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Comparison of three treatments for stress reduction

Moore, Nil Alptekin, Ed.D.

The University of North Carolina at Greensboro, 1990

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COMPARISON OF THREE TREATMENTS FOR STRESS REDUCTION

by

Nil Alptekin Moore

A Dissertation Submitted to
the Faculty of the Graduate School at
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Doctor of Education

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Approved by

Dissertation Adviser

APPROVAL PAGE

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The purpose of this study was to examine the effectiveness of two hypnosis treatment delivery systems, live-model treatment and videotape treatment, in reducing subjective anxiety. More specifically, it was hypothesized that there would be a differential decline in subjective anxiety between the hypnosis treatment conditions and the comparison condition as measured by the State-Trait Anxiety Inventory (STAI) and Anxiety Rating Scale (ARS).

Subjects for the study were volunteers between the ages of 18 and 70. They were randomly assigned to one of the treatment conditions. All treatment conditions, including the comparison condition, lasted for one hour and 45 minutes. The study was conducted in 15 experimental units consisting of 2-5 subjects in each unit. The live-model and videotape treatment conditions were equivalent except for the presence of the author in the live-model treatment. The comparison condition consisted of a lecture on stress and coping strategies provided by the author.

Statistical analyses were conducted in the following manner. A descriptive technique involving graphing was used to report the raw pretest and posttest means for each dependent variable for all three treatment conditions. Analysis of covariance (ANCOVA) method was employed to analyze the adjusted pretest-posttest difference scores

within each treatment condition and also across treatment conditions.

Results of the data analyses indicated statistically significant pretest-posttest difference scores in state anxiety for the two hypnosis treatments and the comparison condition. The pretest-posttest state anxiety difference scores were not statistically significant across treatments. The ARS anxiety results were similar to the STAI state anxiety findings. Results of the analyses for the trait anxiety showed a statistically significant pretest-posttest trait anxiety difference score for the live-model treatment. Videotape treatment also demonstrated reduction in trait anxiety, whereas the comparison condition failed to show any change. The pre-posttest trait anxiety difference scores across treatment conditions showed a trend supporting the research hypothesis.

It was concluded that the live-model and videotape hypnosis treatments have great potential as interventions for stress and anxiety reduction with adults.

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CHAPTER I

INTRODUCTION

The increasing occurrence of stress disorders reflects the inability of many people to cope with the stresses of everyday living in a complex society. Often, individual coping strategies to reduce stress have negative consequences for physical health (e.g., Type A behavior, smoking, alcohol, and drugs). The relationship between stress and physical and psychological disorders has been established in numerous studies (Bowers & Kelly, 1979; Mason, 1975; Singer, 1977; Wickramasekera, 1988). It is vital that professional counselors become knowledgeable about stress in order to plan for its prevention and treatment.

During the 1950's, Hinkle (1961), Hinkle and Wolff (1957) and Wolff (1962) conducted a series of ecological studies that examined the influence of environmental factors on susceptibility to illness. Persons with a high frequency of illness were found to be more dissatisfied and aware of emotional problems than were others who were infrequently ill. Wolff (1962) concluded that stressful life events are related to illness, in general, and that persons' values and attitudes are related to their health. Eastwood and Trevelyan (1972) investigated vulnerability to

illness using standardized and reliable measurements for all types of diseases. A positive relationship existed between physical and psychiatric disorders, and specific illnesses were found to be clustered in some individuals; some persons appear to be especially vulnerable to illnesses of all kinds. Gottschalk (1983), who reviewed studies that examined vulnerability to physical and mental dysfunctions as they relate to predisposition to stress, concluded that psychosocial pressures can increase susceptibility to medical disorders.

A growing body of empirical evidence exists that supports the notion that stress and disease are related. In fact, most studies agree that people who have been exposed to a high degree of recent life stress have more diseases of the upper respiratory tracts, more allergies, a greater risk of hypertension, and a greater risk of coronary disease than do people who have been exposed to a low degree of life stress (Dohrenwend & Dohrenwend, 1974; Jenkins, 1976; Minter & Kimball, 1978). Following a review of empirical research, Jemmott and Locke (1984) concluded that "stress impairs some aspect of immunologic functioning and makes the person, if exposed to an infectious agent, more likely to develop the disease than he or she would have been if not under stress" (p. 82).

Individuals with certain personality characteristics are also shown to be more prone to stress-related disorders.

People with highly anxious personalities tend to react more intensely to stressful situations even in the absence of stress (Farber & Spence, 1956; Spielberger, Gorsuch, & Lushene, 1970). Individuals who exhibit negative mood and cognitions, self-doubt, and passivity tend to report more complaints of psychosomatic illness (Hinkle, 1961; Valliant, 1978). Psychological factors such as anxiety have been reported to play a crucial role in inhibiting the immune system and resulting in the development of cancer in many individuals (Bahnson, 1971; Newton, 1983; Selye, 1956).

Self-control approaches to stress management have been shown to be helpful in stress reduction. Self-hypnosis (Alman, & Lambrou, 1983; Herzfeld & Taub, 1977; Ruch, 1975), heterohypnosis (Benson, Arns, & Hoffman, 1981; From, Brown, Hurt, Oberlander, Boxer, & Pfeiffer, 1981), anxiety-management training (Suinn, 1977), relaxation as self-control (Deffenbacher, Mathis, & Michaels, 1979), stress inoculation (Meichenbaum, 1975), and progressive muscle relaxation (Jacobson, 1938) are some of the stress-reduction methods that have been utilized to help individuals cope with psychological stress without the use of drugs. Convincing evidence exists that hypnosis and relaxation treatments are effective in relieving many somatic disorders as well as reducing stress and anxiety. Bowers and Kelly (1979), in their review of

studies on stress-related disease and the facilitation of hypnotic ability in the healing and relieving of various somatic disorders, found that (a) stress is related to psychosomatic diseases such as asthma, rheumatoid arthritis, and ulcers, (b) certain forms of stress appear to increase the hazard of cancer development by depressing the immune system, and (c) hypnosis is effective in inhibiting allergic skin reactions, eliminating warts, and reducing symptoms of asthma. Other studies, which employed relaxation and hypnosis treatments, showed these procedures to be effective in reducing subjective reports of anxiety (Benson, 1975; Benson, Frankel, Apfel, Daniels, Schniewind, Nemiah, Sifneos, Crassweller, Greenwood, Kotch, Arns, & Rosner, 1978; Charlesworth, Murphy, & Beutler, 1981; Cragan & Deffenbacher, 1984; Stevens, 1971).

Although there is considerable research that, (a) indicates that certain personality characteristics coupled with psychosocial stresses can lead to stress-related disorders (Dohrenwend & Dohrenwend, 1978; Gottschalk, 1983; Hinkle, 1974) and, (b) supports the effectiveness of hypnosis for stress and anxiety reduction (Benson et al., 1978; Deffenbacher, Mathis, & Michaels, 1979), further research is necessary to validate the effectiveness of hypnosis and relaxation treatments using more heterogeneous samples other than college students or psychiatric patients as has been the situation for most research studies in this

area. It is also essential that relaxation and hypnosis treatments are made available to a larger number of people who may be suffering from stress-related symptoms or disorders. Videotape relaxation and hypnosis treatments permit these procedures to be available to diverse populations and larger audiences, and place less demand on the time of expert professionals.

Statement of the Problem

The purpose of this research investigation was to examine whether two hypnosis treatment delivery systems with adults, (i.e., videotape treatment and live-model treatment) would reduce the levels of reported anxiety as measured by the State-Trait Anxiety Inventory (STAI) and the Anxiety Rating Scale (ARS).

Physicians primarily depend on drugs to treat symptoms related to psychological stress, such as depression, anxiety, and insomnia (Orleans, George, Houpt, & Brodie, 1985). For example, the prescription of unnecessary medication for migraine headaches, which are often set off by stress-related psychological factors, may be prevented and a more effective intervention would involve hypnotic or relaxation treatments to induce relaxation and reduce arterial dilation. Benson (1979) reported that 6,000 to 12,000 annual deaths are related to prescription drugs; chemical solutions cannot cure complex psychosocial problems. Health professionals must understand the

intimate connection between mind and body, and the significance of being knowledgeable in identifying the factors associated with both aspects of the individual for prevention and treatment purposes.

Also, it is essential that the prevention and treatment of stress disorders be made available to a larger number of people who are considered to be at high-risk for stress or who are already suffering from stress-related symptoms. Despite the increase in the use of audiotapes, videotapes, and films as therapeutic aids (Carey & Burish, 1987; Eisler, Hersen, & Miller, 1973; Gottman, 1977; O'Conner, 1972; Sox, Morton, Higgins, & Hickam, 1984), few controlled studies in stress-reduction treatments have utilized these modes of delivery to investigate their effectiveness. The use of audiotapes, videotapes and films permit more clients to be treated and place less demand on the time the professional spends with each client, thus making these delivery modes cost effective.

Definitions

To assist the reader, the following definitions of key terms are provided. Other definitions of the dependent variables are included in Chapter III under the heading, Instruments.

Hypnosis Treatment

Hypnosis is a way to facilitate a "psychophysiological condition in which attention is so focused that there occurs

a relative reduction of both peripheral awareness and critical analytic mentation, leading to distortions in perceptions, mood and behavioral and biological changes." (Wickramasekera, 1987, p. 12). Hypnosis treatment is used in this study to facilitate deep levels of relaxation and focused attention, and to help the individual review experiences associated with stressful personal issues. For the purposes of this investigation, hypnosis is assumed to be an extension of the relaxation response; an individual's cognitions and affect are involved in a process of creative problem solving. A brief description of how hypnosis treatment may contribute to subjective reports of stress is given in Appendix A. Support for the hypothesis that hypnosis treatment is an effective procedure for stress-reduction appears in Chapter II in the review of the literature.

Concept of Stress and Anxiety

Lazarus (1966) conceptualizes psychological stress as a reaction to perception of threat in a given situation. The construct anxiety has been viewed as the nonsomatic feelings individuals experience when they are stressed due to perceived threat or danger (Gatchel, Baum, & Krantz, 1989). It is agreed by most researchers that stress is the external or internal cue that is perceived or interpreted as threatening or dangerous. The perception of threat or danger initiates the anxiety reaction (Lambert,

Christensen, & DeJulio, 1983). According to Spielberger (1972) the construct anxiety is multidimensional, involving (a) transient emotional/physiological behavior, and (b) a dispositional trait. An individual may indicate informally (by reporting on present or past cognitions or arousal levels) or formally (through psychological test scores) the degree of anxiety he/she feels, either in general (trait anxiety) or in response to specific situations (state anxiety). This study examined both state and trait anxiety consistent with Spielberger's view of this construct.

This conceptualization of stress and anxiety has several implications for those trying to understand individuals who may be at high risk for stress-related physical or psychological disorders. It suggests the importance of exploring the stress management procedures which high-risk persons can utilize to deal with a perceived threat and to take an active role in stress management. To emphasize some conceptual views of stress, descriptions of different psychological and physiological theoretical positions on the concept of stress are given in Appendix B.

Hypotheses of the Study

The purpose of this study was to determine whether there would be a differential decline in reported anxiety between the two hypnosis delivery systems, live-model treatment and videotape treatment, and the

control/comparison condition. More specifically, it was hypothesized that the decline in anxiety levels from pretest to posttest will be greater for the hypnosis treatment conditions, live-model treatment and videotape treatment, compared to the decline in the control/comparison condition.

CHAPTER II

REVIEW OF THE LITERATURE

Chapter I presented a statement of the problems of stress-related disorders and the importance of health professionals becoming knowledgeable about stress management treatments. Understanding the mind-body connection is useful for the prevention and treatment of stress-related problems. Chapter II provides a review of the literature on stress and the use of hypnosis and relaxation treatments to reduce stress and anxiety. The review of literature concerning stress and hypnosis is divided into four general areas: the relationship between stress and physical and psychological disorders; use of hypnosis and relaxation treatment to reduce psychological stress/anxiety; use of hypnosis and relaxation treatment for ameliorating physical symptoms; and the use of audiotape, videotape, and film media for therapeutic purposes.

Stress and Physical and Psychological Disorders

It has been known for decades that persistent psychological stress predisposes individuals to physical illness (Dohrenwend & Dohrenwend, 1974). At the same time, certain predispositions of the individual, shaped by biological and/or psychosocial factors, increase the

vulnerability to both physical and psychological symptoms. A major portion of the problems presented to physicians today constitute the somatization of distress (Mechanic, 1986).

Canter, Imboden, and Cluff (1966) examined the relationship between the incidence of physical illness, contemporary stress, and prior psychological status. Psychologically vulnerable and nonvulnerable adults, defined by their Minnesota Multiphasic Personality Inventory (MMPI) (Hathaway & McKinley, 1943) and Cornell Medical Index Health Questionnaire (CMI) (Imboden, Canter, & Cluff, 1961) scores were compared on their future accident-stress experiences and number of visits to a medical clinic for physical complaints during an 18-month follow-up period. The subjects were civilian employees at the biological laboratories in Fort Detrick, Maryland.

The concept of stress experience was defined as an accidental exposure to a virulent agent or a resultant injury in which there was an abrasion or skin penetration. The occurrences of such an accident during the 18-month follow-up period were recorded for the vulnerable and nonvulnerable subjects. Physical illness was defined as the number of visits to the medical clinic for physical complaints initiated by the subject because of distress or symptoms of a possible medical disorder. Psychological vulnerability was determined by a pattern of three of the

MMPI scores and the total CMI score. It was hypothesized that psychologically vulnerable subjects and the subjects with stress experience would have higher illness rates.

The findings supported the hypothesis: subjects classified as psychologically vulnerable reported significantly higher rates of illness complaints than did subjects identified as nonvulnerable during the 18-month period. Furthermore, 80% of the vulnerable subjects had some complaint of an upper respiratory infection compared to 63% of the nonvulnerables, resulting in a statistically significant difference.

Jemmott and Locke (1984) reviewed studies on the relationship between psychosocial factors and the human immune system. Holmes et al. (1957) reported that among their tuberculosis patients, the number of stress experiences gradually increased, until 1 to 2 years before hospitalization when a sharp increase in such experiences occurred. This was not demonstrated among the control subjects.

Meyer and Haggarty (1962) followed 16 families for 12 months, recording distressing life events reported by family members. Throat cultures were collected every 3 weeks and analyzed for evidence of streptococcal infection and streptococcal respiratory illness. Among family members, a greater degree of family-related stress was

reported during the 2-week period prior to the documented infection and clinical acute respiratory illness than during the 2-week intervals after the infection and disease.

Studies conducted with college students have also investigated the relationship between life stress and the acute respiratory illnesses. Jacobs, Spilken, and Norman (1969) randomly selected two groups of male college students. One group (N = 29) was chosen from the student health records consisting of students diagnosed as having an upper respiratory infection. The other group of students (N = 29) selected from the college directory did not have an upper respiratory condition for at least one year. The previously ill subjects were studied within 2 weeks after their visit to the health center. These subjects reported a greater number of life events involving personal failure and the experiencing of depression, anxiety, and hostility compared to the control subjects.

Psychological stress literature also points to the existence of individual differences in response to stress (Lazarus, 1970; Mason, 1975). According to Mechanic (1986), individual differences in perceptions, evaluations and responses to stressors have a significant impact on the "extent to which symptoms interfere with usual life routines, chronicity, attainment of appropriate care and cooperation of the patient in treatment" (p. 1).

Watson and Clark (1984), following an extensive review, reported that individuals who experience discomfort at all times, across situation, and in the absence of overt stress, tend to be high on Negative Affectivity (NA). High-NA individuals tend to show greater distress and have negative self-image, whereas low-NA individuals tend to be more relaxed and relatively content with themselves. In eight of the nine studies reviewed by the authors, high-NA subjects reported significantly less favorable self-ratings. Additionally, NA was found to be highly related to trait anxiety (Spielberger, Gorsuch, & Lushene, 1970) across conditions, involving relaxed baseline settings and psychologically or physically stressful conditions.

Jenkins (1971) and Steptoe (1981) reviewed several retrospective studies which indicated a relationship between coronary artery disease and negative affect, or neuroticism. Neuroticism was also found to be related to the number of reported physical complaints (Costa & McCrae, 1986). Medalie et al. (1976) reported the existence of a strong association between negative affect and the tendency to develop angina pectoris. Watson and Tellegan (1985) acknowledged the negative affectivity dimension as being a stable dimension of mood, cross-culturally.

The relationship between individual characteristics and certain physical illnesses has been demonstrated in other instances. For example, individuals with duodenal

ulcer tend to manifest a pattern of hyperreactivity and hypersecretion of gastric acid (Mirsky, 1960). Psychologically these individuals tend to show intense striving for self-sufficiency (Weiner, Thaler, & Reiser, 1957). It has been demonstrated many times that the outset of ulcer symptoms is often precipitated by psychological or stress related factors (Gottschalk, 1983). Loss of significant relationships, followed by an inadequate grieving period, has been detected in individuals with ulcerative colitis (Lindemann, 1950) and leukemia (Greene & Miller, 1958).

Hypnosis and Relaxation Treatments for Stress/Anxiety Reduction

The individual's perception when faced with psychological stress determines, to a great extent, the individual reaction to a stressful situation. It is unlikely that stress, at the physiological level, without the perception of threat or danger, is sufficient for acquiring or maintaining stress-related disorders such as anxiety, insomnia, chronic pain and hypertension (Mandler, 1975). Deep relaxation and hypnosis treatments facilitate an altered state of consciousness characterized by changes in perception, mood, and memory, and increase the probability of approaching old problems in a new and creative way (Bowers, 1978; Johnson, 1981).

Charlesworth, Murphy and Beutler (1981) investigated the effectiveness of a stress-management program with nursing students. The treatment involved teaching progressive relaxation, deep muscle relaxation, visual imagery and modified systematic desensitization. The effectiveness of the relaxation training was examined through the evaluation of subjective anxiety reduction using the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970) at three-points during the study. The stress-management training was group administered during a 5-week period, involving a total of 10 hours.

The treatment group demonstrated a mean reduction of 5.2 units in trait anxiety whereas the control group showed 0.9 units reduction in trait anxiety. The treatment group's pre to posttest reduction in mean trait anxiety was statistically significant. The treatment group also showed a state anxiety reduction of 2.7 units from mid-semester to end-semester, while the control group showed a slight increase in state anxiety during that period.

Deffenbacher, Mathis and Michaels (1979) examined the effects of two anxiety-reduction procedures involving relaxation as self-control and self-control modification of desensitization. Both procedures train the clients in recognizing tension cues, at the physiological level, and to use these cues as signs to begin actively applying relaxation strategies. Subjects included were 69 volunteer

introductory psychology students. Instruments utilized included Achievement Anxiety Test (Alpert & Haber, 1960), Inventory of Test Anxiety (Osterhouse, 1972), Digit Symbol Test (Brown, 1969), Fear Inventory (Wolpe, 1969), and the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970).

The subjects in both treatment groups reported reduction in state and trait test anxiety, and lower anxiety on the Trait Anxiety Inventory and Fear Inventory than the control group at posttreatment and follow-up. These results suggest that subjects were possibly developing generalized coping skills in handling other stressors as a result of the treatment effect.

Charlesworth and Dempsey (1982) reported the effectiveness of a comprehensive stress-management program in reducing trait anxiety. A 2-week, eight session, stress-management program was employed with 25 hospitalized substance abusers with a history of drug use over 10 years. Both the STAI and Taylor Manifest Anxiety Scale (Taylor, 1953) were used as pre and post-measures of anxiety. Audiotapes on progressive relaxation, deep muscle relaxation, visual imagery and automated systematic desensitization were employed as part of the program to teach the subjects an active coping skill.

Findings demonstrated a mean reduction of 6.0 units in trait anxiety for the treatment group, as measured by the

STAI, one week after the stress-management program was completed. The control group demonstrated only 2.0 units of reduction in trait anxiety. The change scores from pretest to posttest for the treatment group were statistically significant for the STAI and TMAS. The STAI change score difference between the treatment and control group was also statistically significant suggesting that a comprehensive stress management program can result in the reduction of trait anxiety. Additionally, subjects in the treatment group reported that they employed these techniques in their daily life to overcome insomnia and family stresses.

Another study (Hassel, Bloom, & Gonzalez, 1982) attempted to evaluate the effects of two stress management procedures with schizophrenics since ineffective stress-management has been central in explaining the many symptoms of schizophrenia (Mendel, 1976; Venables & Wing, 1962). The authors employed two approaches, both designed to reduce generalized anxiety: Anxiety Management Training (AMT) (Suinn & Richardson, 1971) and Applied Relaxation Training (R) (Goldfried & Davidson, 1976). All subjects participating in this study were diagnosed as schizophrenic in their outpatient records, and most were on antipsychotic or tranquilizing medication during the period of the study. STAI was used as a measure of generalized anxiety. A therapist rating scale was also employed to examine changes as perceived by each patient's regular therapist. The AMT

involved deep muscle relaxation, stressful imagery to help identify individual stress reactions and cue-controlled relaxation. The R involved deep muscle relaxation (Jacobson, 1938) and discussions on applying the techniques to life stresses.

Thirty-nine subjects were randomly assigned to one of three experimental groups. The AMT and R groups met once a week for six 45-minute sessions. Subjects were seen in groups of 3 to 8. Individuals in the wait-list control group met for pretesting and then for posttesting at the end of 6 weeks.

The results of the study indicated both AMT and R treatment STAI group means (49.70 and 51.57 respectively) to be considerably lower than the control group mean (58.50). The difference between the two treatment group means was statistically insignificant. The authors concluded that schizophrenics may be helped with anxiety management effectively through these methods.

An investigation by Cragan and Deffenbacher (1984) reported reduction in anxiety in general medical outpatients using Anxiety Management Training (AMT) and Relaxation as Self-Control (RSC). Participants were volunteer patients who were randomly assigned to AMT, RSC or control groups. Instruments utilized measured general anxiety (STAI-T; Spielberger, Gorsuch, & Lushene, 1970) and Multiple Affect Adjective Checklist (MAACL; Zuckerman &

Lubvin, 1965), general physiological arousal (Anxiety Symptom Checklist; Edie, 1973), person-specific stress symptomology, state anxiety (STAI-S), and state physiological arousal (using blood pressure and heart rate measures). Intervention was conducted during six weekly 60-minute group sessions, with 9 or 10 subjects per group.

AMT and RSC groups both reported significantly less general anxiety on the STAI-T and on the MAACL compared to the control group at posttest and follow-up. AMT and RSC subjects also reported significantly less state anxiety on the STAI-S than the subjects in the control group at posttest and follow-up.

Findings by Cragan and Deffenbacher (1984) indicate that both AMT and RSC are effective in reducing stress in general medical outpatients. Stress reduction was observed through a wide range of measures and with a wide range of stress symptoms. The authors suggested that one of these procedures can effectively be used by counselors and psychologists to assist family practitioners with stressed patients.

Hypnosis and Relaxation Treatments for Physical Conditions

Hypnosis and relaxation therapies have been used in the treatment of psychosomatic illnesses such as migraine headache, warts, hypertension, asthma, pain control and for

treating addictive disorders such as cigarette smoking, alcoholism and obesity, and as an adjunct to cancer treatment.

In their review of the clinical use of hypnosis and relaxation treatments, Wadden and Anderton (1982) concluded that hypnosis treatments are effective in the treatment of clinical pain, warts, asthma, and hypertension. The experimental evidence on the effectiveness of hypnosis and relaxation procedures for the treatment of addictive disorders appears to be less conclusive.

In an attempt to evaluate the effects of hypnosis treatment on cigarette smoking, one study (Pederson, Scrimgeour, & Lefcoe, 1979) compared four types of treatments: A live-hypnosis treatment supplemented by non-hypnotic counseling sessions; relaxation therapy and counseling sessions; observation of a videotape of the group hypnotherapy session and counseling sessions; and counseling treatment alone. At follow-up, significantly more subjects reported abstinance from smoking for 3 months in the live-hypnosis plus counseling group than in the other three treatment groups. However, marked differences were reported in drop out and absenteeism rates among the conditions, favoring the live-hypnosis treatment. The results of this study cannot be interpreted clearly due to methodological problems.

Investigations concerning psychosomatic conditions such as asthma and migraine headaches support the effectiveness of hypnosis for treating these disorders with highly to moderately suggestible subjects. Collison (1975) employed a hypnosis treatment with 121 asthma patients during a period of 10 years. The majority of the patients who were cured (criterion being normal ventilatory capacity) were reported as being highly hypnotizable, whereas most of the patients who did not show improvement were not hypnotizable. Cedercreutz (1978) reported similar results with 100 migraine sufferers. At an 11-month follow-up, 23 patients who were symptom-free were identified as highly or moderately hypnotizable. Patients who did not show improvement exhibited minimal, or no hypnotic susceptibility. Hypnotizability was rated on a 4 point scale, ranging from deep hypnosis to no effect.

Hypnosis has also been used in treating skin diseases. Two studies examined the role of hypnotic responsivity in the treatment of warts (Asher, 1956; Ullman & Dudek, 1960) and both found a positive relation between hypnotic susceptibility and treatment outcome. One study (Asher, 1956) reported that 11 out of 17 highly hypnotizable subjects were completely cured of their warts, four were improved and two did not show any change. None of the eight low susceptible subjects showed improvement.

Jacob, Kraemer, and Agras (1977) reviewed the literature on the use of relaxation and hypnosis procedures for the treatment of hypertension. They concluded that relaxation therapy leads to greater reduction of blood pressure than placebo or control methods, and that relaxation therapy may become an effective adjunct to medication in the management of hypertension, especially for individuals who fail to respond to pharmacological intervention.

There is a growing body of literature suggesting a relationship between stress and immune functioning (Bammer & Newberry, 1981; Hall, 1983, Riley, 1981). Stress appears to inhibit the immune system through the production of elevated levels of adrenal corticoid hormones in the plasma. Thus, methods of reducing stress and corticoid production could have a significant influence in the treatments of cancer. Furthermore, hypnosis and relaxation procedures have been useful with cancer patients for controlling pain, for controlling related physiological symptoms, and for controlling psychological reactions to the disease and its treatment (Burish, et al., 1987; Cangello, 1962; Hoffman, 1983; Margolis, 1983).

Simonton, Matthews-Simonton, and Creighton (1978) employed a visualization/relaxation procedure with 159 cancer patients who were given one year to live. The treatment approach involved the facilitation of relaxation

and having the subjects visualize their immune system's white blood cells attacking and destroying the weak cancer cells in their body. Following the study, 63 of the 159 patients were alive two years after their diagnosis. Of the 63 patients alive after two years, 22.2% showed no indication of cancer, 19.1% demonstrated tumor regression, and 27.1% of these patients had stabilized. However, 31.8% showed some new tumor growth. Since the study did not include a control group, it is difficult to conclude that the visualization/relaxation procedure resulted in an enhancement of the patients' immune system. Other studies which employed progressive muscle relaxation training and guided imagery procedures, with cancer patients, showed these procedures to be effective in reducing emotional distress, nausea, and physiological arousal following chemotherapy (Burish & Lyles, 1981; Lyles, et al., 1982).

In summary, the majority of the literature supports the hypothesis that hypnosis and relaxation treatments are effective in reducing psychological and physiological distress, and in treating certain psychosomatic and other physical conditions.

Use of Audio, Video and Film Media for Therapeutic Purposes

During the last 10 years the use of audiotapes, videotapes, and films as teaching aids has increased rapidly (Kaus, Robbins, Abrass, Bakaitis, 1980; Roeske,

1979; Sox, et al., 1984). Schoonover, Bassuk, Smith and Gaskill (1983) reviewed the art of visual training programs in developing a videotape series for teaching human relations. The authors concluded that the effectiveness of television and videotapes as teaching tools is partly due to the average person's past experiences with television, and partly due to the ability of television and videotapes to make the viewer feel more in control of, and participate in, current events.

Sox, Marton, Higgins and Hickam (1984) designed a teaching method using videotape instruction to be employed in a medical setting when the expert teachers were unavailable. Students were randomly assigned to a videotape instruction group, or to a group that heard identical live lectures. The content of the lectures was on clinical decision-making. The two groups both obtained the same mean score on the final examination on the course content. However, the live lecture group rated the quality of the instruction slightly higher than the videotape group although the ratings for both groups were high. Due to the lack of a control or comparison group, it is difficult to reach a conclusion as to the effectiveness of the treatment groups.

Another study by Thelen, Fry, Fehrenbach & Frautschi (1979) reviewed research on the effectiveness of videotape and film modeling as treatment devices. Most of the

studies examined involved the treatment of phobias, test anxiety, dental and medical stress, and teaching of interpersonal skills. The authors concluded the use of videotapes and films as therapeutic tools to have great potential.

Taped or recorded relaxation instructions have been widely used in various studies (Davison, 1968; Ihli & Garlington, 1969; Paul & Trimble, 1970). The majority of the tapes used were reported to have been based upon a modified version of Jacobson's (1938) deep muscle relaxation procedure. In all the studies employing taped relaxation treatment, there was lack of concern in terms of evaluating the efficacy of the taped procedures; several studies did not include a control, or a comparison group. Due to the weaknesses in the methodological designs of the studies the effectiveness of the taped procedures is difficult to evaluate.

One study investigated the effectiveness of tape-recorded versus live relaxation treatment (Paul & Trimble, 1970). Thirty female college students were assigned to one of three treatment conditions: (a) progressive relaxation, (b) hypnotically induced relaxation, and (c) self-relaxation control. Both the progressive relaxation and hypnotic relaxation instructions were presented to the subjects through tape recording with the same therapist making both tapes. The data from these

tape-recorded instruction groups were compared to data collected in an earlier study by Paul (1969) which was methodologically identical except for the mode of presenting the relaxation instructions. Dependent measures included pre-and-post tests of self-reported anxiety, measured by anxiety differential scale (Husek & Alexander, 1963) and measures of physiological arousal using heart rate, muscle tension, skin conductance, and respiratory rate, assessed 5 times during the session. All treatment conditions lasted for about 50 minutes.

The findings indicated that the live treatment was superior to the taped relaxation treatment on heart rate and muscle tension. Yet, on the self-reported anxiety scale the two treatment procedures showed equivalence. One problem with this study was that Paul and Trimble compared two different relaxation procedures since the modes of presentation of the relaxation instructions were not identical. In the taped relaxation instructions, there was no provision to return to any muscle group which remained tense after completion of the relaxation procedure for the basic muscle groups. In the live group, subjects were asked if they felt any tension, and were then instructed to further relax those muscles in case the responses indicated the presence of tension.

Three delivery procedures were evaluated in a study with cancer patients (Carey & Burish, 1987). Forty-five

cancer chemotherapy patients were randomly assigned to one of four treatment groups: (a) progressive muscle relaxation training and guided imagery provided by a professional therapist, (b) progressive muscle relaxation and guided imagery training provided by a paraprofessional volunteer, (c) progressive muscle relaxation and guided imagery training provided by audiotapes, and (d) a control group. Dependent variables included physiological measures, such as blood pressure, pulse rate and respiration rate, Multiple Affect Adjective Check List (MAACL) (Zuckerman, Lubin, & Rinck, 1983), a subjective rating scale which measured level of anxiety, and reported feelings of nausea during chemotherapy.

The results of the study indicated that professionally administered progressive muscle relaxation and guided imagery training led to reduced emotional distress and physiological arousal, and increased intake of food in cancer chemotherapy patients. Professionally conducted relaxation and guided imagery training was found to be superior to the paraprofessionally administered training and to the control condition. However, the differences between the professionally-led live group and the audiotape group was statistically nonsignificant. The authors explained the findings in favor of the professionally-led live-training as, possibly, resulting from (a) the presence and support of the therapist during the training sessions,

and (b) the flexibility of the live-training in terms of allowing subjects to control the pacing of the relaxation instructions, thus, resulting in a possibly deeper level of relaxation and reduction of anxiety.

Summary

This review of literature has examined research related to stress and physical and psychological disorders, use of hypnosis and relaxation treatments to reduce psychological stress/anxiety and for ameliorating physical symptoms, and the use of audio, video, and film media for therapeutic purposes. The results indicate that considerable evidence exists for the association between stress and physiological and psychological disorders. Studies reviewed indicate that stress often affects the immune system and weakens individuals' resistance to disease. Research also offers evidence for individual differences in response to stress, in terms of the types of physical and psychological symptoms manifested by persons with specific psychological characteristics.

Relaxation and hypnosis treatments were often found to be effective in reducing anxiety. Although the strategies employed by the stress-management treatments varied, they had common procedural components. Most stress-reduction techniques employed attempted to facilitate an alteration in the mode of perception, encouraged muscle relaxation, imagery and reduction in physiological arousal.

The review on the use of audio, video, and film media for therapeutic purposes showed their potential as therapeutic tools. However, due to methodological weaknesses in some of the studies, it was difficult to reach a conclusion as to the efficacy of the video and film media for therapeutic purposes. The question concerning the effectiveness of videotaped relaxation or hypnosis treatments needs further attention.

As reflected by the literature reviewed, the concept of relaxation or hypnosis training for stress-reduction is appealing, although adequate investigation as to the effectiveness of these treatments has not been accomplished. It is the purpose of this study to compare the effectiveness of two therapeutic delivery systems (videotape treatment and live-model treatment) as compared to a control/comparison group (on self-report measures of subjective anxiety) to determine possible differences, both qualitatively and quantitatively. Attempting to explain potential differences and similarities may prove to be beneficial in expanding our knowledge about relaxation and hypnosis treatments for stress-reduction, and their potential use for prevention and treatment of stress-related disorders.

CHAPTER III

METHODOLOGY

A review of the literature supports the effectiveness of hypnosis and relaxation treatments for stress reduction. However, empirical evidence as to the efficacy of videotape hypnosis treatment for stress reduction is inconclusive and needs further investigation. Methodological limitations of the past research studies also promote a need for better research designs in future studies. The major null hypotheses examined are given below.

No differential decline exists in adults' anxiety levels produced by three treatment conditions involving anxiety reduction:

(a) live-model hypnosis treatment

(b) videotape hypnosis treatment

(c) a comparison condition

as measured by:

Ho_1: the State-Trait Anxiety Inventory (STAI), A-State Scale.

Ho_1: the State-Trait Anxiety Inventory (STAI), A-Trait Scale.

Ho_1: the Anxiety Rating Scale (ARS).

Subjects

Ninety potential subjects were recruited in the Greensboro, North Carolina area. Of the ninety subjects, 52 participated in the study. A recruitment letter (see Appendix C) was sent to major hospitals, private clinics, school districts, universities, and public and private organizations in Greensboro and the nearby towns inviting subjects to volunteer to participate in a stress management seminar. An announcement of the seminar was also placed in the Greensboro News and Record. The criteria for subject participation consisted of being an adult of either gender, between the ages of 18 and 70. The volunteers who were on anti-depressant and anti-anxiety medicine were excluded from the study. They were given the names of several clinics and/or private practitioners who provide stress-management services. The seminar was free of charge for all the participants. This study was coordinated through the Counseling and Consulting Service of the Center for Educational Studies and Development, University of North Carolina at Greensboro, North Carolina.

Demographic Data

The subjects consisted of 30 female and 22 male participants. Forty persons were caucasian, and the remaining 12 were of black, Spanish or native American origin. Thirty-one individuals were between the ages of 18 and 27, 14 were between 28 and 45, and 7 were 46 to 70.

Thirty-four participants were single, 12 were married, 5 were divorced, and 1 was widowed. Twenty-five persons had attended college or technical school, 8 were college graduates, and 7 had graduate degrees.

Concerning occupation, 27 participants identified themselves as students. The remaining 25 individuals stated that they were managers and supervisors (n=7), technicians (n=6), secretaries/clerks (n=4), retired persons (n=3), and counselors (n=2); one individual listed his occupation as minister and another as pilot. One person did not state his occupation.

Instruments

The research instruments which were used in this research investigation were the X-1 and X-2 form of the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, & Lushene, 1970) and the Anxiety Rating Scale (ARS). A brief description of each instrument is provided.

State-Trait Anxiety Inventory (STAI). The STAI is a general anxiety scale which consists of separate self-report scales for measuring two distinct anxiety concepts: state anxiety (A-State) and trait anxiety (A-Trait). In developing the STAI, emphasis was placed on generating two internally consistent scales (one for state and one for trait anxiety) to differentiate between transitory emotional states and relatively stable personality traits. The STAI A-Trait scale consists of

20 statements which ask subjects to describe how they generally feel. The A-State scale also consists of 20 statements and requires the subjects to indicate how they feel at a specific moment in time. The A-State scale is designated X-1; the A-Trait scale is designated X-2 (see Appendix D).

Test-retest reliability for the normative sample of undergraduate college students are high for the A-Trait scale, ranging from 0.73 to 0.86. For the A-State scale the test-retest correlations are somewhat lower, ranging from 0.16 to 0.62, reflecting the contribution of specific situational variables existing at the time of testing. For the normative samples, alpha coefficients range from 0.83 to 0.92 for the A-State scale and from 0.86 to 0.92 for the A-Trait scale.

In conclusion, the test-retest stability of STAI A-Trait scale is relatively high, but tend to be low for the A-State scale which would be expected due to influences of the situational factors. Both STAI scales have a high degree of internal consistency as reflected by high alpha reliability coefficients.

Construct validity of the STAI was also established by comparing the trait-anxiety scores of normal patients and neuropsychiatric patients. The neuropsychiatric sample scored higher in all but one group. Spielberger (1983) further examined the construct validity by comparing military recruits involved in stressful training, with high

school and college students of similar ages who were tested under non-stressful conditions. The findings indicated significantly higher scores for the recruits.

Evidence on the concurrent validity of the STAI A-Trait scale is presented in Table 1. Correlations with the IPAT Anxiety Scale (Cattell & Scheier, 1963), the Taylor (1953) Manifest Anxiety Scale (TMAS) and the Zuckerman (1965) Affect Adjustment Checklist (AACL), General Form, are reported. As indicated from Table 1, STAI A-Trait Scale correlates highly with the IPAT Anxiety Scale and the Taylor Manifest Anxiety Scale, and only moderately with the Zuckerman Affect Adjustment Checklist.

Table 1

Correlations Between the STAI A-Trait Scale and Other Measures of Trait Anxiety

	College Females (N = 126)			College Males (N = 80)		
Anxiety Scale	STAI	IPAT	TMAS	STAI	IPAT	TMAS
IPAT	.75			.76		
TMAS	.80	.85		.79	.73	
AACL	.52	.52	.53	.58	.51	.41

The STAI has been used widely in research studies as a dependent measure. More than 2,000 publications have employed the STAI to measure anxiety (Spielberger, 1983).

Anxiety Rating Scale. During the pretesting and posttesting sessions subjects were asked to conceptualize anxiety in subjective units of distress (suds) on a scale of 0 (no anxiety) to 100 (profound anxiety) and rate their present level of anxiety. Change scores in suds were computed by calculating the difference between self-reported anxiety during pretesting and posttesting.

Anxiety rating scales have been used in research studies as dependent measures of subjective anxiety levels and distress (Carey & Burish, 1987; Charlesworth, Murphy & Beutler, 1981; Lyles, Burish, Krozely, & Oldham, 1982; Miller & Bowers, 1986; Miller & Cross, 1985; Reinking & Kohl, 1975).

Miller and Bowers (1986) employed an anxiety rating scale to assess subjects' distress levels based on a scale from 0 (extremely calm and relaxed) to 100 (extremely panicked) during a physically painful experience. Subjects' ratings of distress and pain were both transformed to log values. A strong correlation between distress ratings and pain reports ($r = .70$, p .001) seemed to indicate that both were measuring very similar experiences. Carey and Burish (1987) used an anxiety

rating scale with chemotherapy cancer patients to assess their anxiety based on a 7-point scale ranging from not at all anxious to extremely anxious prior to and during chemotherapy. Miller and Cross (1985) employed a scale asking the subjects to rate how relaxed they felt on a 100-point scale prior to and following biofeedback and hypnosis treatments. A change score on subjective relaxation was computed by calculating the difference between pre-and-post treatment scores. Reinking and Kohl (1975) used self-report assessments of muscle tension levels based on a rating scale ranging from 1 (low tension) to 10 (high tension). From the raw estimates a mean subjective tension score was derived by averaging the pre-and-post treatment estimates. The correlations of EMG and self-report measures were computed for the first and last experimental blocks. The results indicated a low correlation (r= .38) during the first three sessions. However, this correlation improved (r= .57) during the last three sessions.

The ARS is based on an operational definition consistent with the STAI-State scale. It evaluates respondents' present level of anxiety. Although self-reported anxiety rating scales have been popular instruments in research investigations, there is hardly any information on the reliability measures. Previous research (Johnson & Spielberger, 1968; Zuckerman, 1965) with other

self-report rating scales have shown that when subjects were instructed to report how they felt today or right now, their scores changed as a function of the amount of stress present in the specific situation. Thus, this would be expected for the ARS as well. Brief state anxiety scales, consisting of as few as four or five items, have been used successfully in research on computer-assisted learning (O'Neil, Spielberger, & Hansen, 1969).

To determine the correlation between the STAI state-anxiety scale and the ARS, both scales were administered, one week apart, to 20 graduate students at UNC-Greensboro during a stress management course taught by the author (summer, 1989). The mean correlations between the STAI and ARS under neutral conditions ($r = .61$) and after relaxation and hypnosis exercises ($r = .60$) were positive and moderate, comparable or better than correlations between the STAI State anxiety scale and other measures of anxiety or personality (Spielberger, 1983).

Procedures

This investigation examined three treatment conditions (one independent variable with three levels): live-model treatment condition, videotape treatment condition, and control/comparison condition. The permission to conduct the research investigation was secured from the Human Subjects Committee at the University of North Carolina at Greensboro. Initially 90 subjects were recruited and

randomly assigned to treatment conditions consisting of 30 subjects in each condition. Subjects in each treatment condition were then randomly assigned to one of five experimental units. There were a total of 15 experimental units consisting of 6 subjects in each unit. Of the 90 subjects, 52 participated in the study consisting of 2-5 subjects in each experimental unit. As shown in Table 2, the research study was completed in 5 weeks, with one experimental unit for each treatment condition being conducted each week.

Table 2

Three Treatment Pretest Posttest Design

	Experimental Units				
Treatment Conditions	Week 1	Week 2	Week 3	Week 4	Week 5
Participants	(11)	(10)	(10)	(12)	(9)
Live-model	5	3	3	5	3
Videotape	3	4	3	4	2
Comparison	3	3	4	3	4

Following the recruitment of the volunteer subjects, the participants were notified by a letter (see Appendix E) indicating the day, time and location for the study. The

length of the study, as well as the nature, purposes and requirements of the study were stated in this letter. The subjects were asked to provide a written consent (see Appendix F) to participate in the study and to complete a background information sheet (see Appendix G). Participants who were assigned to the live-model hypnosis and videotape hypnosis treatments were requested to sign a second informed consent form which indicated that the treatment may include hypnosis and/or relaxation techniques (see Appendix H).

The treatment conditions consisted of the two modes of delivery systems (live-model treatment and videotape treatment) and a comparison condition. All treatment conditions lasted for one hour and 45 minutes. The live-model treatment and the comparison condition were conducted by the author. The videotape treatment was prepared by the author prior to the study and monitored by a female graduate student during the study. The live-model treatment and videotape treatment conditions were equivalent except for the presence of the author in the live-model treatment (see Appendix I). The group discussions in the live-model and videotape treatments were conducted in the same manner based on a written script (see Appendix J). The comparison condition consisted of a lecture on stress and coping strategies provided by the author (see Appendix K).

During week one, experimental units for the live-model, videotape, and comparison condition met 30 minutes prior to the treatment for pretesting. A male graduate student administered the pretests (STAI and ARS) to the subjects participating in the study that day. Following the completion of pretests subjects were shown the location of their treatment. At the completion of a treatment session, the subjects were handed a list of reading material related to stress management (see Appendix L). After the treatment phase of the experiment, the subjects met at the same location where the pretesting was conducted, and they were administered the posttests (STAI and ARS) by the same graduate student. The order of the STAI questions was changed from the original order for use in posttesting. The same procedures were followed for the experimental units during the following four consecutive weeks.

All conditions, such as the specific length of time of the treatment sessions, the environmental conditions, general protocol in beginning and ending the treatment sessions, and following written procedures, were held constant to minimize and control for the effects of extraneous variables. Additionally, prior to conducting this study, a pilot study was carried out to evaluate the equality of the treatment conditions (see Appendix M). The evaluation ratings were comparable reflecting equality in terms of content effectiveness.

Data Analysis

The purpose of this research investigation was to determine whether there would be a differential decline in subjective anxiety between the two hypnosis treatment conditions, live-model treatment and videotape treatment, and the comparison condition, as measured by the State-Trait Anxiety Inventory and an Anxiety Rating Scale.

The results were first analyzed using descriptive statistics involving the graphing of the pretest and posttest mean scores for each dependent variable for the two treatment conditions and the comparison condition. One of the most powerful tools of analysis is the graph since no other method describes a relation so vividly (Kerlinger, 1973). The second procedure utilized involved the analysis of covariance (ANCOVA) to (a) analyze the adjusted mean pretest-posttest anxiety difference scores for each dependent variable within each treatment condition, and (b) analyze the pretest-posttest anxiety difference scores using pretest scores as the covariate, across treatment conditions.

Covariance analysis is especially useful in comparing several treatment conditions (treated as levels of a categorical variable) on some internal level dependent variable Y, while simultaneously controlling for an interval level variable referred to as the covariate. An important consequence of employing the covariate,

especially in experimental studies, is that it reduces error variance and thereby increases precision of estimates (Glass & Hopkins, 1984). In this study, there was observation from two treatment conditions, live-model treatment and videotape treatment, and a comparison condition. It was the purpose of this study to determine whether the three conditions differed in their subjects' measured anxiety levels in terms of the amount of pre to posttest change in anxiety.

CHAPTER IV

RESULTS

The results of various data analyses are presented in this chapter to examine the research hypothesis: is there a differential decline in subjective anxiety between the two hypnosis treatment conditions, live-model treatment and videotape treatment, and the comparison condition. More specifically, it was hypothesized that the decline in anxiety levels from pretest to posttest will be greater for the hypnosis treatment conditions compared to the decline in the comparison condition as measured by (a) STAI State anxiety, (b) STAI Trait anxiety, and (c) Anxiety Rating Scale (ARS).

Two procedures were employed to examine the data obtained from the dependent measures. (Raw data is contained in Appendix N.) The first procedure used for analysis consisted of a descriptive technique involving graphing of pretest and posttest means for each dependent variable for the two treatment conditions and the comparison condition. The second procedure, analysis of covariance (ANCOVA), involved (a) the analysis of the adjusted mean pretest-posttest difference scores for each dependent variable within each treatment condition, and

(b) the analysis of the adjusted mean pretest-posttest difference scores for each dependent variable across treatment conditions.

State Anxiety Data

Graphed data. Graphed data for the variable state anxiety showed a reduction in state anxiety from pretest to posttest for the two hypnosis treatment conditions, and the comparison condition (see Figure 1). There was a small differential decline between the two treatment conditions and the comparison condition. However, the decline in state anxiety from pretest to posttest was greater for the live-model treatment and the comparison condition, and smaller for the videotape treatment, thereby, failing to support the research hypothesis. It is possible that these results are due to sampling variability. Further analysis was necessary to determine whether the observed differences between the means were greater than the differences that arise due to sampling variability.

ANCOVA for the between group differences. The analysis of covariance for the dependent variable pretest-posttest state anxiety difference between the treatment conditions is presented in Table 4. Pretest scores were used as the covariate. The results of the ANCOVA failed to show a statistically significant difference between the treatment conditions, $F(2, 11) = .09$, $p = .914$. Based on the above findings the probability

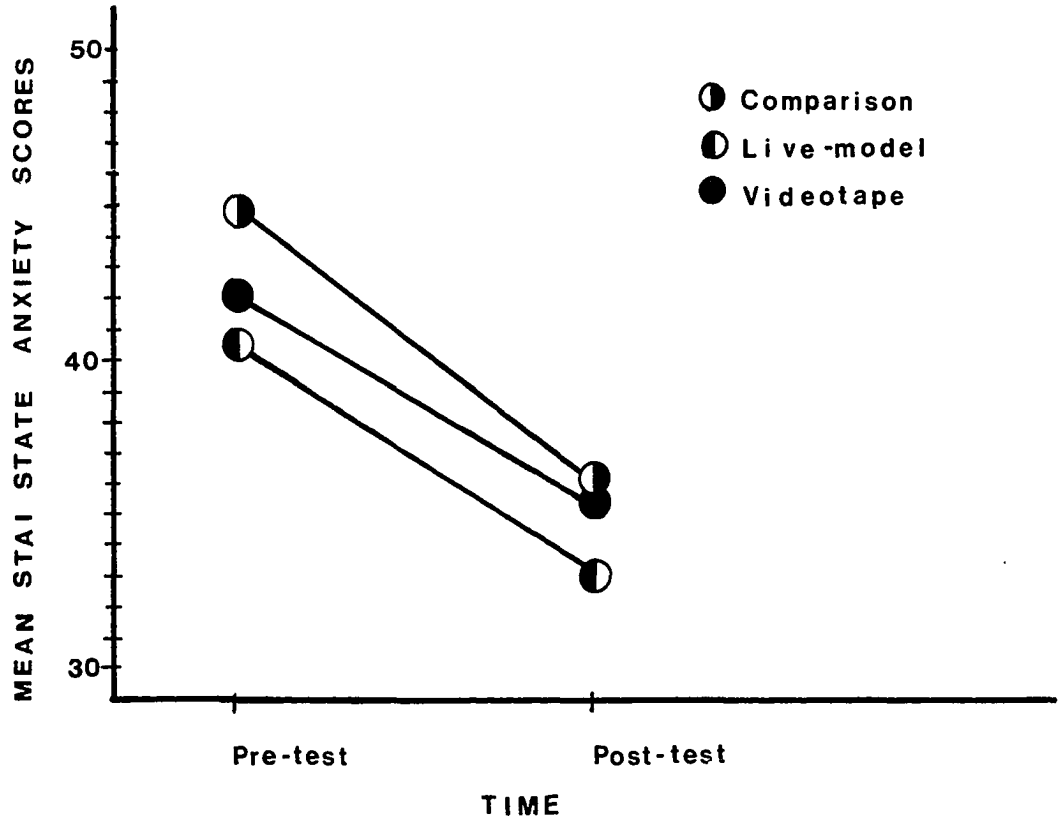

Figure 1. Mean STAI state anxiety scores for the live-model treatment, videotape treatment, and comparison condition at pre-test and post-test.

Table 4

Unadjusted Means ($\bar{X}$) and Standard Deviations (S)

for the Pretest and Posttest Dependent Measures

Dependent	Treatment					
Measure	Live-Model		Videotape		Comparison	
	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S
STAI-State						
Pretest	40.57	7.89	41.93	8.94	44.76	12.64
Posttest	32.89	7.33	35.18	10.43	36.00	11.66
STAI-Trait						
Pretest	44.68	7.11	40.50	6.90	43.35	10.04
Posttest	40.94	5.52	40.31	5.41	43.23	8.04
ARS-Anxiety						
Pretest	52.57	26.61	53.93	24.01	53.23	20.68
Posttest	35.52	23.85	39.00	27.39	43.29	20.81

Table 5

ANCOVA for the Dependent Variable

Pre to Posttest State Anxiety Difference

Source	df	SS	MS	F	P
Pretest	1	93.995	93.995		
Group	2	8.063	4.031	.09	.914
Error	11	491.725	44.702		
Total Corrected	14	593.784			

Note: The F test is testing between group difference

ANCOVA failed to show a statistically significant difference between the treatment conditions, $F(2, 11) = .09$, $p = .914$. Based on the above findings the probability of incorrectly rejecting the null hypothesis (i.e., making a type-I error) of no differential decline is 91%. Therefore, the null hypothesis continues to be tenable.

ANCOVA for the within group differences. The analysis of covariance for the dependent variable pretest-posttest state anxiety difference within each treatment condition is presented in Table 6. The results revealed statistically significant pretest-posttest differences for the live-model treatment, $t(12) = 2.99$, $p = .012$, videotape treatment, $t(12) = 2.41$, $p = .034$, and comparison condition, $t(12) = 2.52$, $p = .028$. Based on the above findings there is less

Table 6

Adjusted Means for the Dependent Variable Pre to Post State Anxiety Difference

Treatment	Difference in State Anxiety Adjusted Mean	t*	P-value	Std Error Adjusted Means
Live-model	-8.98	2.99	0.012	3.00
Videotape	-7.24	2.41	0.034	3.00
Comparison	-7.71	2.52	0.028	3.00

*Note: The t-test is testing within group differences, where each adjusted mean is tested against zero.

than 5% probability that the observed pre to posttest state anxiety difference within each treatment condition is due to sampling variability.

Summary. The results of the analysis indicated statistically significant reductions in state anxiety for the two hypnosis treatment conditions and the comparison condition. However, the pretest-posttest differences in state anxiety were not statistically significant across treatments. Since the probability of incorrectly accepting the research hypothesis that there would be a differential decline between the treatment conditions favoring the two hypnosis treatments was quite high (type-I error rate of 91%), the null hypothesis of no differential decline in state anxiety continued to be tenable.

Trait Anxiety Data

Graphed data. Graphed data for the variable trait anxiety showed a differential decline in trait anxiety between the two hypnosis treatment conditions and the comparison condition (see Figure 2). The decline in trait anxiety from pretest to posttest was greater for the live-model treatment compared to the videotape treatment and comparison condition. Based on the visual examination of the data, the research hypothesis was partially tenable. Further analysis was conducted to separate the experimental effects from the influence of sampling variability in order to reach a more accurate conclusion of these findings.

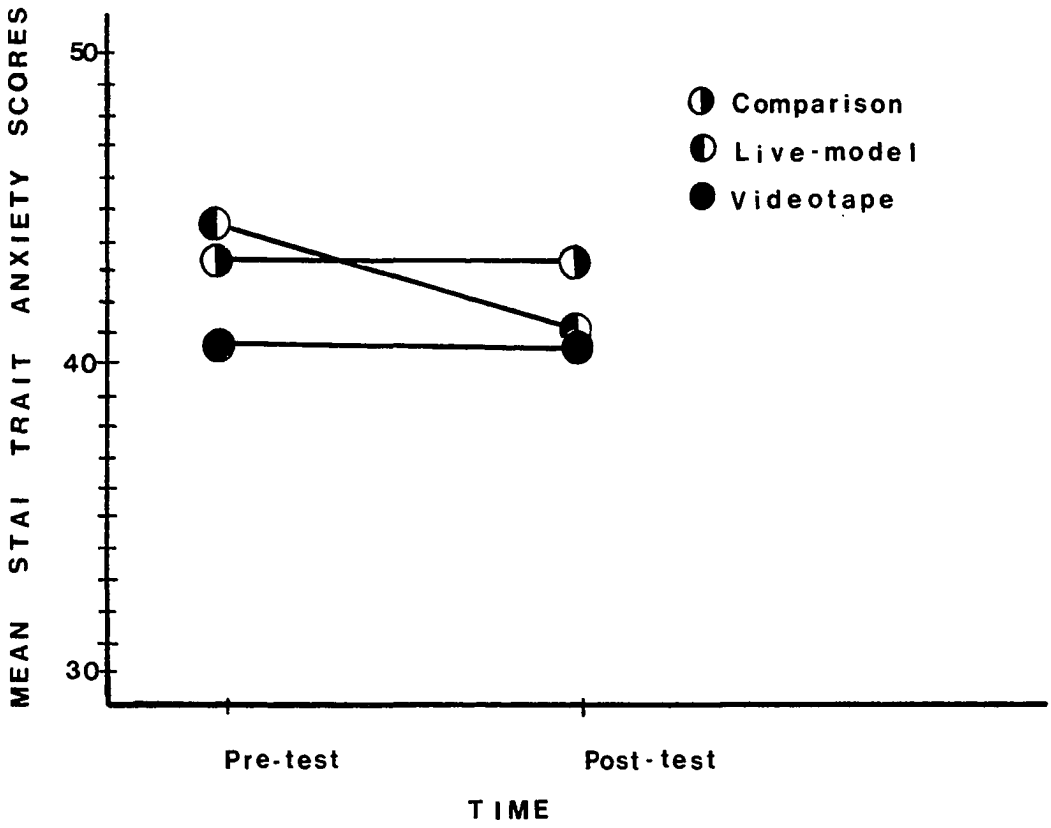

Figure 2. Mean STAI trait anxiety scores for the live-model treatment, videotape treatment, and comparison condition at pre-test and post-test.

ANCOVA for the between group differences. The analysis of covariance for the dependent variable pretest-posttest trait anxiety difference between the treatment conditions is presented in Table 7. Pretest scores were used as the covariate. The results of the ANCOVA failed to show a statistically significant difference between the treatment difference scores, $F(2, 11) = 2.03$, $p = .177$. Based on these findings the probability of incorrectly rejecting the null hypothesis (i.e., making a type-I error) of no differential decline is 17%. Since this probability is not very high, the possibility that the research hypothesis is true is reasonable.

Table 7

ANCOVA for the Dependent Variable
Pre to Posttest Trait Anxiety Difference

Source	df	SS	MS	F*	P
Pretest	1	55.486	55.486		
Group	2	20.740	10.370	2.03	.177
Error	11	56.183	5.107		
Total Corrected	14	132.409			

*Note: The F test is the test between group difference.

Table 8

Adjusted Means for the Dependent Variable Pre to Post Trait Anxiety Difference

Treatment	Difference in State Anxiety Adjusted Means	t*	P-value	Std Error Adjusted Means
Live-model	-2.87	2.78	0.017	1.03
Videotape	-1.11	1.05	0.314	1.05
Comparison	0.00	0.00	0.994	1.01

*Note: The t-test is testing within group differences, where each adjusted mean is tested against zero.

ANCOVA for the within group differences. The analysis of covariance for the dependent variable pretest-posttest trait anxiety difference within each treatment condition is presented in Table 8. The results showed a statistically significant pretest-posttest difference in trait anxiety for the live-model treatment, $t(12) = 2.78$, $p = .017$. This finding is indicative of a less than 2% probability that the observed pre to posttest trait anxiety difference within the live-model treatment condition is due to sampling variability. Although statistically insignificant, the videotape treatment showed a slight decline in trait anxiety from pretest to posttest, $t(12) = 1.05$, $p = .314$. The comparison condition failed to show a decline in trait anxiety from pretest to posttest, $t(12) = .007$, $p = .994$.

Summary. The results of the analysis for the trait anxiety indicated greater reduction in trait anxiety for the live-model treatment; the pre-posttest decline in anxiety was statistically significant. The videotape treatment followed second in the amount of trait anxiety reduction, although the pre-posttest difference did not reach statistical significance. The comparison condition failed to show a reduction in trait anxiety. There was a considerable pretest-posttest difference in trait anxiety across treatments. The probability of incorrectly accepting the research hypothesis that there would be a differential decline between the two treatment conditions and the comparison condition was 17%. Given that the construct trait anxiety is assumed to be a dispositional trait and considerably resistant to change (Spielberger, 1966) the above findings become quite meaningful in favor of the research hypothesis.

Anxiety Rating Scale Data

Graphed data. Graphed data for the variable Anxiety Rating Scale (ARS) showed a reduction in ARS anxiety from pretest to posttest for the two hypnosis treatment conditions and the comparison condition (see Figure 3). There was a small differential decline between the two treatment conditions and the comparison condition. The decline in ARS anxiety from pretest to posttest was greater for the live-model treatment and the comparison condition,

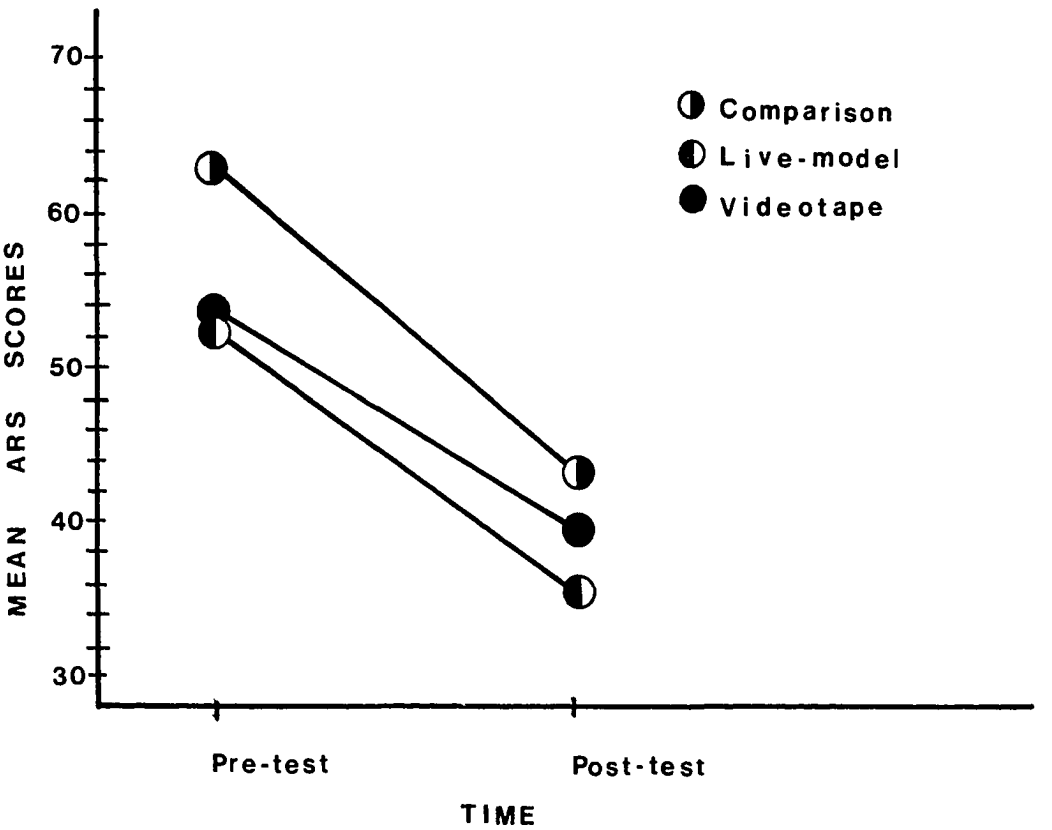

Figure 3. Mean ARS scores for the live-model treatment, videotape treatment, and comparison condition at pre-test and post-test.

and smaller for the videotape treatment, thereby failing to support the research hypothesis. However, the possibility that the results may be due to sampling variability was reasonable at this point until further statistical analyses was conducted to determine the accuracy of the descriptive analysis.

ANCOVA for the between group differences. The analysis of covariance for the dependent variable pretest-posttest ARS anxiety difference between the treatment conditions is presented in Table 9. Pretest scores were used as the covariate. The results of the ANCOVA failed to show a statistically significant difference between the treatment conditions, $F(2, 11) = .54$, $p = .594$. Based on these findings the probability of incorrectly rejecting the null hypothesis (i.e., making a

Table 9

ANCOVA for the Dependent Variable
Pre to Posttest ARS Anxiety Difference

Source	df	SS	MS	F*	P
Pretest	1	118.911	118.911		
Group	2	238.232	119.116	0.544	.594
Error	11	2405.412	218.673		
Total Corrected	14	2762.557			

*Note: The F test is the test between group difference.

type-I error) of no differential decline is 59% which is quite high; therefore, the null hypothesis continues to be tenable.

ANCOVA for the within group differences. The analysis of covariance for the dependent variable pretest-posttest ARS anxiety difference within each treatment condition is presented in Table 10. The results showed statistically significant pretest-posttest differences in ARS anxiety for the live-model treatment, $t(12) = 2.79$, $p = .017$, and the comparison condition, $t(12) = 3.26$, $p = .007$. There is less than 2% probability that the above findings are due to sampling variability. The videotape treatment's pretest-posttest difference score almost reached statistical significance, $t(12) = 1.88$, $p = .086$, indicative of a

Table 10

Adjusted Means for the Dependent Variable Pre to Post ARS Anxiety Difference

Treatment	Difference in ARS Anxiety LS Mean	t*	P-value	Std Error LS Mean
Live-model	-18.73	2.79	0.107	6.71
Videotape	-12.65	1.88	0.086	6.72
Comparison	-22.94	3.26	0.007	7.03

*Note: The t-test is testing within group differences, where each adjusted mean is tested against zero.

probability rate of 8% that the pre to posttest ARS anxiety difference within the videotape treatment condition is due to sampling variability.

Summary. The results of the analysis indicated statistically significant reductions in ARS anxiety for the live-model treatment and the comparison condition. The videotape treatment's reduction in ARS anxiety almost reached statistical significance, thereby indicative of a substantial decline in anxiety following the treatment. The pretest-posttest differences in ARS anxiety were not statistically significant across treatments. Since the probability of accepting the research hypothesis of a differential decline between treatment conditions was 59% (type-I error rate) the null hypothesis of no differential decline in ARS anxiety continued to be tenable.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the effectiveness of two hypnosis delivery systems, live-model treatment and videotape treatment, in reducing stress and anxiety in adults. Subjective anxiety was measured by the State-Trait Anxiety Inventory and the Anxiety Rating Scale. Results for the analyses of the data were described in Chapter IV. The current chapter discusses the results of the study for each dependent variable. For simplification purposes, the findings from the STAI State anxiety and Anxiety Rating Scale (ARS) are discussed jointly since both instruments essentially measure the same construct--present level of subjective anxiety. The limitations of the study recommendations for future research and conclusions conclude this chapter.

State Anxiety and ARS Anxiety

In testing the research hypothesis, there was a small differential decline in reported state anxiety and ARS anxiety among the two hypnosis treatment conditions, live-model treatment and videotape treatment, and the comparison condition, although the difference did not reach statistical significance. The hypnosis treatment conditions showed similar amounts of reduction in

pretest-posttest state anxiety and ARS anxiety. These findings are consistent with the results of another comparative study by Paul and Trimble (1970) which investigated the effectiveness of tape-recorded versus live relaxation treatment in reducing anxiety. They found that the two treatment procedures showed equivalence based on the subjects' scores on a self-reported anxiety scale. Carey and Burish (1987) also reported similar findings in terms of reduced emotional distress and physiological arousal in comparing a live group and an audiotape group.

The lack of a substantial difference in pretest-posttest state anxiety reduction between the two hypnosis delivery systems in this study suggests the practical viability of considering the videotape hypnosis treatment as an alternative to live-model hypnosis treatment. The flexibility and the cost efficiency of the use of a videotape treatment for anxiety reduction with adults further enhance its utility as an alternative mode of treatment.

A discrepancy in outcome appears to exist between the findings of the present study and past research studies involving stress and anxiety that were reviewed in Chapter II. The results of the present study showed a substantial decline in state anxiety and ARS anxiety from pretest to posttest for the comparison condition which was unexpected. This finding suggests that there is no actual difference

etween the two hypnosis treatment conditions and the comparison condition in terms of their effect in reducing present level of anxiety.

At least several explanations can be offered for the above finding. First, the past studies reviewed employed a wait-list control or an untreated control group against which the treatment conditions were compared (Cragan & Deffenbacher, 1984; Dendato & Diener, 1986; Hassel, Bloom, & Gonzalez, 1982). This study, however, employed a more powerful and competitive comparison condition, therefore minimizing systematic variance between the treatment conditions and making it more difficult to obtain a statistically significant difference between the two treatment conditions and the comparison condition (Kerlinger, 1973). Second, the comparison condition may have potentiated the placebo effect by creating belief and confidence in the stress management method employed. The subjects were told that this was a research study involving stress management. They seemed to expect reduction in their stress and anxiety level and reported such. Reinking and Kohl (1975) reported similar findings with their investigation which examined the relative effectiveness of four types of relaxation training using electromyograph (EMG) and self-report measures of relaxation as dependent measures. All four groups, including the untreated control group reported an increased ability to relax following the

treatment. Since the comparison condition in this study utilized an active intervention method, it may have also temporarily induced a subjective sense of control in the participants (Stroebel & Glueck, 1973; Wickramasekera, 1977). Other studies have also reported improvement in the performance of untreated groups (D'Alelio & Murray, 1981; Meichenbaum, 1972, Osterhouse, 1972). Finally, the reliability of the STAI State anxiety scale and Anxiety Rating Scale is questionable in terms of accurately reflecting the true measures. As indicated in Chapter II, under Instruments, the test-retest stability of the State scale tends to be low due to influences of situational factors (Spielberger, 1983). The Anxiety Rating Scale, although popular in its use in research studies, has not been investigated for its reliability. Thus, it is difficult to know how much of the findings related to change in state or ARS anxiety level is accurately reflected. On the other hand, the stability of the STAI Trait anxiety scale has been consistently established in the past supporting its dependability and accuracy (Johnson & Spielberger, 1968; Kendall, Finch, Auerbach & Hooke, 1976).

Trait Anxiety

The results of testing the research hypothesis with the trait anxiety variable showed a differential decline in reported trait anxiety among the two hypnosis treatment

conditions and the comparison condition. The live-model hypnosis treatment demonstrated a statistically significant pre to posttest difference score in trait anxiety. The analysis of the pre to posttest trait anxiety difference scores between the two hypnosis treatment conditions, and the comparison condition reflected a trend in support of the research hypothesis as follows: (a) the live-model treatment showed the most trait anxiety reduction from pretest to posttest, (b) videotape treatment followed next in pretest to posttest trait anxiety reduction, (c) comparison condition failed to show any observable reduction in trait anxiety from pretest to posttest.

According to Johnson and Spielberger (1968) scores on trait anxiety measures are essentially unaffected by relaxation training. The decline in the trait anxiety scores following the hypnosis treatment in this study is inconsistent with Spielberger's (1966) hypothesis. However, the findings of this study are similar to other research studies. As indicated in Chapter II, hypnosis and relaxation procedures decreased trait anxiety levels in student, substance abuse, schizophrenic, and medical out-patient populations (Charlesworth & Dempsey, 1982; Charlesworth, Murphy, & Beutler, 1981; Cragan & Deffenbacher, 1984; Hassel, Bloom, & Gonzalez, 1982). Spielberger (1966) supported the stability of the trait anxiety construct by showing its resistance to change

following a brief muscle relaxation training in a manner similar to that described by Jacobson (1938) and Wolpe (1958). This study, along with other studies discussed in Chapter II, employed a more comprehensive treatment for control of anxiety manifestations in gross muscle, somatic, and cognitive areas. The duration of the treatment was also considerably longer in this study compared to Spielberger's training session. The addition of cognitive and somatic aspects in this study as well as the longer duration of the treatment may have increased the power of the treatment in terms of facilitating a change in trait anxiety.

Limitations of the Study

There was one limitation in the present research study that could affect the generalization of results. This limitation involved the instruments employed. The low test-retest reliability of the STAI State anxiety scale and the lack of research evidence on test-retest reliability of the Anxiety Rating Scale may have contributed to the error variance thereby decreasing the accuracy of the findings from these instruments.

Recommendations

The results of the present study have a number of implications for future research on hypnosis and relaxation treatments for stress and anxiety reduction among adults. This section presents several different issues for future

research which include the following: the inclusion of a follow-up session, refinement of the dependent variables, and an addition of a wait-list control group.

Hypnosis treatment provides adults with self-control strategies to manage anxiety more appropriately and success should be measured by how well these strategies are used after the treatment has ended. The question that needs to be asked is whether hypnosis treatment has any long-range effect on adults who are considered to be at high-risk for stress and anxiety or who are already suffering from stress-related symptoms. Studies have indicated that the effectiveness of a self-control strategy as a treatment depends on continuing and prolonged practice of the technique (Charlesworth, Murphy, & Beutler, 1981; Deffenbacher, Mathis, & Michaels, 1979). This study did not include a follow-up session to examine differences in subjective anxiety between those who practiced hypnosis and those who did not, but future research should address this issue.

A second issue for future research in hypnosis treatments for stress reduction involves careful investigation of the reliability of the dependent measures. The present study included dependent variables (STAI State anxiety scale and ARS) which lacked test-retest reliability. Reliability is the accuracy or precision of a measuring instrument, and, as Kerlinger (1973) indicated,

it is "a necessary but not sufficient condition of the value of research results and their interpretation." (p. 455)

A third issue involves the inclusion of a wait-list or untreated control group. Most studies discussed in the literature review section included a wait-list control or an untreated control group to which the treatment groups were compared. This comparison allowed for the examination of the differences between the groups in order to reach a conclusion as to the effect of the treatment. This study included a comparison group, but the findings would have been more conclusive if a wait-list control group had also been included. This addition to the design would have allowed for a stronger conclusion as to the possible existence of the placebo effect on the comparison condition.

Recommendations for Counselor Educators

The information provided from the results of this study has implications for training counselors, psychologists, and other helping professionals. Although traditional training programs acknowledge the importance of investigating the total person, most do not include a basic theories course or a seminar that examines the relationship between psychosocial factors and physical and psychological health. Counselors must understand the intimate connection between mind and body and be prepared to help their clients

in becoming active participants in their own rehabilitation through the use of self-control approaches.

Conclusions

The study examined the effectiveness of two hypnosis delivery systems, live-model and videotape treatments, in reducing stress and anxiety in adults. Given that the two hypnosis treatment conditions are equivalent in content effectiveness, the results are promising; both treatment conditions showed reduction in present level of anxiety and general level of anxiety. Although this study represents an innovative approach to the treatment of psychological stress and anxiety, further research needs to be conducted to verify the effectiveness of the live and videotape hypnosis delivery systems for stress and anxiety reduction.

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Appendix A

Hypnosis Treatment for Stress Management

Hypnosis can be used in several ways in an overall approach to stress management (Bowers & Kelly, 1979): (a) as a means of facilitating relaxation and coping with stress, (b) as a strategy for controlling specific physical responses to stressful situations, and (c) jointly with psychotherapy. More importantly, hypnosis can serve as a tool for preventing stress disorders and for promoting health.

The goal of most of the stress-management programs is to help people break out of the stress syndrome by increasing awareness of stress and helping them develop personal strategies through relaxation to reduce stress. Relaxation and hypnosis techniques include self-hypnosis, heterohypnosis, the relaxation response, progressive muscle relaxation, meditation, visualization, and autogenic training, all of which produce the same physiological responses (Benson, Arns, & Hoffman, 1981). Benson et al. (1978) compared self-hypnosis and the relaxation response in the treatment of anxiety and found no difference between the two treatments. Despite some differences between stress-management procedures at a theoretical and philosophical level, they appear to have similarities in their emphasis on (1) active participation by the subject (2) the responsibility of the subject for the success of

the process (3) the restriction of sensory stimulation, and (4) reduction of the subject's level of arousal.

Although existing theories explain certain phenomena which take place during the hypnotic or deeply relaxed state, none explains hypnosis itself. The most comprehensive approach to explaining hypnosis is to include it under the paradigm of altered states of consciousness during which perception is altered in such a way that it increases the probability that daily problems will be reviewed differently. Schactel (1959) called this the "allocentric mode of perception" and described it as:

> This openness means that the sensibilities of the person, his mind, and his senses, are more freely receptive, less tied to fixed anticipations and sets, and that the object is approached in different ways, from different angles, and not with any fixed purpose to use it for the satisfaction of a particular need, or the testing of a particular expectation or possibility. (p. 245)

The allocentric mode of perception, or being in an altered state of consciousness, can occur during the hypnotic experience and allows the individual to review a personal stressor with a new perspective and generate fresh coping strategies which can result in significant behavioral and biological consequences (Johnson, 1981: Wickramasekera, et al., 1979).

Appendix B

Conceptual Views of Stress

Stress involves environmental and psychological events, our evaluations of them and physiological and behavioral responses. Hans Selye's research on stress brought the notion of stress to the attention of scientists in many disciplines (Selye, 1956). As a medical student, Selye discovered that each time an alien agent was applied to the body (i.e., injection of insulin, exposure to x-rays, exercise), changes in the adrenal and thymus glands and in the stomach lining were observed (a triadic response). The organism's response was nonspecific since it appeared to be caused by any noxious or aversive event. Selye believed that although stress was a specific syndrome and followed specific patterns and affected specific organs, it was nonspecifically induced. In other words, a stress response would be the same regardless of the specific event which induced it. Selye devised the general adaptation syndrome (GAS) to describe the process. The GAS consists of three stages of response. During the first stage, the organism becomes aware of a stressor or the presence of aversive stimulation and the alarm reaction is experienced. As the organism begins to resist the stressor, adrenal activity, cardiovascular and respiratory functions increase and the body prepares to respond. At this point, the organism enters the stage of resistance

during which it employs coping strategies to achieve an adaptation. There is a constant resistance to the stressor but a decrease in resistance to other stimuli. If these reactions are prolonged because of a recurring problem, the organism may be faced with an irreversable physiological damage. The third stage of the GAS, exhaustion, may set in as adaptive reserves are depleted and resistance is no longer possible. When the body is unable to deal adequately with continued exposure to a stressor, the result may be the onset of stress-related illness, such as kidney disease, arthritis, and cardiovascular disease. There is also some evidence that prolonged stress can affect immunity. Research has indicated that stressors cause many of the changes Selye has outlined (Theorell, 1974).

Mason (1975) disagreed with Selye and argued that stress is neither nonspecific nor unitary and that psychological awareness of aversive events may be necessary for stress to occur. According to Mason, psychological distress precedes adrenal-pituatary response. He stated that in some instances the nonspecific stress response may occur without the psychological awareness of a stressor and attempts to adapt to it are crucial. A study by Patkai (1971) confirmed Mason's view on stress by demonstrating that increased levels of epinephrine and norepineophrine (stress hormones) are associated with aversive events and

also with pleasant but uncontrollable events. Epinephrine secretion was highest among subjects in the pleasant but uncontrollable setting, and next highest in the less pleasant conditions, and lowest in the inactivity session. Both pleasant and unpleasant events evoked biochemical stress symptoms. Marianne Frankenhaeuser and her colleagues conducted many studies which revealed a psychological component of stress. One study demonstrated that stress hormones can affect emotional and cognitive functioning and they are secreted in response to psychological events (Frankenhaeuser, 1972). Another study showed that increases in stress hormone levels were associated with decreasing amounts of control over electric shock (Frankenhaeuser & Rissler 1970).

Lazarus and others have added a psychological dimension to the stress concept. The assumption that stress process can be initiated or influenced by psychological factors, through psychological appraisal, is not inconsistent with the other models discussed here. Although Lazarus's theories are exclusively psychological as Selye's are physiological, they are compatible. Lazarus (1966) added a very important dimension to the study of stress and made it more challenging and complex. Stress can be measured in many ways, including subjective reports of anxiety, observations of task performance, measurement of epinephrine and norepinephrine. Lazarus (1975) suggests

that only when we perceive an event as threatening, we will experience stress. Based on this view, the animals in Selye's experiments may have had to perceive danger prior to developing an alarm reaction. A series of studies conducted by Lazarus and his associates during the 1960s supported his perspective. Some of the studies suggested that personality dispositions or characteristics in appraising events in particular ways as being another dimension contributing to the differences in stress reactions. Lazarus's conceptualization of stress has proven to be a significant contribution to the understanding of stress. The evolution of psychological aspects as part of the stress process helps in explaining variations in responses to stress.

Appendix C

Stress Management Seminar

The Purpose of the Seminar:

In recent years there has been an increasing awareness of stress disorders. Our society must cope with ongoing change, and we are forced to adjust to something very new on a regular basis. That adjustment leads to stress that can create serious symptoms and illness, drug/alcohol abuse, suicide attempts, accidents, and disruption in personal and social relationships. This three-hour seminar will focus on increasing awareness of stress and developing personal strategies.

Seminar Coordinator: Nil A. Moore, M.S., S.S.P.

Ms. Moore is in private practice with the Counseling Center of Greensboro. She is a professional counselor, nationally certified school psychologist and a licensed psychological associate in North Carolina. She has worked in school systems with teachers, counselors, parents and children conducting individual and group counseling, teacher and parent consultations, psychological evaluations and stress management seminars. She is a doctoral candidate at UNC Greensboro. She has also taught a graduate level course in stress management at UNC Greensboro.

This three-hour seminar will be conducted weekly from October 18 to November 16, 1989. It is free of charge and open to anyone between the ages 18 to 70.

For registration and more information please call Nil A. Moore or Ms. Frankie Dickenson (Center secretary) at (919) 334-5100, Ext. 74, or complete and return the registration form to the Center for Educational Studies and Development, UNC-Greensboro, Ferguson Building, Greensboro, North Carolina 27412.

Registration:

Name_____ Phone_____

Address_____

After receiving your registration form, we will send you a confirmation letter that will include pertinent seminar information.

Appendix D

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	○	○	○	○
2. I feel secure	○	○	○	○
3. I am tense	○	○	○	○
4. I am regretful	○	○	○	○
5. I feel at ease	○	○	○	○
6. I feel upset	○	○	○	○
7. I am presently worrying over possible misfortunes	○	○	○	○
8. I feel rested	○	○	○	○
9. I feel anxious	○	○	○	○
10. I feel comfortable	○	○	○	○
11. I feel self-confident	○	○	○	○
12. I feel nervous	○	○	○	○
13. I am jittery	○	○	○	○
14. I feel "high strung"	○	○	○	○
15. I am relaxed	○	○	○	○
16. I feel content	○	○	○	○
17. I am worried	○	○	○	○
18. I feel over-excited and "rattled"	○	○	○	○
19. I feel joyful	○	○	○	○
20. I feel pleasant	○	○	○	○

CONSULTING PSYCHOLOGISTS PRESS
577 College Avenue, Palo Alto, California 94306

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	○	○	○	○
22. I tire quickly	○	○	○	○
23. I feel like crying	○	○	○	○
24. I wish I could be as happy as others seem to be	○	○	○	○
25. I am losing out on things because I can't make up my mind soon enough	○	○	○	○
26. I feel rested	○	○	○	○
27. I am "calm, cool, and collected"	○	○	○	○
28. I feel that difficulties are piling up so that I cannot overcome them	○	○	○	○
29. I worry too much over something that really doesn't matter	○	○	○	○
30. I am happy	○	○	○	○
31. I am inclined to take things hard	○	○	○	○
32. I lack self-confidence	○	○	○	○
33. I feel secure	○	○	○	○
34. I try to avoid facing a crisis or difficulty	○	○	○	○
35. I feel blue	○	○	○	○
36. I am content	○	○	○	○
37. Some unimportant thought runs through my mind and bothers me	○	○	○	○
38. I take disappointments so keenly that I can't put them out of my mind	○	○	○	○
39. I am a steady person	○	○	○	○
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	○	○	○	○

Appendix E

(date)

Dear (name):

As you probably know, the increasing occurrence of stress disorders reflects the inability of many people to cope with stress problems of everyday living in a complex society. In fact, there is considerable evidence of a relationship between stress and physical and psychological disorders.

The Counseling and Consulting Service of the Center for Educational Studies and Development will be conducting a seminar which is designed for the purpose of increasing your awareness of stress and developing personal strategies. The seminar will be conducted on (date and location). Please plan on being at the Center at (time) in order to complete an anxiety inventory and an anxiety rating scale prior to your attendance in the seminar. You will also complete these forms once again at the end of the seminar. Responses on the instruments will be confidential.

We would like to take this opportunity to invite you to participate in this research study which will assist in expanding our knowledge of stress and stress management. Please fill out the attached consent form and the background information sheet and bring them with you to

the Center on (date) so that you may participate. Enrollment will be limited to adults between the ages 18 to 70.

For additional information please contact me or Ms. Frankie Dickenson (Center secretary) at (919) 334-5100, Ext. 74. Enclosed is a map showing the location of the Center.

Sincerely,

Nil A. Moore
Doctoral Candidate
Department of Counseling and
Specialized Educational
Development

Appendix F

Informed Consent for Stress Management Seminar

1. Explanation of Stress Management Seminar

The seminar is part of a research study to expand our knowledge of stress and stress management. It is designed for the purpose of increasing your awareness of stress and developing personal strategies. The study will be conducted in groups of ___, and it will last for approximately 2 hours. You will be asked to complete an anxiety inventory and an anxiety rating scale 30 minutes prior to your participation in the seminar. You will also need to allow yourself an additional 30 minutes immediately following the completion of the seminar to complete these forms once again. Responses on the instruments will be confidential.

2. Use of Personal Information

The information which is obtained prior to and immediately following the seminar will be treated as privileged and confidential. It is not to be released or revealed to any person without my written consent. The information obtained, however, may be used for statistical analysis or scientific purpose with my right to privacy retained.

3. Freedom to Consent

Your permission to engage in this research study is voluntary. You are free to deny consent if you so desire, both now and at any point in the program.

I acknowledge that I have read this form in its entirety or it has been read to me and that I understand the research study involving Stress Management in which I will be engaged. I accept the rules and regulations set forth. I consent to participate in this Stress Management Seminar.

_____
Signature of Participant

_____
Address

_____
Date

Appendix G

Background Information

Please provide the following information by placing an "X" in the appropriate space, or by providing short answers in the space provided. All of the information will be kept confidential.

1. Sex (1)_____Male (2)_____Female
2. Race: (1)_____Caucasian (4)_____Native American
   (2)_____Black (5)_____Asian
   (3)_____Spanish (6)_____Other
3. Age: (1)_____18-22 (4)_____36-45
   (2)_____23-27 (5)_____46-59
   (3)_____28-35 (6)_____60+
4. Marital status:
   (1)_____Single (4)_____Divorced
   (2)_____Married (5)_____Widowed
   (3)_____Separated
5. Level of education completed:
   (1)_____Grade School (4)_____College
   (2)_____High School (5)_____Graduate School
   (3)_____Some College or Technical School
6. Occupation:_____

Appendix H

Informed Consent for

Stress Management Seminar

The seminar you will be attending may include relaxation, hypnosis, lectures and/or discussions. Your permission to engage in this research study is voluntary. You are free to deny consent both now and at any point in the program.

I consent to participate in this Stress Management Seminar.

_____

Signature of Participant

_____

Date

Appendix I

Live-Hypnosis Treatment

1. Introduction:

I would like to welcome you to the seminar on stress management. I am Nil Moore, and I will be your seminar leader. This seminar will teach you how to reduce excess tension with stress reduction techniques. The exercises will teach you to become more tuned to your body and help you become aware of how deep relaxation feels.

In a deeply relaxed state, you may experience feelings of tranquility and emotional calmness, discover new inner resources, and have an opportunity to overcome things that are ordinarily upsetting and worrying.

I will first talk about what stress is and how it affects us. I will then talk about relaxation and hypnosis techniques which have been shown to be effective in reducing stress and anxiety. Through several experiential exercises, I will facilitate a relaxed and hypnotic state in you which you can later utilize on your own to cope with stressful situations.

I hope this seminar will be an enjoyable learning experience for you.

2. Lecture on Stress:

When an individual is under stress, complex physiological, emotional, cognitive and behavioral responses are activated which are tied to "arousal."

Stress elevates the body's state of activity. How we interpret this arousal may lead to different outcomes.

Stress begins with our anticipation of or encounter with a stressor and develops as we become aware of its danger. Individual perceptions play a significant role in determining whether an event or an experience is stressful or not.

Most often we evaluate the situation, determine how threatening it is to us, and decide on coping strategies. During this process the body gets itself ready for action. Here is what happens physiologically:

* Heart beat increases to pump blood throughout the necessary tissues with greater speed.

* As the heart rate increases, the blood pressure rises.

* Breathing becomes rapid and shallow.

* Adrenaline and other hormones are released into the blood.

* The liver releases stored sugar into the blood to meet the increased energy needs of survival.

* The pupils dilate to let in more light; all the senses are heightened.

* Muscles tense for movement, either for flight or protective actions, particularly the skeletal muscles of the thighs, hips, back, shoulders, arms, jaw and face.

* Blood flow is greatly constricted to digestive organs.

* Blood flow increases to the brain and major muscles.

* Blood flow is constricted to the extremities and the hands and feet become cold.

* The body perspires to cool itself, since increased metabolism generates more heat.

Eighty to ninety percent of all disease is directly or indirectly related to stress. Most deaths and disabilities are the result of chronic stress-related conditions such as alcoholism, heart attacks, strokes, cancer, diabetes, respiratory diseases and automobile accidents.

It is vital that we understand the intimate connection between mind and body. Stress reduction, practiced on a regular basis, can help prevent, modify or eliminate the sources and symptoms of many physical and psychological complaints. Relaxation is not a magic cure and is not a drug that can be taken for a quick fix. Practicing once or twice a day, every day, is necessary for results and "letting go" is the key.

3. Lecture on Relaxation and Hypnosis:

Deep relaxation and hypnosis methods facilitate psychophysiological changes. Some of these changes include: (a) a relaxed and calm state (b) inward focus of attention (c) slower focus of attention than ordinary state of consciousness (d) reduction in critical/analytic

thinking, and (e) access to creative problem-solving ability. Some of the physiological changes which take place under a deeply relaxed state are:

1) Facial muscles relax
2) Chest cavity sinks in
3) Shoulders and back of neck feel heavy
4) Pupils dilate
5) Micro-muscular movements
6) Eye-lids flutter
7) Tunnel vision is experienced
8) Heart rate slows down
9) Breathing is slower and rhythmic
10) Skin color changes

Often, people are not clear in their understanding of the difference between the relaxation and hypnosis processes. Hypnosis or the hypnotic state is usually conceptualized as an altered state of consciousness and an extension of deep relaxation.

It is believed that entering into an altered state of consciousness allows changes in perspective which facilitate a different view of the universe.

I would now like to go over some of the misconceptions about hypnosis. Many people who are considering hypnosis for the first time have some of the following common fears:

Hypnosis is a state of sleep or unconsciousness. Under hypnosis a person is not asleep but in a state of

relaxed attention, alert, able to hear, speak, move around and think. Reflexes, such as the knee jerk, which are absent during sleep, are present under hypnosis.

Only weak or passive people can be hypnotized. The reverse is true. More intelligent, strong-willed, creative people tend to be the most responsive to hypnosis because their powers of concentration are better. Strong motivation is the most important factor.

Hypnosis allows someone else to control your mind. Stage hypnotists often give the impression that they are exercising power over a person. In fact, people cannot be hypnotized against their will, and once under hypnosis, cannot be forced to do something they find objectionable. Clinical hypnosis is a means of giving people more, not less, control over their lives and behavior.

A hypnotized person may be unable to come out of a trance. It is more difficult to induce and maintain a hypnotic state than it is to come out of one.

A hypnotized person will give away secrets. Only in film and fiction is hypnosis used to obtain secrets from an unwilling person. In life, a hypnotized person is aware of everything that happens during and after hypnosis. Hypnosis can help individuals to express what they want to express. It cannot force anyone to reveal secrets unwillingly.

I probably cannot be hypnotized. Nearly everyone can achieve at least a light hypnotic trance. Trying too hard, maintaining fears and misconceptions about hypnosis may interfere with one's responsiveness to hypnosis.

Hypnosis is a quick easy cure-all. In a clinical setting, hypnosis is an effective tool for change often used in conjunction with psychotherapy and/or medical treatment.

4. Deep Muscle Relaxation:

The first exercise we will do is a deep muscle relaxation exercise. During this exercise you will focus on different muscle groups and concentrate on relaxing these muscles. The main goal of this exercise is to help you experience what relaxation of each muscle group feels like and to provide practice in achieving more relaxation. This exercise is especially helpful if your tension shows itself as a headache, muscle spasm, backache, tight jaw, and stiff shoulders. They are all forms of skeletal muscle tension.

Deep muscle relaxation exercise is based on the premise that muscle tension is closely related to anxiety and that an individual will feel reduction in experienced anxiety if tense muscles can be made to relax.

Now, I would like everyone to get into a comfortable position in your chairs, with both feet on the ground and your arms at your sides. You may either close your eyes or

you may leave them open and focus on me. Either way is all right. The first thing I would like you to do is to take a deep breath or two and just concentrate on your breathing. That's right. Try to breath from your lower abdomen and exhale slowly. Just concentrate and focus on your breathing. Now you can concentrate on your forehead muscles. Try to focus on your forehead muscles. That is one area one collects a lot of tension. Try to relax those muscles. Just get rid of all the thoughts in your mind right now and focus on those muscle groups. When you feel your forehead muscles are relaxed, you can slowly move down to your eyes and concentrate on the muscles around your eyes. Let go of all the tension around your eyes. Slowly move down to your mouth, muscles around your mouth, and relax those muscles. Just let the tenseness go out of your body. Then you can start concentrating on your muscles around your cheeks and jaw. That is another tight area in most people. Become aware of any clenching. If any of the other areas on your face are still tight, go back and relax that area. You can do this throughout this exercise if you feel any stiffness. You can go back and concentrate on relaxing those muscle groups. Now, once you feel your facial muscles are totally relaxed, slowly move down to your neck and shoulder muscles and try to focus on that area. Just relax and let go of all the tension. That's right. Relax those muscles. Slowly move down to your

chest muscles and relax them. Release any tension you may be feeling in your chest. Gradually move down to your stomach muscles and relax all the tension there. Now concentrate on the back and relax those muscles moving down to your arms and all the way to your right and left hands. Don't forget to relax your fingers. That's right. Let all the tension go out so that you can totally feel relaxed. Now I would like you to focus on your thighs and relax those muscles. Slowly move down to your calves and concentrate on relaxing those muscle groups. Move all the way to your feet including the right and the left foot. Let all the tension go out, leaving you totally relaxed. That's right. By now you should be feeling very relaxed. If any of you experience any tenseness in any of the muscle groups, I would like you to go back to that area and focus on relaxing those muscles. That's right. Now I want you to just enjoy the relaxed feelings and remind yourself that you can accomplish this on your own any time and achieve this totally relaxed feeling. That's right. Concentrate on your body, enjoying that feeling of being so relaxed. Remember the key word "letting go." That's right. Just allow yourself to let go and concentrate on relaxing. In a few moments I will begin to count backwards from 5 to 1. During that time you can continue to relax even more. Let that counting help you become even more deeply relaxed. When I say one, I would like you to come back and open your

eyes if they are closed. Slowly orient yourself to the room and the people around you. Now just enjoy this very comfortable relaxed feeling for another minute or two as I count. 5-4-3-2-1. Now open your eyes. Look around. You will continue to feel very relaxed. Just enjoy the feeling. When you are totally back, I would like you to take 10 minutes to share your experiences with the others.

5. Demonstration with a volunteer subject:

Now I will demonstrate another relaxation exercise which involves imagery. Imagery is one of the most effective tools of hypnosis. Imagery can be experienced in different sensory modalities. For example, primary sensory modality in dreams is visual. Furthermore, most people experience vivid visual imagery just before falling asleep. All people create mental images, and hypnosis facilitates image formation.

All of you participating in this seminar can either observe this demonstration, or you can participate in it.

Hello..... I'm glad you will be my volunteer subject to help me demonstrate this exercise. Now I would like to ask you a question: have you ever been hypnotized or engaged in relaxation exercise in the past? (response) First, I would like you to get in a comfortable position with both feet on the ground, arms resting on your sides. I would like you to take a deep breath or two and concentrate on your breathing. I think it may be easier if

your eyes were closed. Concentrate on your breathing. Now I would like you to concentrate on your bodily sensations so you can feel totally relaxed. Try to shut out all thoughts in your mind and concentrate on your body, on different muscle groups. You may want to start on your facial muscles and slowly move down and focus on your neck and shoulder muscles, areas where most people carry a lot of tension. Just continue down to your chest muscles and stomach muscles. Try to let all tenseness go out of your body. Just let go. When you feel totally relaxed, I would like you to think of a place in your mind that is very relaxing for you. This could be a place you have been to in the past or it may be a place from your childhood or it may be totally imaginary. Whichever it is, the important thing is that this place is a relaxing place when you think about it. Try to imagine in any sensory modality that you can, visual, auditory or kinesthetic, this place that is associated with safety and relaxation. Look around where you are and get to know your surroundings, whether it is inside or outside. Remind yourself that this is a place that you can think of any time by yourself to get away from all the stresses and just relax, so that you can associate deep down in your mind this place that is peaceful and calm and quiet with the feelings of relaxation and letting go. Let yourself feel and imagine whatever that it is you are experiencing right now and enjoy that relaxation. Letting

go of all the tension and feeling totally calm and at peace. That's right. You will be able to do this on your own and can experience what you are experiencing now at any time on your own without the help of anyone else. That's right. Now just enjoy this relaxing feeling and in a few moments I will begin to count backwards from 5 to 1 during which time you can continue to enjoy this peaceful and calm experience. When I say one, I would like you to open your eyes and just orient yourself to the room slowly at your own pace. Now I will begin to count, 5-4-3-2-1. Now open your eyes and take a minute to get reoriented. Can you tell us about what you were experiencing so that others watching this could hear what you felt. (subject responds)

6. Working on a Stressor:

Now I would like you to take a minute or two to think about a mildly stressful experience. In a few moments, I will facilitate a relaxed state in you and ask you to imagine the stressful experience or event you chose to work on. If at any time during your imaginings you feel tense, I want you to stop and concentrate on relaxing. When you feel calm and relaxed, you can go back to your stressor. Continue to do this at any time during the exercise when you feel any tenseness or anxiety. The goal of this exercise is to practice imagining the stressful event in a relaxed and calm state until the stressor loses its effect in making you stressful.

I would like you all to get in a comfortable position as before with both feet on the ground and your arms at your sides. You may close your eyes or keep them open. You can do it the way you feel most comfortable. Now take a deep breath or two and just concentrate on inhaling and exhaling and do this slowly. Focus on your breathing and relax. At this time I will not go through every muscle group in your body to help you relax. However, I would like you to concentrate on doing this by yourself. That's right. Concentrate on those muscle groups we practiced and try to relax them. Begin with your facial muscles, going down to your neck, shoulders, arms, chest, stomach, back and further down and relax your thighs and calves, remembering to relax your feet and hands. Let all the tension out of your body. Just become totally relaxed. This is the first step before you can start imagining the stressful experience or event you decided to work on. Remember that the reason it is important to be relaxed while you are thinking and imagining this stressful experience is that relaxation and calmness will allow you to think of the stressor in a different perspective and not like when you normally think about this experience. I would like you to continue to relax and at any time during this exercise if you feel any tension or any anxiety, I want you to stop thinking about the stressor and go back to relaxing. That's right. If at any time you experience any

tenseness or stress or anxiety, go back to concentrating or relaxing your body. That's right. Once you feel totally relaxed, you may go back and begin thinking about this experience that seems to be stressful to you. Continue doing this and make sure when you experience stress that you stop what you are imagining and go back to relaxing. This is an exercise that you can do in the future to cope better with stressful situations. You can sit or lie down somewhere quiet and where you will not be distracted by others or by noises. The first thing you may do, just as right now you are doing, is to concentrate on relaxing and focusing on your breathing and bodily sensations. After you achieve this calm state, you can then begin to think about the stressful experience and imagine yourself relaxed and experience this stressor in a different way. You may find that if you are successful in imagining this situation in a very deeply relaxed state that the stressor will lose its effectiveness and may no longer be stressful. That's right. You can accomplish this just as you are doing this now on your own to cope with daily stresses by just relaxing and imagining the stressor in a relaxed state until it loses its stressfulness for you. That's right. Continue relaxing. Take a minute or two to just enjoy this relaxed state. In a few minutes I will begin counting backwards from 5 to 1. When I say one, I would like you to

open your eyes and come back. I would like you to take 10 minutes to share your experience with the others.

7. Safe Place:

Safe place is a general image used to attain an altered state of consciousness. You can utilize this exercise for overcoming detrimental effects of the stress response, enhancing the creative thinking process and for promoting health and well-being.

Now once again I would like you to get in a comfortable position with both feet on the ground and your arms at your sides. You may close your eyes or leave them open. Begin by taking several deep breaths. Concentrate on your breathing, inhaling and exhaling slowly and telling yourself that every time you exhale you are letting tenseness go out of your body. Now I would like for you to concentrate on your body and relax all the muscles as you did before until you experience a totally relaxed feeling. Once you are relaxed I would like you to think of the words peace, safety, comfort and happiness. When you think of these words, the first place that comes to your mind, I would like you to stick with that place. This may be from the past or it may be a place you are anticipating to go to or it may be an imaginary place. Whichever it is, stick with the first thought of the safe place in your mind you associate the words peace, safety, comfort and relaxation. That's right. Now if your mind tends to wander from place

to place, I would prefer that you go to the first place simply because that is the place, more likely, that you associate the words peace, safety, comfort, happiness and relaxation. Now this may be a place inside or outside. I would like you to look around in your mind's eye and observe this place. Look at all the details. Look above you, to the right of you, to the left and underneath. Pay attention to details. If there are any sounds you are hearing, pay close attention to differences in pitch or tone of the sounds. Become familiar with the environment which you are in right now. This is the place in your mind associated with calmness, relaxation, safety, and happiness. If there are any objects around you, you can touch those objects in your mind. Pay attention to any feelings you may be experiencing while at this place. Try to remember the imagery and the feelings and the sounds so that you can bring back all of that later and feel what you are feeling now, then. That's right. This is the place in your mind that you associate with tranquility and peace and calmness over and over. Continue to enjoy the safe place right now and remember that this is your place, and you can go back to it any time to relax and feel calm which can allow you to become more creative in your problem-solving and dealing with stress in your life. Remember that you can do this at your own time any place in your mind, and the more you practice it the clearer the

images will become. Any time in the future when you feel tense or stressful, you can stop and do this. That's right. You can bring back this experience by just imagining the safe place in your mind, deep in your mind. Enjoy the feelings of tranquility and calmness and relaxation. Letting go is the key word. In a minute or two I will begin to count backwards from 5 to 1. When I say one, I want you to open your eyes and reorient yourselves to the room and others. I would like each of you to take 10 minutes to share your experience with the others.

8. Teaching Self-Hypnosis:

I want you to get into a comfortable position. Just make sure you are as comfortable as you can be. You might want to shift around into the position that will make you feel most comfortable. That's right. As you do this, take a few deep, satisfying breaths. A couple of relaxing breaths, just to blow off some tension and frustrations. There is no need to try to think of anything. In fact, there is no need to do anything at all. You know when you take this kind of time out that it's centering time, a focusing time, a chance to let your conscious mind be elsewhere, perhaps get busy on the sounds from inside the room or outside the room and just give yourself the opportunity to to use your own resources. To use your own natural abilities, to make change. You know that change is a natural function of nature, and your own nature can allow

you to use untapped resources and begin to open doors that give you some of the solutions to some of the questions that your unconscious is aware of. All you need to do is to allow this to happen. You know full well that whenever you take this kind of time out you can create a tranquil sense of self. If you've been active or busy, even nervous about things, you can acknowledge this, even pay attention to it. When you feel you've given it adequate attention for this kind of experience which may be as long as a minute, but just as much as you need, you can move on to a more relaxed and a more comfortable state, very naturally, at your own pace. Now it may be helpful to you to count backward from 30 to 1. You may feel as if you're going down a flight of stairs, and the closer you get to the bottom the deeper and more relaxed you can feel. You may feel you need to pay attention to my voice, but there is no need to pay attention. You may feel that as you get deeper and feel more comfortable you may fall asleep or your body may feel deeply relaxed, and yet your mind may feel focused. That's right. Even more clear than perhaps it has felt in quite a while. You know what it is like to feel your physical body responding to change, and now you may notice some heaviness in your legs, some heaviness in your arms, and at the same time be able to experience a more true sense of how you can feel lightness and heaviness at the same time. Warmth and even coolness as well. Now

that you've taken this kind of time out, you can feel a renewed sense of having tapped some resources and used some natural abilities that enter into your personal control. You can understand from this time on, you can feel a change in your abilities that enter into your personal control. You can understand from this time on, you can feel a change in your abilities to relax. That will follow into each future experience as well as your abilities to take care of yourself in this natural and positive way. The week to follow can be a week where many of these suggestions filter through and even have an impact on your daily experiences, and even your nightly experiences. That's right. Now I would like you to continue relaxing and enjoy the deeper sense of feeling tranquil and closer to the core of you. This is an exercise you can do on your own or you can make a tape and listen to it. You can use this exercise as a self-hypnosis experience. In a minute or two I will begin to count backward from 5 to 1. When I say one, I would like you to open your eyes and come back and orient yourself to the room and others. You will remember many of the experiences from this exercise when you come back. Now I will begin to count, 5-4-3-2-1. Now, I would like you to take 10 minutes to share your experiences with the others in the group.

9. Summary of the Seminar:

I would like to briefly summarize what this seminar

involved. First, I talked about what stress is and how it affects us. I then talked briefly about the physiological and psychological changes facilitated by deep relaxation and hypnosis techniques and tried to clarify some of the misconceptions about hypnosis. Finally, I tried to demonstrate to you, through experiential exercises, these psychophysiological changes.

Techniques you have learned during the seminar are only a few out of many. However, most have the common feature of helping individuals relax and cope more effectively with the daily stresses. By controlling tension you may be able to learn more quickly and easily, and remember what you learn for a longer time. Relaxation can increase your efficiency; you will not tire as quickly and may find that you need less sleep. For some people, relaxation twenty minutes a day may take the place of two hours of sleep. Your sleep will be deeper and more restful. Stress reduction practiced on a regular basis will help you to perform your best and to give the most that you are capable of giving.

I hope that you enjoyed the seminar.

Appendix J

Stress Management Seminar

Videotape Treatment Monitoring

1. Introduction

"Welcome to the Stress Management Seminar. This seminar will be conducted through a videotape, and I will monitor the necessary activities during the seminar. I will be here to assist you if you need anything or if you have a question about a seminar activity. After you are seated comfortably, I will turn on the videotape." Hand out the agenda to each participant.

2. Turn on the videotape and take a seat in the back of the room.

3. Turn off the videotape when the pause signal is indicated on the screen. Allow 10 minutes for the participants to share their experiences from the exercise. If no one begins to talk after 1-2 minutes, assist the group participants by saying, "Maybe you can each share with the others how you felt and what you experienced during the last exercise." Do not make any more comments.

Follow the same procedure above during each pause.

Do <u>not</u> get engaged in conversations with the participants except when a question is asked and you

have to answer. Make your answers brief. Make it clear to the participants that your role is to monitor the videotape seminar and to make sure that everyone is comfortable.

4. At the end of the seminar thank the participants for attending the seminar and hand out the list of reading materials to each person prior to their leaving the room. Remind them to go back to the same room where they completed the anxiety inventories. If they are confused, show them the room.

Appendix K

Lecture on Stress

1. Introduction:

I would like to welcome you to the seminar on stress management. I am Nil Moore, and I will be your seminar leader. Stress affects us physiologically, behaviorally, and psychologically, and is directly related to health and well-being. During this seminar, I would like to help you understand the complex process of stress and how it affects us. I believe that awareness of what stress is and what it can do is the first step in learning to cope with it more effectively.

2. Physiological Basis of Stress:

Stress and other aspects of health and behavior are mediated by the nervous system and the endocrine system. They are both channeled through the hypothalamus which regulates internal functions of the body. First, I would like to discuss the role of the Autonomic Nervous System (ANS). ANS controls functions of the body basic to survival. It operates below awareness level, yet we are often aware of its effects. Its primary function is to control the internal organs.

(1) Sympathetic Nervous System (SNS) is responsible for arousing or mobilizing the body for action (controls the fight-or-flight reponse basic to stress).

- increases heart rate and blood pressure

- increases conversion of stored energy to usable energy

- dilates blood vessels to the muscles

- increases blood flow to areas that will be needed to act

(2) Parasympathetic Nervous System (PNS) is concerned with calming or reducing arousal of various organisms. After the sympathetic nervous system increases heart rate, parasympathetic system slows it down.

Now, I would like to go over the functions of the endocrine system which interfaces with the nervous system at a number of places and uses chemical messengers to stimulate or slow down the response by the organs.

As you can see on the handout, SNS stimulation leads adrenal glands to secrete catecholamines which include epinephrine and norepinephrine hormones. These are called the stress hormones. As these hormones enter the bloodstream, heart rate increases, blood vessels are constricted, blood pressure is increased, and gastrointestinal activities are inhibited.

SNS stimulation also leads to pituatary gland activitation. The result is ACTH and TTH hormone productions. ACTH elecits corticoid secretion. Corticoids appear to speed body's access to its energy stores of fats and carbohydrates, thereby supporting arousal. Meanwhile,

TTH leads thyroid gland to secrete thyroxine which speeds metabolic rate and oxygen utilization.

Catecholamines and corticoids all play a major role in controlling body's immune responses. Most stressful situations elicit large increases in corticoid secretion, supporting "arousal." Research shows that corticoid and catecholamine excretion rates fall following relaxing. Man's major defense against microorganisms is his immune response. Immune system regulates susceptibility to cancers, infections, diseases, allergies, and other disorders where immune cells attack the normal tissue of the organism. Pollen, viruses, bacteria, cancer cells, and infected cells are antigens and set off immune reactions. Lymphocytes (white blood cells) fight antigens: B-cells produce antibodies into the blood to fight antigens; T-cells kill antigens and also activate B-cells.

I will now cite some findings based on research:

(1) Research shows that stress increases susceptibility to a variety of infectious agents, and incidence and rate of growth of certain tumors.

(2) Life stress increases susceptibility to tuberculosis: as the number of stressful events increase, health declines.

(3) More dissatisfaction with life, the greater the number of acute respiratory illnesses.

(4) Stress may be linked to cancer; stress contributes to tumor development. Research shows evidence that following stress, there are decreases in white blood cells and damage to thymus tissue associated with corticoid elevations after stress.

(5) Several studies showed that following death of a spouse, T-and-B cell activity was reduced during the 2 months after the death, compared to a control group.

(6) When life changes were frequent and reported distress was high as well, measures of T-cell activity were lowest.

(7) Other studies reported poorer lymphocyte response to antigens among people subjected to 2 days of sleep deprivation and among astronauts following their return to earth.

(8) Another study reported decreased T-cell activity due to exams in medical school, compared to levels shown one month earlier.

(9) The corticoid and catecholamine excretion rates fall following relaxing and nonstimulating movies, and increase during distressing or emotionally provocative movies.

Selye's Biologic Stress Model (1956):

* Englargement of adrenal glands which secrete catecholamines and corticoids.

* Shrinkage of thymus gland; this gland controls endocrine function, thyroxine production by thyroid--speeds heart rate and metabolism.

* Bleeding ulcers.

Each time an alien agent was applied into the rat's body, changes in adrenal and thymus glands and in the acid sensitive stomach lining were observed.

Selye's General Adaptation Syndrome (GAS):

As organism becomes aware of a stressor, Alarm Reaction is experienced where organism prepares to resist the stressor. Adrenal activity, cardiovascular and respiratory functions increase. This leads to acceleration of heart rate, dilation of pupils, inhibition of gastrointestinal systems, inhibition of bladder emptying, diversion of blood flow into muscles, increase in blood pressure, respiration rate and metabolic rate. During the Stage of Resistance the individual applies various coping strategies to achieve adaptation. There is resistance to the stressor, but decrease in resistance to other stimuli. The Exhaustion State is reached if adaptive reserves are depleted by long-term or repeated conflict with stressors and resistance is no longer possible. Results of exhaustion could lead to onset of diseases such as kidney disease, arthritis, cardiovascular disease, etc.

3. Psychological Basis of Stress (Lazarus, 1975):

Lazarus' theories are exclusively psychological as

Selye's are physiological, yet they are not incompatible. Lazarus emphasized the role of perception and cognitive appraisal in the stress response. He suggested that unless we perceive a situation as threatening, we will not experience stress. Thus the animals in Selye's experiments may have had to experience danger before an alarm reaction could occur.

When we are exposed to a potentially stressful situation, we appraise the setting and make judgements about how threatening it is to us. Perception of danger motivates a search for coping responses that will reduce the threat. Coping behavior is an important part of the stress response. Stress response may be:

(1) Direct action responses where the individual tries to manipulate or change his/her relationship to the stressful event.

(2) Seek information about the situation so that he/she can understand it and predict related events.

(3) Inhibition of action: do nothing.

(4) Intrapsychic coping--the person accommodates the situation by reappraising it or by altering his internal world by taking drugs, use of alcohol, learning to relax, defense mechanisms, etc.

4. Control and Learned Helplessness:

Control is being able to determine what we do or what others do to us. Perception of control over aversive

events reduces stress and arousal whether control is real or not. Control is our real or perceived ability to determine outcomes of an event.

When we are in ambiguous situations, this usually leads to responses which involve increased secretion of epinephrine, norepinephrine and corticoids, while responses associated with more predictability do not show change in epinephrine levels. Control also plays a significant role in the effects of stress on immunity.

What happens when control is not available? When we cannot, under any conditions, gain some sense of control over what happens to us? Repeated exposure to uncontrollable events leads to learned helplessness. Learned helplessness is the feeling that we cannot do anything, that everything we try to do ends up as failure. When an individual repeatedly fails to accomplish a goal or exert control effectively over something, he/she may stop trying in that setting and may also become unresponsive in new environments. In other words, people can learn to be helpless--learn that their attempts to control or succeed will not be successful.

The major cause of learned helplessness is the awareness that response and outcome are independent--that the possibility of achieving a given outcome is the same whether or not responses are made. When an individual is repeatedly exposed to uncontrollable events, he/she learns

that he/she does not have control over outcomes, and stops trying or responding.

For example, consider a situation where you are in an environment where there is inescapable noise and you have to be there. Nothing you do prevents the noise. After some attempts to turn off the noise, you would stop trying. For the remainder of the time, you would passively accept the noise. Research has shown that illness was more likely to follow stress if the individual felt unable to cope successfully. Failure to cope effectively can lead to "giving up" symptoms such as (1) helplessness, (2) reduced self-esteem, (3) a sense of isolation, (4) disruption, (5) reactivation of memories so that the individual can retreat into the past. These fairly dramatic consequences of failure to cope are usually associated with long-term or major stressors that can exhaust our ability to cope. They are precursors to illness and contribute to the body's susceptibility to disease.

Strategies for Stress-Reduction:

The first step in reducing stress and anxiety is identifying your own unique stress response. Become aware of the events that trigger it. What causes you the most distress? After you recognize the situations that cause you the most discomfort, listen to your body's signals and locate where you feel stress.

Prolonged unrelieved stress has been shown to cause organic disease. Practicing stress reduction and changing some of your habits can help you cope better with stress and improve the quality of your life.

(1) Relaxation Period:

Set aside a regular time and place for at least twenty minutes a day (once or twice daily) to relax. Find a quiet location where you will not be disturbed, take the phone off the hook and ask your family not to interrupt you. Make a decision not to worry about anything during your relaxation period. You can use this period to meditate, to concentrate on relaxing and emptying your mind, pleasant daydreaming, listening to soft relaxing music of your choice, reading poetry, or anything that has a calming effect on you physically and mentally/phychologically.

(2) Active Exercise:

Regular active exercise aids the cardiovascular system and strengthens it by increasing its capacity to supply blood to the body tissues. It burns calories and may help in weight reduction. It stimulates the skeletal muscles and allows them to tense and relax. People who hold tension in their musculature can use active physical exercise as a stress-reduction tehnique if they keep a few things in mind.

* Pick a moderate to active exercise--walking, hiking, jogging slowly and steadily, swimming or bicycling.

* Do it regularly 4-5 times a week.

* Allow yourself at least a half-hour to an hour for exercising.

* Get plenty of fresh air.

* Breath deeply and fully.

* When you really get tired, stop.

(3) Goal Setting:

People's sense of helplessness and hopelessness heightens their anxiety and stress levels. They are often afraid to take a risk, live life fully, with its challenges and the possibilities of success or failure. Learning to view failure as a potential learning experience can be accomplished by learning to set goals, and then accomplish them. If you start out with a reasonably attainable goal, this provides an experience of success.

* First establish the goals you wish to achieve, prioritize them, and break them down into achievable steps.

* Break the goals down into short-range goals and long-range goals. The short-range goals should lead to the long-range goals and be fairly easy to accomplish.

* You want to build a pattern of success, not failure.

(4) Communication:

Stress is often aggravated by miscommunication or lack of communication between people.

* You must be clear in communicating with yourself, and then with the people around you. Often we confuse our

feelings with our thoughts, and end up repressing our real feelings. Feelings are sensations you experience, and thoughts are the way you try to describe or express the sensations.

* Anger-release techniques such as going for a run, taking a long swim, yelling in the shower, writing down what you are feeling, or talking to a tape recorder can all help. It is best not to censure your expression. Express your feelings even if they sound childish or irrational.

* Stress can block your ability to hear and receive; your tension can get in the way. It is important not to send a double message. Ask for feedback from the listener to be certain your message is clear.

* Avoid blaming the other person for your feelings. It is your feeling, your own perception; take responsibility for it.

(5) Developing Social Support Systems:

It is important that you try to develop at least one or more solid relationships in which you can express your feelings and thoughts and feel accepted for who you are.

(6) Asking for Help:

Examine your life-style and determine whether you are taking time and energy for yourself. If you need assistance, you are capable of asking for support or help from a professional counselor or psychologist.

Conclusions

I have tried to help you have a better understanding of what stress is and how it affects us, as well as sharing with you some of the coping strategies which have been helpful to others. It is important that we become knowledgeable about the influence of stress and the factors which trigger the stress response. Understanding the stress process can enable us to take preventive measures before stress leads to the development of psychological and/or physical problems.

I hope that this seminar was an enjoyable learning experience for you.

Appendix L

Reading Material Related to Stress Management

Benson, H. (1975). The relaxation response. New York: Avon Books.

Mason, J. L. (1985). Guide to stress reduction. Berkeley, California: Celestial Arts.

McQuade, W., & Aikman, A. (1974). Stress. New York: Bantam Books.

Samuels, M., & Samuels, N. (1975). Seeing with the mind's eye. New York: Random House.

Selye, H. (1976). The stress of life. New York: McGraw-Hill.

Storr, A. (1988). Solitude. New York: The Free Press.

Straus, R. A. (1988). Strategic self-hypnosis. New York: Prentice Hall.

APPENDIX M

Evaluation of the Treatment Conditions

A modified and a shorter version of an NCATE evaluation form (see Page 134) was used to assess the effectiveness of the treatments for stress management.

Twenty volunteer subjects were randomly assigned to one of the treatment conditions. They were asked to complete the evaluation form immediately following the treatment. As shown in Table 3, the mean ratings of effectiveness for the three treatment conditions were comparable reflecting equality in terms of effectiveness. The evaluation ratings also indicated all three treatments to be effective for stress management purposes.

Table 3

Mean Ratings of Effectiveness for the Three Treatment Conditions

Treatment Condition	n	Mean Rating
Live-model	7	4.51
Videotape	6	4.25
Stress-lecture	7	4.31

Evaluation of the Stress Management Seminar

The purpose of this evaluation is to obtain your opinion of the effectiveness of the stress management seminar. Please respond to each item carefully and thoughtfully using the rating scale below.

Poor	Fair	Good	Very Good	Excellent
1	2	3	4	5

1.	The seminar leader was effective in her presentations.	1	2	3	4	5
2.	The seminar led to enhancement of my knowledge in the area of stress management.	1	2	3	4	5
3.	The instructional approaches used in seminar were appropriate to the purpose of the seminar.	1	2	3	4	5
4.	How would you rate the quality of the seminar?	1	2	3	4	5
5.	I would recommend this seminar to anyone interested in stress management.	1	2	3	4	5

Adapted from a form developed by NCATE.

Appendix N

Raw Data

Comparison Condition

Experimental Unit	State Pre	Trait Pre	ARS Pre	State Post	Trait Post	ARS Post
1	48	55	75	38	50	5
1	35	34	50	29	42	10
1	50	48	50	21	33	25
2	47	36	45	28	37	35
2	31	33	50	36	36	50
2	59	51	75	47	49	50
3	40	43	25	30	50	36
3	42	43	70	27	37	40
3	54	39	75	29	39	50
3	69	47	100	43	42	60
4	56	58	65	52	57	45
4	54	61	85	61	57	85
4	48	36	75	43	44	65
5	35	35	75	37	45	45
5	48	56	70	48	51	45
5	24	32	70	20	32	20
5	21	30	20	23	34	70

Live-Model Treatment

Experimental Unit	State Pre	Trait Pre	ARS Pre	State Post	Trait Post	ARS Post
1	39	43	60	23	29	5
1	41	40	80	42	40	80
1	32	41	15	31	43	50
1	33	45	10	30	42	10
1	29	27	5	31	38	10
2	47	44	72	38	45	20
2	38	43	30	35	45	40
2	52	54	50	25	35	15
3	45	37	75	35	38	25
3	51	41	95	31	42	75
3	37	37	50	21	39	30
4	34	50	42	21	34	20
4	38	46	60	40	38	10
4	30	49	20	34	37	50
4	44	46	50	39	48	20
4	43	52	50	26	43	40
5	45	45	80	38	51	65
5	58	59	80	38	50	40
5	35	50	75	47	41	70

Videotape Treatment

Experimental Unit	State Pre	Trait Pre	ARS Pre	State Post	Trait Post	ARS Post
1	52	53	85	47	47	75
1	45	56	70	51	51	85
1	44	38	30	43	42	25
2	36	39	35	26	42	35
2	41	44	50	38	46	10
2	56	43	72	21	33	10
2	52	41	70	36	40	10
3	35	40	80	31	42	75
3	33	35	27	25	32	20
3	24	26	20	23	32	15
4	46	35	75	51	36	35
4	49	38	65	50	40	50
4	34	42	19	32	40	25
4	36	40	25	24	45	14
5	52	41	80	32	39	70
5	36	37	60	33	38	70