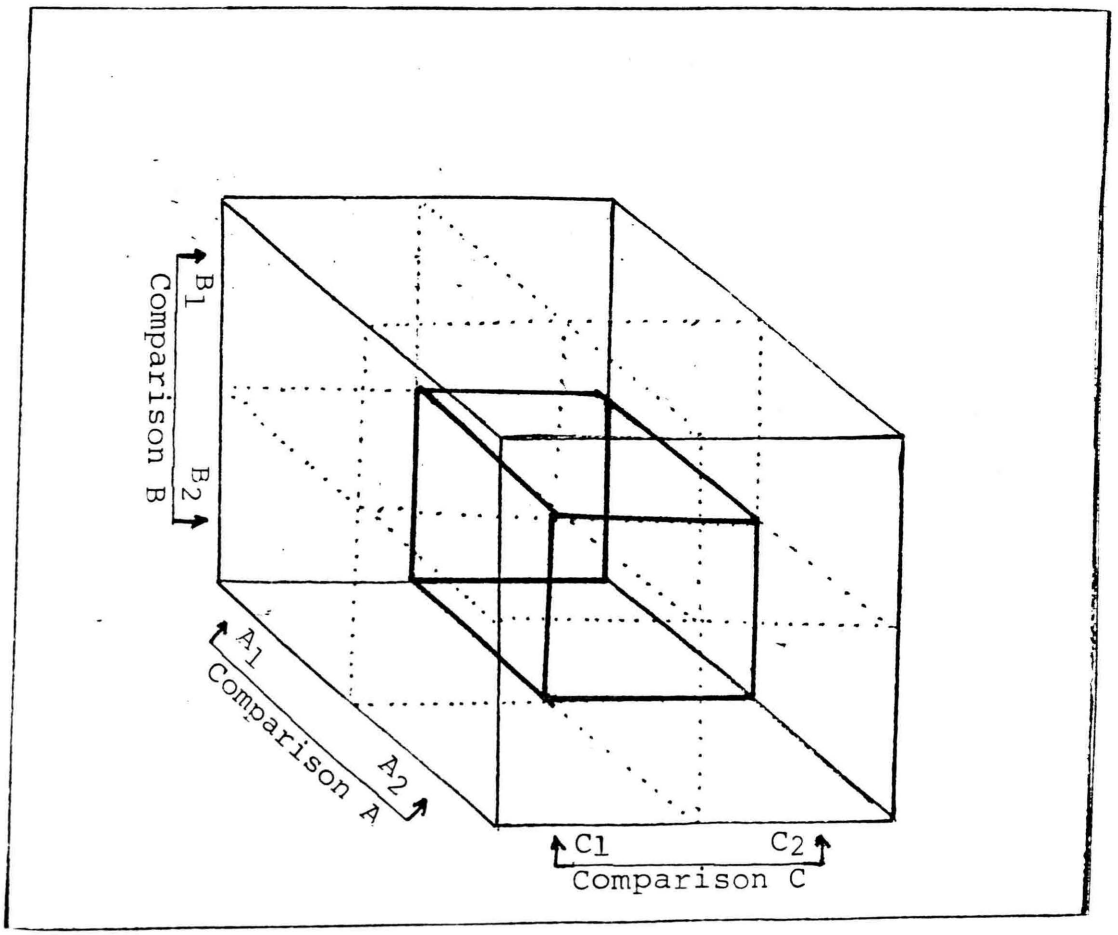


Figure 1. A diagramatic representation of the study with the three experimental variables labeled A, B, C, and the resulting eight blocks.

Legend: A_1 - Teaching Material I
A_2 - Teaching Material II
B_1 - Nurse Not Specially Trained
B_2 - Specially Trained Nurse
C_1 - Informed of Study
C_2 - Not Informed of Study

variables, this analysis was a criterion for determination that patient characteristics were not significant.

Hypotheses

The questions of this study were structured as null and research hypotheses. The null hypotheses posed were as follows:

1. There is no statistically significant difference or variation in attitude between patients undergoing an intravenous pyelogram, whether they received teaching material I, the present teaching method, or material II, a new instructional pamphlet

2. There is no statistically significant difference or variation in attitude between the patients who are instructed and receive the teaching material from a specially trained nurse and those who receive the instructions from nursing personnel not specially trained. That is, there is no statistically significant difference or variation in attitude between the two halves of the sample, half with one kind of teacher, half with another

3. There is no evidence of a Hawthorne effect (Donnelly, Gibson, and Ivancevich 1978:163, 213) as defined in the definition of terms in this study

The research hypotheses for this study were as follows:

1. There is a statistically significant difference or variation in attitude between patients undergoing the radiological examination of intravenous pyelogram when they receive teaching material II, a new instructional pamphlet

2. There is a statistically significant difference or variation in attitudes when the patients are instructed and receive the teaching material from a specially trained nurse

3. There is a statistically significant evidence of a Hawthorne effect in this study

Setting of the Study

This study was conducted in a 365-bed, general, acute-care, community hospital in Houston, Texas. The hospital serves a suburban population of approximately 150,000 people. The patient's hospital room was the area chosen by the investigator to hold the structured interviews, instruct the patient, and ask the questions on the survey instruments (cf. Cohen 1964:130).

Population

The population (Drew 1976:216) was composed of inpatients scheduled for an intravenous pyelogram, entering

Houston Northwest Medical Center, a general, acute-care hospital. The population cohort numbered 1,115 for five months from January, 1981 to April, 1981. This population cohort had the following characteristics:

1. The racial characteristics of the population were 98 percent, white; 1.9 percent, black; and .1 percent, classified as other

2. Thirteen percent previously had been in a hospital

3. Distribution by age categories were 3.7 percent, pediatric (one day to sixteen years); 9.6 percent were sixty-five years of age and over; and 86.7 percent were seventeen years of age to sixty-four years

4. The residency of the population cohort was 96 percent Harris County; 3 percent, Montgomery County; and 1 percent, other counties. The population cohort for this study consisted of those hospitalized patients who meet the criteria of inpatients (cf. definitions of terms) who were scheduled for an intravenous pyelogram after January 1, 1981. The subjects for the study were drawn randomly

Sample

The sample subjects (n = 96), 8.6 percent of the population cohort of inpatients scheduled for an intravenous pyelogram in the study hospital, were chosen, using a random numbers table (Cox 1958:74; Kerlinger 1973:118, 121). Three to five subjects were chosen from the inpatients scheduled each day for an intravenous pyelogram.

The chosen subjects were assigned randomly (Cochran 1963:11; Kerlinger 1973:123) to one of eight blocks (see blocks, below). Random assignments were used to control the effect of uncontrolled variation in the subjects (Cox 1958:77, 85) and to control as much sampling error as possible (Cochran 1963:71-72).

This sample was drawn with the understanding that a population of hospitalized patients may not be representative (Dorn 1955:648) of all populations of all hospitals. Hospitalized patient populations may be biased due to health-illness behavior or previous hospital experiences.

Subject Anonymity

Data were double-coded with numbers to protect the identity of subjects of origin. This procedure consisted of using each subject's medical record number, which was multiplied by a constant, then subtracted by a constant, such constants being known only to the researcher.

Blocks

A randomized block design (Cochran and Cox 1967:106-107; Cox 1958:26-30) was used for this study. The essence of block design is that the experimental material is divided into groups, each of which constitutes a single trial or application. At all stages of any experiment, the object is to keep the experimental errors within each block as small as is practical (Cochran and Cox 1957:16). Block designs were used to eliminate simultaneous variations from a number of sources that could bias the study (p. 43) and to eliminate variations between the blocks as far as treatment comparisons were concerned (Cox 1958:26). The principal advantages of randomized blocks were as follows:

1. More accurate results are usually obtained when block groupings are used than when completely randomized

designs are used (Cochran and Cox 1967:106-107), as block designs eliminate many chances of beta error (Cox 1958:30). Beta error occurs when the null hypothesis is accepted when it should have been rejected. Alpha error infers that a relationship exists when it does not (Zimbardo and Ebbesen 1970:134), or the null hypothesis is rejected when it should be accepted

2. All treatments and any number of replicas may be included in block groupings (Cochran and Cox 1957:106)

3. The statistical analysis is straightforward (Cochran and Cox 1957) and is usually done by an analysis of variance (Cox 1958:28; Insko 1967:346; Kerlinger 1973:147)

4. Cochran and Cox (1957:106) say,

> If the experimental area variance is larger for some treatments than for others, an unbiased area for testing any specific combination of the treatment means can still be obtained.

A three-way analysis of variance required at least eight blocks (see figure 1). The blocks (figure 2) and their variables (see figure 1) were as follows. Block A received teaching material I, was instructed by a nurse not specially trained, and had no prior knowledge of being in the study. Block B received teaching material I, was instructed by a nurse specially trained in the examination of intravenous pyelogram, and had prior knowledge of being

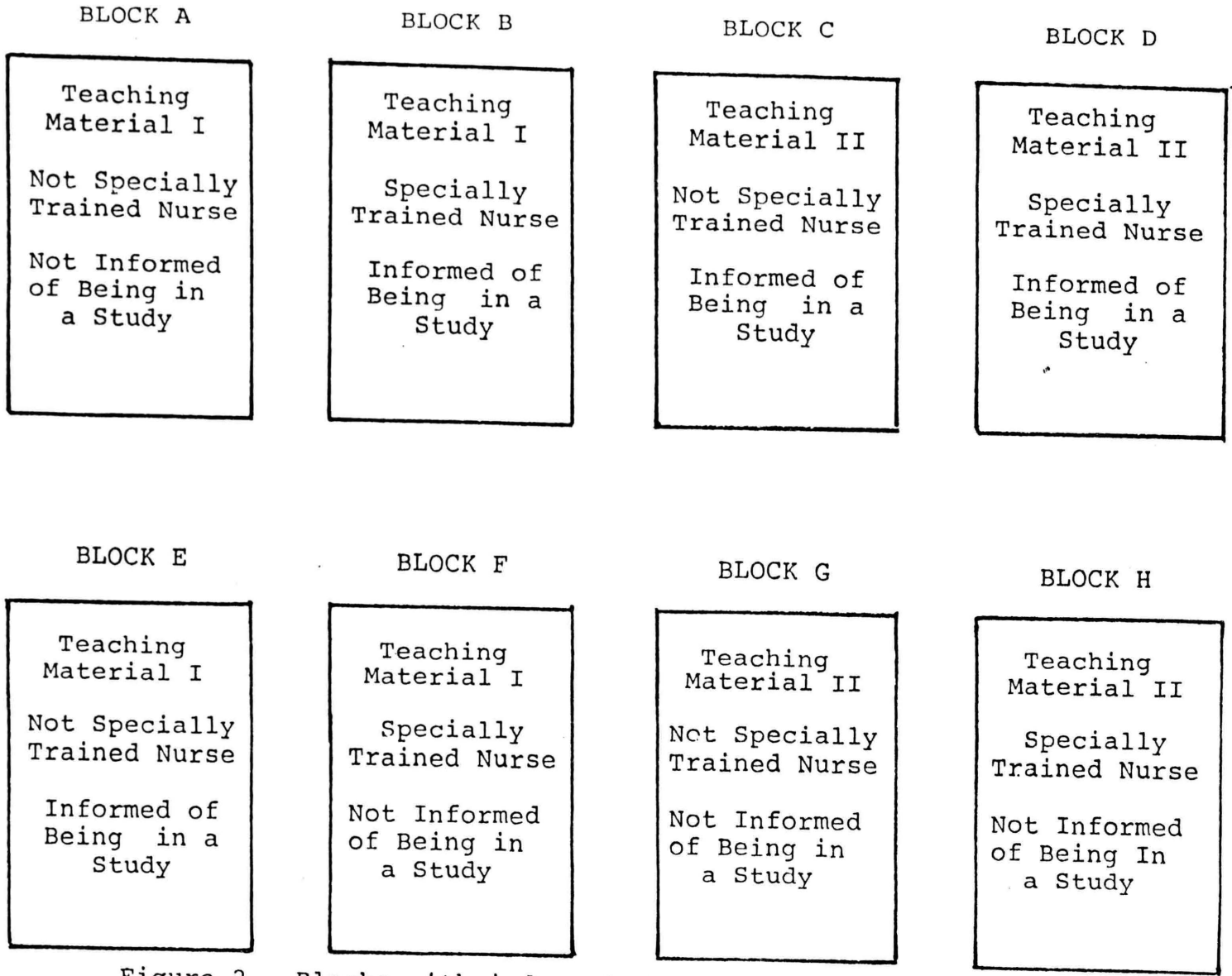


Figure 2. Blocks with independent variables depicted in each block.

in the study. Block C received teaching material II, was instructed by a nurse not specially trained in the examination of intravenous pyelogram, and had prior knowledge of being in the study. Block D received teaching material II, was instructed by a nurse specially trained in the examination of intravenous pyelogram, and had prior knowledge of being in the study. Block E received teaching material I, was instructed by a nurse not specially trained in the examination of intravenous pyelogram, and had prior knowledge of being in the study. Block F received teaching material I, was instructed by a nurse specially trained in the examination of intravenous pyelogram, and had no prior knowledge of being in the study. Block G received teaching material II, was instructed by a nurse not specially trained in the examination of intravenous pyelogram, and had no prior knowledge of being in the study. Block H received teaching material II, was instructed by a nurse specially trained in the examination of intravenous pyelogram, and had no prior knowledge of being in the study.

Instruments

Four instruments comprised the instruments utilized in this study. The four included a patient characteristic questionnaire, appendix D, an attitude survey instrument,

appendix C (it was necessary to have two sets of questions, as one set was asked on one day; another, the following day), and two sets of instructional material, appendixes A and B, for an intravenous pyelogram. The four research tools were accepted as having face validity, consensual validity, concurrent validity, construct validity (cf. Selltiz, Jahoda, Deutsch, and Cook 1959:157-165) and literature validity.

A patient characteristic questionnaire (appendix D), adapted from Pritchett (1977), was used. This questionnaire was presented to the patient in a structured interview (Cohen 1964:128) by the investigator. It was used to gather descriptive information about the patient.

No measurement tool was found in the review of the literature for measuring the attitudes of patients after they had received different instructional materials. It was necessary, therefore, to develop an attitude questionnaire for this study. Kiesler, Collins, and Miller (1969) state that whatever definition or theory is used for attitude, the most common measurement for attitudes is "a pencil and paper instrument"--a measurement technique which does not make direct use of overt behavior, even though attitude test

responses are a kind of behavior (Cohen 1964:4-5; Kibler, Cegala, Miles, and Barker 1974:90).

The two sets of instructional material, appendixes A and B, were comprised of two instructional pamphlets. Teaching material I was the pamphlet presently being used at the study hospital; teaching material II was a new instructional pamphlet written by the investigator and approved for accuracy by the medical director of the radiology department.

Background and Significance

Radiological examinations may appear to the general public as occurrences that take place behind lead-lined doors in a room full of strange machines, with physicians and technologists speaking unknown tongues. Today there are all types of articles and books being written on the dangers of radiation and what can happen to a person if he receives too much radiation. These articles, coupled with stories and tales told by some relative who had a radiological examination, may cause anxiety and stress to one who is scheduled to have a radiological examination. Barnett (1978) concluded that 90 percent of the patients having barium studies had high anxiety levels due to the

examinations being uncomfortable and embarrassing. Barnett's study indicated that the informed patients showed lower levels of psychological stress than the uninformed patients, and by receiving information a great deal of the mystery surrounding radiological testing disappeared.

Kasl and Cobb (1966:61) recognized that the health-illness behavior had two major variables. These major variables were psychological distress and the discomfort arising from the symptoms of a disease. The psychological distress contained a number of variables in which the depression syndrome was further broken into components such as resentment, low esteem, and loss of identity. Anxiety and stress frequently have been associated with the onset of chronic disease (p. 253; Wilson 1970:92-93). Patients with negative feelings or high anxiety levels respond very poorly to an intravenous pyelogram. These patients illustrate the above mentioned variables of the health-illness behavior.

A communication breakdown was recognized by some of the health professionals involved with patient care in the study hospital. Recognizing the problems of the health-illness behavior and the communication breakdowns, the investigator wanted to identify a better method of

instruction for the patient. The better method of instruction would help to alleviate the patient's anxieties and provide a better communication tool between the patient and the health professionals. Instruction is one method to communicate and help the patient's health-illness behavior (Alt 1969:109-115).

The patient's cooperation helps the accuracy of the results of diagnostic studies; and a favorable attitude on the patient's part toward nursing (Risser 1975) and medical care, as well as toward his illness, is a help towards recovery (Tollefsrud 1969:118). The investigator wanted to determine if the patient had a clear, concise, written explanation of the diagnostic test, would the patient understand his responsibility better and be willing to cooperate with his recovery? Written instructions would be less likely to confuse, while verbal instructions are sometimes forgotten (Mager 1968:41). Then, too, if the nurses had a guide to help them teach the patients, a more consistent pattern of teaching would be established (American Hospital Association 1979:350).

Utilizing the tools of two different instructional materials (an informed nurse and structured interviews) to aid in communications, the patient would be able to

cooperate and develop a favorable attitude toward his care. The investigator hoped that the knowledge obtained through this study would be a means of improving patient education and generating greater patient satisfaction.

Limitations

The items that limit the scope of this study were as follows:

1. Selectivity bias is a factor in any study of hospitalized patients (Dorn 1955:648). In the present study, this bias was explained as follows. The subjects used for this experiment came from a general, 365-bed, acute-care hospital, located in the northwest section of Houston, Texas. The population sampled was from the patients entering the hospital for an intravenous pyelogram. Such patients, whether by their own election or that of their admitting physicians, were in this particular hospital for reason(s) which cannot be randomized. Therefore, there may have been bias due to health-illness status, due to rejection of all hospital routine and/or examinations, due to fear of vulnerability to hospital personnel, and due to the short time-frame of one day needed by the investigator to gather the researach data from each subject (p.649-650)

2. The researcher constructed the questionnaires used. The content of these instruments are reasonally, only a sample of questions which might have been asked

Delimitations

The boundaries of this study were as follows:

1. This study did not utilize all instructional materials; only two were used

2. The two materials used were the pamphlet presently being used in the hospital for patient instruction for an intravenous pyelogram (this pamphlet is referred to as teaching material I, appendix A) and a new pamphlet, written by the investigator and approved by the study hospital's medical director of radiology, containing instructions and information about an intravenous pyelogram (this is referred to as teaching material II, appendix B)

3. The choice of a study design was at the discretion of the investigator. The study boundaries were three experimental variables with difference and variation questions. Difference questions make comparisons either between blocks or between measurements within a block (Drew 1978:47). The investigator chose a three-way analysis of variance for independent comparison (Insko 1967:346; Drew 1978:193) as the design for this study

Assumptions

The assumptions made for the purposes of this study were as follows:

1. All of the answers given by the patients on the attitude survey instrument to the investigator were truthful

2. All the patients received one of the two different teaching materials

3. The eight blocks were composed of subjects chosen randomly (Dorn 1955:649). The subjects were scheduled for an intravenous pyelogram

4. The patients in the study met the criterion of being able to communicate verbally in English (see definitions of terms)

5. The nursing personnel presented teaching materials I and II and explained the radiologic examination to the patients. The presentation of the teaching material and the explanation of the examination to the patients by the nursing personnel was assumed, as the investigator did not contact the subjects in four of the blocks until after the subjects had completed an intravenous pyelogram

6. Likert-type measurement scales resulted in interval scale data (cf. Allport 1967:11; Murphy and Likert 1967:39; Likert 1970:154)

Definitions of Terms

The following definitions of terms were used in the study:

1. Analysis of Variance: A statistical procedure which independent comparisons. This statistical procedure will be referred to throughout this study as ANOVA. The results of ANOVA are the sum of squares, the degrees of freedom, the mean squares, the F ratios, and the probabilities associated with each F ratio (cf. Nie et al. 1975:422)

2. Attitude: Beliefs about the nature of an object, person, or group; evaluations of it; tendencies to behave in a certain way; views about appropriate policy with respect to it (Selltiz et al. 1959:146). Attitude is an existing predisposition to respond to social objects, which, in interreaction with situational and other dispositional variables guides and directs the overt behavior of the individual (Allport 1967:279; Shaw and Wright 1967).

Attitude was operationalized in this study by the questions contained in the attitude survey instrument (appendix C)

3. Hawthorne Effect: Change in sensitivity or performance or both by subjects merely because they are part of research (Zimbardo and Ebbesen 1970:137; Drew 1976:214). The potential of Hawthorne effect was measured operationally in this study by having four blocks of subjects knowing they were part of a study and four other blocks of subjects with no knowledge of being part of a study

4. Inpatient: A patient who has been admitted for at least overnight to a hospital or other health facility for the purpose of receiving diagnostic treatment, or other health services (U.S., Congress, House 1976:83). The definition for inpatient for the purposes of this study was a hospitalized individual; not classified as seriously ill or very seriously ill; who is able verbally to communicate in English; who does not have an uncorrected speech, hearing or visual impairment; and was a candidate for an intravenous pyelogram at Houston Northwest Medical Center after January 1, 1981

5. Seriously ill or very seriously ill is defined as needing specially trained nursing personnel to monitor

and use, if necessary, specialized support equipment, because of shock, trauma, burns, major multiple fractures, back injuries with/without spinal cord damage, persistent nausea and vomiting and/or diarrhea, severe pain, temperature greater than 102 degrees F to 105 degrees F, drug overuse and/or apparent or suspected poisoning (Lanros 1978:111) requiring intensified, comprehensive observation and care (American Hospital Association 1976:66)

6. The ability to communicate in English is defined as response behavior exhibited by following English language directons and instructions. This capacity was measured at the affective response level (Kibler et al. 1974:100) by explaining the study in the English language and then asking the subject questions to be answered in the English language

7. Intravenous Pyelogram: The radiological examination of the kidneys and ureters by means of a contrast medium injected intravenously into the patient while X-ray pictures are taken at timed intervals

8. Patient Education: A provision of learning experiences with opportunity or motives for behavior of individual patients, including preventive, diagnostic, therapeutic, and/or rehabilitative services (Peter 1978:6). Patient education in this study was limited to instructions

to patients who are undergoing the radiologic examination of intravenous pyelogram and was measured with respect to the two teaching materials given to the patient by either a specially trained nurse or a nurse not specially trained

9. Structured Interview: A technique designed to elicit information from which valid inferences about the meanings of opinions can be based; the creation of a relaxed, nonjudgmental atmosphere; the emphasis on open-ended questions; the use of probes, of indirect questions, and of interlocking questions (Kelman 1961:58). The structured interviews of this experiment were operationalized using the materials found in appendixes E, F, and G

Summary

The framework of this experiment was a three-factor design, containing eight blocks of patients, with three independent variables. The three variables were two different teaching materials, a specially trained nurse and nurses not specially trained instructing patients, and the patients' knowledge or no knowledge of being part of a study. The study was conducted to determine which of two teaching materials offered the better instruction, the importance, if any, of having specially trained nursing

personnel instructing the patients, and whether the knowledge of being in a study affected the subjects' answers to questions on attitude survey instruments.

The background for this study originated from the observed health-illness behavior of patients with its many psychological factors (Tucker, Breeding, Canobbio, Jacquet, Paquette, Wells, and Willman 1975:7) such as communication, attitude, feelings, and the other complex psychological construct that may be formed through learning, behavior, and cognitive integration (Osgood 1960:359). The stress and anxiety of patients having radiologic testing manifested itself by negative feelings and reactions from the patients toward the testing. The patients having more positive feelings were ones who had received some type and/or form of instruction. The significance of this study is to determine what instructional methods were better received by the patients, and what type of instructor was better received. This knowledge may aid the patients to participate in their health-illness behavior, resulting in a quicker recovery.

CHAPTER III

A REVIEW OF THE LITERATURE

Introduction

This chapter reviews the literature on attitudes, attitude measurement questionnaires, and on patient health education. The objectives of this literature review were to outline the various components of an attitude; to discuss how an attitude changes when it is intervened by two different instructional materials for patient education; and to discuss the certain aspects of health education. The attitude components surveyed were structure, change, behavior and behavior's interralationship to or with an attitude, and the outside influences, variables, and factors of an attitude. A portion of the literature review analyzed health education and the role of health professionals in patient teaching and patient information.

The theoretical framework for the experimental design of this study was conceptualized and operationalized through this review of the literature. Attitudinal and behavioral literature formed the basis for this study's design. This literature defined "attitude" and "behavior" and how they impact on a person's social psychology.

Attitudes are feelings and beliefs held by every person. Attitudes cannot be seen, but behavior can be. The interrelationship between attitude and behavior, and how it impacts on the health-illness behavior of hospitalized patients, offered support for this study design.

Attitude affects behavior, which in turn, impacts on a person's health-illness behavior. Attitudes are relatively stable, can be changed, vary in intensity, are learned, are on a continuum from positive to negative, and have social reference. These attitudinal characteristics allow for intervention in various forms. Education is one method of intervention that can be used to affect an attitudinal change from negative to positive. This study's independent variables were indirectly measured by the construct, attitude.

Attitudes

Definition

The word "attitude" and the definition of what constitutes an attitude has evolved since the 1800s by psychologists trying to describe socially significant behavior. This broad term has been utilized to help explain and to analyze behavior in social or psychological circumstances. Most of the literature in the past has dealt

with attitude and its affect on, or relationship to, behavior. Today social psychologists are starting to examine behavior and how it affects attitudes.

The construct, attitude (Lemon 1973:1, 110) is often used in today's behavioral science literature to account for consistency in social behavior. Attitudes are defined as a way of thinking, acting, or feeling (Barnhart 1968). Dictionary definitions give us a broad perspective, but they do not encompass fully the multifacets of an attitude. The social sciences offer a more precise definition. Sociologists define attitudes as the end-products of the socializing process; that is, how attitudes will significantly influence man through responses to cultural products, to other persons, and to objects around man (Thurstone 1970:128; Murphy and Likert 1967:3). An attitude of a person toward a given object or class of objects may be known (cf. B. Green 1954; W. Green 1954; Rokeach 1960; Sarnoff 1966:279; Triandis 1971:14). This known attitude can be used in connection with situational and other variables to explain the reaction of a person to a particular class of objects (Shaw and Wright 1967). Attitudes are considered to fall within the realm of

personality. However, attitudes are differentiated from other personality constructs on several bases:

1. Attitudes are based on a rational response

2. An attitude is a characteristic which implies a type of relationship between the person and specific aspects of his environment

3. Attitudes differ from other personality constructs in their possession of an evaluative function

4. Attitudes, rather than being overt responses, serve as predispositions to respond overtly. Therefore, as with any mediating variable, it is necessary to measure them indirectly (Drew 1976:108, 216)

Historical Background of the Concept of Attitude

The content of this historical background covered with the following primary references. They are Allport (1969), Allport (1967), and Kiesler et al. (1969).

Less than 100 years ago the term attitude was used with reference to a person's posture. It is only in modern times that the term has taken on a different aspect. Like most abstract terms in the English language, attitude has more than one meaning. Attitude is derived from the Latin

aptus, meaning "fitness" or "adaptedness", connoting a subjective or mental state of preparation for action. The original term "attitude" is preserved in the antiquated phrases of "mental attitude" and "motor attitude" found in 1800 psychology. Mentalistic psychology historically preceded response or motor psychology.

One of the early psychologists who employed the term "mental attitude" was Herbert Spencer (1862). The mental attitude hypothesis held that the forces of the mind forged a set of judgments that opposed or accepted objects. In 1888, Lange developed the concept of motor attitudes. Motor attitude was the process of a perception, of muscular preparation or set; this was also referred to as task-attitude. At about the time of Lange, Munsterberg (1899) developed his action theory of attention, and Fere (1890) maintained that a balanced condition of tensing the muscles was the determining condition of selected consciousness.

A great deal of the work in attitudes in the early 1900s was done in Germany in the Wurzburg school. This school agreed that attitudes were neither sensation, nor energy, nor affection, nor any combination. Many of the terms used today in social psychology originated with the

Wurzburg school where most of the early experimental work was done. Today it is uncommon to explicitly label an attitude to be either mental or motor. The Wurzburg school brought these concepts together under the broad spectrum of social psychology. As a result of the Wurzburg, all psychologists came to accept the concept attitude but not all psychologists believed attitudes to be infallible and irreducible mental elements.

The lack of a general term equivalent to attitude before 1900 lead the German experimentalists in the Wurzburg school to discover many types and forms of an attitude. Titchener (1909) was one of the important leaders in the Wurzburg school. Titchener, in 1899, had no references to attitudes, but ten years later several pages of his Textbook of Psychology contained chapters on attitude and its systematic importance. He worked on the place of attitudes in consciousness. Clark (1911), a pupil of Titchener, found that attitudes in a large part are represented in consciousness through energy, sensation, and affection, and that where no such states are reported, there is presumably merely a decay of the same constituents. No matter how the psychologists disagreed about the nature of attitudes as they appear in consciousness, all investigators, even the

most orthodox, came to admit attitudes as an indespensable part of their psychological theories.

The contribution of the Wurzburg school, and of all its experimental psychologists, was, in effect, the demonstration that the concept of attitudes was indispensable. The discovery that attitudes are, to a large degree, unconscious, however, tended to discourage psychologists from a further study of the problem. The tendency of the experimental orthodoxy was to admit the crucial part played by attitude in mental operations, but consign them to a limbo of motivation, and there all but a few psychologists left them. A few of the experimental psychologists who did work with the unconscious have contributed to modern attitude theories.

The experimental psychologists who wrote on the unconscious formulated diverse ideas. Muller and Pilzeker (1900) called attitude the phenomena of total unconsciousness perseveration. Ach (1905) and Bartlett (1932) reduced largely the phenomena of perception, judgment, memory, learning, and thought to the operation of attitudes. The experiments of Muller and Pilzeker lead Koffka (1912) to postulate the theoretical frame of mind

called "latent attitudes." Washburn (1916) characterized attitudes as "static movement systems" within the organs of the body and the brain.

Freud was the first to resurrect attitudes from obscurity in the early 1900s and to endow them with vitality, identifying them with longing, hatred, and love, with passion and prejudice, in short, with the onrushing stream of unconscious life. The experimentalists established the concept of attitudes in the field of psychology, but without the influence of psychoanalytic idea, the concept would have remained relatively lifeless, and would not have been of much assistance to social psychology.

The first two textbooks in social psychology were both published in the year 1908. One, by Ross, marked the demise of the simple and soverign psychology of imitation-suggestion or instinct hypothesis; the other, by McDougall, marked the commencement of social psychology.

The instinct hypothesis did not satisfy social scientists for long; the very nature of their work forced them to recognize the importance of custom and environment in shaping social behavior. Social scientists required a new psychological concept that would escape, on the one

hand, from the hollow impersonality of custom and social force and, on the other, from nativism. The social psychologists gradually adopted the concept of attitude. Dewey (1917) professed to see in the doctrine of instincts an adequate basis for a social psychology.

Five years later (1922) he no longer found instincts suitable and sought to replace them with a concept that would. He chose habit to express his mixed complex type of mental organization, but admitted as its equivalent either disposition or attitude.

The credit for instituting the concept attitude as a permanent and central feature in sociological writing is assigned to Thomas and Znaniecki (1918). These writers introduced a systematic priority in their study of Polish peasants and their attitudes. This monumental study of attitudes among Polish peasants is considered one of the most influential books in the field of social psychology. Attitudes, according to Thomas and Ananiecki, are individual mental processes which determine both the actual and potential reaponses of each person in the world. An attitude, defined by them, was a state of mind of the individual toward a value. They further defined a social value as "any data having an empirical content accessible to

the members of some social group and a meaning with regard to which it is or may be an object of activity (p. 21)."

Faris (1925) went even further than the work of Thomas and Znaniecki. Faris distinguished between conscious and unconscious attitudes, between mental and motor attitudes, between individual and group attitudes, and between latent and kinetic attitudes. Bernard (1930) prepared a synthesis of the concepts found in the current writings by collective contact and how they had become highly standardized and uniform within a group.

The literature of the 1930s dealt with definitions of attitudes as postulated by different authors following their research. Some of these important authors were Blumer (1939); Murphy, Murphy, and Newcomb (1937); and Caldwell, Lundeen, and Allport (1935).

The 1920s and 1930s experienced a great deal of interest in this new idea of attitudes. Authors advanced on different definitions and ideas of what the word attitude represented. Morgan (1934) believed that attitudes were mental postures or guides for conduct to which new experience is referred, before a response is made. Warren (1934) in his Dictionary of Psychology stated that attitude was a specific mental disposition toward an oncoming

experience. Chave (1920) believed that attitude was a complex of feeling, desire, fears, convictions, and other tendencies that gave a person a readiness to act in a certain manner due to experience. Cantrel (1934) further explored the nature of this readiness idea as it pertained to mental organization.

World War II developed another school of attitude and its relationship to behavior reverting back to Freudian psychodynamic concepts. The post World War II era refined the concepts of the earlier authors in the area of group reactions, though a great deal of the research after World War II was criticized for lack of scientific experimental criteria. These studies did offer ideas and concepts for further study in the 1970s and 1980s. Social philosophers and action-oriented pragmatists have used the concept of attitude, because it offered a theoretical explanation for socially significant behavior. Behavioral relevance to attitudes and their importance in the analysis of socially significant problems can be traced to the above historical roots.

Three steps in the development of the concept of attitude are observed from this brief review of the literature on the historical background of the concept:

1. After the breakdown of individualistic psychology, the phenomena of determination was slowly admitted by psychologists as having an unquestioned standing in experimental psychology. Attitudes came into fashion

2. Under the influence of Freud and psychoanalytic ideas, attitudes became more fully recognized. Psychoanalytic theory demanded information about the unconscious nature

3. In sociological writings there was a gradual turning of interest to attitudes, considered as the concrete representation of culture

General Characterics

Attitudes are said to possess certain general characteristics. These characteristics have been the subjects of extensive research by authors of sociological literature. The following is a synopsis of attitudinal characteristics (Shrief and Cantril 1945; Hovland, Janis, and Kelley 1960; Shaw and Wright 1967; Wilbur 1968):

1. Attitudes are based upon evaluative concepts and give rise to motivative behavior. That is, attitudes are evaluative, effective measures based upon application of evaluative concepts regarding the characteristics of the referent object

2. Attitudes vary in quality and intensity on a continuum from positive through neutral to negative. Qualitative variation of the attitude is represented by the positive or negative intensity; either intensity reflects the evaluation of the object in relation to goal attainment. Attitudes on one side of such a continuum indicate negative reactions and negative approaches, while on the opposite side, attitudes indicate positive reactions which arouse responses of a positive nature. The involvement increases as the atitude goes from neutral toward either an extreme of positive or negative positions on the attitude continuum

3. Attitudes are learned rather than being innate. They are the result of development and maturation. Attitudes are learned through interaction with a social object in social events or situations

4. Attitudes have social reference, or specific classes. These reference needs may not be concrete attitudes, but include abstract objects such as political issues, world problems, and/or the godhead

5. Attitudes possess varying degrees of interrelatedness to one another. They are interrelated to the extent that they possess similar references or similar valences; attitudes which are interrelated cluster

6. Attitudes are relatively stable and enduring. Effective predispositions change slowly. An attitude cannot be expected to change suddenly. The closer the attitude is to the neutral, the easier it is to be altered. The major sources of stability in attitudes are the interrelatedness of the attitudes, the history of reinforcements, and the learning of the attitudes. The possessor of an attitude may actively resist change when contronted with a potential or an actual thwarting of his motives (Shaw and Wright 1967)

The reinforcement concept of attitude change has received greatest emphasis in the work of Hovland and his associates. The reinforcement concept as set forth by Hovland et al. (1960) drew mainly on the principles of learning developed by Hull (1943) and is adapted, according to Insko (1967), to the complex forms of social behavior by Millard and Dollard (1941) and by Dolb (1947). The essence of the reinforcement concept is that attitude change results from learning produced through reinforcement.

Attitude Formation

As an individual experiences a given object, he formulates a set of evaluated beliefs about it. These beliefs may arise from either direct experience with the

object or through indirect experiences and interaction with other persons or objects (Insko and Schopler 1971:22). Beliefs thus formed are relevant to the goal striving of the individual and particularly determine what further beliefs will be formed regarding the object (Shaw and Wright 1967). Beliefs describe the strength of conviction that an object exists (cf. Halloran 1967; Lemon 1973:106). Existing beliefs regarding an object determine what future beliefs may be formed. Some people are able to tolerate inconsistent beliefs and accept different conceptual revelations about the same object. These people are able to evaluate these conceptual revelations positively or negatively at different times and in different situations. The emphasis on consistency is seen in the hypotheses of logical-affective consistency, congruity, belief-congruence, affective-cognitive consistency, and dissidence. Hovland and Rosenberg (1960), according to Insko (1967:347), argue that the motivation to reduce inconsistency can be explained on the basis of reinforcement-produced learning.

Since attitudes are evaluated predispositions, they have consequences for the way people act toward others, for the programs they actually undertake (Bell 1980), and for the manner in which they carry them out. Attitudes are seen

as precursors of behavior, and as determinants of how a person will behave in his daily affairs (cf. Cohen 1964:138; Lemon 1973:6). Acceptance of the predisposition that the attitude object possesses negatively or positively valued atttibutes must be made by an individual before an attitude change can be made by the person toward either an unfavorable or favorable direction. Kiesler et al. (1969) state that attitudes are forged from previous experiences, which is perhaps the least controversial issue in American social psychology.

The amount of feeling associated with an object is referred to as an attitude (Lemon 1973:106). The holding of a particular attitude object perdisposes a person to act in a certain way toward this object; behavior is a consequence of the object (Triandis 1971:16). Behavior may be determined by a complex set of forces so that the effect of any one determinant is contingent upon the number and strength of other determinants operating at any given point. Attitudes are learned, and they are relatively stable. They have a specific reference(s). They vary in direction and intensity. They possess varying degrees of interrelatedness and of scope, and they possess varying degrees of definitiveness (Kiesler et al. 1969).

Behavior

Many studies have been conducted to determine how attitudes affect behavior. Individual differences in response to a variety of situations may be studied in terms of the abstract, attitude. These attitudinal studies suggest that behavioral change can lead to attitude change (Scheflin 1973:4-5). Kiesler et al. (1969) state that a person's psychological process remains fundamentally a state of somebody; an attitude remains fundamentally an attitude toward something.

Even though attitudes are defined with words reflecting a conscious experience, their primary function is to explain the individual's difference in reaction to socially significant objects. Behavior as a consequence of the object can be changed (Insko and Schopler 1971:25). Therefore, no single concept within the whole realm of social psychology occupies a more central position than that of attitudes (Cohen 1964) and its relation to behavior.

Psychologists and sociologists are drawn together in investigating attitudes as a theoretical explanation for socially significant behavior. Scientists such as Hovland (1959), Sherif (1945), and Lipset (1954), according to Cohen (1964), have had an influence on the behavioral relevance of attitudes. The scientists' discussions and definitions have

emphasized the importance of behavior in the analysis of significant social problems, such as why people act as they do and how their behavior can be altered. Attitudes, though they are abstractions, are very real to the individual who holds them. A person may have a very strong attitude for or against something and not realize he has these dormant attitudes. When the individual is presented with an object, these dormant attitudes will make themselves known, thereby affecting the person's behavior. Lemon (1973:3) says that when studying attitudes and behavior, two assumptions must be made. The first is that attitudes are not completely flexible, and that attitudes can maintain a stable form even in the face of changing circumstances. This assumption is necessary in order to clarify that changes in social factors do not lead to immediate changes in attitudes. Behavioral predictions from social structure factors alone will not aid in the prediction of attitude changes. Cohen (1964:109-113) described an experiment carried out by Asch (1951) on the relationship of group factors toward attitudinal change. Asch (1951), according to Cohen (1964), stated that groups have a strong influence on the individual member's attitude. A second assumption necessary in the study of behavior is that an attitude can vary independently of the structural factors. While an attitude may be flexible and resistant to

change, knowledge about this attitude may not facilitate prediction, unless the presence of the attitude in a particular behavioral setting would generate different predictions about behavior than would be produced from knowledge of social structures alone (Cohen 1964). Behavior may vary with the situation.

Knowledge of an attitude would not lead to improved prediction of behavior where the structural factors and the attitude were both leaning in the same direction. Only if an individual had an attitude which was different from one which would have been produced by a given set of structural factors, would this attitude have a demonstrable independent influence on conduct. Merleau-Ponty (1963:125-128) states that behavior, inasmuch as it has a concept of structure is not situated in either the physical, or the internal order, or the external order. Behavior does not unfold in objective time or space.

Interrelationships Between Attitude and Behavior

The components of an attitude have been the subject of a number of studies (cf. Cohen, Brehm, and Fleming 1958; Katz 1960; Hovland 1966; Kelman 1961) centering on the interrelationships between attitude and behavior. The cognitive component of an attitude refers to the way in which the attitude object is perceived and conceptualized.

Cognition, according to Cohen (1964:62-63), denotes the image or map of the world held by the individual person. The individual's responses to persons, things, and events are shaped by the way these objects appear to him (Osgood 1960). The cognitive component represents the individual's picture of the attitude object and his belief about it (Wyler 1974), while the affective component is concerned with the emotional bases of these beliefs and represents the amount of positive or negative feelings that an individual may have toward an attitude object. There is a very strong relationship between the cognitive component of an attitude and the affective component. The way an individual perceives and conceptualizes an object influences the strength of his feelings about it, which should, in turn, influence his overt behavior (Krech, Crutchfield, and Ballachey 1962).

Lemon (1973:17, 207) believes the cognitive and affective part of an attitude is apparent in all attitudes, but in different forms. The degree to which an individual's belief system is integrated is a characteristic of attitudinal structure, and one which is likely to influence its accessibility to behavioral change (Williams 1973). Rosenberg (1960), according to Lemon (1973), experimented with the idea of showing general congruity to exist between

feelings and beliefs, between affect and the affected, between affect and cognition. Rosenberg (1960) assumed that the disruption of structural consistency is a basic condition for the occurrence of attitudinal change.

As the number of studies on attitude and behavior proliferate, so do the possible attitudinal components. Most measures of an attitude are primarily concerned with the affective component as it relates to behavior. Scientists try to measure the degree of affect by an individual toward or away from an attitudinal object (Insko 1967:18-19; Neetlin 1975). Favorable attitudes usually develop toward social objects which fulfill an individual's needs. Unfavorable attitudes usually develop toward social objects which frustrate or block fulfillment of the individual's needs. Communication is a stimulus to all recipients (Cohen 1964:139) and directly affects the interrelationship between attitude and behavior (Tannenbaum 1953). Considering the complexity of the variables affecting an attitude change, it is unlikely that there will be many generalizations applicable to all facets of attitudes and behavior.

The understanding of attitude with its many facets, has imlications in every aspect of living from industry to education, even to advertisements of commercial products.

People want to understand why people act as they do and how their behavior can be changed or altered socially.

Patient Education

Introduction

The social psychologists have been investigating for years the importance of the interrelationship between attitude and behavior as it relates to an individual's life or a group's interactions. Health care professionals are now beginning to comprehend the importance of understanding the concepts of attitude and behavior, and the part they play in the health care of patients.

Significant results have been demonstrated when these attitudinal-behavioral hypotheses were adapted for practical applications. Patients became more positive and cooperative, and recovery from illness was more rapid (Smith 1977:595). Communication, which directly affects the interrelationship between attitude and behavior (Cohen 1963:139; Insko 1971:18-19), has been shown to be the most practical method for applying attitudinal concepts to health-illness behavior. Education through communication is one of the accepted methods for changing attitude and behavior.

Education of patients has been described as a long-overdue obligation toward meeting community

responsibilities (Appelbaum 1977:115). Patient education is considered to be one aspect of patient care (Storch 1976; Skillerin 1977:878; Timmreck 1980). Education enables the patient to participate in his plan of care by understanding what is happening to him and why it is occurring. Frustration and anxiety, formulated by a patient's receiving inadequate information and/or conflicting information, may cause negative reactions and responses to develop toward the hospital, the physician, other health professionals, diagnostic tests or the patient's own disease process (Alt 1969:114). Educational information for patients can be presented using various accepted learning formulas with practical applications.

Learning Theories

Educators have formulated a number of learning hypotheses. One of the earliest hypothesis is called "Mental Discipline," which defines learning as a student's mind being disciplined or trained. A person teaching in this method would assume the student's mind to be bad, neutral, or active, and would instruct in a way that would exercise the student's mind. This method uses a great deal of recitation (cf. Bigge 1964:10). The hypothesis of the Natural Unfoldment is the extreme opposite of "Mental Discipline." Natural Unfoldment holds that the learning of

any person unfolds as nature or a creator has unfolded learning within him. A teacher who adheres to this method would wait for each student to express a desire to learn before the teacher would make any attempt to teach the student. The most widely used hypothesis, "Apperception," is a "process of new ideas associating themselves with old ones that already constitute a mind" (p. 10). A teacher using this hypothesis would start teaching at the beginning, and then, make sure that the student understands the first part before proceeding to the second part.

Twentieth century systematic learning hypotheses are classified into two very broad families; namely, stimulus-response conditioning and the cognitive concept of the Gestalt-field. The stimulus-response supporters are generalized by a belief that conditioning and behaviorism may be used interchangeably. Cognitive field supporters emphasize cognition in learning. The behavioralists, or conditioning supporters, feel learning is a change in behavior that occurs through stimuli and responses becoming related according to mechanistic principles. The cognitive-field supporters feel learning is a process of gaining or changing insights, outlooks, expectations, or thought patterns. To summarize the difference between the two families, stimulus-response (behavioralists) supporters

interpret learning in terms of changes in strength of hypothetical variables, while cognitive-field supporters define learning in terms of reorganization of perceptual, cognitive fields or systems (Bigge 1964:11).

Patient education has been identified in the literature as an important aspect of establishing patient adherence to therapies (Mears 1962). It does not appear, however, that patient education, which minimizes confusion concerning the physician's instructions, can significantly improve adherence to instructions by the patient. However, patients have been shown to comply with instructions more than 85 percent of the time when they were somewhat sure of what was expected of them (Puckett and Russell 1978:38). It appears that a careful explanation of the treatment regime, and adherence-related behaviors expected of the patient may be sufficient to improve compliance to an appreciable extent (Robinson 1974:34-36). When the opportunity to clarify the treatment regime is offered by each member of the health care team, the probability of patient adherence is further increased (Puckett and Russell 1978:37).

The physician's primary function is caring for the patient's disease condition. A nursing function is the patient's perception of his condition (Risser 1975:45; Lewis 1976:20) in order to facilitate the movement of the patient

toward optimal health. These functions, as well as health education, are performed in hospitals as a patient in a hospital is concerned with his health problem. The patient, due to his health problem, will therefore be ready psychologically to accept health instructions (de la Vega 1969:77) from a health educator.

Education and Educators in the Health Field

The educators in the health field, as well as the methods utilized for patient education, are as varied as the people instructing. The individual with the greatest potential as a health educator is the physician (Sommers 1971) due to the patient's perception of the physician as "a healer." Some physicians are making an earnest effort to incorporate patient education into their daily patient contacts, but most physicians feel too busy to take on this extra burden. Specialization in medicine has precipitated this situation (Smith 1977:599). Other health care workers such as nurses, social workers, technologists, have assumed a greater role in educating the patient, as the physician has relinquished gradually part of his educator role. Due to patients' being better educated, patient knowledge about medicine has increased (Currie and Penner 1979:180). This increasing patient demand for more information accentuates

the need for better educators with more effective teaching methods.

Any effective educational program is formulated, using the educational objectives, such as knowledge, comprehension, application, analysis, evaluation, and synthesis. Effectiveness of an educational program is determined by who is receiving the instruction, how they are responding to the knowledge, how they are valuing the knowledge, and how the information is organized (Bloom 1975; Kibler et al. 1974). All of the above mentioned factors (Levin 1978:173) are used in health education. It is insufficient to present knowledge in an explicit manner when the person to whom the knowledge is being presented is unwilling or unable to receive it (Hefferin 1977:75). Teaching plans, after they are formulated, comprise some form of the concept, education. Education encompasses many forms. It can be in verbal form; it can be in written form; it can be nonverbal; or it can be a combination of the three. Robbins (1976) states that patient education is considered an integral part of any health care plan designed to assist the patient to realize the goal of improving his health status.

Communication disruptions sometimes occur between the patient and the health professionals involved in his

care, causing health-illness behavioral problems. This communication problem may occur not only between the nurse and patient, but between the physician and patient (Friesner 1976; Vergara 1978). Differences between hospital staff and patients, whether they are cultural, language, economic, age, or sex, may also cause difficulties in communication. A message may be given to the patient, but the patient may not be able to receive it (Travelbee 1969). An inability or unwillingness to listen by the patients and/or the health care worker hinders communication (Courtney 1974). Patient education, through communication, helps in the total health care of patients (Smith 1977:595), and is a help to relieve some of the fears that surround unfamiliar tests and therapies.

Donabedian (1969:10) pointed out that the patient and the provider of health care services may differ significantly in their perceptions of what quality care is and to what extent it should be presented. Patient satisfaction is one specific approach to quality of care. This literature review has pointed out that, although little is known about patient satisfaction (Hefferin 1977:76), the patient appears to be less critical of the technical component of his care than he is of the attitudinal and situational components (Jonas 1977:401) of his care. These

components of patient criticism focus on provider attitudes, waiting time, the physical environment of care, availability, accessability, and costs (p. 493).

Health care in America is under criticism for a multitude of reasons. One reason for such criticism is the lack of understanding among patients regarding their health conditions and/or services available to assist them with their problems (Bensley and Moffitt 1978:592). Part of this lack of understanding has resulted from poor or insufficient patient education. Patient education is a patient centered activity aimed at assisting the consumer in making intelligent decisions regarding his health care (Johnson 1978:3).

Health education is concerned with knowledge, attitude, and behavior. Effective health education deals with change and growth. The health educator studies attitude to understand why people react as they do and some of the conditions of change (Pratt 1975:3). Bensley and Moffitt (1978:592) state:

> Health education is an integral part of high quality health care. Hospitals and other health care institutions, as focal points of community health care, have an obligation to promote, organize and evaluate health education programs.

This study used the response modification method of instrumental conditioning as one application of the

stimuli-response hypothesis of learning. The methods of instruction were in the form of the written word, as well as, oral communication. Feedback is a method of ascertaining whether the information is being learned, before proceeding to the next step (Bloom 1975:89-115; Friesner 1976). One method of utilizing the stimuli-response theory is through sampling of desired responses by either a series of essay questions, or a structured interview (Bigge 1976:328), as the learners in the behavorial or stimuli-response concept can be either passive or reactive.

Attitude Measurement

The measurement of an attitude is problematic. The construction of the questionnaire, the scaling of the questionnaire, the reliability and validity of the questionnaire, and the statistical analylsis used for measuring the data are vulnerable to criticisms.

The construction of questions designed to measure a patient's attitude toward his education, treatments, or diagnostic testing is difficult and problematic. Bigge (1976) stated that the best method for checking (measuring) stimuli-response is through a series of questions. Basic to

any meaningful measurement of attitude is an adequate formulation of the research questions, and clear definitions of the concepts involved. Construction of questions is dependent on understanding what is being measured (Oppenheim 1966:2; Mager 1968:13). A measurement procedure is a technique for collecting data, plus a set of rules for using the data. Data may be collected in many different ways: by observation of behavior, by questionnaires or interviews, by projected techniques, or by examination of existing records. Some type of coding or scaling system is used to estimate the degree of the individual's favorable or unfavorable attitude. Selltiz et al. (1959:146-147) state:

> The data-collection technique and the rules for using the data to be used, must produce information that is not only relevant but free of systematic errors; that is, they must produce valid information.

Attitude Questionnaires

Attitudes, as discussed in the literature, run a continuum from negative to positive, and as such, are measured in this way. The writing of an item for a questionnaire is a "subtle and frustrating" task (Berdie and Anderson 1974:36). Each question is so clearly worded that all recipients will interpret it the same way (Payne 1951). It is only "by the most painstaking effort, preliminary

trials and revision that questions can be prepared that are entirely clear, and which will mean the same to all respondents" (Berdie and Anderson 1974:36-37).

Attitude is measured through an indirect method (Shaw and Wright 1977:13), as attitude is a construct, requiring the usage of indirect questions (Selltiz et al. 1959:292). Indirect questions require an introduction with an explanation of why the questions are going to be asked of the persons answering the questionnaire. The questions present respondents with a number of answers from which to make their choice (Nixon 1954). An attitude measurement instrument has no questions that can be answered by a "yes" or a "no" (Oppenheim 1966:57).

Kiesler et al. (1969) state that one of the general categories of attitude measurement is a measure in which inferences are drawn from self-reports of beliefs, or behaviors, or the beliefs, behaviors, and attitudes. Attitudes contribute to the overt behavior, so if the stimulus condition is held constant, individual differences of behavior correspond to individual differences in attitude. Whether this is justified in any given case is ultimately a matter of judgement (McKinlay 1972:124; Wallace 1971:3; Rosenstock 1966). Two major questions must be considered whenever making this judgement. They are whether

the instrument is really measuring the kind of behavior the investigator assumes it is, and whether the instrument provides an adequate sample of that kind of behavior (Selltiz et al. 1959:165). Face validity ("the relevance of the measuring instrument to what one is trying to measure is apparent on the face of it") addresses this problem of judgement (p. 165).

Reliability and Validity

A reliable measurement instrument provides similar results whenever the same object is comparably measured. This assumes that there is no reason to believe that the object being measured has, in fact, changed between measurements. Reliability is also stated as the degree to which a scale yields consistent scores when the object is measured a number of times (Murphy and Likert 1967:50; Bohrnstedt 1970:83; Drew 1976:14). In addition to being reliable, a research instrument needs to be valid, thus it is able to make distinctions fine enough for the purpose it is to serve (Selltiz et al 1959:148; Shaw and Wright 1967:561). Measurement of an individual in terms of a given attitude presupposes that the individual can be

appropriately described in terms of that attitude (Selltiz et al. 1959:149).

The reliability of attitudinal questions is problematic, as attitudinal questions are more sensitive than factual questions to changes in wording, contents, and emphasis. Oppenheim (1969:73) says it becomes almost impossible to assess reliability by asking the same question in some other form. The assumption underlying the procedures of using a reliability scale for attitude questionnaires is that there is such a thing as a true attitude, which is relatively stable, just as a case of factual questions are true facts or evidence. A number of questions, or sets of questions, or groupings of questions all basically asking about the same attitude (Moser and Kalton 1971:549) are used to help with reliability. The use of sets of questions (Oppenheim 1966:73), provided they all relate to the same attitude, maximize the more stable components while reducing the instability of the questionnaire due to particular items, emphasis, mood changes, and any environmental components that might interrupt the concentration of the person answering questions on a questionnaire.

Lack of criteria is sometimes given as one of the chief difficulties in assessing the validity of attitude questions (Oppenheim 1966:75). Groups of people who have the same attitude characteristics are needed for pretesting. This is not always feasible, nor can an investigator be sure that the subjects' attitudes are the same (Selltiz 1959:150-154). Individuals' attitudes, according to Oppenheim (1966:74), may be present or dormant, and can be made more positive or negative by the questions, or the form of the questions on the questionnaire (p. 106). Attitudinal questions use a rational approach, and stilted questions are avoided (p. 114). Many people are quick to challenge the reliability and validity of attitude questionnaires, but a well designed questionnaire and a carefully formulated study design will minimize any negative effects that may arise (Shaw and Wright 1967:567). The statistical tool of factor analysis was utilized to help access the validity of this study's attitude instrument.

The validity of a questionnaire is concerned with whether or not the items actually elicit the intended information (Shaw and Wright 1967:18; Murphy and likert 1967:53; Zimbardo and Ebbesen 1970:131; Bohrnstedt 1970:91). Questionnaire items are valid, if they are successful in

eliciting true responses relative to the information desired (Goode and Hatt 1962:386). Lemon (1973) states that validity in its simplest form is "the degree to which a scale measures what it is supposed to measure." Lemon (1973), and Shaw and Wright (1967:18-20) state there are four procedures for estimating the validity of an attitude instrument. The four procedures listed are predicted validity, concurrent validity, content validity, and construct validity. There are other types of validity, such as face validity and consensual validity, not mentioned by Lemon and others. Predicted validity is estimated by showing how accurately the researcher can guess some future performance on external criteria from a knowledge of the attitude per score. This is sometimes referred to as administrative validity. Concurrent validity differs from predicted validity primarily with regard to the time at which the criterion measure is attained. Content validity is evaluated by determining the degree to which the times in the scale sample the content of the attitude, i.e., the attitude scale corresponds to the degree to which the content of the attitude system is shown. Construct validity is evaluated by the determination of the relationships between the attitude scores and other aspects of the personality (Selltiz et al. 1959:157-163). Face validity is

evaluated by the investigator's making the judgement that the questions on the instrument say what the investigator wishes them to say. Consensual validity is evaluated by the person who, because of his position, has the authority to give his consent for the instrument; the person doing the consenting has, as part of his role or position, the capacity to give validity to an instrument.

Attitude Scales

The construction of a scale to measure the responses to the questions follows the construction of a questionnaire in the scientific process. The methodological controls of the scientific process annihilate the individual's standpoint, not by an impossible effort to substitute objectivity in a liberal sense, but by substituting rules for intersubjective criticism, debate, and ultimately agreement. The rules for constructing scales, drawing samples, taking measurements, estimating perimeters, logically inducing and deducing becomes a primary basis for criticizing, rejecting, and accepting items of scientific information (Wallace 1971:14)

Attitude scales are relatively crude measuring instruments. Their chief function is to divide people roughly into a number of broad groups with regard to a

particular attitude (Oppenheim 1966:121). Attitude scales differ in method of construction, method of response, and basis for interpreting the scores. Some scales offer a technique for placing people on a continuum in relation to one another in relative (ordinal and nominal level) and not absolute terms (Selltiz et al. 1959:357). Other scales have all the properties of a scale of number. A scale of number is decided in order to statistically manipulate data. The properties of a scale of number are nominal (each number is an entity), ordinal (each number is greater than another), interval (each number is equidistant), and ratio (each number has a zero point that does not signify total absence of the object being measured) (Summers 1970:11-12). Scales run a continuum from positive to negative. The scale for this study read strongly agree, agree, uncertain, disagree, and strongly disagree; strongly agree being positive, and strongly disagree, negative. This continuum was used to measure the attitude. The data for this study was interval data. An attitude, as an "inferred construct," cannot be measured directly in any literal sense. The scale chosen to measure attitude for this study was a standard Likert scale.

Indirect measures for obtaining data on attitudes gained popularity in the 1960s as opposed to the direct method of obtaining data, such as the use of paper and

pencil, and self-reporting method; but the indirect data gathering measures have not shown any greater reliability than the simple scaling methods (Seiler and Hough 1970). The indirect data gathering measures have simply made it more difficult to interpret the results. The Thurstone scale is a form of indirect data measurement (Selltiz et al 1959:359-160). The Likert scale (Murphy and Likert 1967:281-292) was formulated in 1932 to improve on the cumbersome Thurstone scale. A standard Likert scale was selected as the attitude measurement scale for this study because of its relative ease of administration and scoring, relative simplicity on construction, potential reliability with relatively few items, and relationship to the behavioral criteria (cf. Likert 1967; Oppenheim 1966:140; Tittle and Hill 1967; Warner and DeFluer 1969:156; Risser 1975:46).

The standard Likert scale has its disadvantages, but its advantages outweigh its disadvantages, and it correlates well with scales that have been done with much more complex factors. Likert's (1932) primary concern was unidimensionality--making sure that all the items measure the same thing, according to Oppenheim (1966:140). Murphy and Likert (1967) also wanted to eliminate the need for judges for scales, as required by Thurstone, by having the

subjects in a trial sample place themselves on an attitude continuum for each subject. In the Thurstone scale (Thurstone 1967), there is a need for judges; the scale is also much more cumbersome and complex, and has been shown to contribute nothing reliable (Edwards 1967; Edwards and Kenney 1967:252). Within limits, the reliability of a scale increases as the number of possible alternative responses is increased (Likert 1970:154); the Likert scale items permit the expression of several (usually five) degrees of agreement-disagreement, whereas, the Thurstone scale items allow a choice between only two alternative responses (Selltiz et al. 1959:368). The Likert scale gives a greater degree of intensity and confidence, because the questions on the questionnaire give the person a chance to fully answer the question and does not limit him to choosing only one or two alternatives (Edwards and Kenney 1967:255). Likert developed a five-category rating system as follows: Strongly agree, agree, undecided, disagree, and strongly disagree. The interpretation of Likert's score is based upon the distribution of the scores, i.e., the score has meaning only in relation to the scores accumulated by others.

Scales such as the Likert are the easiest scales to construct. They make fewer assumptions, and it is easier to

devise suitable items. The content is less likely to be unrepresentative than other scales because of the method of selection of item analysis (Lemon 1973). The Likert scales provide interval level data (Murphy and Likert 1967:39; Likert 1970:154).

The attitude survey instrument for this study was administered as a structured interview (appendix G). As a method for obtaining reliable information, Lemon (1973) states that respondents to a survey instrument are to be led through the material in as coherent a way as possible, i.e., questionnaires have a natural sequence to the questions; the questions are made to be as meaningful as possible to the respondent with a beginning, a middle, and an end; do not jump from one subject to another; are understandable to the respondent taking the test; that is, the respondent knows exactly what is expected of him. Attitude statements are better received if they are interesting and, if possible, even exciting to the respondent (Oppenheim 1966:113). The construction of the attitude survey instrument for this study was problematic. The criterion used for the selection of the items on the questionnaire was to demonstrate the patient's attitude toward the three independent variables stated in Purposes in the Design Chapter.

Summary and Conclusion

Historical Perspective

Attitude originated as a term to describe a person's posture. It evolved from this beginning to our present understanding through the work of the early psychologists, especially those in the Wurzburg school and Freud (1900). These early psychologists, according to Allport (1969), planted the idea for one of the most important constructs of social psychology.

Social psychologists in the 1900s discovered in the concept of attitude a new psychological concept to help them to understand man as a social creature. Thomas and Znaniecki (1918) are credited with instituting the idea attitude in the literature. The 1920s and 1930s experienced another burst of literature on attitudes by Dewey (1922), Faris (1925), Cantrel (1924), Allport (1935), and numerous other psychologists (cf. Allport 1966; Allport 1967; Kiesler et al. 1967).

World War II, with its war production problems, and with war propaganda demonstrating the importance of group interactions, introduced a new type of social psychologist such as Hovland and his associates. These social psychologists began evaluating world problems using the

concept of attitude. Social and group interactions, attitudes, beliefs, and behavior have taken on greater significance, as the world became more densely populated and more complex. The problems presented to social psychologists by a "shrinking world" accentuate further the importance of why people act as they do. This understanding of behavior helps in the prediction of why and/or how people might act when presented with similar situations.

Patient education, and its significance in health-illness behavior, has been studied for a relatively short period of time. There has been a dramatic increase in the literature on patient education, and it role in health-illness behavior, in the last ten years. Authors such as Baker (1967), Breen (1968), Alt (1969), Lesparre (1970), Hegyvary (1976), Robbins (1976), Kraus (1977), Hefferin (1977), Jonas (1977), Hinthorne (1978) and Jenny (1979) have emphasized the importance of educating the patient in order to help the patient participate more fully in his health situation, whether it be preventative or therapeutic.

Theoretical Basis

Attitudinal definitions given by Cantril (1932), Graham (1942), Sarnoff (1966), Shaw and Wright (1967),

Murphy and Likert (1967), Barnhart (1968), Greenwald, Brock and Ostrom (1968), Thurstone (1970), Triandis (1971), Thomas (1971), Lemon (1973), and Drew (1976) tell us that an attitude is the way a person tends to interpret, to see, to feel, or to define a given situation. Shrief and Cantril (1945), Hovland et al. (1966), Shrief and Shrief (1956), Shrief, Shrief, and Nebergall (1965), Insko (1967), Shaw and Wright (1967), Wilbur (1968), Fishbein and Icek (1975) further break down the construct, attitude, into general characteristics of interrelatedness, intensity, evaluativeness, and stability. These characteristics help to understand attitude formation. Cohen (1964), Insko (1967), Kiesler et al. (1969), Insko and Schopler (1971), Triandis (1971), and Lemon (1973) say that attitudes are formed as an individual experiences a given object. These formed beliefs have a consequence for the way people act. Attitudes are seen as precursors of behavior.

The theoretical explanation for behavior given by such authors as Katona (1958), Sherif (1945), and Hovland (1966) see behavior as a consequence of an individual's attitude to a given object. Kiesler et al. (1969), and Merleau-Ponty (1963) see attitudes as contributing to overt behavior. Behvioral change requires an attitudinal change as stated by Cohen (1964), Kiesler et al. (1969), and

Scheflin (1973), as behavior is dependent on an individual's attitudinal perception of an object. The direct interrelationship between attitude and behavior was proposed by Krach and Crutchfield (1948), Cohen et al. (1958), Katz (1960), Kelman (1961), Krech et al. (1962), Cohen (1964), and Lemon (1973). Insko (1967) addressed the degree of affect by an individual toward or away from the object as it related to behavior.

The means of changing patient attitude, and thus behavior, is divided into the patient's perceptions of health care, reasons for disruptions in communication, patient care, hypotheses of education, and learning concepts. The importance of patient perceptions was described by Donabedian (1969), Lebow (1974), Millon (1955), Hefferin (1977), Jonas (1977), Johnson (1978), and Bensley and Moffitt (1978). The authors speculated that patient perceptions impact directly on the patient's care. The idea that patient care is a function of everyone in the health care field, with patient education being one aspect of this care, was postulated by Alt (1969), de la Vega (1969, Storch (1976), Robinson (1974), Risser (1975), L. Lewis 1976), Robbins (1976), Skillerin (1977), Appelbaum (1977), and Puckett and Russell (1978). The reasons for disruptions in communication between patients and health care workers, such

as language, cultural, age, sex, or economic, were identified by Travelbee (1969), Courtney (1974), Friesner (1976), and Vergara (1978), and how these disruptions, through education (cf. Fuchra 1976; Freeman 1978; Gulko 1978; Godlove 1977) might be corrected. These disruptions in communication affect adversely all aspects of patient care.

A person studies learning and educational concepts instituting an education program, whether it be for hospitalized patients or for school children. Gilbert (1962), Mager (1968), Bigge (1964), Mager (1973), Kibler et al. (1974), and Pratt (1975) have identified some of the general educational and learning concepts formulated through the years. These concepts are "Mental Discipline," Natural Unfoldment, "Apperception," stimuli-response condition, and cognitive field. Bloom (1959), Krathwohl, Bloom, and Masia (1964), and Kibler et al. (1974) listed educational objectives used for an effective teaching method. Some of these objectives are knowledge, comprehension, application, analysis, evaluation, and synthesis. Bigge (1976) and Friesner (1976) stated that stimuli-response supporters believe learning to be a change in behavior that occurs through stimuli, and responses becoming related to mechanistic principles.

Experimental Design

Any experimental study dealing with hospitalized patients is problematic (Dorn 1955), as patient populations may not be homogeneous, may be biased, and conclusions may not generalize to all populations. The health-illness behavior (Kasl and Cobb 1966) of hospitalized patients are formed directly from the attitudes of these patients. The understanding of the construct, attitude, with all its facets, especially those involving patients, plays a role in the care of patients (Appleweig 1977; Bilee 1977; and Boddie and Weiss 1969). The idea that attitudes are learned, can be changed, and are interrelated to behavior is the basis for this study and experimental design.

A positive attitude has a positive effect on hospitalized patients (Wichita 1980), helping the patient toward a faster, more successful recovery. Understanding therapies, treatments, and tests helps patients to overcome their negativity and bias. Kasl and Cobb (1966) discussed a patient's health-illness behavior, and the effect a positive attitude has on health-illness behavior. Communication between patients and health-care workers was shown to aid in the patient's recovery (cf. Alt 1969; Wilson 1970; Tollefsrud 1969; Becker 1974; Robbins 1976; Robinson 1976;

Barnett 1978; Talarico 1978), in that it can impact on the patient having a positive or negative attitude.

This study was designed with three independent variables, which were two teaching materials, two types of instructors and subject knowledge or no knowledge of being in a study; with one dependent variable, attitude; and four covariates, age, previous hospitalization, previous intravenous pyelogram, and sex. The choosing of a population cohort for the study, and the sampling technique of randomization were chosen after reviewing the literature of the following authors, Dorn (1955), Cox (1958), Cochran and Cox (1957), Cochran (1963), Buckly (1968), Kerlinger (1973), and Drew (1976). A block design was used (cf. Cochran and Cox 1967; Cox 1958; Insko 1967; Zimbardo and Ebbesen 1970), as block designs offer more accurate results, replication of any number of treatments, analysis is straightforward, and reduces experimental variances.

An instrument to measure attitude was formulated specially for this study to measure attitude; and it was determined that the instrument had face validity, consensual validity, literature validity, content validity, concurrent validity, and predicted validity. Reliability assessment was attempted. Questionnaire construction (cf. Morton 1930; Getzels 1958; Selltiz et al. 1959; Cohen 1964; Oppenheim

1966; Murphy and Likert 1967; Kiesler et al. 1969; Shaw and Wright 1967; Moser and Kalton 1971; Berdie and Anderson 1974; Pritchett 1977), proceeded from formulating a research question; understanding the concepts involved; deciding on a data collection technique; deciding on a scaling method; constructing the questions; deciding on a method of statistical analysis; and deciding on a means of expressing conclusions.

The question of what method to use to scale the respondent's answers was decided after reviewing the literature of Edwards (1957), Selltiz et al. (1959), Oppenheim (1966), Edwards and Kenney (1967), Murphy and Likert (1967), Likert (1970), Kibler et al. (1974), and Barnett (1978), in order to choose a scale that was reliable, simple to construct, easy to administer, and easy to score. The decision was made to use a Likert scale for all the stated reasons.

The statistical literature was reviewed in order to choose a method for the statistical analysis that was appropriate for the study's design. The three-factor design of difference of this study, and the need to validate the instrument favored the usage of principal-components analysis (factor analysis), and analysis of variance (ANOVA). Factor analysis was used as one criterion for

determining the validity of the attitude instrument (cf. Kerlinger 1973; Nie et al. 1975), and to produce standardized scores from the raw data. An ANOVA, the most appropriate statistic for determining differences between variables (cf. Cox 1958; Cochran and Cox 1957; Scheffe 1959; Blalock 1960; Insko 1967; Kerlinger 1973; Drew 1976), used the standardized scores to analyze the data. The level of significance was set at the confidence level of $p \leq .05$ (Spiegel 1961:168; Drew 1976:174).

The cited empirical literature provided the theoretical bases for the study; the definitions of the study's concepts; the methods for overcoming problematic sections of the design; the means to statistically analyze the study's data; and the criterion for determination of conclusions. The experimental design for this study was formulated from the empirical literature. The formulated design attempted to overcome the problems of bias, rejection of hosptials, fears, and lack of population homogenity associated with studies using hospitalized patients.

CHAPTER IV

METHODS

Introduction

This chapter discusses the procedures utilized in this research project. The sampling of the population, the type of attitude scale, the use of pilot studies, the method for tabulating the subjects' answers, and the processing of the data are all parts of the methods of this study. These components are discussed as follows.

Sampling

Most inferential techniques rest on the assumption of a randomly sampled population, a sample whose members were chosen on a purely random basis (Kerlinger 1973:118; Sudman 1976; Downie and Starry 1977:59). Johnson (1977:165) states, "In a random sample, not only do all individuals have an equal chance of selection, but all combinations of individuals are equally likely as well to be chosen." Random sampling (Oppenheim 1966:21; Williams 1978:227) does not totally insure that all of the population characteristics will, in fact, be represented in the sample. However, since chance is used to construct the sample, random sampling substantially reduces the possibility that a

biased or unrepresented group will be selected. This reduction of the described population will be fairly homogeneous with regard to its characteristics (Drew 1976: 126).

This study used randomization (cf. Kerlinger 1973: 123) in two instances. One was for assignment of numbers to blocks. Such numbers determined the block of subjects chosen by the second procedure, which was for purposes of scheduling the sample. The procedure for assigning the numbers to the blocks was as follows:

1. The numbers 1, 2, ..., 96 were chosen by means of a table of random numbers

2. The first number so chosen from the table was assigned to Block A; the second, to Block B, and so on until each number, 1, 2, ..., 96, had been assigned to a block

Sample subjects were chosen randomly each day from the population cohort scheduled to have an intravenous pyelogram, as follows:

1. A list of all inpatients scheduled for an intravenous pyelogram was obtained from the radiology department at 4:00 P.M.

2. The names on the list were numbered; the first name was given the number one, the second, two, and so on until every person on the list had a number

3. Using a table of random numbers, five numbers were selected

4. The persons on the list that coincided with the numbers selected were the subjects (provided they agreed to participate in the study) for that day

5. The selected subjects of each day were then assigned in order 1, 2, ..., 96 to the blocks which were determined by step one to have such assignment. For example, the first subject selected from the daily population cohort on the first day of the study was assigned to the block where the number one had been assigned randomly; the second subject selected, to the block where the number two had been assigned, etc. These random assignments into blocks helped to control bias of the investigator and/or the subjects

Consents

Any person not having attained the legal age of consent and/or had a legally appointed guardian was considered a minor. The approval for a minor to be a subject in this study was obtained from the minor's guardian, and if possible, from the minor. All subjects, not considered

minors, were asked to give their consent to participate in this study (appendix E).

Pilot Studies

Two pilot studies of (cf. Drew 1978:132: Risser 1975:47) were initiated for a two-week period in order to test the wording of the characteristic and attitude surveys, the order of the questions on the surveys, the content of the structured interviews, the time required to interview patients, and whether the nursing personnel were instructing patients for an intravenous pyelogram. The pilot studies consisted of twenty-four subjects sampled randomly from the population cohort scheduled for an intravenous pyelogram during the two-week period of the pilot studies. The number of subjects (n = 24) for the pilot studies was chosen because this number allowed three subjects per block, and could be finished within the designated time of two-weeks. The pilot studies replicated the study in order to meet the objectives stated for the pilot studies.

The results of the pilot studies indicated that there was a need for changes to be made, as follows:

1. The three-factor design of the study with the eight blocks appeared to be manageable for the investigator

2. The wording of the characteristic and attitude survey instruments needed revisions. Technical terms such as "radiological" and "intravenous pyelogram" needed to be in the vernacular of the patient. The word "X-ray" was substituted for "radiological" and "I.V.P." was substituted for "intravenous pyelogram"

3. The order of presenting the questions also required changes. These changes made the questions flow better and the patients seemed to better understand them

4. The content of the structured interviews required only minor corrections. The pilot studies demonstrated the definite need for structured interviews, as the subjects continually wandered from the matter under discussion. The patients wanted to discuss all their tests, disease process, and examinations. The investigator continually had to turn the conversation back to the subject of the patient's intravenous pyelogram examination. Continuous reaffirmation of what was the subject, was necessary for nearly every patient

5. The length of time necessary to complete each subject was determined by the pilot studies to be about an hour per subject. This length of time was unexpected by the investigator. The time factor appeared lengthy due to the structured interviews, the subject's affinity to

continue to wander off the topic, and the subject's need for reassurance and companionship. One subject needed help with her lunch; another needed an emesis basin as she was nauseated, and a few others required the investigator to do minor nursing duties

6. The nursing personnel were found to be providing the patients with instructional materials and with some instruction about an intravenous pyelogram. Each patient interview demonstrated the need for making some revision, and this was noted. The instruments were pretested and revised until no further discrepancies could be detected. This gave the instrument's administration validity

Processing the Data

The data were obtained from the subjects by administering two survey instruments. The attitude survey instruments utilized a Likert scale of measurement for gathering the attitude data (see attitude scales in literature). The data obtained from Likert scale were considered to be of interval level. This conclusion has been widely accepted (Allport 1967:11; Edwards and Kenney 1967:245; Murphy and Likert 1967:39).

The information, obtained by the investigator through structured interviews with the patients, was placed

on optical scanning cards. Optical scanning cards are a data processing tool that facilitates rapid computer tabulation. The person administering the structured interviews to the patients marked with a No. 2 pencil the areas that corresponded to the patients' responses. An "A" on the optical scanning card was marked if the patient said he strongly agreed with the question on the questionnaire; "B" was blackened when the patient said he agreed with the question; "C" was blackened when the patient's response was uncertain; "D" was blackened when the patient's response was disagree; and "E" was blackened when the patient's response was "strongly disagree." Upon completion of the research, the optical scanning cards were taken to the computer area and used to compile the patient raw data files. These patient files were statistically manipulated, results were tabulated, and conclusions were then drawn from the statistical analysis.

Summary

This section has dealt with the procedures or methods used to complete this study. The question of how the sampling of the population was accomplished was addressed through random sampling using a random numbers table. Pilot studies were conducted in order to test the

wording of the instruments, the order of the questions on the surveys, and the content of the structural interviews. A paper and pencil (cf. Cohen 1964:5; Berdie and Anderson 1974:39) test given in a structured interview by an investigator was the means utilized for measuring the patient's attitude, as self-reporting tests have been found to give the greatest reliability in the formation of reporting an attitude (Oppenheim 1966:30-36). Optical scanning cards were used as a means of compiling the data. These data were compiled by the computer into patient, raw data files; these raw data files were manipulated statistically; and the results of this manipulation were the bases for the conclusions of this study.

CHAPTER V

FINDINGS

Introduction

The dependent variable, attitude interacted with the independent variables, teaching materials, types of instructors, and knowledge of being in a study. The data were interval level. The attitude survey instrument used principal-components analysis, producing factors (factor analysis) (cf. Kerlinger 1973:659-660, 662) as a method of validation, and from this analysis, factor scores were obtained. These factor scores were computed from the raw data file; they provided the data for an analysis of variance (ANOVA) (p. 257-258; Nie et al. 1975:422). The ANOVA yielded the sum of squares (SS), degrees of freedom (df), mean squares (MS), F ratios, and probabilities associated with each F ratio. The F ratios were the criteria for determining the significance of the interactions between each variable. Characteristics of patients were constructed as the variables, age, sex, previous intravenous pyelogram, and previous hospitalization, and were used as covariates. Covariates are variables that

vary together and are analyzed by the relation between the sets of variable scores. The level of significance was set at the $p \leq .05$ level (cf. Drew 1976:174). This level of significance means that there were about five chances in one hundred that a null hypothesis would be rejected when it should be accepted (Alpha error). The statistics produced are reported. These statistics will be used as the criteria for answering the questions posed. Such questions were: are there significant differences or variations in the attitudes of hospitalized patients undergoing an intravenous pyelogram when:

1. The patients receive one of two different instructional materials?

2. The patients are instructed by a specially trained nurse as opposed to nurses not specially trained?

3. The patients know they are part of a study as compared with patients who have no knowledge that they are part of a study?

Analysis of the Data

Factor analysis was used to test the validity of the questions on the attitude survey questionnaire. Factor analysis extracts common factors from sets of measures (cf. Kerlinger 1973:659). Factor analysis is a method for

determining the underlying variables from sets of measures. Factor scores obtained from the factor analysis of the data indicated that the questions on the attitude survey instrument clustered according to the independent variables, teaching materials, types of instructors, and knowledge of study, except for Question 5 (see table 5). Analysis of variance,(ANOVA), a parametric statistical procedure, was used for determining differences in variation between variables and the interactions of the above named independent variables with the dependent variable, attitude. ANOVA is a powerful method for identifying, breaking down, and testing the statistically significant variance that comes from different sources of variation (p. 147). A factoral study design such as this one, with a 3 x 2 design, is best analyzed by an ANOVA because a factoral design testing three hypotheses at one time is measured more precisely and exactly (p. 238) by ANOVA.

Results

The raw data were first analyzed using factor analysis (cf. Kerlinger 1973:659). Two factors (Factor 1 and Factor 2) resulted from this analysis and were rotated by the varimax method (varimax centers on simplifying the columns of a factor matrix; defining a single factor) (cf.

TABLE 5

VARIMAX ROTATED FACTOR MATRIX FOR TWENTY VARIABLES LOADING ON TWO FACTORS, TYPE OF INSTRUCTOR AND TEACHING MATERIALS

VARIABLES	FACTOR 1	FACTOR 2
Variable 01	0.16106	0.87825
Variable 02	0.10507	0.92061
Variable 03	0.16503	0.86735
Variable 04	0.15153	0.90996
Variable 05	0.13655	0.19125
Variable 06	0.06273	0.90219
Variable 07	0.11385	0.92016
Variable 08	0.15584	0.87466
Variable 09	0.04102	0.76763
Variable 10	0.08646	0.68012
Variable 11	0.93121	0.12050
Variable 12	0.87590	0.10547
Variable 13	0.87321	0.13373
Variable 14	0.91215	0.08428
Variable 15	0.65732	0.19167
Variable 16	0.92137	0.15359
Variable 17	0.93551	0.12574
Variable 18	0.94727	0.02288
Variable 19	0.86522	0.00672
Variable 20	0.74441	0.01816

Note: Factor 1 = Type of Instructor
Factor 2 = Teaching Material

Variable 1 = Quality	Variable 11 = Quality
Variable 2 = Accuracy	Variable 12 = Accuracy
Variable 3 = Relaxation	Variable 13 = Relaxation
Variable 4 = Quantity	Variable 14 = Quantity
Var. 5 = Nervous Feelings	Var. 15 = Nervous Feelings
Var. 6 = Satisfaction	Var. 16 = Satisfaction
Var. 7 = Suff. Quality	Var. 17 = Suff. Quality
Var. 8 = Positive Feelings	Var. 18 = Positive Feelings
Var. 9 = Security	Var. 19 = Security
Var.10 = Additional Info.	Var. 20 = Additional Info.

Nie et al. 1975:485) (table 6), and an orthogonal (p.470) rotation which maintains the independence of factors. One question, Question 5, did not factor load (or correlate) on either Factor 1 or Factor 2 (see table 5). The criterion for determining whether a question correlated (loaded) significantly on any factor was to use any question that had a coefficient of .40 or higher, regardless of sign (cf. Kerlinger 1973:662).

Factor 1 was judged by the investigator, through inference and grouping, as being a composite measure of the subjects' attitude toward two types of instructors (this judgement was made using commonality of the questions, cf. Kerlinger 1973:661). The questionnaire items with significant factor loadings on Factor 1 (going from greatest correlation to least correlation) were Questions 18, 17, 11, 16, 14, 12, 13, 19, 20, and 15. Question 18 (.94) dealt with positive feelings toward instructions; question 17 (.93) dealt with sufficient quality of instruction; question 11 (.93) dealt with sufficent quality of oral information; question 16 (.92) dealt with the feelings of the subjects toward the oral information; question 14 (.91) dealt with an adequate quantity of oral information; question 12 (.87) dealt with the accuracy of the oral information; question 13 (.87) dealt with the feeling of

TABLE 6

TRANSFORMATION MATRIX FOR FACTOR 1, TYPE OF INSTRUCTOR, AND FACTOR 2, TEACHING MATERIALS

	Factor 1	Factor 2
Factor 1	0.78888	0.59348
Factor 2	-0.60159	0.79872

NOTE: Factor 1 is TYPE OF INSTRUCTOR.
Factor 2 is TEACHING MATERIAL.

security; question 20 (.74) dealt with need for more information; and question 15 (.65) dealt with feeling nervous about oral information. Factor 1 was named type of instructor. This name was chosen as the questions correlating on Factor 1 dealt with types of instructors.

Factor 2 was judged (by the investigator in the manner described above) as a measure of the subjects' attitude toward two teaching materials. Nine questions had significant factor loadings on Factor 2. These, going from greatest correlation to least correlation, were Questions 2, 7, 4, 6, 1, 8, 3, 9, and 10. The most significant factor loading (.92) was on question 2, teaching material describing the test; the, question 7 (.92), quality of teaching material; question 4 (.90), adequate quantity of information; question 6 (.90), pleased with material; question 1 (.87), overall quality of teaching material; question 8 (.87), positive information; question 3 (.86), relaxing information; question 9 (.76), security; and question 10 (.68), more available information. Factor 2 was named teaching material, as the questions that correlated on Factor 2 made operational the variable, teaching materials.

It was determined by studying the factor matrices that these matrices (coefficients that express the relations

between the test and the underlying factor) yielded factors resembling the variables, teaching materials and types of instructors, being measured by the attitude survey questionnaire. This resemblance of the factors (teaching material and type of instructor) to the variables, teaching materials and types of instructor, of this study design helped to give the attitude survey instrument content validity. The comparison of the questionnaire items through factor analysis, with two of the independent variables indicated criterion related validity for the attitude survey instrument. These findings assisted with determining the validity of this study's untested questionnaire instrument.

Two standardized factor scores for each individual were developed from the raw data file (cf. Nie et al. 1975:487). These factor scores, standardized variables (p.489) representing the dependent variable, attitude, were developed into a data file of standardized scores. The factor scores (labeled Facs 1 and Facs 2 in this study) were then used for the statistical computations of the ANOVA subprogram of a statistical computer program (p. 410-432).

The ANOVA subprogram, using a multiple classification analysis option, analyzed the linear relationships

between Facs 1 and Facs 2 (the dependent variable, attitude) and the three independent variables, teaching materials, types of instructors, and knowledge of study. Facs 1 represented the subjects' attitude toward two types of instructors. Facs 2 represented the subjects' attitude toward the two teaching materials.

The results of the ANOVA of Facs 1 demonstrated F ratios of statistical significance for the joint (additive) effects of the three independent variables, teaching materials, types of instructor, knowledge of study, and variable B, types of instructors. The joint effects were significant at the $p \leq .0001$ level. This significant interaction implied that teaching materials, varied from one category of instructor to another, and the effect of instructors was not uniform across different groups of teaching material. Variable B, types of instructors, was statistically significant at the $p \leq .0001$ level. The first order interaction of variable A (teaching materials) with variable B (type of instructors) was significant at the $p \leq .039$ level (see table 7). A multiple classification analysis for Facs 1, the subjects' attitude toward two types of instructors (see table 8), produced an R^2 of 32 percent. The R^2 (.32) represented the proportion of variation in the dependent variable (Facs 1),

TABLE 7

ANALYSIS OF VARIANCE OF FACTOR, ATTITUDE TO INSTRUCTORS, BY THREE VARIABLES, TEACHING MATERIALS, TYPE OF INSTRUCTORS, AND KNOWLEDGE OF STUDY

**********ANALYSIS OF VARIANCE**********

FACS1 - Attitude to Instructors
by VARA - Teaching Materials
VARB - Type of Instructor
VARC - Knowledge of Study

****

Source of variation	Sum of Squares	df	Mean Square	F	Signif of F
Main effects	30.552	3	10.184	15.030	0.000
VARA	0.001	1	0.001	0.002	0.963
VARB	29.631	1	29.631	43.730	0.000
VARC	1.145	1	1.145	1.690	0.197
2-way interactions	3.500	3	1.167	1.722	0.168
VARA VARB	2.965	1	2.965	4.376	0.039
VARA VARC	0.062	1	0.062	0.092	0.762
VARB VARC	0.479	1	0.479	0.707	0.403
3-way interactions	1.320	1	1.320	1.948	0.166
VARA VARB VARC	1.320	1	1.320	1.948	0.166
Explained	35.373	7	5.053	7.458	0.000
Residual	59.627	88	0.678		
Total	95.000	95	1.000		

96 cases were processed.
0 cases (0.0 %) were missing.

Legend: Facs 1 - Attitude to Instructors
Var A - Teaching Materials
Var B - Type of Instructor
Var C - Knowledge of Study

TABLE 8

MULTIPLE CLASSIFICATION ANALYSIS FOR FACTOR, ATTITUDE TO INSTRUCTORS, BY THREE VARIABLES, TEACHING MATERIALS, TYPE OF INSTRUCTORS AND KNOWLEDGE OF STUDY

*** MULTIPLE CLASSIFICATION ANALYSIS ***
FACS1 - Attitude to Instructors
by VARA - Teaching Materials
VARB - Type of Instructor
VARC - Knowledge of Study
****

Grand mean = -0.00

Variable + category	N	Unadjusted Dev'n	Eta	Adjusted for independents Dev'n	Beta	Adjusted for independents + covariates Dev'n	Beta
VARA							
1	48	0.01		-0.00			
2	48	-0.01		0.00			
			0.01		0.00		
VARB							
1	47	-0.57		-0.57			
2	49	0.54		0.54			
			0.56		0.56		
VARC							
1	48	0.10		0.11			
2	48	-0.10		-0.11			
			0.10		0.11		
Multiple R squared					.322		
Multiple R					.567		

Legend: Facs 1 - Attitude to Instructors
Var A - Teaching Materials
Var B - Type of Instructor
var C - Knowledge of Study

attitude to instructor, explained by the additive effect of the independent variables, teaching materials, types of instructors, and knowledge of study. The multiple R (.567), indicating overall relationship between the dependent variable (Facs 1), attitude to instructor, and the independent variables, demonstrated a high, positive linear relationship (1.00 equals a perfect relationship).

These results answered affirmatively the question concerning patients being instructed by a specially trained nurse as opposed to nurses not specially trained. There was a significant difference in attitude when the patients were instructed by a specially trained nurse ($p \leq .0001$). The significant first-order interaction ($p \leq .039$) between the independent variables A (teaching materials) and B (type of instructors), indicated that a significant relationship exists between the two. Whenever a specially trained nurse instructs patients, the selection of teaching materials is not as important. Conversely, the preferred teaching material, teaching material II, was important whenever a nurse, not specially trained, was instructing patients (see table 8).

The dependent variable (Facs 2), the subjects' attitude toward two teaching materials, and the independent

variables, teaching materials, type of instructors, and knowledge of study, were analyzed by ANOVA (see table 9). The joint (additive) effects from this analysis were statistically significant ($p \leq .0001$); variable A, the independent variable, teaching material, was statistically significant ($p \leq .0001$); the first-order interaction of the joint (additive) interaction of all variables, was significant ($p \leq .025$), as was the interaction between variable A, teaching materials, and variable C, knowledge of study ($p \leq .003$). The multiple classification analysis (MCA) for Facs 2, the subjects' attitude toward two teaching materials, as seen on table 10, produced a $\underline{R}^2$ of .515. This $\underline{R}^2$ (.515) was the proportion of variation in the dependent variable (Facs 2), attitude to teaching materials, explained by the additive effect of the independent variables, teaching materials, types of instructors, and knowledge of study. The multiple $\underline{R}$ (.717) indicated a high, positive relationship between the dependent variable (Facs 2), attitude to teaching materials, and the independent variables stated above.

The question of whether there were significant differences or variations in the attitudes of hospitalized patients undergoing an intravenous pyelogram when the patients receive one of two different teaching materials

TABLE 9

ANALYSIS OF VARIANCE OF FACTOR, ATTITUDE TO TEACHING MATERIALS, BY THREE VARIABLES, TEACHING MATERIALS, TYPE OF INSTRUCTORS, AND KNOWLEDGE OF STUDY

**********ANALYSIS OF VARIANCE**********

FACS2 - Attitude to Teaching Material
by VARA - Teaching Material
VARB - Type of Instructor
VARC - Knowledge of Study

****

Source of variation	Sum of Squares	df	Mean Square	F	Signif of F
Main effects	48.868	3	16.296	35.226	0.000
VARA	46.569	1	46.569	100.666	0.000
VARB	0.425	1	0.425	0.918	0.341
VARC	1.653	1	1.653	3.573	0.062
2-way interactions	4.554	3	1.518	3.281	0.025
VARA VARB	0.055	1	0.055	0.119	0.731
VARA VARC	4.259	1	4.259	9.207	0.003
VARB VARC	0.304	1	0.304	0.657	0.420
3-way interactions	0.849	1	0.849	1.835	0.179
VARA VARB VARC	0.849	1	0.849	1.835	0.179
Explained	54.291	7	7.756	16.765	0.000
Residual	40.709	88	0.463		
Total	95.000	95	1.000		

96 cases were processed.
0 cases (0.0 %) were missing.

Legend: Facs 2 - Attitude to Teaching Material
Var A - Teaching Material
Var B - Type of Instructor
Var C - Knowledge of Study

TABLE 10

MULTIPLE CLASSIFICATION ANALYSIS FOR FACTOR, ATTITUDE TO TEACHING MATERIALS, BY THREE VARIABLES, TEACHING MATERIALS, TYPE OF INSTRUCTORS, AND KNOWLEDGE OF STUDY

*** MULTIPLE CLASSIFICATION ANALYSIS ***

FACS2 - Attitude to Teaching Material
by VARA - Teaching Material
VARB - Type of Instructor
VARC - Knowledge of Study

****

Grand mean = 0.00

Variable + category	N	Unadjusted Dev'n	Unadjusted Eta	Adjusted for independents Dev'n	Adjusted for independents Beta	Adjusted for independents + covariates Dev'n	Adjusted for independents + covariates Beta
VARA							
1	48	-0.70		-0.70			
2	48	0.70		0.70			
			0.70		0.70		
VARB							
1	47	0.09		0.07			
2	49	-0.08		-0.07			
			0.08		0.07		
VARC							
1	48	0.13		0.13			
2	48	-0.13		-0.13			
			0.13		0.13		
Multiple R squared					.515		
Multiple R					.717		

Legend: Facs 2 - Attitude to Teaching Material
Var A - Teaching Material
Var B - Type of Instructor
Var c - Knowledge of Study

was answered affirmatively by the statistical significance ($p \leq .0001$) of variable A, teaching materials. There was a relationship between variable A, teaching materials, with variable C, knowledge of study (Hawthorne effect). The preferred teaching material was teaching material II, the pamphlet written by the investigator. Using the MCA, table 10, the relationship between variable A, teaching materials, and variable C, knowledge of study, was demonstrated. The Hawthorne effect may have been accentuated by the patients' receiving a new teaching material (something new and different). This may have made the patients feel that their answers might "be used against them," thus sensitiving them further. The Hawthorne effect did not affect the study statistically in all aspects. There were not sufficient statistical variations to be able to completely reject the null hypothesis because there was no statistically significant interaction between variable B, types of instructors, and variable C, knowledge of study. Had the Hawthorne effect statistically influenced the entire study, there would have been a relationship between types of instructors and knowledge of study; as well as, between teaching materials and knowledge of study.

ANOVAs with covariates analyzed the dependent variable, attitude, with the independent variables, teaching materials, types of instructor, and knowledge of study, and the characteristic variables of age, previous hospitalization, previous intravenous pyelogram, and sex (see tables 11, 12, 13, 14, and appendixes I, J, K, L). The results of the ANOVAs with covariates (see tables 1, 2, 3, 4 in study design) showed statistical significance with the joint (additive) covariates at the $p \leq .03$ level, but only the covariate, previous intravenous pyelogram, showed significance ($p \leq .003$) when analyzed with Facs 1, the dependent variable, attitude to instructors. There was no statistical difference or variation when the covariates were analyzed with Facs 2, the dependent variable, attitude to teaching materials. The addition of the above mentioned covariates to the analysis reduced the F ratios of the combined main effects of the independent variables, teaching materials, types of instructor, and knowledge of study, and variable B, types of instructor. These reductions in F ratios were small and did not affect the statistical significance of these variables.

Variable C, knowledge of study, was statistically significant ($p \leq .04$) when analyzed with the dependent variable, attitude, the covariates, age, previous hospital-

TABLE 11

FREQUENCY TABLE OF DISTRIBUTION
OF SUBJECTS BY AGE

AGE

Category Label	Code	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj Freq (percent)
0 TO 10	1	6	6.3	6.3	6.3
11 TO 20	2	11	11.5	11.5	17.7
21 TO 30	3	10	10.4	10.4	28.1
31 TO 40	4	22	22.9	22.9	51.0
41 50	5	14	14.6	14.6	65.6
51 TO60	6	17	17.7	17.7	83.3
61 TO 70	7	11	11.5	11.5	94.8
OVER 70	8	5	5.2	5.2	100.0
TL	Total	96	100.0	100.0	

TABLE 12

FREQUENCY TABLE OF DISTRIBUTION OF SUBJECTS
BY PREVIOUS HOSPITALIZATION

HOSPITALIZATION, PREVIOUS

Category Label	Code	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj Freq (percent)
	Yes - 1	88	91.7	94.6	94.6
	No - 2	5	5.2	5.4	100.0
Out of range		3	3.1	Missing	100.0
TL	Total	96	100.0	100.0	

TABLE 13

FREQUENCY TABLE OF DISTRIBUTION OF SUBJECTS
BY PREVIOUS INTRAVENOUS PYELOGRAM

IVP, PREVIOUS

Category Label	Code	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj Freq (percent)
YES	1	25	26.0	26.3	26.3
NO	2	70	72.9	73.7	100.0
Out of range		1	1.0	Missing	100.0
TL	Total	96	100.0	100.0	

TABLE 14

FREQUENCY TABLE OF DISTRIBUTION OF SUBJECTS
BY SEX

SEX

Category Label	Code	Absolute Frequency	Relative Frequency (percent)	Adjusted Frequency (percent)	Cumulative Adj Freq (percent)
MALE	1	32	33.3	33.7	33.7
FEMALE	2	63	65.6	66.3	100.0
Out of range		1	1.0	Missing	100.0
	Total	96	100.0	100.0	

ization, previous intravenous pyelogram, and sex. This statistical significance of variable C, knowledge of study, correlated with the Hawthorne effect relationship shown in the previously mentioned ANOVA with no covariates. The first-order interaction of variable A, teaching materials, with variable C, knowledge of study, increased in statistical significance from $p \leq .003$ (ANOVA with Facs 2 and no covariates) to $p \leq .002$ (ANOVA with Facs 2 and covariates). This linear relationship indicated that as more variables were introduced into the study, the subjects became more aware of being in a study, and this seemed to influence their decisions.

Conclusions

The statistical analysis provided the criteria for answering the questions (see statement of the problems in study design) and for accepting or rejecting the hypotheses (see hypotheses in study design). The conclusions were as follows:

1. The question of whether there were significant differences or variations in the attitude of hospitalized patients when they receive one of two different teaching materials was answered affirmatively ($p \leq .0001$). The patients preferred teaching material II

2. The question of whether there were significant differences or variations in the attitude of hospitalized patients when they were instructed by a specially trained nurse was answered affirmatively ($p \leq .0001$). The patients preferred to be instructed by a specially trained nurse

3. The question of whether there were significant differences or variations in the attitude of hospitalized patients when the patients knew they were part of a study as compared with patients who had no knowledge that they were part of a study was not answered conclusively. This Hawthorne effect was shown to be operating whenever there was an interaction with teaching materials, especially teaching material II. This may have been caused by the patients' feeling of inadequacy when they were asked to make judgemental decisions about the teaching materials

4. The null hypothesis that states,

> There is no statistically significant difference or variation in attitudes between patients undergoing an intravenous pyelogram whether they received teaching material I, the present teaching method, or teaching material II, a new instructional pamphlet,

was rejected

5. The null hypothesis that states,

> There is no statistically significant difference or variation in attitude between the patients who are instructed and receive the teaching material from a specially trained nurse and those who receive the instructions from nursing personnel not specially trained. That is, there will be no statistically significant differences or variations in attitude between the two halves of the sample, half with one kind of teacher, half with another,

was rejected

6. The null hypothesis that states,

> There is no evidence of a Hawthorne effect (Donnelly et al. 1978:163, 213) as defined in the definitions of terms in this study,

was accepted with reservations. A Hawthorne effect was seen whenever the patients interacted with teaching materials, but not when they interacted with nurse instructors. The null hypothesis was not rejected as the Hawthorne effect was statistically significant in only one of a possible three ways, as an interaction with teaching materials

7. The research hypothesis that states,

> There is a statistically significant difference of variation in attitude between patients undergoing an intravenous pyelogram when they receive teaching material II, a new instructional pamphlet,

was accepted

8. The research hypothesis that states,

> There is a statistically significant difference or variation in attitude when the patients are instructed and receive the teaching material from a specially trained nurse,

was accepted

9. The research hypothesis that states,

> There is a statistically significant evidence of a Hawthorne effect,

was rejected with reservations, as stated in number six (6)

These conclusions were varied and interesting from a health-illness behavioral viewpoint. The hospitalized patients' attitudes in this hospital were positive toward the new teaching material (teaching material II). They were positive toward being instructed by a specially trained nurse. They were sensitive to the Hawthorne effect whenever they were asked to judge teaching materials, but not when they interacted with types of instructors. The addition of the characteristic variables of age, previous hospitalization, previous intravenous pyelogram, and sex had no significant effect on teaching materials or types of instructors, but it did effect the variable, knowledge of study. This addition of the characteristic covariates to the main variables showed a linear relationship between attitude (dependent variable), and knowledge

or no knowledge of study (independent variable). As the covariates were increased, so did the level of statistical significance.

The hospitalized patients in this study's population cohort may not have all the characteristics of all populations of hospitalized patients, but if they did, the information obtained from this study would have clinical significance for hospital boards of directors, hospital administrators, health care educators, patient advocates, and patients (consumers); if they did not, the information has clinical significance as an additional piece of research contributing to the field of patient attitudes and health education. Attitudes of hospitalized patients in this study were affected by the teaching materials they received. The level of knowledge of the person instructing patients did affect the patients' attitudes. Knowing that they (patients) were part of a study did affect the patients' attitude toward teaching materials.

The findings support the premise that well-written, descriptive teaching materials and personnel with high levels of knowledge instructing hospitalized patients are worthwhile objectives for health care providers. It is not always practical to meet these objectives due

to lack of resources. The practical applications of this study are two-fold and are taken from this study's findings.

1. Personnel with minimal levels of knowledge instructing patients use concise, descriptive teaching materials to support their lack of knowledge

2. Teaching materials that are not well-written are supported by nurses or personnel who are specially trained to do the patient instructing. These practical application could be used by any health facility as a means of helping the patients to have a more positive attitude towards their disease process

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

The null hypotheses concerning the independent variables, teaching materials and types of instructors, were rejected; while the null hypothesis dealing with the independent variable, knowledge of study, was accepted. There were significant relationships between the dependent variable, attitude, and the independent variables, teaching materials and types of instructors ($p \leq .0001$). This statistical significance was greater than the level of significance ($p \leq .05$) set at the beginning of this study. The first order interactions between teaching materials and types of instructors, as well as, teaching materials and knowledge of study, were also statistically significant, though, to different levels. The high level of statistical significance of the three independent variables was reduced when the variables of age, previous hospitalization, previous intravenous pyelogram, and sex were introduced. The reduction was so small that it had no effect on the study ($p \leq .0002$). Previous intravenous pyelogram was the only additional variable (covariate)

that showed any statistical significance ($p \leq .003$) when it interacted with attitude, and the variables of teaching materials, types of instructors, and knowledge of study.

The results of this study support the ideas of the health-illness psychologists, and social psychologists in general, that attitude is affected by forms of education. The high level of statistical significance of the dual form of communication (oral and written) used in this study supported the concepts of health educators, as well as, educators in general. The specially trained instructor was favored by the subjects.

The subjects in this study preferred teaching material II, the new pamphlet written by the investigator. Time after time subjects in this study told the investigator how happy they were to receive some type of teaching material, because they had not received any type of teaching materials in other hospitals and/or clinics. The parents of pediatric (one day to sixteen years of age) patients were the most responsive to any form of education. Their responses to the teaching materials and instructions were positive. Some of the parents were working in the health field, but felt insecure and ignorant when it involved testing for their children. Parental and patient

education are worthy objectives for health care workers and institutions.

It was evident by the comments of the subjects, as well as by the statistical analysis, that the dual form of communication did effect the subjects' attitude in this hospital. Most subjects felt they were not making adequate judgments about the teaching materials, but almost all of the subjects made vocal comments about the instructors. The more information the patients received, the more positive were their comments toward the test, intravenous pyelogram. This study's high level of significance further suggests that patients respond when someone shows interest and concern for them. The occasions when someone took the time to talk to the subjects about the test, helped the subjects feel like individuals, and not simply "bodies in beds."

Recommendations for further studies are to have groups of subjects receiving no teaching materials and no oral instructions, and comparing them to groups who have received teaching materials and oral instructions. The attitude of the groups receiving no educational information might demonstrate to hospital administrations and boards of directors the importance of health education for the

patient's recovery. The administrations and boards of directors might be more willing to allocate money for patient educational materials, patient instructors, and/or patient advocates, who would be concerned with the psychology of the patients, not just his disease process, if the importance of patient education could be demonstrated. A more holistic approach to health care would be a greater concern for the patients' attitudes and perceptions, as well as, his disease.

A study designed around the educational needs and attitudes of pediatric patients and their parents is another suggestion. No matter how knowledgeable parents may feel they are, whenever tests or treatments involve their children, parents become very insecure, and thus may become suspicious, hostile, and/or negative. In many instances parents impart these negative and/or insecure feelings to their children. The children become upset and/or anxious before tests or teatments begin. This negativity may make the child's health-illness process a negative one. Children many times carry these negative and/or hostile feelings into their adult lives. As adults, they may not even realize they have these negative beliefs, for they may lie dormant within the person. Many times health care workers cannot understand why a patient may

have a hostile reaction to a simple test, and the patient cannot understand his own reactions, thus causing greater confusion and anxiety for the patient. The patient's hostility may result from a negative experience as a child, or from listening to the negative feelings of his parents.

APPENDIXES

APPENDIX A

TEACHING MATERIAL I

YOU ARE GOING TO HAVE AN INTRAVENOUS PYLOGRAM*

*Pyelogram is misspelled in this pamphlet. This is a printing error.

DEPARTMENT OF NURSING

HOUSTON NORTHWEST MEDICAL CENTER, INC.

NAME _____ **DATE** _____

APPENDIX B

TEACHING METHOD II

Patient Information About Intravenous Pyelogram

An intravenous pyelogram (I.V.P.) is an X-ray examination of the urinary system, including the kidneys, ureters, and bladder used to evaluate the function of the kidneys and to rule out disease. An iodine based material will be injected into your vein; it will circulate throughout your blood stream and be excreted through the kidneys. This material will show up on an X-ray film and will enable the radiologist, who is a physician specially trained in interpreting X-rays, to determine how well your kidneys are functioning and if there is any physical abnormality present.

This examination is done in an X-ray or radiology department by trained radiologic technologists. The radiologic technologists will inject the material into your vein under the supervision of the radiologist. This examination takes about 45 minutes. It is a very common procaedure done in almost every radiology department a number of times each day.

It is important, if you are a female, to tell the radiologic technologist if there is any possibility that you

might be pregnant. The technologist should also be told if you have had a history of asthma or hay fever; or if you have a past history of reactions to intravenous injections of medication or iodine.

The preparation needed for this examination is basically the cleansing of your bowel (the large intestine). This is necessary in order to remove as much fecal material as possible so that your kidneys, ureters and bladder will be better visualized.

You will be brought to the radiology department by a radiology aide who will provide you with an X-ray gown. It is important not to wear undergarments as the buttons, snaps and/or elastic will show up on the X-ray pictures and ruin your study.

Upon arrival in the radiology department, you will be brought into an X-ray room, the technologist will ask you to empty your bladder, and then you will be assisted onto the X-ray table. A film of your abdomen will be taken before you are injected to be sure that you have nothing in your abdomen that would keep you from having the best examination possible. The iodine solution will then be injected into your vein by the technologist; there will then be an interval of 5 minutes before the first film is taken.

Once the technologist starts taking the films, a series of films will be taken in rapid sequence.

The X-ray tube and the cooling rotor may make a whirling noise between pictures. This is normal. This is the method used to cool the tube; there is no radiation involved during this. It is not uncommon for some patients to experience a feeling of warmth, a flushing of the face, and a salty taste in the mouth. Occasionally there is some nausea. Minor allergic reactions of little significance may sometimes occur in the form of itching, sneezing or a few hives. Less common minor reactions include slight wheezing, mild swelling of the eyelids and pain at the site of injection. The radiology team is trained and equipped to treat any and all such conditions.

Despite the many stories about complications due to this procedure, serious complications occur very rarely--only in about one in ten thousand examinations. Your physician has considered all of these risks before he recommended the examination, and he believes your symptoms justify the procedure. Complications occur less frequently in intravenous pyelograms than in many other medical procedures; therefore, the procedure is performed daily on

patients in almost any physical condition with a good assurance of safety.

Your radiologist is aware of the risks and will take every precaution to obtain a good examination with maximum safety. At the completion of your examination the radiologist will view your films and report the findings to your physician who will, in turn, notify you. During any time feel free to ask any questions about any phase of the examination as the radiologic technologist will be only too happy to answer any questions that you may have.

APPENDIX C

ATTITUDE SURVEY INSTRUMENT

Scenario: The investigator knocks and enters the patient's room. The investigator will have in her possession the attitude survey instrument, the optical scanning card, the response card for the patient, a copy of the structured interview, and a No. 2 pencil. The interviewer will say, "We want to get your opinion about the instructions regarding the radiological examination of intravenous pyelogram. I will ask you a number of questions which can be answered by one of the five responses on this card. (At this point the interviewer will hand the patient the response card, appendix I.) If you did not receive any information, that answer will be recorded. If you do not have a strong feeling or opinion, you may answer 'uncertain.' If you strongly agree with the statement, answer 'strongly agree.' If you just agree, answer 'agree.' If you disagree or strongly disagree, answer with the appropriate reply."

1. Did you receive written information about the X-ray test, I.V.P.? (Instructions to investigator doing the interview: If the patient answers no, mark the answers to questions 1 through 10 on the optical scanning card as **E**.

If yes, say to the patient: I feel that the quality of the written material I received was sufficient.)

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
A	B	C	D	E

2. I am satisfied that the written material I received accurately described the test I actually experienced.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

3. The written information I received made me feel more relaxed about having this test.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

4. I feel that the quantity of the written information was adequate.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

5. The written information I received made me feel nervous about the X-ray examination, I.V.P.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

6. I was very pleased with the written material I received.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

7. The quality of the written information satisfied me.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

8. The written information made me feel more positive toward this test.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

9. The written information I received made me feel secure.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

10. I would have felt more comfortable if more written information had been made available to me.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

11. Did you receive oral information from nursing personnel about your X-ray test, I.V.P.? (Instructions to investigator doing the interview: If the patient answers no, mark the last ten answers on the optical scanning card as E. If yes, say to the patient: I feel that the quality of the oral information I received from nursing was sufficient.)

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

12. I am satisfied that the oral information I received from nursing accurately described the test I actually experienced.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

13. The oral information I received from nursing made me feel more relaxed about having this test.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

14. I feel that the quantity of the oral information I received from nursing was adequate.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

15. The oral information I received from nursing made me feel nervous about the X-ray examination, I.V.P.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

16. I was very pleased with the oral information I received from nursing.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

17. The quality of the oral information I received from nursing satisfied me.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

18. The oral information I received from nursing made me feel more positive toward this test.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

19. The oral information I received from nursing made me feel secure.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

20. I would have felt more comfortable if more oral information had been made available to me.

Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree

APPENDIX D

PATIENT CHARACTERISTIC QUESTIONNAIRE

1. What is your age category to the nearest whole year?

A ___	0 to 10 yrs.	2A ___	41 to 50 yrs.
B ___	11 to 20 yrs.	B ___	51 to 60 yrs.
C ___	21 to 30 yrs.	C ___	61 to 70 yrs.
D ___	31 to 40 yrs.	D ___	Over 70 yrs.

2. Have you ever been a patient in a hospital before?

6A ___ Yes B ___ No

If the answer to question 2 is "No", then proceed to question 6.

3. How many times have you been in a hospital prior to this admission? This includes "having a baby."

3A ___	0	4A ___	4 or 5	5A ___	8 or 9
B ___	1 or 2	B ___	5 or 6	B ___	9 or 10
C ___	2 or 3	C ___	6 or 7	C ___	Over 10
D ___	3 or 4	D ___	7 or 8		

4. Have you ever been in this hospital before?

7A ___ Yes B ___ No

5. If you have been in this hospital before, how many times?

8A ___	1 or 2	B ___	3 or 4	E ___	Over 5
B ___	2 or 3	D ___	4 or 5		

6. Have you ever had an intravenous pyelogram (I.V.P.)?

   9A ___ Yes B ___ No

7. What is the sex of the patient?

   10A ___ Male B ___ Female

APPENDIX E

STRUCTURED INTERVIEW TO OBTAIN

SUBJECT'S CONSENT

Hello, Mrs., Mr., or Miss Jones. My name is Martha Koperwhats. I am a member of the staff of this hospital. (I will be wearing my name tag or identification badge.) I am conducting a study on different methods of patient instruction for an intravenous pyelogram and would like for you to be one of the subjects in this study.

I will be asking you two sets of questions if you consent to be a subject for this study. One of the sets of questions concerns information about you as a person; the other set of questions will evolve around your feelings or opinions about the method of instruction you will receive for an intravenous pyelogram.

Any information given to me by you will be kept in strictest confidence. The only person knowing your identity will be me. Your identity will be protected by the assignment of a number for identification rather than your name. These numbers will be your identification throughout the study. At no time in this study will any person be publicly named or identified except by number.

Do you have any questions about this study? (I will answer all questions, then I will ask:)

Would you be willing to be a subject in this study?

If the subject says, no, I will thank him for letting me take his time, and hope that his stay in this hospital will be as pleasant as possible. If a subject says he will consent to be a subject, then, I will produce the consent form (the short form, see appendix H) and show it to him.

This is the consent form I will need for you to sign. It is a requirement for your protection and for the protection of the hospital. After you sign the form, I will be asking you six questions about you as a person. I will be recording your answers on a computer form. If this person is in the blocks having no prior knowledge of being in a study, I will ask the subject the attitude survey questions after they complete the consent form and the characteristic questions. If this person is in the blocks having prior knowledge of being in a study, I will then hand him one of the teaching materials (appendixes A or B), and say, "Tomorrow I will return and ask you some questions concerning your feelings or opinions about the method of instruction you received."

I will say to the patient after he signs the form, "Thank you for your cooperation in this study. Do you have any further questions?" (I will answer all questions that pertain to the study.)

NOTE: Should the subject be under the age of consent, then his parents will be informed of the study as described above and their consent will be obtained.

APPENDIX F

STRUCTURED INTERVIEW FOR

CHARACTERISTIC SURVEY

Thank you for consenting to be a subject in this study. I have a few questions that I would like for you to answer about yourself. I will ask you the questions and you can give me your answers verbally. Your answers will be recorded on this computer form (I will show the subject the form) and the form will be given a number. This number will be your identification number for this study; this is to protect your identity.

Do you have any questions about what I am about to do? (I will answer all questions pertaining to the study.) I will then continue, the questions I will be asking you are about you as a person. I will then ask the subject the questions on the patient characteristic survey instrument and will record the patient's answers on the computer card as they correspond to the questions.

Upon completion of the patient characteristic survey, I will say, "Your cooperation is appreciated; thank you. I will return tomorrow to ask you questions about your feelings or opinions about the method of instruction you received for an intravenous pyelogram. Have a pleasant evening."

NOTE: Should the subject be in a block having the variable no prior knowledge of being in a study, I would omit the previous paragraph and proceed directly to the attitude survey instrument.

APPENDIX G

STRUCTURED INTERVIEW FOR ATTITUDE QUESTIONNAIRE

Hello, (name of subject) Mrs., Mr., or Miss Jones. I hope you have had a pleasant day. I am here to ask you some questions about the instructions you received for an intravenous pyelogram.

The patient will be handed a 3 inch by 5 inch card, and I will read to the patient as follows.

> We want to get your opinion about your instructions for an I.V.P. I will ask you a number of questions which can be answered by one of the five responses on this card. The responses are strongly agree, agree, uncertain, disagree, and strongly disagree.
>
> Should you strongly agree with the question, answer, "strongly agree." If you do not have a strong feeling or opinion, answer, "uncertain." If you just agree, answer, "agree." If you disagree or strongly disagree, give me the appropriate reply.
>
> The responses are strongly agree, agree, uncertain, disagree, or strongly disagree.

Do you have any questions before we begin? (I will wait to see if the subject has any questions before continuing.) I will record your answers to the questions on a response card. This card will have only your identification number. This is to protect your identity. This card will facilitate the computations of your answers in a more accurate manner.

I will read you a question; then I will ask for your response. You may choose your response from one of the five responses given on the 3 inch by 5 inch card (appendix M). Feel free to refer to the card at any time if you are

Feel free to refer to the card at any time if you are uncertain of the responses, or what each response means. Do you have any questions before we proceed? (I will answer the subject's questions.)

(The subject's responses will be recorded on the response card using a No. 2 lead pencil.) Upon completion of the attitude questionnaire, I will say, "Your cooperation has made this study possible. Again thank you for your help."

APPENDIX H

Title of Project: PATIENT ATTITUDES WITH VARIATION IN INSTRUCTIONAL METHOD AND MATERIAL AND STUDY KNOWLEDGE

Consent to Act as a Subject for Research and Investigation:

I have received an oral description of this study, including a fair explanation of the procedures and their purpose, any associated discomforts or risks, and a description of the possible benefits. An offer has been made to me to answer all questions about the study. I understand that my name will not be used in any release of the data and that I am free to withdraw at any time. I further understand that no medical service or compensation is provided to subjects by the university as a result of injury from participation in research.

Signature Date

Signature Date

Certification by Person Explaining the Study:

This is to certify that I have fully informed and explained to the above named person a description of the listed elements of informed consent.

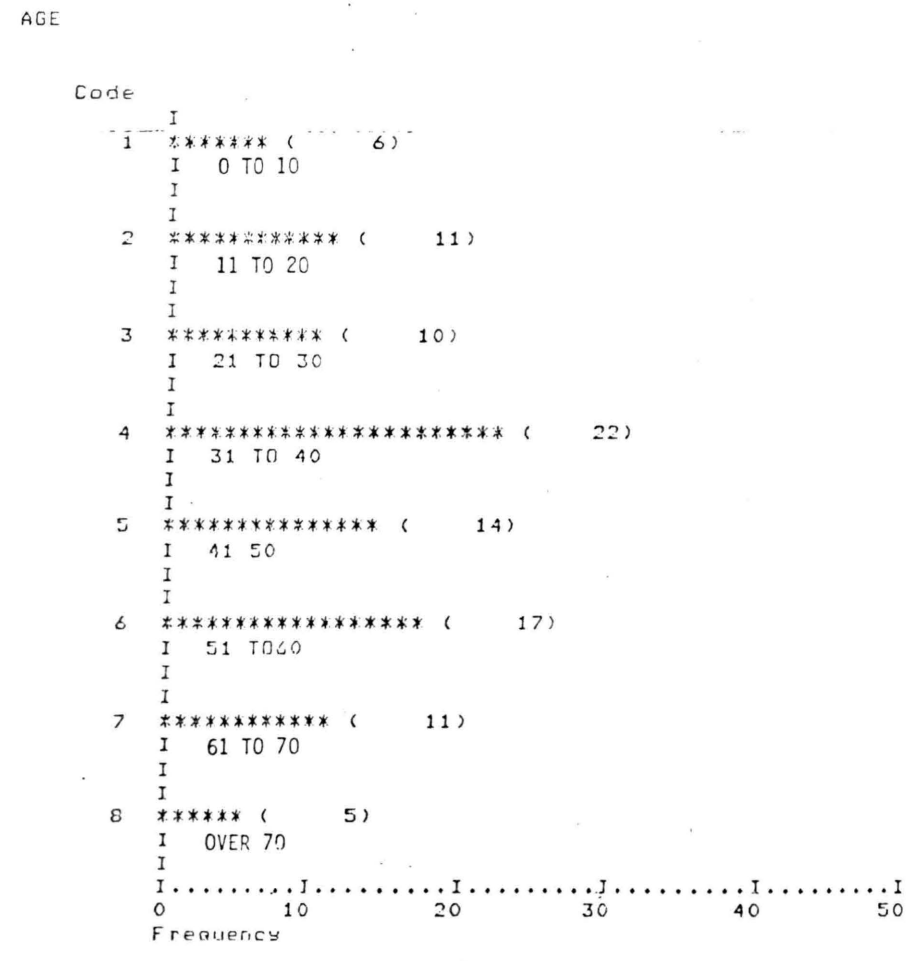
Signature Date

Position

Witness Date

APPENDIX I

HISTOGRAM OF DISTRIBUTION OF SUBJECTS BY AGE

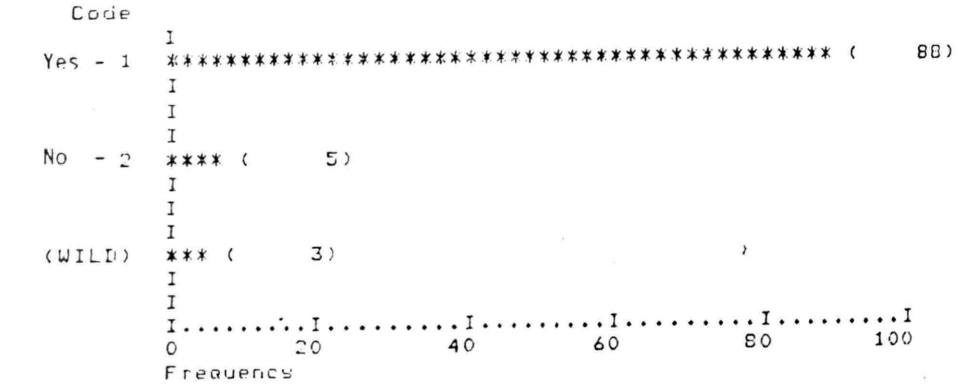


Mean	4.531	Std err	0.194	Median	4.455
Mode	4.000	Std dev	1.897	Variance	3.599
Kurtosis	-0.800	Skewness	-0.082	Range	7.000
Minimum	1.000	Maximum	8.000		
Valid cases	96	Missing cases	0		

APPENDIX J

HISTOGRAM OF DISTRIBUTION OF SUBJECTS BY PREVIOUS HOSPITALIZATION

HOSPITALIZATION, PREVIOUS

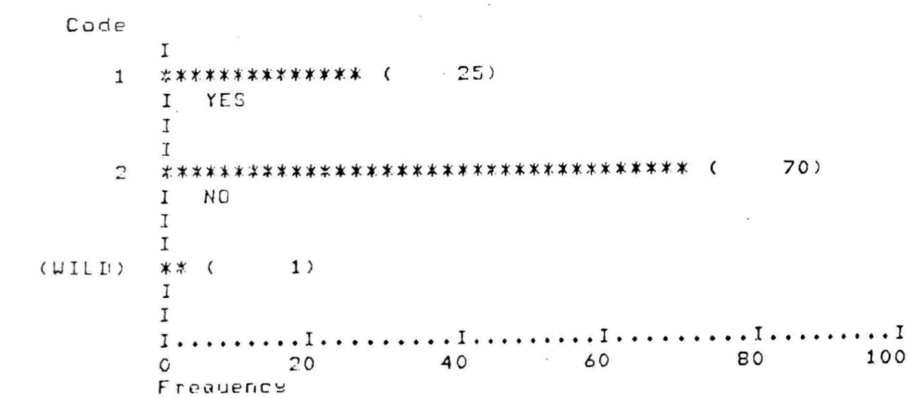


Mean	1.054	Std err	0.024	Median	1.028
Mode	1.000	Std dev	0.227	Variance	0.051
Kurtosis	14.480	Skewness	4.022	Range	1.000
Minimum	1.000	Maximum	2.000		
Valid cases	93	Missing cases	3		

APPENDIX K

HISTOGRAM OF DISTRIBUTION OF SUBJECTS BY PREVIOUS INTRAVENOUS PYELOGRAM

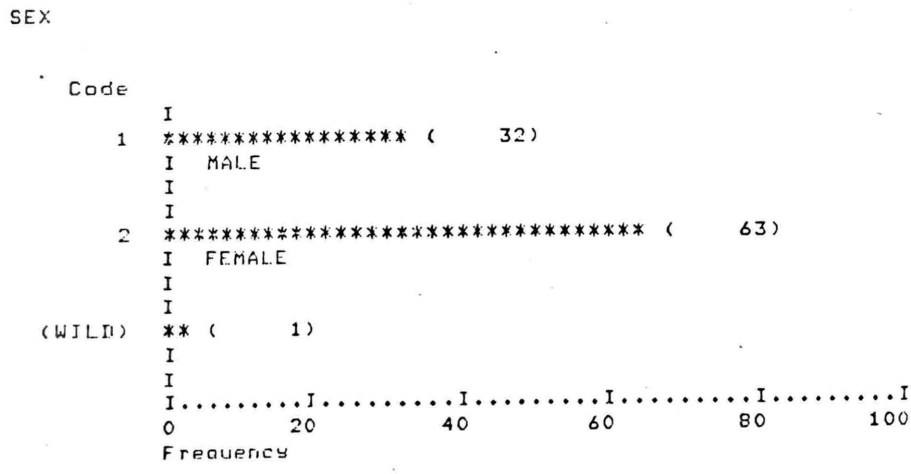
IVP, PREVIOUS



Mean	1.737	Std err	0.045	Median	1.821
Mode	2.000	Std dev	0.443	Variance	0.196
Kurtosis	-0.823	Skewness	-1.093	Range	1.000
Minimum	1.000	Maximum	2.000		
Valid cases	95	Missing cases	1		

APPENDIX L

HISTOGRAM OF DISTRIBUTION OF SUBJECTS BY SEX



Mean	1.663	Std err	0.049	Median	1.746
Mode	2.000	Std dev	0.475	Variance	0.226
Kurtosis	-1.541	Skewness	-0.702	Range	1.000
Minimum	1.000	Maximum	2.000		

APPENDIX M

INSTRUCTIONS FOR PATIENTS REGARDING

RESPONSES TO QUESTIONS

We want to get your opinion about your instructions for an intravenous pyelogram. I will ask you a number of questions which can be answered by one of the five responses on this card. The responses are strongly agree, agree, uncertain, disagree, and strongly disagree.

Should you strongly agree with the question, answer, "strongly agree". If you do not have a strong feeling or opinion, answer, "uncertain". If you just agree, answer, "agree". If you disagree or strongly disagree, give me the appropriate reply.

The responses are strongly agree, agree, uncertain, disagree, or strongly disagree.

REFERENCES CITED

Allport, Gordon W. Attitudes. In Attitude theory and measurement, pp. 3-13. Edited by Martin Fishbein. New York: John Wiley and Sons, Inc., 1967.

_____. Attitudes in the history of social psychology. In Attitudes, pp. 15-21. Edited by Marie Jahoda and Neil Warren. Baltimore, Md.: Penguin Books, 1966.

Alt, Richard E. Patient education program answers many unanswered questions. In Readings in Health Education, pp. 109-115. Chicago: American Hospital Association, 1969.

American Hospital Association. Chart of accounts for hospitals. Chicago: American Hospital Association, 1976.

_____. Hospital inpatient education. Chicago: American Hospital Association, 1977.

_____. Patients' bill of rights. (Pamphlet) Chicago: American Hospital Association, 1973.

_____. Staff manual for teaching patients about chronic obstructive pulmonary diseases. Chicago: American Hospital Association, 1979.

Applebaum, Al. Patient education seen as an integral part of care. Hospitals 51 (November 6, 1977):115-116.

Appleweig, Dee G. Some determinants of behavioral rigidity. Journal of Abnormal and Social Psychology 49 (April 1954):224-228.

Baker, Constance Marie. Microteaching: A teaching strategy for increasing the valuation of the teaching function of the nurse role. Ph.D. dissertation, University of California, San Francisco, 1967.

Barnett, J. W. Patients' emotional responses to barium X-rays. Journal of Advanced Nursing 3 (January 1978):37-46.

Barnhart, Clarence L., ed. The world book dictionary. Chicago: Field Enterprises Educational Corporation, 1968.

Becker, Marshall H. The health belief model and sick role behavior. Health Education Monographs (Winter 1974):409-419.

Bell, Roy. A is for attitude. Radiologic Technology 52 (November/December 1980):p. 265-268.

Bensley, Loren B., and Moffit, Patrick B. Patient education in university health services, an interdisciplinary approach to planning and implementation. The Journal of School Health 48 (December 1978):592-595.

Berdie, Douglas R., and Anderson, John F. Questionnaires: Design and Use. Metuchen, N. J.: The Scarecrow Press, Inc., 1974.

Bigge, Morris L. Learning theories for teachers. New York: Harper and Row, 1976.

Bilee, D. A. A better way to calm the patient who fears the worst. Registered Nurse 40 (April 1977):47-54.

Blalock, Hubert. Social statistics. New York: McGraw-Hill, 1960.

Bloom, Benjamin S. Taxonomy of educational objectives. Edited by Max D. Englehart, Edward J. Furst, Walker H. Hill, and David R. Krathwohl. New York: David McKay Company, Inc., 1975.

Boddie, Drusilla G., and Weiss, Moe. Educating the hospitalized tuberculosis patient. In Readings in health education, pp. 123-129. Chicago: American Hospital Association, 1969.

Bohrnstedt, George W. Reliability and validity assessment in attitude measurement, in Attitude measurement pp. 80-99. Edited by Gene F. Summers. Chicago: Rand McNally and Company, 1970.

Breen, Delilah Ancell. A study of the process of patient teaching in a cancer hospital. M.S. thesis, Texas Woman's University, Denton, Texas, 1970.

Buckly, Williams, ed. Modern systems research for the behavioral scientists. Chicago: Aldine, 1968.

Cantril, Hadley. General and specific attitudes. Princeton, N. J.: University Press, 1932.

Cochran, William G., and Cox, Gertrude M. Experimental designs. New York: John Wiley and Sons, Inc., 1957.

Cochran, William G. Sampling techniques. New York: John Wiley and Sons, Inc., 1963.

Cohen, Arthur R. Need for cognition and order of communication as determinants of opinion change. In The order of presentation of persuasion. New Haven, Conn.: Yale University Press, 1957.

Cohen, Arthur. Attitude change and social influence. New York: Basic Books, Inc., 1964.

_____, ed. Attitude change and justification for compliance. With Jack Breham and William A. Fleming. Journal of Abnormal and Social Psychology 56 (1958):276-278.

Courtney, Maureen Reiner. A determination of teaching responsibility and important instruction for the cardiac patient and family. M.S. thesis, Texas Woman's University, Denton, Texas, 1974.

Cox, D. R. Planning of experiments. New York: John Wiley and Sons, Inc., 1958.

Currie, Bruce F., and Renner, John H. Patient education developing a health care partnership. Journal of Medical Education 65 (January 1979):177-80 and 182.

Dodge, J. S. What patients should be told: patients' and nurses' beliefs. American Journal of Nursing 71 (1972):1852-1854.

Donabedian, Avedis. A guide to medical care administration. Vol. 2: Medical care appraisal. New York: American Publisher Historical Association, 1969.

Donnelly, James H., Jr.; Gibson, James L.; and Ivancevich, John M. Fundamentals of management. Dallas, Texas: Business Publications, Inc., 1978.

_____. Fundamentals of management: selected readings. Dallas, Texas: Business Publications, Inc., 1978.

Dorn, Harold F. Some applications of biometry in the collection and evaluation of Medical Data. Journal of Chronic Disease 1 (June 1955):638-664.

Downie, Norville Morgan, and Starry, Allan R. Descriptive and inferential statistics. New York: Harper and Row, Publishers, Inc., 1977.

Drew, Clifford J. Introduction to designing research and evaluation. St. Louis, Missouri: C. V. Mosby Company, 1976.

Edwards, Allen Louis. Techniques of attitude scale construction. New York: Appleton-Century-Crofts, 1957.

Edwards, Allen L., and Kenney, Kathryn Claire. A comparison of the Thurstone and Likert techniques of attitude scale construction. In Attitude theory and measurement, pp. 249-256. Edited by Martin Fishbein. New York: John Wiley and Sons, Inc., 1967.

Fischer, Constance T., and Brodsky, Stanley L. Client participation in human services. New Brunswick, N. J.: Transaction Books, 1978.

Fishbein, Martin, and Icek, Ajzen. Belief, attitude, intention and behavior. Reading, Mass.: Addison-Wesley Publishing Company, 1975.

Freeman, Carol R. Teaching patients. San Diego, Calif.: Courseware, Inc., 1978.

Friesner, Arylne. A study of factors relating to nurse, client, communications effectiveness and health counselling in teaching situations. Ph.D. dissertation, Columbia University Teacher's College, 1976.

Fuchra, L. M. Making patient education a part of the patient care. American Journal of Nursing 76 (November 1976):1798-1799.

Getzels, Jacob W. Method of paired direct and projective questionnaires in the study of attitude structure and socialization. Washington, D. C.: American Psychological Association, 1958.

Gilbert, T. F. Mathetics: the technology of education. Journal of Mathetics 1 (1962):7-73.

Godlove, B. W. Three views of patient education. Health Care Education 6 (October 1977):21-23.

Goode, William, and Hatt, Paul. Methods in social research. New York: McGraw-Hill, 1962.

Graham, James Larmour. Studies in attitude. Bethlehem, Pa.: Lehigh University, 1942.

Green, Bert F. Attitude measurement. In Handbook of social psychology. Vol. 1, pp. 335-336. Edited by G. Lindsay. Reading, Mass.: Addison, Wesley, 1954.

Green, W. A., Jr. Psychological factors and reticuloendothelial disease: preliminary observations on a group of males with lymphomas and leukemia. Psychosomatic Medicine 16 (1954):220-230.

Greenwald, Anthony G.; Brock, Timothy C.; and Ostrom, Thomas M., eds. Psychological foundations of attitudes. New York: Academic Press, 1968.

Gulko, Candace S., and Buthrus, Constance. Toward better patient teaching. Journal of Practical Nursing 28 (August 1978):37-38.

_____. Toward better patient teaching, part II. Journal of Practical Nursing 18 (September 1978):33-34.

Halloran, James Dermot. Attitude, formation and change. London: Leicester, 1967.

Hefferin, Elizabeth A. Patient health education: goal or element in modern health care? The Sight-Saving Review 47 (Summer 1977):67-78.

Hegyvary, Sue T. The relationship of nursing process and patient outcomes. Journal of Advanced Nursing 6 (November 1976):81-82.

Hinthorne, Rita Andre, and Jones, Ruth. Coordinating patient education in the hospital. Hospitals 52 (June 1, 1978):85-88.

Hovland, Carl I. Reconciling conflicting results derived from experimental and survey studies of attitude change. In Attitudes, pp. 287-303. Edited by Marie Jahoda and Neil Warren. Baltimore, Md.: Penguin Books, 1966.

Hovland, Carl I.; Janis, I. L.; and Kelley, H. H. Communications and change. New Haven, Conn.: Yale University Press, 1960.

Insko, Chester A. Theories of attitude change. New York: Appleton-Century-Crofts, 1967.

Insko, Chester A., and Schopler, J. Triadic consistency: a statement of affective-cognitive-conative consistency. In Attitudes and behavior, pp. 22-33. Edited by Kerry Thomas. Baltimore, Md.: Penguin Books, 1971.

Jenny, Jean. A humanistic strategy for patient teaching. Health Values 3 (May-June 1979):175-180.

Johnson, Allan G. Social statistics without tears. New York: McGraw-Hill Book Company, 1977.

Johnson, Robert L. Update on patient education. Journal of Biocommunications 5 (March 1978):3-5.

Jonas, Steven. Health care delivery in the United States. New York: Springer Publishing Company, 1977.

Kasl, Stanislav V., and Cobb, Sidney. Health behavior, illness behavior. Archives of Environment Health 12 (February 1966):246-262.

Katona, George. Attitude change: instability of response and acquisition of experience. Washington, D. C.: American Psychological Association, 1958.

Katz, Daniel. The functional approach to the study of attitudes. Public Opinion Quarterly 24 (1960):163-204.

Kelman, H. C. Process of opinion change. Public Opinion Quarterly 25 (1961):57-78.

Kerlinger, Fred N. Foundations of behavioral research. New York: Holt, Rinehart and Winston, Inc., 1973.

Kibler, Robert J.; Cegala, Donald J.; Miles, David T.; and Barker, Larry L. Objectives for instruction and evaluation. Boston: Allyn and Bacon, Inc., 1974.

Kiesler, Charles A.; Collins, Barry E.; and Miller, Norman. Attitude change. New York: John Wiley and Sons, Inc. 1969.

Krathwohl, David R.; Bloom, Benjamin S.; and Masia, Bertram B. Taxonomy of educational objective--the classification of educational goals handbook II: affective domain. New York: David McKay Co., Inc., 1964.

Kraus, Irene. Hospitals need humanism. Hospitals 53 (November 16, 1977):84-85.

Krech, David, and Crutchfield, Richard S. Theory and problems in social psychology. New York: McGraw-Hill, 1948.

Krech, David; Crutchfield, Richard S.; and Ballachey, Egerton L. Individual in society. New York: McGraw-Hill, 1962.

Lanros, R. N., Nedell E. Assessment and intervention in emergency care. Bowie, Maryland: Robert J. Brady Co., 1978.

Lazarsfeld, Paul F.; Sewell, William H.; Valensky, Harold L. eds. The uses of sociology. New York: Basic Books, 1967.

Lebow, J. Consumer assessments of the quality of medical care. Medical Care 12 (April 1974).

Lemon, Nigel. Attitudes and their measurements. New York: John Wiley and Sons, 1973.

Lesparre, M. The patient as a health student. Journal of American Hospital Association 44 (1970):75-80.

Levin, Lowell S. Patient education and self-care: how do they differ? Nursing Outlook 26 (March 1978):170-175.

Lewis, Charles E.; Fein, Rashi; and Mechanic, David. A right to health. New York: John Wiley and Sons, 1976.

Lewis, Lucile. Planning patient care. Dubuque, Iowa: Wm. C. Brown Co., Publishers, 1976.

Likert, Rensis. The method of constructing an attitude scale. In Attitude theory and measurement, pp. 90-96. Edited by Martin Fishbein. New York: John Wiley and Sons, Inc., 1967.

_____. A technique for the measurement of attitudes. In Attitude measurement, pp. 149-158. Edited by Gene F. Summers. Chicago: Rand McNally and Company, 1970.

McKinlay, John B. Some approaches and problems in the study of the use of services--an overview. Journal of Health and Social Behavior 13 (June 1972):115-151.

Mager, Robert F. Developing attitude toward learning. Belmont, Calif.: Fearon-Pitman, Publishers, Inc., 1968.

_____. Measuring instructional intent or got a match? Belmont, Calif.: Fearon-Pitman, Publishers, Inc., 1973.

Mears, Richard K. A history of health education in the United States. Philadelphia: Lea and Febiger, 1962.

Merleau-Ponty, Maurice. The structure of behavior. Boston: Beacon Press, 1963.

Miller, Benjamin F. The complete medical guild. New York: Simon and Schuster, 1978.

Millon, Theodore. Medical behavioral. Philadelphia: W. B. Saunders Company, 1975.

Morton, J. E. Handbook for community manpower survey. Kalamazoo: The W. L. Upjohn Institute for Employment Research, 1972.

Morton, John. The questionnaire. National Education Association Research Bulletin 8 (1930):19-25.

Moser, Carol A., and Kalton, G. Survey methods in social investigation. London: Heinemann Educational Books Limited, 1971.

Murphy, Gardner, and Likert, Rensis. Public opinion and the individual. New York: Russell and Russell, 1967.

Neetlin, Joseph M., Jr. The illusion of attitude change. New York: Academic Press, 1975.

Nie, Norman H.; Hull, C. Hadlai; Jenkins, Jean G.; Steinbrenner, Karin; and Bent, Dale H. Statistical package for the social sciences. New York: McGraw-Hill Book Company, 1975.

Nixon, John. The mechanics of questionnaire construction. Journal of Educational Research 47 (March 1954):481-487.

Oppenheim, Aluahan Noffali. Questionnaire design of attitude measurement. London: Heinemann Educational Books Limited, 1966.

Osgood, Charles E. Cognitive dynamics in the conduct of human affairs. Public Opinion Quarterly (Summer 1960):341-365.

Payne, Stanley L. The art of asking questions. Princeton, N. J.: Princeton University Press, 1951.

Peter, Anne. The feasibility of patient education in a community hospital. M.S. thesis, Sam Houston University, 1978.

Pohl, Margaret L. The teaching function of the nurse practitioner. Dubuque, Iowa: William C. Brown Co., Publishers, 1978.

Pratt, Hugh S. The physician as health educator. The Hospital Medical Staff 4 (December 1975):1-7.

Pritchett, Sue. Patient, family and community health education. Atlanta, Ga.: Pritchett and Hall Associates, Inc., 1977.

Puckett, Mary J., and Russell, Michael L. The role of the allied health professional in improving patient adherence. Journal of Allied Health 7 (Winter 1978):36-41.

Quinn, Nancy, and Somers, Anne R. The patient's bill of rights. Nursing Outlook 22:240-244.

Risser, Nancy L. Development of an instrument to measure patient satisfaction with nurses and nursing care in primary care setting. Nursing Research 24 (January-February 1975):45-52.

Robbins, Ann C. Patient education and the proper administration of cromolyn sodium. M.S. thesis, Texas Woman's University, Denton, Texas, 1976.

Robinson, Leola A. Patient's information base: a key to care. The Canadian Nurse 70 (December 1974):34-36.

Robinson, Lisa. Psychological aspects of the care of hospitalized patients. Philadelphia: F. A. Davis Company, 1976.

Rokeach, Milton. The open and closed mind. New York: Basic Books, 1960.

Rosenstock, Irwin M. Historical origins of the health belief model. Health Education Monographs 4 (Winter 1974):328-335.

Sarnoff, I. Social attitudes and the resolution of motivational conflict. In Attitudes, pp. 279-285. Edited by Marie Jahoda and Neil Warren. Baltimore, Md.: Penguin Books, 1966.

Scheffe, Henry. The analysis of variance. New York: John Wiley and Sons, Inc., 1959.

Scheflen, Albert E. How behavior means. New York: Gordon and Breach, 1973.

Seiler, Lauren H., and Hough, Richard L. Empirical comparisons of the Thurstone and Likert techniques. In Attitude measurement, pp. 159-173. Edited by Gene F. Summers. Chicago: Rand McNally and Company, 1970.

Selltiz, Claire; Jahoda, Marie; Deutsch, Morton; and Cook, Stuart W. Research methods in social relations. New York: Holt, Rinehart and Winston, 1959.

Shaw, Marvin E., and Wright, Jack M. Scales for the measurement of attitudes. New York: McGraw-Hill, 1967.

Sherif, Carolyn W.; Sherif, Musafer; and Nebergall, Roger E. Attitude and attitude change. Philadelphia: W. G. Saunders Co., 1965.

Sherif, Muzafer, and Cantril, H. The psychology of attitudes: part I. Psychology Review 52 (1945):293-319.

Sherif, Muzafer, and Sherif, Carolyn W. An outline of social psychology (Revised Edition). New York: Harper and Row, 1956.

Skillern, Penn G. A planned system of patient education. Journal of American Medical Association 238 (August 22, 1977):878-879.

Smith, Carol R. Patient education and ambulatory care. Nursing Clinics of North America 12 (December 1977):595-608.

Somers, Anne R. Health care in transition: directions for the future. Chicago: Hospital Research and Education Trust, 1971.

Southwick, Arthur F. The law of health care administration. University of Michigan: Health Administration Press, 1978.

Sparer, E. V. On the matter of community relations: the consumer movement in health care and the Albert Einstein Medical Center. Paper presented at the Albert Einstein Medical Center Long Range Planning Seminar, New York, June 1971.

Spiegel, Murray R. Theories and problems of statistics. New York: McGraw-Hill Book Company, 1961.

Storch, M. L. The criteria for evaluation studies of patient education. American Journal of Nursing 76 (November 1976):1798-1799.

Stryker, Ruth Perin. Rehabilitative aspects of acute and chronic nursing care. Philadelphia: W. B. Saunders Company, 1972.

Sudman, Seymour. Applied sampling. New York: Academic Press, 1976.

Summers, Gene F., ed. Attitude measurement. Chicago: Rand McNally and Company, 1970.

Talarico, D. Four basic steps to successful patient teaching. The Canadian Nurse 74 (May 1978):22-24.

Tannenbaum, P. H. Attitude toward source and concept as factors in attitude change through communications. Ph.D. dissertation, University of Illinois, 1953.

Thomas, Kerry, ed. Attitudes and behavior. Baltimore, Md.: Penguin Books, 1971.

Thurstone, Louis Leon. The measurement of attitude. Chicago: The University of Chicago Press, 1929.

Thurstone, Louis Leon. Attitudes can be measured. In Attitude theory and measurement, pp. 77-89. Edited by Martin Fishbein. New York: John Wiley and Sons, Inc., 1967.

Timmreck, Thomas C. Working model of patient-health education. Radiology Technology 51 (March-April 1980):629-634.

Tittle, C. R., and Hill, R. J. Attitude measurement and prediction of behavior: an evaluation of conditions and measurement techniques. Socimetry 30 (June 1967):199-213.

Tollefsrud, Valborge. We're for educating our patients. In Readings in health education, pp. 118-122. Chicago: American Hospital Association, 1969.

Travelbee, Joyce. Intervention in psychiatric nursing. Philadelphia: F.A. Davis Company, 1969.

Triandis, Harry Charalambos. Attitude and attitude change. New York: John Wiley and Sons, Inc., 1971.

Tucker, Susan Martin; Breeding, Mary N.; Canobbil, Mary M.; Jacquet, Gloria D; Pacquette, Eleanor H.; Wells, Marjorie E.; and Willmann, Mary E. Patient care standards. St. Louis, Mo.: C. V. Mosby Company, 1975.

U.S. Congress. House. Committee on Interstate and Foreign Commerce. A discursive dictionary of health care. Washington, D.C.: Government Printing Office, 1976.

Vega, de la, Marguerite. A health education program in a hospital. In Readings in health education, pp. 77-85. Chicago: American Hospital Association, 1969.

Vergara, Lanell C. Hospitalized patients' knowledge of medical vocabulary and their perception of communication effectiveness between themselves and nurses. M.S. thesis, Texas Woman's University, Denton, Texas, 1978.

Wallace, Walter L. The field of medical sociology. London: Altin-Atherton, 1971.

Warner, Lucile, and Defleir, M. Attitude as an international concept: social constraint and social distance as intervening variables between attitudes and action. American Sociological Review 34 (April 1969):153-169.

Wichita, Carol. Everyone wins when you push patient power. Registered Nurse 43 (February 1980):50-51.

Wilbur, Muriel Bliss. Educational tools for health personnel. New York: The Macmillan Company, 1968.

Will PPI's affect your patients' attitudes? Patient Care 13 (February 15, 1979):190-198.

Williams, Bill. A sampler on sampling. New York: John Wildy and Sons, Inc., 1978, p. 227.

Williams, Jon L. Operant learning: procedures for changing behavior. Monterey, Calif.: Brook-Cole Publishing Company, 1973.

Wilson, Robert M. The sociology of health. New York: Random House, 1970.

Wyer, Robert S., Jr. Cognitive organization and change. New York: Wiley Publishing, 1974.

Zimbardo, Philip G., and Ebbesen, Ebbe B. Influencing attitudes and changing behavior. Reading, Mass.: Addison-Wesley Publishing Company, 1970.