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Colorado State University, Ph.D., 1972
Psychology, clinical

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DISSERTATION

ANXIETY MANAGEMENT TRAINING

Submitted by

John A. Nicoletti Jr.

In partial fulfillment of the requirements

for the Degree of Doctor of Philosophy

Colorado State University

Fort Collins, Colorado

August, 1972

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COLORADO STATE UNIVERSITY

August, 1972

WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY JOHN A. NICOLETTI JR. ENTITLED ANXIETY MANAGEMENT TRAINING BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

ANXIETY MANAGEMENT TRAINING

This study investigated the effectiveness of an anxiety management training technique (AMT) in the treatment of generalized and public speaking anxiety. The effectiveness of AMT was determined by comparison with a waitlist control group and a no-problem control group.

The subjects were 40 undergraduate students attending either Colorado State University (N=32) or Metropolitan State College (N=8). The subjects were referred by their respective counseling centers for either generalized anxiety (N=20) or public speaking anxiety (N=20). After an initial intake interview subjects were assigned randomly to either a treatment or waitlist group for their respective anxiety, each group having ten members.

All subjects were administered the IPAT Anxiety Scale (IPAT), the Taylor Manifest Anxiety Scale (MAS), the Anxiety Symptom Checklist (ASCL) and the Public Speaking Anxiety Inventory (PSI). Subjects were administered the scales on two different occasions two weeks apart. The IPAT, MAS and ASCL were used as measures of general anxiety while the PSI was used as a measure of public speaking anxiety.

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Treatment consisted of five two hour sessions conducted over a two week period in the evenings. The first session involved the administration of the anxiety scales and training in relaxation. Session two, three and four involved the AMT treatment. AMT treatment involved training the subjects in controlling anxiety by having them arouse anxiety and terminate it by the use of deep muscle relaxation. Session five involved readministering the scales and obtaining feedback from the subjects.

It was predicted that AMT would be effective in significantly reducing both generalized and public speaking anxiety as compared to the waitlist control group. It was also predicted that AMT would lower the anxiety levels of the treatment groups to that of the no-problem group while the waitlist groups anxiety levels would remain unchanged. Predictions for the generalized anxiety subjects were made only with regard to the IPAT, MAS and ASCL. Predictions for the public speaking anxiety subjects were made only with regard to the PSI. Analysis of covariance designs were used to compare treatment groups to waitlist groups while analysis of variance designs were used to compare the anxiety groups to the no-problem group.

For the general anxiety subjects, results showed that there were no significant differences between the general anxiety treatment group (GAT) and the general anxiety waitlist group (GAW) on the pretest scores for the scales. The generalized anxiety people (GAT + GAW)

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were significantly different from the no-problem group (NPC) on the pretest scores. Results of the analysis of covariance comparisons on the posttests indicated a significant reduction in anxiety for the GAT on the IPAT and MAS as compared to the GAW. The ASCL total scores were not significantly reduced, but an analysis of the subscales indicated a significant drop in the frequency and intensity scales. However, no significant reduction was obtained in the interference subscale. For both the GAT and GAW posttest scores remained significantly higher as compared to the NPC.

For the public speaking anxiety subjects, results showed that there were no significant differences between the public speaking anxiety treatment (PST) and the public speaking anxiety waitlist group (PSW) on the pretest scores for the scales. The public speaking anxiety people (PST + PSW) were significantly different from the no-problem group on the pretest scores of the PSI. Results of the analysis of covariance comparison on the posttest scores for the PSI indicated a significant reduction in anxiety for the PST as compared to the PSW. Both the PST and PSW were not significantly different from the NPC on the posttest scores for the PSI.

It was concluded that AMT was effective in reducing both generalized and public speaking anxiety when compared to a waitlist group. However, further research was indicated because of the discrepancies

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found in the present study. Some suggestions were made concerning the implication and considerations involved in the use of AMT treatment method.

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

The purpose of this study was to examine the effectiveness of a method for treating anxiety. The technique, called anxiety management training (AMT), was originally researched on a specific anxiety manifested in difficulties with mathematics (Suinn & Richardson, 1971). Results of this initail study were quite positive, showing that AMT was effective in alleviating mathematics anxiety. However, preliminary results in a later study by Richardson (1971) did not show AMT to be effective in the alleviation of test-taking anxiety. The technique itself, a non-specific behavioral approach, involves several significant differences in comparison to traditional desensitization approaches. The advent of this approach has provided, for the first time, a potential method for treating generalized anxiety.

Although AMT lends itself to the treatment of generalized anxiety, all of the research to date has been with specific anxiety problems. Of these two studies, the first one (Suinn & Richardson, 1971) obtained positive results while the second study (Richardson, 1971) obtains rather equivocal results. It therefore appears necessary to:

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1. Investigate the effectiveness of AMT for treating generalized anxiety.
2. Add research on the effectiveness of AMT with specific anxiety.

The specific theory and techniques involved in AMT will be covered in detail later in this chapter.

The present chapter will begin with a brief review of the concept of anxiety. Included in this section will be studies dealing with the relationship of anxiety to behavior and learning, theoretical views on anxiety, and researched studies of a non-behavioral orientation on the treatment of anxiety. Following the brief review of anxiety studies, a review of the theory and practice of systematic desensitization will be provided in order to give a perspective on the development of AMT. The review will sketch the development of systematic desensitization from its inception in individual and group treatment to the more innovative approaches such as short term desensitization, automated desensitization and finally the development of AMT. The chapter will conclude with a statement of the problem involved in the current study and a statement of the hypotheses to be tested.

Anxiety

Anxiety is a concept which has received a great deal of interest in terms of its importance in the functioning of the human organism. Spielberger (1966) indicated that from 1950-1964 alone there were

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some 3, 500 studies under the heading of anxiety in the Psychological Abstracts. In addition to the general interest in anxiety, Cattell and Scheier (1958) reported more than 120 personality-type tests which have been claimed to measure anxiety. McReynolds (1968) reported 88 different anxiety measurement procedures.

The importance of anxiety as an influencing factor in learning and behavior is a well established fact. Early research in this area conducted by Yerkes and Dodson (1908) established that the relationship between anxiety or fear, and learning, was curvilinear. That is, high drive levels on simple tasks facilitate performance but impede performance on complex tasks. Task complexity or difficulty, however, is not a concrete concept and is either operationally defined or determined by a knowledge of individual habit hierarchies. Also, the relationship between anxiety and various outcome variables depends to a large extent on the nature of the instrument used to measure anxiety (Sarason, 1957). The theory itself, however, has been supported by other researchers (Welch & Kubis, 1947; Taylor, 1951; Bitterman & Holtzman, 1952; Montague, 1953; Farber & Spence, 1953; Child, 1954; Grice, 1955). Montague (1953), for example, found that low anxious subjects learned a difficult list of nonsense syllables quicker than high anxious subjects, with the reverse being true on the simple list. Farber and Spence (1953) found similar

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results when researching the effects of high and low anxiety on performance in a stylus maze.

In addition to interfering with various tasks, anxiety has also been shown to interfere with school work and grades, with the higher anxious students of equal ability receiving lower grades (Alpert & Haber, 1960; Suinn, 1968) and having a higher attrition rate than their less anxious peers (Spielberger & Katzenmeyer, 1959; Spielberger, 1962). It seems that all people experience anxiety at one time or another as a natural response to stress or danger, but the anxiety becomes a hindrance rather than a help when it is sustained at a high level over a long period of time after the stressful event. If the anxiety continues and goes beyond the individual's ability to control it, there is a resulting interference with his daily life. Also, it has been shown that those individuals who respond with anxiety in one setting are likely to respond in a similar manner to other non-related situations (Suinn, 1965).

Contemporary interest in anxiety phenomena had its historical roots in the philosophical and theological views of Pascal and Kierkegaard who considered anxiety as the state of man when he confronts his freedom (May, 1950). Freud, however, was the first to attempt to deal with the meaning of anxiety in terms of psychological theory. He set forth three basic types of anxiety which were alike

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in that they all had the same quality of being an unpleasant affective state or condition but differed in respect to their source (1936).

The first type of anxiety defined by Freud was termed reality anxiety and resulted from a perception of danger in the external world. A second type of anxiety was termed neurotic anxiety and was aroused by a perception of danger from the instincts. The third type of anxiety, moral, centered around a fear of the superego, that is the conscience.

Although Freud was the first person to define anxiety from a psychological standpoint, many other people in the field of psychology and psychiatry have set forth their ideas on the concept. Even with anxiety being the basic concept in many theories of personality, there does not seem to be any widely accepted general definition. Sullivan (1953), for example, considered anxiety to be an intensely unpleasant state of tension resulting from various threats to the individual's security, with the origin of the anxiety coming from the mother very early in the life of a child. Horney (1945) agreed somewhat with Sullivan's view, in that the parent-child relationship is a factor in what she labeled "basic anxiety". The presence of parents provides security to the child, and the feeling a child has of being isolated in a potentially hostile world-as a result of possibly losing his parents-defines "basic anxiety" for Horney. May (1950) viewed anxiety as more of an apprehension which was cued off by a threat to some value

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which the individual held essential to his existence as a personality. In a somewhat different view, Mowrer (1950) set forth a guilt theory in which the anxiety occurred from acts that an individual has committed but wished that he had not, rather than only from the acts themselves.

Wolpe (1958) produced a more objectively defined view of anxiety when he identified it as an autonomic response pattern or patterns that were characteristically a part of the organism's response to noxious stimulation. The response elements that typically constitute an anxiety response are largely those associated with a widespread discharge of the autonomic nervous system, specifically the sympathetic system. Wolpe considered anxiety to be the antecedent to the learning of all neurotic behaviors and the severity of the neurosis could be judged in terms of the amount of unadaptive anxiety.

More recently, researchers have set forth a two factor theory of anxiety (Cattell & Scheier, 1961; Heath & Korchin, 1963; Lazarus, 1966; Spielberger, 1966). The first factor refers to characteristic anxiety which Lazarus (1966) refers to as "chronic anxiety" while Spielberger (1966) call it "trait anxiety". "Trait anxiety" is an acquired behavioral disposition that predisposes an individual to perceive a wide range of objectively nondangerous circumstances as threatening, and to respond to these with various autonomic reactions (Spielberger, 1966). These autonomic reactions then become stimuli

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for further anxiety reactions, or as Lang (1969) indicates, the incipient anxiety symptoms become the most potent cues for an increase in anxiety. The "trait anxiety" reflects residues of past experiences which probably date back to childhood.

The second factor refers to "acute anxiety" (Lazarus, 1966) or "state anxiety" (Spielberger, 1966). This factor is characterized by subjective, consciously perceived feelings of apprehension and tension induced by a specific stimulus or set of stimulus conditions either from the external environment or from internal cues. This factor is more of a transitory response and could fluctuate from situation to situation.

In spite of the diversified views on the conceptualization of anxiety, there does seem to be a rather consistent view on what constitutes the more extreme manifestations of anxiety. A fairly typical example is given by Portnoy (1959) who defines anxiety as:

> "...subjectively experienced uneasiness, apprehension, anticipation of danger, doom, disintegration and going to pieces, the source of which is unknown by the individual and toward which he feels helpless, with a characteristic somatic pattern. This somatic pattern shows evidence of increased tension in the skeletal muscles (stiffness, tremors, weakness, unsteadiness of voice, etc.); the cardiovascular system (palpitation, blushing or pallor, faintness, rapid pulse, increased blood pressure, etc.); and the gastrointestinal system (nausea, vomiting, diarrhea, etc.). There may also be other manifestations such as cold wet extremities, rapid or irregular breathing, frequency of urination, and sleep disturbances...(p. 308)."

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Although there has been considerable research in the area of causal and associative factors, there have been no controlled studies of a nonbehavioristic psychotherapeutic orientation on the treatment of anxiety specifically. However, all major therapeutic approaches have attempted to treat the problem of anxiety by one method or another.

Haugen, Dixon and Dickel (1958) discussed the approaches which attempt to control anxiety and indicated that they could be divided into three main areas:

1. Approaches which attempt to build up the patient's feelings of strength;
2. Approaches which diminish the apparent magnitude of the threatening situation or circumstances;
3. Approaches which reduce the general reactivity of the patient so that he can think more clearly and objectively.

The authors concluded that these approaches are probably most effective when used all together. In this respect, the main tools used by the therapist in controlling anxiety are diversion, suggestion, reassurance, education and sedation (Haugen et al., 1958).

Although there have been no controlled studies into the treatment of anxiety, Luborsky, Chandler, Auerbach, Cohen and Bachrach (1971) conducted an extensive review into the factors that influenced the outcome of psychotherapy. They were able to find nine studies

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where individual anxiety levels were assessed, although the anxiety problem was not treated directly. A significant relationship was found between high initial anxiety and a criterion of change in only five of the nine studies (Gallagher, 1954; Gottschalk, Mayerson & Gottlieb, 1967; Hamburg, Bibring, Fisher, Stanton, Wallerstein, Weinstock & Haggard, 1967; Kirtner & Cartwright, 1958; Luborsky, 1962).

In looking at these studies in more detail, Gallagher (1954) conducted one of the earliest outcome studies using anxiety level as a predictor variable. His study involved selecting the 15 most successful and 15 least successful therapy clients from 76 students being seen in client-centered therapy. The most successful and least successful clients were selected on the basis of scores on a multiple criterion scale for success in therapy. Gallagher concluded that high overt stress as measured by The Taylor Manifest Anxiety Scale, The Elizur Rorschach Anxiety Scale, and The Mooney Problem Check List was related to success in therapy. However, the Taylor was the only scale that was significantly related to outcome. Kirtner and Cartwright (1958) also found similar results in another study relating anxiety level to success in therapy. Luborsky (1962), using a health-sickness rating scale, found initial anxiety level correlated .66 for patients whose initial scores were toward the healthy side of the scale.

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Gottschalk et al. (1967) using tape recorded speech samples to rate initial anxiety levels found significant results between anxiety level and success in therapy. Similarly, Hamburg et al. (1967) relying upon a therapist's judgements of anxiety as a presenting symptom found that more of the patients who completed treatment improved in character change than would be expected by chance.

Although these studies show positive results between the higher anxiety levels and treatment outcome, a closer look indicates that the studies were not well controlled and contained certain deficiencies. For example, some of the criterion measures were not wholly objective in that they relied upon either a single therapist's judgement (Hamburg et al., 1967) or upon measures of anxiety rated on personal judgement from a tape recorded speech sample (Gottschalk et al., 1967). Gallagher's (1954) study is another example wherein the research method had certain shortcomings. Even though he used a more objective measure of anxiety, the Manifest Anxiety Scale, there was no control group, which makes his conclusion of high initial anxiety level related to success in therapy somewhat questionable. The problem with Gallagher's study is that the group defined as "high anxious" may not be that high. His mean score for this group (18) was considerably lower than the mean score obtained by the people who complained of anxiety and who were tested by the present author

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(pretest $\bar{X}$ = 32). Also, Gallagher's mean for the "high anxious" group even falls below the eightieth percentile (21) of the norms established by Hedlund, Farber and Bechtoldt (1951).

Although studies of psychological approaches to treating anxiety are rare, the pharmocological approaches have been extensively researched. In fact, the use of drugs in the modification of anxiety has been the subject of massive research. Davis (1965), for example, compiled the results of 410 controlled studies on different tranquilizers. Of these studies, Davis reviewed 125 double-blind designs and found the major tranquilizing drugs to be more effective that a placebo in 91 studies. Studies showing the effectiveness of tranquilizers on treating anxiety have ranged all the way from the major tranquilizers such as chlorpromazine (Mitchell & Zax, 1959; DiMascio, Havens, & Klerman; 1963; Goldstein, Acker, Crockett, & Riddle, 1966) to minor tranquilizers such as librium (Solomn, 1966) and meprobamate (Rickels, Cattell, Weise, Gray, Yee, Mallin, & Aaronson, 1966; Pronko & Kenyon, 1959).

In summarizing, it appears that the concept of anxiety has been extensively discussed and researched. Ideas or conceptions about anxiety have ranged from the early theoretical conception by Freud, Horney, and Sullivan to the more rigorously investigated ideas of Taylor, Mowrer, and Spielberger. From the treatment standpoint, psychotherapeutic investigations on the outcome of treating anxiety

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are non-existant and predictive studies relating anxiety level to treatment outcomes have produced rather equivocal results. This finding was somewhat surprising in light of the fact that anxiety is treated by all major psychotherapeutic approaches. The use of tranquilizers as an approach to controlling anxiety, however, has been somewhat more extensively researched and the results have been favorable. But this approach is not totally efficient because the use of drugs does not give the individual any overt control over the anxiety and if the drug is removed, the symptoms could return. Therefore, chemotherapy is at best an alleviant for anxiety, but does not offer a permanent recovery.

Systematic Desensitization: Origin and Development

Recently significant progress has occurred in the development of a new psychotherapeutic technique for treating anxiety, a technique based upon established principles of learning-systematic desensitization. Systematic desensitization is a psychotherapeutic technique developed by Joseph Wolpe (1958), having its beginnings in the experimental laboratory with cats as subjects (Wolpe, 1952).

Wolpe (Wolpe & Lazarus, 1966) presents the following description of systematic desensitization:

> "Systematic desensitization is the piecemeal breaking down of neurotic anxiety-response habits, employing a physiological state incompatible with anxiety to inhibit the anxiety response to a stimulus that evokes it weakly,

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> repeating the exposure until the stimulus loses completely its anxiety-evoking ability. Then progressively 'stronger' stimuli are introduced and similarly treated. This technique, which characteristically employs relaxation as the anxiety inhibiting state, has made it possible for the first time to exert direct control over a great many neurotic habits." (p. 54)

Essentially, the technique is based upon the assumption that if a response antagonistic to anxiety can be made to occur in the presence of anxiety evoking stimuli it will weaken the bond between these stimuli and the anxiety (Wolpe & Lazarus, 1966). The technique itself involves three sets of operations:

1. Training in deep muscle relaxation;
2. The construction of anxiety hierarchies;
3. Counterposing relaxation and anxiety evoking stimuli from the hierarchies (Wolpe, 1969, p. 100).

The method of deep muscle relaxation taught is essentially a technique developed by Jacobsen (1938). The anxiety hierarchy is a list of stimuli on a common theme ranked in descending order according to the amount of anxiety they evoke (Wolpe, 1958). Counterposing of relaxation for anxiety is achieved by having the client visualize the anxiety producing scenes while in a relaxed state, starting with the least anxiety provoking items and working up to the most anxiety provoking items. This procedure thus enables the

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client to associate relaxation with the situations in reality because anxiety and relaxation are antagonistic responses.

The focus of the next section will be to review some of the numerous studies using desensitization as a psychotherapeutic technique. The purpose of reviewing the desensitization area is to provide an overview of the approaches and refinements which allowed the treatment procedures to move from the individualized approach for specific anxiety to the more diversified anxiety management techniques. The significant studies are covered chronologically with regard to technique sophistication and refinement.

Systematic Desensitization: Individual Treatment

In order to provide a better picture of the effectiveness of desensitization only controlled studies will be included in this section. For an in depth exposure to some of the various uncontrolled studies, the reader is referred to Paul (1969), who reports on various uncontrolled and case studies of individual desensitization. The work of Joseph Wolpe, however, deserves some mention because of his pioneering contribution to the development of desensitization. In a ten year period ranging from 1952 to 1962, Wolpe treated approximately 150 clients of varying problems with desensitization obtaining 88-92% recovery rate (Paul, 1969). There has been some criticism raised against Wolpe's early work because of his lack of controlled

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investigation, but he must be given credit for the fact that his research was the impetus to much of the controlled research present today in the area of desensitization.

In one of the earliest controlled studies using systematic desensitization, Lang and Lazovik (1963) screened volunteer students for people experiencing snake phobias. The Ss consisted of 24 students from an introductory psychology class selected on the basis of self ratings of intense fear toward snakes on the Fear Survey Schedule (FSS). In addition to the FSS, all Ss were administered a snake avoidance test in which they were rated on various graded tasks with the snake. Ss were randomly placed in one of four groups using a Solomon Four-Groups Design involving two treatment and two control groups. One treatment and one control group were evaluated before treatment, after training and after treatment, while the other treatment and control group were evaluated only after training and after treatment. By using this design, the authors attempted to control for any sensitizing effects the avoidance test might have presented. Treatment lasted an average of eight weeks and consisted of 15 sessions (4 training and 11 treatment).

Results indicated that treated Ss showed significantly greater reduction in avoidance of the phobic object than non-treated Ss on the posttest. However, this result was not present when posttraining scores were compared, indicating that merely undergoing the

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assessment procedures or training in relaxation was not a significant factor in improvement. Improvement from treatment was still found to be present in all but two of the four Ss in a six month follow-up.

Cooke (1966) in a small analogue study compared the effectiveness of systematic desensitization to in-vivo desensitization and a no-treatment control group. Ss were 12 students selected from 34 introductory psychology students who volunteered to participate in a study on "fear of laboratory rats". All Ss were administered the Bendig Emotionality Scale, the FSS and the Snake Avoidance Test. Ss were dichotomized into high and low anxiety on the basis of their Bendig Emotionality scores and then randomly assigned to one of the three groups (two Ss from each anxiety level per group). Treatment consisted of four one hour sessions over a two week period. The direct treatment group received reciprocal inhibition to the actual fear stimulus. The indirect treatment group received reciprocal inhibition to the imagined fear stimulus. Results indicated that both direct and indirect treatment groups showed significantly greater reductions in anxiety and avoidance as compared to the untreated controls, while showing no difference between treatment groups. However, the high anxiety group showed greater improvement in systematic desensitization than the low anxiety group, while no difference was found with the in-vivo procedure.

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In a psuedo-controlled study, Gelder and Marks (1966) assigned 20 patients suffering from severe agorophobia into either a desensitization group or a control group. The control group was mislabled, however, since it involved the use of psychotherapeutic interviews directed to current problems in interpersonal functioning, then relating these to past experiences. The systematic desensitization group used imagined scenes with graded retraining.

Assessments consisted of two kinds of clinical ratings: symptom ratings dealing with the phobias and general anxiety, and social adjustment ratings. There were no significant differences between groups of patients with regard to age at symptom onset, initial severity of phobia, degree of general anxiety and scores on a symptom check list of phobic symptoms. Results indicated that seven out of ten patients in both groups showed evidence of improvement in the main phobic symptom at the end of treatment. The results, however, were significant only in the desensitization group ($p<.05$) with four out of the ten being much improved compared to two out of ten in the control group.

Another area that has been researched by behavior therapists using individualized desensitization is that of test anxiety, with one of the earliest studies being conducted by Paul and Eriksen (1964). In Paul's study the Ss consisted of 11 students enrolled in an introductory psychology course who requested treatment for

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examination anxiety. All Ss were equated in terms of their scores on the first exam in the psychology class and were then randomly placed into either a treatment group (N=5) or a control group (N=6).

Treatment consisted of four sessions over a two week period with the effectiveness of treatment being assessed by the students' performance on the second examination in their psychology class. After the second test, Ss who were in the treatment group had increased their score an average of eight points, while Ss in the control group dropped an average of seven points.

Paul (1966) also conducted another rather comprehensive study when he compared traditional insight oriented therapy with modified systematic desensitization for the reduction of interpersonal performance anxiety manifested in public speaking. Paul's method consisted of selecting 96 Ss from a population of 320 students enrolled in a public speaking class who were high on performance anxiety and motivated for treatment. All students completed a battery of personality and anxiety scales which included the IPAT Anxiety Scale, the Pittsburgh Social Extroversion-Introversion and Emotionality Scales, the Interpersonal Anxiety Scales, and the Personal Report of Confidence as a Speaker. Stress condition measures were obtained from 74 Ss by having them present a speech before an unfamiliar audience and taking various physiological measures.

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All Ss were then randomly assigned to one of five groups: three treatment groups (N=15 each), a "no treatment" class control and a "no contact" control. The three treatment groups consisted of insight oriented psychotherapy, modified systematic desensitization, and an attention-placebo group. The attention-placebo used non-specific treatment effects such as expectation of relief, therapeutic relationships, suggestion, and faith. The "no-treatment" class control group followed the same procedures under the same conditions as the treatment groups with the exception of treatment itself. The "no-contact" classroom control group consisted of 22 Ss who met selection criteria but who were never contacted personally. The Ss in this group merely took the pre-and-follow-up battery with the entire class population and continued in the course.

After a time limited treatment period, the relative efficacy of the various treatments in alleviating anxiety was then evaluated on the basis of measures obtained from a criterion test speech and the follow-up battery of personality and anxiety scales. Measures of anxiety and physiological arousal were taken immediately before each test speech, and during presentation of the speeches each S was scored on the Timed Behavioral Checklist.

An analysis of variance comparison of individual improvement rates found systematic desensitization superior over insight oriented psychotherapy and attention-placebo. The systematic desensitization

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group was found to be superior in all areas of measurement, under stress conditions, on therapists ratings, and on self-reports of experienced anxiety. The gains from desensitization were also found to be maintained at a six-week follow-up.

Paul (1967) also conducted a second follow-up two years later to examine the relative stability of improvement from the six-week follow-up with regard to the questions of differential relapse and symptom substitution. Higher return rates were obtained than in any previous long term follow-up, revealing maintainance of improvement found earlier for interpersonal performance anxiety. There were also no cases of symptom substitution from pretreatment to the two year follow-up.

More recently, Davidson (1968) conducted a study on 28 female snake phobic volunteers. All Ss were administered the Lang and Lazovik Avoidance Test and The Fear Thermometer Self-ratings. Ss were matched according to scores on the avoidance test and then randomly placed into one of four groups: (1) systematic desensitization, (2) pseudo-desensitization, (3) exposure only, or (4) no treatment. Each treatment condition received eight Ss with the no treatment group receiving four Ss. The desensitization group consisted of relaxation plus the presentation of a 26 item snake hierarchy individually arranged by each Ss.

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The pseudo-desensitization group was similar to the systematic desensitization group except that it used 16 snake irrelevant items from the volunteers' childhood experiences. The exposure group involved desensitization but did not train the Ss in relaxation.

Results (analysis of variance and t tests) indicated that the systematic desensitization group showed significantly greater pre-post change and reduction in avoidance scores than did the other treatment groups or control group. Significant improvement was also obtained on the self-report measures by the systematic desensitization group.

Systematic Desensitization: Group Treatment

Lazarus (1961) conducted one of the earliest investigations into the use of desensitization in groups on people suffering from phobic disorders. He attempted to investigate the therapeutic effects of group desensitization compared to the more conventional form of interpretive group therapy using matched Ss.

His sample included 35 white, middle class, urban South Africans handicapped by phobic disorders. The sample consisted of 11 acrophobics, 15 claustrophobics, five impotent men, and a mixed group of four phobic patients. Throughout the experiment, pairs of phobic patients were matched in terms of sex, age, and the nature and objective severity of the phobia. A coin was then tossed to decide in which group a given member would be placed. Extra or

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unmatched individuals were always placed in the interpretive groups so that each group would have at least three members. The final breakdown included 18 patients in the desensitization group, nine patients in the interpretive group and eight patients who were treated by relaxation and group interpretation.

The interpretive group consisted of insight therapy with reeducation and setting up goals. The desensitization group consisted of systematically counterposing by relaxation, graded lists of anxiety evoking stimuli which the separate groups of patients were asked to imagine. All the patients were given a pretest stress scale before treatment and those acrophobic and claustrophobic patients who claimed to have recovered from their phobias were required to undergo additional stress tolerance tests one month after termination. Treatment consisted of approximately 20 sessions and lasted about seven weeks.

The results indicated that there were 13 recoveries out of 18 patients in the desensitization group, zero recoveries out of nine patients in the interpretive group, and two recoveries out of eight patients in the interpretive group plus relaxation. The resulting Chi Square was significant at the $p < .01$ level. A follow-up ranging from 1.5 months to 15 months indicated that of the 13 patients who recovered in the desensitization group, three subsequently relapsed.

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Rachman (1965) used group desensitization in working with normal Ss who expressed a fear of spiders. Ss were allocated to one of four different conditions, desensitization with relaxation, desensitization without relaxation only, relaxation only, and no treatment control.

Treatment consisted of ten sessions over a six-week period. The effects of treatment were assessed by subjective reports: avoidance tests and fear estimates. In analyzing the results, only the desensitization with relaxation group showed significant reductions in fear on the posttest.

Paul and Shannon (1966) conducted a study on group desensitization for public speaking anxiety using the waitlist Ss (N=10) from Paul's (1966) earlier study. Another group of ten Ss was drawn from previously untreated students to serve as a control. The same battery used in Paul's earlier study was also used in the present investigation. Using analysis of variance and t tests in assessing improvement, the authors found a significant anxiety reduction in the treatment Ss.

Katahn, Strenger and Cherry (1966) made the first attempt to use group desensitization for the alleviation of test-taking anxiety. Ss consisted of 45 students drawn from second year psychology classes on the basis of their scores on the Sarason Test Anxiety Scale (TAS). The 45 students selected had TAS scores in the upper 25 percent of the distribution. Of these students, 22 volunteered to go through a desensitization program while the remaining 23 students were

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considered to be a "nonvolunteer control group". Assessment measures consisted of pre and post TAS scores and GPA'S taken prior to and following treatment.

The treatment groups involved forty minutes of a bibliotherapy type discussion followed by twenty minutes of desensitization. Ss constructed their own hierarchy consisting of ten items centering around studying, class attendance, fear of professors and examination items.

An analysis of variance indicated that the treated group showed a significantly greater improvement in GPA as compared to the control group. The TAS showed a significant reduction pre-to-post for the treatment group but was not significant when compared with the change pre-to-post in the control group, although it was approaching significance ($p < .10$).

Emery and Krumboltz (1967) investigated the effectiveness of standard versus individualized hierarchies in desensitization to reduce test anxiety. The Ss consisted of 54 test anxious college freshman who were randomly placed into either desensitization with individual hierarchies, desensitization with standardized hierarchy, or a no treatment control group. Criteria for success were self ratings of anxiety before and during exams, scores on a test anxiety scale and final examination grades.

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Results indicated that the students who received the desensitization treatment rated themselves as significantly less anxious about exams both before and during their final as compared with the no treatment control group. The final examination grades of the desensitization group were also slightly, but not significantly higher than the control group. No significant differences were found in the relative effectiveness of individualized versus standardized hierarchies. Similar results were also obtained by McGlynn (1971) in another comparitive study between individualized and standardized hierarchies in the treatment of snake phobic Ss.

In another approach, Suinn (1968) used modified individual and group treatment to treat test anxious students. The study involved a treatment group consisting of student volunteers (N=12) and a control group of students who took the measuring instruments used as part of their psychology class (N=18). The Suinn Test Anxiety Behavioral Scale (STABS), the Sarason Test Anxiety Scale (TAS) and a self-rating scale were used as the assessment measures.

The treatment program involved three group meetings and several individual sessions. The group meetings centered around discussing the concept of anxiety as being learned, explaining the desensitization procedures, training in deep muscle relaxation, and forming the anxiety hierarchies. The individual sessions consisted of the desensitization proper and lasted approximately eight sessions.

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A t test of difference scores between the means was used to analyze the data. Results indicated that the treated Ss decreases on the test scores were significantly greater than the decreases shown by the control Ss on all scales.

Neuman (1968) compared the effects of professional and subprofessional counselors using group insight and group desensitization techniques with test anxious college students. His results indicated that group desensitization brought about a significantly greater decrease in test anxiety scores than the insight group. The results also indicated that groups led by subprofessional counselors were, in general, as effective as groups led by professional counselors.

In a slightly different approach, Cohen (1969) attempted to investigate the variables of group interaction, group non-interaction, and progressive and high anxious hierarchies plus a no contact control group on desensitization of test anxiety. The Ss consisted of undergraduate students from an introductory psychology class who were in the upper 30th percentile of the TAS. Twenty-five students volunteered and were randomly assigned to one of the four experimental groups.

Results indicated that the students who were treated reported more anxiety reduction on the TAS ($p < .05$) and achieved a greater increase in Grade Point Average ($p < .10$) than students in the no contact control group. Also, students in the group interaction condition had greater pre to post treatment decreases in the TAS than

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those in the group non-interaction condition ($p < .01$). No significant differences were found between progressive and high anxious groups.

Crighton and Jehu (1969) compared the effectiveness of systematic desensitization with non-directed group psychotherapy plus relaxation in reducting examination anxiety. The original sample consisted of 23 Ss drawn from students who had previously complained of examination anxiety to the university health center and who were not undergoing treatment for any other psychiatric difficulty.

The Ss were allocated randomly to either the desensitization or therapy group. Six Ss subsequently dropped out leaving a final sample of ten in the desensitization group and seven in the therapy group. The groups met twice weekly for one hour. There were six criteria for measuring outcome used: (1) the Zuckerman Affect Adjective Check List, (2) the Sleep Disturbance Questionnaire, (3) the amount of psychotropic drugs prescribed, (4) examination marks obtained by each patient and a matched control in the preceding and current year examinations, (5) the Fear Survey Schedule, and (6) self reports and therapists' observations.

A one-tailed sign test was used to assess the significance of pre to post treatment changes within the desensitization and therapy group. The results indicated that there was less distress on the Affective Adjective Check List ($p < .001$) and less disturbance on the Sleep Questionnaire ($p < .005$ for total patients and $p < .05$ for the

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desensitization and therapy group separately). There were significantly less psychotropic drugs issued ($p < .005$), and eight out of 11 Ss showed greater improvement in their grades. There were no significant changes in the Fear Survey Schedule or on the social anxiety subscore. Although overall the Ss showed improvement, no significant difference was found in the outcome between desensitization and group psychotherapy.

Ihli and Garlington (1969) report on a study comparing the effectiveness of group versus individual desensitization in the alleviation of test anxiety. The Ss consisted of 14 freshman and sophomore females who indicated a fear of tests on the Fear Survey Schedule II. Ss were randomly assigned to one of three treatment groups: Group I (group desensitization with a standardized composite hierarchy, N=5); Group II (group desensitization using the same hierarchy as Group I, but item order being individually arranged, N=5); Group III (individual desensitization using the same hierarchy, but item order arranged individually, N=4).

All Ss were administered the Fear Survey Schedule and the TAS pre and post. Results indicated that all groups significantly improved pre to post and there were no differences in the effectiveness of group versus individual or standardized hierarchy versus individualized hierarchy presentation.

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The effectiveness of group desensitization in the alleviation of test anxiety as compared to a control group has also been studied by Freeling and Shemberg (1970) and McManus (1971). Both studies, using the TAS and GPA's respectively as measuring instruments, found group desensitization to be effective in the alleviation of test anxiety.

More recently, Meichenbaum, Gilmore and Fedororuceus (1971) compared three forms of group treatment in reducing speech anxiety: (1) systematic desensitization, (2) insight oriented psychotherapy, (3) combined desensitization and insight. Ss consisted of 53 volunteers between the ages of 18 and 26. All Ss filled out several self report measures (Confidence in Speaking Scale, Social Avoidance and Distress Scale and Fear of Negative Evaluation Scale) and a speech anxiety questionnaire. They were then randomly assigned to one of the three treatment groups or to a discussion group (attention placebo) or to a waitlist control.

Results indicated that the desensitization group was as effective as the insight groups in significantly reducing speech anxiety, compared to the control groups, as assessed by behavioral, cognitive and self report measures given immediately at the end of treatment and at a three month follow-up. An interesting finding of the Meichenbaum et al. study was that desensitization was more effective than insight with Ss for whom speech anxiety was confined

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to formal speech situations; conversly, insight group treatment was more effective with Ss who suffered anxiety in many and varied social situations.

In addition to the previous studies, there are numerous other controlled studies attesting to the effectiveness of group desensitization in the alleviation of specific anxiety, but they will not be covered here. The effectiveness of desensitization in groups is important to keep in mind because it provided a stepping stone for many of the procedural innovations presented in the next section.

Systematic Desensitization: Procedural Innovations

This section will present the more refined techniques which have decreased treatment time, increased treatment efficiency, or a combination of these factors. The section will start with short-term desensitization followed by automated treatment techniques and finishing with anxiety management training.

Short-term desensitization. Short-term desensitization involves basically an attempt to decrease the treatment time for desensitization by either massing the treatment or accelerating the treatment by presenting only the high anxiety items. In moving from standard desensitization approaches to these accelerated or massed procedures, one or more changes must be undertaken. These changes become an

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important consideration because they would involve eliminating or modifying some of the variables which were felt to be crucial to desensitization.

Rachman (1963) proposed that a major variable necessary for desensitization to be effective is that the anxiety felt toward an item on the hierarchy be completely eliminated before going on to another item. The particular anxiety evoking item should be presented as many times as necessary to eliminate the anxiety. Lazarus (1964) presented five variables crucial to desensitization: (1) signaling when anxiety is present, (2) the duration of scenes being from 2-10 seconds, (3) the interval between scenes being at least 2-3 minutes, (4) the number of scenes presented being from 2-4 session up to 50 total presentations, and (5) the spacing of the sessions being 2-3 per week.

In view of the previous considerations of Lazarus any significant deviation or short cut from standard desensitization would surely fail. However, the studies which did deviate from these standard desensitization procedures were still able to obtain significant improvements in the symptoms treated. Suinn, Edie, and Spinelli (1970) presented a clarification of the rationale for the effectiveness of a short-term approach when they indicated that, "counterconditioning theory simply requires that the newly conditioned response (e.g. relaxation) be stronger than the undesirable response (e.g.

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anxiety) when the stimulus scene is presented (p. 309)." Therefore, given this rationale, lengthy duration of scene presentation is not needed, provided that the relaxation response is stronger than the anxiety response when the scene is presented.

In looking at the research in the area of short-term desensitization, one of the earliest studies was conducted by Wolpin and Pearsall (1965). Their investigation, a case history, involved the treatment of a 40 year old woman who was afraid of snakes, a 20 item hierarchy was used and the treatment was done in one session. After treatment the patient could pick up and play with two snakes; this lack of fear was also present at a follow-up 23 days later. Actually, this study involved more than one session; the patient was trained in relaxation for eight sessions. However, the desensitization was conducted in one session and did produce a significant change.

Robinson and Suinn (1969), in a more controlled study, attempted to determine the effectiveness of massed desensitization sessions in eliminating spider phobia. The Ss consisted of 20 female students obtained from classes and dormitories at a state university. All Ss completed the Specific Fear Rating Sheet (SFR), the General Fear Inventory (GFI), and were evaluated on a direct behavioral task prior to and following treatment. The Ss received desensitization therapy in five consecutive days, meeting one hour per day.

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Results indicated (t test of the differences pre to post) that significant reductions in fear self-ratings were found on the SFR and the GFI. The direct behavioral task also found significant results as Ss for the most part, were able to place their hands in the aquarium with the spider by the end of therapy. Prior to therapy however, none of the Ss would attempt to place her hand near the spider and half would not touch the outside of the aquarium.

Taking the previous research one step further, Suinn and Hall (1970) attempted a marathon desensitization for test-taking anxiety. Treatment was completed within a twenty-four hour period and the results indicated that the Ss showed improvement to the same degree that was present in traditional desensitization procedures.

Suinn, Edie and Spinelli (1970) in a later study, compared the effectiveness of marathon desensitization with an accelerated massed desensitization (AMD) group for students experiencing mathematics anxiety. Ss consisted of 13 students who responded to an announcement of a behavior therapy treatment for mathematics anxiety.

Ss were randomly placed into either the marathon desensitization group (MD) or the AMD group. The MD group consisted of five consecutive treatment blocks over a four hour period, being exposed to all eight items from an anxiety hierarchy. The AMD group was desensitized to only the highest three items in the hierarchy within two hours in two treatment blocks. All Ss were administered the

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Mathematics Anxiety Rating Scale (MARS) and the mathematics form of the Differential Aptitude Test (DAT) with a ten minute time limit. Scales were administered one week prior to treatment and at the end of treatment.

Results on the various measures plus an interview indicated that both groups improved significantly following treatment. There were no significant differences between groups.

This study incorporated several interesting changes into its treatment procedures such as massed treatment, the presentation of only the high anxiety items, and the elimination of signalling. All of these changes were significant deviations from the standard technique but did not seem to hamper treatment. These changes are important in that they are related to another innovation, the use of automated treatment.

Automated desensitization. Migler and Wolpe (1967) reported the first study which utilized automated desensitization, a study based on a single case. The authors relied upon a tape recorder to provide treatment directives for a patient experiencing a fear of public speaking. The tape was prepared using the patient's voice throughout and constructed so he could stop the tape and repeat any of the anxiety hierarchy items if they caused a great deal of anxiety. Seven sessions were required to accomplish desensitization to all the scenes in the hierarchy.

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Feedback from the patient indicated that he had been called upon to speak a week after the final session and he delivered a long speech disagreeing with all the previous speakers. During the speech he experienced no anxiety and felt quite proud of himself.

Garlington and Cotler (1968) also attempted to use automated instructions with the desensitization of test anxiety. Using female undergraduate students, the authors compared the effectiveness of desensitization using taped instructions with a no contact control group. Results indicated that the group which received desensitization reported a significant decrease in test anxiety compared to the group which did not receive treatment. This decrease in test anxiety, however, was not reflected in better performance on course exams or final grades.

Donner and Guerney (1969) attempted to develop a pre-programmed group desensitization treatment for test anxiety to determine the importance of the physical presence or absence of the therapists in the sessions. Ss were 42 female college students who were placed into one of three groups based on their previous semesters grade point average. The groups consisted of a waitlist control, a therapist-present treatment group, and a therapist-absent group. The pre-programmed group consisted of a modified group desensitization approach incorporating a common hierarchy and a predetermined scene visualization sequence with a timed presentation

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rate. In one treatment group the therapist administered the technique while in the other group a tape recorded set of instructions was used.

Results indicated that both groups obtained a significant improvement in GPA and decrease in daily anxiety as compared to the no contact control group. In comparing the effects of the therapist present and absent, the results did not indicate any significant differences although there was a slight trend favoring the therapist present group.

In a five month follow-up study of the previous groups, Donner (1970) indicated that the automated treatment group not only maintained its gains but showed further improvement. However, the therapist present group also showed further improvement and in fact, exhibitied a significantly greater increase in GPA over time. Donner felt that the therapist present group was more effective because the presence of the therapist more closely approximated the classroom relationship of instructor and student.

More recently, Suinn (1970) and Suinn, Edie, Nicoletti and Spinelli (1972) developed an automated desensitization program for the treatment of test and mathematics anxiety in a college counseling center. Ss consisted of students who came to the university counseling center complaining of either test (N=67) or mathematics anxiety (N=31). Notices of availability of treatment had been placed in the student newspaper and announced by university professors.

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The treatment consisted of a half hour taped training session in progressive relaxation and four one hour desensitization sessions. The desensitization sessions were presented in 2 two hour blocks a week apart. For the test anxiety Ss, the desensitization hierarchy consisted of eight items centering around test taking and studying for exams. For mathematics anxiety Ss, the desensitization hierarchy consisted of eight items centering around mathematics problems and taking mathematics exams. For both groups, each item was presented an average of three times.

All Ss were administered the Suinn Test Anxiety Behavioral Scale (STABS), the Mathematics Anxiety Rating Scale (MARS), and the mathematics form of the Differential Aptitude Test (DAT). These scales were administered prior to and following treatment. Results were obtained by comparing pre to post change scores on the various scales (t test) as well as comparison with a no treatment control group. The results indicated that both the test desensitization and mathematics desensitization groups showed significant improvement pre to post and when compared with the control group.

From the research in this section it appears that the addition of another change, automation, along with the short term approach was also effective in the alleviation of specific anxiety.

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Anxiety management training. Recently, the behavior therapy area has seen the development of an innovative conditioning procedure to reduce anxiety-anxiety management training (Suinn & Richardson, 1971). Anxiety management training (AMT) is a non-specific behavior therapy approach which was developed to overcome some of the deficiencies in the standard desensitization approaches which were not yet overcome by either the AMD techniques or the automated techniques.

Basically, AMT involves: (1) the use of instructions and cues to arouse anxiety responses, and (2) the training of the client in developing competing responses such as relaxation, or success or competency. This technique incorporates several important changes from the standard desensitization approaches, with the first difference being the lack of any specific hierarchy scenes. This variation is important in that, for the first time, it eliminates the necessity of relying upon specific stimulus conditions.

By not having to rely upon specific external stimuli AMT provides a unitary approach which could be used to treat all types of phobias or anxieties. This could provide a considerable savings in time and personnel since various specific fears or phobias could be treated at the same time in the same group. In addition, AMT provides, for the first time, a tool for the treatment of generalized anxiety. This is an extremely important break-through because the treatment of

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pervasive or generalized anxiety has been difficult for behavior therapists and has been avoided. Lazarus (1963) indicated that Ss who exhibitied pervasive anxiety received relatively lower percentages of success ratings and have the most unfavorable prognosis. Some researchers, in fact, feel that systematic desensitization is indicated only where specific anxiety rather than generalized or free-floating anxiety is present (Clark 1963; Gelder, 1969). It appears that much of the difficulty in treating the more pervasive anxiety states centered around the difficulty in isolating the conditioned stimuli for anxiety. As a result of not being able to determine any specific anxiety stimuli, standardized desensitization techniques were ineffective because of their use of specific anxiety hierarchies. With AMT the treatment of generalized anxiety is made possible because the technique has dispensed with the anxiety hierarchy and attempts to control the anxiety response itself.

Another important implication of AMT is that it provides the individual with a specific and concrete method for controlling present and future anxieties. In this respect, AMT is making a step in rectifying one of the main criticisms set forth by Cautela (1969) against desensitization. Cautela indicated that behavior therapists have not made any attempts to make the individual less susceptible to the development of future maladaptive behavior. Cautela also

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indicated that behavior therapists have not provided any means for the individual to control or eliminate the maladaptive behaviors without the aid of a therapist. Self-control is basically one of the skills provided by AMT; it attacks the anxiety itself.

The theory behind AMT, as set forth by Suinn and Richardson (1971), is based on the assumption that the anxiety or fear responses can themselves be viewed as discriminative stimuli and clients can be conditioned to respond to these stimuli with responses which effectively remove the stimuli through counterconditioning. Specifically, AMT utilizes relaxation or competency as responses to the stimulus anxiety cues. The authors point out that AMT theory is supported by many of the motivational theorists who viewed fear as an aquired drive possessing stimulus qualities. (Dollard & Miller, 1950; Mowrer, 1950; Brown, 1961).

The premise that anxiety can function as a drive stimulus has been supported in numerous studies. Mowrer (1939), for example, hypothesized that an original neutral stimulus which was presented a number of times in close temporal contiguity with a noxious stimulus could arouse a state of anxiety or fear, as conditioned from the pain reaction. Mowrer then goes on to state that the anxiety or fear will motivate acts or behaviors in an attempt to reduce the anxiety.

Miller (1948) experimentally tested the notion that because its removal is reinforcing, anxiety can act as a drive. The study

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involved shocking rats in a white box and then allowing them to escape the shock by running into an adjoining black box. The rats were then placed in the white box without the shock and they still ran into the black box. In fact, the animals even learned to turn a wheel in order to open a door and escape from the white box.

From his results Miller concluded that the removal of the cues associated with the white box was reinforcing; consequently they aroused a drive state. Other studies have also supported Miller's early results (Miller, 1951; May, 1948). More recent researchers have also supported the idea of anxiety being a drive state. Spence (1960) set forth a theory in which anxiety was viewed as an acquired drive which has the capacity for emergizing the organism, while Valins and Ray (1967) indicated that conditioned stimuli can produce emotional effects partly through intervening self-arousal systems. In addition to the studies showing that anxiety or fear is learnable, there have also been studies establishing that the principles involved in stimulus generalization also apply to the drive state (Miller, 1937; Webb, 1949; Rosenbaum, 1953).

With the assumptions of the previous research in mind, Suinn and Richardson (1971) attempted to experimentally test the effectiveness of AMT. Ss consisted of 24 students who responded to an announcement of a behavior therapy program for the treatment of mathematics anxiety. Of the 24 Ss, 13 were placed in the AMT

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group and 11 were placed in an automated desensitization group. All Ss were administered the MARS and DAT pre and post. The results were also compared with an non-anxious control group (N=119).

AMT involved three basic steps: (1) a half-hour training session in deep muscle relaxation using tape-recorded instruction, (2) one-hour's training by a therapist in visualization of a scene which aroused anxiety, a scene which involved success or competency, and a scene involving feelings of relaxation, and (3) one-hour's tape-recorded instructions to visualize the anxiety, then to immediately terminate the scene through either the visualization of the competency or the relaxation scene. In step three, the tape-recording provided mood music and fantasy readings in order to facilitate the anxiety arousal. The standard desensitization group consisted of a half-hour training session in relaxation by tape-recorded instructions, then two two-hour desensitization sessions in which the subjects progressed through an anxiety hierarchy for mathematics scenes.

Results showed significant reductions in reported anxiety as measured by the MARS and DAT for both the AMT and the standard desensitization group. However, there were no differences in effectiveness between the two treatment techniques.

An attempt at replicating the effectiveness of AMT was conducted by Richardson (1971) using test anxious Ss. Richardson compared the effectiveness of AMT as compared to standard systematic

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desensitization (SSD), accelerated massed desensitization (AMD) and a control group. Effectiveness of the treatments was assessed by the STABS and the Fear Survey Schedule (FSS) administered pre and post.

Preliminary results indicated that both the SSD and AMD groups significantly decreased test anxiety as measured by the scales, but the AMT group did not significantly decrease anxiety. This result was in contrast to the earlier study by Suinn and Richardson (1971) which showed AMT to be as effective as SSD. The author, however, was not able to come up with any substantial reason for the difference, but a further statistical analysis of the data is forthcoming.

Statement of the Problem

The present study is an attempt to investigate further the effectiveness of AMT in the alleviation of specific anxiety and also to test the effectiveness of this technique with a problem that has never been effectively treated by behavior therapists-generalized, pervasive anxiety. Two previous studies have investigated the effectiveness of AMT and have produced equivocal results, with one study showing AMT to be effective in the alleviation of mathematics anxiety (Suinn & Richardson, 1971) while early results of the other study did not show AMT to be effective in the alleviation of test anxiety (Richardson, 1971).

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The present study therefore, will compare the effectiveness of AMT in the treatment of both generalized anxiety and specific anxiety manifested in public speaking.

Hypotheses

The following hypotheses were made regarding the outcomes of this study:

1. AMT is effective in reducing generalized anxiety in a college population when compared with a waitlist control group.

2. AMT is effective in reducing specific anxiety manifested in public speaking in a college population when compared with a waitlist control group.

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CHAPTER II

METHOD

This chapter will present the method and procedure used to investigate the effectiveness of anxiety management training (AMT). Included will be sections on the description and selection of subjects, the therapists, the measuring instruments, and the procedures. The section involving procedures will be divided into testing and treatment procedures. Also included in this chapter is a section on data analysis and outcome predictions.

Subjects

The Ss used in the study were 40 undergraduate college students attending either Colorado State University (N=32) or Metropolitan State College (N=8) during the academic year 1971-1972. All Ss were referred to the program from the respective university counseling centers because they were experiencing either generalized or public speaking anxiety. In addition to the students seeking treatment for anxiety, a no-problem group of 20 students was also included. The no-problem group was selected randomly from a larger sample of 92 students enrolled in an introductory psychology course at Colorado State University who agreed to fill out some questionnaires on fears.

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The remaining 72 students were used as a standardization sample for the measuring instruments used in this study.

Selection of Subjects

All Ss were interviewed clinically by the therapist in order to determine appropriateness for the program. A copy of the intake guideline used can be found in Appendix A. Volunteers were accepted for the program only if their primary complaint centered around generalized anxiety or public speaking anxiety. Individuals selected for the program who were already in psychotherapy were asked to temporarily discontinue their appointments until the program was completed. However, treatment considerations were always put ahead of research considerations and there was one S who did remain in psychotherapy during the treatment program.

Ss selected for the generalized anxiety group were those who were experiencing a pervasive anxiety of a chronic nature not related to any known medical dysfunction and without any perceived specific or explicit causal factors. Students selected for the public speaking anxiety group were those who were experiencing specific anxiety centering around speaking in front of groups of people either formally or informally. A total of 50 students volunteered for the program and of these, only two were not considered appropriate. To the extent possible, the remaining 48 students (public speaking N=25, general N=23) were placed randomly into either the treatment group or the

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waitlist control group for their respective anxiety. Complete randomization was not carried through in its strictest sense since clients were assigned to the group which was being formed at that time. Of the 48 Ss selected for treatment, six subsequently dropped out leaving a total of 42 Ss. In order to have consistency two of the Ss were dropped randomly from the groups, leaving ten Ss in each data cell for an overall total of 40. Table 1 gives a breakdown of how the general anxiety Ss and public speaking anxiety Ss were placed by quarter and school.

TABLE 1

Breakdown of Placement for General Anxiety and Public Speaking Anxiety Ss by Quarter and School

		General Anxiety		Public Speaking Anxiety	
School	Quarter	Treatment	Wait-list	Treatment	Wait-list
Colorado State University	Fall	6	3	5	4
	Winter	3	4	3	3
	Spring	0	0	0	1
Metropolitan State College	Fall	0	0	0	0
	Winter	0	2	0	1
	Spring	1	1	2	1

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Therapists

The therapists were two advanced doctoral candidates in counseling psychology who had three years of extensive therapy experience in the field of behavior modification, especially in the area of desensitization and anxiety management training.

Instruments

The assessment instruments used in the study were the Taylor Manifest Anxiety Scale (Taylor, 1953); the IPAT Anxiety Scale (Cattell & Scheier, 1963); the Public Speaking Anxiety Inventory (Nicoletti, Edie, Spinelli, 1971); and the Anxiety Symptom Checklist (Edie, Nicoletti, Spinelli, 1972). In order to have standardization data on the scales which was more recent and related to the college population, normative data were obtained from students at Colorado State University. Two standardization samples were obtained, one in the spring of 1971 ($N=58$) and one in the spring of 1972 ($N=72$). For both samples subjects consisted of undergraduate students enrolled in an introductory psychology course who volunteered to fill out some questionnaires on fears. The first sample ($N=58$) filled out only the IPAT Anxiety Scale and the Public Speaking Anxiety Inventory while the second sample ($N=72$) filled out all four scales. Both samples were administered the scales on two different occasions approximately two weeks apart.

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The Manifest Anxiety Scale. The Manifest Anxiety Scale (MAS) is a 50 item instrument developed to assess chronic anxiety. In its initial form the MAS consists of the 50 anxiety items plus 175 buffer items. For the purposes of this study, however, only the 50 anxiety items were included. A copy of the 50 item MAS is included in Appendix B.

The scale itself consists of items which involve symptoms characteristic of anxiety neurosis. Ss are instructed to respond to each item as it applies to them by checking TRUE if the item is always or usually true and FALSE if the item is never or rarely true.

Originally the MAS was standardized on 1,971 undergraduate psychology students (Hedlund, Farber & Bechtoldt, 1951). The mean score for this group was 14.56. The twentieth percentile was at a score of 7, the fiftieth percentile was at a score of 13, and the eightieth percentile was at a score of 21. Test-retest reliability for the MAS with 59 Ss over a three week period yielded a Pearson product-moment coefficient of .89. Another test-retest study after a five month interval with 113 Ss yielded a correlation coefficient of .82. The odd-even reliability was found to be .92. Validity studies on the MAS have produced somewhat equivocal results. Studies conducted on the MAS and ratings of anxiety have produced correlations of .47 between MAS scores and counselor ratings (Hoyt & Magoon, 1954); .61 between MAS scores and psychiatrist's ratings of anxiety

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(Glesser & Ulett, 1952); and .60 between pooled judges' ratings of anxiety and MAS scores (Buss, Wiener, Durkee & Baer, 1955).

A more recent administration of the MAS was conducted by the present author using 72 volunteers from an introductory psychology class at Colorado State University. Results of two administration over a two week period yielded a pretest mean of 17.53, a posttest mean of 16.36 and a test-retest correlation of .88. In addition, the MAS correlated on the pretest .73 with the IPAT, .60 with the ASCL and .46 with the PSI. On the posttest the MAS correlated .78 with the IPAT, .73 with the ASCL and .53 with the PSI.

The IPAT Anxiety Scale. The IPAT is a 40 item questionnaire designed to measure anxiety using a three choice answer format (Appendix C). The scale provides three different scores: a covert anxiety score, an overt anxiety score and a total score which is the sum of the overt and covert anxiety scores. Covert and overt anxiety refer to anxiety at different levels of consciousness. The total score from the scale can be converted into standard scores based upon stens according to three standardization populations: a general population (N=935); a college student population (N=1,392); and teen-high school students (N=525). Norms are also established for males and females separately in addition to combined norms.

Test-retest reliability coefficients for the IPAT ranged from .82 to .93 for one and two week testing intervals respectively.

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Split-half reliability ranged from .80 to .91 (Cattell & Scheier, 1961). Validity studies on the IPAT are scarce, although it did correlate in the range from .70 to .80 with the MAS.

Two other standardizations were conducted on the IPAT by the present author. In the first standardization conducted in the spring of 1971 on 58 Ss, results of two testings over a two week period yielded a pretest mean of 32.78 and a posttest mean of 30.83. The test-retest correlation was .86. Validity data from the second sample indicated that on the pretest the IPAT correlated .73 with the MAS, .58 with the ASCL and .40 with the PSI. On the posttest the IPAT correlated .78 with the MAS, .65 with the ASCL and .51 with the PSI.

The Public Speaking Anxiety Inventory. The Public Speaking Anxiety Inventory (PSI) is a 50 item scale developed to serve in the identification of public speaking anxiety and to measure changes in this anxiety. A copy of the PSI is contained in Appendix D.

Each of the items on the PSI involve a brief description of some event or situation relating to speaking that may evoke anxiety. Ss are instructed to respond to each item in terms of how much anxiety that event or situation evokes. The anxiety is rated on a scale from one (not at all) to five (very much). The scale is scored by multiplying the number of responses in each category by the corresponding numerical ratings. For example, responses placed in the "not at all" category are multiplied by one, responses placed in the

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"a little" category are multiplied by two, and so on, down to responses placed in the "very much" category which are multiplied by five. The scale yields a possible total score value which ranges from 50 to 250.

Normative data were obtained from two samples of volunteers from introductory psychology courses at Colorado State University, using a two week interval period between testings. Sample I consisted of 58 Ss who were administered the scale during the spring of 1971. Results yielded a pretest mean of 131.47, a posttest mean of 128.23, and a test-retest correlation of .90. Sample II, conducted during the spring of 1972 on 72 Ss yielded a pretest mean of 135.44. a posttest mean of 130.46, and a test-retest correlation of .73. No specific validity data is available on the PSI at this time. However, correlations of the PSI with the general anxiety scales used in this study were low indicating that the test is measuring something other than general anxiety. Also, Ss complaining of public speaking anxiety scored higher on the PSI than normals.

The Anxiety Symptom Checklist. The Anxiety Symptom Checklist (ASCL) is a scale designed to measure various symptoms experienced by people who report tension. The scale was developed on the assumption that when people report that they are "feeling" anxious or tense, they are responding to various changes or states in the autonomic or central nervous system. The scale consists of 40 symptoms related to anxiety and is broken down into three dimensions of anxiety: frequency, intensity and interference.

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Frequency refers to how often the symptom is experienced by an individual and is rated on a scale ranging from one (never of very infrequently) to five (all the time). Intensity refers to how strong the symptom is when it occurs and is rated on a scale ranging from one (don't notice it) to five (very intense). Interference refers to how much the symptom interferes with the individual's activities or behaviors and is rated on a scale ranging from one (doesn't interfere) to five (interferes to the point of incapacistation). The scale gives four different anxiety scores: a total frequency score, a total intensity score, a total interference score and an overall total score. A copy of the ASCL is contained in Appendix E.

Normative data were gathered on a sample of 72 undergraduate volunteers during the spring of 1972. Results yielded a pretest mean of 216.11, and a posttest mean of 191.13. The test-retest correlation over a two week interval was found to be .85. Validity data on the ASCL is incomplete at this time but it did correlate on the pretest .58 with the IPAT, .60 with the MAS and .30 with the PSI. Posttest scores indicated correlations of .65 with the IPAT, .73 with the MAS and .41 with the PSI.

Procedure

Intake Procedure. All Ss were screened in an initial 20-30 minute clinical interview. The interview followed the general guidelines set forth in the intake form in Appendix A. The main purpose of the

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interview was to establish whether the individual's problem was anxiety. Other information obtained centered around chronicity of the problem, physical symptoms associated with the anxiety and the extent of the anxiety's interference in the individual's functioning. Also, it was determined to what extent, if any, the individual had attempted to rectify the problem either through psychotherapy, medication or other means. If the individual appeared to be appropriate for AMT, he was given the set that someone would contact him within the next two weeks to begin treatment. Individuals perceived as inappropriate for the program were referred to other treatment procedures.

Testing Procedures. The pretesting, treatment and posttesting were completed within a 15-19 day period for all groups. For the treatment group, pretesting was conducted in the first session prior to training in relaxation and posttesting was conducted in the fifth session 16 days later. The waitlist group were instructed that the treatment groups were full and that they would be contacted at a later date for treatment. Their pretesting was conducted two weeks prior to their starting treatment and posttesting was conducted at the beginning of session one. The no problem control group was administered the scales on two different occasions two weeks apart with no anticipation on their part of receiving treatment. All scales were administered by one of the therapists. Ss were asked to respond to each item according to how they felt "today". All scales were administered in the same order for all Ss (IPAT, MAS, PSI, ASCL).

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Treatment Procedure. Treatment consisted of five sessions of approximately two hours each. Treatment was conducted in the evenings from 7-9:00 PM twice a week on Mondays and Wednesdays. For the students at Colorado State University, treatment was conducted in a group therapy room with a carpeted floor and various comfortable chairs available. The students from Metropolitan State College met in a conference room at the student activities center which had a carpeted floor and semi-comfortable straight back chairs. For both groups, the Ss were given the opportunity to either sit in the chairs or on the floor. A total of six treatment groups with three to nine Ss per group were completed for this study during the 1971-1972 academic year. Of the six groups completed, three were conducted during the fall quarter, one during the winter quarter and one during the spring quarter.

During the first treatment session all the Ss were given an outline explaining the goals of each treatment session (Appendix F) along with a brief verbal overview (Appendix G). The overview attempted to communicate to the Ss the fact that anxiety was a learned response capable of being modified and the purpose of AMT was to provide a more adaptive alternative to the anxiety response. Following the brief introduction the Ss were administered the scales in the specified order. After the last scale was completed the Ss were trained in relaxation as described by Wolpe and Lazarus (1966)

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(Appendix H). At the end of the relaxation training the Ss were given the following instructional set:

> The remaining sessions will continue to make use of deep muscle relaxation. It is important for you to find time to practice the relaxation between sessions as, like many activities, the more that you can practice it the easier it is to become more and more relaxed and to become relaxed more quickly. That is, with continuing practice deeper and deeper levels of relaxation can be achieved. The ideal situation would be to find a quiet place where you live - a place where you will not be bothered by anyone - to practice. Sometimes the only quiet time will be just before going to sleep at night. Any time that is suitable to your schedule is fine; but what IS IMPORTANT is that you can find some time each day to practice the relaxation.
>
> The remaining sessions will consist of two basic parts. We will be focusing upon the feelings that come with complete relaxation and the feelings that accompany anxiety. We will look at and experience the differences between those two opposite feelings. Anxiety and relaxation are antagonistic responses that is, you cannot be relaxed and anxious at the same time. We will also learn a way in which you can achieve control over feelings of anxiety. Anxiety is a learned response and hence can be unlearned and calm, relaxed feelings can be learned to take the place of the feelings of anxiety. That is, the feelings of anxiety can be stopped and replaced with feelings of calmness and relaxation through a learning process. As you become more and more aware of the physical signs of anxiety that each of you have and more and more aware of the pleasant, calm feelings of relaxation you CAN learn to achieve the feelings of calmness more often and use them to your benefit. You CAN learn that it is you who HAVE CONTROL over these feelings and that the relaxed, calm feelings can be used by you in many situations in which you have felt anxious in the past.

The Ss were then given the opportunity to ask any questions and respond to the relaxation.

The next three sessions involved the use of AMT, i.e., the application of relaxation technique for anxiety control. At the beginning of session two the Ss were given the following orientation:

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> During this session we will be using the deep muscle relaxation technique that you have learned to look at the differences between feelings of anxiety and feelings of relaxation. We will also be stopping from time to time to talk about how it is going for each of you. Also during this session we will begin to learn how to achieve control over anxiety and be able to switch to calm, relaxed feelings to replace the feelings of anxiety. At first I will be helping you control the feelings of anxiety so do not be afraid to allow yourself to experience the anxiety and appreciate the differences between feelings of anxiety and feelings of calmness and relaxation. I will be here to help you control the anxiety at first, but as you learn that the feelings of anxiety can be controlled, you will be more and more in control of the situation and eventually will no longer need help from me in controlling the anxiety. You will notice that as you become more and more in control of your own feelings and more able to feel relaxed and calm a new set of feelings will begin to develop. You will begin to have some real positive feelings of competence and mastery over the anxiety as well as the pleasant, relaxed state that replaced the feelings of anxiety.

Ss were then relaxed using the deep muscle technique taught in session one. At the end of the relaxation the Ss were awakened and interviewed for 10-15 minutes. The purpose of the interview at this point, was to determine if the Ss were able to relax and the extent of their relaxation.

The next step involved the anxiety induction in which the Ss were returned to their relaxed state by the use of brief relaxation instructions (Appendix I). Following the achievement of the relaxed state, anxiety was induced by the therapist who read to them the following instructions:

> All right, let the relaxation go now and concentrate on letting yourself become anxious.....let the feelings of anxiety and fearfulness develop.....focus in on the bodily sensations which express your anxiety.....let these sensations become more and more intense.....feel your heart starting to pound

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and your breathing becoming very shallow and irregular..... notice your palms beginning to sweat and your stomach becoming jittery.....you will begin to have a difficult time sitting still as the anxiety becomes more intense.....just let the anxiety develop more and more.....use any image, sound or sensation that helps to arouse the anxious and fearful feelings .....feel the anxiety throughout your entire body.....notice your muscles becoming tight and tense.....your stomach feels like it has a knot in it.....your mouth feels dry.....just notice all the bodily changes that occur as the anxiety increases and spreads throughout your entire body.....notice the various sensations and feelings of dread and helplessness.....don't stop yourself from feeling more and more fear and anxiety..... let the anxiety completely take over.....let it become more and more intense.....notice how rapidly you are breathing and how hard your heart is pounding.....feel the uncomfortableness of your body.....feel the chills and the heat.....the tight muscles.....the panickly helpless feeling.....feel the anxiety beginning to reach a peak as the helplessness increases.....let the anxiety reach such an intense point that you feel you have no control over it.....

Ss were then instructed to control the anxiety (by using the deep breath as a cue to relaxation) and were given the following set:

Take in a deep breath and relax.....good - again focus on the refreshing feelings of relaxation that spread throughout your body.....the arms - comfortably heavy - beginning in the upper portions of the arms, notice how these feelings quickly flow downward into the forearm, wrist and hands, driving out any tension that may reside there - the facial area - calm and smooth as these same refreshing feelings sweep across the forehead, scalp, and down the sides of the face. - Feelings of relaxation penetrate deep into the muscles of the shoulders - work their way down the back fanning out until the entire back area is immersed in the soothing feelings of relaxation.....now focus in on your breathing...notice how the rhythmic pattern serves to augment the feelings of tranquility and well being...as you attend to your own breathing notice how comfortable the chest area becomes as feelings of relaxation spread across the chest and down into the stomach area.....leaving the entire portion of the body feeling delightfully good, and comfortably heavy and very relaxed.....just let the same good feelings sweep down into the legs.....the thighs, calves, ankles and feet so that the entire body simply bathes in these feelings of

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> refreshment and inner tranquility - you are in a perfect state of relaxation.....enjoy it, experience it fully.....just let these feelings proceed on their own for a few moments.....focus on them.....good!
>
> As you enjoy this state of inner calm it is important for you to note that you achieved this yourself.....you have been able to sweep away the tension of the day and have provided yourself with considerable relief and comfort.....enjoy these feelings of accomplishment for having attained it - let these good feelings intermingle and simply delight in them. You can become twice as relaxed by merely taking a deep breath and slowly exhaling.

Once again Ss were awakened and interviewed for approximately 10-15 minutes. The emphasis of the interview was placed on determining the Ss level of relaxation and anxiety experienced. In addition, information concerning the Ss ability to control the anxiety was also obtained. The Ss were then told that they once again would go through the relaxation and anxiety induction. They were given the following set:

> Notice how the relaxation can be achieved again after you have become.....and think about how enjoyable and pleasant those feelings of relaxation are.....At this point we will be relaxing again and I want you to focus more on the differences between feeling anxious and feelings relaxed. Once again I will be helping you control the feelings of anxiety and replace them with the enjoyable feelings of relaxation..... and the realization that the anxiety can be controlled.

Two more segments of anxiety induction and anxiety control were repeated, after which the Ss were again interviewed, with the session ending after the second interview. They left with instructions to practice the relaxation as much as possible on their own.

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The AMT approach used in this study differed from the original AMT approach in the following areas:

1. The addition of two more sessions;
2. The elimination of the automated segment;
3. The emphasis upon physiological cues rather than scene visualization;
4. The utilization of a control cue--deep breathing.

Session three began by interviewing the Ss in an effort to determine how the past week and practicing the relaxation had gone for each of them. During this session the Ss were relaxed using the brief relaxation instructions and taken through anxiety induction and anxiety control three times each. For this session the Ss were not awakened for interviewing until the end of the session. The anxiety induction and anxiety control instructions were essentially the same as were given in session two, with some minor wording change and a gradual decrease in the E's verbalization during anxiety control. The amount of instructions given by the therapist during the anxiety control was decreased in order to encourage the Ss to assume more control.

Session four was essentially the same as session three with the Ss being interviewed at the beginning of the session and then going through anxiety induction and anxiety control three times. The anxiety control instructions were again decreased until the following set was arrive at:

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> Take in a deep breath and relax yourself.....permit those heavy comfortable feelings to come into awareness.....let them develop on their own and enjoy them.....good! Once again attend to your own feelings of personal strength.....the ease with which you are able to mobilize it.....sense your own vitality as you overcome any tension that might be present..... go right on relaxing.....

Session five was the termination session and involved posttesting the Ss on all scales in the specified order and interviewing them again. A copy of the complete script and outline for the treatment program is contained in Appendix J.

Data Analysis and Predictions

Data Analysis. Pretest and posttest scores for the IPAT, MAS, PSI and ASCL were obtained for all Ss. Analysis of variance (Wert, Neidt & Ahmann, 1954) and analysis of covariance designs (Kirk, 1967) were used in analyzing the data. Analysis of variance comparisons were computed between the groups on pretest scores and on posttest scores. Analysis of covariance comparisons were computed between groups which came from the same populations (waitlist to treatment comparisons) in order to control for any differences that might be present as a result of differences in pretest scores.

Predictions. Predictions concerning the outcome of the study were based on the hypotheses set forth at the end of Chapter I. For the general anxiety group predictions were only made with regard to the general anxiety scales (IPAT, MAS, ASCL). However, the data on the PSI was also analyzed in order to determine the effects of AMT

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on a specific anxiety. For the public speaking anxiety group predictions were only made with regard to the specific anxiety measure for public speaking, but the data on the general anxiety scales were also analyzed. The specific predictions made were:

1. AMT will be effective in reducing generalized anxiety, demonstrated by the following results:

1A. There will be no significant difference on the pretest scores between the general anxiety treatment group (GAT) and the general anxiety waitlist group (GAW) on the IPAT, MAS and ASCL.

1B. There will be a significant difference on the pretest scores between the people who complain of generalized anxiety (GAT + GAW) and the no-problem, no-treatment control group (NPC), on the IPAT, MAS and ASCL.

1C. There will be an overall significant difference between the GAT and GAW in terms of posttest scores on the IPAT, MAS and ASCL.

1D. There will be no significant difference between the GAT and NPC in terms of posttest scores on the IPAT, MAS and ASCL.

1E. There will be a significant difference between the GAW and NPC in terms of posttest scores on the IPAT, MAS and ASCL.

2. AMT will be effective in reducing public speaking anxiety, demonstrated by the following results:

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2A. There will be no significant difference on the pretest scores between the public speaking anxiety treatment group (PST) and the public speaking anxiety waitlist group (PSW) on the PSI.

2B. There will be a significant difference on the pretest scores between the people who complain of public speaking anxiety (PST + PSW) and the NPC on the PSI.

2C. There will be an overall significant difference between the PST and PSW in terms of posttest scores on the PSI.

2D. There will be no significant difference between the PST and NPC in terms of posttest scores on the PSI.

2E. There will be a significant difference between the PSW and NPC in terms of posttest scores on the PSI.

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CHAPTER III

RESULTS

This chapter reports the results of the study. In an attempt to present the data in a meaningful and logical manner, the results will be broken down into two sections corresponding to the two hypotheses and their predictions. These sections are: AMT with generalized anxiety, and AMT with public speaking anxiety.

Each section will begin by presenting the means and standard deviations on pretest and posttest scores for the group in that section. The results of the specific predictions will be presented next in each section, beginning with the scales for which the specific predictions were made, followed by the scale in which no specific predictions were made. The results of the study will be presented in narrative, graphic and tabular form.

AMT with Generalized Anxiety

Five specific predictions were involved in testing the effectiveness of AMT with generalized anxiety between the generalized, anxiety treatment group (GAT), the generalized anxiety waitlist group (GAW) and the no-problem control group (NPC). The mean pretest and posttest scores and standard deviations on each scale for the GAT, GAW, and NPC appear in Table 2.

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TABLE 2

Pretest and Posttest Mean Scores and Standard Deviations for GAT, GAW and NPC on the IPAT, MAS, ASCL and PSI

		Pretest		Posttest	
Group	Scales	Mean	S.D.	Mean	S.D.
GAT	IPAT	47.20	9.58	40.00	10.01
	MAS	32.20	7.39	23.30	7.78
	ASCL	291.00	68.84	250.50	62.65
	PSI	160.10	33.34	135.50	36.89
GAW	IPAT	50.60	11.50	48.70	13.60
	MAS	31.40	10.30	33.20	9.73
	ASCL	296.00	88.89	291.60	98.04
	PSI	168.50	441.3	164.00	45.12
NPC	IPAT	35.70	10.26	35.35	9.70
	MAS	20.95	7.67	18.90	7.01
	ASCL	201.15	32.88	192.10	35.13
	PSI	149.35	18.93	138.55	24.90

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Since Ss were treated over three different quarters, it was necessary to establish that there were no differences between the students seen for each quarter. This was accomplished by t test comparisons on the IPAT, MAS, ASCL and PSI for the GAT Ss. Since such a small number of Ss were treated in the spring quarter, they were combined with the Ss treated in the winter quarter and compared with the Ss seen in the fall quarter. Table 3 presents the mean pretest scores and t test comparisons for the two groups on the IPAT, MAS, ASCL and PSI. Results indicated that there were no significant differences between the students seen fall quarter as compared to the students seen in the winter and spring quarters on the pretest scores.

TABLE 3

Mean Pretest Scores and t Test Comparisons for the GAT Ss Fall Quarter Versus the Combined GAT Ss for Winter and Spring Quarter on the IPAT, MAS, ASCL and PSI

	Mean Pretest Scores		
Scale	Fall	Winter + Spring	t
IPAT	42.33	54.50	2.44
MAS	30.00	35.50	1.19
ASCL	259.83	322.75	1.58
PSI	143.33	185.25	1.19

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Table 4 presents the mean posttest scores and t test comparisons for the two groups on the IPAT, MAS, ASCL, and PSI. Results on the posttest scores also indicated that there were no significant differences between the students seen fall quarter as compared to the students seen in the winter and spring quarters.

TABLE 4

Mean Posttest Scores and t test Comparisons for the GAT Ss Fall Quarter Versus the Combined GAT Ss for Winter and Spring Quarter on the IPAT, MAS, ASCL and PSI

	Mean Posttest Scores		
Scale	Fall	Winter + Spring	t
IPAT	36.33	45.50	1.79
MAS	21.67	25.75	0.92
ASCL	216.67	301.25	2.50
PSI	118.18	161.50	2.56

Prediction One. Prediction 1A was that there would be no significant difference between the GAT and GAW on pretest scores for the IPAT, MAS, and ASCL. This prediction was confirmed for all three scales. The results of the analysis of variance comparisons are presented in Tables 5, 6, and 7.

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TABLE 5

Analysis of Variance for the GAT and GAW:

IPAT Pretest Scores

Source	df	MS	F	p
Between Groups	1	57.8	0.516	NS
Within Groups	18	112.0		

TABLE 6

Analysis of Variance for the GAT and GAW:

MAS Pretest Scores

Source	df	MS	F	p
Between Groups	1	66.75	0.831	NS
Within Groups	18	80.33		

TABLE 7

Analysis of Variance for the GAT and GAW:

ASCL Pretest Scores

Source	df	MS	F	p
Between Groups	1	125.00	0.020	NS
Within Groups	18	6320.33		

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No prediction was made in regard to pretest scores on the PSI between the GAT and GAW, but an analysis of variance was also computed and found to be nonsignificant (Table 8).

TABLE 8

Analysis of Variance for the GAT and GAW:

PSI Pretest Scores

Source	df	MS	F	p
Between Groups	1	352.8	0.230	NS
Within Groups	18	1529.86		

Prediction 1B was that there would be a significant difference on the pretest scores between the people who complained of generalized anxiety (GAT+GAW), and the no-problem control (NPC) on the IPAT, MAS, and ASCL. This prediction was confirmed as the analysis of variance comparisons were significant for all three scales (Table 9, 10, and 11).

TABLE 9

Analysis of Variance for the GAT + GAW and NPC:

IPAT Pretest Scores

Source	df	MS	F	p
Between Groups	1	1742.4	16.260	<.0004
Within Groups	38	107.16		

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TABLE 10

Analysis of Variance for the GAT + GAW and NPC:

MAS Pretest Scores

Source	df	MS	F	p
Between Groups	1	2,232.23	56.058	<.0001
Within Groups	38	39.82		

TABLE 11

Analysis of Variance for the GAT + GAW and NPC:

ASCL Pretest Scores

Source	df	MS	F	p
Between Groups	1	88,285.23	24.109	<.0001
Within Groups	38	3,537.51		

Analysis of variance comparison between the generalized anxiety people and the non-anxious people did not produce a significant difference on the pretest scores for the specific public speaking anxiety scale (Table 12), indicating no difference between the groups.

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TABLE 12

Analysis of Variance for the GAT + GAW and NPC:
PSI Pretest Scores

Source	df	MS	F	p
Between Groups	1	2,235.03	2.448	NS
Within Groups	38	913.18		

Prediction 1C was that there would be an overall significant difference between the GAT and GAW in terms of posttest scores on the IPAT, MAS and ASCL. This prediction was confirmed for the IPAT and MAS, but not for the ASCL using an analysis of covariance. The results of the analysis of covariance comparing GAT with GAW on the IPAT, MAS and ASCL are presented in Tables 13, 14 and 15 respectively.

TABLE 13

Analysis of Covariance for the GAT and GAW:
IPAT Posttest Scores

Source	df	MS	F	p
Between Groups	1	137.90	4.471	<.05
Within Groups	17	30.85		

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TABLE 14

Analysis of Covariance for the GAT and GAW:
MAS Posttest Scores

Source	df	MS	F	p
Between Groups	1	553.06	18.718	<.0005
Within Groups	17	29.55		

TABLE 15

Analysis of Covariance for the GAT and GAW:
ASCL Posttest Scores

Source	df	MS	F	p
Between Groups	1	6,717.57	3.493	NS
Within Groups	17	1,923.35		

Although the covariance analysis computed on the ASCL was non-significant on the total ASCL scores, three additional covariance analyses were computed on the subtest scores to determine if any of them were significant. These were computed between the GAT and GAW on the three subscales of the ASCL (frequency, intensity and interference). Results of the comparisons indicated a significant difference between GAT and GAW on the frequency (Table 16) and intensity subscale (Table 17), but not on the interference subscale (Table 18).

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TABLE 16

Analysis of Covariance for the GAT and GAW:

ASCL Frequency Posttest Scores

Source	df	MS	F	p
Between Groups	1	1,234.78	7.698	<.05
Within Groups	17	160.41		

TABLE 17

Analysis of Covariance for the GAT and GAW:

ASCL Intensity Posttest Scores

Source	df	MS	F	p
Between Groups	1	3,604.76	5.426	<.05
Within Groups	17	664.31		

TABLE 18

Analysis of Covariance for the GAT and GAW:

ASCL Interference Posttest Scores

Source	df	MS	F	p
Between Groups	1	708.05	2.622	NS
Within Groups	17	270.07		

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No predictions were made with regard to scores on the PSI for the GAT and GAW, but an analysis of covariance was computed and indicated a significant difference between the two groups on the adjusted posttest scores (Table 19).

TABLE 19

Analysis of Covariance for the GAT and GAW: PSI Posttest Scores

Source	df	MS	F	p
Between Groups	1	2,130.46	4.982	<.0394
Within Groups	17	427.63		

In addition to the analysis of covariance comparisons, four one way analysis of variance comparisons were also computed on the posttest scores for all four scales between the two groups. The F values and probability levels for each of the scales are presented in Table 20 and indicate a significant difference between the GAT and GAW on the MAS and PSI, but not on the IPAT and ASCL.

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TABLE 20

Analysis of Variance for the GAT and GAW:

IPAT, MAS, ASCL and PSI Posttest Scores

Scales	F	p
IPAT	2.648	NS
MAS	6.317	<.05
ASCL	1.247	NS
PSI	131.490	<.001

Prediction 1D was that there would be no significant difference between the GAT and NPC in terms of posttest scores on the IPAT, MAS and ASCL. This prediction was confirmed for the MAS but not for the IPAT or ASCL (Tables 21, 22, 23).

TABLE 21

Analysis of Variance for the GAT and NPC:

IPAT Posttest Scores

Source	df	MS	F	p
Between Groups	1	851.6	12.024	<.005
Within Groups	28	70.825		

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TABLE 22

Analysis of Variance for the GAT and NPC:

MAS Posttest Scores

Source	df	MS	F	p
Between Groups	1	129.067	2.445	NS
Within Groups	28	52.782		

TABLE 23

Analysis of Variance for the GAT and NPC:

ASCL Posttest Scores

Source	df	MS	F	p
Between Groups	1	2,2737.1	11.830	<.005
Within Groups	28	2099.37		

No predictions were made on the PSI, but the results of the analysis of variance indicated no significant difference between the GAT and NPC on the posttest scores (Table 24).

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TABLE 24

Analysis of Variance for the GAT and NPC:

PSI Posttest Scores

Source	df	MS	F	p
Between Groups	1	620.5	0.0723	NS
Within Groups	28	858.123		

Prediction 1E was that there would be a significant difference between the GAW and NPC in terms of posttest scores on the IPAT, MAS and ASCL. This prediction was confirmed for all three scales as the results of the analysis of variance were significant for all scales (Tables 25, 26, 27).

TABLE 25

Analysis of Variance for the GAW and NPC:

IPAT Posttest Scores

Source	df	MS	F	p
Between Groups	1	1,188.15	9.636	<.005
Within Groups	28	123.31		

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TABLE 26

Analysis of Variance for the GAW and NPC:

MAS Posttest Scores

Source	df	MS	F	p
Between Groups	1	1,363.27	21.381	<.001
Within Groups	28	63.76		

TABLE 27

Analysis of Variance for the GAW and NPC:

ASCL Posttest Scores

Source	df	MS	F	p
Between Groups	1	66,002.07	16.806	<.001
Within Groups	28	3,927.21		

The analysis of variance conducted on the PSI between the GAW and NPC was not significant (Table 28).

TABLE 28

Analysis of Variance for the GAW and NPC:

PSI Posttest Scores

Source	df	MS	F	p
Between Groups	1	4,318.02	4.016	NS
Within Groups	28	1,075.18		

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The following four figures graphically illustrate the pretest to posttest changes between the groups on the anxiety scales. Figure 1 presents the pretest to posttest changes for the GAT, GAW and NPC on the IPAT. Figures 2, 3, and 4 present the pretest to posttest changes for the GAT, GAW and NPC on the MAS, ASCL and PSI respectively.

In summarizing the outcomes of the predictions in this section the following results were obtained:

1. Prediction 1A comparing the GAT and GAW by analysis of variance on the pretest scores was confirmed on all scales.
2. Prediction 1B comparing the GAT + GAW and NPC by analysis of variance on the pretest scores was confirmed on all scales.
3. Prediction 1C comparing the GAT and GAW by analysis of covariance on the posttest scores was confirmed for the IPAT and MAS, but not for the ASCL. However, subscale analysis of the ASCL indicated a significant difference between the GAT and GAW on frequency and intensity but not on interference.
4. Prediction 1D comparing the GAT and NPC by analysis of variance on the posttest scores was confirmed for the MAS, but not for the IPAT and ASCL.

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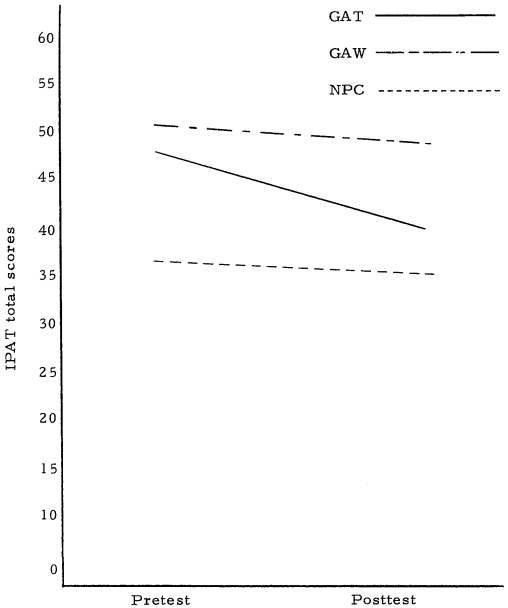

Figure 1. Mean pretest and posttest IPAT scores for the GAT, GAW, and NPC.

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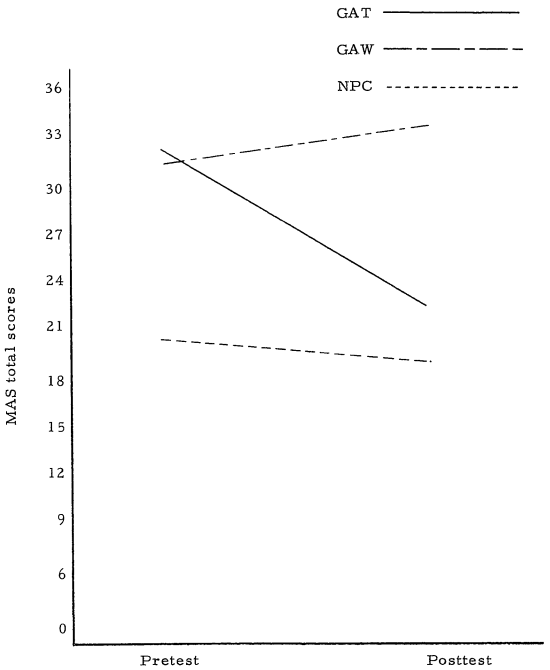

Figure 2. Mean pretest and posttest MAS scores for the GAT, GAW, and NPC.

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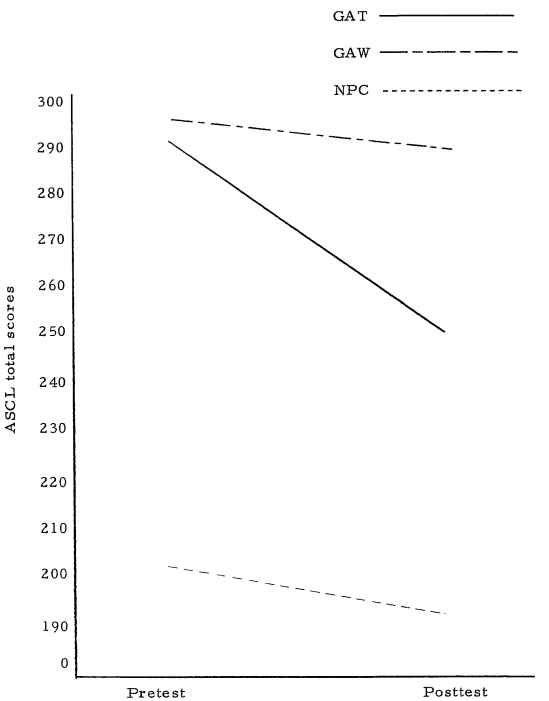

Figure 3. Mean pretest and posttest ASCL scores for the GAT, GAW, and NPC.

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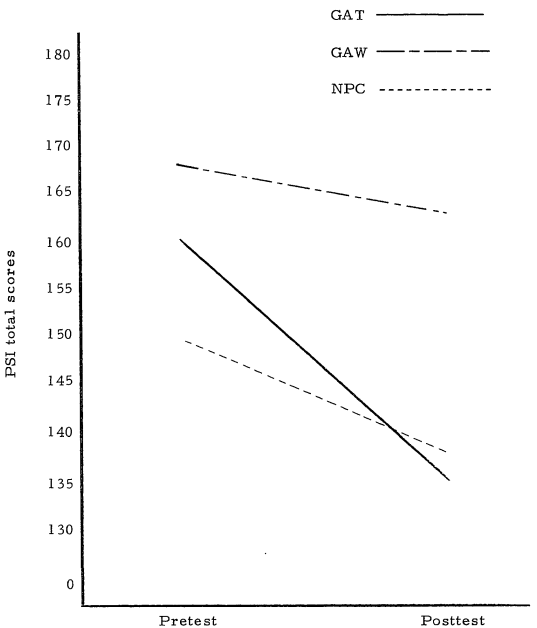

Figure 4. Mean pretest and posttest PSI scores for the GAT, GAW, and NPC.

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5. Prediction 1E comparing the GAW and NPC by analysis of variance on the posttest scores was confirmed on all scales.

AMT with Public Speaking Anxiety

Five specific predictions were involved in testing the effectiveness of AMT with public speaking anxiety between three groups (PST, PSW, NPC). Specific predictions were made in regard to the Public Speaking Anxiety Inventory (PSI). The mean pretest and posttest scores and standard deviations on each scale for the PST and PSW appear in Table 29.

Since the public speaking anxiety Ss were also treated over three different quarters, it was again necessary to establish that there were no differences between the students seen for each quarter. This was accomplished by t test comparisons on the IPAT, MAS, ASCL and PSI for the PST Ss. As with the GAT, the Ss seen in the winter and spring quarter were combined and compared with the Ss seen in the fall quarter. Table 29 presents the mean pretest scores and t test comparisons for the two groups on the IPAT, MAS, ASCL and PSI. Results indicated that there were no significant differences between the students seen fall quarter as compared to the students seen in the winter and spring quarters on the pretest scores.

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TABLE 29

Pretest and Posttest Mean Scores and Standard Deviations for PST and PSW on the IPAT, MAS, ASCL and PSI

		Pretest		Posttest	
Group	Scales	Mean	S.D.	Mean	S.D.
PST	IPAT	37.00	26.94	29.80	11.04
	MAS	22.70	5.26	17.70	7.70
	ASCL	230.30	45.27	204.50	50.84
	PSI	176.40	23.95	136.50	30.88
PSW	IPAT	35.00	12.68	36.30	12.61
	MAS	18.90	7.79	19.10	8.81
	ASCL	197.10	39.01	199.60	47.13
	PSI	159.50	30.61	148.20	33.13
NPC	IPAT	35.70	10.26	35.35	9.70
	MAS	20.95	7.67	18.90	7.01
	ASCL	201.15	32.88	192.10	35.13
	PSI	149.35	18.93	138.55	24.90

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TABLE 30

Mean Pretest Scores and t test Comparisons for the PST Ss Fall Quarter Versus the Combined PST Ss for Winter and Spring Quarter on the IPAT, MAS, ASCL and PSI

Scale	Mean Pretest Scores		t
	Fall	Winter + Spring	
IPAT	34.40	37.60	0.57
MAS	20.40	25.00	0.49
ASCL	221.60	239.00	0.55
PSI	171.60	181.20	0.58

Table 31 presents the mean posttest scores and t test comparisons for the two groups on the IPAT, MAS, ASCL and PSI. Results on the posttest scores also indicated that there were no significant differences between the students seen fall quarter as compared to the students seen in the winter and spring quarters.

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TABLE 31

Mean Posttest Scores and t test Comparisons for the PST Ss Fall Quarter Versus the Combined GAT Ss for Winter and Spring Quarter on the IPAT, MAS, ASCL and PSI

	Mean Posttest Scores		
Scale	Fall	Winter + Spring	t
IPAT	29	30.6	0.08
MAS	17.9	17.6	0.06
ASCL	192.4	217.8	0.23
PSI	127.8	145.2	0.84

Prediction Two. Prediction 2A was that there would be no significant difference between the public speaking anxiety treatment group (PST) and the public speaking anxiety waitlist group (PSW) on the pretest scores of the PSI. This prediction was confirmed. Results of the analysis of variance are presented in Table 32.

TABLE 32

Analysis of Variance for the PST and PSW: PSI Pretest Scores

Source	df	MS	F	p
Between Groups	1	1,428.05	1.596	NS
Within Groups	18	894.72		

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No predictions were made in regard to the general anxiety indicators (IPAT, MAS, ASCL) but analysis of variance comparisons were computed and the results indicated that there were no significant differences between the PST and PSW on the scales. The F values and probability levels for the comparisons are included in Table 33.

TABLE 33

Analysis of Variance for the PST and PSW: IPAT, MAS and ASCL Pretest Scores

Scales	F	p
IPAT	0.168	NS
MAS	1.472	NS
ASCL	2.777	NS

Prediction 2B was that there would be a significant difference on the pretest scores between the people who complain of public speaking anxiety (PST+PSW) and the NPC on the PSI. The prediction was confirmed. Results of the analysis of variance on the pretest for the PSI are presented in Table 34.

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TABLE 34

Analysis of Variance for the PST + PSW and NPC:

PSI Pretest Scores

Source	df	MS	F	p
Between Groups	1	3,459.60	5.400	<.05
Within Groups	38	640.62		

Analysis of variance comparisons computed on the general anxiety measures indicated no significant differences between the public speaking anxiety people and the no-problem people (Table 35).

TABLE 35

Analysis of Variance for the PST + PSW and NPC:

IPAT, MAS and ASCL Pretest Scores

Scales	F	p
IPAT	0.008	NS
MAS	0.004	NS
ASCL	0.969	NS

Prediction 2C was that there would be an overall significant difference between the PST and PSW in terms of posttest scores on the PSI. This prediction was confirmed. The results of the analysis of covariance comparing the PST with the PSW on the adjusted posttest scores for the PSI are presented in Table 36.

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TABLE 36

Analysis of Covariance for the PST and PSW:

PSI Posttest Scores

Source	df	MS	F	p
Between Groups	1	3,576.70	10.660	<.0046
Within Groups	17	335.52		

Analysis of covariance comparisons computed on the general anxiety measures indicated a significant difference between the groups on the IPAT but not on the MAS or ASCL at posttesting. The F values and probability levels for the scales are presented in Table 37.

TABLE 37

Analysis of Covariance for the PST and PSW:

IPAT, MAS and ASCL Posttest Scores

Scales	F	p
IPAT	7.527	<.0139
MAS	4.4095	NS
ASCL	3.787	NS

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In addition to the analysis of covariance comparisons, four one way analysis of variance comparisons were also computed on the posttest scores for all four scales between the PST and PSW. The F values and probability levels for each of the scales are presented in Table 38 and indicate no significant differences on the posttests between the PST and PSW.

TABLE 38

Analysis of Variance for the PST and PSW: IPAT, MAS, ASCL and PSI Posttest Scores

Scales	F	p
IPAT	1.391	NS
MAS	0.128	NS
ASCL	0.045	NS
PSI	0.601	NS

Prediction 2D was that there would be no significant difference between the PST and NPC in terms of posttest scores on the PSI. This prediction was confirmed. The results of the analysis of variance are presented in Table 39.

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TABLE 39

Analysis of Variance for the PST and NPC:

PSI Posttest Scores

Source	df	MS	F	p
Between Groups	1	28.05	0.0368	NS
Within Groups	28	761.40		

Prediction 2E was that there would be a significant difference between the PSW and NPC on the posttest scores for the PSI. This prediction was not confirmed. Results of the analysis of variance are presented in Table 40.

TABLE 40

Analysis of Variance for the PSW and NPC:

PSI Posttest Scores

Source	df	MS	F	p
Between Groups	1	620.85	0.7638	NS
Within Groups	28	812.87		

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The following four figures graphically illustrate the pretest to posttest changes between the groups on the anxiety scales. Figure 5 presents the pretest to posttest changes for the PST, PSW and NPC on the PSI. Figures 6, 7, and 8 present the pretest to posttest changes for the PST, PSW and NPC on the IPAT, MAS and ASCL respectively.

In summarizing the outcomes of the predictions in this section the following results were obtained:

1. Prediction 2A comparing the PST and PSW by analysis of variance on the pretest scores for the PSI was confirmed.
2. Prediction 2B comparing the PST + PSW and NPC by analysis of variance on the pretest scores for the PSI was confirmed.
3. Prediction 2C comparing the PST and PSW by analysis of covariance on the posttest scores for the PSI was confirmed.
4. Prediction 2D comparing the PST and NPC by analysis of variance on the posttest scores for the PSI was confirmed.
5. Prediction 2E comparing the PSW and NPC by analysis of variance on the posttest scores for the PSI was not confirmed.

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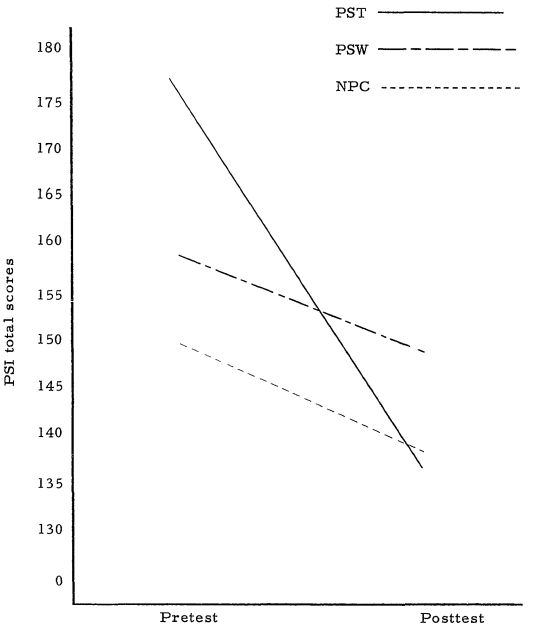

Figure 5. Mean pretest and posttest PSI scores for the PST, PSW, and NPC.

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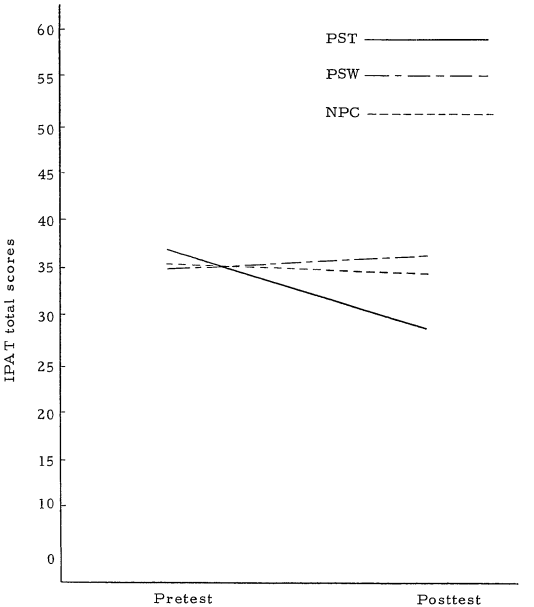

Figure 6. Mean pretest and posttest IPAT scores for the PST, PSW, and NPC.

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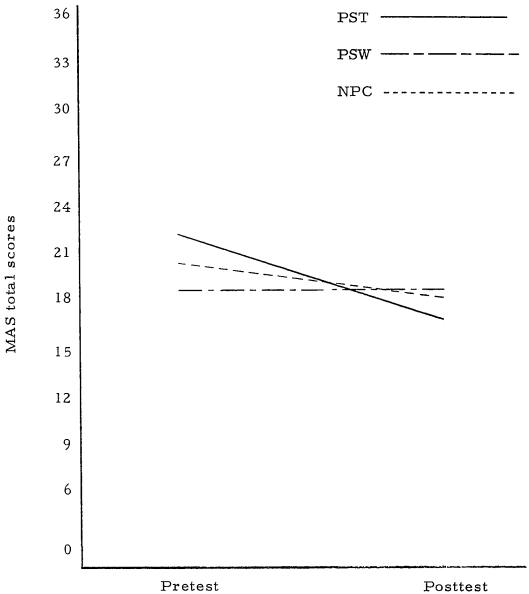

Figure 7. Mean pretest and posttest MAS scores for the PST, PSW, and NPC.

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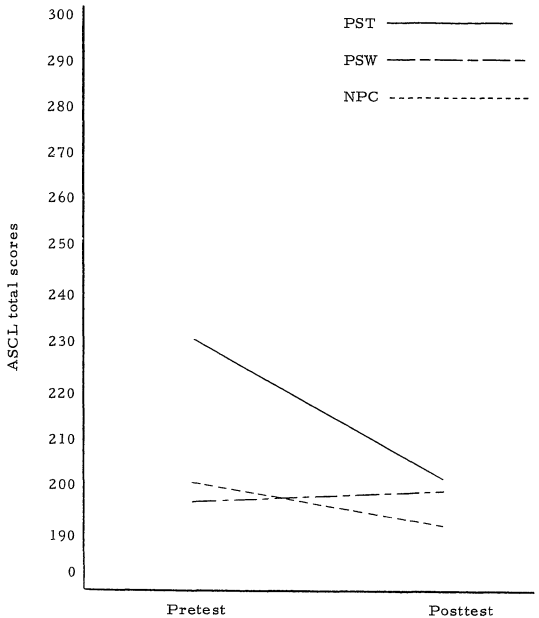

Figure 8. Mean pretest and posttest ASCL scores for the PST, PSW, and NPC.

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CHAPTER IV

DISCUSSION AND CONCLUSIONS

The purpose of this study was to evaluate the effectiveness of AMT in the treatment of generalized and public speaking anxiety. This chapter presents a discussion of the study's results along with the conclusions and implications. The chapter will follow the same organization as the previous chapter. The results of AMT with generalized anxiety will be discussed first followed by the results of AMT with public speaking anxiety. The chapter will conclude with a discussion on the implications of the study.

AMT with Generalized Anxiety

The t tests conducted between the treatment Ss seen fall quarter versus the combined group of the treatment Ss seen winter and spring quarter were not significant on any of the scales. This was true on both the pretest and posttest analyses. The results indicate that no differences were present between the treatment Ss as a function of quarter treated.

Results of the analysis of variance on the pretest scores for the IPAT, MAS and ASCL indicate, as predicted, that the generalized anxiety treatment group (GAT) and the generalized anxiety waitlist group (GAW) did not differ significantly from each other (Prediction

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1A). The GAT and GAW were, however, significantly different from a no-problem control group (Prediction 1B). Although significant differences were found between the anxious and non-anxious Ss on the general anxiety scales, no significant difference was found between the two groups on the specific anxiety scale (PSI). The discrepancy between the general anxiety scales and the specific anxiety scale on the pretest outcomes seem to lend support to the two factor theory of emotion set forth by various researchers (Cattell & Scheier, 1961; Heath & Korchin, 1963; Lazarus, 1966; Spielberger, 1966). This was supported from the fact that the people who complained of generalized anxiety scored higher than a no-problem group on the general anxiety scales, but did not score higher than the no-problem group on the specific anxiety scale.

Prediction 1C comparing the posttest scores between the GAT and GAW was confirmed for the IPAT and MAS, but not for the ASCL. The results seemed to indicate that AMT was effective in decreasing generalized anxiety as compared to a waitlist group when the MAS and IPAT are considered. The results of the ASCL are not that discrepant because, first of all, the F value was approaching significance ($p<.079$) and secondly, an analysis of the subscales indicated a significant difference between the groups in two out of the three subscales. Both the frequency and intensity subscales showed a significant drop on posttest scores when compared to the waitlist group while the interference scores did not change significantly.

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The results obtained on the ASCL indicating significant decreases on the frequency and intensity of the anxiety seem to indicate that the Ss are able to exert some control over their physiological systems. However, when the symptoms do in fact occur they are still troublesome since the Ss do not know how to handle them by the use of AMT. It is not possible to totally conclude that the Ss have gained control over various parts of their autonomic or central nervous systems because the ASCL is only a subjective measure. However, there have been many studies using more objective measures that have shown control is possible. These studies have indicated control and changes in such areas as muscle tension (Edelman, 1971; Mathews & Gelder, 1969), heartrate (Ascough & Sipprelle, 1968; Edelman, 1971; Wallace, 1971), oxygen consumption (Wallace, 1971), blood pressure (Edelman, 1971) and alpha waves (DiCara, 1971).

A significant difference was obtained between the GAT and GAW on the posttest scores for the PSI. This result seems to indicate that the effectiveness of AMT did generalize to public speaking anxiety as exhibited by the decrease in scores for the GAT on the PSI. The GAT showed a decrease in the PSI even though they were not significantly higher than the no-problem group on the PSI. The generalization of AMT from a generalized anxiety to a specific anxiety is somewhat discrepant with the preliminary results obtained by Richardson (1971) as he did not find any generalization in the effectiveness of AMT.

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However, in looking at Richardson's data in more detail it appears that AMT may have been more effective than his data analysis indicated. The absolute differences between the pre and post scores were large even though they were not significant when compared to a waitlist group.

When the GAT was compared to the GAW using an analysis of variance on posttest scores, only the MAS and PSI showed a significant difference. This result is discrepant with the results of the covariance analyses which indicated a significant difference between the GAT and GAW on all the scales. The discrepancy in this case, however, seems to be a result of the particular statistic used. The covariance design takes into consideration pretest differences, even though they may not be significant, and adjusts on the posttest scores while the analysis of variance design looks only at the posttest scores. The minor differences between the GAT and GAW on the pretest scores therefore, would be a factor in the discrepancy. Table 41 presents the pretest means and the differences between them for the GAT and GAW on the IPAT, MAS, ASCL and PSI. Statistically, the analysis of covariance is the more appropriate choice when individuals from the same theoretical population are being compared (Kirk, 1969).

Prediction 1D compared the GAT to the NPC on the posttest scores. Results indicated that only the MAS was lowered enough to not be significantly different from the normal population. The reason

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TABLE 41

Pretest Means and the Absolute Difference for the GAT and GAW on the IPAT, MAS, ASCL and PSI

Scale	Groups GAT	GAW	Difference
IPAT	47.20	50.60	3.40
MAS	32.20	31.40	0.80
ASCL	291.00	296.00	5.00
PSI	160.10	168.50	8.70

for the MAS scores dropping as low as the no-problem group while the IPAT and ASCL did not drop as low is unclear. Even though the GAT as a group did not drop as low as the NPC on the IPAT and ASCL, individual scores did show decreases from pre to post. Table 42 presents the number of subjects who increased, decreased or remained the same on the scales for the GAT and GAW.

From observation of Table 43 it appears that the majority of Ss showed decreases on all the scales, with both the MAS and IPAT having nine out of ten Ss improving. Since both the MAS and IPAT had the same number of Ss improving, the significant decrease obtained on the MAS must have been related to the MAS scores decreasing relatively more as compared to the IPAT. One possible explanation for only the MAS dropping as low as the no-problem group while the

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TABLE 42

Frequency and Direction of Change for the Ss in the GAT and GAW on the IPAT, MAS, ASCL and PSI

	Direction of Change					
	Increase		Decrease		Remain the Same	
Scale	GAT	GAW	GAT	GAW	GAT	GAW
IPAT	0	3	9	5	1	2
MAS	0	7	9	3	1	0
ASCL	4	5	6	5	0	0
PSI	2	5	6	4	2	1

other scales did not could be related to the factors measured by the various scales. The factors measured by the MAS may be more affected by the AMT treatment than the factors measured by the IPAT or ASCL. However, this would have to be proven by conducting a factor analytic study of the scales.

Comparing the GAW to the NPC (Prediction 1E) indicated that the scores on the MAS, IPAT and ASCL remained significantly higher on the posttest. This result is consistent with the prediction because if Ss receive no treatment their scores should not change significantly from pre to post.

In summary, it appears that AMT is effective in significantly reducing general anxiety as compared to an anxious group which

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receives no treatment. The gains obtained from AMT seem to generalize to a specific anxiety, public speaking. Physiologically, the effectiveness of AMT centers around significantly decreasing the frequency and intensity of the anxiety symptoms, but the amount of interference caused by the symptom occurrence is not changed. The decrease in anxiety experienced by the GAT, although significantly lower than the GAW, was not large enough to bring them to the level of a no-problem group on all the scales.

AMT With Public Speaking Anxiety

The *t* tests conducted between the treatment *Ss* seen fall quarter versus the combined group of the treatment *Ss* seen winter and spring quarter were not significant on any of the Scales. This was true on both the pretest and posttest analyses. The results indicate that no differences were present between the treatment *Ss* as a function of quarter treated.

The results of the analysis of variance on the PSI pretest scores for the public speaking anxiety treatment group (PST) and public speaking anxiety waitlist group (PSW) indicated, as predicted, that there was no significant difference between the two groups (Prediction 2A). Also no differences were found between PST and PSW on the general anxiety scales.

The people complaining of public speaking anxiety (PST + PSW) scored significantly higher than the people who did not complain of

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public speaking anxiety (NPC) on the PSI (Prediction 2B). However, no differences were found between the public speaking anxious people and the no-problem people on the general anxiety scales. This result, as with the result of Prediction 1B, lend support to the two factor theory of anxiety. It indicates that the people complaining of a specific anxiety score higher than a normal group on that particular anxiety scale, but they do not score higher on scales designed to measure general anxiety.

Results of the comparison between PST and PSW showed that AMT was significant in reducing public speaking anxiety. The results of AMT with this specific anxiety are consistent with the study by Suinn & Richardson (1971) in which they found AMT to be effective with a specific anxiety centering around mathematics.

No significant differences were found between the PST and PSW on the pretest scores for the general anxiety scales, however, a significant difference was obtained between the two groups on the posttest scores for the IPAT. This change could be attributed to a general effect of AMT in which other anxieties are simultaneously reduced. This conclusion, however, needs further investigation because the other two anxiety scales (MAS & ASCL) did not show any significant change following treatment.

A comparison of posttest scores on the PSI indicated that there was no significant difference between the PST and NPC. However,

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there was also no significant difference between the PSW and NPC on the PSI posttest scores. This result is somewhat confusing since the previous analysis indicated a significant difference between the PST and PSW on the posttest.

A possible explanation for both the PST and PSW not being significantly different from the NPC on posttest is found in the scores presented in Table 43.

TABLE 43

Pretest, Posttest and Mean Change Scores for the PST, PSW and NPC on the PSI

Group	Pretest	Posttest	Mean Change
PST	176.40	136.50	-39.90
PSW	159.50	148.20	-11.30
NPC	149.35	138.55	-10.80

Pretest scores indicate that the PST was slightly higher than the PSW even though the difference was not significant. Also, the PSW was not that much higher than the NPC and an analysis of variance on the pretest scores indicated that there was no significant difference between the two groups ($F = 1.102$). It appears that the significant difference between the public speaking anxious people and the no-problem people was carried mostly by the PST whose scores were

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27.05 points higher as a group than the NPC. However, the PST scores were lowered significantly enough to be no different from the NPC.

In summary, it appears that AMT is effective in reducing public speaking anxiety to a point as low as that found in a normal group. The results of AMT with this specific anxiety are supportive of the Suinn and Richardson study (1971). More research, however, is still needed because the present AMT technique differs from the technique used by Suinn and Richardson. A replication should also be conducted on the same specific anxiety in case the prognosis for different specific activities is not the same. Follow-up studies should also be included to determine if AMT has any long term effects.

AMT: Implications and Considerations

The results of the present study have shown that AMT is effective in reducing generalized and public speaking anxiety (but further research is necessary). The technique itself is exciting because it is a step in the direction of providing the individual with a method for self control which could be appropriate in any anxiety provoking situations regardless of the particular stimulus conditions. AMT provides an important breakthrough because it allows for the treatment of all anxieties and provides the individual with a method for controlling current and future anxieties.

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The most frequent comments made by the Ss were:

1. I don't feel as helpless about controlling my anxiety.
2. The deep breathing technique has been helpful to me.
3. The technique has really helped me to become aware of when I am nervous.
4. I had a chance to use it this last weekend and I could shut off the anxiety.
5. I don't feel the same about the anxiety when it occurs, I feel like I can control it before it gets out of hand.

From the comments made by the Ss who were treated by AMT, there seems to be two main benefits gained from the treatment:

1. The awareness of the physiological symptoms associated with anxiety and thus providing a means for identifying anxiety early.
2. Providing a non-specific technique for controlling anxiety regardless of the specific stimulus conditions.

The most frequent feedback from the Ss centered around being able to recognize anxiety earlier and feeling some control over it. The feeling of control over the anxiety is important because many of the students on intake reported a real feeling of helplessness in doing anything about the anxiety.

Even though AMT has proven to be an effective technique in controlling anxiety, there are some considerations which must be taken into account. The technique of deliberately inducing anxiety in an already anxious person should be done with utmost consideration for

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possible problems. For example, two female Ss in the present study reached such an intense level of anxiety that they began to cry and shake. Fortunately, however, both Ss were able to shut off the anxiety and return to a relaxed state. If a generalized anxiety population is treated, it would seem beneficial to have the therapist aware of the difficulties and trained to handle them.

An interesting indirect result of treating generalized anxiety with AMT is the expression of other feelings besides anxiety and relaxation by the Ss after the treatment sessions. Some of the other feelings reported have centered around anger, sex and insecurity. One possible explanation for the expression of other feelings could center around the fact that anxiety was reduced which made possible the expression of some of the less acceptable feelings.

If having Ss express other emotions is a common result of AMT treatment than the technique itself would have some potential value as an adjunct to psychotherapy. AMT could contribute to the therapeutic process by decreasing the inhibitions caused by anxiety.

The whole concept of "self control" is one which is an appropriate reply to the criticisms set forth by Cautela (1969). Cautela indicated that:

> "....the behavior therapist has not, to any extent, attempted to make the individual less susceptible to the development of future maladaptive behavior without the aid of the therapist. For the most part, the behavior therapist has concentrated exclusively on removing the maladaptive behavior present in the individual when he comes for treatment (p. 323)."

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AMT is an approach which provides the individual with a method for handling his own anxiety.

AMT is a new technique with numerous possibilities, but before it can be used on a wide scale and expanded to other areas further research must be conducted at this point. More research is needed in the effectiveness of AMT with generalized anxiety and various specific anxieties. Research should be conducted in order to determine if AMT is more effective with certain types of individuals over others (repressors versus sensitizers). Age would also seem to be an important variable in terms of the effectiveness of the technique with children.

The possibilities for AMT are far reaching and it is conceivable that it could be incorporated into many mental health programs as an on going technique. The technique, however, should be looked at as one approach for controlling anxiety which could be used as the sole treatment or in conjunction with another approach.

Summary

This study was an investigation of the relative effectiveness of an anxiety management training technique (AMT) in the treatment of generalized and public speaking anxiety. AMT is a non-specific behavior therapy procedure which has provided, for the first time, a technique which can simultaneously treat all types of anxieties. The effectiveness of AMT was determined by comparison with a waitlist control group and a no-problem control group.

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The subjects were 40 undergraduate students attending either Colorado State University (N=32) or Metropolitan State College (N=8). The subjects were referred by their respective counseling centers for either generalized anxiety (N=20) or public speaking anxiety (N=20) After an initial intake interview subjects were assigned randomly to either a treatment or waitlist group for their respective anxiety, each group having ten members.

All subjects were administered the IPAT Anxiety Scale (IPAT), the Taylor Manifest Anxiety Scale (MAS), the Anxiety Symptom Checklist (ASCL) and the Public Speaking Anxiety Inventory (PSI). Subjects were administered the scales on two different occasions two weeks apart. The IPAT, MAS and ASCL were used as measures of general anxiety while the PSI was used as a measure of public speaking anxiety.

Treatment consisted of five two hour sessions conducted over a two week period in the evenings. The first session involved the administration of the anxiety scales and training in relaxation. Session two, three and four involved the AMT treatment. AMT treatment involved training the subjects in controlling anxiety by having them arouse anxiety and terminate it by the use of deep muscle relaxation. Session five involved readministering the scales and obtaining feedback from the subjects.

It was predicted that AMT would be effective in significantly reducing both generalized and public speaking anxiety as compared to

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the waitlist control group. It was also predicted that AMT would lower the anxiety levels of the treatment groups to that of the no-problem group while the waitlist groups anxiety levels would remain unchanged. Predictions for the generalized anxiety subjects were made only with regard to the IPAT, MAS and ASCL. Predictions for the public speaking anxiety subjects were made only with regard to the PSI. Analysis of covariance designs were used to compare treatment groups to waitlist groups while analysis of variance designs were used to compare the anxiety groups to the no-problem group.

For the general anxiety subjects, results showed that there were no significant differences between the general anxiety treatment group (GAT) and the general anxiety waitlist group (GAW) on the pretest scores for the scales. The generalized anxiety people (GAT + GAW) were significantly different from the no-problem group (NPC) on the pretest scores. Results of the analysis of covariance comparisons on the posttests indicated a significant reduction in anxiety for the GAT on the IPAT and MAS as compared to the GAW. The ASCL total scores were not significantly reduced, but an analysis of the subscales indicated a significant drop in the frequency and intensity scales. However, no significant reduction was obtained in the interference subscale. For both the GAT and GAW posttest scores remained significantly higher as compared to the NPC.

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For the public speaking anxiety subjects, results showed that there were no significant differences between the public speaking anxiety treatment (PST) and the public speaking anxiety waitlist group (PSW) on the pretest scores for the scales. The public speaking anxiety people (PST + PSW) were significantly different from the no-problem group on the pretest scores of the PSI. Results of the analysis of covariance comparison on the posttest scores for the PSI indicated a significant reduction in anxiety for the PST as compared to the PSW. Both the PST and PSW were not significantly different from the NPC on the posttest scores for the PSI.

It was concluded that AMT was effective in reducing both generalized and public speaking anxiety when compared to a waitlist group. However, further research was indicated because of the discrepancies found in the present study. Some suggestions were made concerning the implication and considerations involved in the use of AMT treatment method.

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APPENDICES

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APPENDIX A

INTAKE GUIDELINE FORM

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GENERAL ANXIETY PROGRAM
INTAKE INTERVIEW RECORD
CONFIDENTIAL

Name:_____

Date:_____

Counselor:_____

Etiology, Chronicity and Pervasiveness of Anxiety

Precipitating Conditions

Conditions which alleviate anxiety
(medications, etc.)

Questions concerning Intake Form, Symptom Check List, etc.
Extent of interference with normal functioning.

Previous psychiatric or psychological contacts

Where? How Long?

When? What For?

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APPENDIX B

MANIFEST ANXIETY SCALE

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THE TAYLOR MANIFEST ANXIETY SCALE

The following are 50 statements which may or may not be true of you. Answer each item TRUE or FALSE on the separate answer sheet that has been provided and do not mark on this questionnaire. Answer each item the way it applies to you now. Mark TRUE if the item is always or usually true of you. Answer FALSE if the item is never or rarely true about you.

1. I do not tire quickly.
2. I am often sick to my stomach.
3. I am about as nervous as other people.
4. I have very few headaches.
5. I work under a great deal of strain.
6. I cannot keep my mind on one thing.
7. I worry over money and business.
8. I frequently notice my hand shakes when I try to do something.
9. I blush as often as others.
10. I have diarrhea ("the runs") once a month or more.
11. I worry quite a bit over possible troubles.
12. I practically never blush.
13. I am often afraid that I am going to blush.
14. I have nightmares every few nights.
15. My hands and feet are usually warm enough.
16. I sweat very easily even on cool days.

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17. When embarrassed I often break out in a sweat which is very annoying.

18. I do not often notice my heart pounding and I am seldom short of breath.

19. I feel hungry almost all the time.

20. Often my bowels don't move for several days at a time.

21. I have a great deal of stomach trouble.

22. At times I lose sleep over worry.

23. My sleep is restless and disturbed.

24. I often dream about things I don't like to tell other people.

25. I am easily embarrassed.

26. My feelings are hurt easier than most people.

27. I often find myself worrying about something.

28. I wish I could be as happy as others.

29. I am usually calm and not easily upset.

30. I cry easily.

31. I feel anxious about something or someone almost all of the time.

32. I am happy most of the time.

33. It makes me nervous to have to wait.

34. At times I am so restless that I cannot sit in a chair for very long.

35. Sometimes I become so excited that I find it hard to get to sleep.

36. I have often felt that I faced so many difficulties I could not overcome them.

37. At times I have been worried beyond reason about something that really did not matter.

38. I do not have as many fears as my friends.

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39. I have been afraid of things or people that I know cannot hurt me.

40. I certainly feel useless at times.

41. I find it hard to keep my mind on a task or job.

42. I am more self-conscious than most people.

43. I am the kind of person who takes things hard.

44. I am a very nervous person.

45. Life is often a strain for me.

46. At times I think I am no good at all.

47. I am not at all confident of myself.

48. At times I feel that I am going to crack up.

49. I don't like to face a difficulty or make an important decision.

50. I am very confident of myself.

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APPENDIX C

IPAT ANXIETY SCALE

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IPAT SELF ANALYSIS FORM

NAME _____ TODAY'S DATE _____
First Middle Last

SEX _____ AGE _____ OTHER FACTS _____
(Write M or F) (Nearest year) (Address, Occupation, etc., as instructed)

1. Make sure you have put your name, and whatever else the examiner asks, in the place at the top of this page.

2. Never pass over an item but give some answer to every single one. Your answers will be entirely confidential.

3. Do not spend time pondering. Answer each immediately, the way you want to at this moment (not last week, or usually). You may have answered questions like this before; but answer them as you feel now.

Most people finish in five minutes; some, in ten. Hand in this form as soon as you are through with it, unless told to do otherwise. As soon as the examiner signals or tells you to, turn the page and begin.

	True	In between	False
1. I find that my interests, in people and amusements, tend to change fairly rapidly.	0	0	0
2. If people think poorly of me I can still go on quite serenely in my own mind	0	0	0
3. I like to wait till I am sure that what I am saying is correct, before I put forward an argument. .	0	0	0
	Some-Times	Seldom	Never
4. I am inclined to let my actions get swayed by feelings of jealousy . . .	0	0	0

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		A	In between	B
5.	If I had my life to live over again I would: (A) plan very differently, (B) want it the same	0	0	0
		Yes	In between	No
6.	I admire my parents in all important matters	0	0	0
		True	In between	False
7.	I find it had to "take 'no' for an answer," even when I know what I ask is impossible	0	0	0
8.	I doubt the honesty of people who are more friendly than I would naturally expect them to be	0	0	0
		A	In between	B
9.	In demanding and enforcing obedience my parents (or guardians) were: (A) always very reasonable (B) often unreasonable	0	0	0
		Rarely	Sometimes	Often
10.	I need my friends more than they seem to need me	0	0	0
		Always	Often	Seldom
11.	I feel sure that I could "pull myself together" to deal with an emergency	0	0	0
		Often	Sometimes	Never
12.	As a child I was afraid of the dark	0	0	0
		Yes	Uncertain	No
13.	People sometimes tell me that I show my excitement in voice and manner too obviously	0	0	0

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		A	In between	B
14.	If people take advantage of my friendliness I: (A) soon forget and forgive, (B) resent it and hold it against them	0	0	0
		Often	Occasionally	Never
15.	I find myself upset rather than helped by the kind of personal criticism that many people make. .	0	0	0
		True	In between	False
16.	Often I get angry with people too quickly	0	0	0
		Very rarely	Sometimes	Often
17.	I feel restless as if I want something but do not know what	0	0	0
		True	In between	False
18.	I sometimes doubt whether people I am talking to are really interested in what I am saying . . .	0	0	0
		True	Uncertain	False
19.	I have always been free from any vague feelings of ill-health, such as obscure pains, digestive upsets, awareness of heart action, etc.	0	0	0
		Some-Times	Rarely	Never
20.	In discussion with some people, I get so annoyed that I can hardly trust myself to speak . . .	0	0	0
		True	Uncertain	False
21.	Through getting tense I use up more energy than most people in getting things done	0	0	0
22.	I make a point of not being absent-minded or forgetful of details . . .	0	0	0

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	Yes	In between	No
23. However difficult and unpleasant the obstacles, I always stick to my original intentions	0	0	0
24. I tend to get over-excited and "rattled" in upsetting situations . .	0	0	0
25. I occasionally have vivid dreams that disturb my sleep	0	0	0
26. I always have enough energy when faced with difficulties	0	0	0
	True	Uncertain	False
27. I sometimes feel compelled to count things for no particular purpose	0	0	0
28. Most people are a little queer mentally, though they do not like to admit it	0	0	0
	Yes	In between	No
29. If I make an awkward social mistake I can soon forget it	0	0	0
	A	In between	B
30. I feel grouchy and just do not want to see people: (A) occasionally, (B) rather often	0	0	0
	Never	Very rarely	Sometimes
31. I am brought almost to tears by having things go wrong	0	0	0
	Yes	In between	No
32. In the midst of social groups I am nevertheless sometimes overcome by feelings of loneliness and worthlessness	0	0	0
	Often	Sometimes	Never
33. I wake in the night and, through worry, have some difficulty in sleeping again	0	0	0

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	Yes	In between	No
34. My spirits generally stay high no matter how many troubles I meet .	0	0	0
35. I sometimes get feelings of guilt or remorse over quite small matters	0	0	0
	Often	Sometimes	Never
36. My nerves get on edge so that certain sounds, e.g., a screechy hinge, are unbearable and give me the shivers	0	0	0
	True	Uncertain	False
37. If something badly upsets me I generally calm down again quite quickly	0	0	0
	Yes	In between	False
38. I tend to tremble or perspire when I think of a difficult task ahead	0	0	0
	Yes	In between	No
39. I usually fall asleep quickly, in a few minutes, when I go to bed .	0	0	0
	True	Uncertain	False
40. I sometimes get in a state of tension or turmoil as I think over my recent concerns and interests.	0	0	0

STOP HERE. BE SURE YOU HAVE ANSWERED EVERY QUESTION.

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APPENDIX D

PUBLIC SPEAKING ANXIETY INVENTORY

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PSI - COLLEGE FORM

Directions:

The following are fifty items that describe a variety of settings that may cause fear or apprehension. Please read each item and determine the extent to which you might react anxiously to each situation. Using a separate answer sheet rate the degree of anxiety according to the following scale:

1. Not at all
2. A little
3. A fair amount
4. Much
5. Very much

1. Speaking in front of a few friends on a familiar subject.
2. Talking to a small group of strangers concerning a subject well known to you.
3. Giving an impromptu speech before a small group.
4. Presenting a short prepared talk to a class in which you are a member.
5. Giving a prepared talk to a large group of strangers.
6. Asking a question in a large class.
7. Rising from an audience of strangers to disagree with a speaker during a discussion period.
8. Expressing an opinion among a group of friends.
9. Being asked to express your opinion by a group that does not share your views.
10. Standing with a group of professors as they discuss a topic familiar to you.

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11. Speaking to persons in a position of authority.

12. Giving directions to a group of strangers.

13. Being asked in a group to express an opinion about a topic that you are not familiar.

14. Speaking on a topic in which you are adequately informed.

15. Reciting a short poem to a class that you have memorized.

16. Carrying on a conversation with someone whom you wish to impress.

17. Debating a point with a professor in a large class.

18. Learning that you have been selected to play a small part in a theatre production.

19. Being chosen to perform a leading role in a theatre production.

20. Sitting and waiting to be introduced as the main speaker in a program.

21. Standing at a rostrum and looking out at an audience of strange faces.

22. Standing before a class of peers and preparing to deliver a short address without the aid of notes.

23. Being asked to introduce a stranger to an informal gathering of friends.

24. Waiting for the curtain to rise on a play in which you have an extensive speaking part.

25. Being asked to sit at the guest of honor's table and realizing that you will be expected to say a few words.

26. Leading a discussion in which two opposing views are hotly debated.

27. Rising from a large audience to voice your support for a particular point that was made.

28. Being asked to introduce the guest of honor at a formal luncheon meeting.

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29. Learning that you will be expected to deliver a formal presentation one week from today.

30. Being asked your opinion by friends.

31. Speaking to persons in a position of authority.

32. Waiting off stage to give a speech.

33. Waiting to be called on in a speech course.

34. Raising your hand in a large class to ask a question.

35. Disagreeing with a friend in an informal discussion.

36. Watching someone you like give a speech.

37. Speaking into a microphone.

38. Rehearsing a speech two days before it is to be given.

39. Rising to give a speech following someone who has just spoken very eloquently to the same group.

40. Losing your place while giving a prepared talk.

41. Participating in a class debate.

42. Listening to comments and/or criticism on a speech that you just completed.

43. Being asked to speak to a small service club to which some of your friends belong.

44. Answering a question in class.

45. Being interviewed for a job by several people at once.

46. Being introduced by a friend to a group of strangers.

47. Arguing with an acquaintance in the presence of others.

48. Sitting in a large crowd of strangers and having someone call attention to you.

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49. Writing a speech which you will have to present for evaluation.

50. Waking up and remembering that this is the day that you are to deliver an important speech.

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APPENDIX E

ANXIETY SYMPTOM CHECKLIST

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NAME_____ DATE_____

SYMPTOM CHECK LIST

The following is a list of the ways in which people report that they are emotionally or psychologically experiencing some tensions. While one may not experience all of these signs, it is not uncommon to find several or many of them present when one is tense. Please indicate the extent to which each sign is experienced by you in terms of the three dimensions of FREQUENCY, INTENSITY, and INTERFERENCE. Frequency refers to HOW OFTEN the sign is experienced by you while Intensity refers to HOW STRONG the sign is and Interference refers to HOW MUCH the symptom interferes with your activities or behaviors. Base your ratings on emotionally related symptoms and not on situations with known physical cause or other states. Use the following scales as a means of making the ratings.

FREQUENCY

1. never or very infrequently
2. once every two weeks
3. once a week
4. several times a week
5. all of the time

INTENSITY

1. don't notice it
2. weak but aware of it
3. mild
4. intense
5. very intense

INTERFERENCE

1. doesn't interfere
2. interferes
3. interferes somewhat
4. interferes greatly
5. interferes to the point of incapacitation

Circle the appropriate number following each symptom for each scale

1.	nausea					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
2.	constipation					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5

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3.	frequent urination					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
4.	stomach in knots					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
5.	increased sensitivity					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
6.	dizziness					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
7.	chills					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
8.	restlessness					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
9.	irregular eating habits					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
10.	difficulty in sleeping					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
11.	rapid, pounding heart					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
12.	feelings of foreboding					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
13.	muscle tension					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5

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14. clammy hands
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
15. headache
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
16. listlessness
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
17. difficulty in concentration
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
18. dryness of mouth
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
19. cold hands
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
20. extreme changes in skin temperature
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
21. feeling tired all the time
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
22. excessive eating
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
23. stomach cramps
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
24. trembling
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5

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25. forgetfulness
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. inteference 1 2 3 4 5
26. diarrhea
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
27. neck pain
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
28. itching
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
29. irritability
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
30. weakness in legs
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
31. rash
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
32. blushing
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
33. excessive perspiration
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
34. chest pain
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5
35. difficulty in swallowing
    a. frequency 1 2 3 4 5
    b. intensity 1 2 3 4 5
    c. interference 1 2 3 4 5

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36.	irregular breathing					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
37.	tingling feelings					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
38.	stammering					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
39.	feeling hurried					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5
40.	tightness in throat					
	a. frequency	1	2	3	4	5
	b. intensity	1	2	3	4	5
	c. interference	1	2	3	4	5

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APPENDIX F

TREATMENT GOALS OUTLINE

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OUTLINE OF ANXIETY CONTROL TREATMENT PROGRAM (ACT)

This is a brief outline for you to keep. It was put together to let you know what to expect from each treatment session in terms of what the group will be doing and talking about each treatment session.

I. TRAINING SESSION (1 hour)

During this session your therapist will teach you deep muscle relaxation - a technique developed by Jacobson in the 1930's and since used as a way of "unlearning" anxiety by replacing it with feelings of relaxation. The therapist will spend some time talking with each group member about how the relaxation practice went. The treatment program will be explained in further detail to the group and any questions that you have about the program will be answered at this time.

II. TREATMENT SESSION I (2 hours)

This session will begin with a discussion of how the treatment program will proceed and how it works. Deep muscle relaxation will be induced. Group members will be asked to generate anxiety while in a relaxed state and the therapist will bring the feelings of anxiety under control using relaxation as an antagonistic response to anxiety. During this session the therapist will help you to control your anxiety

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and to begin to teach you ways in which you can learn to control feelings of anxiety for yourself. Some time will be spent during the session and at the end of the session to talk about how it is going for each group member.

III. TREATMENT SESSION II (1 hour)

During this session the therapist will again be using relaxation as a means of controlling anxiety. The therapist will once again ask you to generate feelings of anxiety and help you to control them. You will be learning that you can control feelings of anxiety by the method taught during Treatment Sessions I and II. Some time will be spent at the end of the session to discuss how the program is going for each group member.

IV. TREATMENT SESSION III (1 hour)

This session is basically the same as Treatment Session II.

V. TERMINATION SESSION (1 hour)

This session will be used primarily as an interaction session between group members and the therapist. It will provide an opportunity for group members to exchange information with each other concerning how each has been able to utilize the ACT program in their everyday life. The therapist will also be making suggestions to group members about how they can best make use of the program in being in control of their own feelings. Group members will be asked to fill our four short questionnaires.

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APPENDIX G

INTRODUCTORY VERBAL OVERVIEW

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VERBAL OVERVIEW

The emotional reactions that you experience are a result of your previous experiences with people and situations; these reactions often times lead to feelings of anxiety and tensions which are really inappropriate. Since perceptions of situations and feelings of anxiety occur within ourselves, it is possible to work with your reactions right here in this room even though we may not know what caused them.

The specific technique we will be using is called anxiety management training. Basically it involves two steps--training in relaxation and applying the relaxation to control the anxiety. The relaxation procedure is based upon years of work that was started in the 1930's by Dr. Jaconbsen. Dr. Jacobsen developed a method of inducing relaxation that can be learned very quickly, and which will allow you to become more deeply relaxed than ever before. The technique itself is based on the fact that you can not be relaxed and anxious at the same time. That is, you learn how to control your anxiety be replacing it with relaxation.

Most of these procedures will become clearer after we get into them. Do you have any questions before we begin training?

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APPENDIX H

COMPLETE MUSCLE RELAXATION INSTRUCTIONS

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RELAXATION TECHNIQUES

RELAXATION OF ARMS

(time: 4-5 min.)

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

Clench both fists tighter and tighter, both fists tense, forearms tense, study the sensations. . . and relax; straighten out your fingers and feel that relaxation. Continue relaxing your hands and forearms more and more. . . . Now bend your elbows and tense your biceps, tense them harder and study the tension feelings. . . . all right, straighten out your arms, let them relax and feel that difference again. Let the relaxation develop. . . . Once more, tense your biceps; hold the tension and observe it carefully. . . Straighten the arms and relax; relax to the best of your ability. . . . And now relax your arms back into a comfortable position. Let the relaxation proceed on its own. The arms should feel comfortably heavy as you allow them to relax. . . . concentrate on pure relaxation in the arms without any tension. Get your arms comfortable and let them relax further and further. Continue relaxing your arms ever further. Even when your arms seem fully relaxed, try to go that extra bit further; try to achieve deeper and deeper levels of relaxation.

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RELAXATION OF FACIAL AREA WITH NECK, SHOULDERS, AND UPPER BACK
(time: 4-5 min.)

Let all your muscles go loose and heavy. Just settle back quietly and comfortably. Wrinkle up your forehead now; wrinkle it tighter. . . . And now stop wrinkling your forehead, relax and smooth it out. Picture the entire forehead and scalp becoming smoother as the relaxation increases. . . . Now frown and crease your brows and study the tension. . . . Let go of the tension again. Smooth out the forehead once more. . . . Now, close your eyes tighter and tighter. . . feel the tension. . .and relax your eyes. Keep your eyes closed, gently, comfortably, and notice the relaxation. . . . Now clench your jaws, bite your teeth together; study the tension throughout the jaws. . . . Relax your jaws now. . . . Appreciate the relaxation. . . . Feel the relaxation all over your face, all over your forehead and scalp, eyes, jaws, lips, tongue and throat. The relaxation progresses further and further. . . . Now attend to your neck muscles. Press your head back as far as it can go and feel the tension in the neck. Let your head return forward to a comfortable position, and study the relaxation. Let the relaxation develop. . . . Shrug your shoulders, right up. Hold the tension. . . . Drop your shoulders and feel the relaxation. Neck and shoulders relaxed. . . . Shrug your shoulders again. Feel the tension in your shoulders and in your upper back. . . . Drop your shoulders once more and relax. Let the relaxation spread deep into the shoulders, right into your back muscles; relax your neck and throat, and your jaws and other facial areas as the pure relaxation takes over and grows deeper. . .deeper. . .deeper.

RELAXATION OF CHEST, STOMACH AND LOWER BACK
(time: 4-5 min.)

Relax your entire body to the best of your ability. Feel that comfortable heaviness that accompanies relaxation. Breathe easily and freely in and out. Notice how the relaxation increases as you exhale. . .as you breathe out just feel that relaxation. . . . Now breathe right in and fill your lungs; inhale deeply and hold your breath. Study the tension. . . . Now exhale, let the walls of your chest grow loose and push the air out automatically. Continue relaxing and breathe normally. Continue relaxing your chest and let the relaxation spread to your back, shoulders, neck and arms. Merely let go. . . and enjoy the relaxation. Now let's pay attention to your abdominal muscles, your stomach area. Tighten your stomach muscles, make your abdomen hard. Notice the tension. . . . And relax. Let the

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muscles loosen and notice the contrast. . . . Once more, press and tighten your stomach muscles. Hold the tension and study it . . . . And relax. Notice the general well-being that comes with relaxing your stomach. . . . Now tense your stomach, feel the tension. . . . Now relax again. Continue breathing normally and easily. . . . Now pull your stomach in and hold the tension. . . . hold the tension. . . now relax your stomach fully. Let the tension dissolve as the relaxation grows deeper. Each time you breathe out, notice the rhythmic relaxation both in your lungs and in your stomach. Notice and let go of all contractions anywhere in your body.

RELAXATION OF HIPS, THIGHS AND CALVES FOLLOWED BY

COMPLETE BODY RELAXATION

Let go of all tensions and relax. . . . Now flex your thighs. Flex your thighs by pressing down your heels as hard as you can. . . . Relax and note the difference. . . . Flex your thigh muscles again. Hold the tension. . . . Relax your hips and thighs. Allow the relaxation to proceed on its own. . . . Press your feet and toes downwards, away from your face, so that your calf muscles become tense. Study that tension. . . . Relax your feet and calves. . . . Keep relaxing for a while. . . . Now let yourself relax further all over. Relax your feet, ankles, calves and shins, knees, thighs, and hips. Feel the heaviness of your lower body as you relax still further. . . . Now spread the relaxation to your stomach, waist, lower back. Let go more and more. Feel that relaxation all over. Let it proceed to your upper back, chest, shoulders and arms and right to the tips of your fingers. Keep relaxing more and more deeply. Relax your neck and your jaws and all your facial muscles. Keep relaxing your whole body like that for a while. Let yourself relax.

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

In a state of perfect relaxation you should feel unwilling to move a single muscle in your body.

Now, your whole body becomes progressively heavier, and all your muscles relax. Let go more and more completely. We shall give your muscles individual attention. Relax the muscles of your

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forehead. (Pause 5-10 sec.) Relax the muscles of the lower part of your face. (Pause 5-10 sec.) Relax the muscles of your jaws and those of your tongue. (Pause.) The more you relax the calmer you become. (Pause.) Relax the muscles of your neck. (Pause.) Let all the muscles of your shoulders relax. Just let yourself go. (Pause.) Relax the muscles of your trunk. (Pause.) Relax the muscles of your lower limbs. Let your muscles go more and more. You feel so much at ease and so very comfortable.

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

INTERIM DIRECTIONS

Let the relaxation proceed on its own. The arms should feel comfortably heavy as you allow them to relax. . . Now let's concentrate on pure relaxation in the arms without any tension. Get your arms comfortable and let them relax further and further. Continue relaxing your arms ever further. Even when your arms seem fully relaxed, try to go that extra bit further; try to achieve deeper and deeper levels of relaxation.

Let the relaxation spread deep into the shoulders, right into your back muscles, relax your neck and throat, and your jaws and face and forehead as the pure relaxation takes over and grows deeper. . . deeper. . . ever deeper.

Relax your entire body to the best of your ability. Feel that comfortable heaviness that accompanies relaxation. . Breathe easily and freely in and out. Notice how the relaxation increases as you exhale. . . as you breathe out just feel that relaxation. . . Now breathe right in and fill your lungs; inhale deeply and hold your breath. Study the tension. . . . Now exhale, let the walls of your chest grow loose and push the air out automatically. Continue relaxing and breathe freely and gently. Feel the relaxation and enjoy it. . . . With the rest of your body as relaxed as possible, fill your lungs again. Breathe in deeply and hold it again. . . That's fine, breathe out and appreciate the relief. Just breathe normally. Continue relaxing your chest and let the relaxation spread to your head, shoulders, neck and arms. Merely let go. . . and enjoy the relaxation.

Now relax again. Continue breathing normally and easily and feel the gentle massaging action all over your chest and stomach. . . .

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Now pull your stomach in and hold the tension. . . now relax your stomach fully. Let the tension dissolve as the relaxation grows deeper. Each time you breathe out, notice the rhythmic relaxation both in your lungs and in your stomach. Notice and let go of all contractions anywhere in your body.

Relax once more, relaxing further and further. Relax your upper back, relax your lower back, spread the relaxation to your stomach, chest, shoulders, arms and facial area. These parts relaxing further and further and further and ever deeper.

Relax again. Keep relaxing for a while. . . . Now let yourself relax further all over. Relax your feet, ankles, knees, thighs, and hips. Feel the heaviness of your lower body as you relax still further. . . Now spread the relaxation to your stomach, waist, lower back. Let go more and more. Feel that relaxation all over. Let it proceed to your upper back, chest, shoulders and arms and right to the tips of your fingers. Keep relaxing more and more deeply. Make sure that no tension has crept into your throat; relax your neck and your jaws and all your facial muscles. Keep relaxing your whole body like that for a while. Let yourself relax.

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

In a state of perfect relaxation you should feel unwilling to move a single muscle in your body.

Now, your whole body becomes progressively heavier, and all your muscles relax. Let go more and more completely. We shall give your muscles individual attention. Relax the muscles of your forehead. (Pause 5-10 sec.) Relax the muscles of the lower part of your face. (Pause 5-10 sec.) Relax the muscles of your jaws and those of your tongue. (Pause.) The more you relax, the calmer you become. (Pause.) Relax the muscles of your neck. (Pause.) Let all the muscles of your shoulders relax. Just let yourself go. (Pause.) Relax the muscles of your arms. (Pause.) Relax the muscles of your trunk and lower limbs. Let your muscles go more and more. You feel so much at ease and so very comfortable.

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APPENDIX I

BRIEF RELAXATION INSTRUCTIONS

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INTERIM DIRECTIONS

Let the relaxation proceed on its own. The arms should feel comfortably heavy as you allow them to relax. . . Now let's concentrate on pure relaxation in the arms without any tension. Get your arms comfortable and let them relax further and further. Continue relaxing your arms ever further. Even when your arms seem fully relaxed, try to go that extra bit further; try to achieve deeper and deeper levels of relaxation.

Let the relaxation spread deep into the shoulders, right into your back muscles, relax your neck and throat, and your jaws and face and forehead as the pure relaxation takes over and grows deeper. . . deeper. . . ever deeper.

Relax your entire body to the best of your ability. Feel that comfortable heaviness that accompanies relaxation. . . Breathe easily and freely in and out. Notice how the relaxation increases as you exhale. . . as you breathe out just feel that relaxation. . . Now breathe right in and fill your lungs; inhale deeply and hold your breath. Study the tension. . . . Now exhale, let the walls of your chest grow loose and push the air out automatically. Continue relaxing and breathe freely and gently. Feel the relaxation and enjoy it. . . . With the rest of your body as relaxed as possible, fill your lungs again. Breathe in deeply and hold it again. . . That's fine, breathe out and appreciate the relief. Just breathe normally. Continue relaxing your chest and let the relaxation spread to your head, shoulders, neck and arms. Merely let go. . . and enjoy the relaxation.

Now relax again. Let your stomach out. Continue breathing normally and easily and feel the gentle massaging action all over your chest and stomach. . . . Now pull your stomach in again and hold the tension. . . now relax your stomach fully. Let the tension dissolve as the relaxation grows deeper. Each time you breathe out, notice the rhythmic relaxation both in your lungs and in your stomach. Notice and let go of all contractions anywhere in your body.

Relax once more, relaxing further and further. Relax your upper back, relax your lower back, spread the relaxation to your stomach, chest, shoulders, arms and facial area. These parts relaxing further and further and further and ever deeper.

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Relax again. Keep relaxing for a while. . . . Now let yourself relax further all over. Relax your feet, ankles, knees, thighs, and hips. Feel the heaviness of your lower body as you relax still further. . . Now spread the relaxation to your stomach, waist, lower back. Let go more and more. Feel that relaxation all over. Let it proceed to your upper back, chest, shoulders and arms and right to the tips of your fingers. Keep relaxing more and more deeply. Make sure that no tension has crept into your throat; relax your neck and your jaws and all your facial muscles. Keep relaxing your whole body like that for a while. Let yourself relax.

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

In a state of perfect relaxation you should feel unwilling to move a single muscle in your body.

Now, your whole body becomes progressively heavier, and all your muscles relax. Let go more and more completely. We shall give your muscles individual attention. Relax the muscles of your forehead. (Pause 5-10 sec.) Relax the muscles of the lower part of your face. (Pause.) The more you relax, the calmer you become. (Pause.) Relax the muscles of your neck. (Pause.) Let all the muscles of your shoulders relax. Just let yourself go (Pause.) Relax the muscles of your arms. (Pause.) Relax the muscles of your trunk and lower limbs. Let your muscles go more and more. You feel so much at ease and so very comfortable.

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APPENDIX J

TREATMENT SCRIPT AND OUTLINE

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ANXIETY MANAGEMENT TRAINING
Physiological Cues Only
Treatment I

I. INTAKE (20 minutes)

A. Interview

II. TRAINING SESSION (2 hours)

A. Pretesting

B. Training (27 minutes)

C. Orientation to treatment program and interview (10-15 minutes). (Interview time used to see how the relaxation training went for each individual in the group.)

"The remaining sessions will continue to make use of deep muscle relaxation. It is important for you to find time to practice the relaxation between sessions as, like many activities, the more that you can practice it the easier it is to become more and more relaxed and to become relaxed more quickly. That is, with continuing practice deeper and deeper levels of relaxation can be achieved. The ideal situation would be to find a quite place where you live - a place where you will not be bothered by anyone - to practice. Sometimes the only quiet time will be just before going to sleep at night. Any time that is suitable to your schedule is fine; but what IS IMPORTANT is that you can find some time each day to practice the relaxation."

"The remaining sessions will consist of two basic parts. We will be focusing upon the feelings that come with complete relaxation and the feelings that accompany anxiety. We will look at and experience the differences between those two opposite feelings. Anxiety and relaxation are antagonistic responses - that is, you cannot be relaxed and anxious at the same time. We will also learn a way in which you can achieve control over feelings of anxiety. Anxiety is a learned response and hence can be unlearned and calm, relaxed feelings can be learned to take the place of the feelings of anxiety. That is, the feelings of anxiety can be stopped and replaced with feelings of calmness and relaxation through a learning process. As you become more and more aware of the physical signs of anxiety that each of you have and more and more aware of the pleasant, calm feelings of relaxation you CAN learn that it is you who HAVE CONTROL over these feelings and that the relaxed, calm feelings can be used by you in many situations in which you have felt anxious in the past."

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D. Hand out treatment program outline prepared for the clients.

III. TREATMENT SESSION I (2 hours)

A. Orientation to the treatment procedure.

"During this session we will be using the deep muscle relaxation technique that you have learned to look at the differences between feelings of anxiety and feelings of relaxation. We will also be stopping from time to time to talk about how it is going for each of you. Also during this session we wll begin to learn how to achieve control over anxiety and be able to switch to calm, relaxed feelings to replace the feelings of anxiety. At first we will be helping you control the feelings of anxiety so do not be afraid to allow yourself to experience the anxiety and appreciate the differences between feelings of anxiety and feelings of calmness and relaxation. We will be here to help you control the anxiety at first, but as you learn that the feelings of anxiety can be controlled, you will be more and more in control of the situation and eventually will no longer need help from us in controlling the anxiety. You will notice that as you become more and more in control of your own feelings and more able to feel relaxed and calm a new set of feelings will begin to develop. You will begin to have some real positive feelings of competence and mastery over the anxiety as well as the pleasant, relaxed state that replaced the feelings of anxiety."

B. Relaxation with muscle tension

C. Break and interview - (See how it went for each group member and emphasize that they focus on the feelings of relaxation.)

D. Relaxation with in arim directions.

E. Anxiety induction

"Alright, let the relaxation go now and concentrate on letting yourself become anxious....let the feelings of anxiety and fearfulness develop....focus in on the bodily sensations which express your anxiety....let these sensations become more and more intense.... feel your heart starting to pound and your breathing becoming very shallow and irregular....notice your palms beginning to sweat and your stomach becoming jittery....you will begin to have a difficult time sitting still as the anxiety becomes more intense....just let the anxiety develop more and more....use any image, sound or sensation that helps to arouse the anxious and fearful feelings....feel the anxiety throughout your entire body....notice your muscles becoming tight and

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tense....your stomach feels like it has a knot in it....your mouth feels dry....just notice all the bodily changes that occur as the anxiety increases and spreads throughout your entire body....notice the various sensations and feelings of dread and helplessness....don't stop yourself from feeling more and more fear and anxiety....let the anxiety completely take over....let it become more and more intense....notice how rapidly you are breathing and how hard your heart is pounding....feel the uncomfortableness of your body....feel the chills and the heat....the tight muscles....the panicky helpless feeling....feel the anxiety beginning to reach a peak as the helplessness increases....let the anxiety reach such an intense point that you feel you have no control over it...."

F. Anxiety control cue and relaxation reinforce feelings of control

"Take in a deep breath and relax....good - again focus on the refreshing feelings of relaxation that spread throughout your body.... the arms - comfortably heavy - beginning in the upper portions of the arms, notice how these feelings quickly flow downward into the forearm, wrist and hands, driving out any tension that may reside there - the facial area - calm and smooth as these same refreshing feelings sweep across the forehead, scalp, and down the sides of the face. Feelings of relaxation penetrate deep into the muscles of the shoulders - work their way down the back fanning out until the entire back area is immersed in the soothing feelings of relaxation....now focus in on your breathing....notice how the rhythmic pattern serves to augment the feelings of tranquility and well being....as you attend to your own breathing notice how comfortable the chest area becomes as feelings of relaxation spread across the chest and down into the stomach area.... leaving the entire upper portion of the body feeling delightfully good, and comfortably heavy and very relaxed....Just let the same good feelings sweep down into the legs....the thighs, calves, ankles and feet so that the entire body simply bathes in these feelings of refreshment and inner tranquility - you are in a perfect state of relaxation.... enjoy it, experience it fully....just let these feelings proceed on their own for a few moments....focus on them....good!"

"As you enjoy this state of inner calm it is important for you to note that you achieved this yourself....you have been able to sweep away the tension of the day and have provided yourself with considerable relief and comfort....enjoy these feelings of accomplishment for having attained it - let these good feelings intermingle and simply delight in them. You can become twice as relaxed by merely taking a deep breath and slowly exhaling...."

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G. Break and interview - short presentation of the rationale for the anxiety control program. (See how it went for each group member.)

"Notice how the relaxation can be achieved again after you have become anxious....and think about how enjoyable and pleasant those feelings of relaxation are.... At this point we will be relaxing again and I want you to focus more on the differences between feeling anxious and feeling relaxed. Once again we will be helping you control the feelings of anxiety and replace them with the enjoyable feelings of relaxation....and the realization that the anxiety can be controlled."

H. Relaxation with interim directions.

I. Anxiety induction

"Okay, now let the relaxation go and let yourself become anxious once again....just let the feelings of anxiety and fearfulness develop.... concentrate on these feelings and let them become more intense.... notice the various bodily changes that occur as the anxiety begins to take over and becomes more intense....use any image, sound, or sensation that helps to arouse the anxious and fearful feelings....let the anxiety spread throughout your entire body....feel your muscles becoming tight and tense....notice your palms beginning to sweat and your stomach becoming jittery....feel your heart pounding and your breathing becoming very shallow and irregular....just let the anxiety develop more and more....notice the various sensations and feelings of helplessness that occur....don't stop yourself from feeling more and more fear and anxiety....let the anxiety completely take over.... let it become more and more intense....notice how rapidly you are breathing and how hard your heart is pounding....your body seems to be speeding up faster and faster as the anxiety grows more intense.... feel the uncomfortableness of your body as the anxiety becomes more intense....feel the helplessness you are experiencing as the anxiety takes over and becomes more intense....just let the anxiety develop more and more....feel it throughout your entire body....experience it fully....

J. Anxiety control cue and relaxation, reinforce control and relaxation

"Take in a deep breath and relax, good! Again let feelings of inner calm and relaxation develop - let them spread throughout your entire body - heavy soothing feelings are noted in the arms....the facial area and scalp....the neck, shoulders, and back....focus on the rhythmic pattern of your own breathing light and relaxed - the

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same good feelings spread out across the chest....the stomach and pour right down into the legs. The outer body is again bathed in feelings of heavy comfort and relaxation....there is little desire to move....to do anything but to focus on the deep feelings of inner comfort that you are experiencing at the moment - just let these feelings proceed on their own - focus on them....attend to nothing but these very real, very enjoyable feelings of relaxation...."

"As you do so notice the care with which you have been able to sweep away all feelings of tension....you have transferred them into deep and soothing feelings of serenity and inner calm....enjoy a sense of accomplishment....indeed a sense of competency as you relax....let feelings of self satisfaction build up for you have mastered your tensions and have achieved a very real....a very personal sense of relaxation....focus on your own strength....your own inner vitality and resources....just let these good feelings of personal satisfaction proceed on their own....experience them fully.... enjoy them."

K. Anxiety induction

"Now once again, let the relaxation go and concentrate on letting yourself become anxious....just let the feelings of anxiety and fearfulness develop....concentrate on these feelings and let them become more intense....use any sound or image or sensation that helps arouse the anxious and fearful feelings....keep them up....experience the anxiety fully....feel the fright and anxiety in as many parts of your body as you can....let it fill your thoughts and mind as well....don't stop yourself from feeling more and more fear....let some feelings such as uncertainty, dread, or awfulness also develop along with the anxiety....feel these fully....let yourself go and keep the anxiety and fear at a high pitch....keep them up....feel it throughout your entire body....experience it fully....just let the anxiety and fear completely take over...."

L. Anxiety control cue and relaxation

"Take in a deep breath and relax....good! Again return yourself to a state of inner calm and comfort....permit your body to simply bathe in the refreshment of your own soothing feelings of relaxation and well being....just let those feelings go....let them spread throughout your entire body....good!"

"As you attend to these feelings, focus on the ease with which you have been able to achieve the peace and harmony within yourself.... you have dispelled all feelings of tension from your body....you have driven them out leaving yourself feeling completely calm....completely

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relaxed....you have mastered your own inner tension....enjoy that feeling of accomplishment....let these feelings develop fully....that sense of inner strength and vitality....a sense of mastery over your own personal feelings....let them mingle with the soothing feelings of relaxation and well being that you are experiencing at this moment."

M. Break and interview

IV. TREATMENT SESSION II (1 1/2 hours)

A. Relaxation with interim directions

B. Anxiety induction

"Alright, let the relaxation go now and concentrate on letting yourself become anxious....let the feelings of anxiety and fearfulness develop....focus in on the bodily sensations which express your anxiety....let these sensations become more and more intense....feel your heart starting to pound and your breathing becoming very shallow and irregular....notice your palms beginning to sweat and your stomach becoming jittery....you will begin to have a difficult time sitting still as the anxiety becomes more intense....just let the anxiety develop more and more....use any image, sound, or sensation that helps to arouse the anxious and fearful feelings....feel the anxiety throughout your entire body....notice your muscles becoming tight and tense....your stomach feels like it has a knot in it....your mouth feels dry....just notice all the bodily changes that occur as the anxiety increases and spreads throughout your entire body....notice the various sensations and feelings of dread and helplessness....don't stop yourself from feeling more and more fear and anxiety....let the anxiety completely take over....let it become more and more intense.... notice how rapidly you are breathing and how hard your heart is pounding....feel the uncomfortableness of your body....feel the chills and the heat....the tight muscles....the panicky helpless feeling.... feel the anxiety beginning to reach a peak as the helplessness increases....let the anxiety reach such an intense point that you feel you have no control over it...."

C. Anxiety control cue and relaxation

"Take in a deep breath and relax....good - again focus on the refreshing feelings of relaxation that spread throughout your body.... the arms - comfortably heavy - beginning in the upper portion of the arms, notice how these feelings quickly flow downward into the fore-arm, wrist and hands, driving out any tension that may reside there - the facial area - calm and smooth as the same refreshing feelings sweep across the forehead, scalp and down the sides of the face.

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- Feelings of relaxation penetrate deep into the muscles of the shoulders - work their way down the back fanning out until the entire back area is immersed in the soothing feelings of relaxation....now focus in on your breathing....notice how the rhythmic pattern serves to augment these feelings of tranquility and well being....as you attend to your own breathing notice how comfortable the chest area becomes as feelings of relaxation spread across the chest and down into the stomach area....leaving the entire upper portion of the body feeling delightfully good, and comfortably heavy and very relaxed.... Just let these same good feelings sweep down into the legs....the thighs, calves, ankles, and feet, so that the entire body simply bathes in these feelings of refreshment and inner tranquility - you are in a perfect state of relaxation....enjoy it, experience it fully....just let these feelings proceed on their own for a few moments....focus on them....good!"

"As you enjoy this state of inner calm it is important for you to note that you achieved this yourself....you have been able to sweep away the tensions of the day and have provided yourself with considerable relief and comfort....enjoy these feelings of inner harmony as well as a feeling of accomplishment for having attained it - let these good feelings intermingle and simply delight in them. You can become twice as relaxed by merely taking a deep breath and slowly exhaling...."

D. Anxiety induction

"Okay, now let the relaxation go and let yourself become anxious once again....just let the feelings of anxiety and fearfulness develop.... concentrate on these feelings and let them become more intense.... notice the various bodily changes that occur as the anxiety begins to take over and becomes more intense....use any image, sound or sensation that helps to arouse the anxious and fearful feelings....let the anxiety spread throughout your entire body....feel your muscles becoming tight and tense....notice your palms beginning to sweat and your stomach becoming jittery....feel your heart pounding and your breathing becoming very shallow and irregular....just let the anxiety develop more and more....notice the various sensations and feelings of helplessness that occur....don't stop yourself from feeling more and more fear and anxiety....let the anxiety completely take over.... let it become more and more intense....notice how rapidly you are breathing and how hard your heart is pounding....your body seems to be speeding up faster and faster as the anxiety grows more intense.... feel the uncomfortableness of your body as the anxiety becomes more intense....feel the helplessness you are experiencing as the anxiety takes over and becomes more intense....just let the anxiety develop more and more....feel it throughout your entire body...experience it fully."

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E. Anxiety control cue

"Take in a deep breath and relax - good! Again let feelings of inner calm and relaxation develop - let them spread throughout your entire body - heavy soothing feelings are noted in the arms...the facial area and scalp....the neck, shoulders and back....focus on the rhythmic pattern of your own breathing, light and relaxed - these same good feelings spread out across the chest....the stomach and pour right down into the legs. The entire body is again bathed in feelings of heavy comfort and relaxation....there is little desire to move.... to do anything but to focus on the deep feelings of inner comfort that you are experiencing at this moment - just let these feelings proceed on their own - focus on them....attend to nothing but these very real, very enjoyable feelings of relaxation...."

"As you do so notice the ease with which you have been able to sweep away all feelings of tension....you have transferred them into deep and soothing feelings of serenity and inner calm....enjoy a sense of accomplishment....indeed a sense of competency as you relax.... let feelings of self satisfaction build up for you have mastered your tensions and have achieved a very real....a very personal sense of relaxation....focus on your own strength....your own inner vitality and resources....just let these good feelings of personal satisfaction proceed on their own....experience them fully....enjoy them."

F. Anxiety induction

"Now once again, let the relaxation go and concentrate on letting yourself become anxious....just let the feelings of anxiety and fearfulness develop....concentrate on these feelings and let them become more intense....use any sound or image or sensation that helps arouse the anxious and fearful feelings....keep them up....experience the anxiety fully....feel the fright and anxiety in as many parts of your body as you can....let it fill your thoughts and mind as well....don't stop yourself from feeling more and more fear....let some feelings such as uncertainty, dread, or awfulness also develop along with the anxiety....feel these fully....let yourself go and keep the anxiety and fear at a high pitch....keep them up....feel it throughout your entire body....experience it fully....just let the anxiety and fear completely take over...."

G. Anxiety control and relaxation

"Take a deep breath and relax yourself....permit those heavy comfortable feelings to come into awareness....let them develop on their own and enjoy them....good! Once again attend to your own

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feelings of personal strength.... the ease with which you are able to mobilize it.... sense your own vitality as you overcome any tension that might be present.... go right on relaxing...."

H. Break and interview. (See how it went for each group member)

V. TREATMENT SESSION III (1 1/2 hours)

A. Relaxation with interim directions

B. Anxiety induction

"Alright, let the relaxation go now and concentrate on letting yourself become anxious.... let the feelings of anxiety and fearfulness develop.... focus in on the bodily sensations which express your anxiety.... let these sensations become more and more intense.... feel your heart starting to pound and your breathing becoming very shallow and irregular.... notice your palms beginning to sweat and your stomach becoming jittery.... you will begin to have a difficult time sitting still as the anxiety becomes more intense.... just let the anxiety develop more and more.... use any image, sound, or sensation that helps to arouse the anxious and fearful feelings.... feel the anxiety throughout your entire body.... notice your muscles becoming tight and tense.... your stomach feels like it has a knot in it.... your mouth feels dry.... just notice all the bodily changes that occur as the anxiety increases and spreads throughout your entire body.... notice the various sensations and feelings of dread and helplessness.... don't stop yourself from feeling more and more fear and anxiety.... let the anxiety completely take over.... let it become more and more intense.... notice how rapidly you are breathing and how hard your heart is pounding.... feel the uncomfortableness of your body.... feel the chills and the heat.... the tight muscles.... the panicky helpless feeling.... feel the anxiety beginning to reach a peak as the helplessness increases.... let the anxiety reach such an intense point that you feel you have no control over it...."

C. Anxiety control and relaxation

"Take in a deep breath and relax - good! Again, let feelings of inner calm and relaxation develop - let them spread throughout your entire body - heavy soothing feelings are noted in the arms.... the facial area and scalp.... the neck, shoulders, and back.... focus on the rhythmic pattern of your own breathing, light and relaxed - these same good feelings spread out across the chest.... the stomach and pour right down into the legs. The entire body is again bathed in

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feelings of heavy comfort and relaxation....there is little desire to move....to do anything - but to focus on the deep feelings of inner comfort that you are experiencing at this moment - just let these feelings proceed on their own - focus on them - attend to nothing but these very real, very enjoyable feelings of relaxation...."

"As you do so, notice the ease with which you have been able to sweep away all feelings of tension....you have transformed them into deep and soothing feelings of serenity and inner calm....enjoy a sense of accomplishment....indeed a sense of competency as you relax.... let feelings of self satisfaction build up for you have mastered your tensions and have achieved a very real....a very personal sense of relaxation....focus on your own strenth....your own inner vitality and resources....just let these good feelings of personal satisfaction proceed on their own....experience them fully....enjoy them."

D. Anxiety induction

"Okay, now let the relaxation go and let yourself become anxious once again....just let the feelings of anxiety and fearfulness develop.... concentrate on these feelings and let them become more intense.... notice the various bodily changes that occur as the anxiety begins to take over and become more intense....use any image, sound, or sensation that helps to arouse the anxious and fearful feelings....let the anxiety spread throughout your entire body....feel your muscles becoming tight and tense....notice the palms beginning to sweat and your stomach becoming jittery....feel your heart pounding and your breathing becoming very shallow and irregular....just let the anxiety develop more and more....notice the various sensations and feelings of helplessness that occur....don't stop yourself from feeling more and more fear and anxiety....let the anxiety completely take over.... let it become more and more intense....notice how rapidly you are breathing and how hard your heart is pounding....your body seems to be speeding up faster and faster as the anxiety gorws more intense.... feel the uncomfortableness of your body as the anxiety becomes more intense....feel the helplessness you are experiencing as the anxiety takes over and becomes more intense....just let the anxiety develop more and more....feel it throughout your entire body....experience it fully...."

E. Anxiety control cue and relaxation

"Take in a deep breath and relax....good! Again return yourself to a state of inner calm and comfort....permit your body to simply bathe in the refreshment of your own soothing feelings of relaxation and well being....just let those feelings go....let them spread throughout your entire body....good!"

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"As you attend to these feelings, focus in on the ease with which you have been able to achieve the peace and harmony within yourself.... you have dispelled all feelings of tension from your body....you have driven them out leaving yourself feeling completely calm....completely relaxed....you have mastered your own inner tension....enjoy that feeling of accomplishment....let the feeling develop fully....that sense of inner strength and vitality....a sense of mastery over your own personal feelings....let them mingle with the soothing feelings of relaxation and well being that you are experiencing at this moment."

F. Anxiety induction

"Now once again, let the relaxation go and concentrate on letting yourself become anxious....just let the feelings of anxiety and fearfulness develop....concentrate on these feelings and let them become more intense....use any sound or image or sensation that helps arouse the anxious and fearful feelings....keep them up....experience the anxiety fully....feel the fright and anxiety in as many parts of your body as you can....let it fill your thoughts and mind as well....don't stop yourself from feeling more and more fear....let some feelings such as uncertainty, dread, or awfulness also develop along with the anxiety....feel these fully....let yourself go and keep the anxiety and fear at a high pitch....keep them up....feel it throughout your entire body....experience it fully....just let the anxiety and fear completely take over...."

G. Anxiety control cue and relaxation

"Take in a deep breath and relax....good! Again return yourself to a state of inner calm and comfort....permit your body to simply bathe in the refreshment of your own soothing feelings of relaxation and well being....just let these feelings go....let them spread throughout your entire body....good!"

"As you attend to these feelings, focus in on the ease with which you have been able to achieve the peace and harmony within yourself.... you have dispelled all feelings of tension from your body....you have driven them out leaving yourself feeling completely calm....completely relaxed....you have mastered your own inner tension....enjoy that feeling of accomplishment....let these feelings develop fully....that sense of inner strength and vitality....a sense of mastery over your own personal feelings....let them mingle with the soothing feelings of relaxation and well being that you are experiencing at this moment...."

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H. Anxiety induction

"Now once again, let the relaxation go and concentrate on letting yourself become anxious....just let the feelings of anxiety and fearfulness develop....concentrate on these feelings and let them become more intense....use any sound or image or sensation that helps arouse the anxious and fearful feelings....keep them up....experience the anxiety fully....feel the fright and anxiety in as many parts of your body as you can....let it fill your thoughts and mind as well....don't stop yourself from feeling more and more fear....let some feelings such as uncertainty, dread, or awfulness also develop along with the anxiety....feel these fully....let yourself go and keep the anxiety and fear at a high pitch....keep them up....feel it throughout your entire body....experience it fully....just let the anxiety and fear completely take over...."

I. Anxiety control cue and relaxation

"Take in a deep breath and relax yourself....permit those heavy comfortable feelings to come into awareness....let them develop on their own and enjoy them....good! Once again attend to your own feelings of personal strength....the ease with which you are able to mobilize it....sense your own vitality as you overcome any tension that might be present....go right on relaxing...."

J. Break and interview

VI. TERMINATION SESSION (2 hours)

A. Posttesting

B. Interaction period with group feedback and verbal reinforcement by the therapist.

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APPENDIX K

RAW DATA

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Raw Data For All Groups

IPAT Pretest

GAT	GAW	PST	PSW	NPC
42	49	45	20	30
52	56	43	39	17
46	52	32	35	37
34	56	19	32	37
33	45	33	30	43
47	59	29	51	52
48	69	37	41	34
65	50	49	58	48
56	25	39	27	31
49	45	44	17	33
				34
				28
				44
				29
				57
				24
				25
				49
				29
				33

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Raw Data For All Groups

IPAT Posttest

GAT	GAW	PST	PSW	NPC
40	50	40	17	29
49	56	36	47	19
46	52	32	38	34
26	55	15	31	31
20	37	22	26	46
37	65	29	52	44
40	65	15	40	41
44	41	50	54	42
50	20	23	41	41
48	46	36	17	24
				37
				40
				45
				35
				53
				23
				19
				45
				26
				33

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Raw Data For All Groups

MAS Pretest

GAT	GAW	PST	PSW	NPC
30	28	17	11	20
34	32	28	17	16
37	32	16	13	27
18	42	14	21	20
25	29	27	17	27
36	42	23	19	32
30	42	20	26	26
43	30	29	37	27
40	7	27	20	28
29	30	26	8	17
				12
				11
				18
				18
				36
				18
				07
				29
				13
				17

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Raw Data For All Groups

MAS Posttest

GAT	GAW	PST	PSW	NPC
28	35	18	7	16
34	35	28	20	15
18	36	12	14	26
11	38	10	19	15
12	27	21	12	21
27	45	28	19	30
25	40	4	31	20
21	32	26	36	22
32	9	13	24	21
25	35	17	9	15
				19
				17
				16
				21
				36
				16
				07
				24
				05
				16

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Raw Data For All Groups

ASCL Pretest

GAT	GAW	PST	PSW	NPC
298	269	169	145	237
249	324	219	197	210
257	256	214	187	216
180	366	252	226	186
331	235	254	199	186
244	446	204	202	260
259	390	195	254	184
428	315	341	260	197
346	163	251	152	193
318	196	204	149	193
				150
				150
				223
				175
				239
				184
				170
				275
				195
				200

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Raw Data For All Groups

ASCL Posttest

GAT	GAW	PST	PSW	NPC
301	249	195	143	191
218	311	213	198	171
203	240	204	176	217
197	319	180	212	154
184	222	170	188	180
197	483	208	209	215
262	408	174	278	150
315	317	349	284	224
373	153	191	172	218
255	214	161	136	182
				161
				163
				243
				186
				219
				160
				158
				287
				174
				189

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Raw Data For All Groups

PSI Posttest

GAT	GAW	PST	PSW	NPC
145	154	170	117	094
125	149	144	188	132
101	144	119	176	117
142	172	112	146	147
69	183	94	90	167
127	235	117	106	135
117	224	100	180	134
195	155	162	184	152
152	73	190	138	155
182	151	157	157	127
				112
				154
				128
				165
				181
				166
				097
				142
				104
				162

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Raw Data For All Groups

PSI Pretest

GAT	GAW	PST	PSW	NPC
145	201	205	140	157
147	143	192	171	123
161	159	140	185	119
160	166	158	155	135
117	197	163	91	167
130	225	148	122	125
133	221	160	187	148
217	143	192	191	146
209	79	210	196	158
182	151	196	157	130
				136
				177
				143
				169
				168
				179
				140
				142
				147
				178

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