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The Influence of a Diverse Relaxation Training Program Upon a Measure of Anxiety

Julie A. Joseph

The Influence of a Diverse Relaxation Training Program Upon A Measure of Anxiety

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Julie A. Joseph

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(date)
Richard L. Miller
Lawrence M. Hussey

Approved June 19, 1979
Elmer Gray
Dean of the Graduate College

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Julie A. Joseph May, 1979 pages

Directed by: Richard Miller, Larry Hanser, and Betsy Howton

Department of Psychology Western Kentucky University

Fourteen subjects from among the student and staff population, complaining of anxiety, volunteered to participate in a relaxation training program. The subjects were referred by the University Counseling Center, the Office of Undergraduate Advisement, or responded to an article and advertisement published in the school newspaper. Assignment to control or experimental groups was based on date of response and availability for participation. The experimental group, which consisted of eight subjects, received training in deep muscle relaxation, electromyograph, skin temperature, and concomitant biofeedback, and systematic desensitization over a three week period. The controls received no relaxation training. Both groups were administered Forms A through D of the Institute for Personality and Ability Testing (IPAT) 8-Parallel-Form Anxiety Battery at similar intervals during the study, to observe changes in the anxiety levels for each group. It was hypothesized that those undergoing the training would decrease their anxiety levels as training progressed. Analysis of the results indicated that no significant differences existed as a function of training. Discussion centered on the possible effects of individual differences on performance within the training program, as well as possible

modification of the program as subject for further research.

INTRODUCTION

There is an increasing body of evidence suggesting a connection between the amount of anxiety an individual experiences and his physical and psychological well-being. It appears that high anxiety can exacerbate physical anomalies or contribute to their causation, as well as cognitively affect efficiency and effectiveness (Shapiro, 1977). Because of the pervasiveness of anxiety in our society, and particularly in a population of college students, some therapeutic techniques now include relaxation training as a precursor to psychotherapy, while other intervention plans consist entirely of relaxation training, such as those dealing with phobic behavior (Rachman, 1965).

Debilitating anxiety is differentiated into two types: situational and chronic. Both types can be present in the same subject, such as the individual having a high level of arousal which is exaggerated in a particular situation. Situational anxiety is evoked by a specifiable stimulus, such as a phobic reaction to heights or spiders, and may be so subjectively threatening to the individual that he may avoid situations or stimuli which are anxiety provoking, thereby preventing possible extinction of this debilitating coping behavior. Chronic anxiety is a more generalized response to the environment, one which causes an individual to feel more

"tense" and to be more vulnerable to emotional trauma, since much energy is expended in order to maintain a high arousal level demanded by the body.

Past efforts in devising an effective, comprehensible, and easily administered relaxation training program to alleviate complaints of anxiety have been hampered by several factors. Possibly the most paradoxical of these is the term "relaxation" itself. Without some type of discernable feedback for their relaxation efforts, individuals may not recognize the physical or cognitive aspects of the relaxation process. The advent of biofeedback monitoring has allowed this feedback, as well as providing the individual with immediate reinforcement, enabling him to associate a particular physical or mental state with activity level indicated on the monitor.

Biofeedback, when used concomitantly with other relaxation techniques, allows the therapist to tailor relaxation programs best suited to each client. For instance, for situational anxiety, the therapist might devise a program which uses biofeedback monitoring in conjunction with progressive relaxation and systematic desensitization. The former is a necessary precursor to the latter, and the addition of feedback monitoring to the relaxation instructions provides both therapist and client with information regarding the client's current tension level. The desensitization procedure itself involves the presentation of graded, subjectively noxious stimuli to the imagination of the relaxed

subject until he is capable of emotionally experiencing the most anxiety provoking of these scenes without displaying physical tension.

The importance of an individually tailored program is emphasized when subjects report both situational and chronic anxiety, as well as when the needs of a client change during the course of intervention.

Past studies have researched the efficacy of the use of particular techniques or combinations of techniques, providing the practitioner with quantification of data to help devise a treatment plan. The present research is intended to investigate a diverse program for the reduction of anxiety.

LITERATURE REVIEW

The use of relaxation as a therapeutic technique originated with the publication of Jacobson's Progressive Relaxation in 1929. Progressive relaxation, a procedure in which the subject is instructed how to relax specific sequential muscle groups to achieve relaxation, was intended as a potentially effective intervention for various forms of tension and anxiety. Jacobson believed that relief from debilitating anxiety and tension could be achieved in 50 to 200 training sessions, which was often impractical. The concept of relaxation as a therapy was not in accordance with the theoretical therapeutic frameworks in vogue at the time, and the method made little impact on the profession.

It was not until 1958, when Wolpe modified Jacobson's technique and combined it with systematic desensitization, that the technique received professional recognition and regular use. Wolpe's method involved an abbreviated form of Jacobson relaxation instruction accompanied by a hierarchy of progressively more anxiety-provoking situations. Because Wolpe believed that relaxation and anxiety were mutually exclusive physiological conditions, he theorized that presentation of anxiety provoking stimuli during a relaxed state would inhibit and overcome the association between the stimuli and subsequent or accompanying tension, thereby circumventing

the anxiety response.

However, in practicing his technique, Wolpe encountered individuals who seemed incapable of acquiring the necessary proficiency in relaxation, or who became even more anxious as a result of the instruction. He felt that relaxation was a necessary precursor to successful desensitization, citing physiological evidence that motor activity can play a distinct role in the alleviation of some anxiety related disturbance.

Lazarus (1965), considering this evidence, investigated the use of reciprocal inhibition of anxiety by a dominating motor response for use with clients who had previously been unable to relax with significant success. This method requires muscular exercise rather than relaxation with the presentation of an anxiety hierarchy, and proved effective for clients who found relaxation difficult.

During their relatively short history as therapeutic techniques, relaxation procedures have been the subject of much controversy, particularly since anxiety and tension have been linked to the increased rate of psychosomatic disorders. Current research in this area suggests that the increasing anxiety and tension levels that accompany the increasing industrialization and growth of society are correlated with increases in the occurences of bronchial asthma (Kha, 1977), ulcers and insomnia (Haynes and Sides, 1977), dermatitis (Murray, 1977), and various cardiovascular maladies (Schwartz, 1974). Broverman, Klarber, Vogel and Kabayaski, in a 1974 study, measuring the relationship between certain stressful psychological stimuli and the overall hormonal balance which

regulates neural transmissions, found that periods of life considered stressful or unsatisfactory often coincide with periods in which the frequency of illnesses of all types increases. The authors found that subjects withstanding varying periods of intense stress experienced subsequent adrenergic and cholinergic reactions which surfaced in the form of neurodermatitis, essential hypertension, arthritis, asthma, peptic ulcers, migraine headaches, gout, and ulcerative colitis.

High tension levels are also associated with increases in heart and respiratory rates (DeGood and Chisolm, 1977), as well as elevated blood pressure in essential hypertension (Shapiro, 1977-1978), and various neuromuscular disorders (Budzynski, Stoyva, Adler, and Mullaney, 1973). Evidence also suggests a relationship between arousal level, muscular tension, and disfluent behavior (Wilson, 1977), and tension headaches (Budzynski and Stoyva, and Adler, 1970).

The increasing body of evidence suggesting anxiety as a contributing factor in physical and emotional dysfunction, particularly neurotic symptoms (Winner, 1977), has spurred much research in the investigation of the efficacy and appropriateness of intervention through relaxation techniques. So pervasive are the effects of tension that some investigators have even declared that relaxation is helpful, if not necessary, in successful psychotherapy (Budzynski and Stoyva, 1972; Paul, 1966). Some of the techniques that these researchers advocate include biofeedback, sympathetic

desensitization, and progressive relaxation.

Biofeedback, a relatively new term, is the process by which an individual derives feedback on the level of activity potential of any particular muscle group in the body in the form of an auditory tone or visual cue. While virtually any muscle bundle or group is amenable to biofeedback procedures, the present review will limit itself to those procedures involving electromyographic (EMG) readings from the frontalis muscle of the forehead, the extensor muscle in the forearm, and digital skin temperature.

Budzynski and Stoyva (1969) found that subjects could learn to lower frontalis EMG levels more effectively with biofeedback than without, and that subjects also reported that the deep muscle relaxation seemed to generalize to other muscles, especially the upper head and body musculature.

In examining the comparative effectiveness of four types of relaxation training, Reinking and Kohl (1975) used decreased EMG activity level and more positive self ratings as indicative of achieved relaxation. Fifty undergraduate students were assigned randomly to one to five groups: control, Jacobson-Wolpe instruction, electromyographic feedback, electromyograph feedback plus Jacobson-Wolpe instruction, and electromyographic feedback plus monetary reward. Following baseline recordings, those assigned to the Jacobson-Wolpe group and the Jacobson-Wolpe plus electromyographic group were given taped instruction on relaxation and told to practice for the remainder of the session. The electromyograph group received no specific instruction, but were

told to relax and keep an auditory or visual cue within a certain range. The electromyograph plus monetary reward group was given the same instruction, plus the incentive of receiving one dollar for every twenty percent decrease in relative activity. Results indicate that the type of training received significantly affected the overall degree of relaxation control a participant achieved. While none of the groups differed significantly during baseline recording, during and following the treatment the three groups with EMG feedback proved superior to the Jacobson-Wolpe group in speed of learning and depth of relaxation. The authors concluded that relaxation is significantly influenced by the type of relaxation program, as well as being a function of practice, and that these two factors are important predictors in treatment outcome.

In addition to using feedback procedures in combination with other techniques, biofeedback monitoring has been found to be effective when used alone. Results have been so encouraging that Shapiro (1977) referred to biofeedback as one of the single most significant advances for basic research on the modification of physiological responses, as well as having important implications for the control of symptoms of psychophysiological or other disorders. The use of biofeedback can enable individuals to achieve voluntary control over sympathtic nervous system response, resulting in the treatment of visceral fluctuations as any other behavioral response.

Biofeedback appears to be most useful in the treatment of specific symptoms, such as blood pressure (Shapiro, 1977), neuromuscular disorders (Budzynski, Stoyva, and Adler, 1970), and anxiety related neurotic symptoms, such as sleep disturbances, including insomnia and nightmares (Winer, 1977).

Philips (1977) found electromyograph feedback useful in reducing muscle tension levels, intensity, and frequency of medication, in addition to a slight reduction in headache frequency. Budzynski, Stoyva, and Adler (1970) chose five subjects with complaints of tension headaches to determine the effects of feedback induced muscle relaxation on their ailments. The subjects were screened to exclude the possibility of possible neurological or organic dysfunction. During baseline recording, it was noted that the subjects chosen had baselines approximately twice the level of a group of previously recorded normals. Following baseline recording, the subjects were seen two or three times weekly for 30 sessions, with instructions to keep the auditory monitor tone constant low frequency if possible. As the subjects became more proficient at maintaining low frequencies, silent trials were interspersed with feedback trials in order to aid subjects in maintaining relaxation during the absence of feedback. The use of this methodology resulted in a significant decrease in both the electromyograph and headache activity levels of the participants. Subjects also reported a heightened awareness of the onset of tension and a decreasing tendency to overact to stress. Individuals also reported more sound sleep and a lower likelihood of awakening due

to slight noise. A three month follow-up indicated that subjects still experienced fewer headaches, particularly those who practiced the relaxation procedure at home. The authors interpreted the results as evidence that chronic tension headache sufferers can be trained to voluntarily lower striate muscle tension and subsequently reduce the frequency and duration of tension headaches.

In addition to the reduction of the physiological manifestations of tension and anxiety, relaxation techniques have been used to alleviate the accompanying mental processes of anxiety. Adjectives used to describe these psychical manifestations might include nervousness, tenseness, or an elevated level of psychological arousal found discomforting to some.

The specific and general effects of relaxation training achieved by subjects in a six week relaxation training program suggested significant improvements in anxiety level and subjective complaints of tension as a function of training (Sherman and Plummer, 1973). In light of the results, the authors hypothesized that relaxation training may be a valuable self management tool for anxiety reduction in situations which might evoke such a response.

In a study conducted by Goldfried and Trier in 1974, the authors found that when subjects learn to recognize the cognitive aspects of applying relaxation techniques, the results of several assessment instruments were affected in a positive way. These measures included subjective self reports,

physiological measures such as blood pressure and heart rate, as well as objective tests such as the Anxiety Differential (Husik and Alexander, 1963) the State-Trait Anxiety Inventory (Spielberger, Gorusch, and Lushene, 1970), and Endler, Hunt, and Rosenstein's Inventory of Anxiousness. The study involved three conditions, controlled for the possible effects of attention or placebo factors. Group one was told that relaxation exercises would reduce their anxiety levels virtually automatically, the second group believed that they were attaining relaxation proficiency as a coping technique, while the third group involved group discussions. Within group changes on the assessment measures consistently favored the self control group. This finding is consonant with the belief that such control involves a learned skill which improves with practice. A six week follow up found continued change in the hypothesized direction. As well as achieving significant anxiety reduction on the instruments, the self control group reported greater satisfaction with the experimental procedure than for those to whom it was presented as a passive means for anxiety reduction.

Raskin, Johnson, and Rondestvedt (1973) researched the applicability of feedback-induced muscle relaxation as a mediator of chronic anxiety. The electromyograph feedback, practiced daily, proved beneficial to four of ten chronically anxious patients, which the authors felt demonstrated the usefulness of the technique considering the chronicity of the participants involved. Significant decreases in mood

disturbance and anxiety test scores were achieved by those undergoing deep muscle relaxation using electromyograph levels as a feedback modality when compared to a comparable group of chronically anxious subjects undergoing traditional psychotherapy.

Similar positive results have been achieved with the use of skin temperature feedback. Success in alleviating headache pain, high blood pressure, and insomnia has been reported for subjects having participated in relaxation training programs using skin temperature as the feedback mode (Raskin, Johnson, and Rondestevadt, 1973; Shapior, 1977). These training programs were similar to those using electromyograph feedback, with subjects completing four to twelve one hour sessions of temperature-feedback, with no instruction on relaxation provided other than to improve baseline levels (Raskin, Johnson, and Rondestevadt, 1973), or to keep the monitor needle within a certain range (Shapiro, 1977). Significant results were obtained in both studies, with subjects reporting fewer tension headaches and sleep disturbances. Reductions were also noted in the heart rate and blood pressure level of participants with cardiovascular complaints (Shapiro, 1977).

Although the positive effect of biofeedback has been well documented, certain difficulties arise in implementing such a program. Possibly the most common factor which confounds relaxation training results in boredom. Regular sessions can often lead to boredom and apathy, particularly

if the subject is able to master the technique quickly. The effects of this intervening variable are, unfortunately, indeterminable. A combination of techniques, although they may not increase the desired effect, may prove more intrinsically interesting to a participant, providing more motivation to continue earnestly in the procedure.

Another possible difficulty may lie with chronically anxious subjects who are also plagued with situation specific anxiety. Systematic desensitization has been proven appropriate for those with this second type of anxiety and, in combination with other techniques such as electromyograph feedback, may provide a more comprehensive intervention for these subjects.

The present study was designed to not only provide the subjects with an interesting task beneficial to them, but also to be comprehensive enough to prove of value to those with the more complex difficulty of both chronic and situational anxieties. In light of the present review, it is hypothesized that there will be a reduction in anxiety level for those subjects who are provided with a diverse relaxation program meaningful to them.

METHODS

Subjects

Subjects were solicited from among the student and staff population at Western Kentucky University at Bowling Green, Ky. Referrals were sought from three sources: the Office of Undergraduate Advisement, the campus Counseling Center, and through an advertisement in the college newspaper. Individuals currently undergoing psychotherapy were excluded from the sample. Eight participants with complaints of anxiety contacted this researcher and agreed to complete the program. The control group was composed of a group of six students who had volunteered to participate in a similar relaxation project commencing upon the completion of the present research.

Instruments

The 8 PFB, published by the Institute for Personality and Ability Testing, was utilized as a measure of anxiety because of its ease of administration, availability of alternate forms, and proven validity (Cattell and Sheier, 1973). The 8 PFB is a forced-choice instrument containing questions subsumed under the headings: Questions, Annoyances, Skills, Do You Sometimes, Comments, Checklist, and Embarrassing Circumstances. The 8 PFB has eight alternate forms.

Apparatus

The current study utilized the first two tapes from the series of relaxation training tapes by Arnold Lazarus (1965). Tape one presented the subject with muscle relaxation exercises designed to aid him in recognizing the physical symptoms of anxiety, while tape two continued to present exercises for increasing the subject's awareness of the tension-relaxation continuum.

Also utilized in the training were two Narco-Bio-Systems Biofeedback monitors: the Electromyograph feedback monitor NB 222 and the temperature feedback monitor TM 301.

The electromyograph monitor provided feedback gained from three electrodes attached to the forearm extension muscle bundle. Before placement, Hewlett-Packard Redux Creme was applied to the electrode surface to provide a medium for conducting the electrical impulses from the muscle to the monitor. The monitor instrumentation consists of an adjustable auditory tone and a needle which reflects muscle potential on a relative one-to-ten point score. Needle deflection is indicative of fluctuation in underlying muscle activity.

The skin temperature unit utilizes a set of flashing lights to indicate changes in skin temperature. A blue light indicates falling temperature, while a red light indicates change in the desired direction and rising temperature. Absence of either visual cue indicates no temperature change. In addition to this visual cue the monitor is equipped with a meter which is deflected on a scale of

positive five to negative five to indicate temperature fluctuations. There is also an accompanying tone which increases or decreases in frequency as skin temperature changes.

Procedure

Anxiety as measured by the IPAT 8 PFB was the dependent variable in the present research, while the sequence of relaxation training techniques served as the independent variable. This sequence progressed as follows: presentation of the Lazarus tapes in order to provide a skill for effectively coping with tension, biofeedback mediated relaxation training, and systematic desensitization with the presentation of an abbreviated, relevant hierarchy. The dependent variable was measured prior to participation, during alternate training sessions, and two weeks following program completion. Measurements of the control groups were procured on a similar schedule without experimental intervention.

The relaxation sequence previously described was instituted in order to circumvent procedural difficulties such as boredom and lack of motivation, encountered in a previous study (Brown, 1976). Subjects were chosen from a volunteer pool to insure that the project was meaningful to those involved and the subjects properly motivated and committed to completing the program.

Secondly, to alleviate the possible confounding effects of boredom, the relaxation methods chosen were changed every two sessions.

Each subject was seen individually prior to participation for a modified intake interview. The interview, conducted by the experimenter, consisted of a brief description of the program, the constraints of confidentiality, and discussion of the experimenter's role and her qualifications. The nature of the subject's anxiety was also discussed.

Experimental Group

Following the intake interview, the subject was scheduled for nine 45 minute sessions during which they could be seen individually for the treatment.

The first meeting consisted of a pre-test administration of Form A of the 8 PFB to determine the participant's baseline anxiety level. This was followed by active participation in the Lazarus deep muscle relaxation technique presented on tape. Lazarus tape two and active participation comprised the second meeting. The third session began with the administration of the 8 PFB form B and the use of an electromyograph monitor. Electrodes were attached to the right forearm extensor muscles of each subject, who then attempted to decrease their activity level from the baseline measurement. The feedback monitor was adjusted so that needle deflection to the far left indicated complete relaxation. A decreased frequency in the accompanying auditory tone was also indicative of a reduction in electromyograph activity. The third and fourth sessions differed only in the administration of the 8 PFB at the beginning of the third session.

Form C of the 8 PFB was administered prior to session

five. The fifth and sixth sessions focused on increasing the skin temperature as measured by a thermistor placed on the forefinger of the dominant hand. Illumination of a red light on the monitor's instrument panel, as well as deflection of the needle to the subject's right, indicated success in increasing skin temperature. Additionally, skin temperature activated an auditory cue which increased in frequency as temperature rose.

Preceding the seventh session, the subjects completed Form D of the 8 PFB. Sessions seven and eight involved simultaneous feedback from both the electromyograph and skin temperature monitors. Relaxation was evidenced on the monitors as previously described, with deflection of the temperature monitor needle to the right and the electromyograph monitor needle to the left. The subjects also received the auditory and visual cues of a decreasing tone and red light if relaxation occurred.

The last meeting consisted of construction of an anxiety hierarchy by each subject centering around an anxiety evoking situation or specific fear of concern to the subject. Criteria for successful completion of the hierarchy consisted of no subjective report of anxiety or increase in electromyograph level during the presentation. A post test 8 PFB, Form A, administration was conducted two weeks following the training.

Control Group

The control group received no relaxation training, but

were individually administered the same 8 PFB forms at similar intervals to those of the control group. Following the data gathering, the controls were offered relaxation training in a similar form by another experimenter.

Scoring and Analysis

The answer sheets of the 8 PFB were hand scored using the key provided in the manual (Cattell and Sheier, 1973). Standard scores for each subject were then derived from the sum of mean raw scores according to the published transformations for each form.

RESULTS

The raw scores obtained on IPAT forms A, B, C, and D were transformed to standard scores based on the total of the subtest means for each measure.

These standard score conversions were based on the parameters of each form, due to the fact that each form has a different normative mean and standard deviation. A table of these raw score conversions is included in the IPAT manual (Cattell and Scheier, 1973).

While the mean standard scores for the experimental group trended in a positive direction, examination of individual scores does not reveal consistent change in the desired direction. Table 1 presents the means and standard deviations for each group. These data are graphically represented in Figure 1, which displays the mean for each group as a function of training sessions. These figures indicate that the mean of the experimental group anxiety scores were lower, though not significantly, than those of the control group across training sessions. Although the experimental and control standard score means appear divergent as the training continued, examination of the standard deviation for each measure reveals that much overlap exists (Figure 2). For all five measures, the mean score for the control group is contained within one standard deviation of

the mean of the experimental group.

A least squares solution for a repeated measures design was used as a test of main effects. The obtained results were not significant, $F(1,12) = 1.29$, $p > .05$. Interaction effects between subjects and treatment also proved non-significant, $F(1,4) = .67$, $p > .05$.

Table 1

Means and Standard

Deviations for Experimental

and Control Groups

Test Sequence	Control		Experimental	
	$\bar{X}$	SD	$\bar{X}$	SD
Pre-test	5.5	2.26	4.5	1.93
Form B	6.0	1.55	5.5	2.39
Form C	6.5	2.43	4.5	2.78
Form D	7.0	2.50	4.75	2.43
Post-test	6.0	2.53	4.4	2.32

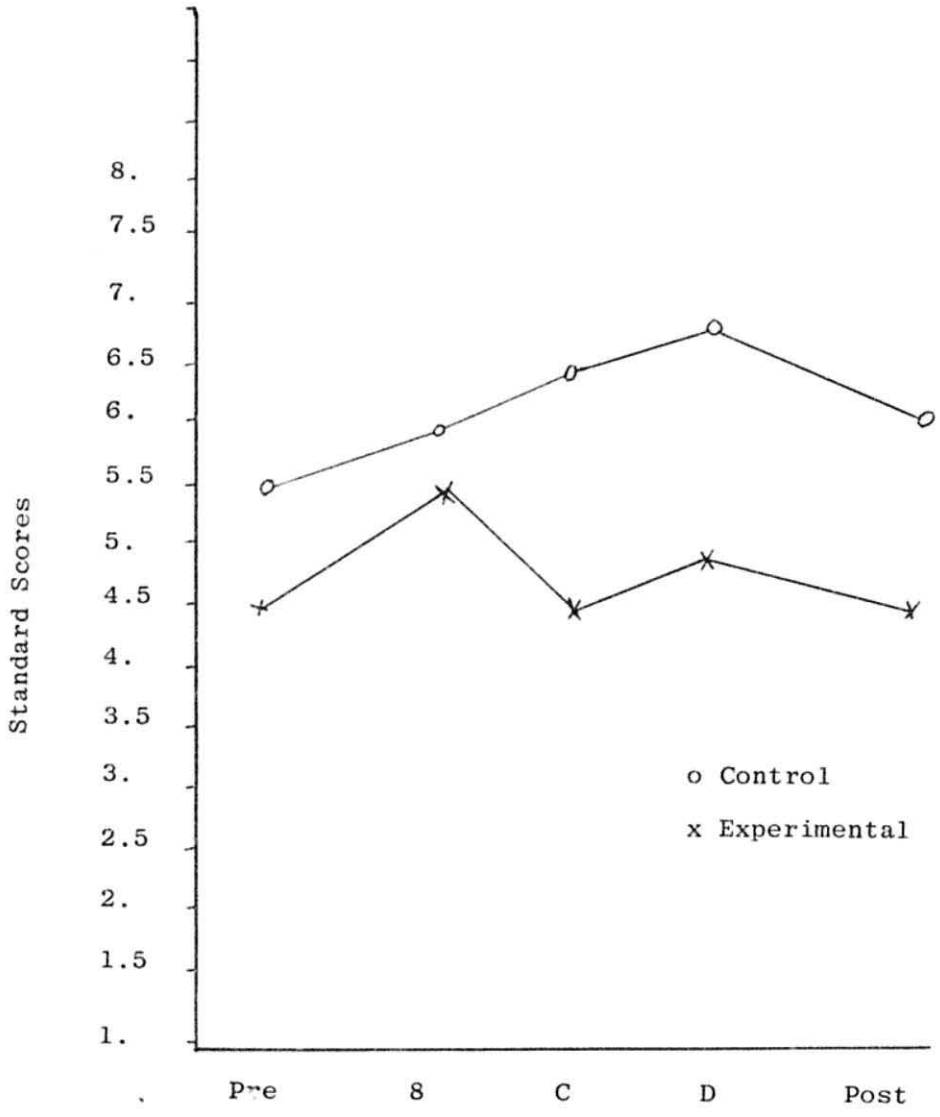

Figure 1. Mean standard score performances as a function of training sessions

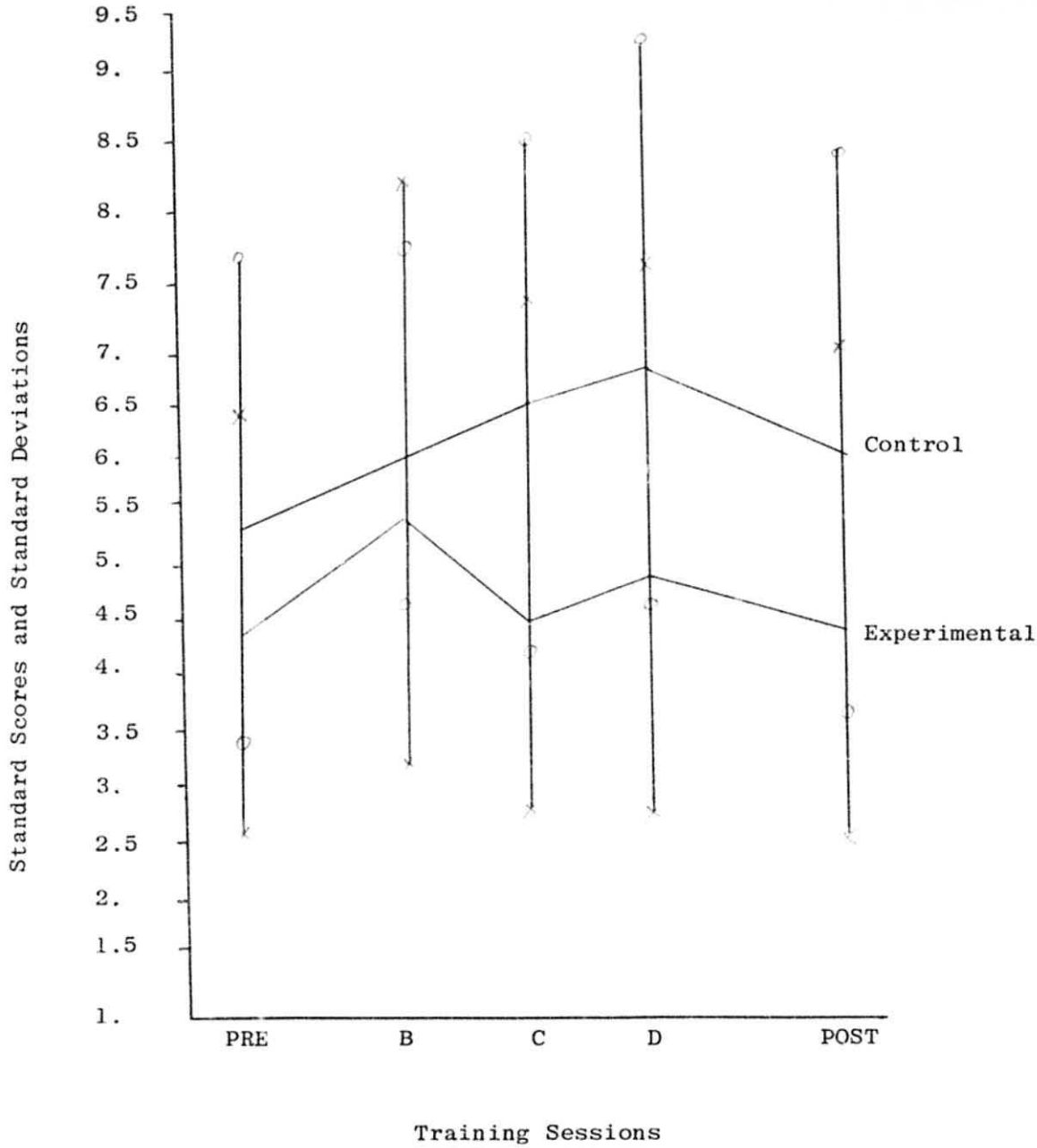

Figure 2. Standard Deviations for Standard Scores

DISCUSSION

Although the hypothesized reduction of anxiety as a function of the relaxation procedure did not occur, it is not clear as to which of the factors involved prevented the desired change. Analysis of test results shows that wide individual differences occurred during the course of the procedure for both the control and experimental subjects. Those assigned to the experimental procedure may have had artificially depressed pre-test scores, due to the fact that they were receiving treatment immediately afterward. Control subjects who began the treatment three weeks later may not have experienced such a placebo effect. In addition to these possible confounding variables, the motivation of each subject is another potential influence upon outcome. Because subjects were accepted into the program without screening for similar anxiety levels, pre-test anxiety levels varied greatly. Those subjects beginning the procedure with relatively low anxiety scores may have been less motivated than those subjects experiencing a high degree of discomfort as a result of elevated anxiety. For these less anxious subjects involvement in the sessions may have been of less value, and, as the novelty of the situation was reduced as the sessions progressed, the subject may have become bored with the task, focusing upon other factors not necessarily conducive

to relaxation. This reduction of the novelty of the situation and instrumentation may have existed, to a lesser degree, for the other subjects involved.

Anxiety levels may also have been affected by other ongoing activities or demands of the school term. The last four sessions of the procedure overlapped with scheduled midterm examinations, which may have accounted for elevated scores, particularly for those subjects who entered the project in order to combat test-taking anxiety. For these subjects, the increase in anxiety might have been prevented by having scheduled the program to avoid as much interference from academic factors as possible; however, with the wide variation in class schedules, this would be most difficult to achieve.

One alternative might be sequential changes in the procedure, such as a presentation of the hierarchy prior to midterm examinations for those subjects complaining of test taking anxiety. In order to maintain experimental rigor, this change would have to occur for all subjects, and might prove detrimental to subjects requiring greater lengths of time to master the actual relaxation process.

The subject's reaction to the experimenter may have affected performance and motivation as well. Over the four week duration of the program, the experimenter may have treated the subjects differently, perhaps in relation to the subject, or as a function of outside influences. The effect of this possible confounding factor is difficult, if not

impossible, to assess and circumvent. If the experimenter-subject interaction was replaced by, say, a tape recording, the subject's reaction to this device may affect performance in an equally unassessable manner. Yet, consistent, uniform behavior in the experimenter is probably more an ideal than obtainable goal, and any other behavior is a source of confounding which is certain to affect or influence the participant.

The display of score variability in the control group further emphasizes individual differences. The inconsistency of these scores within an individual subject's own testing sequence as well as among other subjects in a group provides support for the confounding effect of individual differences.

Certain limitations other than those previously mentioned may have themselves reduced the efficacy of the procedure. The first of these is related to individual differences in the sample. Some subjects appeared to have assimilated the relaxation process more quickly than others, while some progressed at faster rates with different procedures. It seems that some techniques are more easily integrated than others, thereby proving more effective for that particular subject. An additional limiting design characteristic might be the length of treatment. Because of varying degrees of anxiety, interest in a particular technique, and other intervening individual differences, subjects may have required a more intensive program of greater duration in order to assure adequate time for acclimation to the

experimental situation and experimenter. Additional exposure to the technique may be necessary to insure increased proficiency in mastering the task.

Because of the complexity of possible confounding factors, it is difficult to discern which of these factors or interactions were responsible for the reported outcome. Subsequent research might include modifications such as the use of a population less vulnerable to situational changes and screening for equivalent pre-test anxiety levels in both groups. An increase in generalizability of the treatment effect might occur if in vivo relaxation training were substituted for the less anxiety evoking clinical setting. Lengthened program duration and possible experimenter effect might also be systematically examined to determine more precisely their role in relaxation training and subsequent anxiety reduction.

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APPENDIX 1

Inter-Form Reliability of IPAT Forms

Form	Average Obtained Correlation with Other Forms
A	+ .55
B	+ .61
C	+ .61
D	+ .63