

THE EFFECT OF HEALTH TEACHING ON THE ANXIETY LEVEL OF  
PATIENTS WITH CHRONIC OBSTRUCTIVE LUNG DISEASE

by

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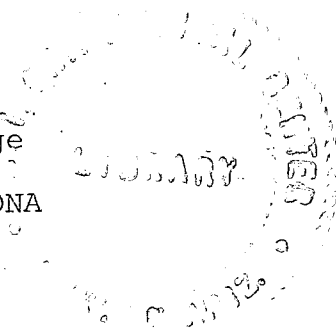
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## ABSTRACT

An experimental study was conducted to measure the effects of a health teaching unit on the anxiety level of patients with chronic obstructive lung disease attending an out-patient chest clinic. The health teaching program was administered via an automated audio/slide unit in two sessions of thirty minutes each, using group interaction as one means and nurse-patient interaction as the other. A third group served as the control. The Institute for Personality and Ability Testing (IPAT) Anxiety Scale was utilized to measure trait anxiety and the Affect Adjective Check List (AACL) was utilized to measure state anxiety.

The research hypothesis that health teaching done in a small group by the professional nurse will result in a significant reduction of mean trait and state anxiety scores for individuals with chronic obstructive lung disease was not supported. The subjects who received the health teaching unit in a nurse-patient interaction had the lowest mean trait and state anxiety scores, indicating a trend toward the preference of individual instruction over group instruction when the goal is reduced anxiety. The highest IPAT anxiety scores were obtained by the two smoking subjects in the group setting. This suggested the possibility of increased dissonance for subjects who smoke and



are exposed to anti-smoking information in a group composed of smokers and nonsmokers.

## CHAPTER I

### INTRODUCTION

Illness, especially prolonged illness, is an anxiety-producing situation for the individual (Lederer, 1952). To speak of anxiety as unequivocally undesirable is not realistic (Gage, 1963), but it is recognized that persistent, high anxiety results in distortions, shifts in emphasis, and inability to comprehend and adapt (Bard, 1966; Peplau, 1963). The negative effects of high anxiety upon appropriate health behavior cannot be overlooked (Robbins, 1962).

Chronic obstructive lung disease which encompasses asthma, chronic bronchitis, and emphysema, can certainly be considered an anxiety-producing situation. "Difficulty in breathing is frequently related to deep concerns about life and death and primitive fears of suffocation" (Hargreaves, 1968:481). This concern with life and death is realistic, since the United States has experienced rapidly rising mortality rates from 1950 to 1963 due to emphysema with or without chronic bronchitis. Arizona's rate was more than four times the United States rate for white males for this same period (Oppenheimer, 1965).

Chronic obstructive lung disease also results in a high rate of morbidity and disability. The estimates from the surveys of the "Report of the Task Force on Chronic Bronchitis and Emphysema" (1967) indicate that 14,000,000 persons in the United States have some degree of chronic obstructive lung disease. The same report indicates that in 1963, the pensions for disability due to emphysema cost the Social Security Administration about ninety million dollars. Emphysema is second only to heart disease in terms of most frequent diagnosis among workers eligible for a disability pension.

How can the professional nurse influence the individual's ability to cope with the stresses of a prolonged illness such as chronic obstructive lung disease? Can the nurse make the experience of illness less anxiety-producing through health teaching? Wheeler (1970) believes that health teaching by the nurse decreases the emphysematous patient's anxiety. Through this reduction of anxiety, he can more fully comprehend the reasons for his therapy, cooperate more positively in his treatment, and thus cope more effectively with his situation.

#### Statement of the Problem

The specific problem identified for study is: What is the effect of health teaching related to chronic obstructive lung disease on the individual's anxiety level?

The purpose of the study is to explore the relationship between health teaching and anxiety.

The problem is worthy of study in view of the loss of human resources due to the rising morbidity and mortality rates of chronic obstructive lung disease and the dollar cost to society from the disabilities resulting from emphysema.

The problem is significant to nursing because it attempts partial validation of the assumption that health teaching alters the degree of anxiety experienced during illness. The inference of this assumption is that a reduced anxiety level enhances a positive response to the therapeutic modalities. Prescriptions for nursing practice directed toward promotion of patient welfare too often rely on intuitive rather than scientific knowledge. Assumptions need to be tested through clinical research to establish predicted outcomes of nursing actions and thus increase nursing's body of theory (Conant, 1967).

#### Research Hypothesis

The research hypothesis is that health teaching done in a small group by the professional nurse will result in significantly greater reduction of the mean trait and state anxiety scores as measured by the Institute for Personality and Ability Testing (IPAT) Anxiety Scale and the Affect Adjective Check List (AACL) for individuals with chronic

obstructive lung disease than for individuals with chronic obstructive lung disease who are not exposed to health teaching and/or group interaction.

### Theoretical Framework

The theoretical framework for this experimental study utilizes Lazarus' theory of psychological stress (Lazarus, 1966), and Festinger's cognitive dissonance theory (Festinger, 1957).

#### Theory of Psychological Stress

Lazarus (1966) uses "stress" as a collective term for the area of study that includes the stimuli producing stress reactions, the reactions themselves, and the factors influencing the processes intervening between the stress stimulus and the stress response.

Threat, a state in which the individual anticipates harm, is the key intervening variable. Stimuli resulting in threat reactions are cues evaluated by a cognitive process of appraisal. The process of appraisal depends on two major classes. These classes are the stimulus configuration and the psychological structure of the individual.

The three factors in the stimulus configuration that determine the appraisal of threat are: (1) the comparative power of the harm-producing condition which is dependent on the information available and the individual's

counterharm resources, (2) the temporal nearness of the harmful confrontation, and (3) the degree of ambiguity in the significance of the stimuli cues.

The second class of factors that determine the appraisal fall within the individual's psychological structure. These are: (1) the pattern and strength of motivations where stimuli would lead to appraisal of threat if a confrontation was anticipated that would thwart a motive; (2) belief systems concerning interaction with the environment where, for example, beliefs about death are relevant in situations where death is a major portion of the threat; and (3) knowledge, education, and intellectual resources where the lack would increase the likelihood of threat appraisal or incorrect evaluation of the situation. Lazarus (1966) suggests that the reverse relationship could also occur.

Following the appraisal of a stimulus as threatening, coping processes function to reduce or eliminate the anticipated harm. The cognitive activity related to the coping process is termed secondary appraisal and is influenced by the degree of threat and factors in the stimulus configuration such as location of the agent of harm, the feasibility of alternative actions, and situational constraints. The psychological structure of the individual is the third class of factors influencing the secondary appraisal process. These include the pattern of

motivation which determines the cost of coping alternatives, ego strength, defensive dispositions, and general beliefs about the environment and one's resources for dealing with it.

Because cognitive processes take place rapidly and secondary appraisal makes use of information that may have registered simultaneously with the primary process of appraisal, the two stages of appraisal merge or overlap with one another. One cannot clearly speak of a sequence. Appraisal also does not necessarily imply awareness and good reality-testing, only that thought processes such as beliefs, expectations, perceptions, evaluations, learning, and memory are involved.

Threat reactions are associated with the process of coping with threat and both are the result, at least partially, of the process of secondary appraisal. The nature of the affect experienced, as well as the motor and physiological reactions, depends upon the action tendency resulting from the secondary appraisal process.

The advantages of regarding emotions, specifically anxiety as the consequences of intervening cognitive processes are two-fold. The complexity of the determination of the coping process is recognized, and through appraisal, transactions between the individual and the situation are emphasized. Secondly, investigation is directed toward

aspects in the environment and qualities in the individual which influence his action when threatened (Lazarus, 1966).

From this brief summary, it is evident that Lazarus regards the hypothetical construct of anxiety as a response to threat appraisal with antecedent and consequent conditions. Anxiety is the inevitable initial response to being threatened, and will disappear if the danger is actually overcome by the coping process. However, anxiety can remain the dominant affective response to threat when the source of threat remains ambiguous and defense is unsuccessful. The response then becomes free floating anxiety since it attaches itself to readily shifting objects in the external environment.

Using Lazarus' model, anxiety for the individual with chronic obstructive lung disease could occur following secondary appraisal in this pattern:

1. Breathlessness due to decreased ventilatory capacity and accompanied with fear of suffocation and death is appraised as a threat.
2. The agent of harm is ambiguous since there is no specific recognized cause for the pulmonary dysfunction (Burrows and Earle, 1969).
3. Due to the absence of pertinent knowledge to cope with the breathlessness, there is no basis for either attack, avoidance, or an estimate of hopelessness.



4. Free-floating anxiety results, with concurrent changes in the efferent impulses to the respiratory muscles and/or smooth muscles in the bronchioles. Total pulmonary ventilation is affected with secondary changes in alveolar gas exchange and arterial blood gas levels (Ganong, 1969). Increased breathlessness results, and a vicious cycle ensues.

#### Theory of Cognitive Dissonance

Festinger's theory of dissonance is concerned with the psychological processes which occur in the individual. The basic hypotheses of the theory are extremely simple. These hypotheses are that the simultaneous existence of cognitions (any knowledge, opinion or belief about the environment, about the individual, or about his behavior) which do not fit together (dissonance) leads to efforts on the part of the person to somehow make them fit better (dissonance reduction). Secondly, when dissonance is present, in addition to trying to reduce it, the individual will actively avoid situations and information which would increase the dissonance (Festinger, 1957).

Cognitive dissonance can be viewed as an antecedent condition, similar to Lazarus' stimulus configuration and the individual's psychological structure. The cognitive dissonance leads to activity directed toward dissonance reduction, similar to Lazarus' coping process.

Festinger (1957) suggests that one means of reducing dissonance for the individual is through group interaction. The two processes involved are reducing dissonance by obtaining support from people who already believe what the individual wants to persuade himself about or by persuading others that they should also believe what he wants to believe. If an individual has been exposed to evidence contrary to an opinion he holds, he is more likely to seek social support from persons who hold the same opinion he does. Persons who agree with him can provide new information and arguments which are consonant with his belief and discredit arguments which are dissonant with his belief to reduce the dissonance. However, if agreement from others does not result, then the dissonance may persist or even be increased.

Beliefs regarding smoking and the value of a daily bronchial hygiene program are two examples of cognitions that could lead to dissonance in individuals with chronic obstructive lung disease. The individual knows smoking is harmful for him and that his physician advises him to quit smoking, but he enjoys smoking and he is acquainted with other people with chronic obstructive lung disease who continue to smoke. He may also realize the benefits to be accrued from a daily bronchial hygiene program, but he does not see how he can take the time each morning and evening to assume the various positions for postural drainage. The

individual would then experience cognitive-dissonance and symptoms of psychological discomfort would be observable. If this individual sought support from a group who believes smoking is harmful and attempts to quit smoking and follow a daily bronchial hygiene program are sanctioned, the individual would experience dissonance reduction, and, therefore, reduced anxiety.

#### Assumptions

The assumptions basic to this study are:

1. Chronic obstructive lung disease is stressful and anxiety-producing.
2. With a primitive knowledge of the disease, the unknown factors provide the background for disabling anxieties.
3. The professional nurse, through her teaching-counseling role, contributes to the individual's knowledge of the nature of his illness.
4. Group interaction and nurse-patient interaction are two means of reducing anxiety.
5. Anxiety can be measured.
6. Reduction of excessive anxiety enhances the individual's receptiveness to the treatment modalities and ability to adapt to the physical limitations imposed by chronic obstructive lung disease.

### Working Definitions

For the purpose of this study, the following terms are defined.

#### Health Teaching

Health teaching is instrumental and expressive communication designed to provide information and reduce the anxiety of illness.

#### Anxiety

Anxiety is trait and state responses to threat appraisal. Trait anxiety is a general disposition to act in some way and state anxiety is a response to a given set of conditions. The Institute for Personality and Ability Testing (IPAT) Anxiety scale is utilized as a measure of trait anxiety and the Affect Adjective Check List (AACL) is utilized as a measure of state anxiety.

#### Chronic Obstructive Lung Disease

Chronic obstructive lung disease includes all long-term conditions with expiratory airway obstruction such as asthma, chronic bronchitis, and emphysema.

## CHAPTER II

### REVIEW OF THE LITERATURE

The review of the literature focuses on patients' reactions to chronic obstructive lung disease and the need for teaching, the effect of anxiety on learning, health teaching and behavioral change, health teaching and reduced tension, studies utilizing a teaching-counseling approach, and methods of patient teaching.

#### Patients' Reactions to Chronic Obstructive Lung Disease and the Need for Teaching

Jones (1967:53) in the personal account of his efforts to live with emphysema, dramatically related the emotional reaction to dyspnea:

We actually experience a perpetual mental burden of apprehension, physical tension, constant fright, severe depression, and conscious and unconscious irritability. . . . Frequently we are beset with feelings of personal inadequacy, and we feel neglected to the point of complete frustration. . . . These burdens of the patient can be greatly relieved, relaxed and lightened if the doctors, nurses, and therapists teach the patient and his family how to live with breathlessness. Most important and helpful is instruction in proper posture, diaphragmatic breathing, isometric exercises, room ventilation, and better breathing habits.

Because chronic obstructive lung disease represents a lifelong complex illness, Petty and Nett (1969:117) deemed it essential "that patients learn about their illness,

comprehend factors in prevention and understand care so that they can be more independent and thus able to cope with their many disease related problems."

Secor (1969) commented on the anxiety a person who suffers from breathing difficulties experiences. She recognized the need for health teaching through skillful communication between the patient and nurse to reduce the patient's anxiety and enable him to care for himself to the full limits of his ability.

Dudley (1969) viewed responses of resentment, anger, fear, or depression as the more common reactions to attempts to adjust to increasing weakness, dyspnea, cough, and sputum production. These emotions can readily upset a therapeutic program with chronic obstructive lung disease. The patient may be too anxious to see his physician or carry out his medical regime, or he may be too depressed and therefore lack motivation to take adequate care of himself.

Education of the patient and his family as the first and most important task of management of patients with obstructive lung disease is cited by Dudley (1969). He believed that frank and open discussion concerning the nature of the disease, its social implications, and its prognosis with comprehensive medical care relieved the disabling fears.

### Effect of Anxiety on Learning

Is anxiety an innate potential or a diffuse emotional response with overt and covert manifestations? Is anxiety a cue for defensive reactions or a learned drive, a habitual reaction? Akutagawa (1968) briefly surveyed the theoretical properties of anxiety, emphasizing the variety of terms and concepts to be found in the psychological and psychoanalytic literature.

Spence (1958) emphasized the drive aspect of anxiety. The point of view is based on Hull's postulate that drive multiplies the strengths of all habits, including the habits associated with task performance. Spence postulated that high levels of drive, as measured by the Taylor Manifest Anxiety Scale, increase the strengths of correct and incorrect responses in task performances connected with learning. If the task is difficult or complex, high drive will impair performance because the habit strengths of many wrong responses will be facilitated. If the task is simple and contains few competing responses, performance will be facilitated by high drive. Critiques have been offered for this position and the findings involved (Sarason, 1960). Lazarus (1966) commented that since anxiety is regarded as another term for general drive, the issue of the nature of anxiety as compared with other affects such as anger becomes irrelevant.

Research by Spielberger and Smith (1966) demonstrated the complexity of the relationship of anxiety to performance. In an experiment involving the learning of a serial list of nonsense syllables, some subjects learned the list under threat while others did so under neutral conditions. The statement that the quality of the subject's performance reflected his intelligence was the threat. Under no threat conditions, there were no significant differences between the high and low anxiety subjects. Under threat, the high anxiety subjects began to exceed the low anxiety subjects late in performance. In comparing the learning curves of subjects high and low in anxiety for the easy and difficult syllables under the threat condition, it was found that subjects high in anxiety showed a performance that rapidly became superior to those low in anxiety on the easy words. But on difficult words, high-anxiety subjects performed more poorly and achieved superiority over subjects low in anxiety very late in the learning situation when the syllables had been well mastered. These results seem to show that a greater amount of threat impairs the performance of chronically anxious subjects.

Another view of the effect of anxiety on learning is offered by Sarason, Mandler, and Craighill (1952). These authors studied the effects of anxiety on intellectual-task performance. Anxiety is viewed as a threat response that



may compete or interfere with the responses required for successful task performance.

Easterbrook (1959) has argued that anxiety disorganizes the utilization of stimulus cues in learning and performance by narrowing the range of attention and limiting perceptual-cue utilization. This constriction of perception occurs because only things that appear to be relevant to the danger receive attention.

The effect of emotion on behavior has been discussed in reference to the empirically derived generalization that the number of cues utilized in any situation tends to become smaller with increase in emotion.

On some tasks, reduction in the range of cue utilization improves performance. Irrelevant cues are excluded and drive is then said to be organizing or motivating. In other tasks, proficiency demands the use of a wide range of cues, and drive is disorganizing or emotional. There seems to be an optimal range of cue utilization for each task (Easterbrook, 1959:197-198).

Wachtel (1968) attempted to gain further evidence of the "reduction in the range of cue utilization" (Easterbrook, 1959) under anxiety and to determine how this could be modified when a means is provided to cope with the anxiety-producing threat. He found that subjects threatened with shock performed no differently than an unthreatened control group on a tracking test occupying the center of their attention, but had significantly longer reaction times to lights which went on at the periphery of their visual field. The subjects who were told they could avoid the shock

through good performance showed no such increase in reaction time.

The theories advanced by Spence (1958), Sarason et al. (1952), and Easterbrook (1959) specify some of the processes that intervene between the threat stimulus and changes in cognitive performance. But Lazarus (1966) preferred the more complex propositions that are in line with his theory of psychological stress. He emphasized the coping processes which determine the behavioral and performance outcome of threat conditions (for example, Lazarus, Deese, and Osler, 1952; Lazarus and Speisman, 1960; Folkins et al., 1968).

Thus, "anxiety is a response of an individual to a situation of danger, and is adaptive to the degree that it aids the individual in coping with the threat" (Wachtel, 1968:137). Research has indicated that high anxiety produces more rapid learning on simple tasks than low anxiety, but the reverse is true in complex tasks. Performance is, of course, also related to other variables irrelevant to threat--for example fatigue, capacity, distraction, learning processes, and individual response styles.

#### Health Teaching and Behavioral Change

Redman (1968) defined teaching as a special form of communication designed to produce learning, and eventually, behavioral change. The concept of change in behavior is

worth emphasizing. Kasey and McMahan (1964:8) in their discussion concerning patient education, differentiated between training and education:

If the major objective is to train patients to respond to certain stimuli, to cooperate, to comply, to accept what they are told, then the procedure should be called patient training. If the hospital staff is concerned about providing experiences that will enable the patient to understand, to acquire skills, and to develop attitudes that will help him become an "inner directed," self-operating learner then education is the objective.

A report of World Health Organization committee (1969:8) agreed that health education is focused on people and their action ("Planning and Evaluation . . ."):

In general, its aims are to persuade people to adopt and sustain healthful life practices, to use judiciously and wisely the health services available to them, and to take their own decisions, both individually and collectively, to improve their health status and environment.

Correct health knowledge in itself is not the inevitable trigger of desirable behavior change or health action. Three separate studies, reported by Young (1968), compare the relationship between knowledge about diabetes and control. Each study obtained the same surprising and significant results: knowledge concerning diabetes is inversely correlated with control. It is suggested that factors affecting diabetic control apply to the control of other chronic diseases. These factors include biological and psychological factors, appropriateness of the medical

recommendations, and the patient's performance of the recommended therapy.

Behavior change is related to motivation and felt need. Health as an explicit, valued, and consciously pervasive need lies in a rather lowly position in the scale of human motivation (Redman, 1968; Steuart, 1967).

Social and psychological realities affect the attainment of change in health behavior. "The acceptability of the proposed health practice in terms of the customs and traditions that the individuals, families, and groups observe, the beliefs that they hold, and the attitudes of their peers" ("Planning and Evaluation of Health Education Services: Report of a World Health Organization Committee," 1969:8) are important considerations. Practical ease of implementation in terms of finances and time is another variable.

Measurement of appropriate health behaviors is difficult. In controlled studies, limited single-event behavior may be measured, but not complex ones. Even simple behavior must be narrowly defined before it can be measured in any practical sense (Kerrick and Clark, 1969). Wheeler (1970), in measuring the effect of nurse teaching interviews on patients with emphysema, recognized the lack of standardized measurements in the psychomotor domain. She experienced difficulty in obtaining objective measurements of changes in pursed lip and diaphragmatic breathing.

### Health Teaching and Reduced Tension

Instead of concentrating on the long term goal of behavioral change and the difficulties encountered in measuring the change, the focus will now turn to the more immediate goal of "relieving the tensions of illness by means of learning" (Redman, 1968:3).

Skipper (1965) offered several untested hypotheses in his discussion of the consequences of limited communication between patients and hospital functions. One of his hypotheses "the greater the patient's fear and anxiety about the nature and the extent of his illness, the greater the probability that this fear and anxiety will not be reduced when such information is not communicated to him" (Skipper, 1965:79), supports this goal of health teaching.

Kauffman (1965) studied thirty patients' perception of stress within a university hospital setting and found that all patients perceived the lack of information about illness as stress-producing. The information which patients wanted concerning their illness was knowledge of the medical plan of treatment, prognosis, cause of illness, damage done, and discharge date. They believed that the nurse could reduce stress through showing a personal interest in the patient, providing for his physical comfort, and giving information about treatments, routines, and the patient's illness.

Counseling, regarded by Reiter (1966) as emotional, intellectual, and psychological support, is related to teaching. Freeman (1963) placed counseling and teaching on a continuum with the difference being related to the degree of self direction that is possible. Peplau (1952) had a broad conception of the teaching role of the nurse, that it is a combination of roles, including counseling.

Helming (1968:419-420) discussed the teaching-counseling role of the nurse in relation to chronic obstructive lung disease:

For the patient to participate in a plan of care that will assist him to utilize his optimum functional capacities, two conditions must be met. He must understand his disease--the reasons for his dyspnea, cough, and fatigue--and how the various therapies assist him to minimize them. Then he must be provided with the opportunity to express his feelings about his health and given direction to assist him to gain insight into the meaning of his behavior. Hopefully he can then begin to accept his situation and cope satisfactorily with the limitations it imposes upon him.

In collaboration with the physician and other members of the health team, the nurse can contribute in each of these areas. Her teaching and counseling functions can be fully utilized here.

#### Studies Utilizing a Teaching-Counseling Approach

Studies have been conducted that utilize the teaching-counseling role. Wheeler (1970) found that patients with emphysema who were individually instructed about their disease and self care by a nurse who encouraged discussion about their anxieties had fewer misunderstandings

about their disease and greater confidence in their ability to live within their physical limitation than the patients who did not receive such instruction. Mezzanotte (1970) gave preoperative instruction to twenty-four patients in groups of four and explained what to expect pre- and post-operatively. The patients reported a gain in their ability to participate in the postoperative activity and several patients reported decreased anxiety as a result of the instruction and group discussion.

Dumas and Leonard (1963) found that gynecologic patients who received the experimental nursing approach as part of their preoperative care experienced less post-operative vomiting than those who did not have their distress relieved through the supportive nursing approach. In a similar study conducted by anesthesiologists, instruction, suggestion, and encouragement concerning the severity of postoperative pain resulted in decreased postoperative narcotic requirements and earlier hospital discharge for the treatment group (Egbert et al., 1964).

#### Methods and Tools of Patient Teaching

Teaching of patients varies from informal, incidental communication between two individuals to formal structured classes (Monteiro, 1964). Methods of instruction include lectures, discussion, and demonstration and practice for teaching motor skills.

The lecture can be an efficient and interesting means for giving information, for showing relationships among concepts, for demonstrating higher-level intellectual skill, and for influencing attitudes. But, unlike the discussion method, the lecture does not focus on the exchange of ideas among individuals, so that active involvement is less possible (Redman, 1968).

Discussion groups are useful in patient teaching because it is an economical way to teach a number of individuals at one time, and the experience of being part of a group may be educative regarding the development of attitudes or concepts already attained (Redman, 1968; Hirsch, 1969). Levine and Butler (1952) compared the results of a formal lecture method with group decision in influencing twenty-nine supervisors of 395 factory workers to overcome their biased performance in rating workers. Only the group of supervisors involved in group decision improved their ratings. According to Steuart (1967), group pressure to conform to appropriate health-related behavior is more likely to produce desirable changes than communication flowing directly from expert to a group of individuals.

Slater (1958) suggested that maximal group satisfaction is achieved when the group is large enough so members feel free to express positive and negative feelings safely, yet small enough so some regard is shown for the feelings of others. He found that a group size of five is



optimum for tasks of discussing human relations problems (Slater, 1958). Roth and Mirsa (1963) found that change in attitude due to group discussion is maximally seen in a group size of seven. Groups of three and eleven members did not differ significantly.

Teaching tools include written materials such as pamphlets, programmed instruction, and audiovisual aids. The physical object, records, pictures, posters, motion pictures, television, and audio/slide program are examples. Although the initial production of an audio/slide program may be expensive, the advantages are attractive. These include low maintenance cost to the slide and sound equipment and easy modification of the program by changing the slides used or by editing the tape (Chez, 1969).

McNab (1969) reported that by using the lecture method of teaching, adults on the average will rapidly lose all but 20 per cent of the information imparted in the course of a twenty minute lecture. Retention can be improved 40 to 45 per cent when the sense of sight is utilized, 70 per cent when participation is utilized, and 100 per cent when repetition of lesson material occurs.

## CHAPTER III

### DESIGN OF THE STUDY

The topics discussed in this chapter are the experimental design, population, description, samples size and selection, variables, measurement instruments, and limitations of the experimental study.

#### Experimental Design

A "posttest only" control group design was utilized in this experimental study.

While the pretest is a concept deeply embedded in the thinking of research workers in education and psychology, it is not actually essential to true experimental designs. For psychological reasons it is difficult to give up "knowing for sure" that the experimental and control groups were "equal" before the differential experimental treatment. Nonetheless, the most adequate all-purpose assurance of lack of initial biases between groups is randomization. Within the limits of confidence stated by the tests of significance, randomization can suffice without the pretest (Campbell and Stanley, 1963:25).

#### Population

The target population was fifty-nine patients with chronic obstructive lung disease who were actively participating in an outpatient chest clinic rehabilitation program as of February 6, 1970, at a 475-bed accredited general hospital in an urban center in southern Arizona.

The purpose of the chest clinic is to provide comprehensive rehabilitative care to ambulatory patients with chronic obstructive lung disease. Each patient is referred to the chest clinic by his private physician. The private physician retains responsibility for the individual's care, with the chest clinic physician assuming responsibility only for the immediate care of the chest condition.

The staff of the chest clinic consists of a physician director, two staff physicians, a registered nurse, a social worker, an inhalation therapist, physical therapist and assistant, and a secretary-receptionist. The modalities of treatment include inhalation therapy, physical therapy, drug therapy, and services of a nurse and social worker.

#### Sample

The random sample, selected through the use of a table of random numbers, was to consist of three groups of seven patients with chronic obstructive lung disease who were actively participating in the chest clinic program. Treatment Group I consisted of six rather than seven patients due to an illness of one patient and received the planned health teaching unit in a group setting. Treatment Group II, consisting of seven patients, received the planned health teaching unit in individual sessions. Treatment Group III, also consisting of seven patients, received the routine care of the chest clinic and served

as the control group. Each patient received a written explanation of the nature of the study appropriate to his group and signed a consent form (Appendix A and B).

### Variables

The independent variable was the planned health teaching unit administered by the nurse researcher via two methods: group interaction and nurse-patient interaction. The planned health teaching unit was divided into four sections which included the chest clinic program, the disease process, treatment modalities, and healthful living practices. It was administered via an automated audio/slide program in two sessions, each approximately thirty minutes in length and separated in time by one week. The initial outline for the health teaching unit was prepared by the nurse researcher in conjunction with the medical director when the nurse researcher was employed at the chest clinic. The development of the program was accomplished by the education coordinator of the hospital. This study initiated the utilization of the audio/slide program.

### Measurement Instruments

It is recognized that problems exist in developing defensible criteria for assessing the process and effects of quality nursing practice on patient welfare (Abdellah, 1970). Reliability and validity of measurement tools are especially important. With these thoughts in mind, the

tools selected for the measurement of anxiety were the Institute for Personality and Ability Testing (IPAT) Anxiety Scale and the Affect Adjective Check List (AACL).

#### IPAT Anxiety Scale

"The IPAT Anxiety Scale is primarily designed to measure free-floating, manifest anxiety level, whether it be situationally-determined or relatively independent of the immediate situation" (Cattell and Scheier, 1963:13). It is a brief, non-stressful, forty-item questionnaire that can be answered in five or ten minutes and scored in about one-half minute.

Cattell (1966) differentiated between anxiety as a trait and anxiety as a state. Trait anxiety is a relatively stable disposition to respond in the same way in a variety of situations. State anxiety is a reaction to a particular stimuli and is transient. In trait anxiety, the reaction is treated as an independent variable useful in predicting other behaviors. In state anxiety, emphasis is placed on the conditions that influence the reaction. Lazarus (1966) pointed out that standardized pencil-and-paper tests of anxiety usually measure a general trait of anxiety-proneness, as is evidenced by the use of such terms as "often" or "usually" in questions about the reaction--for example, "I usually fall asleep quickly, in a few minutes,

when I go to bed" (Appendix C). Thus the IPAT Anxiety Scale is primarily a measure of trait anxiety.

The construct validity which is the correlation of the test items and components with the anxiety factor of the scale is estimated in The Handbook of the IPAT Anxiety Scale Questionnaire to be  $+ .85$  to  $.90$  and the reliability is estimated at  $.93$  for test-retest at one-week interval and  $.87$  at two-weeks interval (Cattell and Scheier, 1963). Cohen (1965:256) commented on the "impressive systematic research background" of the IPAT Anxiety Scale and stated it had "no peer" as a quick measure of anxiety for literate adolescents and adults.

#### AACL Anxiety Scale

The Affect Adjective Check List differs from the IPAT Anxiety Scale Questionnaire in that it is designed specifically to assess changes in an individual's anxiety over time (Zuckerman, 1960).

Subjects are instructed to check from a list of adjectives those words that best describe their feelings "now--today." Eleven adjectives are anxiety-plus words and ten are anxiety-minus words (Appendix D). The anxiety-plus words such as afraid, nervous, and shaky are checked significantly more frequently by psychiatric patients rated high in anxiety than by normal subjects rated low in anxiety; the anxiety-minus words such as calm, contented,

and joyful are checked significantly more frequently by normal subjects than by psychiatric patients (Zuckerman, 1960). Anxiety-plus words are scored one if checked and anxiety-minus words are scored one if not checked.

The low reliability of .00 to .28 on test-retest indicates measurement of day to day fluctuations in anxiety. The validity of the AACL has been established through demonstrated sensitivity to such variables as anticipation of an exam, exam threat, exam failure, child-birth fear, and motion picture stimuli (Datel et al., 1966). Like the IPAT Anxiety Scale, the AACL can be administered and scored in a short period of time.

### Limitations

Limitations of this experimental study are as follows:

1. The study was a field experiment with limitations on control of variables.
2. The design did not control for intersession history.
3. The small sample limited the amount of generalization possible to the universe of patients with chronic obstructive lung disease.
4. The short period of time between application of the independent variable of health teaching, via the group interaction and nurse-patient interaction, and the measurement of the dependent variables,

trait and state anxiety, may have been insufficient time for significance to be revealed.

- 5.. The sample consisted of individuals with chronic obstructive lung disease who were not recently diagnosed and had been attending the chest clinic for two to twenty-six months.



## CHAPTER IV

### PRESENTATION OF DATA

This chapter presents a profile of the subjects in the sample who provided the data, the raw data resulting from the measurements of the dependent variable anxiety, statistical analysis of the findings, appropriateness of the measurement instruments, and the relationship between the level of dyspnea and the IPAT anxiety score.

#### Profile of the Subjects

Of the twenty patients with chronic obstructive lung disease, fifteen were males and five were females. The ages ranged from thirty to seventy-one years with a mean age of 60.20 years. The number of months each subject had been attending the chest clinic at the time of the study varied from two months to twenty-six months, with a mean of 14.95 months.

The range of the dyspnea grade was from one to five, with an average of 3.42. The dyspnea grade is assessed by the patient's chest clinic physician during the initial evaluation and periodically thereafter. The dyspnea grade listed was the latest grade recorded in the patient's chart. It was estimated by using the "Dyspnea Assessment-Present" section of the Chest Clinic Questionnaire on Respiratory Symptoms. A grade of one is given if the

patient is not troubled by shortness of breath when hurrying on the level or walking up a slight hill. The highest grade of five is given to the patient if he becomes short of breathing on washing or dressing. Five of the twenty patients were currently smoking. This information appears in Table I.

Table I. Profile of Subjects with Chronic Obstructive Lung Disease According to Age, Sex, Number of Months Attending the Chest Clinic, Dyspnea Grade, and Smoking Habits

Group	Subject	Age	Sex	No. of Months Attending Chest Clinic	Dyspnea Grade	Smoking Now
I	1	55	M	17	4	no
	2	69	M	11	4	no
	3	72	M	14	1	no
	4	67	M	14	4	no
	5	61	F	7	4	yes
	6	46	M	24	5	yes
II	7	70	F	2	5	no
	8	30	M	5	3	no
	9	70	M	5	5	no
	10	50	M	14	4-5	yes
	11	71	F	12	3	no
	12	64	M	26	2	no
	13	56	M	6	4	no
III	14	69	M	24	1	yes
	15	55	M	26	5	no
	16	65	M	25	3	no
	17	60	M	27	1	no
	18	54	F	5	5	yes
	19	69	M	26	3	no
	20	51	F	9	2	no
Mean		60.20		14.95	3.42	

### Raw Data from Measurement Instruments

The IPAT Anxiety Scale was utilized to measure the trait anxiety of patients with chronic obstructive lung disease following presentation of the health teaching unit. Group I, consisting of six patients, received the health teaching unit via group interaction in two sessions. The total scores on the IPAT ranged from 20 to 46, with a mean of 34.00 and a standard deviation of 10.18. Group II, consisting of seven patients, received the health teaching unit via nurse-patient interaction in two sessions. The scores ranged from 17 to 40, with a mean of 27.00 and a standard deviation of 8.87. Group III, also consisting of seven patients, served as the control group and did not receive the health teaching unit. Their scores ranged from 15 to 43, with a mean of 31.14 and a standard deviation of 11.39.

The IPAT Anxiety Scale raw score for the general population of 935 men and women is 27.10, with a standard deviation of 11.40 (Cattell and Scheier, 1963). The IPAT raw score mean for the total sample was 30.55 and the standard deviation was 10.08.

The AACL Anxiety Scale was utilized to measure the state anxiety of patients with chronic obstructive lung disease following presentation of the health teaching unit. The scores of Group I ranged from 1 to 12, with a mean of 7.33 and a standard deviation of 10.18. The AACL scores

for Group II ranged from 0 to 13, with a mean of 6.00 and a standard deviation of 4.65. For Group III, the scores ranged from 2 to 13. The mean was 7.86 and the standard deviation was 4.67. Table II shows the IPAT Anxiety Scale and the AACL raw scores for the subjects in Groups I, II, and III.

### Statistical Analysis of the Findings

The Kruskal-Wallis one-way analysis of variance was used to test the null hypothesis that there are no significant differences in the mean trait and state anxiety level scores among the three groups of individuals with chronic obstructive lung disease. According to Popham (1967), this non-parametric test is useful with three or more independent samples, ordinal or stronger data, and small sample sizes. As shown on Table III, there are no significant differences between the three groups for either the IPAT Anxiety Scale or the AACL scores. It can be noted from the data, however, that there are score differences between the three groups. With larger number of subjects in each group and a persistence of the trend of these differences, statistical significance would be expected.

The one-tail t-test of the differences between sample means was then utilized to measure the differences between Groups I and II, Groups II and III, and Groups I and III. No significant differences between groups for the

Table II. Raw Scores of the IPAT Anxiety Scale and AACL Anxiety Scale for Subjects with Chronic Obstructive Lung Disease

Group	Subject	IPAT Anxiety Scale	AACL
I	1	20	1
	2	30	8
	3	31	4
	4	31	12
	5	46	8
	6	46	11
Mean		34.00	7.33
Standard Deviation		10.18	4.18
II	7	17	0
	8	19	6
	9	24	2
	10	24	8
	11	27	13
	12	38	10
	13	40	3
Mean		27.00	6.00
Standard Deviation		8.87	4.65
III	14	15	2
	15	16	5
	16	30	6
	17	37	12
	18	37	13
	19	40	4
	20	43	13
Mean		31.14	7.86
Standard Deviation		11.39	4.67

Table III. Kruskal-Wallis One-Way Analysis of Variance of IPAT Anxiety Scale and AACL Scores for Three Groups of Subjects with Chronic Obstructive Lung Disease

Instrument	df	H
IPAT	2	1.67
AACL	2	0.668

dependent variable of anxiety were found. Table IV presents the probabilities obtained through the use of the t-test. Only the comparison of the difference between the covert (A score) IPAT Anxiety Scale means for Group I which received the health teaching unit via group interaction and Group II which received the health teaching unit via nurse-patient interaction approached significance with a probability of 0.06,, and the significance was in the opposite direction than that hypothesized. The null hypotheses cannot be rejected.

A two-tail t-test was done to determine the probability that a statistically significant mean difference existed between the general population's IPAT Anxiety Scale mean score as reported in The Handbook of the IPAT Anxiety Scale Questionnaire and the mean score of the total sample. The t-test was significant beyond the 0.05 level as indicated in Table V. The interpretation of this

Table IV. t-Values, Degrees of Freedom, and Probabilities for Groups I, II, and III Using the Mean Total, Covert, and Overt IPAT Anxiety Scale and AACL Scores

Score	Group	t-value	df	Probability
IPAT Total	I and II	1.326	11	.11
	II and III	.473	11	.32
	I and III	.759	12	.23
	I, II, and III	.188	18	.43
IPAT Covert	I and II	1.648	11	.06
	II and III	.895	12	.19
	I and III	.897	11	.19
IPAT Overt	I and II	.606	11	.28
	II and III	.555	12	.29
	I and III	.000	11	.50
AACL	I and II	.539	11	.30
	II and III	.745	12	.23
	I and III	.211	11	.41
	I, II, and III	.597	18	.28

Table V. A Comparison of IPAT Anxiety Scale Scores for Subjects with Chronic Obstructive Lung Disease and the General Population

Group	Number	Standard Deviation	Mean IPAT Raw Score	t-value
Chronic Obstructive Lung Disease	20	10.08	30.55	1.513*
General Population	935	11.40	27.10	

\*Significant beyond the 0.05 level.

significance is that patients with chronic obstructive lung disease attending the chest clinic do not come from the same general population as reported in the IPAT handbook when trait anxiety is considered.

Appropriateness of the IPAT Anxiety Scale  
and the AACL

The fact that no significant differences were found among the three groups in this study seems to indicate that the IPAT Anxiety Scale and the AACL are not sensitive to the independent variable of health teaching as utilized for this sample with quiescent chronic obstructive lung disease patients. Since health is a low-priority conscious need of the general population (Steuart, 1967), it may be that health teaching is also a low-priority need for the general population and for patients with chronic obstructive lung disease who have not been recently diagnosed and are in a stable phase of their disease.

Another feasible explanation for the lack of significant differences is the short period of time between completion of the health teaching unit and measurement of the criterion. This could lead to a Type I error or rejection of a true hypothesis (Popham, 1967).

Pride (1968), in her study of the effect of an interpersonal nursing approach on urine potassium output as an index of hospitalization stress, did not find a positive relationship between the IPAT Anxiety Scale scores and



milliequivalents of urine potassium. She suggested that there could be a discrepancy between the concept of stress as defined for her study and the factorially-defined concept of anxiety used to develop the IPAT instrument. She also suggested the possibility of a difference in sensitivity between milliequivalents of urine potassium and the raw scores for the IPAT questionnaire.

Putt (1969) used the IPAT questionnaire as one criterion of the effectiveness of an instructional approach and a psychological support approach against the control of hospital nursing care on thirty-six adults hospitalized for peptic ulcers. The group receiving individual instruction had an adjusted mean IPAT total score of 28.26 which was the lowest of the three groups. The group receiving psychological support had an adjusted mean score of 33.81, and the control group's adjusted mean was 33.93. Even though the analysis of variance indicated that the scores were not significantly different, the scores did indicate a trend toward the research hypothesis that individual instruction is more effective than psychological support and routine hospital nursing.

In this study, the IPAT questionnaire was sensitive to the mean score differences between the total and covert IPAT scores for Group I and Group II. Dalzell (1965) suggested that since health is of such a personal nature, the individual approach is better than the group approach.

She reported an evaluation of a public health department prenatal teaching program which utilized three methods of instruction: (1) prenatal clinic classes, (2) home visits, and (3) individual counseling. Mean scores of an objective-type test indicated that individual counseling methods were significantly better than the class methods. These results are similar to the results of this study.

#### Dyspnea Grade and IPAT Anxiety Scores

In an attempt to explain the higher trait anxiety level found in patients with chronic obstructive lung disease as compared to the general population, the correlation between dyspnea grade and IPAT Anxiety scores was explored.

Figure 1 shows the lack of relationship between dyspnea and trait anxiety scores. Dudley (1969) supports this finding of a lack of correlation. In a follow-up study of twenty patients, the onset and relief of dyspnea was related with both the hyperventilation and hyperpnea associated with anger and anxiety, and with the hypoventilation and decreased ventilation associated with depression. He states that "no explanation can as yet be offered as to why subjects with seemingly identical emotional and physiologic change do not experience dyspnea, or why its description differs with the same subject at different times and between subjects" (Dudley, 1969:338).

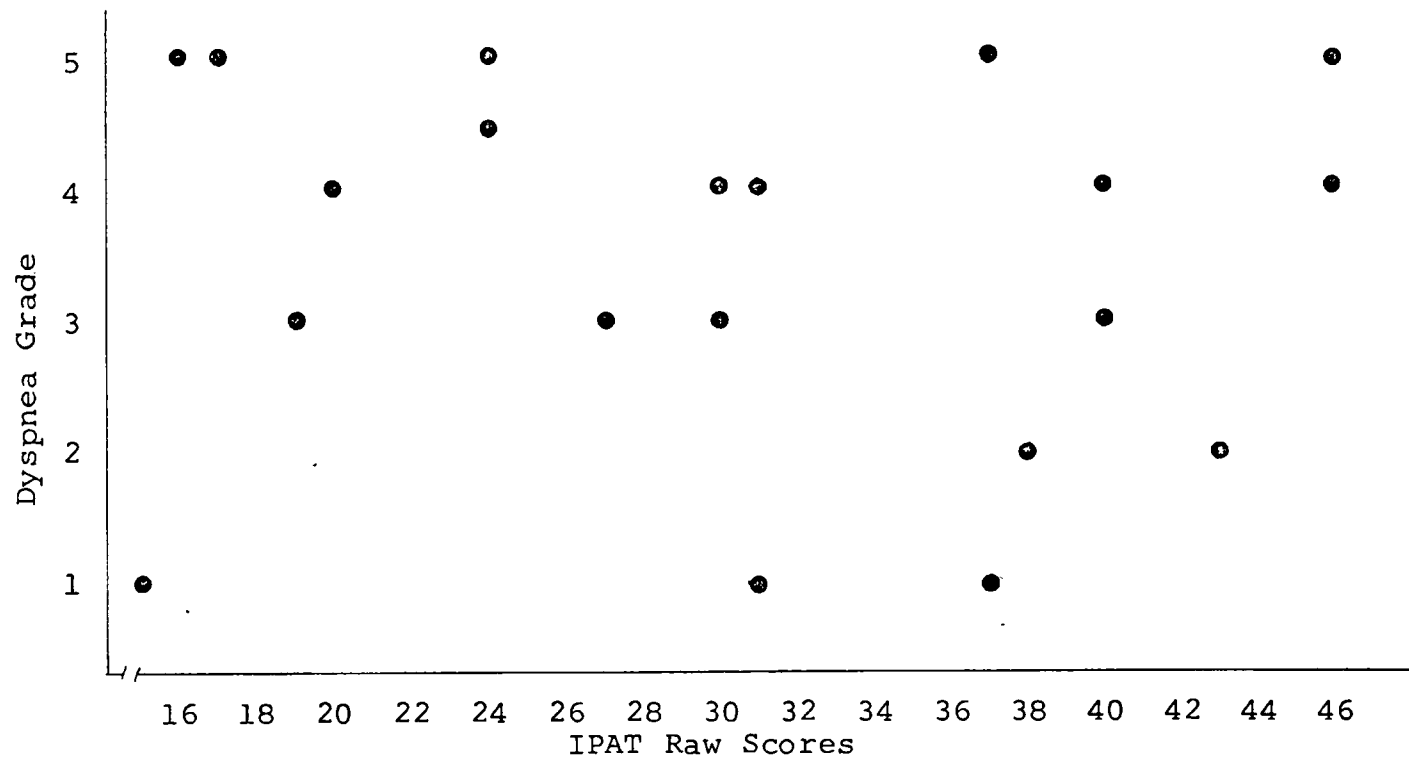


Figure 1. Scatter Diagram for Comparison Between IPAT Anxiety Scale Scores and Dyspnea Grade for Twenty Subjects with Chronic Obstructive Lung Disease

### Summary

The Kruskal-Wallis one-way analysis of variance of the mean trait and state anxiety scores of subjects with chronic obstructive lung disease revealed that the subjects in Group I who received the health teaching unit via group interaction, the subjects in Group II who received the health teaching unit via nurse-patient interaction, and the subjects in Group III who did not receive the health teaching were from the same population. The one-tail t-test of the difference between mean Covert IPAT Anxiety scores for Group I and Group II approached significance, with Group II having a lower covert Anxiety score than Group I. A statistically significant mean difference existed between the total sample mean IPAT raw score and the general population mean IPAT raw score. The existence of correlation between dyspnea and the IPAT Anxiety Scale scores was explored to explain this finding, but no relationship was found.

Explanations offered for no significant association between health teaching and anxiety were the insensitivity of the IPAT Anxiety Scale and the AACL to health teaching in subjects with long-standing chronic obstructive lung disease who are in a stable phase of their disease, the low felt need for health teaching, and the short time interval between completion of the health teaching unit and measurement of anxiety.

## CHAPTER V

### IMPLICATIONS

This chapter discusses the relationship of the findings to the theoretical framework and the conclusion and recommendations for further study.

#### Theoretical Framework

Lazarus' theory of psychological stress and the theory of cognitive dissonance provide nursing with a useful theoretical framework. They delineate the process of how the professional can achieve her goal of reduced anxiety for the patient through the action of health teaching. By providing information of the disease process and the means of coping with the limitations imposed by the disease, the patient's cognitive process of appraisal of the stimuli of breathlessness can be reevaluated. The stimulus configuration of breathlessness becomes less ambiguous for the patient, and he has accurate knowledge by which he can evaluate the significance of his symptoms and the degree of threat inherent in them.

As indicated by the mean IPAT and AACL anxiety scores, exposure to the knowledge was associated with increased anxiety for the patients in the group setting and decreased anxiety for the patients in the individual

setting. Festinger's theory of cognitive dissonance anticipated this finding. Festinger (1957) hypothesized that for persons who do not find agreement for their beliefs in a social group, dissonance may persist or even increase.

The two highest IPAT raw scores of forty-six were obtained by the two subjects in Group I who smoked. When the topics of decreased cilia action due to smoking and cessation of smoking as a healthful practice were discussed, the subjects who did not smoke nodded their heads or gave testimony to the harmful effects of smoking. The two who did smoke did not make any attempt to dissuade their fellow members from this belief, and may have experienced cognitive dissonance.

It is interesting to note the range of IPAT scores between the other three subjects who did smoke and the two in Group I. The IPAT raw scores for the three not in Group I were fifteen, twenty-four, and thirty-seven, which are within the normal score range of seventeen to thirty-nine for men and women together in the general population (Cattell and Scheier, 1963).

This finding has implications for the process of patient teaching. An assessment of the patient's teaching needs which includes the patient's psychosocial status and knowledge of the patient's current health practices in relation to his disease are necessary to determine what type of group or individual sessions are the most appropriate

means for presenting the health information. If the objective for patient teaching is cessation of smoking through awareness of the harmful physiological effects of smoking, would the method of group discussion among individuals who do smoke be more effective than a mixed group of smokers and nonsmokers? The findings of this study suggest a homogeneous group in terms of smoking would be preferred.

### Conclusion

1. The research hypothesis that health teaching done in a small group by the professional nurse will result in significantly greater reduction of mean trait and state anxiety scores for individuals with chronic obstructive lung disease than for individuals with chronic obstructive lung disease who are not exposed to health teaching and group interaction was not supported.
2. The subjects who received the health teaching unit in a nurse-patient interaction had the lowest mean trait and state anxiety scores. Although the differences between the three groups did not reach significance, the raw scores indicated a trend toward the preference of individual instruction over group instruction when the goal is reduced anxiety.

3. The highest IPAT anxiety scores were obtained by the two smoking subjects in the group setting. This suggested the possibility of increased dissonance for subjects who smoke and are exposed to anti-smoking information in a group composed of smokers and nonsmokers.
4. The total sample of subjects with chronic obstructive lung disease had a significantly higher mean IPAT anxiety score than the general population. This difference could not be explained by the subjective phenomenon of dyspnea.
5. The theory of psychological stress and the theory of cognitive dissonance complement one another. Both proved to be a useful framework for describing the process of threat reduction through health teaching.

#### Recommendations for Further Study

The findings of this study indicate a need for continued effort in the development and refinement of instruments for measuring the affective results of health teaching. The value of health teaching to individuals and the most effective means for enacting the health teaching process need additional study. Further investigations which may augment nursing's body of knowledge concerning the stress of illness and the role of health teaching include:



1. A replication of this study using a larger sample, with the sample consisting of individuals recently diagnosed as having chronic obstructive lung disease.
2. A replication of this study using objective criteria such as the use of abdominal breathing and measured walking in conjunction with the affective measurements.
3. A study utilizing smoking and health teaching as independent variables. Smokers would be placed in one group and non-smokers in a different group.
4. A study comparing the value of health teaching to individuals with chronic diseases that are stabilized with individuals with chronic diseases that are not stabilized.

## CHAPTER VI

### SUMMARY

The purpose of this study was to explore the relationship between health teaching and anxiety. The research hypothesis was that health teaching done in a small group by the professional nurse will result in significantly greater reduction of the mean trait and state anxiety scores for individuals with chronic obstructive lung disease than for individuals with chronic obstructive lung disease who are not exposed to health teaching and/or group interaction.

The theoretical framework consisted of the theory of psychological stress (Lazarus, 1966) and the cognitive dissonance theory (Festinger, 1957). Using Lazarus' theory, anxiety in chronic obstructive lung disease could occur in this manner:

1. Breathlessness, due to decreased ventilatory capacity and accompanied with fear of suffocation and death, is appraised as a threat.
2. The agent of harm is ambiguous since there is no specific recognized cause for the pulmonary dysfunction.
3. Due to the absence of pertinent knowledge to cope with the breathlessness, there is no basis for

either attack, avoidance, or an estimate of hopelessness.

4. Free-floating anxiety results, with concurrent changes in the efferent impulses to the respiratory muscles and/or smooth muscles in the bronchioles. Total pulmonary ventilation is affected, with the result of increased breathlessness.

Festinger (1957) hypothesized that the simultaneous existence of cognitions (any knowledge, opinion, or belief about the environment, about the individual, or about his behavior) which do not fit together (dissonance) leads to efforts on the part of the person to somehow make them fit better (dissonance reduction). He suggested that one means of reducing dissonance for the individual is through group interaction. The individual may obtain support from people who already believe what he wants to believe or by persuading others that they should also believe what he wants to believe. If agreement from others does not result, then the dissonance may persist or even be increased.

A "posttest-only" control group design was used in this experimental study. The target population was fifty-nine patients with chronic obstructive lung disease who were actively participating in an out-patient chest clinic rehabilitative program. The random sample, selected through the use of a table of random numbers, consisted of three

groups. Treatment Group I consisted of six patients and received the planned health teaching unit in a group setting. Treatment Group II, consisting of seven patients, received the planned health teaching in individual sessions. Treatment Group III, also consisting of seven patients, received the routine care of the chest clinic and served as the control group.

The planned health teaching was divided into four sections. These sections were the chest clinic program, the disease process, treatment modalities, and healthful living practices. The teaching program was administered via an automated audio/slide unit in two sessions, each approximately thirty minutes in length and separated in time by one week.

The tools selected for the measurement of anxiety were the IPAT Anxiety Scale and the AACL. The IPAT measured the general trait of anxiety-proneness and the AACL measured transient state anxiety. The statistical procedures to analyze the data were the Kruskal-Wallis one-way analysis of variance and the t-test of the difference between sample means. The acceptable level of significance was 0.05.

Limitations of this field of experiment were several. The design did not control for intersession history, the sample consisted of individuals with chronic obstructive lung disease who had been attending the chest clinic for two to twenty-six months and were not recently diagnosed, and

the short period of time between application of the independent variable of health teaching and the measurement of the dependent variable of trait and state anxiety may have been insufficient time for significance to be revealed.

#### Findings of the Study

The Kruskal-Wallis one-way analysis of variance of the mean trait and state anxiety scores of subjects with chronic obstructive lung disease revealed no significant differences among the three groups. Explanations offered for no significant association between health teaching and anxiety were the insensitivity of the IPAT Anxiety Scale and the AACL to health teaching in subjects with long-standing chronic obstructive lung disease who are in a stable phase of their disease, the low felt need for health teaching, and the short time interval between completion of the health teaching unit and criterion measurement.

The subjects who received the health teaching unit in the individual setting had the lowest mean trait and state anxiety level. Although the differences between the three groups did not reach significance, the raw scores indicated a trend toward the preference of individual instruction over group instruction when the goal is reduced anxiety.

A statistically significant mean difference existed between the general population's IPAT Anxiety Scale mean

score and the mean score of the total sample. Patients attending the chest clinic had a significantly higher trait anxiety level than the general population. The subjective phenomena of dyspnea in the subjects of the sample could not explain this finding.

The highest IPAT Anxiety Scale scores were obtained by the two smoking subjects in the group setting. This suggested the possibility of increased dissonance for subjects who smoke and are exposed to anti-smoking information in a group composed of smokers and non-smokers.

Finally, the theory of psychological stress and the theory of cognitive dissonance proved to be useful frameworks for describing the process of threat reduction through health teaching.

Further investigations were recommended that may augment nursing's body of knowledge concerning the stress of illness and the role of health teaching. Recommendations included a replication of this study using a larger sample, with the sample consisting of individuals recently diagnosed as having chronic obstructive lung disease, and using objective criteria such as abdominal breathing and measured walking in conjunction with the affective treatment. A study utilizing smoking and health teaching as the independent variables, with smokers in one group and non-smokers in another group was recommended. The last suggestion was studying the value of health teaching to

individuals with chronic diseases who are in a stable phase compared with individuals with chronic diseases that are not stabilized.

## APPENDIX A

### INFORMATION AND CONSENT FORM (1) FOR PARTICIPATION IN AN INVESTIGATION UTILIZING PATIENTS ATTENDING THE CHEST CLINIC

A study is being conducted by M. Nield, R.N., on patients with breathing problems. The purpose of this form is to describe briefly the study and to ask if you will participate in it.

If you will participate, you will be shown slides by the investigator in two 30-minute sessions. You will then be asked to check from a short list of words, those words which describe best your feelings at that time. In addition, you will be asked to answer forty general life-type situation questions. Checking of the list and answering the questions will take about fifteen minutes.

All information which is obtained will be kept confidential. All information will be identified by a number, not your name.

Your doctor at the Chest Clinic has already given permission for you to participate in this study. The record of your feelings could contribute some very important information to health workers in finding out how they can be more helpful to patients with breathing problems. If you



are willing to participate, please sign your name in the space provided below.

\_\_\_\_\_

I consent to participate in this study as described above. I understand that if I choose to withdraw from the study at any time I will be able to do so.

Signature \_\_\_\_\_

Date \_\_\_\_\_

## APPENDIX B

### INFORMATION AND CONSENT FORM (2) FOR PARTICIPATION IN AN INVESTIGATION UTILIZING PATIENTS ATTENDING THE CHEST CLINIC

A study is being conducted by M. Nield, R.N., on patients with breathing problems. The purpose of this form is to describe briefly the study and to ask if you will participate in it.

If you will participate, you will be shown slides by the investigator in two 30-minute sessions. You will then be asked to check from a short list of words, those words which describe best your feelings at that time. In addition, you will be asked to answer forty general life-type situation questions. Checking of the list and answering the questions will take about fifteen minutes.

All information which is obtained will be kept confidential. All information will be identified by a number, not your name.

Your doctor at the Chest Clinic has already given permission for you to participate in this study. The record of your feelings could contribute some very important information to health workers in finding out how they can be more helpful to patients with breathing problems. If you

are willing to participate, please sign your name in the space provided below.

---

I consent to participate in this study as described above. I understand that if I choose to withdraw from the study at any time I will be able to do so.

Signature \_\_\_\_\_

Date \_\_\_\_\_

## APPENDIX C

### IPAT QUESTIONNAIRE

A

- |   |   |  |                                    |
|---|---|--|------------------------------------|
| 1. I find that my interests, in people and amusements, tend to change fairly rapidly.....   | True<br><input type="checkbox"/>        | In between<br><input type="checkbox"/>   | False<br><input type="checkbox"/>  |
| 2. If people think poorly of me I can still go on quite serenely in my own mind.....  | True<br><input type="checkbox"/>        | In between<br><input type="checkbox"/>   | False<br><input type="checkbox"/>  |
| 3. I like to wait till I am sure that what I am saying is correct, before I put forward an argument.....  | Yes<br><input type="checkbox"/>         | In between<br><input type="checkbox"/>   | No<br><input type="checkbox"/>     |
| 4. I am inclined to let my actions get swayed by feelings of jealousy.....  | Sometimes<br><input type="checkbox"/>   | Seldom<br><input type="checkbox"/>       | Never<br><input type="checkbox"/>  |
| 5. If I had my life to live over again I would:<br>(A) plan very differently, (B) want it the same.....   | A<br><input type="checkbox"/>           | In between<br><input type="checkbox"/>   | B<br><input type="checkbox"/>      |
| 6. I admire my parents in all important matters.....  | Yes<br><input type="checkbox"/>         | In between<br><input type="checkbox"/>   | No<br><input type="checkbox"/>     |
| 7. I find it hard to "take 'no' for an answer", even when I know what I ask is impossible.....  | True<br><input type="checkbox"/>        | In between<br><input type="checkbox"/>   | False<br><input type="checkbox"/>  |
| 8. I doubt the honesty of people who are more friendly than I would naturally expect them to be.....  | True<br><input type="checkbox"/>        | In between<br><input type="checkbox"/>   | False<br><input type="checkbox"/>  |
| 9. In demanding and enforcing obedience my parents (or guardians) were: (A) always very reasonable, (B) often unreasonable.....                 | A<br><input type="checkbox"/>           | In between<br><input type="checkbox"/>   | B<br><input type="checkbox"/>      |
| 10. I need my friends more than they seem to need me.....   | Rarely<br><input type="checkbox"/>      | Sometimes<br><input type="checkbox"/>    | Often<br><input type="checkbox"/>  |
| 11. I feel sure that I could "pull myself together" to deal with an emergency.....  | Always<br><input type="checkbox"/>      | Often<br><input type="checkbox"/>        | Seldom<br><input type="checkbox"/> |
| 12. As a child I was afraid of the dark.....  | Often<br><input type="checkbox"/>       | Sometimes<br><input type="checkbox"/>    | Never<br><input type="checkbox"/>  |
| 13. People sometimes tell me that I show my excitement in voice and manner too obviously.....   | Yes<br><input type="checkbox"/>         | Uncertain<br><input type="checkbox"/>    | No<br><input type="checkbox"/>     |
| 14. If people take advantage of my friendliness I:<br>(A) soon forget and forgive, (B) resent it and hold it against them.....                  | A<br><input type="checkbox"/>           | In between<br><input type="checkbox"/>   | B<br><input type="checkbox"/>      |
| 15. I find myself upset rather than helped by the kind of personal criticism that many people make.....   | Often<br><input type="checkbox"/>       | Occasionally<br><input type="checkbox"/> | Never<br><input type="checkbox"/>  |
| 16. Often I get angry with people too quickly.....  | True<br><input type="checkbox"/>        | In between<br><input type="checkbox"/>   | False<br><input type="checkbox"/>  |
| 17. I feel restless as if I want something but do not know what.....  | Very rarely<br><input type="checkbox"/> | Sometimes<br><input type="checkbox"/>    | Often<br><input type="checkbox"/>  |
| 18. I sometimes doubt whether people I am talking to are really interested in what I am saying.....   | True<br><input type="checkbox"/>        | In between<br><input type="checkbox"/>   | False<br><input type="checkbox"/>  |
| 19. I have always been free from any vague feelings of ill-health, such as obscure pains, digestive upsets, awareness of heart action, etc..... | True<br><input type="checkbox"/>        | Uncertain<br><input type="checkbox"/>    | False<br><input type="checkbox"/>  |
| 20. In discussion with some people, I get so annoyed that I can hardly trust myself to speak.....   | Sometimes<br><input type="checkbox"/>   | Rarely<br><input type="checkbox"/>       | Never<br><input type="checkbox"/>  |

CONTINUE ON NEXT PAGE.

- B
- |  |                                   |   |                                       |
|--|-----------------------------------|---|---------------------------------------|
| 21. Through getting tense I use up more energy than most people in getting things done.....                              | True<br><input type="checkbox"/>  | Uncertain<br><input type="checkbox"/>   | False<br><input type="checkbox"/>     |
| 22. I make a point of not being absent-minded or forgetful of details.....   | True<br><input type="checkbox"/>  | Uncertain<br><input type="checkbox"/>   | False<br><input type="checkbox"/>     |
| 23. However difficult and unpleasant the obstacles, I always stick to my original intentions.....                        | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 24. I tend to get over-excited and "rattled" in upsetting situations.....  | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 25. I occasionally have vivid dreams that disturb my sleep.....  | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 26. I always have enough energy when faced with difficulties.....  | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 27. I sometimes feel compelled to count things for no particular purpose.....  | True<br><input type="checkbox"/>  | Uncertain<br><input type="checkbox"/>   | False<br><input type="checkbox"/>     |
| 28. Most people are a little queer mentally, though they do not like to admit it .....                                   | True<br><input type="checkbox"/>  | Uncertain<br><input type="checkbox"/>   | False<br><input type="checkbox"/>     |
| 29. If I make an awkward social mistake I can soon forget it.....  | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 30. I feel grouchy and just do not want to see people:<br>(A) occasionally, (B) rather often.....                        | A<br><input type="checkbox"/>     | In between<br><input type="checkbox"/>  | B<br><input type="checkbox"/>         |
| 31. I am brought almost to tears by having things go wrong.....  | Never<br><input type="checkbox"/> | Very rarely<br><input type="checkbox"/> | Sometimes<br><input type="checkbox"/> |
| 32. In the midst of social groups I am nevertheless sometimes overcome by feelings of loneliness and worthlessness ..... | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 33. I wake in the night and, through worry, have some difficulty in sleeping again .....                                 | Often<br><input type="checkbox"/> | Sometimes<br><input type="checkbox"/>   | Never<br><input type="checkbox"/>     |
| 34. My spirits generally stay high no matter how many troubles I meet.....   | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 35. I sometimes get feelings of guilt or remorse over quite small matters.....   | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 36. My nerves get on edge so that certain sounds, e.g., a screechy hinge, are unbearable and give me the shivers.....    | Often<br><input type="checkbox"/> | Sometimes<br><input type="checkbox"/>   | Never<br><input type="checkbox"/>     |
| 37. If something badly upsets me I generally calm down again quite quickly.....  | True<br><input type="checkbox"/>  | Uncertain<br><input type="checkbox"/>   | False<br><input type="checkbox"/>     |
| 38. I tend to tremble or perspire when I think of a difficult task ahead.....  | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 39. I usually fall asleep quickly, in a few minutes, when I go to bed.....   | Yes<br><input type="checkbox"/>   | In between<br><input type="checkbox"/>  | No<br><input type="checkbox"/>        |
| 40. I sometimes get in a state of tension or turmoil as I think over my recent concerns and interests.....               | True<br><input type="checkbox"/>  | Uncertain<br><input type="checkbox"/>   | False<br><input type="checkbox"/>     |

STOP HERE.

BE SURE YOU HAVE ANSWERED EVERY QUESTION.

## APPENDIX D

### THE AFFECT ADJECTIVE CHECK LIST

Date \_\_\_\_\_

Code Number \_\_\_\_\_

Below you will find words which describe different kinds of feelings. Check the words which describe how you feel now--today. Some of the words may sound alike but we want you to check all the words that describe your feelings. Work rapidly.

1. \_\_\_\_\_ AFRAID
2. \_\_\_\_\_ AGITATED
3. \_\_\_\_\_ ANGRY
4. \_\_\_\_\_ BITTER
5. \_\_\_\_\_ CALM
6. \_\_\_\_\_ CHARMING
7. \_\_\_\_\_ CHEERFUL
8. \_\_\_\_\_ COMPLAINING
9. \_\_\_\_\_ CONTENTED
10. \_\_\_\_\_ CONTRARY
11. \_\_\_\_\_ COOL
12. \_\_\_\_\_ CROSS
13. \_\_\_\_\_ DESPERATE
14. \_\_\_\_\_ EASY-GOING
15. \_\_\_\_\_ FEARFUL
16. \_\_\_\_\_ FEARLESS
17. \_\_\_\_\_ FRETFUL
18. \_\_\_\_\_ FRIENDLY
19. \_\_\_\_\_ FRIGHTENED
20. \_\_\_\_\_ FURIOUS
21. \_\_\_\_\_ GAY
22. \_\_\_\_\_ GLOOMY
23. \_\_\_\_\_ GRIM
24. \_\_\_\_\_ HAPPY
25. \_\_\_\_\_ HELPLESS
26. \_\_\_\_\_ HOPELESS
27. \_\_\_\_\_ INSECURE
28. \_\_\_\_\_ JEALOUS
29. \_\_\_\_\_ JOYFUL
30. \_\_\_\_\_ KINDLY

31. \_\_\_\_\_ LIGHT-HEARTED
32. \_\_\_\_\_ LONELY
33. \_\_\_\_\_ LOVING
34. \_\_\_\_\_ MAD
35. \_\_\_\_\_ MEAN
36. \_\_\_\_\_ MERRY
37. \_\_\_\_\_ MISERABLE
38. \_\_\_\_\_ NERVOUS
39. \_\_\_\_\_ OVERCONCERNED
40. \_\_\_\_\_ OVERWHELMED
41. \_\_\_\_\_ PANICKY
42. \_\_\_\_\_ PEACEFUL
43. \_\_\_\_\_ PLEASANT
44. \_\_\_\_\_ RATTLED
45. \_\_\_\_\_ SAD
46. \_\_\_\_\_ SECURE
47. \_\_\_\_\_ SENTIMENTAL
48. \_\_\_\_\_ SERIOUS
49. \_\_\_\_\_ SHAKY
50. \_\_\_\_\_ SOLEMN
51. \_\_\_\_\_ STEADY
52. \_\_\_\_\_ TENDER
53. \_\_\_\_\_ TENSE
54. \_\_\_\_\_ TERRIFIED
55. \_\_\_\_\_ THREATENED
56. \_\_\_\_\_ THOUGHTFUL
57. \_\_\_\_\_ UNCONCERNED
58. \_\_\_\_\_ UNEASY
59. \_\_\_\_\_ UPSET
60. \_\_\_\_\_ WARM
61. \_\_\_\_\_ WORRYING

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