

STUDY OF COPING STYLE AND REDUCTION OF
ANXIETY VIA PROGRESSIVE RELAXATION
FOR STUDENT NURSES

by

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Chapter I

INTRODUCTION

Introduction to the Problem

Stress and anxiety are discussed considerably in our society today and are of a particular concern to many educators who observe these conditions interfering with the students' learning process or ability to learn. In the student nursing program, on which this study is based, a high level of anxiety seemed to develop as students faced their first clinical practice in hospitals and nursing homes. The anxiety appeared to increase in some students to the point of interrupting and delaying their necessary competency.

Many educators are of the belief that college students having serious and disabling emotional conflicts, in many cases, could be treated successfully and learn to avoid such malfunctioning. It seems possible that a type of progressive relaxation could be taught and used in a way to assist in reducing student anxiety and thus aid the student to be more successful in educational pursuits.

It might be said that to be healthy one must not only face stress, but learn to cope with it. Though certain background factors may increase vulnerability to stress, knowledge of these sources can reduce their influence and help in developing effective methods of

dealing with stressful encounters.

The high rate of withdrawal from colleges has received considerable attention from educators who see as an essential part of learning the necessity to overcome certain handicaps and to use abilities effectively.

Farnsworth (1966) states that psychological and sociological causes largely account for the recent trend of students to leave college before graduating. Even in colleges with the highest standards of selection, 20-25% of the members of each entering class fail to graduate in four years. Very few of those who drop out do so because of lack of intelligence but rather because of inability or unwillingness to bring their intellectual ability to bear on studies. Summerskill (1962) has a similar view, that the attrition problems that predominate in the colleges, involve the students' failure to meet the psychological, sociological, and economic demands rather than strictly the academic demands of the college environment.

Farnsworth further indicates that the dropout rate could be reduced by careful selection of students, providing for effective orientation programs early in the course, good counseling, and adequate health facilities with strong emphasis on prevention of disabling circumstances (1966).

In order to decrease the dropout rate, efforts should be made to recognize the students who are unable to cope successfully with their

quandaries and to mobilize efforts designed to aid them in dealing with stress, while at the same time attempting to minimize those forms of stress that do not contribute to the students' educational advancement.

Students who carry too heavy a burden of emotional conflict warrant the best help possible, particularly in the early stages of their difficulties, when intervention is most effective.

According to the National Commission for the Study of Nursing and Nursing Education, approximately one out of three nursing students withdraw from school before graduation. Cohen and Gesner (1972) found that the high attrition rate of nursing students was not necessarily due to low intellectual capacities but rather to emotional problems such as unresolved past trauma activated by their current nursing clinical situation, as well as poor basic preparation and study skills. These emotional problems can lead to additional stress and anxiety.

Anxiety is most often described as an uncomfortable state, characterized by a subjective sense of impending doom. There are common physical or somatic alterations in the body system. The effects of anxiety on mental functioning include impaired attention, poor concentration, impairment of memory, and changes in outlook and future planning (Burgess, 1972). Although anxiety in moderate amounts is necessary, it does interfere with proper functioning if

excessive. The method chosen by an individual to minimize unpleasant feelings associated with anxiety is in part influenced by his coping style. Numerous studies have attempted to find effective ways to reduce anxiety.

One acceptable method for reducing unpleasantness and anxiety was developed by Edmund Jacobson (1964). This procedure is progressive relaxation which has been utilized by many with great success. In earlier research Jacobson found that when a person is trained to relax the muscles throughout his body, he will undergo a decrease in the autonomic responses mood that accompany anxiety. As a result, a person's mood will temporarily improve and he will be able to function more effectively.

Statement of the Problem

This investigation was concerned with the reduction of anxiety of freshmen nursing students as they entered the stressful area of clinical nursing. The largest number of dropouts, at the study institution, had occurred during the first quarter of the first year. This study was an attempt to evaluate whether a progressive relaxation program begun as the students enter the nursing course can assist in reducing their level of anxiety. Despite the virtual impossibility and undesirability of eliminating all psychological stress, much can be done to modulate it to minimum acceptable levels.

Review of the Literature

The reduction of anxiety and stress has become of greater concern in this time of rapid change and increased tension. Alan Tof-
fler's Future Shock (1970) demonstrates the need to develop flexibility to change and how the increasing rate of change also greatly in-
creases the level of anxiety and stress people are confronted with.

The literature reviewed supports the premise of this study that reactions to anxiety and stress, even those that tend to be uncon-
scious, can be dealt with more favorably through a type of learning process, be it progressive muscle relaxation or systematic desen-
sitization which is a form of counter conditioning.

Anxiety has emerged as a central problem and a predominant theme of modern life. Spielberger (1972) states that since 1950 more than 2500 articles and books have been indexed in Psychological Abstracts under the heading of "anxiety" and the percentage of "anxiety" studies relative to the total number of annual entries in the abstracts has increased eight-fold. Since 1930 more than 4000 studies on anxiety and closely related topics have appeared in medical journals.

Anxiety was regarded by Freud as something felt, an unpleasant state or condition of the human organism. As it is commonly used

in contemporary psychology "anxiety" denotes "a palpable but transitory emotional state or condition characterized by feelings of tension and apprehension and heightened autonomic nervous system activity"(Speilberger, 1972, p. 80). Lazarus (1966) stated that much of what was previously studied under the label of "emotion," is now considered under the label of "psychological stress." The words "stress", "threat", and "anxiety" are often used interchangeably by those who research the anxiety phenomenon.

Anxiety can occur whenever one is faced with the unknown, the new, or the untried. Sans (1968) believes that preparation for the unknown through reflective worrying or emotional roleplaying can minimize anxiety, while Rycroft (1971) states that the presence of trusted-others and encounters with familiar situations tend to reduce anxiety.

Seager (1968) writes that anxiety serves to warn an individual of potential danger so that he can take appropriate action: attack or flight. However, as an individual ages and life becomes more complex it is socially inappropriate to react in such extremes. Rather, we develop mechanisms known as "mental mechanisms", "defense mechanisms" or "coping style" to appropriately deal with anxiety. Defense mechanisms are defined by Kyes and Hofling (1974) as psychological techniques designed to ward off excessive anxiety or unpleasant tensions. If these psychological techniques are success-

ful then anxiety is reduced; if unsuccessful, anxiety remains; discomfort and conflict result, and behavior changes to a neurotic or somatic disorder.

It has been speculated that humans have always exerted great effort to avoid the discomfort experienced with anxiety. Some individuals have resorted to religion and philosophy, others have sought help from psychologists and psychiatrists. Some engage in self hypnosis and self analysis, others in strenuous exercise. Some have used sex, others alcohol, food, or drugs. Tension control methods give the individual greater freedom from anxieties, phobias, disabling fears and other forms of excessive emotions. It is desirable, to eliminate as much as possible the anxiety that is pathologically harmful or wasteful of energy.

[How, then, can these anxieties be reduced so that one is better able to deal effectively with the pressures of change and stress on a daily basis? Reduction of anxiety is seen as a special concern for nurses, who are often directly involved in assisting individuals to adapt effectively to the stresses of daily living. In order to be helpful to others, the nurse must be able to cope effectively with her own feelings of anxiety. A nurse who can adequately utilize a technique designed to reduce anxiety can present a helpful role-model for her peers and patients as well.]

Jacobson (1964) suggested the use of progressive relaxation, a

tension control technique that could enable an individual to cope more effectively with anxiety. [Progressive relaxation takes little time to plan or to master. The aim is to provide a more efficient route in achieving goals, by eliminating wasteful and less desired goals and by achieving integration of efforts. Jacobson believes that a relaxed musculature leads to a relaxed mind thus permitting individuals to cope more effectively. Muscular relaxation as a method to reduce anxiety has been effective, either when used alone or in combination with other techniques.] *in book*

Those who advocate behavior therapy, have made some remarkable claims about the use of the principle of conditioning. Wolpe (1966) utilized the learning process in a reverse direction to treat neurosis. He believed that whatever undesirable behavior has been learned may be unlearned. In a study done with cats he demonstrated how unlearning could be brought about. "His findings led to the reciprocal inhibition principle of psychotherapy which is that if a response inhibitory of anxiety can be made to occur in the presence of anxiety-working stimuli, it will weaken the bond between these stimuli and the anxiety" (Janis, 1969, p. 55).

Wolpe (1966) developed a new technique of therapy called "systemic desensitization," which is based directly on the reciprocal

inhibition principle. He used a three-step method for deconditioning a person who is suffering from anxiety symptoms which can be completed within a few weeks. His theory has not gone unchallenged and these controversies have given powerful impetus to research on emotional deconditioning.

Progressive relaxation is the first step and an integral part of systematic desensitization to recondition a person suffering from anxiety symptoms. The three steps are progressive relaxation, building a hierarchy of anxiety provoking stimuli, and imagining the stimuli while performing the relaxation technique until such time as the individual becomes insensitive to the stimulus (Wolpe and Lazarus, 1966).

In their study of the role of mental relaxation in experimental desensitization, Marshall, Strawbridge, Heile, and Keltner (1972) used spider phobia as the target behavior. Their findings were in support of Rachman's (1968) position that a sense of calm or mental relaxation is a necessary component of reduced anxiety and that all successful desensitization techniques have as their basis of success the induction of a state of mental calm. Thus, these authors felt, that mental relaxation ought to be at least as effective in reducing anxiety as the training in muscular relaxation.

David (1972) examined the counter conditioning thesis in systematic desensitization in snake phobia, exposing individuals to desensitization

plus relaxation, desensitization plus muscle tension, and no treatment. It was found that both treatment groups improved significantly more than the control group on the behavioral avoidance test and on most of the self rating measures. The role of relaxation with systematic desensitization was found to be a necessary part of success.

Davidson and Hiebert (1971) investigated the relative effectiveness of two relaxation procedures for reducing stress in ten repeated exposures, in one session, to a stressor film. Twenty-seven student nurses were randomly assigned to one of three groups. Measures were taken of both autonomic arousal and subjective anxiety. Taped abbreviated progressive relaxation training (RT) and oral instruction (RI) without training were used. The results showed a significant decrease in autonomic arousal in RT and RI with no significant difference between RT and RI. The study showed an indication for a need to consider the effectiveness of taped relaxation training procedures.

The importance of relaxation was identified in a study by Sloan (1972), in which 34 female undergraduates who met paper and pencil test and behavioral avoidance criteria for snake phobia were identified, matched and assigned to one of three desensitization groups using a single therapist for all three groups. All received four desentization sessions. One group used 100% relaxation,

another used 100% muscular tension as a competing response and the third group used 50% muscular relaxation and 50% muscular tension at alternate sessions. All three treated groups reduced their behavioral avoidance in greater amounts than control but only 100% tension and 100% relaxation subjects were significantly greater.

Andrews (1973) investigated the effects of a filmed vicarious desensitization procedure in the treatment of manifest anxiety and test anxiety in community college students and concluded that there was a positive effect on final grade point averages for those students who had participated in the test anxiety program.

Transfer of fear reduction through systematic desensitization has been demonstrated with the fear of small animals, interpersonal performance anxiety, classic phobia, test anxiety, impotence and frigidity. Schroeder and Dietrich (1973) support the claim that separate research shows fear reduction in 82% of the observed cases.

Anxiety management training is a non-specific behavior therapy program for anxiety control. Suinn and Richardson (1971) utilized three variations of anxiety management training in a study at Colorado University. These procedures differed from systematic desensitization in that no hierarchies were necessary and once the technique was learned, clients used it for coping with sources of anxiety without the necessity of returning for therapy. The variations of anxiety management training were found effective in allevia-

ting "free floating" anxiety problems. "Free floating" was defined as an anxiety for which the subject was unable to identify explicit stimulus condition, anxiety triggered off by a wide variety of vague unrelated stimulus situations, or triggered off by internal stimulus which the subject is unaware of. It was suggested that caution needs to be taken in application of anxiety management training. Deliberately inducing anxiety can be a risky procedure.

The relative effectiveness of individual and group desensitization in reducing anxiety was explored by Tobiason (1972). He randomly drew 32 subjects from a population of 68 student nurses prior to their experience in a psychiatric affiliation. The researcher studied the use of individual and group systematic desensitization to reduce their anxiety levels. Each group received two sessions of relaxation. A stress film involving situations simulating the student nurses psychiatric affiliation was shown prior to the treatment. Data revealed that subjects treated with group desensitization reported a significant decrease in anxiety levels.

In reply to a comment that systematic desensitization procedures are unnecessary, Morgan (1973) suggested that to discard the procedure of desensitization is very premature. It has been shown that desensitization is quite useful and necessary for success in treating highly fearful patients.

Several studies on desensitization or relaxation have utilized

the State-Trait Anxiety Inventory (Form A-State scale) by Spielberger (1970) to distinguish between state and trait anxiety. State anxiety refers to that uncomfortable experience during stress as a result of situational factors, while trait anxiety refers to the intrinsic or underlying tendency of an individual to be anxious. Spielberger (1972) conceives of state and trait personality as analogous to the concepts of kinetic energy and potential energy in physics.

A trait-state anxiety and psychological stress study was done by Millimet and Gardner (1972) in which they examined high and low anxiety subjects in relation to the manipulation of psychological stress. Both had an equally high positive effect under non-stressful conditions but exhibited a significant increase in state anxiety under implied and induced stress conditions. Results tended to support a reactive view of anxiety proneness which contends that subjects predisposed to emotional arousal, exhibit greater state anxiety in response to situations of increasing stress.

A study conducted to explore the use of progressive relaxation to reduce anxiety that might be experienced by students in psychiatric nursing settings was completed by Singiten (1973). A sample of 27 nursing students who were unfamiliar with the theory and practice of psychiatric nursing was used. Results indicated that students who practiced relaxation did report a greater reduction in anxiety.

Singiten (1973) utilized Spielberger's A-State scale to measure the subjects anxiety level at three different and specific times in her study. Prior to beginning with progressive relaxation training Singiten (1973) utilized a revised Repression-Sensitization scale (RS scale) which is based on Byrne's (1961) conception of coping style as a continuum ranging from the tendency to use repressive defense mechanisms at one extreme to the use of sensitization defense mechanisms at the other. Repressive defense mechanisms include denial and many types of rationalizations which in essence involve the avoidance of anxiety-provoking stimuli. Sensitization includes defenses such as intellectualization, obsessive behavior and persistent worrying. These defenses are a method individuals utilize to approach or control anxiety-provoking stimuli and their after effects.

The previous study found that students who tend to be sensitizers chose to practice relaxation more frequently than the repressors. The sensitizers reported a greater reduction in anxiety and thus benefited more than the repressors from the use of relaxation techniques. The nursing students found the relaxation techniques effective in the clinical area as well as in a variety of day to day activities.

Anecdotal records to document the use of progressive relaxation were kept by the subjects. It was found that in 90% of the instances

recorded, the students stated that the technique was effective in helping them cope with stress situations.

The Singiten (1973) approach may be viewed as an in-vivo systematic desensitization technique in which the subjects were faced with a real life situation instead of imagining stimuli. The usefulness of relaxation as a technique to reduce anxiety in psychiatric student nurses was demonstrated. Her recommendation was that the study be repeated involving a larger population and a comparable control group. A further suggestion was that the benefits of progressive relaxation be explored on freshman nursing students.

Therefore, the aim of the present study was to follow the suggestion of Singiten (1973) and investigate the effectiveness of progressive relaxation training for freshman student nurses as they begin their first quarter of education.

Purpose of This Study

It has been observed, in the setting where the research was conducted, that the stress and anxiety of freshman student nurses, reached a peak at some time in the first quarter, usually prior to mid-term. This high level of anxiety appeared to vary with individuals depending on their coping mechanisms, their meaningful support persons and their capabilities for communicating with significant others. Because the heightened anxiety level was reached

in the first quarter it was decided to instigate this study at the beginning of the first year.

This investigation was an extension of the study by Singiten (1973). Every effort was made to increase the validity of the results as recommended. This study was done in an effort to explore the use of progressive relaxation to reduce anxiety that may be experienced by freshmen student nurses.

Hypotheses

The purpose of this study will be to test the following hypotheses:

I. The level of anxiety in a group of Associate Degree nursing students will be significantly reduced following progressive relaxation training.

II. Students who are sensitizers will indicate a significantly greater reduction in anxiety than repressors as a result of progressive relaxation training.

Chapter II

METHODOLOGY

Setting of the Study

The setting for the present study was at a Community College in Oregon, located in a city of approximately 20,000 people. The enrollment at the college was approximately 6000 students with 49 enrolled in the Associate Degree nursing program. There were 24 beginning nursing students enrolled in 16 credit hours of related courses and nursing fundamentals. The curriculum was integrated with beginning focus on communications, asepsis, body mechanics, maternal child care, and pharmacology. Three hours a week were spent in classroom activities which consisted of group discussions, lectures, role-playing as well as small groups. Theoretical and clinical content was introduced gradually to the freshman students by two instructors. In addition, 9 hours of clinical experience each week was undertaken in 3 hospitals and 3 nursing homes in local and near-by communities under the supervision of the same two nursing instructors.

Subjects

The subjects were students beginning their first year of a two-

year Associate Degree nursing program. Of the 24 students enrolled all volunteered to participate in the study.

Tabulation of demographic data (see Appendix A) revealed some interesting facts about the students in this study. All 24 were Caucasian with only one male. The students ranged in age from 18 to 45 years. The median age was 26. Over half, 13 out of 24, were of Protestant religion. Their educational level ranged from G.E.D. to a Masters Degree with the majority having had some college education.

Eleven of the students indicated they were familiar with muscle relaxation but in varying degrees. Only eight students had used muscle relaxation themselves previously. When asked to define their method of relaxation, 8 of 24 (33.7%) designated physical activity as most useful for them. Other methods used were reading (25%) seeking a quiet situation (16%), prayer (4%), warm bath (4%), playing the piano (4%), no method (8%), and unknown (4%). (see Appendix B)

Data Gathering Instruments

Four instruments were used in this study;

1. State-Trait Anxiety Inventory Form X-1 (A-State Scale, See Appendix C).
2. Revised Repression-Sensitization scale to measure coping

style (R-S scale, see Appendix D).

3. Individual records of frequency count for the number of times that subjects utilized relaxation in the week following the progressive relaxation treatment.

4. Anecdotal notes kept by experimental subjects for one week following the progressive relaxation treatment.

The A-State scale of STAI Inventory form consists of 20 statements that ask respondents to describe how they feel at a particular moment and measures the individuals level of anxiety at any given time. Subjects are asked to rate themselves on a four-point scale. Half of the items relate to the presence of apprehension, worry, or tension. The remaining reflect the absences of such states. Thus A-State defines a continuance of increasing levels of A-State intensity. Low scores indicate moderate levels of calmness and serenity, intermediate scores indicate moderate levels of tension and apprehension and high scores indicate intense apprehension and fearfulness that approach panic. This is to say that the score measures along a continuum from low to a high anxiety. It has been demonstrated that scores on the A-State scale increase in response to various kinds of stress and decrease as a result of relaxation training (Spielberger 1973).

The test-retest reliability (stability) of the STAI A-Trait scale

is relatively high, but stability coefficients for the STAI A-State scale tend to be low, as would be expected for a measure to be influenced by situational factors. Spielberger (1970) states that both the A-Trait and A-State scales have a high degree of internal consistency.

Correlation with other measures of A-State such as the Suckerman AACL, Today Form, provide evidence of the concurrent validity of the STAI A-State scale (Spielberger 1970).

The Repression-Sensitization scale (R-S scale) consists of 127 items from Minnesota Multiphasic Personality Inventory (MMPI). The test is scored for sensitization and high scores indicate sensitizer defenses and low scores indicate repressing defenses or coping styles. Byrnes (1968) states that this scale is valid and a reliable measurement to assess the coping style along this dimension.

Design and Procedure of the Study

The first day of school the 24 freshman students were told about the study and they were encouraged to volunteer. On the second day all 24 volunteered and each completed their demographic data sheet, the Repression-Sensitization scale and the A-State-Trait Anxiety Inventory. See Table 1, page 23, for design and procedure of this study.

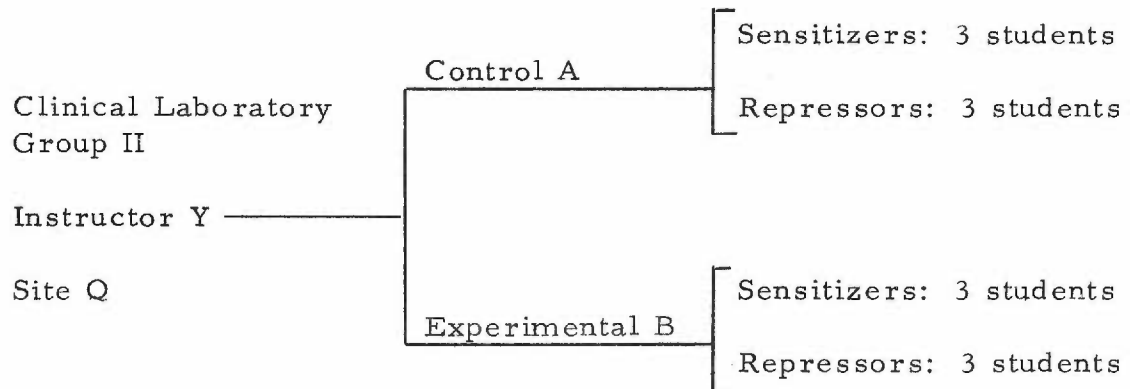
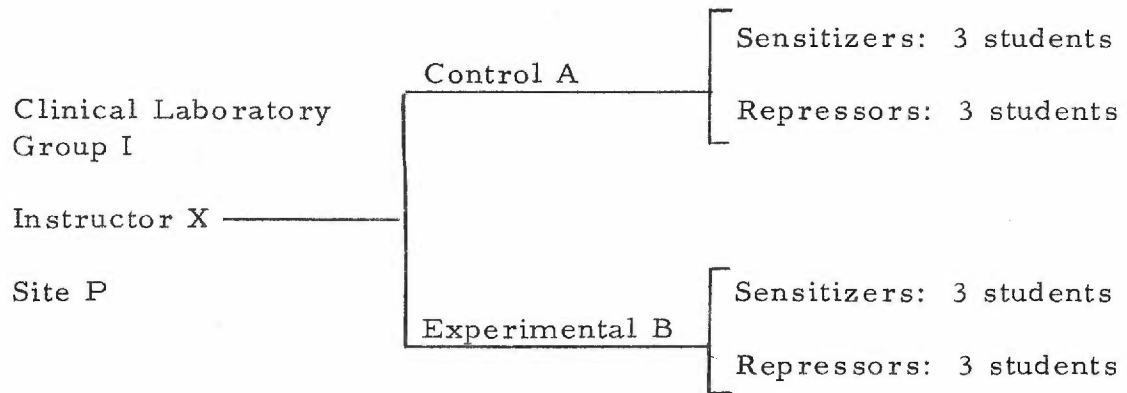
Following tabulation of the R-S scale the subjects were identified

according to their coping style. High scores indicated sensitizer coping style, and low scores indicated repressor coping style. Those 12 students with scores on or above the median of 32 were placed in the sensitizer category while those with scores below the median were placed in the repressor category. Subsequently the repressors and sensitizers were matched in pairs based on their R-S scale scores, the first pair being the highest two scores and so on in rank order pairs. Pairs were assigned equally into experimental or control groups by flipping a coin.

Apportionment of the students into clinical laboratory groups, each with a different teacher and clinical site, allowed for equal distribution of repressors and sensitizers into control and experimental groups.

To ascertain whether assignment to different clinical laboratory groups, I or II, with different instructors, X or Y, had any effect on the anxiety reduction results, a t-test was administered on the A-state raw scores of final testing, time 4, day 49. The results obtained were insignificant.

The following chart illustrates the clinical laboratory groupings used in this study.

Group Organization

The progressive relaxation treatment used in this study began at time 2--day 7, this was the second week of the nursing education program. See Table 1 for design and procedure of this study.

Table 1
Design and Procedure of Study

Procedure and Design	Time Periods			
	Time 1 Day 1	Time 2 Day 7	Time 3 Day 42	Time 4 Day 49
R-S Scale (E & C)*	X			
A-State Scale (E & C)	X		X	X
Relaxation Instruction Oral and Taped (E)		X		
Relaxation - Training (E)		Initi- ated	Con- cluded	
Recording of Anecdotes on Relaxation Practice (E)			Start	Ter- minated

*E = Experimental Group
C = Control Group

The experimental group was instructed in progressive relaxation technique by the counseling department at the study institution. The first session was an hour in length with all subjects in attendance. See Appendix F for Progressive Relaxation technique used for the instruction. These sessions were held twice each week for a period of four weeks. The first week each subject utilized an audio tape recording 2 times each day at home to aid in learning the technique of relaxation.

After one week of using the audio tape they were returned and the students were encouraged to practice progressive relaxation two times daily on their own. From this point on the progressive relaxation treatment sessions were one-half hour in length.

Four handouts to supplement class instruction were given to the subjects, one for each week. These handouts were to be utilized for references to aid them in learning the progressive relaxation techniques. Handout subject titles were as follows:

- No. 1 Relaxation Materials (see Appendix G)
- No. 2 Relaxation Supplement (see Appendix H)
- No. 3 Relaxation Review (see Appendix I)
- No. 4 Test Taking Hints (see Appendix J)

At the completion of 4 weeks of instruction in progressive relaxation, the A-State scale was completed again by both experimental and control group (time 3, day 42, see Table 1).

From that point, for a period of one week, the experimental subjects recorded a frequency count of their utilization of progressive relaxation, along with an anecdotal record of the positive or negative effects of the relaxation.

At the conclusion of one week of self administered progressive relaxation procedure (time 4, day 49), the A-State scale was administered to both the control and experimental groups for the final time. The individual anecdotal records and frequency tabulations were collected. This concluded the treatment program and the data gathering.

Chapter III

RESULTS

Anxiety Reduction

The A-State Anxiety Inventory Form was used to measure anxiety state of subjects at three specified times during the study. The raw scores were converted into standard T-scores normalized for college undergraduates according to Spielberger's STAI Manual (1970). These provided input for measuring anxiety reduction between treatments.

The range of possible raw scores for Spielberger's A-State scale varies from a minimum of 20 to a maximum of 80. The range of scores for this study varied from 21 to 76.

Coping Style

The coping style, or way in which students deal with stress and anxiety, was identified by their individual scores on the Repression-Sensitization scale. High scores indicate sensitizer defenses and low scores indicate repressing mechanisms. The scores were evenly distributed along the R-S continuum (See Appendix E). The scores ranged from 3 to 62 with a median of 33, a mean of 31.08 and a standard deviation of 18.14.

The differences in anxiety scores between time 2, at the start of the treatment, and time 3, four weeks later when instructional treatment ended, were examined using a two-way analysis of variance with the level of significance set at .05. The data failed to attain statistical significance at the designated level. These data are shown in Table 2 below.

Table 2
Analysis of Variance of Anxiety Scores
between Time 2 and Time 3

Source of Variance	SS	df	MS	F	ρ
Between Treatments	150.00	1	150.00	1.10	n. s.
Between Coping Style	42.67	1	42.67	.31	n. s.
Treatment X Coping Style	207.50	1	207.50	1.52	n. s.
Within	2735.00	20	136.75		

The differences in anxiety scores between time 2, at the start of treatment, and time 4 at the conclusion of data collection, were examined next using a two-way analysis of variance with the level of significance set at .05. The data failed to attain statistical significance at the designated level. These data are shown in Table 3.

Table 3
 Analysis of Variance of Anxiety Scores
 between Time 2 and Time 4

Source of Variance	SS	df	MS	F	p
Between Treatments	12.04	1	12.04	.07	n. s.
Between Coping Style	45.37	1	45.37	.26	n. s.
Treatment X Coping Style	760.54	1	760.54	4.29	n. s.
Within	3542.67	20	177.13		

It had been previously noted by a t-test on the A-state raw scores of final testing, that placement in different clinical laboratory groups had not significantly affected the anxiety states of the students.

The analysis of variance did not reveal any significant difference between control and experimental groups in reduction of anxiety scores, nor did these data show that sensitizers were any more responsive to treatment than repressors. However, that the statistics in Table 3 for interaction (treatment X coping style) was so large seemed notably curious. Subsequent examination of cell means revealed that for repressors the treatment program intensified anxiety while sensitizers anxiety reduction tended to negate the over all effect. This apparently unanticipated result is what caused the F ratio for treatment to be non-significant.

It is noteworthy, however, that the F-ratio of Interaction between time 2 and time 4 was in the expected direction ($F = 4.29$, while $F_{.05} = 4.35$). Probably the reason the analysis of variance did not detect effectiveness of progressive relaxation was because of the large interaction effect.

Because of this effect a t-test for repressor and sensitizers was computed separately. The t-test was significant at the .05 level for sensitizers ($t = 1.95$, $t_{.05} = 1.82$) indicating that the treatment program had significantly reduced the anxiety level for sensitizers.

The t-test for repressors, on the other hand, showed no difference in the mean response between controls and experimental students ($t = -.035$, $t_{.05} = 1.81$) indicating that anxiety levels for repressors in this study were not significantly reduced by progressive relaxation training.

It was noted that one student who was a repressor in the experimental group had an atypical A-State score 50 points higher than scores contributed by the other individuals. To determine the influence of this score on the F-ratio, a two-way analysis of variance was administered deleting this score (No. 1123 normalized T-score for first testing was 37, second testing was 26, and final testing was 76). The result of this analysis was still not significant.

From these results the following conclusions may be drawn. First, the anxiety state of this sample of beginning nursing students

was not significantly reduced after treatment of progressive relaxation. Therefore, the first hypothesis of this study can not be accepted. But it is important to note that the F-ratio for significance of interaction of treatment and coping style between time 2 and time 4 did approach significance (See Table 3).

Upon analysis of the data for repressors and sensitizers, on the basis of results of a t-test, the second hypothesis can be accepted. Therefore, we can conclude that students who were sensitizers experienced a significantly greater reduction in anxiety than repressors as a result of progressive relaxation training.

Utilization of Progressive Relaxation

The subjects in the experimental treatment group were told that progressive relaxation was an effective tool to reduce anxiety. They were encouraged to utilize the technique at least two times a day during the four-week training period.

Between time 3 (day 42) and time 4 (day 49) the experimental group counted and recorded the number of times progressive relaxation technique was used voluntarily. The subjects also documented the situation in which they used the technique and recorded its positive or negative effects. Reports indicated that the most common time for using progressive relaxation was before bed time. It was effective 85 percent of the time. Relaxation was also used

beneficially to relieve tension while driving a car and while in class at college (See Appendix K).

The technique was least effective when used to relieve physical aches, alleviate stress during tests, in class or laboratory sessions, and while entertaining at home. One circumstance of a stressful telephone call and another while cleaning the house was not relieved by utilization of progressive relaxation.

Sensitizers practiced relaxation more frequently than repressors. In the seven-day period during which students used the method independently, the six sensitizers used progressive relaxation 60 times ($\bar{x} = 10$), while the frequency of usage by repressors was only 33 times ($\bar{x} = 5.5$).

The study seems to indicate that repressors deny their anxious state and apparently do not experience the need to attempt relaxation. Sensitizers on the other hand, intellectualize, attempt to do something to reduce or understand their reason for stress. The data in this study indicate that sensitizers do indeed attempt to take steps to assist in the reduction of their anxious state.

Additional frustration and anxiety could have been caused by the midterm examination period of the fall quarter. At that point course work had progressed to where several papers and case studies were due, adding to the pressures of the more complex and theoretical course content. Students who have returned to school

following a brief or lengthy absence from the academic setting may find that learning how to study again comes with a great deal of difficulty and stress. Also at midterm time in this study setting, the number of laboratory check-offs of nursing skills increases as well as becoming more complicated. This is a possible explanation for the unpredicted results of this study.

Previous studies had demonstrated the effectiveness of progressive relaxation in reducing anxiety. The literature shows that Jacobson used it effectively in reducing snake phobia, test anxiety, spider phobia and others.

The students in this study had an initial mean score on the A-State scale of 53.08 (See Table 4). This was higher than observed for college undergraduates by Spielberger (1971), who reported an initial mean score of 35.12. Also, the initial mean score for students in the present study was not as high as Singiten (1973) reported in her

Table 4

Mean Score on the A-State Scale
Times 2, 3 and 4

	Time 2	Time 3	Time 4
Repressors	46.75	43.16	45.00
Sensitizers	59.42	54.00	54.91
Both R and S	53.08	48.58	49.95

study of psychiatric nursing students. The initial mean score Singiten (1973) reported was 54.88, which substantiates the observation that psychiatric nursing students tend to exhibit a higher level of anxiety.

Review of the literature suggests that sensitizers show a decrease in anxiety when provided with a tool to control or approach an anxiety-provoking stimulus. Similarly, in the present study it was found that the level of anxiety of sensitizers was significantly reduced following progressive relaxation training at time 3. Repressors on the other hand reduced their anxiety state score to a much lesser and non-significant degree.

These results (See Table 4) support the second hypothesis of the study, namely that sensitizers benefit more than do repressors from the use of progressive relaxation techniques in terms of reduced anxiety. Final testing, at time 4, following individual practice of progressive relaxation for one week, showed increased anxiety level mean score for repressors, while a very slight increase in the mean score of sensitizers was recorded.

High anxiety levels may be accounted for because of a threat of the unknown. The "unknown" for students in this study included being in a nursing course for the first time and facing the very unfamiliar and often emotionally upsetting exposure to patient care and hospital activities.

Chapter IV

DISCUSSION

The first hypothesis that the level of anxiety experienced by a group of beginning Associate Degree nursing students would be significantly reduced following progressive relaxation training was rejected on the basis of the following findings.

There was not a significant reduction in the A-State scale mean score between the initiation of relaxation training at times 2, day 7, and the completion of the study at time 4, day 49. This finding is contrary to that of Singiten who reported a significant reduction in anxiety state following treatment with progressive relaxation (1973). It should be noted, however, that Singiten's study lacked a control group for comparison (1973). On the other hand, it seems noteworthy that the written statements of the experimental subjects of this present study affirm the effectiveness of relaxation in 74.47% of the times it was utilized.

Some extraneous factors that could have increased anxiety are greater complexity of course content and the additional time necessary for more in-depth study. Another possible contributing factor was that students were required to spend additional time in the instructional laboratory practicing and perfecting nursing skills in order to be ready to give nursing care in the clinical laboratory at

local hospitals and nursing homes. In addition, students did not have an opportunity to become habituated because of the rapid acceleration of the course. If the type and level of stress were to remain the same during the entire study, reduction of the anxiety-state due to the treatment and adoption of progressive relaxation might have been significant. Supportive evidence can be found in a study by Millimet and Gardner (1972) in which subjects having both high and low anxiety levels benefitted equally well to psychological manipulation under non-stressful conditions. Their results also showed that under implied and induced stress condition, subjects exhibited greater state anxiety.

The second hypothesis that students who are sensitizers would demonstrate a significant reduction in anxiety than would repressors after progressive relaxation training was accepted on the basis of the following significant findings. It was indicated that if one is a repressor, progressive relaxation may not tend to give relief from anxiety, while if one is a sensitizer substantial support could be gained for anxiety reduction by the use of progressive relaxation.

Byrnes (1961) stated that repressive defense mechanisms include denial as well as many types of rationalization which can lead to avoidance of anxiety provoking stimuli. This could be the reason for repressors not realizing positive effects from progressive relaxation. On the other hand, sensitizers use such defenses as intellectual

reasoning, obsessive behavior and persistive worrying which are aided by the use of progressive relaxation. Brynes (1961), Sans (1968), and Janis (1971) also state that reflective worrying minimizes anxiety. Brynes states that sensitizers do spend time at "persistive worrying" in order to reduce their anxiety (1961). In the current study, increasing levels of stress, as the nursing course progressed, might have increased the amount of worrying by sensitizers. If so, this increase in worrying corresponded to reduced anxiety through progressive relaxation. It is conceivable that for sensitizers then, persistive worrying coupled with progressive relaxation could affect even greater reduction in anxiety than has been demonstrated in this study.

Singiten (1973) found that sensitizers chose to practice relaxation more frequently than the repressor and that sensitizers reported a greater reduction in anxiety. It follows, then, that sensitizers would benefit more from the use of relaxation technique. Again, the present study substantiated that not only did sensitizers practice progressive relaxation more frequently than did repressors but also reported 31% greater success (See Appendix L).

Results of this study indicate that sensitizers benefit

substantially from the utilization of progressive relaxation while persons with repressor coping styles show no significant response to anxiety relief.

Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The problem of a high anxiety level in beginning student nurses led to this experimental study to determine whether a treatment of "progressive relaxation" would significantly reduce the level of anxiety. Progressive relaxation is a method of teaching individuals to relax muscles of the body in a systematic manner to bring about complete relaxation. The aim of progressive relaxation is to assist individuals to cope more effectively with normal stress and anxiety. It was also deemed as a useful technique in other specialized situations, such as giving effective nursing care.

This field experiment was a two-group, time-series design. On the first day students were tested for anxiety level and coping style (time 1, day 1).

Subjects were matched and rank-ordered according to their scores on the Repressor Sensitizer Scale and placed in control or experimental groups by a coin toss. High-scoring individuals are sensitizers who identify and worry about sources of stress while low-scoring individuals are repressors who deny, rationalize and avoid anxiety (Byrne, 1961).

At time 2, day 7, progressive relaxation treatment commenced. During the next four weeks both experimental and control groups

carried on with their normal, daily-routine activities. In addition, the experimental group received progressive relaxation training two times each week and were encouraged to practice individually. At the conclusion of this four-week period the A-State anxiety test was again administered to both experimental and control groups (post test 1, time 3, day 42).

During the fifth week the subjects in the experimental group counted the number of times progressive relaxation was used and kept a record of its effectiveness. A final testing (post test 2) was given to all students (time 4, day 49).

There were two hypotheses made prior to the study relating to reduction of anxiety from the progressive relaxation treatments. The first hypothesis--the level of anxiety in a group of Associate Degree nursing students will be reduced following progressive relaxation training--was not accepted. The second hypothesis--students who are sensitizers will indicate a significantly greater reduction in anxiety than repressors--was supported.

The overall conclusion to be drawn from this research is that progressive relaxation training can decrease the anxiety level of persons with sensitizer coping mechanisms, but it will not greatly reduce the anxiety level for those persons with repressor coping mechanisms.

In conclusion, the following recommendations for future

research are suggested:

(1) A larger sample might give a wider spread on the R-S continuum and thus yield more accurate results in determining the effectiveness of progressive relaxation as a method for reducing anxiety.

(2) It would seem highly desirable to investigate the effect of progressive relaxation on anxiety reduction of a group of nursing students a year following treatment, comparing them to untreated second-year students. This could measure long-term results of acquisition and learning of the technique.

(3) A study could be done utilizing the A-Trait measurement of anxiety level of student nurses thus measuring the effect of progressive relaxation on trait anxiety and indicate if it is possible to change one's basic technique of coping.

(4) Consider a study in which subjects are informed of their type of coping style, and measure if this knowledge has an effect on anxiety reduction.

References

- Andrews, J. M. Study of the effect of a filmed vicarious, desensitization procedure in the treatment of manifest anxiety and test anxiety in community college students. Dissertation Abstracts International, April 1973, 33 (10A) 5399-5400.
- Burgess, A. C., & Laxare, A. Nursing management of feelings, thoughts and behavior. Journal of Psychiatric Nursing and Mental Health Services, November-December 1972, pp. 9-11.
- Byrne, D. The repression-sensitization scale, rational, reliability and validity. Journal of Personality, 1961, 29, 334-349.
- Cohen, H. A., & Gesner, F. P. Dropouts and failures: A preventative program. Nursing Outlook, November 1972, 20 (11), 723-725.
- David, S. The role of relaxation is systematic desensitization. Behavior Research and Therapy, May 1972, 10 (2), 153-158.
- Davidson, P. O., & Hiebert, S. F. Relaxation training, relaxation instruction and repeated exposure to a stressor film. Journal Abnormal Psychology, October 1971, 78 (2), 154-159.
- Farnsworth, D. L. Psychiatry, education and the young adult. Springfield, Illinois: C. Thomas, 1966.
- Jacobson, E. Anxiety and tension control. Philadelphia: J. B. Lip-

pincott, 1964.

Janis, I. Stress and frustration. New York: Harcourt-Brace-

Jovanovich, 1971.

Joesting, J., & Joesting, R. Correlations among views of contra-
ception, anxiety, creativity and equilateralism measures.

The Journal of Psychology, January 1974, 86.

Kyes, J., & Hofling, C. Basic psychiatric concepts in nursing

(3rd ed.). Philadelphia: J. B. Lippincott, 1974.

Lazarus, R. S. Psychological stress and the coping process. New

York: McGraw-Hill, 1966.

Marshall, W. L., Strawbridge, H., & Keltner, J. The role of men-
tal relaxation in experimental desensitization. Behavior Re-

search Therapy, November 1972, 10 (4), 355-366.

Millimet, C. R., & Gardner, D. F. Trait-state anxiety and psycho-
logical stress. Journal of Clinical Psychology, April 1972, 28

(2), 145-148.

Morgan, W. G. Nonnecessary condition or useful procedures in de-
sensitization: A reply to Wilkens. Psychological Bulletin,

January 1973, 79 (6), 373-375.

Rycroft, C. Anxiety and neurosis. Middlesex, England: Penguin
Books, 1971.

Sans, L. B. The relationship between anxiety stress and the per-

formance of nursing students. Dissertation Abstracts Interna-

- tional, October-December 1968, 29A, 4-6.
- Schroeder, H. E., & Dietrich, R. R. Transfer of fear reduction through systematic desensitization. Behavior Research and Therapy, February 1973, 2(1), 137-141.
- Singiten, C. C. Progressive relaxation anxiety reduction and coping style in twenty-seven student nurses. Unpublished field study, University of Oregon School of Nursing, 1973.
- Sloan, J. L. The role of muscular relaxation and muscular tension as competing responses in the systematic desensitization of snake phobia. Dissertation Abstracts International, May 1972, 32, 6663.
- Spielberger, C. D. Anxiety, current trends in theory and research. New York and London: Academic Press, 1972.
- Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. STAI Manual. Consulting Psychologist Press, Inc., 1970.
- Spielberger, C. D., Wadsworth, A., & Dunn, J. Emotional reactions to surgery. Journal of Consulting and Clinical Psychology, 1973, 40 (1).
- Suinn, R. M., & Richardson, F. Anxiety management training: A nonspecific behavior therapy program for anxiety control. Behavior Therapy, October 1971, 2 (4), 498-510.

- Summerskill, J. Dropouts from college. New York: Wiley (The American College, N. Sanford Edition), 1962.
- Tobiason, R. V. The relative effectiveness of individual and group desensitization in reducing student nurses anxiety. Dissertation Abstracts International, January 1972, 32 (7), 3707.
- Wolpe, J., & Lazarus, A. Behavior therapy techniques. Pergamon Press, 1966.

APPENDICES

APPENDIX A

DEMOGRAPHIC INFORMATION OF THE STUDENTS

<u>Characteristics</u>	<u>Sample (N = 24)</u>
<u>Sex</u>	
Male	1
Female	23
<u>Age</u>	
Below 20	3
20-25	8
26-30	6
31-35	2
36-40	4
41-45	1
<u>Ethnic Group</u>	
Caucasian	24
<u>Religion</u>	
Protestant	13
Roman Catholic	4
Other	7
<u>Education Level</u>	
GED	1
High School	5
College	14
Bachelors Degree	3
Masters Degree	1

APPENDIX B

FREQUENCY COUNT OF METHOD OF RELAXATION USED
PRIOR TO STUDY

	N	%
Physical Activity	8	33%
Reading	6	25%
Quiet Situation	4	16%
No Method	2	8%
Prayer	1	4%
Warm Bath	1	4%
Playing Piano	1	4%
Unknown	1	4%
TOTAL	24	100%

APPENDIX C

SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene
STAI Form X-1

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not At All	Somewhat	Moderately So	Very Much So
1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I am regretful	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel rested	1	2	3	4
9. I feel anxious	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel "high strung"	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel over-excited and "rattled"	1	2	3	4
19. I feel joyful	1	2	3	4
20. I feel pleasant	1	2	3	4

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SELF-EVALUATION QUESTIONNAIRE
STAI Form X-2

NAME _____ DATE _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	Almost Never	Sometimes	Often	Almost Always
21. I feel pleasant	1	2	3	4
22. I tire quickly	1	2	3	4
23. I feel like crying	1	2	3	4
24. I wish I could be as happy as others seem to be	1	2	3	4
25. I am losing out on things because I can't make up my mind soon enough	1	2	3	4
26. I feel rested	1	2	3	4
27. I am "calm, cool, and collected"	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29. I worry too much over something that really doesn't matter	1	2	3	4
30. I am happy	1	2	3	4
31. I am inclined to take things hard	1	2	3	4
32. I lack self-confidence	1	2	3	4
33. I feel secure	1	2	3	4
34. I try to avoid facing a crisis or difficulty	1	2	3	4
35. I feel blue	1	2	3	4
36. I am content	1	2	3	4
37. Some unimportant thought runs through my mind and bothers me	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
39. I am a steady person	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

APPENDIX D

REVISED R-S SCALE

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you.

You are to mark your answers on the answer sheet you have. If a statement is TRUE or MOSTLY TRUE, as applied to you, circle the letter T. If a statement is FALSE or NOT USUALLY TRUE, as applied to you, circle the letter F.

Remember to give YOUR OWN opinion of yourself. Do not leave any blank spaces if you can avoid it.

In marking your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet.

For example:

If question 201 were true, on the answer sheet you would circle T.

201. T F

If question 202 were false, circle F.

202. T F

NOW OPEN THE BOOKLET AND GO AHEAD.

REVISED R-S SCALE

1. I wake up fresh and rested most mornings.
2. My hands and feet are usually warm enough.
3. My daily life is full of things that keep me interested.
4. There seems to be a lump in my throat much of the time.
5. Once in awhile I think of things too bad to talk about.
6. At times I have fits of laughing and crying that I cannot control.
7. I feel that it is certainly best to keep my mouth shut when I'm in trouble.
8. I find it hard to keep my mind on a task or job.
9. I seldom worry about my health.
10. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going."
11. My sleep is fitful and disturbed.
12. Much of the time my head seems to hurt all over.
13. I am in just as good physical health as most of my friends.
14. I prefer to pass by school friends, or people I know but have not seen for a long time, unless they speak to me first.
15. I am almost never bothered by pains over the heart or in my chest.
16. I am a good mixer.
17. I wish I could be as happy as others seem to be.
18. Most of the time I feel blue.
19. I am certainly lacking in self-confidence.

20. I usually feel that life is worthwhile.
21. It takes a lot of argument to convince most people of the truth.
22. I think most people would lie to get ahead.
23. I do many things which I regret afterwards (I regret things more or more often than others seem to).
24. I have very few quarrels with members of my family.
25. My hardest battles are with myself.
26. I have little or no trouble with my muscles twitching or jumping.
27. I don't seem to care what happens to me.
28. Much of the time I feel as if I have done something wrong or evil.
29. I am happy most of the time.
30. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.
31. Often I feel as if there were a tight band about my head.
32. I seem to be about as capable and smart as most others around me.
33. Most people will use somewhat unfair means to gain profit or advantage rather than to lose it.
34. Often I can't understand why I have been so cross and grouchy.
35. I do not worry about catching diseases.
36. I commonly wonder what hidden reason another person may have for doing something nice for me.
37. Criticism or scolding hurts me terribly.
38. My conduct is largely controlled by the customs of those about me.
39. I certainly feel useless at times.

40. At times I feel like picking a fist fight with someone.
41. I have often lost out on things because I couldn't make up my mind soon enough.
42. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.
43. Most nights I go to sleep without thoughts or ideas bothering me.
44. I cry easily.
45. I cannot understand what I read as well as I used to.
46. I have never felt better in my life than I do now.
47. I resent having anyone take me in so cleverly that I have had to admit that it was one on me.
48. I do not tire quickly.
49. I like to study and read about things that I am working at.
50. I like to know some important people because it makes me feel important.
51. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things.
52. I frequently have to fight against showing that I am bashful.
53. I seldom or never have dizzy spells.
54. My memory seems to be all right.
55. I am worried about sex matters.
56. I find it hard to make talk when I meet new people.
57. I am afraid of losing my mind.
58. I frequently notice my hand shakes when I try to do something.
59. I can read a long while without tiring my eyes.

60. I feel weak all over much of the time.
61. I have very few headaches.
62. Sometimes, when embarrassed, I break out in a sweat which annoys me greatly.
63. I have had no difficulty in keeping my balance in walking.
64. I wish I were not so shy.
65. I enjoy many different kinds of play and recreation.
66. In walking I am very careful to step over sidewalk cracks.
67. I frequently find myself worrying about something.
68. I hardly ever notice my heart pounding and I am seldom short of breath.
69. I get mad easily and then get over it soon.
70. I brood a great deal.
71. I have periods of such great restlessness that I cannot sit long in a chair.
72. I dream frequently about things that are best kept to myself.
73. I believe I am no more nervous than most others.
74. I have few or no pains.
75. I have difficulty in starting to do things.
76. It is safer to trust nobody.
77. Once a week or oftener I become very excited.
78. When in a group of people I have trouble thinking of the right things to talk about.
79. When I leave home I do not worry about whether the door is locked and the windows closed.

80. I have often felt that strangers were looking at me critically.
81. I drink an unusually large amount of water every day.
82. I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.
83. I work under a great deal of tension.
84. I am likely not to speak to people until they speak to me.
85. Life is a strain for me much of the time.
86. In school I found it very hard to talk before the class.
87. Even when I am with people I feel lonely much of the time.
88. I think nearly anyone would tell a lie to keep out of trouble.
89. I am easily embarrassed.
90. I worry over money and business.
91. I easily become impatient with people.
92. I feel anxiety about something or someone almost all the time.
93. Sometimes I become so excited that I find it hard to get to sleep.
94. I forget right away what people say to me.
95. I usually have to stop and think before I act even in trifling matters.
96. Often I cross the street in order not to meet someone I see.
97. I often feel as if things were not real.
98. I have a habit of counting things that are not important such as bulbs on electric signs, and so forth.
99. I have strange and peculiar thoughts.
100. I have been afraid of things or people that I knew could not hurt me.

101. I have no dread of going into a room by myself where other people have already gathered and are talking.
102. I have more trouble concentrating than others seem to have.
103. I have several times given up doing a thing because I thought too little of my ability.
104. Bad words, often terrible words, come into my mind and I cannot get rid of them.
105. Sometimes some unimportant thought will run through my mind and bother me for days.
106. Almost every day something happens to frighten me.
107. I am inclined to take things hard.
108. I am more sensitive than most other people.
109. At periods my mind seems to work more slowly than usual.
110. I very seldom have spells of the blues.
111. I wish I could get over worrying about things I have said that may have injured other people's feelings.
112. People often disappoint me.
113. I feel unable to tell anyone all about myself.
114. My plans have frequently seemed so full of difficulties that I have had to give them up.
115. Often, even though everything is going fine for me, I feel that I don't care about anything.
116. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
117. I often think, "I wish I were a child again."
118. It makes me feel like a failure when I hear of the success of someone I know well.

119. I am apt to take disappointments so keenly that I can't put them out of my mind.
120. At times I think I am no good at all.
121. I worry quite a bit over possible misfortunes.
122. I am apt to pass up something I want to do because others feel I am not going about it in the right way.
123. I have several times had a change of heart about my life work.
124. I have a daydream life about which I do not tell other people.
125. I have often felt guilty because I have pretended to feel more sorry about something than I really was.
126. I feel tired a good deal of the time.
127. I sometimes feel that I am about to go to pieces.

APPENDIX E

FREQUENCY DISTRIBUTION OF R-S SCALE SCORES

<u>R-S Scale Scores</u>	<u>N</u>
60-69	1
50-59	4
40-49	4
30-39	4
20-29	4
10-19	3
0-9	4

TOTAL 24

MEDIAN - 33

MEAN - 31.08

STANDARD DEVIATION - 18.14

APPENDIX F

PROGRESSIVE RELAXATION TECHNIQUE

Relaxation of Arms (4-5 minutes)

Settle back as comfortably as you can. Let yourself relax to the best of your ability Now, as you relax like that clench your right fist tighter and tighter, and study the tension as you do. Keep it clenched and study the tension as you do. Feel the tension in your right first, hand and forearm Now, relax Let the fingers of your right hand become loose, and observe the contrast in your feelings Now let yourself go and try to become more relaxed. Once more clench your right fist really tight hold it, and notice the tension once more Now let it go and relax Let your fingers straighten out and notice the difference once more Now repeat that with your left fist. Clench your left fist while the rest of your body relaxes; clench your fist tighter and feel the tension Now, relax. Enjoy the contrast Repeat that once more. Clench your left fist while your body relaxes Clench the fist tighter and feel the tension. Now relax and feel the difference. Continue relaxing like that for a while Clench both fists tight and tighter, both tense, forearms tense, study the sensation Now relax; straighten out your fingers and feel the

relaxation. Continue relaxing your hands and forearms more and more. Now, bend your elbows and tense your biceps, tense them harder and study your feelings of tension. Now straighten out your arms, let them relax and feel that nice comfortable feeling once more. Let relaxation develop Once more, tense your biceps; hold the tension and observe it carefully Straighten your arms and relax; relax to the best of your ability. Each time, pay close attention to your feelings when you tense up and when you relax. Now straighten your arms, straighten them so that you feel most tension in the triceps muscles along the back of your arms; stretch your arms and feel that tension . . . and now, relax. Get your arms back into a comfortable position. Let relaxation proceed on its own. The arms should feel comfortably heavy as you allow them to relax. Now concentrate on pure relaxation in the arms without any tension. Get your arms comfortable and let them relax further and further. Continue relaxing your arms even further. Even when your arms seem fully relaxed, try to go that bit further; try to achieve deeper and deeper levels of relaxation.

Relaxation of Facial Area, Neck,
Shoulders and Upper Back (4-5 Minutes)

Let all your muscles go loose and heavy. Just settle back quietly and comfortably. Wrinkle your forehead Wrinkle it tighter Now stop wrinkling your forehead. Relax and smoothe

it out. Picture your entire forehead and scalp becoming smoother as the relaxation increases. Now frown and crease your brows and study the tension Let go of the tension again. Smoothe out the forehead once more Now close your eyes tighter and tighter Feel the tension and relax your eyes. Keep your eyes closed, gently, comfortably and notice the relaxation Now clench your jaws, bite your teeth together; study the tension throughout the jaws Relax your jaws now. Let your lips part slightly Appreciate the relaxation Now press your tongue hard against the roof of your mouth. Look for the tension Relax the lips. Note the contrast between tension and relaxation Feel the relaxation all over your face, all over your forehead and scalp, eyes, jaws, lips, tongue and throat. Let relaxation progress further and further Now attend to your neck muscles. Press your head back as far as it can go and feel the tension in the neck; roll it to the right and feel the tension shift; now roll it to the left. Straighten your head and bring it forward, press your chin against your chest. Let your head return to a comfortable position, and study relaxation. Let relaxation develop Shrug your shoulders again and move them around. Bring your shoulders up and forward and back. Feel the tension in your shoulders and in your upper back Drop your shoulders once more and relax. Let relaxation spread deep into the shoulders, right into your back

muscles, relax your neck and throat, and your jaws and other facial areas as pure relaxation takes over and grows deeper deeper even deeper.

Relaxation of Chest, Stomach
and Lower Back (4-5 Minutes)

Relax your entire body to the best of your ability. Feel that comfortable heaviness that accompanies relaxation. Breathe easily and freely in and out. Notice how the relaxation increases as you exhale as you breathe out just feel that relaxation Now breathe right in and fill your lungs; inhale deeply and hold your breath. Study the tension Now exhale, let the walls of your chest grow loose and push out the air automatically. Continue relaxing and breathe freely and gently. Feel the relaxation and enjoy it With the rest of your body as relaxed as possible, fill your lungs again. Breathe in deeply and hold it again That's fine, breathe out and appreciate the relief. Just breathe normally. Continue relaxing your chest and let the relaxation spread to your back, shoulders to your neck and arms. Merely let go enjoy the relaxation. Now pay attention to your abdominal muscles, your stomach area. Tighten your stomach muscles, make your abdomen hard. Notice the tension and relax. Let the muscles loosen and notice the contrast Once more, press and tighten your

stomach muscles. Hold the tension and study it Now draw your stomach in, pull the muscles right in and continue breathing normally and easily and feel the gentle massaging action all over your chest and stomach Now pull your stomach in again and hold the tension Now push it out and tense it like that; hold your stomach fully. Let the tension dissolve as the relaxation grows deeper. Each time you breathe out, notice the rhythmic relaxation both in your lungs and in your stomach. Notice thereby how your chest and your stomach relax more and more Try and let go of all the tension in your body Now direct your attention to your lower back. Arch up your back, make your lower back quite hollow, and feel the tension along your spine settle down comfortably again, relaxing the lower back. Just arch your back up and feel the tension as you do so. Try to keep the rest of your body as relaxed as possible. Try to localize the tension throughout your lower back area Relax once more, relaxing further and further. Relax your lower back, relax your upper back, spread the relaxation to your stomach, chest, shoulders, arms and facial area. Allow these parts to relax further and further and even deeper.

Relaxation of Hips, Thighs and Calves
Followed by Complete Body Relaxation

Let go of all tensions and relax Now flex your buttocks and thighs by pressing down your heels as hard as you can

Relax and notice the difference Straighten your knees and flex your thigh muscles again. Hold the tension Relax your hips and thighs. Allow the relaxation to proceed on its own Press your feet and toes downwards, away from your face, so that your calf muscles become tense. Study that tension Relax your feet and calves This time, bend your feet towards your face so that you feel tension along your shins. Bring your toes right up Relax again. Keep relaxing for a while. Now let yourself relax further all over. Relax your feet, ankles, calves and shins, knees, thighs, buttocks and hips. Feel the heaviness of your lower body as you relax still further Now spread the relaxation all over. Let it proceed to your lower back, chest, shoulders, and arms and right to the tips of your fingers. Keep relaxing more and more deeply. Make sure that no tension has crept into your throat; relax your neck and jaws and all your facial muscles. Keep relaxing your whole body like that for a while. Let yourself relax.

You can become twice as relaxed as you are merely by taking in a really deep breath and slowly exhaling. With your eyes closed so that you become less aware of objects and movements around you and thus prevent surface tensions from developing, breathe in deeply and feel yourself becoming heavier. Take in a long, deep breath and let it out very slowly Feel how heavy and relaxed you have become.

In a state of perfect relaxation you should feel unwilling to move a single muscle in your body. Think about the effort that would be required to raise your right arm. As you think about raising your right arm, see if you can notice any tensions that might have crept into your shoulder and your arm Now you can decide not to lift the arm but to continue relaxing. Observe relief and the disappearance of the tension

Just carry on relaxing like that. When you wish to get up count from one to four. You should then feel fine and refreshed, wide awake and calm

APPENDIX G

Relaxation Materials

Relaxation is an important part of our desensitization process. Since relaxation is a skill that you can learn with practice, you are asked to practice relaxation at least once and preferably twice daily. This sheet of materials should aid you in your practice.

You should try to make the relaxation practice parallel your experience here in the counseling session. Choose a place of practice which is dimly lighted and where you will be undisturbed for the period while relaxing. Pick a place which will leave your body as supported and tension-free as possible. Beds, couches, or cushions spread on the floor are good support systems for people relaxing in a horizontal position. Recliner chairs, large overstuffed chairs, or two chairs, one to sit on with your head resting back against the wall and the other to support your legs, are good ways for people who are relaxing in a sitting position. If you find a good system, stay with it. If you continually fall asleep, change your positioning and/or time of day for relaxation practice.

Your tension-relaxation procedure should follow the one you learned here. You should tense each muscle group in the way and the order which you experienced them. Tense each one for 5 to 10 seconds and then say "relax" to yourself. Then give yourself another few seconds, say 10 to 20, to continue releasing and relaxing. When you covertly say "relax", concentrate on that muscle group and release it immediately. Pay attention to the feelings of tension and of relaxation in each muscle group, identify and enjoy them. Think about relaxing each muscle group a little more and consciously release each a little more. When you are doing this feel free to use any of the helpful phrases or suggestions you have learned here such as occasionally counting from 1 to 6, breathing in on the odd numbers and out on even ones, all the time letting a little more relaxation in with each time you exhale. Simply taking a few deep breaths would be another example. At various points you should go back over and review the various muscle groups and let each go a little more, e.g., after your arms, after your neck and head area, after your chest and stomach area, and after your legs are finished. Awaken yourself the same as in counseling, by counting backwards from 5 to 1.

When practicing, you should not practice for more than about 15 minutes at a time. This should give you time enough to tense and release each muscle group once and hit two or three times those special muscle groups in which exercises twice in the same three hour period. Most people find that relaxation practice tends to refresh them and to give them a "second wind". You might keep this in mind and use it to your best advantage. Many people find that the late afternoon or early evening is a good time to capitalize on this feature.

To help you remember the tension-release exercises, you will find below a list of the muscle groups in order and the methods for tensing them. Tense each group hard, but not to the point of cramping. Repeat any group in which you feel excessive tension; these are the areas that you probably will want to repeat.

Muscle groups and exercises:

1. hands by clenching them
2. wrists and forearms by extending them and bending the hands back at the wrists
3. biceps and upper arms by clenching your hands into fists, bending your arm at the elbows, and flexing your biceps
4. shoulders by shrugging them

(review back over the arms and shoulder area)

5. forehead by wrinkling it into a deep frown
6. around the eyes and bridge of the nose by closing the eyes as tightly as possible (contact lens should be removed before beginning the exercises)
7. cheeks and jaws by grinning from ear to ear
8. around the mouth by pressing the lips together tightly
9. back of the neck by pressing the head back hard
10. front of the neck by touching the chin on the chest

(review the neck and head area)

11. chest by taking a deep breath and holding it, then exhaling
12. back by arching the back up and away from the support surface
13. stomach by sucking it in as far as possible
14. stomach by forming it into a tight knot

(review the chest and stomach area)

15. hips and buttocks by pressing the buttocks together tightly
16. thighs by clenching them hard
17. lower legs by pointing the feet back towards the face, like trying to bring the toes up to touch the knees
18. lower legs by pointing the toes away and curling the toes downward at the same time

(review the area from the waist down)

Check with your counselor at your next session if there are any questions or problems.

APPENDIX H

RELAXATION SUPPLEMENT

1. Many persons find that they have difficulty relaxing their stomach muscles. There are several procedures that will facilitate relaxing this area. Either or both may work for you. Experiment with both; then use what works.
 - A. First, suck in your stomach as far as possible. Try to make your belly button touch your back bone. Let it go abruptly, forcing it out. Do this three times in rapid succession. This will fatigue the muscles and put them into a relaxed state.
 - B. Second, breathe deeply into your stomach. Push it out as far as possible by filling it with air. (If you are practicing relaxing, place your hands flat on your stomach. Imagine your hands being pushed up and rising as your stomach fills with air.) Hold the breath when you have filled your stomach to capacity and release. Repeat the exercise three times.
2. To accelerate relaxation you will find it useful at any point to take a deep breath, let go, and immediately say, "Relax". You may do this any time when you are relaxing either to speed up or deepen the relaxation or both.
3. Cue-Produced Relaxation. Each time you say "Relax" when exhaling and letting go you associate the word "Relax" with the experience of deepening relaxation. Through repeated pairing of the word and experience, repeating the word "Relax" will be a cue to enable you to induce quick, deep, comfortable relaxation.

Another way to pair "Relax" with deep relaxation is to say the word "Relax" slowly ten times, each time letting go a little more, at the end of your daily practice. If you practice twice daily you will have made a minimum of twenty pairings per day; that is 140 per week. Remember, relaxation is a skill that is learned by

instruction and practice.

HOMEWORK

1. Practice relaxation 10-15 minutes, twice each day.
2. Practice relaxing in class, in the car, whenever you are tense or worried.
3. Rate SUDS (subjective units of disturbance) on 1 - 100 scale. Check your speedometer. Use relaxation when exceeding speed limit.

APPENDIX I

RELAXATION REVIEW

Anxiety is an interfering response pattern that may be eliminated or controlled by the effective use of relaxation. Relaxation will become a self-control technique that will enable you to manage tension, worry and nervousness wherever and whenever you experience it if you will practice 10 to 15 minutes at least once a day.

You can (1) learn to relax deeply and quickly; (2) learn to recognize and gauge your tension; and (3) as you become aware of the anxiety, learn to apply the relaxation procedures. This comes easily with repeated daily practice.

Let's review the procedures we have been learning:

1. Deep muscle relaxation - tension and release exercises
2. Deepening Techniques
 - (a) Deep chest breathing - inhale, exhale, let go
 - (b) Stomach fatiguing
 - (1) Suck gut way in, let go abruptly, do 3 times in quick succession
 - (2) Tighten muscles as if someone were going to punch you, let go, repeat 3 times.
 - (c) Stomach breathing - fill stomach with air, push it way out, release abruptly, repeat for deepening further.
 - (d) Visualization of relaxing scene - e.g. lying on warm, soft sand at the beach.
3. Acceleration Techniques - speed up your ability to relax.
 - (a) Cue-produced relaxation is developed as follows:
 - (1) With deep breathing - inhale, say "relax" or "calm" (cue word) exhale, let go.
 - (2) When deeply relaxed at the end of your relaxation practice repeat the word "calm" or "relax" ten times very slowly.

Principle: Repeated association of letting go and of being deeply relaxed with a cue word ("relax")

or "calm") will condition that word to be a cue whereby you can induce relaxation immediately by merely repeating it and letting go.

- (b) Three-breath technique - Take a deep breath, hold it, begin with your hands thinking through the muscles, exhale, relax, use second and third breath in the same manner.
- (c) Relax larger muscle groups all at once (e.g. arms, head, neck, shoulders, trunk, legs, feet).
- (d) Combine three breath technique with relaxing large muscle groups.
- (e) Alternate between breathing and "relax" and focus on muscles.

*4. Homework

- (a) Practice regularly (twice a day) the above techniques and your relaxation skill will improve remarkably.
- (b) Practice gauging your tension level on 0 - 100 speedometer or thermometer - what is a comfortable level for you?
- (c) Practice relaxing wherever and whenever you get up-tight (exams speeches, talking with another person, driving your car, etc.)

*Write out your set of self-instructions and bring them to the next session.

APPENDIX J

TEST TAKING HINTS

Non-anxious students focus their full attention on answering the test questions, while they are taking an exam. Test-anxious students divide their attention between test-relevant and self-relevant thoughts. First, when they are tense, they pay attention to their disturbing feelings and get distracted from the task. Second, when they worry, their self-talk (thoughts) are about irrelevant things. Thinking about non-test-related matters distracts from concentrating on the task. Tension and worry interfere with paying attention to test-taking.

Specific distractions like those listed below may occur. How will you handle them?

- Wonder whether I'll get a good grade..the consequences if I fail...or do poorly.
- Think about what parents or friends would say..
- Think about how other students are doing on this test...how they are brighter than me...
- Worrying about the time...looking at the clock or watch.
- Think about things unrelated to answering test questions.
- Thoughts get so jumbled I cannot think straight.
- Wonder whether I'll finish the test.
- Think about how well or poorly I'm doing.
- Wishing the test was over.
- Tell myself how awful it would be if I did poorly.
- Putting myself down (e. g. "I'm dumb") for not being able to solve all the problems.
- Going from one problem to another; thinking about the problem I could not solve; or frantically going back and forth from problem to problem.

By relaxing and getting yourself calm and comfortable you may approach your tests in a confident frame of mind. You are in control. With this new mental set you can also instruct yourself in a manner that is incompatible with self defeating thoughts like those above. For example:

I am faced with a tough test and I would like to do well. But, what if I didn't? What if I did miserably? Maybe missed every question? Wouldn't it be awful! Now wait a minute. Before I jump to conclusions I have to stop and think. Sure, I'd like to do well, but would it really be so terrible if I didn't? It is clear that it would be preferable for me to do well on the test, but it is not a catastrophe if I don't. It is not the end of the world. All that it means is that on a particular day, at a certain time, in a given place, I did not do as well as I would have liked. It does not mean that I am dumb or stupid, only that I did not do as well as I wanted. Therefore, I am going to remain calm and confident and do my best, which is all I can ask of myself.

Whenever you feel uptight on the exam, use your cue-produced and whatever self-instructions for relaxation you have decided are effective for you. Relax and go on working.

"Okay, I cannot solve this problem (feelings of anxiety). I'll take a deep breath and relax. (Inhale, "Relax", exhale). Now, I'm not going to worry about that one. I'll continue and concentrate on solving the next problem. Now, let's see what is being asked?"

Review

1. Develop a constructive mental set by talking to yourself. Challenge disparaging or negative remarks about yourself by talking differently. You do not have to believe upsetting assumptions.
2. Use your relaxation skills to make yourself feel calm, comfortable, and confident at every point in approaching the test (e.g. when studying for, thinking about, walking to an exam). Whenever your 0-100 speedometer exceeds a comfortable speed, take control, relax yourself.
3. On the exam use your own set of relaxation instructions to relax deeply and quickly.
4. Turn your attention back to the task instead of worrying. (You'll worry less if you do 1, 2, 3 above.)

APPENDIX K

Circumstances and Frequencies of the Use of Relaxation by
Experimental Group Between Time 3 and Time 4

Situation	# Times Used		Times Effectively Used	
	N	% of Total	N	%
Before Bedtime	27	29%	23	85%
Stressful Cir- cumstances	11	12%	8	73%
Physical Aches	8	8%	4	50%
Class	9	9%	8	88%
Driving	9	9%	5	55%
Studying	4	7%	3	75%
Cafeteria Line	4	7%	3	75%
Testing	4	7%	2	50%
Family Affair	5	5%	5	100%
Dr. Office Visit	2	2%	2	100%
Entertaining	2	2%	1	50%
Campus Lab	2	2%	1	50%
Discussion with Spouse	2	2%	2	100%
Meeting	11	2%	1	100%
Phone Call	1	1%	0	0
House Cleaning	1	1%	0	0
Tired	1	1%	1	100%
Middle of Noct	1	1%	1	100%
TOTALS	94		70	74.47%

APPENDIX L

Frequency of Use of Relaxation and Percent Success by
Individual Sensitizers and Repressor from Time 3 to Time 4

Sensitizers			Repressors		
Ident. No.	Freq.	Success %	Ident. No.	Freq.	Success %
7429	9	88%	9204	3	2 66%
7859	6	100%	0983	5	3 60%
8466	5	100%	8650	3	2 66%
0825	6	100%	1123	7	4 57%
4301	21	95%	0109	10	6 60%
2794	13	85%	2965	5	5 100%
TOTALS	60	93%		33	21 64%
	$\bar{x} = 10$			$\bar{x} = 5.5$	

APPENDIX M

Selected Anecdotal Notes

The following are examples of selected anecdotal accounts of students' experiences with relaxation.

Student A (Repressor):

"Going to bed I used deep breathing. It helps me slow down and relax."

While studying I got a back and head ache. I tensed back and neck muscles and then relaxed them. I felt somewhat better."

Student B (Repressor):

"Going to bed. Quickly reached completely relaxed state."

"Tired and tense from clinical, I quickly relaxed and felt good again."

Student C (Repressor):

"Winding down 'preparation to bedtime', I was able to clear my mind, identify tense muscle areas and get ready to sleep."

"2 1/2 hours spent in dentists chair, it was unbelievably successful."

Student D (Repressor):

"Had to speak for small group, my heart was beating really fast, by breathing deeply and relaxing it slowed down my heart and

calmed me. "

"Tension in neck, causing headache, I let my head hang for few minutes and thought about relaxing, and it worked!"

Student E (Repressor):

"In bed, can't tune out day's happenings - I went to sleep. "

"Need to shut down again, I went to sleep. "

Student F (Repressor):

"Sort of angry about something my husband did, used progressive relaxation to calm down, it worked good. "

"Checked off on skill of making surgical bed and I was worried.

I used relaxation to calm me down and I did just fine. "

Student G (Sensitizer):

"Trying to sleep, I used relaxation and it did the trick. "

"Bad backache, trying to go to sleep. Started procedure as we learned it initially - Wow! I gained dramatic release of tension in my back. "

Student H (Sensitizer):

"Beginning test, I panicked - relaxation calmed me down and helped me realize I did know the answers. "

"Studying, relaxed neck muscles. "

"Integrated Basic Science class, everyone up tight, caught more tension from a classmate. Relaxation helped me get the class in perspective. "

"Driving to school, relaxed neck muscles."

Student I (Sensitizer):

"Waiting in line, had to slow myself down by relaxing with deep breaths."

"Hyper from evenings entertainment used relaxation to go to sleep."

Student J (Sensitizer):

"Frustrated - progressive relaxation calmed me enough to begin my evening study."

"Headache - relaxed - headache gone in five minutes."

"Too tense to sleep, a few deep breaths relaxed me."

Student K (Sensitizer):

"Got uptight taking a test, tried breathing deeply telling myself to relax, it worked. I just kind of let it all flow out and I felt a lot better."

"Driving home, traffic heavy, tensed and relaxed neck muscles, breathed deeply and I relaxed myself."

Student L (Sensitizer):

"Going to sleep, relaxed and sleepy after progressive relaxation."

"Time to sleep - works promptly."

APPENDIX N

WOOD PROJECT
NORMALIZED T-SCORE

Ident. No.	Control Group A						Ident. No.	Experimental Group B						Freq. of Relax.	
	A State			A Trait				A State			A Trait				
Time	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
9039	50	30	43	33	36	38	0983	51	52	56	34	49	50	4	
6007	53	57	63	37	40	41	1123	37	26	76	33	41	50	7	
4900	57	54	54	49	43	43	2965	43	49	51	31	56	50	5	
8263	53	57	33	21	25	28	0109	30	26	26	25	21	21	10	
2707	49	41	37	37	34	33	8650	30	43	30	21	38	34	3	
male															
6420	58	62	50	51	62	55	9204	50	21	21	47	28	33	3	
0070	57	53	50	55	49	41	4301	71	39	44	60	52	57	20	
0654	66	72	76	58	57	60	7429	68	52	60	61	58	59	6	
3216	63	49	60	58	61	55	8466	67	69	64	55	67	64	5	
0004	55	52	55	34	38	41	2794	61	50	44	46	41	41	13	
3548	51	56	56	52	43	54	7859	56	50	50	50	41	41	6	
6034	44	54	50	40	47	41	0825	54	52	50	38	46	49	3	

Represents

Sensitizers

AN ABSTRACT OF THE FIELD STUDY

of

ADELLA M. NORD WOOD
FOR THE MASTER OF NURSING

Date of receiving this degree: June 12, 1975

Title: STUDY OF COPING STYLE AND REDUCTION OF
ANXIETY VIA PROGRESSIVE RELAXATION FOR STUDENT
NURSES

Approved: Marie Berger, M.S. Field Study Advisor

The purpose of this experimental study was to investigate the effects of progressive relaxation on anxiety in student nurses. This field study was a two-group, time-series design. Twenty-four beginning nursing students between the ages of 19 and 45 were assigned to experimental and control groups. They were further assigned into repressors or sensitizers according to their scores on the revised Repression-Sensitization Scale which is an indication of their coping style.

Four data collecting tools were used: (1) The A-State Scale to measure state anxiety, (2) The revised Repression-Sensitization Scale, (3) A week's anecdotal record to show the effectiveness of progressive relaxation, and (4) A frequency individual record of the number of times the relaxation was utilized by the students after going through the training period.

The treatment program in progressive relaxation was given for

a period of four weeks to the experimental group. The results strongly indicate that sensitizers are significantly aided in the reduction of anxiety by utilization of progressive relaxation, while repressors are not relieved significantly.

The prediction was not borne out that the level of anxiety experienced by beginning student nurses in this study would be significantly reduced following progressive relaxation.