PROFESSIONAL AND SUBPROFESSIONAL COUNSELORS USING GROUP DESENSITIZATION AND INSIGHT PROCEDURES TO REDUCE EXAMINATION ANXIETY

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This is to certify that the

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ABSTRACT

PROFESSIONAL AND SUBPROFESSIONAL COUNSELORS
USING GROUP DESENSITIZATION AND INSIGHT PROCEDURES
TO REDUCE EXAMINATION ANXIETY

by Donald R. Neuman

This study was designed to compare the effects of professional and subprofessional counselors using group insight and group desensitization techniques with high and low imagery arousal test anxious college students.

Two professional and two subprofessional counselors met with groups of three students for five interviews to administer insight and desensitization treatments. Wait control and no contact control groups were included to control for external interview influences and attention effects. Dependent variables included the S-R Inventory of Anxiousness, Test Anxiety Inventory, Observers' Checklist, Test Anxiety Rating Scale, Pulse Rate, Thayer Activation-Deactivation Checklist, Therapists' Ratings, and Client Ratings. High and low imagery arousal subjects were categorized by degree of reported physiological anxiety when certain situations were imagined when administered the Imagery Arousal Inventory.

The major conclusions of the study were:

(1) Group desensitization methods caused a significantly greater decrease in mean change scores than group insight procedures. Several criterion measures, the S-R Inventory of Anxiousness, and Test Anxiety Inventory and Client Ratings clearly differentiated the two treatments. The differences on the remaining measures were not as pronounced.

(2) Groups led by subprofessional counselors were in general as effective as groups led by professional counselors. There was some variability in the data however. The S-R Inventory of Anxiousness favored the subprofessional counselors while the Test Anxiety Rating Scale indicated that the professional counselors did significantly better. The remaining dependent variables, the Test Anxiety Inventory, Thayer Activation-Deactivation Checklist, Pulse Rate, and Observers' Checklist failed to suggest an advantage for either group.

(3) High imagery arousal subjects did not show a significantly greater decrease in change scores when compared with low imagery arousal subjects. Low imagery arousal subjects did significantly better than high imagery arousal students when the Observers' Checklist was the dependent variable. It appears that the degree to which clients physiologically re-experience images does not determine success or failure in counseling. More sensitive techniques for assessing level of arousal need development.

(4) Both experimental groups showed a significant decrease in mean change scores on all of the criterion measures when compared to control groups.

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By

Donald R. Neuman

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I certify that I have read this thesis and that in my opinion it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Dr. Carl E. Thoresen, Chairman

I certify that I have read this thesis and that in my opinion it is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

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CHAPTER I

PROBLEM AND REVIEW OF LITERATURE

Purpose and Introduction

The main purpose of this investigation was to compare the effects of group insight counseling and systematic desensitization procedures in reducing test anxiety in college students. Another objective was to contrast the effectiveness of counselor support personnel, i.e., sub-professional counselors, with professionally trained counselors. In addition, a client characteristic involving level of imagery arousal was examined.

Problems involving stress and tension in taking examinations have steadily increased during the last decade. This often results in inaccurate assessment of student achievement, as well as in debilitating anxiety in situations other than examinations (Alpert and Haber, 1963; Gordon and Sarason, 1955; Grooms and Endler, 1960; and Paul and Eriksen, 1964). Yet evaluations of systematic approaches to reduce the above maladaptive behaviors have been conspicuous by their absence, and only theoretical notions of treating this condition have prevailed. Insight methods, stressing "deep psychodynamic" procedures have traditionally been used by psychotherapists to change any and all inappropriate behaviors, including examination anxieties. Fenichel (1945, pp. 201-202) discusses the theoretical basis of test anxiety:

> "A fear of examinations is closely related to... stage fright. However... (the) authority, an external representative of the superego, is about to decide whether one is accepted and permitted to participate in certain privileges, that is, to obtain the narcissistic supplies, or whether one is rejected and sentenced to isolation and narcissistic hunger. The relationship between modern examinations and primitive initiation rites has been stressed (elsewhere). How a person reacts to this situation depends both on his sexual feeling relationship to

> authorities (to the father) and on his narcissistic needs. An anxiety hysteria will result whenever the person sexualizes the examination situation in the hope of thereby overcoming his inferiority feelings and castration fear, and then has to face the possibility of his efforts having the opposite effect. Usually, conflicts around passive-feminine longings complicate the situation in examination phobias".

Wolberg (1967, pp. 1100-1101) also presents some emotional causes for failure of students to learn in school:

> "A psychological inability to learn or to read is usually a symptom which serves a specific purpose such as to punish the parents, to defy authority, to refuse to grow up, to avoid competition, or to punish oneself".

Frieda Fromm-Reichmann, (1959, p. 316), a psychodynamic therapist, summarizes the goals for clients suffering from anxiety, which implicitly includes examination anxiety:

> "Therefore, the focal point of all psychotherapeutic..treatment of anxiety states is to help the anxious person uncover and understand the unconscious reason for his helplessness and anxiety.. the psychotherapeutic goal should be to help patients, for preventative reasons, uncover, resolve, and integrate the causes of these anxieties, lest they lead to an expression by mental symptoms which simultaneously are used as defenses against the awareness of these anxiety states".

Psychodynamic practictioners therefore see understanding, insight and integration of instinctual urges as essential processes in the treatment of anxiety. They contend that if reasons for the maladaptive behavior can be brought into awareness, change should occur in the form of anxiety reduction. In short, psychodynamic treatment methods focus on underlying dimensions rather than on the direct reduction of anxiety behaviors.

Recently, however, researchers and theoreticians have reexamined these basic assumptions of behavior change. Laboratory investigations, based on experiments with animal behavior, have led to behavioral approaches to counseling which state that maladaptive behavior is environmentally learned. These new approaches, reviewed by Grossberg (1964, p. 75) include:

> "(1) Aversion therapy. Aversive stimuli are presented in conjunction with the elicitation of a maladaptive response... (2) Negative practice. The maladaptive response is elicited repeatedly and frequently... (3) Operant conditioning. Reinforcing stimuli are presented which increase the frequency of responses whose low frequency constitutes a behavior deficit... (4) Reinforcement withdrawal. Positive reinforcing stimuli are withdrawn following the occurance of a maladaptive response... and (5) Desensitization. Stimuli evoking maladaptive responses are repeatedly presented at low intensities which do not provoke a full-blown response. Stimulus intensity is systematically increased until even high intensities no longer evoke maladaptive responses...".

The last model, systematic desensitization, developed by Wolpe (1958) and Wolpe and Lazarus (1966), has recently been used to treat speech and test anxiety in college students (Emery and Krumboltz, 1967; Katahn, Strenger, and Cherry, 1966; Paul, 1966; and Spaights, 1967). Desensitization is based on the principle of reciprocal inhibition or counterconditioning which states that: "If a response can be made to occur in the presence of anxiety-evoking stimuli, it will weaken the bond between these stimuli and the anxiety" (Wolpe and Lazarus, 1966, p. 12). This principle has led to many different methods of behavioral counseling techniques of which desensitization is one. Other procedures, as outlined by Wolpe and Lazarus (1966) include the use of (1) Assertive Training, (2) Thought-stopping, (3) Sexual Responses, (4) Conditioned Motor Responses, (5) in Vivo Desensitization, (6) Emotional Flooding, (7) Hypnosis, and (8) Exaggerated Role-Training.

To implement reciprocal inhibition in desensitization, the client is first taught to relax using specific relaxation exercises. A ranked list of fear-evoking stimulus situations is then constructed. The weakest fear situation on the hierarchy is presented so that only a minimal amount of anxiety accompanies the image. When the client can successfully visualize the graded anxious situation, without anxiety, he then proceeds up the hierarchy, gradually imagining stronger fears at each step, but pairing these images with a relaxed body state. The assumption is made that these imagined emotional states, when accompanied by relaxation, generalize to the same external real-life situations, resulting in a decrease in anxiety outside the therapy room. The purpose of this study is to evaluate group desensitization procedures when compared with group insight counseling methods.

A review of the literature reveals that several studies have compared desensitization with some other mode of treatment (Davison, in press, and Lang, Lazovik, and Reynolds, 1965) but only the studies by Lazarus (1961) and Paul (1966) have directly compared systematic desensitization procedures with insight methods. No comparative studies have appeared using test anxiety as the target behavior. This investigation seeks to partially replicate the studies by Lazarus (1961) and Paul (1966).

Lazarus (1961) compared the therapeutic effects of group desensitization and interpretive group psychotherapy with subjects whose fears were clearly observable, such as fear of heights, enclosures, and other specific environmental stimuli. However, the results must be considered as tentative since many facets of a rigorous experimental design were not employed. For example, Lazarus himself served as therapist and evaluator.

Lazarus concluded that his groups of five to seven subjects were only minimally slowed down by other subjects unable to successfully complete the hierarchies with the rest of the group. The group insight approach he used placed heavy emphasis upon interpretation, awareness, and relationships. He found that of 18 subjects treated by group desensitization, 13 improved significantly. Of the 17 insight subjects only two improved significantly.

Paul (1966) compared the effectiveness of insight and desensitization techniques using stress associated with public speaking as the target or observable behavior to change. Ninety-six subjects were assigned to individual desensitization, individual insight, attention-placebo, no-treatment control and no-contact control groups. Five experienced insight psychotherapists administered both the desensitization and insight treatments for five sessions each. Paul found that all subjects receiving desensitization reduced their speech anxiety and that there were no differences between the insight therapy and attention-placebo groups. He concluded that: (1) insight therapy reduced anxiety more than no treatment at all, (2) giving attention in a counseling relationship accounted for as much anxiety-reduction as giving insight and understanding, (3) desensitization was

the most effective treatment in reducing speech anxiety, (4) observable criteria were the most useful measures and (5) control groups must be included in future research to accommodate changes resulting from attention-placebo effects.

The present study used only three subjects in the treatment groups to compromise on the traditional group size of five to seven clients used in the Lazarus study (1966) and individual counseling, thereby offering economy as well as some of the individualized features of one-to-one treatment. Also, the investigator was not one of the therapists in the study so that the bias factor could be controlled. The group dynamic approach used in this investigation appeared to be similar to that described by Lazarus. This study also followed the recommendation of Paul (1966) that specific target behaviors be used, such as anxiety over tests, for evaluative purposes. In order to replicate his design (Paul 1966), a wait control was used instead of a no-treatment control group to compare nonspecific, or attention effects with the no-contact control group receiving no attention.

The purpose of this investigation was to: (1) provide a partial replication of the studies by Lazarus (1961) and Paul (1966) in evaluating and contrasting the efficacy of desensitization and insight methods, (2) compare differential effects of using professional counselors and "counselor support personnel", (3) evaluate treatment effects with a variety of outcome criteria and (4) conduct an experimental study using small counseling groups.

Review and Discussion of the Literature

Insight vs. Desensitization Methods

While a comprehensive review of the literature involving insight therapy, often used interchangeably with such terms as "psychoanalytic", "relationship", "dynamic", and "traditional", is not possible here, selective attention will be given to reviewing the recent articles involving insight and desensitization procedures.

Before examining some of the work that has been done in these two areas, a brief inquiry into their historical roots might prove helpful. The first indications of a scientific approach to psychodynamic therapy began with Rogers (1951, 1957, 1958) who used process evaluations by means of analyzing audio tape recordings of interviews. Previously, Freudian theory, or depth psychology, dominated the therapeutic literature. Objective evaluations were thought unnecessary. Dollard and Miller (1950), however, made the initial attempt to integrate traditional psychotherapy with laboratory theories by trying to give concreteness and rigor to clinical psychology while also using laws of learning to explain clinical observations.

The conditioning therapies on the other hand were inspired by the laboratory experients and theoretical accounts of Pavlov, Thorndike, Watson, Guthrie, Hill, Spence, Skinner, and Mowrer (Wolpe, Salter, and Reyna, 1964). The therapeutic implications of behavior therapy were gradually practiced in clinical settings. Wolpe (1958), the originator of systematic desensitization, combined the principle of successive approximations with imagery and relaxation to formulate a theoretical model of behavior change with humans.

A look at the Annual Review of Psychology publications of 1957 and 1967 permits an interesting contrast in the historical development of behavior or conditioning therapies. The review of Winder (1957) considered the status of psychotherapy with no mention of learning theory approaches, behavior therapy, or variations of them. The only term even resembling behavioral language was "directive therapy". It was not described but merely embodied in a list of therapeutic techniques. The bibliography cited in the Winder (1957) review, while written by a psychologist, contained references primarily from psychiatric and medical journals. This reflects the youth of research in psychotherapy only a decade ago.

The latest review by Ford and Urban (1967, p. 366), however, presents the changing status of psychotherapy research succinctly:

> "The king is dead, long live the king. The picture of psychotherapy as a condition in which two people sit privately in an office and talk about the thought and feelings of one of them with

> the expectation that changes in these will automatically produce changes in overt behavior outside that office has been shattered. A new generation is emerging in the field of psychtherapy. A much wider range of procedures is being used by people with a variety of theoretical persuasions. Out of this innovative activity will undoubtly come major theoretical changes".

Ford and Urban (1967) point out that advocates of psychoanalysis and client-centered therapy, that is, insight models, have not provided the new directions so urgently needed to improve counseling processes.

The first national conference sponsored by the American Psychological Association dealing with research in psychotherapy (Rubenstein and Parloff, 1959) also was a significant though relatively unsuccessful attempt to bring order, integration and scientific language to the field. A basic issue of this conference was whether rigorous scientific methodology could be applied to research in psychotherapy. Krasner and Ullmann (1965) have stressed that procedures leading to effective behavior modification have only been direct applications of laboratory data and principles. Therefore a compromise between insight and learning theory would be incompatible. These authors point out that insight therapies start with a treatment procedure and bring in theory after the fact. Behavior therapy starts with concepts of learning and develops a program for behavior change before the fact.

Other writers have leveled strong criticism at the ineffective, unnecessary length, and unsystematic aspects of insight therapy (Wolpe, Salter, and Reyna, 1964); at the lack of objective experimental conditions offered by cognitive critics of behaviorism (Weist, 1967), and at the myth that insight, or awareness, is the independent variable that causes change (Hobbs, 1962). Grossberg (1964), after reviewing research in behavior therapy, concluded that this approach has been successful with disorders involving specific maladaptive behaviors; i.e., phobias, tics, anxiety reactions, stuttering and enuresis. Followup investigations seemed to suggest long-lasting cures occurred with little evidence of symptom substitution as predicted by insight therapists.

Krumboltz (1966a, 1966b, 1967) has argued that the behavioral approach to counseling is more humanistic by emphasizing the individualization of client goals. Carkhuff (1966b), in reviewing counseling research for 1965, echos the call for criteria based on the goals of the client which were not achieved without the assistance of a counselor. Carkhuff (1966b, p. 479) points out paradoxically that "...it takes a behaviorist (Krumboltz) to establish truly client-centered criteria". The therapist applies a specifically tailored treatment needed to help him change the maladaptive behaviors in question. This is a radical departure from the insight therapy position which relies seemingly upon one passive, relationship-type technique for all clients. Subjective goals, difficult to measure and treat like "self-acceptance", "self-fulfillment", and "self-actualization" are also part of the traditional approach. Krumboltz sees understanding and warmth as necessary but often insufficient interpersonal conditions for behavior change to take place.

Truax (1966) has succinctly reviewed numerous research studies suggesting that accurate empathic understanding, nonpossessive warmth and genuineness are requisite characteristics of effective therapists. He posits that therapists manifesting these three behaviors are effective <u>because</u> they are more potent reinforcers and elicit positive affect in the patient. In addition, he presents data showing that insight practitioners rely on several learning-based techniques but conceptualize their methods as one model. Using excerpts from tape recordings of therapy sessions by Carl Rogers, Truax (1966) found that selective verbal and non-verbal positive reinforcement occurred in spite of Roger's contention that "selective responding" would be damaging rather than helpful.

Eysenck (1952, 1966) elaborately and longitudinally critiqued the fields of psychotherapy. Some of his conclusions were (1966, p. 39):

> "When untreated neurotic control groups are compared with experimental groups of neurotic patients treated by means of psychotherapy (insight), both groups recover to approximately the same extent...patients treated by means of psychotherapeutic

> procedures based on learning theory, improve significantly more quickly than do patients treated by means of psychoanalytic or eclectic psychotherapy, or not treated by psychotherapy at all".

Kiesler (1966) disagreed with the manner in which Eysenck reached the above conclusions by reviewing in depth his generalizations. For example, Eysenck (1966) proposed that studies consistantly indicated that about two-thirds of severe psychoneurotics show recovery or considerable improvement without the benefit of therapy; i.e., "spontaneous remission". Therefore, the implications suggest that therapy ought to be able to improve on this "two-thirds" improvement rate. Kiesler, however, pointed out that the controls and treatment groups used in the investigation were not comparable. He also maintains that the two-thirds spontaneous remission rate is not a reliable figure and that a five year followup may yield discrepant data. Kiesler concludes that current investigations of the efficacy of psychotherapy are based on inadequate paradigms and that certain "myths" need to be refuted to adequately evaluate counseling. The present study seeks to gather data based on a more rigorous research design. The use of two control groups and multiple outcome criteria can permit more accurate conclusions to be drawn about the effectiveness of two methods of group counseling; insight and desensitization.

Studies Comparing Desensitization and Insight Methods

Several recent studies have indicated successful results using systematic desensitization procedures with test anxious students. Spaights (1967) found that five group desensitization sessions which also included group interaction resulted in significantly higher final examination scores and grade point averages, less anxiety on a self-report measure and more favorable attitudes toward testing. The counseling sessions appeared to be similar to the insight methods used in the present study. The criterion measures, however, did not include behavioral observations but only self-report indications of anxiety reduction.

In a pilot study, Katahn, Strenger, and Cherry (1966) successfully used desensitization methods combined with group counseling to reduce test

anxiety and improve grade point averages of college students. They found that the students perceived the group counseling discussion as more helpful than desensitization methods. It was not clear, however, in this study and the above study (Spaights, 1967) whether the group counseling or group desensitization procedures was the causitive agent of change since both were combined in each treatment session.

Lang, Lazovik, and Reynolds (1965) reported on snake phobic subjects individually treated with desensitization and pseudotherapy (placebo) where the treatment procedure was therapeutically neutral except for the therapist-client relationship. The pseudotherapy subjects received the same five training sessions as in desensitization but the treatment consisted of discussing non-fearful objects. A no-treatment control was included. Desensitization subjects showed greater fear reduction than controls, while placebo subjects changed no more than untreated subjects. The successful desensitization cases were relatively independent of suggestibility effects and the desensitization of specific fears generalized positively to other fears as measured by the Fear Survey Schedule.

A study by Davison (in press) has shown that the effectiveness of desensitization occurs from a counterconditioning process and is not derived from the singular application of relaxation alone nor from gradual exposure to imaginal aversive stimuli without relaxation. Snake phobic college students receiving a graded series of aversive stimuli contiguously paired in imagination with deep muscle relaxation (desensitization), displayed significantly more snake-approach behavior than matched subjects in the pseudo-desensitization (relaxation and irrelevant hierarchy items), the exposure group (graded aversive stimuli without relaxation) or the no-treatment group.

In all of the above studies, no direct comparisons were made between insight and desensitization procedures nor were physiological and observational criterion measures included. In most research studies of counseling adequate research designs have not been employed. Paul's (1966) investigation, however,

seems to be an exceptional prototype in this area. By using multiple criterion measures and several control procedures, his format may enable researchers to more accurately measure the psychotherapy process. The present study will attempt to incorporate knowledge gained from previous research to more adequately evaluate what differences exist between insight and desensitization methods.

Toward An Integration of Insight and Desensitization

The seemingly diametrically opposed theoretical positions now present in the field of counseling should not remain segregated. If clients are to benefit from therapeutic services, these approaches need to be consolidated in some way. Several writers have proposed solutions.

Kanfer (1966) attempts an integration of the two approaches by envisioning a time when a therapist will select a set of procedures (based on content and process) with predictable effects for use on a patient with specific symptoms and assets, to accomplish a clearly defined goal. The therapist would then serve as a behavior engineer whose major skill lies in the proper choice of known instruments for the change of behavior, and who programs his own behavior and that of other people and events in the patients environment.

Truax (1966b) tried to show similarities of traditional psychotherapy and behavior therapy by hypothesizing that therapists of both disciplines manifest the same actual behaviors. For example, the traditional counselor uses the human relationship systematically as a source for counterconditioning but without acknowledging this intent.

> "In S-R terminology, an affective stimulus serves as an unconditioned stimulus in automatically eliciting an affect response which is in kind and proportion to the stimulus. In the therapy situation, when the therapist communicates warmth, he thereby tends to elicit warmth in response from the patient." (p. 162)

In other words, the therapist controls and influences the positive effects of warmth occurring in the client.

Wolberg (1967) calls for a marriage between insight-oriented therapists who unwittingly use extinction but yet avoid using techniques with patients who cannot benefit from insight methods, and the learning theory therapists, who should recognize that not all forces operating in the interpersonal relationship are identifiable and manipulatable. He suggests that properly controlled comparisons are needed to solve the question of outcome by arranging for such controls in psychotherapy, where the variables are so great and extremely difficult. Also, no one apparently knows yet for whom or when behavior therapy is most appropriately used. Wolberg goes on to suggest that the behavior therapist ought to (1967, p. 210):

> "...share the throne of empiricism with other therapists whom they consider unscientifically steeped in the mystique of their arts, and amalgamate their findings with those of schools different than their own...out of this wedding of the insight and behavior therapies, dynamic explorations helping the individual to structure and refine his learning field, and conditioning techniques expediting the unlearning of neurotic and the incorporation of healthy patterns (may emerge)."

Wrenn (1966, p. 104) proposes the same synthesis when he states that:

> "...perceptual (insight) psychology can contribute to the examination and determination of meaningful ends or purposes of a given counseling relationship, and that scientific behaviorism can contribute a significant method for producing desired change in behavior or attitude".

He comments further (p. 106) by pointing out that:

> "Perhaps it is not integration that is to be sought at all but <u>selective use</u> of elements, whatever the source. The counselor deals with a <u>person</u> who wants <u>changes</u>, and the counselor's responsibility goes beyond the intellectual stages of dealing with ideas and with disembodied facts".

The next section will deal with ways to implement some of the above positions, namely, economical and efficient ways to serve clients by utilizing counselor-support personnel.

Professional and Subprofessional Counselors

Many of the theoretical issues and assumptions are apparent when professional training is examined. The traditionalists stress rather long-term interpersonal training programs. The behavioral oriented counselor would include effective interpersonal behaviors in his repertoire but go further and ask questions such as "What reinforcers are available?", "What are the consequences of my behavior?", and "In what ways can the client's environment be modified to promote relevant behaviors?"

For example, Wetzel (1966) modified the compulsive stealing of a 10 year old male in a resident home by using an older female cook to give attention and "love" only when the subject did not steal. In this case, the patient's environment was modified to elicit behavior change without the direct intervention of a therapist, by using a "non-professional" person.

Urban and Ford (1967, p. 365), reviewing the professional preparation of psychotherapists, summarized a significant trend in training:

> "...psychologists should be trained in a variety of approaches beyond one-to-one psychotherapy..".

This consideration, training in varied techniques, suggests that therapists should use whatever methods, traditional or non-traditional, that bring about relevant changes. It also implies that sub-professional personnel be considered to help in effecting change in clients.

An increasing number of writers are suggesting that the necessity for elaborate long-term professional training may be questionable. Many researchers are using auxiliary, or sub-professional personnel to achieve certain types of behavior changes with certain types of clients. For example, Poser (1966) suggests that effective therapy can be carried out by personnel without professional training. He used undergraduate female students with no training or experience in psychotherapy and found that in comparison with professional therapists who treated matched patients, the undergraduates

achieved slightly better results. In a critique of his study, Rioch (1966, p. 290) urges that: "...professionals with traditional training identify themselves with the advancement of knowledge and leave more of the practice of crafts to new categories of workers".

Carkhuff and Truax (1965) report that hospital aides, volunteer workers, and industrial therapists, in training for four months to provide high levels of accurate empathy, non-possessive warmth and genuineness were able to have significantly positive effects on the behavioral and personality functioning of chronic hospitalized patients. No comparisons of professional and subprofessionals were made, however, in this study.

Schlossberg (1967) calls for the use of subprofessionals as ways to help the lower socio-economic class people achieve direction in life, relieve the manpower shortage in guidance and provide certain types of "helping" services for clients from socially deprived areas. This model suggests that socio-economic class peers, functioning as subprofessionals, may be more effective in changing behaviors than professionally trained counselors from another socio-economic class.

Kanfer (1966) recognizes the potential of this untapped resource and suggests that sets of therapeutic programs with predictable effects be available for use with clients manifesting specific symptoms. The therapist could then be seen as a "behavioral engineer" who uses his skills to decide which techniques or behaviors he, or a trained technician, need apply to achieve a clients predetermined goal.

Magoon and Golann (1966) have reported that women were used as mental health counselors to assist in the current manpower shortage in the helping professions. Mature, bright, socially-sensitive women were trained for two years to do psychotherapy, under supervision, in mental health settings. The National Institute of Mental Health (NIMH) pilot training program directed by Rioch, Elkes, and Flint (1965) provided the intensive and broad instruction in psychotherapy. Their work was evaluated by their

supervisors as being as effective as professionally-trained new therapists and social workers starting their first professional experience.

To illustrate the concern for training subprofessional counselors by professional organizations, a special Education and Training Committee of Division 17 from the American Psychological Association (Krumboltz, et al., 1966) recommended certain roles that the counseling psychologist should take in developing counselor support personnel. Two suggested areas of examination were concerned with what types of work can be done effectively by support personnel and what types of training are most effective in preparing these subprofessionals.

In analyzing the implications of the recent Project Cause, using Counselor Aides and Youth Advisors for the poverty program, Gordon (1965, p. 342) concluded that:

> "There is a shortage of professional personnel, and the models which underlie the structures of the professions as presently constituted are inappropriate for meeting the social needs. One solution to these problems lies in subprofessional training, to implement a team concept which may provide services more appropriate to the population needing them and which can compensate for the shortage of fully qualified professionals. The establishment of subprofessional training requires attention to ways in which helping work can be subdivided into subprofessional roles which are effective and economical, the development of techniques for supervision, the training of professionals in supervision, attention to methods of in-service training and the development of training skills in professional personnel..."

The experience of the professionally-trained person may thus be maximized by expanding his role to include that of a consultant or organizer rather than restricting his abilities to include only one-to-one counseling.

In summary, the evidence of professional and subprofessional counselors seems to indicate that subprofessionals can at least be as effective as professionally-trained personnel. Empirical data has not appeared in the literature indicating that subprofessionals are ineffective or detrimental.

All the above writers have provided data to show that using counselor support personnel can relieve the shortage in the mental health field while providing helpful services to clients.

The purpose of the present study is to evaluate further the effectiveness of the subprofessional counselor. By accumulating data concerned with the methods or levels of training needed for treatment of specific behaviors, such as test anxiety, a more valid scientific judgment of treatment procedures may be made. This study seeks to investigate this potential resource by comparing the efficacy of subprofessionally-trained counselors with professionally-trained counselors using changes in amount of examination anxiety as outcome criteria.

Imagery Arousal Factor

Although studies suggest that desensitization procedures are effective, there are certain restrictions that limit its application. One primary drawback involves individual difference in clients due to variability in imagery arousal. Some clients are able to remember past emotional experiences but cannot conjure up reasonable vivid visual images when they do recall the anxiety-producing scene. Counterconditioning cannot work without the original emotional reaction being elicited during relaxation. For example, while imagining the original aversive situation, panic on a final examination, the client must be able to physically experience the original fear stimulus he felt in the classroom the day he "blocked". The aversive stimulus must be paired with relaxation responses to be "neutralized" or "desensitized".

Wolpe and Lazarus (1966, p. 95) discuss this need for imagery arousal:

> "There are a few people who are simply unable to conjure up either visual or auditory images-at any rate in response to the requirements of the therapist. Far more commonly, the trouble is that while images can be formed they have no sense of reality for the patient. Occasionally action taken

> by the therapist leads to the difficulty being overcome. The action is of various kinds - providing much verbal detail of the situation to be imagined, inducing a 'deep' trance in good hypnotic subjects, or getting the patient to describe what he imagines. But, usually, such efforts are without avail; and the therapeutic change must then depend upon the use of real stimuli".

The author is not aware of any study investigating this aspect of desensitization treatment or of any suggested method of assessing it other than a clinical judgment. Ideally, imagery arousal should be assessed by physiological instruments while the subject is reacting to emotional situations similar to the desensitization process. This, however, could affect the ability of the person to concentrate by creating an unnaturalistic setting.

To accurately and reliably record the arousal quality of a subject seeking psychotherapy for specific disorders would aid in prognosis and assignment to a particular treatment. Therapists would also be able to gather data on possible ways of increasing a client's ability to visually imagine past emotional experiences. The absence of any experimental data in this field indicates a need to investigate this influential variable. Therapists of all disciplines unwittingly use this behavior with no knowledge of its effects on the client. Insight counselors rely on imagery to arouse catharsis and "working through" of transference and repression. Behavior therapists, other than those practicing systematic desensitization, also need to have clients recall the past emotional anxieties from which they seek relief. Therefore, the intent of investigating imagery arousal is to provide general data concerning this unexamined behavior of clients as well as to gather information on which clients, high or low-imagery arousal types, succeed or do not succeed with insight or desensitization methods.

Multiple Criterion Measures

The greatest problem today is psychotherapeutic research seems to be the outcome criterion problem (Paul, 1967). In spite of the lack of validation

(Eysenck, 1966), research workers (Strupp and Luborsky, 1962) contend that psychotherapy is effective but faulty instrumentation and unreliable dependent variables have caused the negative findings.

Paul (1967) critiques the present state of research in psychotherapy and offers helpful innovations to redirect investigations. He selects a factorial group design approach with no-treatment and attention-placebo controls to restrain confounding variables. He also suggests that (p. 111):

> "...the question towards which all outcome research should ultimately be directed is the following: What treatment, by whom, is most effective for this individual with that specific problem, and under which set of circumstances?"

He does not expect a single study to answer this question but a collection of factorially-designed studies, with the aid of computers, will be the only means to achieve relevant knowledge to solve the above problem. The present study attempts to provide some data toward arriving at the solution.

Krumboltz (1966) and Thoresen (1966a) amplify the position of Paul by stating that no one type of criterion measure is appropriate for all clients due to their differential characteristics and problems. It follows, therefore, that no one type of counseling procedure is appropriate to modify client behavior. These authors suggest that observable and individualized goals may take the form of changing maladaptive behavior, improving decision-making behavior, or presenting future problematic behavior. Therefore, evaluation of the "successes" of therapy is really dependent upon the idiosyncratic client objectives.

Paul (1966, 1967) has added to the construct validity of certain measuring instruments by using multiple-measures of outcomes in his study. He points out that objective and reliable observations of selected target behaviors, such as observation of response rate of test anxious behavior are extremely desirable because otherwise bias enters into subjective instruments. Physiological measures such as pulse rate, observational samples of specific predetermined text-anxious behaviors, and self-ratings, specific and general, constitute more promising criterion instruments than do current singular

outcome measures such as Q-sorts, Grade Point averages and self-reports. Usingand analyzing the results of multi-dimensional assessment instruments will be an important feature of this study.

Hypotheses and Summary

The criterion measures to be used in this study are:

(1) S-R Inventory of Anxiousness
(2) Test Anxiety Inventory
(3) Test Anxiety Rating
(4) Thayer Adjective Checklist
(5) Pulse Rate
(6) Observers' Checklist
(7) Therapist Ratings
(8) Client Ratings

The hypotheses of this study are as follows:

Hypothesis One - Groups receiving systematic desensitization procedures will show a significantly greater decrease in criterion scores than groups receiving insight counseling.

Hypothesis Two - There will be no significant differences on mean change scores of groups led by professional counselors when compared with groups led by sub-professional counsellors.

Hypothesis Three - High imagery arousal subjects will show a significantly greater decrease in criterion scores when compared with low imagery arousal subjects.

Hypothesis Four - There will be no significant interactions involving type of treatment, counselor-level, or imagery arousal level.

Hypothesis Five - Experimental groups will show a significant decrease on mean difference criterion scores.

Hypothesis Six - Wait Control or No-Contact Control groups will not show a significant decrease or mean difference criterion scores.

Summary

In summary, there is a definite trend in the field of psychotherapy to investigate whatever innovative methods might cause relevant behavior change in clients. Insight counseling procedures may in fact be effective but the process is not clear nor is it systematic. Behavioral approaches, however, offer many more clearly-delineated techniques that show much promise, especially as to permitting empirical and experimental validation. Traditional forms of counseling have not changed much in the past few decades.

The view is suggested that counselors, to be effective, may not have to go through extensive training programs if they can demonstrate positive behavior change in clients using specific therapeutic procedures. There also is a growing tendency to investigate the differential characteristics of clients which would aid in diagnosis and treatment. The investigation of the ability of clients to vividly imagine emotional experiences is a promising area. Finally, various outcome criterion such as physiological, observational, and self-rating instruments need to be subjected to further empirical investigation.

CHAPTER II

EXPERIMENTAL DESIGN AND PROCEDURES

Introduction

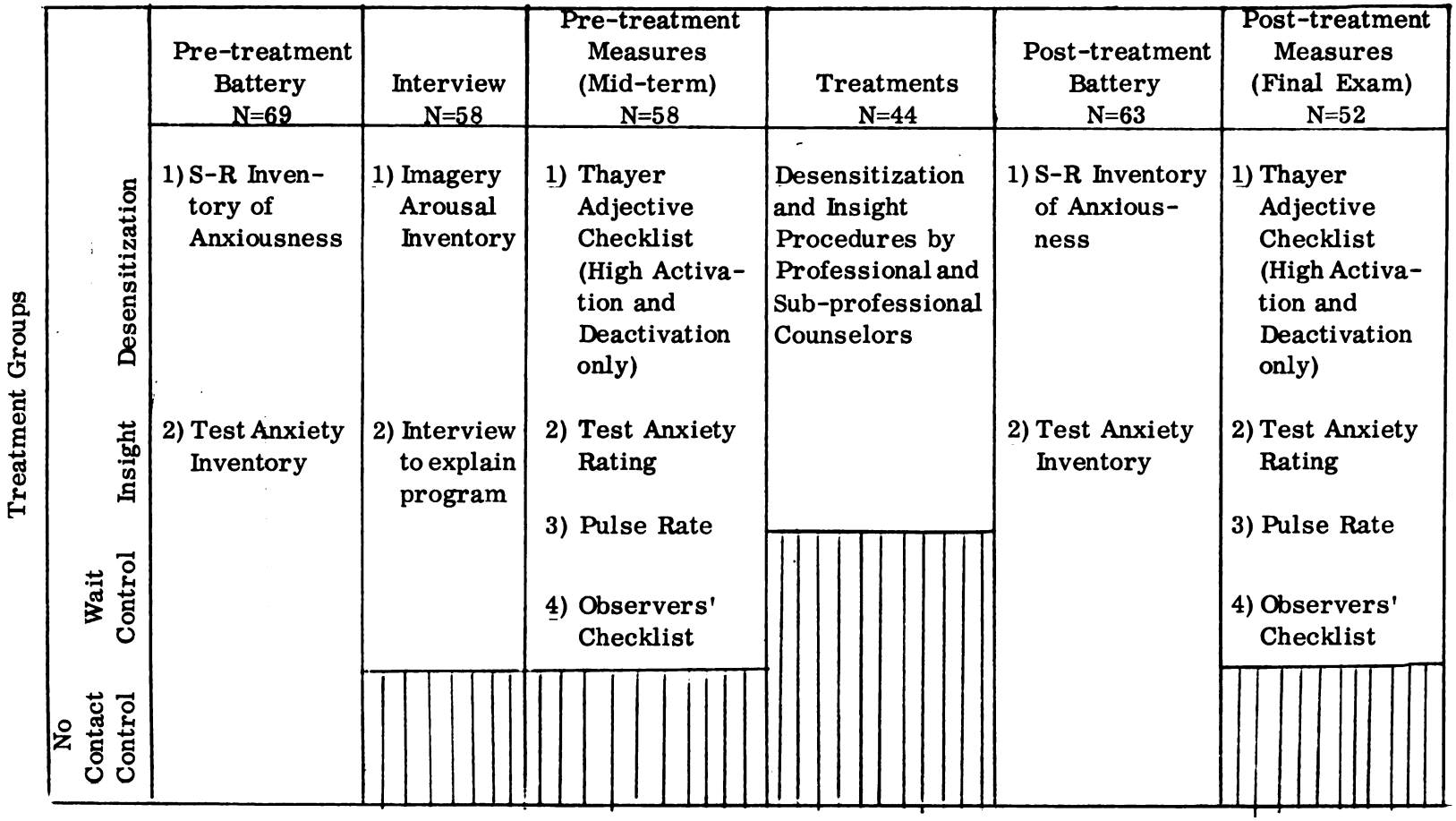
This study was designed to investigate what differences exist between counseling procedures termed insight and desensitization when applied to the problem of examination anxiety. A second objective was to contrast the effectiveness of professional and subprofessional counselors. A final objective was to assess the differences between high and low imagery arousal level subjects as to treatment effect. Figure I presents the experimental design of this investigation suggested by Paul (1966, p. 27).

This study utilized a pre- and post-treatment test battery of self-report measures prior to mid-term and final examinations. In addition, pre- and post-treatment measures were taken immediately prior to, during and following mid-term and final examinations. The purpose of this extensive data-gathering was to control for the differences of measures taken at different times. For example, evaluation of behavior two weeks prior to examinations does not necessarily record behavior similar to data gathered during examinations.

To indicate that change occurs in clients as a result of some treatment, subjects have been used as their own control (Gardner, 1967). Randomly-chosen control groups, however, are not included with this approach. Base rates are obtained to determine behavioral changes following treatment but the own control design does not take into account changes caused by witholding treatment, passage of time, or extra-therapy influences. To accommodate these extraneous variables, control groups therefore seem to be an essential part of outcome research. Paul (1966) has used both a wait control and a no-contact control group to hold the effect of these variables constant. In his study, the wait control group received the same testing and attention from the investigator as the treatment group but no

FIGURE 1

Design and Procedure



"counseling" was provided. His no-contact control group however received only the test battery. The purpose of including these two control groups in the present investigation was to control for external life experiences that often result in behavioral change.

Figure 2 portrays the arrangement of the treatment and control groups. The original assignment consisted of 12 subjects to each group; that is, 12 subjects to the professional desensitization treatment groups and 12 subjects to the professional insight groups. The wait-control group contained 10 subjects and the no-contact control group 11 subjects.

FIGURE 2

Counselor Level

	Professional N=24		Sub-Professional N=24			
	Treatment				Wait	No Contact
	Desensitization	Insight	Desensitization	Insight	Control	Control
High Imagery Arousal N=24	N=6	N=6	N=6	N=6	N=10	N=11
Low Imagery Arousal N=24	N=6	N=6	N=6	N=6		

Desensitization N=24
Insight N=24

Seven Human Growth and Development classes, required for students in education at Western Michigan University, were contacted by the investigator to explain an experimental program offered by the counseling center to relieve test anxiety in college students. Fifty-eight students volunteered for the study. Six students, after assignment to treatment groups, dropped out because of time limitations. All subjects completed a pre-treatment test battery two

weeks prior to their Human Growth and Development mid-term examinations. This battery consisted of the S-R Inventory of Anxiousness (see Appendix A), the Test Anxiety Inventory (see Appendix B), and a cover sheet explaining the program (see Appendix C). An orientation interview at the Western Michigan University Counseling Center was arranged by telephone.

Methodology

Orientation Interview and Arousal Measurement

The investigator interviewed all 58 subjects individually, explaining the purpose of the project but avoiding description of the types of treatments involved. Essentially they were told that their counselor, carefully trained for this program, would see them in groups of three for five sessions to "help relieve their anxiety over taking tests". All questions were answered in such a way so that the differential treatments would not be disclosed. A typescript of the orientation tape is found in Appendix D.

Prior to the interview, all subjects filled out the Imagery Arousal Inventory (see Appendix E) designed to assess the ability of each individual to experience physiological arousal when imagining an emotional scene. During the interview the subject was told to relax as much as possible and keep his eyes closed to facilitate "imagining" behavior. The responses to the six emotional situations in the inventory were then read to the subjects in a somewhat dramatic fashion by the investigator. For example, "Think back, the last time you kissed someone who really turned you on...imagine yourself there with that person...".

The subject raised the number of fingers on his right hand to indicate the degree of physiological arousal felt when he imagined each of the six scenes. Not raising any fingers indicated no anxiety felt while raising five fingers indicated extreme anxiety arousal. The arousal score consisted of the sum of the six ratings with the possible range from zero to thirty. It

is acknowledged that physiological measurement techniques would more accurately determine the subjects' arousal level. Such instrumentation was not, however, available. The present rating method seemed promising as a rough screening device to determine arousal level.

Instrumentation

The Test Anxiety Inventory and the S-R Inventory of Anxiousness comprised the pre-treatment test battery (see Appendix C for cover sheet) completed by all subjects several weeks before their mid-term examinations. Pulse rates for 30 seconds were taken on all subjects just prior to receiving their mid-term tests. During the examination, the Observers' Checklist (see Appendix F) was used to record the subjects' test-anxious behaviors. Immediately following the test, the Test Anxiety Rating (see Appendix G) and a modification of the Thayer Activation-Deactivation Checklist (see Appendix H) were completed.

The post-treatment test battery included the Test Anxiety Inventory and the S-R Inventory of Anxiousness, along with a cover sheet (see Appendix I) asking all subjects in the treatment groups to complete an evaluation of their counseling. These test batteries were passed out in class the week before finals, after all subjects had terminated their groups. All but two batteries were returned. An effort was made to achieve a 100 per cent return but it was decided that extensive pressure on the students might adversely influence their responses. Pulse rates were taken prior to the final examination. The Observers' Checklist was completed on the subjects during the test. The Thayer Activation-Deactivation Checklist and the Test Anxiety Rating were also administered immediately following the test. The no-contact control group was again asked to complete the same inventories to "conclude the reaearch experiment".

S-R Inventory of Anxiousness

General Design: This instrument, constructed by Endler, McV Hunt, and Rosenstein (1962), consists of 11 situations to which subjects rate their

reactions, such as "You are entering a final examination in an important course", and "You are going into an interview for a very important job". (See Appendix A for format.) These 11 different situations yield 14 different response modes. Based on a five-point rating scale, these modes represent three general ways in which subjects express their emotions: (1) distress, disruption of action, and avoidance, (2) exhilaration, enjoyment, and approach, and (3) residual autonomic responses. Examples of these 14 modal items are "Emotions disrupt action", "Seek experiences like this very much", and "Heart beats faster".

The 11 situational scales are concerned with threats to interpersonal status such as "You are going to meet a new date"; inanimate dangers, for example, "You are alone in the woods at night", and another factor whose meaning is unclear. Each of the 11 situations were separately analyzed in order to evaluate the subjects' responses to the different stimulus situations. Analyses of "modes" of anxiety were not conducted for the S-R Inventory of Anxiousness.

Validation: Endler and McV Hunt (1966) have reported the results of two validity studies. One study found a negative correlation, -.63, between the situation described as "You are getting up to give a speech before a large group", and frequency of pre-treatment recitations in class. Another study found positive correlations, .70 to .80,between the speech situation item and student self-reports of anxiety while speaking. Endler and McV Hunt (1966) concluded that validity of prediction from this instrument is a function of the similarity of the 11 situations and other comparative criterion situations. The first situation, "You are entering a final examination in an important course" was judged to have relevency as to the outcome of the present investigation. The other items provided data on this study's generalization effects; i.e., anxiety relief associated with giving speeches, going out on dates, and entering competitive contests.

Test Anxiety Inventory

General Design: The Test Anxiety Inventory (see Appendix B) is a scale used by Thoresen (1966) and is a revision of a scale used by Emery (1967). It contains items designed to measure degrees of reactions to the testing situation, such as "My heart beats faster just as I start on an important test" and "During an important examination, I experience a feeling of helplessness building up inside me". Subjects respond to these 34 items by completing a five-point scale ranging from "Rarely or never experience that feeling" to "Always or almost always experience that feeling".

Validation: Thoresen (1966) revised the 18 item scale by Emery (1967) used to discriminate test-anxious college students from a random sample control group. Emery found that the test-anxious group scored significantly higher on all 18 items when compared with the control group. The 34 item revision of this scale by Thoresen (1966) was used in the present investigation.

Imagery Arousal Inventory

General Design: This instrument, constructed by the investigator for this study (see Appendix E) consists of six representative emotional-arousing situations that most people have encountered during their lives. The subjects wrote down their specific recollections to the situations so that the examiner would be able to repeat back to the subject, while he was relaxed, the specific environmental stimuli that aroused the anxiety. The situations were worded so that both males and females alike would be able to interprete the experience as having happened to them. Briefly, the administration of this pilot instrument consisted of placing the subject in a relaxed state (see Appendix D for transcript of tape recording) and verbally presenting back to him, in a rather dramatic fashion, his reactions to the six situations. The subject was then instructed to rate his accompanying physiological reaction, or imagery, by raising his right fore finger if he

felt "just a little bit jittery", raising two fingers if he felt "a little more tense", and raising up to five fingers for "really feeling tense and anxious".

The total possible for the six situations ranged from zero to thirty. Actual scores ranged from three to twenty-eight, with a mean of 17.24 and a standard deviation of 5.76.

Validation: The only mention of any form of imagery arousal in the recent literature was by Lazarus and Abramovitz (1962) who used "emotive imagery" in treating children's phobias. Their study did not attempt to systematically evaluate the arousal level of the subjects. It was concerned only with eliciting "emotive imagery" and categorizing subjects for treatment in a clinical setting. To date, nothing has been published assessing the imagery arousal level of clients as a critical factor in desensitiation.

Thayer Activation-Deactivation Checklist

General Design: Thayer (1967) investigated self-report of what he termed activation and deactivation adjectives as an indication of physiological arousal. He categorized the adjectives into four factors: High Activation, General Deactivation, General Activation, and Deactivation-Sleep (see Appendix H for categorization of factors). Only the High Activation and General Deactivation factors were considered appropriate as criterion measures for this investigation. The High Activation adjectives were: clutched-up, jittery, stirred-up, fearful and intense. The General Deactivation adjectives were: at rest, still, leisurely, quiescent, quiet, calm and placid. The latter adjectives were scored in the opposite direction as compared with the High Activation adjectives. That is, a "very fearful" (High Activation adjective) was scored four and a "very calm" response (General Deactivation adjective) was scored one.

Validation: Thayer (1967) found that the four Activation-Deactivation factors correlated .58 and .56 with composite heart and galvanic skin resistance measures. He concluded that controlled self-report is an

adequate alternative measurement form for physiological instrumentation. The above four factors seem to have been empirically validated based on predicted physiological changes that occurred during diurnal sleep-wakefulness and an impending examination.

Test Anxiety Rating

General Design: This instrument (see Appendix G), administered after the mid-term and final examinations, is an eight point rating scale constructed by Thoresen (1967) based in part on a scale used by Emery (1967). It is designed to measure the subjects' self-report of anxiety during five stages of the examination; just before, at the beginning, in the middle, near the end, and after completion of the test.

Validation: Formal validation data have not yet been reported. A comparable rating scale has been used to significantly discriminate subjects who report experiencing extreme anxiety on examinations from non-anxious subjects (Emery, 1967).

Observers' Checklist

General Design: Paul (1966) suggested that research investigations include direct observations of specific behavioral movements by reliable raters as outcome criteria. Based on an observational checklist which he developed to observe subjects in a public speaking situation, a checklist (see Appendix F) was created by the investigator to allow recording of observable body movement responses in test situations. For example, it was decided to group specific behavioral manifestations of anxiety, like shifting of feet, chewing a pencil, and wringing the hands, into categories such as legs, facial, and hands. Observers in this investigation watched one preselected subject for one-minute time spans, starting a stop watch when the subject was engaged in anxious behaviors and stopping it when the subject no longer manifested these behaviors. These trained observers recorded on a sheet (see Appendix F), the total number of seconds during that one minute time

span that the subject was observed engaging in anxious behavior. One person used a separate stop watch to determine the one minute observational spans. The observers looked away from their predetermined subjects only to record the data. When this was done, the observers then shifted to another predetermined subject and repeated the process. The checklist procedures are discussed at greater length in the section dealing with observations of subjects during mid-term and final examinations. The observers then shifted to another subject and repeated the process.

Validation: An assumption was made that these behaviors do indicate to some extent the presence of physiological anxiety. Relevant to this assumption, Paul (1966) found significant positive correlations between change on physiological measurements and change in observable behavior. He combined Pulse Rate and Palmar Sweat Index scores to form a Physiological Composite and reported that it showed a .35 correlation with a Behavioral Checklist, consisting of reliable observations of speech anxious behavior.

Pulse Rate

General Design: In his study, Paul (1966) recorded pulse rates from the radial artery of the subject's right arm immediately before each speech test. The rates were timed by a stopwatch for 30 seconds and later doubled to pulse rate per minute. This procedure was followed in the present investigation except that the pulse rate for 30 seconds was used and not converted to 60 seconds. Immediately before each subject began working on their mid-term and final examinations, the investigator collected the pulse rates for all subjects. This procedure consisted of the investigator firmly placing the middle three fingers of his right hand on the subject's radial artery of the right wrist. The investigator's left hand recorded the 30 second time span with a stop watch. An assistant recorded the pulse rate on the Observers' Checklist sheet.

Validation: Paul (1966) found that use of pulse rate as a criterion measure reached only the 10 per cent level of significance between desensitization

and insight groups, but the failure of seven control subjects to complete post-treatment measures resulted in their being excluded from analyses. Hence, the differences between treatment and control groups were seen as underestimates of changes. Paul (1966) did point out that the mean pre-post reductions in pulse rate scores for the desensitization group was seven while the attention-placebo and insight groups showed a mean decrease of only one. The treatment control increased their mean pulse rate change scores. Therefore, although not a significant discriminator, pulse rate did show some differences between treatments. Therefore, it was decided to use pulse rate in the present study to replicate Paul's (1966) findings, to include some feasible physiological measurement and to determine whether pulse rate can be used as a valid criterion measure in investigating change in test-anxious subjects.

Therapists Ratings

General Design: After each treatment session, professional and subprofessional counselors rated the anxiety-level of each subject in his group (see Appendix J for rating sheet). Mean difference scores were computed based on counselor ratings of the anxiety-level for the first and fifth interviews. For example, a subject's anxiety-level may be rated as three on the five point scale for the first interview and two for the final interview. His change score would be one.

Validation: Paul (1966, p. 52-53) states that:

> "Even though the insight-oriented approach was the one preferred by the other therapists prior to treatment contact, the mean differences in prognosis ratings after treatment showed that the desensitization group was rated significantly higher than either insight or attention-placebo for specific prognosis, and that desensitization was rated higher than insight for prognosis in other areas".

Therefore, it seems clear that therapists ratings can be used as significant outcome criteria despite the apparent bias of the orientation of the therapist.

Client Ratings

General Design: Subjects receiving insight and desensitization procedures were asked to provide a rating of the extent to which (1) their test anxiety was relieved, (2) anxieties other than test anxiety were relieved, (3) their therapist was competent, and (4) the approach used was effective or not effective. (See Appendix I for post-treatment test battery cover sheet.)

Validation: In spite of the subjective nature in utilizing self-report data, Koenig (1963) concluded that some confidence may be placed in utilizing change in self-report of anxiety as a valid index of anxiety change. Even though physiological measures may be more objective, self-report data need not be excluded as outcome research. Walsh (1967) also investigated the validity of self-report and found no differences between the questionnaire, the interview and the personal data blank for collecting data. He concluded that student information can validly be obtained through self-report.

Sampling and Assignment Procedures

Subjects were first assigned to either a high or low group based on their imagery arousal score. A score of 17 was used as a cutoff point. Subjects whose scores were 18 or above were classified in the high imagery arousal group and those whose scores were 16 and below were assigned to the low imagery arousal group. Four subjects scored 17. These subjects were randomly assigned to the low and high groups. A table of random numbers (Winer, 1962) was used to assign the subjects to the 16 different treatment groups and the wait-control group (see Figure 3). Subjects were notified by telephone when and where they were to meet their groups. All sessions were held in the Western Michigan University Counseling Center.

FIGURE 3

Treatments

		High Arousal Desensitization	Low Arousal Desensitization	High Arousal Insight	Low Arousal Insight		
Professional Counselors	A	N=3	N=3	N=3	N=3	High Arousal Wait Control N=5	No Treatment Control N=11
	B	N=3	N=3	N=3	N=3		
Subprofessional Counselors	A	N=3	N=3	N=3	N=3	Low Arousal Wait Control N=5	
	B	N=3	N=3	N=3	N=3		

Total N=69

Control Groups

Paul (1966) has mentioned the need for two types of control groups so that spontaneous remissions, or the changes that occur due to the passage of time, can be controlled. The no-contact control group (N=11) was comprised of students randomly selected from a Human Growth and Development class not previously approached about participation in this project. The 11 students were asked by their instructor to complete a test battery for a "research experiment" prior to mid-term and final examinations. No inquiry was made before selection of the subjects concerning their degree of test anxiety. Examination of the pre-treatment mean scores for all groups showed that the no-treatment control group scored lower on both criterion measures completed, the Test Anxiety Inventory and the S-R Inventory of Anxiousness.

These data therefore provide an opportunity to limit, as much as possible, the non-specific attention effects occurring in other types of control groups. In addition, this group provided control for the effects of history and the possible interaction of testing and treatment (Campbell and Stanley, 1966).

The original wait-control group (N=10), randomly selected with five high imagery arousal subjects and five low imagery arousal subject, were told by telephone that "because of space limitations, they would not be able to be seen this semester but the next semester they were enrolled in school, they would be contacted and the same type of group meeting would be provided for them". They were also urged to help in the evaluation of the experiment by continuing in the program. All 10 subjects cooperated except that two students, one a high arousal subject and one a low arousal subject, did not want to take the final examination in the one-way observation room again. They stated that it "made them too anxious". The final wait-control group, therefore, contained eight subjects.

Counselors

Selection. The two professional therapists, Dr. Donald Davis, Director of the Western Michigan University Counseling Center, and Dr. Milton Cudney, Assistant Director, were selected because they were the only two Ph. D. -level counselors in counseling psychology on the above staff when the study was initiated. The two subprofessional counselors were chosen from six members of a first year graduate course in a clinical psychology practicum class. All had training in studying counseling theory but lacked actual counseling experience or formal supervision. Four members of the class volunteered to take part in the experiment and submitted tapes of simulated counseling interviews in which each acted out "counselor-client" roles with another member of the class. These tapes were then rated by two advanced doctoral students at Michigan State University with considerable counseling experience and supervision. The tapes were ranked on the basis of warmth, empathy, understanding and other generally accepted characteristics deemed important in insight procedures. The top two students were selected. The two subprofessional counselors were paid for their services. The two professional counselors were not paid but integrated their groups into their regular work schedule.

Qualifications. Dr. Donald Davis, 50 years old, and a member of the American Academy of Psychotherapists, received his degree from Michigan State University in 1958, has published numerous professional articles, has presented papers at various conferences, and is currently active in several counseling research projects. Dr. Milton Cudney, 36 years old, received his degree from the Ohio State University in 1964, has contributed several articles to the professional literature, and has more than four years of post-doctoral experience as a psychotherapist.

Paul (1966) used Orientation Scales to describe the "school" each therapist saw himself allied with. The scales may also be used descriptively to portray the two professional therapists' theoretical positions. They both may be described as "insight and relationship" counselors who view the following techniques as an essential part of their counseling: reflection and clarification of feelings, interpretation of feelings, warmth and understanding, permissive and spontaneous relationships, exploration of client dynamics and actualized growth, and avoidance of conditioning, manipulation and systematic reinforcement techniques. Both subprofessional males were married, twenty-two years old and planning to pursue a Ph. D. in Clinical Psychology. They expressed a preference for doing "depth" counseling and "resolving" client problems by means of the above insight procedures. Neither had participated as a client in counseling or psychotherapy nor had they experienced formal practicum training. They were, however, very enthusiastic about the opportunity to be "counselors" in the present study.

Training. Two training sessions of one hour each in systematic desensitization procedures were conducted by Dr. Don Whaley, a member of the Western Michigan University Psychology Department, who has had extensive experience in desensitization methods. Historical antecedents, relaxation techniques, construction of hierarchies and specific behaviors were stressed to facilitate counterconditioning. Each therapist also received a manual

based on Paul's (1966) study, describing how to administer desensitization procedures (see Appendix K), three by five cards on which their clients were to construct individual hierarchies, summary sheets with specific instructions for their clients on how to relax (see Appendix L), therapist rating sheets (see Appendix J), and guidelines for insight treatment techniques (see Appendix M).

Dr. Davis, one of the professional therapists, conducted the two hour-long training sessions for the insight therapy treatment. He discussed theoretical aspects of the test-anxious student and ways of relating to them. In brief, he emphasized that the client's emotional perception of life, needed to be treated as well as his feelings about himself and others. Close, "existential" relationships were encouraged and specific behavioral suggestions were avoided. In addition, 40 tapes were available to the subprofessional counselors to review and integrate the insight approach. Above all, both trainers made an effort to avoid conveying the idea that desensitization or insight was the "best" treatment. An elaboration of treatment techniques will be included under treatment procedures (see page 38).

Observations of Subjects During Mid-term and Final Examinations

Paul (1966) suggested that observational data be included in the outcome criterion analysis. Observing specific test-anxious behaviors in a naturalistic setting has not been attempted previously. If the dependent variables in therapeutic studies are, in fact, changes in behavior, then it seems logical that evidence of this change needs to be objectively recorded. Kerlinger (1964) has pointed out that when inquiry utilizes observations, the observer needs to know exactly what behaviors he is looking for as well as reliably recording the behaviors. This is the intent of the observational data.

Ten graduate students from the Western Michigan University Counseling Center volunteered to take part in the project as observers. Due to these observers being available at limited times, and examinations being given according to instructor's schedules, only a few observers were

available for each examination. All observers became familiar with the Observers' Checklist (see Appendix F) and practiced observing other graduate assistant's role-playing test-anxious students.

Students in the study were notified they would be taking their examinations in a room "more conducive for taking tests". That is, it would be quieter and less distracting. Subjects were assigned a specific chair to facilitate their identification while under observation. It was casually mentioned that proctors were behind the one-way mirrors so that apprehensions of the "unknown" were reduced. There was no evidence to suggest that the subjects were aware of the main purpose of the testing arrangement, which was to observe anxious behavior.

Generally, the students reacted favorable to the small test-taking group situation. Two students in the wait-control group however, said that the mirror distracted them and requested that they be permitted to take their final examination in their original classroom. Other students reported that they could concentrate better in the room with only a few students around (between two to twelve subjects were in each observational group) and when the visual as well as auditory distractions were reduced.

The investigator used a stop watch to record one-minute observational time spans by signaling "start" and "stop" commands to the observers. The time engaged in anxious behaviors observed for a particular subject was then recorded and the next subject was then observed for a one-minute span. All subjects were observed for at least six and not more than 20 one-minute spans. This variability occurred because of the varying amount of time taken by subjects to complete the tests and the fluctuating length of the different examinations. The mean number of seconds of anxious behavior was then computed for all subjects on the mid-term and final examinations. Approximately 14 subjects were able to be observed by two or more raters. Their scores were then averaged together. The remaining 40 subjects were observed by only one rater during the examinations.

The data collected on each subject consisted of the mean number of seconds that that particular student manifested overt anxious behavior. The observer did not have to look away from the subject under observation during the one-minute spans which typically happens with other types of checklists; i.e., they must look down to check a specific occurrence. After the mean number of seconds of anxious behavior was determined for each subject, the observer recorded it on his sheet before proceeding to the next subject.

An intraclass correlation formula (see Appendix N for explication) was used to assess interjudge agreement. Ebel (1951) suggests that "between raters" variance be included in computing reliability of raters. Correlational formulas, such as the Pearson r, consider only the sums of each rater, rather than the agreement between raters for each individual trial. Ebel (1951, p. 420) points out that the product moment correlational approach "removes" between-raters variance in its computation and overestimates relationships between raters by using averages rather than considering individual trials. Reliability coefficients ranged from .84 to .96 permitting confidence to be placed in the observer ratings.

However, it must be pointed out that due to the uniqueness of this measurement, ratings were probably not independent of each other. Observers viewed the subjects from a small room behind a one-way mirror and the clicking of an observer's stop watch tended to cue the other observer to start his stop watch. There were no other provisions such as separate rooms, available at this time to control for this confounding variable.

Treatment Procedures

All groups in both treatments met for five sessions, each session being about 45 minutes in length. The interviews were audio-taped with the investigator periodically reviewing the tapes to insure adherence to treatment procedures.

One of the reasons for arranging treatments in groups was to investigate the potentialities of this economical method. Several studies have indicated that group desensitization is an effective procedure. Paul's (1966) study contrasted individual treatments of insight and desensitization, showing desensitization to be most successful. Lazarus (1961) used groups for a comparative study of insight and desensitization treatments but certain methodological weaknesses were in evidence. For example, only a few criterion measures were used and therapist bias seemed to exist in that the investigator was the therapist for both treatments. Paul and Shannon (1966) found that group desensitization combined with re-educative discussion offered an efficient and effective treatment for social-evaluative anxiety. Katahn, Strenger and Cherry (1966) combined group counseling and systematic desensitization in successfully treating test-anxious college students. Grade Point Averages and a self-report measure of test anxiety were the only criterion measures used however.

The objectives of the present study do not include a comparison of group vs. individual methods, but rather attempt only to investigate the feasibility of these group methods using the selected criterion measures.

Group Insight Treatment

The insight counseling procedures cannot be adequately described in the form of specific behaviors because they traditionally lack observable and objective guidelines. Generally, the counselor seeks possible answers to the question "Why?", and attempts to reduce anxiety by helping the client to gain insight into his problem. Therefore, the test-anxious situation would not be focused on but rather emphasis placed on historical and interpersonal antecedents such as "How do your parents feel about your progress in college?".

Suggestions by the counselor of ways that clients might change their behavior were avoided. Counselor responses took the reflective form such as "What do you think you ought to do?". Affective, feeling-type responses, e.g., "I feel confused...lost" were reinforced and their etiology examined.

Intrapersonal techniques and meanings were explored with the intent of clients' gaining knowledge of their dynamic behavior. All the counselors felt that insight was an important goal and that five interviews were adequate for some change to occur. They stated that for some "difficult" clients, more extensive treatment was needed. They were allowed to continue to see the subjects as long as they arranged the appointments after post-treatment measures were taken.

Appendix M, Guidelines for Insight Methods, lists the specific behaviors that each counselor was to emphasize during the insight counseling interviews. Briefly, they were to talk softly, maintain eye contact, lean forward frequently to attend to a client's verbalizations, and convey understanding by repeating what the client had said. Counselors were instructed to reflect, clarify, reassure, and interprete client responses. All counselors stated that they felt comfortable and confident carrying out this approach. All counseling sessions followed the same procedures and students could generally discuss whatever they wished. No attempt was made to systematically structure the sequence of content.

Group Desensitization Treatment

The desensitization treatment procedures were clearly defined for the counselors (see Appendix K) consisting of a modified form of the method advocated by Wolpe (1968). This technique of counterconditioning was selected because it has been widely used and can be more easily applied than other procedures.

Session One. This consisted of building rapport with the clients and explaining the approach to be used. They were told that their emotional reactions could be unlearned by first determining the situations in which they became progressively more anxious, building a hierarchy from the least to the most test anxious situations. These situations were then to be visualized while deeply relaxed. Ten three by five cards were passed out to each client on

which individualized hierarchies were to be written by him, one situation on each card. A sample test-anxiety hierarchy (see Appendix O) was also distributed for modeling purposes. The subject, however, were urged to construct their own for what may be "arousing" for one student may not necessarily be so for another. The remainder of the first interview was devoted to instruction in relaxation. All subjects were given a relaxation procedures sheet (see Appendix L) listing specific ways to practice relaxing in their rooms.

Session Two. In this interview relaxation methods were reviewed to see if the subjects had in fact, practiced the exercises. The hierarchies listed on the cards were also checked to see if all subjects constructed them properly. They were then told to place themselves in a relaxed state, look at the first card with the least anxious situation, close their eyes and imagine it. The therapist would state common relaxation suggestions to all subjects such as "imagine you are there...right now...relax...feel yourself in that situation...". If the subject became mildly anxious, he would signal by raising the index finger of his right hand. Subjects were not allowed to go past the first three situations during the second session. If some subjects seemed to have trouble relaxing, and were unable to go beyond the first hierarchy card, the counselor would do whatever he could to help that person relax. The session closed with a few minutes of positive reassurance and instructions for the intervening time until the next interview.

Sessions Three through Five. The remaining three interviews consisted of imagining about two to three cards each session, depending upon the progress of the group. Some hierarchies were replaced with more suitable situations that aroused anxiety. The counselors were told to maintain a warm and approachable attitude similar to the atmosphere in the insight treatment groups but to ignore topics of an affective nature. Discussion of historical or interpersonal difficulties was not permitted. All counselors felt that

most subjects could imagine all cards with minimal or no anxiety after the five sessions. All groups therefore completed their hierarchies before termination.

During treatment, two subjects from the high arousal insight and two subjects from the high arousal desensitization groups dropped out of the study due to time and emotional reasons. All four were from the groups assigned to the professional counselors.

Summary

This investigation attempted to examine the differential effects of two types of treatments, desensitization and insight, with high and low imagery arousal test-anxious students. Wait control and no-contact control groups were included to control for changes that might be attributed to time or external conditions. Two professional and two subprofessional counselors were trained to carry out procedures that were as representative as possible of the different theoretical methods. Various types of outcome criteria were used before, during and after mid-term and final examinations to measure the efficacy of the above treatments. These criteria measures included:

(1) Self-report-S-R Inventory of Anxiousness, Test Anxiety Inventory, Thayer Activation-Deactivation Checklist, and Test Anxiety Rating

(2) Physiological-Pulse Rate

(3) Objective Observations-Observers' Checklist

(4) Therapists' Ratings

(5) Client Ratings of Treatments

CHAPTER III

RESULTS AND DISCUSSION

Research Hypotheses

This chapter presents in detail the results of the study in terms of the research hypotheses. The following hypotheses were tested statistically by using a factorial analysis of variance design:

Hypothesis One - Groups receiving systematic desensitization procedures will show a significantly greater decrease in criterion scores than groups receiving insight counseling.

Hypothesis Two - There will be no significant differences in mean change scores between groups led by professional counselors and groups led by subprofessional counselors.

Hypothesis Three - High imagery arousal subjects will show a significantly greater decrease in criterion scores when compared with low imagery arousal subjects.

Hypothesis Four - There will be no significant interactions involving type of treatment, counselor-level, or imagery arousal level.

Two subsidiary hypotheses were tested by means of comparing test scores:

Hypothesis Five - Experimental groups will show a significant decrease on mean difference criterion scores.

Hypothesis Six - Wait Control and No Contact Control groups will not show a significant decrease in mean difference criterion scores.

Partial replication of Paul's (1966) study comparing insight and desensitization necessitated including self-report, observable, and physiological measures. The S-R Inventory of Anxiousness, Test Anxiety Inventory,

Test Anxiety Rating Scale, Thayer Activation-Deactivation Checklist and Client Ratings were used to assess subjective evaluations of the degree and kind of client anxiety. In addition, objective motoric measurements of anxiety were recorded by the Observers' Checklist. Pulse Rate measurements indicated the degree of physiological anxiety felt by the subjects during the examinations. Therapist's Ratings provided external judgments of the level of client anxiety.

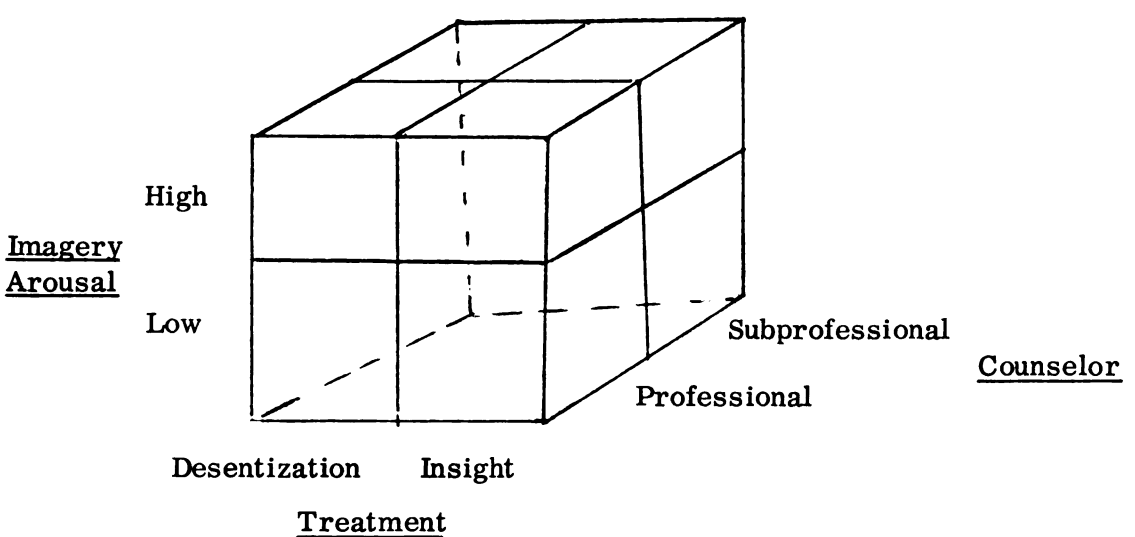
Acceptance or rejection of these hypotheses is dependent upon which criterion measure is examined. Therefore, each dependent variable was separately analyzed as to the effect of treatment, counselor-level, arousal level, and control groups. Each of these four areas was then summarized and discussed.

Analysis of Data

Introduction

Facilities at the San Diego State College Computer Center were utilized to run a 2x2x2 analysis of variance on the data. Figure 4 graphically presents the research design.

FIGURE 4



Six subjects dropped out of the study during treatment; two from the high arousal professional desensitization cell, two from the high arousal professional insight cell and two from the wait control group.

Due to the different number of subjects in each cell, a 2x2x2 analysis of variance program was used by the San Diego State College Computer Center. This procedure was derived from Winer (1962, 374-378) to handle unequal cell frequencies and was developed by the statistical personnel from the Institute for Developmental Studies at San Diego State College.

Because the control groups were not exposed to the same variables as the experimental groups, they could not be included in the 2x2x2 analysis of variance program. To evaluate the control groups effectiveness in controlling for the passage of time and extraneous variables, t tests were computed on the significance of the mean difference in pre-test and post-test criterion scores. The t tests were then compared with the t tests for the treatment groups by observation.

To assess the effectiveness of the treatment groups in reducing test anxiety, tests of significance of mean difference scores (change scores) between pre and post test measures were used to determine if improvement for each treatment, counselor-level and arousal level group had occurred. That is, did treatments cause a significant improvement, on the average, for subjects involved? The direction of reductions was hypothesized prior to the experiment. The t statistic used was from Guilford (1956, p. 220). Mean difference scores were used because this study was designed to investigate which experimental factors, if any, resulted in significant reductions of measures of anxiety.

Thorndike and Hagen (1961, p. 191) have suggested that change scores suffer from problems of low reliability because the error of measurement is involved in both pre and post tests. This increases error variance, due, in part to the elimination of common variance between measures(pre and post) leaving a larger proportion of error variance as a residual.

McNemar (1962, p. 157) also agrees that change scores are unreliable but points out that the standard error of the difference is progressively reduced by the increasing r_{xy} in the standard error of the difference between initial and final means. Paul (1966, 1967) maintains that the most stringent test of treatment effects is based on an analysis of the change scores from pre-treatment to post-treatment anxiety measures. Because this investigation was a partial replication of Paul's (1966) study, change scores were selected for the major analysis. A supplemental analysis was made on the post-treatment means to determine if there was a significant difference in group means after treatment.

Results of S-R Inventory of Anxiousness

An analysis of all 11 situations of this criterion measure was made. As in Paul's (1966) study, an examination of significant t test scores was followed by a discussion of the analysis of variance results.

Tables 1 and 2 present the t test and F ratio values for the S-R Inventory of Anxiousness situation, "You are entering a final examination in an important course". The purpose of including these measures was to determine which specific anxiety-situations improved. This instrument evaluates the subject's anxiety level for 11 specific situations. The most relevant situation "You are entering a final examination in an important course" shows that none of the F ratios reached the .05 level of significance but the desensitization and subprofessional groups did achieve a significant decrease, at the .05 level, in mean difference scores (Table 1). The remaining 10 situations are concerned with reactions to anxieties such as intra- and interpersonal threats and are presented in Appendix P (Table I-XX).

Of particular interest is the fact that for all 11 situations the control groups accomplished their purpose of controlling for passage of time and extraneous variables except for one situation, "You are starting out in a sailboat on a rough sea" (Appendix P, Table VII). The no-contact control group significantly decreased their mean difference scores on this variable.

TABLE 1

S-R INVENTORY OF ANXIOUSNESS

"You are entering a final examination in an important course"

MEANS, STANDARD DEVIATIONS AND t VALUES FOR MEAN DIFFERENCE SCORES[1]

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	40.15	35.45	4.70	7.39	7.40	2.56*
	Insight	39.35	37.45	1.90	9.49	10.13	1.17
B	Professional Counselors	38.78	36.42	2.36	7.30	7.71	1.68
	Subprofessional Counselors	40.61	36.47	4.14	9.38	9.90	2.09*
C	High Arousal Level	39.52	35.76	3.76	7.73	10.32	1.76
	Low Arousal Level	39.91	36.95	2.96	9.04	7.72	1.99
	Wait Control	43.12	43.37	-.25	6.79	5.73	-.18
	No Contact Control	33.72	32.72	1.00	9.06	10.80	.48

* = $p < .05$

[1]Total N for Variables A, B, and C = 44

TABLE 2

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	87.07	1	87.07	1.46
B Counselors	27.46	1	27.46	.46
C Arousal Level	4.72	1	4.72	.07
AB	173.34	1	173.34	2.91
AC	97.17	1	97.17	1.63
BC	15.42	1	15.42	.23
ABC	.01	1	.01	.00
Within	1901.50	36	59.42	1.00
Total	2306.69	43		

The desensitization group improved significantly, either at the .05 or .01 level of significance, on nine situations. The two that did not reach significance were "You are going into a psychological experiment" and "You are starting off on a long automobile trip" (Appendix P, Tables XV and XIX). It should be noted that all the other treatments did not show a decrease, or improvement, in mean change scores on these measures. Four of the six treatment groups actually showed an increase in pre-post scores on the latter situation, "You are starting off on a long automobile trip" (Appendix P, Table XIX).

Groups receiving desensitization procedures recorded significant decreases at either the .05 or .01 level on all the remaining nine situations. The groups receiving insight methods did not achieve a significant decrease on any of the 11 variables.

The groups counseled by the subprofessionals showed slightly more of an improvement than their counterparts, the professional counselors. The subprofessional group results disclosed five situations that reached the .05 or .01 level of significance. The groups led by professional counselors did not show any significant changes. Yet, F ratios between groups were insignificant. There was little difference between the high and low imagery arousal group results, both achieving significance on two different situations.

Table 2 shows that the most relevant variable "You are entering a final examination in an important course" did not yield a significant F ratio between treatments, However, on two situations "You are going into an interview for a very important job" and "You are starting out in a sailboat on a rough sea (Appendix P, Tables II and VIII), F Ratios did reach the .05 level of significance, favoring the desensitization treatment. Two other situations achieved the .01 level in the direction of desensitization treatment, but failed to reach the required .05 level of significance.

Two interactions occurred, "You are crawling along a ledge high on a mountain side" (Appendix P, Table XII), reached significance supporting

the subprofessional counselors using desensitization methods. Another situation, "You are just starting off on a long automobile trip" (Appendix P, Table XX) produced a significant F ratio in the direction of professional counselors using desensitization methods with high arousal clients. It should be noted though, that the F ratio for the latter situation, 4.13, barely achieved significance. No other F ratio reached the .05 level of significance.

Three interpersonal situations, "You are going into an interview for a very important job", "You are going to give a speech before a large group", and "You are entering a competitive contest before spectators" (Appendix P, Tables I, V, and IX), showed desensitization and subprofessional groups to be slightly superior. No significant pattern however was found in contrasting the high and low arousal groups.

In summary, analyses of the S-R Test of Anxiousness revealed that on the most relevant siguation, "You are entering a final examination in an important course", desensitization groups showed the most improvement. The remaining 10 situations favored the desensitization and subprofessional subjects but there was little difference between high and low arousal groups. Both control groups controlled for external and attention effects.

Results of Test Anxiety Inventory

A summary of the results of the Test Anxiety Inventory is found in Tables 3 and 4. Two-sided tests of significance for mean change scores profuced significant differences at either the .05 or .01 level for all treatments except the high arousal group. The wait-control and no-contact control groups remained unchanged. This instrument was designed to measure a subject's self-report of felt anxiety and physical reactions associated with taking tests. Since the control groups remained the same while the treatment groups showed significant decreases, it can be inferred that the effect of external influences was held to a minimum. Furthermore, some evidence of instrumental stability is provided. No significant F ratios were found but two did achieve (2.26 and 2.02) the .10 level of significance

in the direction of the low arousal and desensitization groups. In summary, desensitization and low arousal subjects tended to do better than their counterparts.

Results of Test Anxiety Rating Scale

Inspection of Tables 5 and 6 shows that all treatment groups reached the .01 level of significance on the change score analysis. Yet, the wait control group scored essentially the same when the pre and post means were compared. The no-contact control group completed only the S-R Inventory of Anxiousness and the Test Anxiety Inventory so that "contact" and "treatment" could be held to a minimum, thus insuring a valid "no-contact" control group.

Groups led by professional counselors showed marked improvement (.001) in change scores reflected by significant F ratio (Tables 5 and 6), favoring the professional treatment when compared with the subprofessional treatment. No other source of variance revealed significant F ratios, due to the fact that all groups improved significantly from their pre to post treatment measures. There is evidence that both desensitization and insight treatments reduced rated anxiety in the actual test situation. The scale was completed by subjects immediately after their mid-term and final examinations. External influences were non-existant as demonstrated by the failure of the wait control group subjects to significantly improve their mean scores. In summary, the subjects assigned to professional counselors did significantly better than those assigned to subprofessional counselors, although both groups significantly reduced their test anxiety.

Results of Thayer Activation-Deactivation Checklist

This checklist also was completed by subjects immediately after their mid-term and final examinations. Inspection of Tables 7 and 8 reveals that all treatments significantly decreased their mean scores on this instrument at the .01 level. This change in pre-post mean scores could have

TABLE 3

TEST ANXIETY INVENTORY[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables		Means			Standard Deviations		
			Pre	Post	Difference	Pre	Post	t
A	Desensitization		114.35	99.10	15.25	16.02	16.96	5.07**
	Insight		118.00	109.19	8.81	22.82	29.59	2.23*
B	Professional Counselors		116.26	104.47	11.79	18.83	20.77	3.38**
	Subprofessional Counselors		116.18	104.09	12.09	20.76	27.82	3.29**
C	High Arousal Level		115.11	107.22	7.89	18.39	29.65	1.73**
	Low Arousal Level		117.08	101.95	15.13	20.94	20.00	5.75**
	Wait Control	N=8	121.87	122.25	.38	21.86	15.11	-.08
	No Contact Control	N=11	91.45	89.18	2.27	22.79	24.93	.96

*= $p < .05$

**= $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE 4

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	583.67	1	583.67	2.26
B Counselors	6.07	1	6.07	.02
C Arousal Level	522.66	1	522.66	2.02
AB	77.38	1	77.38	.30
AC	735.37	1	735.37	2.85
BC	91.69	1	91.69	.35
ABC	14.15	1	14.15	.05
Within	8497.40	36	257.49	1.00
Total	10528.39	43		

TABLE 5

TEST ANXIETY RATING SCALE[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	18.85	13.61	5.24	5.44	2.95	4.19**
	Insight	22.13	17.27	4.86	6.58	6.32	3.76**
B	Professional Counselors	21.31	14.26	7.05	6.51	4.34	5.94***
	Subprofessional Counselors	19.91	16.45	3.46	6.02	5.77	2.85**
C	High Arousal Level	20.78	15.94	4.84	7.34	6.56	3.45**
	Low Arousal Level	20.33	15.12	5.21	5.29	4.04	4.45**
	Wait Control N=8	23.87	23.12	.75	4.76	4.25	.38

** = $p < .01$
*** = $p < .001$
[1] Total N for Variables A, B, and C = 44

TABLE 6

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	3.19	1	3.19	.08
B Counselors	150.10	1	150.10	4.20*
C Arousal Level	1.26	1	1.26	.03
AB	2.74	1	2.74	.07
AC	.35	1	.35	.00
BC	20.88	1	20.88	.58
ABC	11.40	1	11.40	.31
Within	1250.75	36	35.73	1.00
Total	1440.67	43		

* = $p < .05$

TABLE 7

THAYER ACTIVATION-DEACTIVATION CHECK LIST[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	32.42	27.04	5.38	5.29	6.03	4.10**
	Insight	33.19	27.80	5.39	7.24	10.08	2.84**
B	Professional Counselors	32.36	27.89	4.47	7.35	6.28	3.34**
	Subprofessional Counselors	33.17	27.04	6.13	5.38	9.65	3.46**
C	High Arousal Level	32.75	27.40	5.35	4.90	7.40	4.13**
	Low Arousal Level	32.86	27.45	5.41	7.42	9.07	2.91**
	Wait Control N=8	32.12	31.37	.75	7.23	6.92	.27

** = $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE 8

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	.31	1	.31	.00
B Counselors	27.24	1	27.24	.43
C Arousal Level	.00	1	.00	.00
AB	3.77	1	3.77	.06
AC	23.23	1	23.23	.37
BC	36.22	1	36.22	.57
ABC	.51	1	.51	.00
Within	2132.50	36	62.72	1.00
Total	2223.78	43		

occurred by chance only one time in a hundred. Again, the wait control group scores remained essentially the same. It should be mentioned that only the High Activation and General Deactivation adjectives were used (see Appendix H for adjectives). No significant F ratios were listed as achieving significance due to the overall and consistant improvement shown by all groups. In summary, all the groups significantly improved their mean scores to approximately the same degree.

Results of Observers' Checklist

Examination of Tables 9 and 10 discloses that the desensitization and low arousal groups were the only groups to reach the specified .05 level of significance on this motoric scale. Both professional and subprofessional groups did achieve the .10 level, while the insight group reached the .20 level. The clear constrast between the high and low arousal groups is reflected in the significant F ratio of 6.11, which favors the low arousal group. The high arousal group actually increased their mean change scores while the low arousal subjects' post mean score was one-half of the pre mean score. The wait control group remained about the same, showing a t test score of only .64. This figure might have been different if the two subjects who dropped out of the study due to the "stressful circumstances", has been included. With future refinements this objective but crude measure of behavioral movements may yield different results. In summary, the low arousal and desensitization groups showed the only significant improvement. The low arousal group did significantly better than the high arousal group.

Results of Pulse Rate

Tables 11 and 12 indicate that Pulse Rate was the only criterion measure in which the insight group showed more of a mean decrease in change scores than the desensitization group. Both groups showed a significant decrease in change scores than the desensitization group. Both groups showed a significant decrease but the insight group reached the .01 level of significance. The only group that did not reach at least the .05 level was the low arousal group, reaching .10 level.

TABLE 9

S-R INVENTORY OF ANXIOUSNESS

OBSERVERS' CHECKLIST[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviation		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	13.83	8.05	5.78	11.27	6.57	2.19*
	Insight	14.00	11.13	2.87	7.88	10.88	1.36
B	Professional Counselors	14.47	9.23	5.24	9.57	10.43	1.76
	Subprofessional Counselors	13.52	10.13	3.39	9.51	8.44	1.78
C	High Arousal Level	12.83	12.94	-.11	7.69	11.50	-.04
	Low Arousal Level	14.81	7.13	7.68	10.74	5.91	4.07**
	Wait Control N=8	13.12	11.25	1.77	7.07	7.47	.64

*= $p < .05$
**= $p < .01$
[1]Total N for Variables A, B, and C = 44

TABLE 10

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	78.76	1	78.76	.76
B Counselors	19.00	1	19.00	.18
C Arousal Level	630.99	1	630.99	6.11*
AB	.09	1	.09	.00
AC	48.36	1	48.36	.46
BC	27.47	1	27.47	.26
ABC	38.14	1	38.14	.36
Within	3404.36	36	103.16	1.00
Total	4247.17			

*= $p < .05$

TABLE 11

S-R INVENTORY OF ANXIOUSNESS

PULSE RATE[1]

MEANS, STANDARD DEVIATIONS AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviation		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	44.81	41.09	3.72	5.68	7.30	2.30*
	Insight	43.59	37.86	5.73	6.52	5.95	3.81**
B	Professional Counselors	43.60	38.40	5.20	5.95	6.01	4.44**
	Subprofessional Counselors	44.70	40.37	4.33	6.27	7.37	2.42*
C	High Arousal Level	45.90	39.10	6.80	6.34	7.49	4.74**
	Low Arousal Level	42.79	39.79	3.00	5.59	6.27	1.90
	Wait Control N=8	42.37	39.12	3.25	7.99	5.35	1.39

*= $p < .05$

**= $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE 12

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	60.16	1	60.16	1.14
B Counselors	10.66	1	10.66	.20
C Arousal Level	143.40	1	143.40	2.72
AB	.16	1	.16	.00
AC	8.16	1	8.16	.15
BC	58.07	1	58.07	1.10
ABC	121.50	1	121.50	2.30
Within	1894.50	36	52.62	1.00
Total	2296.61	43		

Again, the wait control group did not significantly improve, thereby controlling for passage of time and external influences.

Even though this physiological measure produced significant t test scores showing improvement in the treatment groups, the F ratios (Table 12) did not reach the .05 level of significance. The ratios however were in a different direction compared with prior criteria, in that the insight, professional and high arousal groups slightly out-performed their counterparts. In summary, the insight, professional and high arousal groups were shown to be slightly more effective in reducing physiological anxiety.

Results of Therapists' Ratings

This measure consisted of the difference between the first and fifth interview mean ratings of client anxiety level. The t test is computed by comparing the mean differences of the two treatment groups. Inspection of Table 13 shows that there were no significant differences between treatment, counselor-level or arousal level groups. It should be pointed out, however, that the insight, professional and high arousal groups recorded the greatest mean change in ratings of anxiety level. Perhaps the contaminating effect of the professional counselor's orientation contributed to this difference. Even though a five point scale (see Appendix J) was used by the counselors, more first interview ratings were about three. Fifth interview ratings averaged about two, resulting in a very small spread. Significant differences would be extremely difficult to achieve in this situation. In summary, the professional counselors' ratings showed more client anxiety reduction than subprofessional counselor ratings.

Results of Client Ratings

Observation of Table 14 reveals a significant difference for student ratings of the degree to which they had been helped with their anxiety over tests. Students rated desensitization methods as significantly more helpful at the .01 level than students rating the assistance of insight methods. No other comparisons of mean ratings were significantly different.

TABLE 13

MEANS, STANDARD DEVIATIONS AND t VALUES FOR DIFFERENCES BETWEEN FIRST AND FIFTH INTERVIEW THERAPISTS' MEAN RATINGS OF "CLIENT ANXIETY" LEVEL[1]

Group	Means	Standard Deviations	t
Desensitization	1.13	.88	.00
Insight	1.36	1.03	
Professional	1.30	.80	1.01
Subprofessional	1.00	1.06	
High Arousal	1.25	.85	.70
Low Arousal	1.04	1.04	

[1]Total N for Groups = 44

TABLE 14

MEANS, STANDARD DEVIATIONS AND t VALUES FOR CLIENT RATINGS (3, 2, 1, 0) "HELP WITH TEST ANXIETY"[1]

Group	Means	Standard Deviations	t
Desensitization	1.75	.85	2.87**
Insight	1.04	.66	
Professional	1.31	.74	.51
Subprofessional	1.45	.91	
High Arousal	1.50	.78	.72
Low Arousal	1.30	.87	

[1]Total N for Groups = 44

** = $p < .01$

Table 15 shows a similar pattern in that subjects who received desensitization methods rated "Help with other anxiety" significantly higher than the ratings made by subjects in the insight group. This is particularly meaningful because advocates of insight counseling claim that their goal is to treat the "whole person" and not a specific anxiety. The mean improvement rating for the insight group was 1.14, lowest of any of the treatment groups. There was no significant difference between the mean improvement ratings of any of the other groups. It is interesting to note that subjects assigned to subprofessional counselors rated both "Help with test anxiety" and "Help with other anxiety" slightly, but not significantly, higher than ratings by subjects assigned to professional counselors.

TABLE 15

MEANS, STANDARD DEVIATIONS AND t VALUES FOR CLIENT RATINGS (3, 2, 1, 0) "HELP WITH OTHER ANXIETY"[1]

Group	Means	Standard Deviations	t
Desensitization	1.75	.96	2.39*
Insight	1.14	.57	
Professional	1.42	.83	.12
Subprofessional	1.45	.85	
High Arousal	1.50	.78	.72
Low Arousal	1.30	.87	

[1]Total N for Groups = 44

* = $p < .05$

However, the professional counselors received the highest mean improvement (Table 16) when subjects rated the "competency-level" of their counselors. The t test comparing the mean rating given professional counselors with the mean rating given subprofessional counselors, only reached the .25 level. Failure to achieve significance may be explained by the shift

to a three point rating (2, 1, 0) as compared with a four point rating (3, 2, 1, 0) for the two previous student ratings. This tendency to rate professional counselors as slightly more competent was to be expected because of their age, experience and status. They exhibited the essential characteristics of "competent" counselors. Yet, observation of other more objective data in this study does not show them to be more effective than subprofessional counselors.

TABLE 16

MEANS, STANDARD DEVIATIONS AND t VALUES FOR CLIENT RATINGS (2, 1, 0) "HOW COMPETENT THE THERAPIST"[1]

Group	Means	Standard Deviations	t
Desensitization	1.65	.48	.41
Insight	1.57	.67	
Professional	1.73	.45	1.26
Subprofessional	1.50	.67	
High Arousal	1.55	.51	.50
Low Arousal	1.65	.64	

[1]Total N for Groups = 44

The last Client Rating, "How helpful was the approach", is presented in Table 17. The professional counselors received the highest mean improvement rating of 1.36 but it was not significantly different from the subprofessional group ratings. Overall, the three groups did not show any significant differences in mean ratings. In summary, clients rated desensitization methods as significantly more helpful with test, and other anxiety than insight procedures.

Post Treatment Analysis of Data

Appendix Q, (Tables XX through XXV) presents the analysis of variance data on post-treatment mean scores, rather than on mean change

TABLE 17

MEANS, STANDARD DEVIATIONS AND t VALUES FOR CLIENT RATINGS (2, 1, 0) "HOW HELPFUL THE APPROACH"[1]

Group	Means	Standard Deviations	t
Desensitization	1.30	.57	.74
Insight	1.14	.72	
Professional	1.36	.59	1.33
Subprofessional	1.09	.68	
High Arousal	1.27	.46	.48
Low Arousal	1.17	.77	

[1]Total N for Groups = 44

scores. These analyses were run because one of the objectives of this study was to determine if there were any significant differences between treatment groups after exposure to the treatments. Even though the subjects were randomly assigned to the groups before treatment, it was not known whether or not there were significant differences before the treatment was administered. Therefore, analyses of variance were computed on all pre criterion measures except the S-R Inventory of Anxiousness.

Examination of Appendix Q (Tables XX-XXV) revealed only one F ratio reaching significance. The post-treatments variance for the Test Anxiety Rating Scale did show a pre measure F ratio of 3.14, also favoring desensitization. There did seem to be a tendency, prior to treatment, for subjects assigned to the desensitization group to show superior mean scores on this one criterion measure. It should be noted though, that F ratios throughout investigation were computed using change scores. In summary, pre and post analyses of variance on the Test Anxiety Rating Scale favored the desensitization treatment. The remaining criterion measures, the Test Anxiety Inventory, Thayer Activation-Deactivation Checklist, Observers' Checklist, and Pulse Rate, showed no significant F ratios on post-treatment analyses of variance.

Control for Sex Variable

To investigate whether differences of sex produced a contaminating effect on these data, t tests were run on the mean of the differences between pre and post-treatment measures for males and females. Appendix R (Table XXVI) presents the t test scores comparing the male difference scores with female difference scores. There were no significant differences between male and female scores on all criterion measures. The females generally had higher change scores but this difference was not significant. Even though females (50) outnumbered the males (13), and all treatment counselors were males, the sex factor did not seem to adversely influence the results of the data.

Discussion

Treatment Factor

The principle hypothesis tested in this investigation, Research Hypothesis One, stated that groups receiving systematic desensitization procedures will show a significantly greater decrease in criterion scores than groups receiving insight counseling. The data presented above provide support for accepting this hypothesis. Desensitization methods produced a more consistent measureable reduction in the cognitive and motoric aspects of anxiety, when compared with insight procedures.

Acceptance of this hypothesis is qualified however for the physiological measurement, Pulse Rate. Insight procedures apparently produced slightly more of an improvement than desensitization methods when Pulse Rate is used as a criterion measure. This was a rather unexpected outcome considering the physiological relaxation exercises emphasized by desensitization techniques.

The only other measure in which mean scores favored the insight treatment was the Therapists' Rating Scale, which showed a slight superiority in rated effectiveness, 1.36 to 1.13. This resulted in a t value of only

.00 though a difference could be anticipated because all four counselors acknowledged prior to treatment that they viewed client change as resulting from "being aware of one's relationships with others". Yet, all four counselors reported that they also noted a "remarkable change" in clients who were assigned to their desensitization groups.

On all criterion measures tested, except the two listed above, groups receiving desensitization methods tended to improve their pre-post mean scores more than groups receiving insight techniques. Analysis of variance data indicated that desensitization procedures resulted in significant F ratios on two situations of the S-R Inventory of Anxiousness while all of the remaining nine situations showed F ratios in the direction of desensitization. None favored the insight method.

The remaining primary dependent variables, Test Anxiety Inventory, Test Anxiety Rating Scale, Thayer Activation-Deactivation Checklist, Observers' Checklist and Pulse Rate, did not show significant F ratios between treatments, while t values indicated that both the desensitization and insight groups recorded significant decreases in their change scores. The desensitization treatment mean change scores were greater on all measures except Pulse Rate.

Student ratings supported the acceptance of Hypothesis One by yielding significant differences in mean ratings of help with test anxiety and help with other anxiety. Counselors reported that clients in the desensitization group described how they had been less anxious when on dates, giving speeches and talking with their parents as a result of learning systematically, less anxious ways of responding. This generalized effect was not reported for the insight group.

Perhaps the differences would have been more distinct if more interviews and a larger number of subjects would have been included in the design. Also, in place of accommodating the biases in favor of insight methods, using skilled practioners in systematic desensitization to administer both treatments might cause an even greater discrimination between procedures.

Because eight criterion measures were used in this study, no one dependent variable can be used to accept or reject the research hypothesis. However, desensitization techniques were superior when self-reports of specific and generalized anxiety and behavioral manifestations of anxiety were evaluated. That is, six of the eight dependent variables showed desensitization groups improving more than insight groups. Insight subjects, though, slightly outperformed desensitization subjects on the lone physiological measurement, Pulse Rate, and on Therapists' Ratings.

The overall analysis of the data suggests that the desensitization method produced a significantly greater decrease in criterion scores than groups receiving insight counseling, thereby permitting Hypothesis One to be supported and accepted.

Counselor-level Factor

Research Hypothesis Two, stating that there will be no significant differences in mean change scores between groups led by professional counselors and groups led by subprofessional counselors, is accepted with some qualification. On all situations of the S-R Inventory of Anxiousness, there were no significant differences between professional and subprofessional groups. However, the mean change scores showed slightly greater decreases favoring the subprofessional counselors. Yet, the Test Anxiety Rating Scale yielded a significant F ratio (4.20) in the direction of the professional counselors. Therapists' Ratings also favored the professional counselors but perhaps experienced counselors tend to overrate their success as compared with inexperienced counselors. Client Ratings "How competent the counselor" and "How helpful the approach" presented some supportive data for the professional group. On all the other criterion measures, Test Anxiety Inventory, Thayer Activation-Deactivation Checklist, Observers' Checklist, and Pulse Rate, there was negligible differences between the two groups.

One explanation for the higher ratings by subjects treated by the professional counselors is that they were quite competent and experienced when contrasted to uncertain counselor-trainees. Presenting a relaxed and confident model does permit the counselor to have a settling and positive effect on clients. In addition, the professional counselors were older, and mentioned to their group that they were "Dr. Davis" and "Dr. Cudney", staff members at the Counseling Center. The contrasting implicit credentials of the professional and subprofessional counselors suggest that the professional counselors should be more effective due to their "experienced counselor" image. This difference, of course, was not validated in the present study. These findings do point out the importance of using multiple outcome criteria. The question also emerges as to whether Client Ratings of "competence" and behavior change are related.

In summary, the data presented do indicate that the differences between the professional and subprofessional groups were so minute that Hypothesis Two would have to be accepted.

Arousal-level Factor

Research Hypothesis Three states that high imagery arousal subjects will show a significantly greater decrease in criterion scores when compared with low imagery arousal subjects. This hypothesis is rejected. In fact, the low arousal subjects slightly but not significantly, outperformed the high arousal subjects.

The only clear differences between the two groups appeared on the Observers' Checklist and Pulse Rate. Observation of motoric aspects of stress-induced behavior, mid-term and final examinations, produced a significant F ratio of 6.11, indicating that the low arousal subjects materially reduced their anxious movements while taking tests. Observation of the Pulse Rate measures showed that high arousal subjects substantially, but not significantly, improved their pre-post mean physiological scores while taking examinations. Improvements on the other criterion measures were minimal and insignificant.

One apparent criticism of the arousal factor is that the method used in chosing the subjects for the high and low groups was not objective and distinct. Subjects raised the number of fingers that indicated the "degree" of anxiety felt when an emotional situation was presented to them. Objective measurement of this factor was, and is, difficult. The manner of assessing the degree of arousal would lead to a within-subject ordinal scale and not a between-subject scale. Idiosyncratic perceptions of a "great deal of anxiety" vary considerably between subjects. Also, high arousal subjects clustering around the mean were in fact little different from similar subjects who were assigned to the low arousal group. The ordering of the subjects was not a clear and discriminative process. This may well account for the lack of differentiation between the high and low arousal subjects, as theorized by the Research Hypothesis. Suggestions for improving the selection process are presented in Chapter IV.

Assuming that polarity did exist in arousal level, the high arousal subjects' improvement on the physiological measurement, Pulse Rate, could have occurred because they had a wider range of anxiety to improve upon. The high arousal subjects showed a t test score of 4.74, significant at the .01 level. The F ratio did approach significance (2.72). Physiological improvement seemed to be greater with high arousal subjects because they were more anxious to begin with. Yet, they apparently didn't manifest the anxiety, as evidenced by the slight increase in the Observers' Checklist means. The low arousal subjects might have been more cognitively oriented and not able to "show" their anxiety as much. The explanations are speculative and need further empirical data to validate them. There were no indications that either the high or low arousal subjects tended to benefit more from desensitization or insight methods because interactions were nonexistant.

Therefore, Research Hypothesis Three is rejected indicating that the high arousal subjects did not improve significantly greater than low arousal subjects. The suggestion is made that low arousal subjects even slightly outperformed the high arousal subjects.

Research Hypothesis Four stating that there will be no significant interactions involving type of treatment, counselor-level, or imagery arousal level, is rejected. Two interactions did occur, both on the S-R Inventory of Anxiousness. An F ratio of 5.03 was found for "You are crawling along on a ledge high on a mountain side", and was in the direction of subprofessional counselors using desensitization methods. The other interaction achieved an F ratio of 4.13 on "You are just starting off on a long automobile trip". This favored the subprofessional counselor using desensitization methods with high arousal subjects.

Research Hypothesis Five stating that the experimental groups will show a significant decrease in pre vs. post mean criterion scores is accepted unequivocally. Inspection of t test scores indicates that treatment groups either showed improvement or reached the .01 or .05 level of significance for all of the criterion measures. Professional and subprofessional counselors using desensitization and insight procedures for five interviews can significantly improve criterion scores of high and low imagery arousal subjects, meeting together in groups of three.

Control Groups

The proposal that neither the wait control nor the no contact control groups will show a significant decrease in pre vs. post mean criterion scores, Research Hypothesis Six, is clearly accepted. Inspection of Tables 1 to 11 reveals that both the no contact and wait control groups successfully controlled for passage of time and extra-interview influences.

The no contact control group, responding only to the S-R Inventory of Anxiousness and the Test Anxiety Inventory, were told only that the battery was for "research purposes" so that the effect of non-treatment procedures could be limited. This control group did not have to be exposed to attention-giving situations like interviews, phone calls, assignments to groups, explanations of the program, assessments of imagery arousal level and a

general promise of "help". Their mean scores were slightly lower than the wait control and treatment groups because they did not seek out help for test-anxious behavior. One situation "You are starting out in a sailboat on a rough sea" did reach significance at the .05 level (2.82) but the remaining measures indicated no significant change from pre to post mean scores.

The wait control results were even more uniform and unchanged. Two subjects dropped out prior to the final evaluation because they felt that taking the final examination in the special room made them too anxious. If they had been included in the final analysis, they may have influenced the group mean scores in a different direction. Also, with only eight subjects, considerable error enters into the analysis of the data. Further experimentation would dictate a larger number of wait control subjects.

It is surprising that being interviewed for the program, tested for level of imagery arousal and promised future treatment, they did not significantly improve as several authors have suggested (Paul, 1966, and Eysenck, 1966). Their pre-post scores were remarkably consistent, even increasing in some instances. Research Hypothesis Six, stating that the control groups' scores will remain the same, is therefore accepted.

Summary

The results of criterion measures have been presented comparing professional and subprofessional counselors using desensitization and insight methods to reduce test, and other, anxiety, in high and low imagery arousal subjects. These data indicate that:

(1) Subjects receiving systematic desensitization procedures showed a significantly greater decrease in mean scores than subjects assigned to insight methods when the S-R Inventory of Anxiousness, the Test Anxiety Inventory, and Client Ratings were the dependent variables. The other criterion measures did not favor either the desensitization or insight treatment.

(2) Groups led by professional counselors did not show significantly greater improvement in mean scores than the groups led by the subprofessional counselors. The results were variable however. On the S-R Inventory of Anxiousness, the subprofessional counselors showed consistent, but minimal advantages. On the Test Anxiety Rating Scale, the professional groups were significantly superior at the .05 level as evidenced by the F ratio of 4.20. The remainder of the criterion measures favored neither group.

(3) High Imagery Arousal subjects did not show a significantly greater decrease in change scores when compared with Low Imagery Arousal subjects. In fact, Low Imagery Arousal subjects tended to do slightly better than High Imagery Arousal subjects. This was indicated by a significant F ratio of 6.11 on the motoric Observers' Checklist, favoring the Low Arousal Group.

(4) There were two interactions, both on the S-R Inventory of Anxiousness, in the direction of subprofessional counselors using desensitization methods, one of which (AxBxC) also favored this combination but included high arousal subjects.

(5) All experimental groups showed a significant decrease in mean change scores with most of the criterion measures.

(6) The no contact and wait control groups did not significantly decrease their mean pre vs. post scores, thereby achieving a control for extraneous influences and the passage of time.

Chapter IV will summarize, conclude and present implications and suggestions for further research concerning this investigation.

CHAPTER IV

SUMMARY AND IMPLICATIONS

Summary

This study was designed to compare the effect of professional and subprofessional counselors using group insight and group systematic desensitization techniques with high and low imagery arousal test anxious subjects. The basic plan was to determine if test anxiety could be reduced for all treatment groups, and to ascertain to what extent which treatment, group desensitization or group insight, administered by which type of counselor, professional or subprofessional, assisted clients in reducing test anxiety.

Desensitization methods were initially formulated by Wolpe (1958) as a counterconditioning procedure designed to extinguish inappropriately learned fears. This procedure consists of repeatedly presenting weak fear-evoking images to a relaxed client so that only a minimal amount of anxiety is elicited. The client is taught systematic relaxation excercises. With the counselor the client constructs a list of specific fear-evoking stimuli and rank-orders this list as to degree of intensity. The weakest item on the list is presented so that the client can easily pair a relaxed response, rather than an anxious response, while imagining that item. The client proceeds through the hierarchy, gradually imagining stronger fears at each step. This approach hypothesizes that anxiety states are inappropriately learned responses and are unlearned through systematic counterconditioning.

Insight, or psychodynamic approaches view understanding, communication of empathy, awareness of the reasons for behavior, and intense emotional relationships with the counselor as necessary and sufficient conditions for behavior change to occur. Traditional treatment methods search for "deep" historical and symbolic meaning rather than attempt to remove

the "symptoms". The counselor typically asks "How do you feel?" more often than "What should be done?", stressing emotional rather than rational content.

Two recent studies (Lazarus, 1961, and Paul, 1966) have compared the effects of desensitization and insight treatments using fear of height and fear of making speeches as the outcome criteria. Lazarus (1961) used group rather than individual methods as in Paul's (1966) study. Both found that desensitization procedures were superior. The present study has been a partial replication of the above investigations using test anxiety as the target behavior.

The use of carefully selected, trained subprofessional counselors has been considered as a means to accommodate the increased demand for counseling services. The necessity for elaborate long-term professional training is being questioned. Gordon (1965), Kanfer (1966), Krumboltz, et al., (1966) and Poser (1966) have supported the hypothesis that counselor support personnel can directly relieve observable symptomatic behavior with as much effectiveness as professionally-trained counselors. This study attempted to compare the relative efficacy of professional and subprofessional counselors. Conclusive empirical data indicating that subprofessional counselors are less effective than professional counselors has not appeared in the literature.

A client prerequisite of being able to physiologically re-experience past emotional situations in the desensitization process model has drawn attention to an imagery arousal factor (Wolpe & Lazarus, 1966). That is, unless clients can conjure up vivid visual images during desensitization, the original fear will not be elicited for extinction to take place. The hypothesis of this study was that clients with a high degree of imagery arousal, e.g., the ability to experience physiological anxiety when the original fear is imagined, would show a greater reduction in test anxiety than clients with a low degree of imagery arousal.

To more objectively evaluate the effects of counseling, extra-therapy influences need to be controlled such as the passage of time, intercurrent life experiences, and promise of treatment and attention effects. Therefore, various control group procedures such as control and no contact groups need to be incorporated into research designs. In addition, multiple criteria measures of selected target behaviors are needed to evaluate studies of counseling effectiveness (Paul, 1966). Observations of samples of specific motoric test-anxious behaviors, pulse rates, self-ratings and therapists' ratings were all included in the present investigation so that a variety of behavioral data could be gathered to evaluate treatment effects.

Fifty-eight test anxious college students were categorized as high or low imagery arousal subjects based on scores on the Imagery Arousal Inventory, a scale which pooled student ratings of the degree of physiological arousal they experienced when they recalled five emotional situations. Subjects were then randomly assigned to group insight or group systematic desensitization treatments by professional or subprofessional counselors, or to a wait control group (N=10). Subjects were also assigned randomly to a no contact control group (N=11) so that attention effects could be controlled.

All subjects completed the pre-test battery (S-R Inventory of Anxiousness and the Test Anxiety Inventory) prior to taking their mid-term examinations. At the time of their mid-term examinations, pulse rates, observer ratings of the number of minutes engaged in anxious behaviors (Observers' Checklist), and self-reports of anxiety (Thayer Activation-Deactivation Checklist and Test Anxiety Rating Scale) were gathered as pre-treatment measures. Following the mid-term examination groups of three subjects met for five interviews. Post-test and post-treatment measurements were again taken after treatment. The Test Anxiety Rating Scale, Observers' Checklist, Pulse Rate, and Thayer Activation-Deactivation

Checklist were readministered during their final examination while the Test Anxiety Inventory and the S-R Inventory of Anxiousness were given a week before the final examination.

The two experienced Ph. D. -level professional counselors were selected because of their credentials and availability. The selection of inexperienced subprofessional counselors was based on blind ratings of role-playing counseling interviews by four students in a beginning masters-level clinical psychology class by two doctoral students in counseling and guidance. The professional and subprofessional counselors underwent four hours of coordinating and training for administering the insight and desensitization treatments.

Six subjects dropped out of the study. Two from the high arousal professional desensitization group, two from the high arousal professional insight group and two from the wait control group. Reasons given varied from "too threatening" to "not enough time to participate in the program". The no contact control group members were asked to take the test batteries for "research purposes" and the wait control subjects were promised treatment the following semester. The latter group completed all criterion measures but did not receive the group insight or group desensitization treatments.

The five treatment sessions, 45 minutes in length, were tapere-corded and reviewed to insure conformity to prescribed counseling procedures. Counselors also rated the anxiety level of each client after the first and last interviews. Clients rated the "Help received with test anxiety", "Help received with other anxiety", "Competency of counselor" and "Helpfulness of the approach used". A 2x2x2 analysis of variance was used for major analyses and t tests were computed for all groups to assess change of the treatment groups as well as effectiveness of the control groups in controlling for extraneous variables.

It was hypothesized that:

1. Groups receiving systematic desensitization procedures would show a significantly greater decrease in criterion scores than groups receiving insight counseling.

2. No significant difference would be found in mean change scores between groups led by professional counselors and groups led by subprofessional counselors.

3. High imagery arousal subjects would show a significantly greater decrease in criterion scores when compared with low imagery arousal subjects.

4. No significant interactions would be found involving type of treatment, counselor-level or imagery arousal-level.

5. Experimental groups would show a significant decrease in mean difference criterion scores (pre vs. post).

6. Wait control and no contact control groups would not show a significant decrease in mean difference criterion scores.

The findings of this study demonstrated that group systematic desensitization counseling techniques were more effective in reducing test, and other, anxiety in college students than traditional, psychodynamic group counseling methods based on client awareness and insight. Also, the use of subprofessionally-trained counselors was effective in treating students with examination anxiety. The ability to physiologically arouse anxiety when emotional scenes are imagined did not appear to be a requisite characteristic of successful clients in either desensitization of insight counseling models.

The major conclusions of this study are as follows:

1. Group systematic desensitization methods caused a significantly greater decrease in mean change scores than traditional group insight procedures on the following measures: The S-R Inventory of Anxiousness, the Test Anxiety Inventory and Client Ratings of the "Help received with test anxiety" and "Help received with other anxiety" clearly favored the group desensitization treatment. While the group insight methods did produce a significant reduction in change

scores on Pulse Rate, Test Anxiety Inventory, Test Anxiety Rating Scale and Thayer Activation-Deactivation Checklist, only Pulse Rate favored, but not significantly, insight procedures when the two treatments were contrasted.

2. Groups led by subprofessional counselors were in general as effective as groups led by professional counselors. There was some variability in the data however. The S-R Inventory of Anxiousness favored the subprofessional counselors while the Test Anxiety Rating Scale indicated that the professional counselors did significantly better. The remaining dependent variables, the Test Anxiety Inventory, Thayer Activation-Deactivation Checklist, Pulse Rate, ad Observers' Checklist failed to suggest an advantage for either group.

3. High imagery arousal subjects did not show a significantly greater decrease in change scores when compared with low imagery arousal subjects. In fact, low imagery arousal subjects tended to do slightly better than high imagery arousal students. It appears that the degree to which clients physiologically re-experience images does not determine success or failure in counseling. More sensitive techniques for assessing level of arousal need development.

4. Experimental groups showed a significant decrease in mean change scores on all of the criterion measures. Therefore, the group treatments can be interpreted as being successful in reducing test anxiety in college students.

5. Effects of giving attention to some students, for example, in assignments to groups in testing, and in a general promise of relief (wait-control procedures), were not found. Scores for these students remained essentially the same. Passage of time and other external influences were controlled due to the absence of change in the no contact control group mean change scores.

Implications

While student pressures and anxieties connected with taking examinations seem to be increasing in our colleges and universities, clearly defined therapeutic methods to deal with this problem have been largely non-existent. Theoretical assumptions concerning behavior change, such as reducing test, or other anxiety, have been based generally on the psychodynamic, traditional approaches which stress insight. This study however was designed to evaluate in part, the feasibility of following specific treatment methods based on principles of social learning to relieve test anxiety in college students in comparison to more general treatment methods based on insight and understanding.

Information is needed to supplement Paul's (1966) seminal study in ascertaining whether therapeutic procedures, like desensitisation, will result in a significant reduction in test, and other types of anxieties. Reports of group approaches using desensitization methods have been sparse. By using counselor support personnel to apply specific techniques, professional counselors will be available for more complicated activities. In addition, data and experimentation is needed concerning various types of criterion measures so that the success of counseling can be more objectively evaluated. Motoric, physiological and traditional self-report measures need to be compared and contrasted.

The results of this study seem to present the following implications:

1. Counselors without prior training in systematic desensitization, nor preference for it, can effectively carry out the treatment resulting in significant improvements in stated, observed and measured behaviors.

2. When the behaviors to be changed are clearly delineated, evaluation and treatment are more successfully carried out.

3. Personnel not trained professionally in a traditional sense are able to effectively change students behavior without going through extensive and often irrelevant training programs now in existance. Professionally-trained counselors can therefore give their attention to more unique and difficult problems presented by clients.

4. Counseling for behavior change can be a systematic procedure rather than a disorganized and extensive venture. It has been shown that changes can result from a limited treatment time of five interviews, casting doubt on the necessity for long term counseling contacts.

5. Group procedures can effectively produce behavior change. This permits more economically using professional and subprofessional counselor time. With the increased demand for counseling services in our colleges and universities, more efficient methods are needed to accommodate client demands.

6. Evaluative measures should not rely exclusively on self-report of client satisfaction but rather multiple criterion measures should be utilized. Even though clients report that they were "helped", they may in fact not really know to what extent and how their behavior has changed.

7. Counselors need to ask the question "What type of treatment is needed for this type of client,to accomplish what?", rather than use essentially one method with all clients regardless of the specific problem. Because of the uniqueness of humans, different methods are needed to change different types of client problems.

8. Counselor educators can successfully teach systematic desensitization methods to counselors in training, in addition to the standardization and traditional models of psychodynamic procedures now almost exclusively emphasized in graduate training. By providing trainees the interpersonal experience of teaching relaxation and desensitization methods, experience is gained by trainees which reduces their usual anxieties accompanying counselor-client contacts.

9. Practitioners should consider viewing maladaptive behavior and emotional disturbances as being successfully treated via emotional re-education and behavior techniques, rather than applying psychodynamic models in counseling, to the exclusion of alternative methods.

10. A reduction in client anxiety level tends to reduce other anxious behaviors in client's lives. Therefore, when subjects experience a reduction in anxiety in one specific situation, they tend to apply the methods to other similar stresses in their lives.

Suggestions for Further Research

The results, conclusions, and broad implications of this investigation have presented many questions which need to be answered. Data on which systematic and specific counseling model, produces what type of client behavior is just beginning to be gathered. This knowledge is urgently needed if counselors are to successfully provide help to an increasing number of students who seek a reduction in their anxiety-level, whether it be caused by maladaptive learning, "identity" problems, or academic difficulties. The dilemma of effective goals and techniques of counselors currently in existence in counselor-education circles can be resolved by further research similar to the design of this study. The following specific suggestions for further experimentation can help resolve this dilemma:

1. Replications of this study are needed with a larger number of professional and subprofessional counselors, a greater number of subjects, and more data on the subjects.

2. More precise criteria should be used for selecting subprofessional counselors. The use of a variety of assessment techniques would permit discovery of variables which may be shown to be highly correlated with effectiveness.

3. Various lengths of treatments should be contrasted. For example, compare five sessions with 10 or more sessions, especially for "insight" procedures.

4. A replication of this study is needed but comparing other process models, i.e., implosive therapy, rational-emotive therapy, existential therapy, or some other form of behavior therapy such as in vivo desensitization,

self-management contingencies, flooding techniques, or aversive therapy. The exact behaviors needed to implement each method would have to be determined prior to treatment. Various types of client problems could be represented in the design. Maladaptive client behaviors such as unassertiveness, fear and lack of skill in social relations, homosexuality, frigidity, impotency, lack of self-control, and a general "too much anxiety" state, may be included so that data could be gathered to help determine the most successful type of treatment for a particular problematic behavior.

5. Longitudinal and followup studies are needed to produce information on enduring effects over an extended period of time. Knowing what specific and general changes occurred with which clients one or two years after treatment can aid in productive treatment. Also, the principle of partial reinforcement, "fading out" once effective habits are established, could be tested by means of spacing interviews at appropriate times during treatment. During the initial stages of counseling, several interviews could be held each week. Subsequently, the number of interviews per week, or month, would diminish.

6. The use of a variety of counselor characteristics is suggested, such as age, sex, verbal behaviors, mannerisms, gestures and physical characteristics such as appearance and size to compare their success rates with different types of clients. Significant differences apparently exist between individuals in their receptivity to certain counselor characteristics. Matching the most appropriate counselor to "fit" the needs of a particular type client should produce a higher success rate in counseling than presently exists.

7. Objective measurements similar to the Observers' Checklist used in this study, need to be developed and refined. Decide what behavior is to be changed, then, depending upon the chosen behavior, create or select an objective, observational instrument to record motoric data. If a client wishes to change a specific behavior, some method to assess such change is essential, Further

refinement of the Observers' Checklist could be accomplished by using the same trained rater to observe all subjects, thereby eliminating inter-rater variance. If several raters are needed, their reliability should be assessed by having them independently observe and record a particular subject's behavior, rather than permitting between rater movement and "cues" to affect their ratings. For example, raters could use two separate rooms, if available, to accomplish this purpose.

8. Replication of this study is needed using different target behaviors. The behaviors to be changed could include assertive behavior, dating behavior, "uncommunicative" behavior with a parent, or any broad range of difficulties presented by clients. By being innovative, a variety of techniques can be developed to permit assessment of client behaviors. Observations of those life situations in which the client experiences difficulty is cruc al. For example, electronic devices can gather relevant data by being attached to the client's body so that physiological data may be recorded daily.

9. The evaluation of a combination of various treatment techniques is urged. Many counselors state that they are "eclectic" and use a variety of methods. Investigations based on examining a sequence of various procedures derived from existing rationales ("insight", desensitization, rational-emotive, etc.) could be innovative and helpful.

10. Investigation of the historical antecedents of the client's behaviors is proposed. Extensive case histories could be compiled which would include demographic data such as academic, medical, social, educational, vocational and familial factors. These variables may yield computerized patterns of behavior with which a certain type of treatment may show a high probability of success. For example, a student with a high grade point average, high scientific aspirations, few friends, high frequency of "psychosomatic symptoms", and high family goals, might respond better to, and show a greater reduction in anxiety with conditioning procedures rather than "insight" methods.

11. The generalization factor needs to be examined in greater detail. Few studies have investigated the "self-reported" behavior of clients outside the counseling office nor have many investigations been made to evaluate systematically the behavior changes other than the original "presenting problem". Too often the self-report of client progress is invalid and ambiguous therby causing the counselor to change or retain a certain type of clinical approach based on insufficient and inaccurate evidence. Rarely do studies followup the external behavior of clients or use that observed objective data as primary criteria.

If counseling is supposed to help solve problematic behavior, and reduce anxiety, then its generalized effects need to be examined. For example, if a female client's goal is to reduce the amount of anxiety she feels when she is around males, a reduction in anxiety may occur but a side effect may be that she finds herself becoming more indifferent, disinterested and "cold" with males leading to fewer male contacts.

Clients in the present study indicated that they were significantly helped in "other" general areas by desensitization methods. Individual analyses and followup in this area can provide answers to the questions "In what specific way has your behavior changed?", "How often does this new behavior occur?" and "What was there about the treatment that resulted in this unexpected behavior to occur?". The rigor of generalization research is lacking but due only to its infancy. This generalization approach is needed so that clients do not get "worse" in their everyday lives while showing a successful counseling "experience".

Appendix A

An S-R Inventory of Anxiousness

"You are entering a final examination in an important course"

PLEASE DO NOT MARK THIS BOOKLET

Mark on the ANSWER SHEET one of the five alternative degrees of reaction or attitude for each of the following 14 items.

1. Heart beats faster	1	2	3	4	5
	Not at all				Much faster
2. Get an "uneasy feeling"	1	2	3	4	5
	None				Very strongly
3. Emotions disrupt action	1	2	3	4	5
	Not at all				Very disruptive
4. Feel exhilarated and thrilled	1	2	3	4	5
	Very much				Not at all
5. Want to avoid situation	1	2	3	4	5
	Not at all				Very much
6. Perspire	1	2	3	4	5
	Not at all				Perspire much
7. Need to urinate frequently	1	2	3	4	5
	Not at all				Very frequently
8. Enjoy the challenge	1	2	3	4	5
	Enjoy much				Not at all
9. Mouth gets dry	1	2	3	4	5
	Not at all				Very dry
10. Become immobilized	1	2	3	4	5
	Not at all				Completely
11. Get full feeling in stomach	1	2	3	4	5
	None				Very full
12. Seek experiences like this	1	2	3	4	5
	Very much				Not at all
13. Have loose boweis	1	2	3	4	5
	None				Very much
14. Experience nausea	1	2	3	4	5
	Not at all				Much nausea

PLEASE RECORD YOUR ANSWERS ON THE ANSWER SHEET

An S-R Inventory of Anxiousness

The format is the same for the remaining ten situations that subjects respond to but the situations change to:

(2)"You are going into an interview for a very important job"

(3)"You are alone in the woods at night"

(4)"You are entering a competitive contest before spectators"

(5)"You are starting out in a sailboat onto a rough sea"

(6)"You are going to a counseling bureau to seek help in solving a personal problem"

(7)"You are getting up to give a speech before a large group"

(8)"You are crawling along a ledge high on a mountain side"

(9)"You are going into a psychological experiment"

(10)"You are going to meet a new date"

(11)"You are just starting off on a long automobile trip"

Appendix B

Name_____

Date_____

TEST ANXIETY INVENTORY

This form is composed of statements regarding your feelings of tension and stress (anxiety) in taking an important test. After each question circle the letter which best describes your present feelings. Think back to your most recent important test on which you experienced tension and stress. Work quickly and don't spend much time on any one question. Your first impression of each question is most important. Now go ahead, work quickly, and remember to answer every question. Circle the letter which represents your present feeling.

Rarely or Never	Infrequently	Occasionally	Frequently	Always or Almost Always
R	I	O	F	A

1. While studying for a test I feel tense and nervous.	R	I	O	F	A
2. I feel tense when I see the words "midtern" and "final" on a course outline when studying.	R	I	O	F	A
3. My thoughts become confused and jumbled when I am taking a test.	R	I	O	F	A
4. Right after taking a test I feel that I have had a pleasant experience.	R	I	O	F	A
5. I get anxious when I think about a test coming up.	R	I	O	F	A
6. I have no fear of taking a test.	R	I	O	F	A
7. Although I am nervous just before starting the test, I soon settle down after starting on the test and feel calm and comfortable.	R	I	O	F	A
8. I look forward to taking a test.	R	I	O	F	A
9. When the instructor announces a test in class I can feel myself getting tense.	R	I	O	F	A
10. My hands tremble when I am taking a test.	R	I	O	F	A
11. I feel relaxed while taking a test.	R	I	O	F	A
12. I enjoy preparing for a test.	R	I	O	F	A
13. I am in constant fear of forgetting what I have studied.	R	I	O	F	A
14. I get anxious if someone asks me something about course material that I do not know.	R	I	O	F	A
15. I face the prospect of taking a test with confidence.	R	I	O	F	A
16. I feel I am in complete possession of myself while taking a test.	R	I	O	F	A
17. My mind is clear when taking a test.	R	I	O	F	A

18. I do not dread taking a test.	R I O F A
19. I perspire just before starting a test.	R I O F A
20. My heart beats very fast just as I start an important test.	R I O F A
21. I experience considerable anxiety while sitting in the exam room just before the test has started.	R I O F A
22. Certain parts of my body feel very tense and rigid while taking a test.	R I O F A
23. Realizing that only a little time remains on a test makes me very tense and anxious.	R I O F A
24. In taking a test I know I can control my feelings of tension and stress.	R I O F A
25. I breathe faster just before starting a test.	R I O F A
26. I feel comfortable and relaxed in the hour or so just before taking a test.	R I O F A
27. I do poorer on exams because I am anxious.	R I O F A
28. I feel anxious when the teacher announces the date of an exam.	R I O F A
29. When I have trouble answering a question on a test, I find it hard to concentrate on the questions that follow.	R I O F A
30. During an important examination I experience a feeling of helplessness building up inside me.	R I O F A
31. I have trouble falling asleep the night before an important examination.	R I O F A
32. My heart beats very fast during an important test.	R I O F A
33. I feel anxious while the test is being handed out.	R I O F A
34. During a test I get so nervous I forget facts I really know.	R I O F A

APPENDIX C

Name_____ Address_____ Phone_____

Time your class ends_____

TEST ANXIETY ATTITUDE BATTERY

You are being asked to complete this series of short inquires to help investigate specific ways students can overcome fears associated with taking tests. We are concerned about students who experience anxiety over tests and who, therefore, fail to do as well as they are capable of doing. We already have worked with some students using psychological principles and therapeutic procedures with excellent results. An effort is not being made to determine how much anxiety students experience on examinations. You can help us by completing the enclosed forms with the knowledge that your answers will be held in confidence.

The main purpose of this project is to help students reduce their anxieties and tensions about tests. If you are seriously interested in wanting to do something about anxiety you experience, please indicate in the space below. Ordinarily, these services would cost more than $50 for non-students but will be free for students participating. If you are interested, you will receive five interviews with a trained specialist. In addition, an hour interview will be needed. The total time spent by you will be about six hours. We know you will benefit from your participation and we are most interested in helping you learn how to be more calm and relaxed concerning examinations.

I wish to participate in this project to reduce my test anxiety_____

APPENDIX D

TRANSCRIPT OF IMAGERY AROUSAL INVENTORY TAPE

Now, because imagery is important in reducing anxiety, I would like to see how well you can imagine experiences that have probably happened to all of us... and the extent to which you actually FEEL the experience you picture....to help you imagine these experiences, I'd like to have you get in a relaxed position... that's right...relax...stretch your arms and legs...get in a comfortable position.. move around until you feel your muscles loosen up and your body relax...good... let your muscles go...relax...sit back...close your eyes...slowly...relax... close your eyes...take a deep breath...and let the muscles go in your stomach... neck...arms...shoulders...relax...that's it...try not to think of anything else but just listen to me and I'll present your six reactions to situations you wrote out just a few minutes ago. I'd like to have you imagine them as vividly and completely as possible...just as if you were there...let yourself go and experience the feelings that accompany these situations...All the feelings... I'll ask you to indicate how anxious, tense or nervous you feel...that is, your physical reaction to these situations...by raising one finger of your right hand if you feel just a little but jittery...two fingers if you feel a little bit more tense... three fingers if you feel even more...four fingers for a great deal of anxiety...and raise all five fingers if you're really tense and anxious...if you don't feel any anxiety at all, don't raise any fingers...O.K.? Remember...relax, let your mind concentrate on these situations and keep your eyes closed...(read selections from anxious situations).

APPENDIX E

Your name_____ instructor_____

time class meets_____

As part of the program we'd like to have you recall certain situations that we probably all have encountered in our lives. As you recall them, imagine in your mind the specific details of the scene. Write a few sentences that specifically describe the situation as you recall it. For example: Making a speech--"Um, last Wednesday in speech class I stood by the podium and tried to discuss our government's foreign policy--my throat was dry--lips parched--legs shaky--the audience just stared--people slouched in their seats--one I scowled."

Write down your specific recollections to the situations below:

1. Think of a movie that you recently saw...one that really had an emotional impact on you...can you visualize it?...a time really tugged,.. and had meaning for you...do you remember the parts that were particularly moving or stimulating...? that made you tingle...or cry...or happy--describe it briefly. Just relate the specific feelings and details of it.

2. Now, think back...the last time you listened to music that really turned you on. Think of your feelings...imagine yourself there with that person... elaborate on that moment now--describe it briefly, but specifically, as to feelings and details.

3. Now visualize that moment when you were involved in or witnessed a traffic accident...can you imagine the impact of the car or cars or the physical injury to the people--describe a few of the specific details you see and the feelings you experienced...

4. Now you are entering a final examination in a course that has you pretty scared...it really is the most anxious moment of the course for you...you don't see how in the world you'll ever remember the material... much less how to interpret the questions you know the instructor gives... you're starting to block--describe the specific situation.

5. Now...imagine you are having one of those days...nothing seems to go right...everything seems to go wrong...you're irritable...things upset you easily...you're about ready to explode--describe the particular situation.

6. Think now of a recent frightening or panicky experience that you've had...one that really scared you--describe it briefly.

OBSERVER PROCEDURES AND CHECKLIST

Observer________________________________

S's will be assigned a predetermined seat to aid in identification. A seating chart will be completed beforehand that will show where each S will sit. Observers will take S's pulse rate when they arrive to take the test. (Pulse Rate for 1 min.) S's will not begin testing until all S's report and have PR's taken. S's will be told "as part of your participation in this project we would like you to take the test under optimal testing conditions, so that you can do your best on the test. We will be proctoring you from behind the one-way mirrors to eliminate distractions on our part."

Observers will leave the testing room and locate themselves behind the one-way mirrors. One minute observations of each S will be taken by both observers, switching to other S's in a left to right fashion. Stop watches will be utilized to record how many seconds of a one-minute span the observed S engages in test behavior anxiety (see below). E's will repeat the cycle as many times as possible. After the S's finish the examination, they will complete (1) The [illegible] and (2) The [illegible] Activation: Deactivation Adjective Check List.

Each S. must have an equal number of observations recorded. In other words, if E's are part way around a cycle when an S completes the test, only the observations that are included in a complete cycle will be used.

Specific behaviors to be observed as test-anxiety behavior:

<u>Facial Behaviors</u>
- Plays with hair
- Brushes hair from eyes
- Rubs forehead
- Rubs eyes
- Stares blankly
- Scratches nose
- Grimaces/makes faces
- Bites lips
- Moistens lips
- Purses lips
- Coughs
- Fingers in mouth
- Chews on nails/pencil

<u>Shoulders/Arms/Hands</u>
- Shrugs shoulders
- Rubs neck 'scratching'
- Wringing hands
- Manipulation of pen
- Hand tremors
- 'Plucking' fingernails

<u>Trunk</u>
- Heavy breathing
- Moves about in chair, 'fidgety'

<u>Legs</u>
- Shuffles/taps feet
- Double-crosses/recrosses

Students Observed	(1-min.) Pulse Rate	Observation Time (1-min.)										
1.												
2.												
3.												
4.												
5.												
6.												
7.												

APPENDIX G

Course Title and No._____ Name_____

Date of Exam_____ Phone No._____

TEST ANXIETY RATING SHEET

Please complete this immediately after taking the exam before you leave the exam room.

Type of Exam: Multiple Choice _____
Essay _____
Multiple Choice and Essay _____

Please indicate how you were feeling just before (within 10 minutes) the exam. (Circle one number).

1	2	3	4	5
Completely Relaxed	Calm and Comfortable	Mild Tension-Not Bothersome	Mild Anxiety - a Little Bothersome	Anxiety - Somewhat Disturbing

6	7	8
Anxiety-Moderately Disturbing	Intense Anxiety Very Disturbing	Very Intense Anxiety-Extremely Disturbing

Please indicate how you were feeling at the beginning (first 10 minutes) of the exam.

1	2	3	4	5
Completely Relaxed	Calm and Comfortable	Mild Tension-Not Bothersome	Mild Anxiety -a Little Bothersome	Anxiety - Somewhat Disturbing

6	7	8
Anxiety-Moderately Disturbing	Intense Anxiety Very Disturbing	Very Intense Anxiety Extremely Disturbing

Please indicate how you were feeling in the middle of the exam.

1	2	3	4	5
Completely Relaxed	Calm and Comfortable	Mild Tension - Not Bothersome	Mild Anxiety -a Little Bothersome	Anxiety - Somewhat Disturbing

6	7	8
Anxiety-Moderately Disturbing	Intense Anxiety - Very Disturbing	Very Intense Anxiety-Extremely Disturbing

Please indicate how you were feeling near the end (last 10 Minutes) of the exam.

1	2	3	4	5
Completely Relaxed	Calm and Comfortable	Mild Tension-Not Bothersome	Mild Anxiety - a Little Bothersome	Anxiety - Somewhat Disturbing

6	7	8
Anxiety-Moderately Disturbing	Intense Anxiety - Very Disturbing	Very Intense Anxiety - Extremely Disturbing

Now please indicate how you were feeling after you have completed the exam.

1	2	3	4	5
Completely Relaxed	Calm and Comfortable	Mild Tension-Not Bothersome	Mild Anxiety -a Little Bothersome	Anxiety -Somewhat Disturbing

6	7	8

APPENDIX H

THAYER ACTIVATION-DEACTIVATION CHECKLIST

(vv) v ? no : definitely feel
vv (v) ? no : feel slightly
vv v (?) no : cannot decide
vv v ? (no) : definitely do not feel

*High Activation
**General Deactivation
***General Activation
****Deactivation-Sleep

---

carefree vv v ? no
serious vv v ? no
***peppy vv v ? no
pleased vv v ? no
**placid vv v ? no
**leisurely vv v ? no
****sleepy vv v ? no
*jittery vv v ? no
*intense vv v ? no
grouchy vv v ? no
***energetic vv v ? no
egotistic vv v ?? no
**calm vv v ? no
***suspicious vv v ? no
****tired vv v ? no
regretful vv v ? no
*stirred-up vv v ? no
***warm-hearted vv v ? no
***vigorous vv v ? no
engaged-in-thought vv v ? no
**at rest vv y ? no
***elated vv v ? no
****drowsy vv v ? no
witty vv v ? no

***aroused vv v ? no
*fearful vv V ? no
***lively vv v ? no
**still vv v ? no
self-centered vv v ? no
***wide-awake vv v ? no
skeptical vv v ? no
***activated vv v ? no
sad vv v ? no
***full-of-pep vv v ? no
***affectionate vv v ? no
**quiet vv v ? no
concentrating vv v ? no
****sluggish vv v ? no
***overjoyed vv v ? no
***quick vv v ? no
nonchalant vv v ? no
**quiescent vv v ? no
*clutched-up vv v ? no
***wakeful vv v ? no
***rebellious vv v ? no
***active vv v ? no
blue vv v ? no
defiant vv v ? no

APPENDIX I

TEST ANXIETY ATTITUDE BATTERY(POST-SESSION)

Name_____ Class_____ Phone_____

You are again being asked to complete this battery in conjunction with the test anxiety project the counseling center is conducting. This will only be about two-thirds of what you previously completed. As you recall, the purpose of this project was to investigate the effectiveness of certain types of counseling with students who experience anxiety over taking tests.

Most of you have had five interviews with your specialist. Those of you who were unable to be seen this semester will be able to have these same interviews the next semester, or term, you are in school. We still would like to have ALL of you fill out this battery. If you would like to have a complete explanation of this project after the semester is completed, please contact Mr. Neuman at the counseling center. We also would like to express our appreciation to everyone who cooperated by participating in this study.

Please answer by circling the following(those who did not meet in groups, skip 1-4)

1. For those of you who not in the group sessions, to what degree do you think you were helped in overcoming test anxiety?

very much 3 | much 2 | somewhat 1 | not at all 0

2. To what degree were you helped in overcoming anxiety in situations OTHER than the testing situation?

very much 3 | much 2 | somewhat 1 | not at all 0

3. How would you rate the specialist who led your group?

very competent 2 | competent 1 | not very competent 0

4. How do you feel about the approach that was used in the group?

very satisfactory 2 | satisfactory 1 | not very satisfactory 0

After you fill this out, please keep it in the folder and return it to us when you report for your final examination in Education 250. See below.

Date_____ Room_____

If you have any questions, please call Mr. Neuman at 393-1950. Thanks

APPENDIX J

Therapist Ratings of Client's Anxiety

Please rate Ss on degree of behavioral and intrapsychic anxiety (fighting, tenseness, stammering, shaking, etc.)

Therapist_____

Group PADH PADL PAIH PAIL
PBDH PBDL PBIH PBIL
SADH SADL SAIH SAIL
SBDH SBDL SBIH SBIL

Date	1._____	2._____	3._____	4._____	5._____
Subjects					
1._____	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
2._____	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
3._____	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Rate Ss on this basis: 1 is "very low or no anxiety", and 5 is "very high or intense anxiety

APPENDIX K

SPECIFIC DESENSITIZATION PROCEDURES

1. Exploration of history and current status of symptoms. This phase will serve primarily as an "icebreaker" and as a period in which to establish rapport. Determine (a) how long the subject has experienced test anxiety, (b) to what degree test anxiety interferes with functioning, and (c) whether other social or evaluative situations also arouse anxiety. This should be completed in no more than 10 minutes of the first session.

2. Explanation of rationale and course of treatment. It is important that each subject understand and accept the treatment process. Both the theory and course of treatment should be briefly explained and repeated if questions arise. It should be made clear that anxiety is a result of learning, and that treatment is a learning process. If any subject seems to have trouble understanding, rephrase your explanation in language he can understand. The following brief explanation usually suffices for introductory purposes.

"The emotional reactions that you experience are a result of your previous experiences with people and situations; these reactions oftentimes lead to feelings of anxiety or tenseness which are really inappropriate. Since perceptions of situations occur within ourselves, it is possible to work with your reactions right here in the office by having you imagine or visualize those situations."

"The specific technique we will be using is one called desensitization. This technique utilizes two main procedures--relazation and counterconditioning --to reduce your anxiety. The relaxation procedure is based upon years of work that was started in the 1930's by Dr. Jacobsen. 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. Of course, the real advantage of relaxation is that the muscle systems in your body cannot be both tense and relaxed at the same time; therefore, once you have learned the relaxation technique, it can be used to counter anxiety, tenseness, and feelings like those you experience in the anxious test situation.

"Relaxation alone can be used to reduce anxiety and tension, and I'll be asking you to practice relaxation between our meetings. Often, however, relaxation is inconvenient to use, and really doesn't permanently overcome anxiety. Therefore, we combine the relaxation technique with the psychological principle of counterconditioning to actually desensitize situations so that anxiety no longer occurs."

"The way in which we will do this is to determine the situations in which you become progressively more anxious, building a hierarchy from the least to the most anxious situations with regard to taking a test. Then I will teach you the technique of progressive relaxation, and have you practice this. You will see how this operates in a few minutes when we actually start training. After you are more relaxed than ever before, we will then start counterconditioning. This will be done by having you repeatedly imagine the specific situations from the anxiety

hierarchy while under relaxation. By having you visualize very briefly, while you are deeply relaxed, the situations that normally arouse anxiety, those situations gradually become desensitized, so that they no longer make you anxious. We start with those situations that bother you the least, and gradually work up to the most anxious moment. Since each visualization will lower your anxiety to the next, a full-fledged anxiety reaction never occurs."

"These procedures have been used on many different types of clinical problems, including students with performance anxiety, with excellent results. Most of these procedures will become clearer after we get into them. Do you have any questions before we continue?"

3. Construction of the anxiety hierarchy. The anxiety hierarchy is one of the most important aspects of this treatment. The object is to determine situations related to test anxiety which run from very slight, controllable amounts of anxiety to the most extreme anxiety attendant upon the actual test situation. It is not necessary to determine every instance, since generalization from one instance to another will bridge the gap. It is necessary to determine situations close enough together to allow generalization to occur.

3a. The basic test anxiety hierarchy. Based upon interviews with students and analysis of the situation, the following temporal hierarchy might form a basic framework, this reducing the time involved. Here is an example of a test hierarchy. Construct your own based on your individual experiences:

(1) Beginning of quarter, instructor hands out course outline. On glancing over outline you see the words "mid-term" and "final" and how much each is weighted in grading.
(2) Sitting down to study the third week of the quarter, having difficulty concentrating, think about an important mid-term coming up.
(3) While sitting in an important class the instructor mentions that the mid-term will be on Thursday.
(4) You have started to look over a chapter in your testbook for a test in a few days. You realize that the material is very difficult and hard to understand and start thinking about the test coming up.
(5) The day before an important exam your roommate asks you a question about material to be covered on the test. You don't know the answer.
(6) You are lying in bed the night before the final trying to go to sleep.
(7) You are sitting in the exam room, watching the clock, looking at your notes, and trying to memorize certain facts, trying to anticipate what is going to be on the exam.
(8) The instructor has just handed you the final. You glance at the first question.
(9) You have just read a test question slowly and carefully. You don't understand it so you reread it but still don't seem to understand it.
(10) Upon looking at the test you realize that you did not study for these questions.

(11) Sitting in the room taking the final you glance up at the clock and realize that only a little time remains.

This hierarchy is to serve only as a guide; each subject should make out his own 3 x 5 cards. The procedure is as follows: First explain that you wish to determine specific situations from the least to the most anxiety producing. Ask the subject when he first notices feelings of tenseness and anxiety; then work through each of the 10-15 items to determine if some items should be excluded or others included. Have them write down on the cards the specifics associated with each item, so that you may better control the imagery of the subject, (where they get anxious). Subjects may replace non-anxiety arousing items from time to time with more anxious items.

4. Training in progressive relaxation. This is a most important procedure, and one that should be mastered. It should be explained to the subject that this technique will take some time (20-25 minutes) at first, but as he learns, the time for inducing deep relaxation will be shortened. Training begins by having the subject systematically tense his gross-muscle systems, holding them tense until you say "relax", at which time the subject lets go immediately. If the muscles are first tensed, they will relax more deeply when they are relaxed. Explain that you want the subject to focus all his attention on each muscle system as you work through the various groups, so that after practice he will not have to tense the muscles first in order to achieve deep relaxation.

4a. The Method. Seat the three subjects in comfortable chairs. Legs should be extended, head resting on the back of the chair, and arms resting on the arms of the chair. No part of the body should require the use of muscles for support. Have the subjects close their eyes to minimize external stimulation. The room should be quiet and lights dimmed if possible.

(1). Instruct the subject to "clench the arm of the chair with your dominant hand (usually right). Tense the muscles of your (right) hand, forearm, and biceps. Tense until it trembles. Feel the muscles pull across your fingers and lower part of your forearm". Have the subject hold this position for 5 to 7 seconds, then say "relax", instructing him to just let his hand go: "Pay attention to the muscles of your (right) hand and forearm as they relax even more until your arm and hand are completely relaxed with no tension at all, warm and relaxed".

Continue until subject reports his (right) hand and forearm are completely relaxed with no tension (usually 2--4 times is sufficient).

(2) Instruct the subject to tense his left hand, forearm, and bicep. Proceed in the same manner as above, in a "hypnotic monotone", using the (right) hand as a reference point, that is, move on when the subject reports his biceps feel as completely relaxed as his hand and forearm.

Proceed to other gross-muscle groups (listed below) in the same manner, with the same verbalization. For example: "Note how these muscles feel as they relax; feel the relaxation and warmth flow through these muscles; pay attention to these muscles so that later you can relax them again". Always use the preceding group as a reference for moving on.

(3) Frown hard, tensing muscles of forehead and top of head (these muscles often "tingle" as they relax).

(4) Clench teeth, feeling jaw muscles and cheeks

(5) Tighten chin and throat muscles, feeling two muscles in front of throat.

(6) Tighten chest muscles and muscles across back--feel muscles pull below shoulder blades.

(7) Tighten abdominal muscles--make abdomen hard.

(8) Tighten muscles of right leg and calf--push down with toes and arch--apply pressure on ball of foot.

(9) Tighten muscles of left leg and calf--feel muscles on bottom of left calf.

For most muscle groups, two presentations will suffice. Ask the subject if he feels any tension anywhere in his body. If he does, go back and repeat the tension-release cycle for that muscle group. It is often helpful to instruct the subject to take a deep breath and hold it while tensing muscles, and to let it go while releasing. Should any muscle group not respond after four trials, move on and return to it later. Caution: some subjects may develop muscle cramps or spasms from prolonged tension of muscles. If this occurs, shorten the tension interval a few seconds, and instruct the subject not to tense his muscles quite so hard.

Although the word "hypnosis" is not to be used, progressive relaxation, properly executed, does seem to resemble a light hypnotic-trance state, with the subject more succeptible to suggestion. Relaxation may be further deepened by repetition of suggestions of warmth, relaxation, etc. Some subjects may actually report sensations of disassociation from their bodies. This is complete relaxation and is to be expected. Subjects should be instructed to speak as little as possible while under relaxation.

In bringing subjects back to "normal", the numerical method of trance termination should be used: "I'm going to count from one to four. On the count of one, start moving your legs; two, your fingers and hands; three, your head; and four, open your eyes and sit up. One--move your legs; two--move your fingers and hands; three--move your head around; four--open your eyes and sit up". Always check to see that the subjects feel well, alert, etc., before leaving.

The subject should be instructed to practice relaxation twice a day between sessions. He should not work at it more than 15 minutes at a time and should not practice twice within any three-hour period. He should also practice alone. Relaxation may be used to get to sleep if practiced while horizontal; if the subject does not wish to sleep, he should practice sitting up. Properly timed, relaxation can be used for a "second-wind" during study.

By the third session, if the subject has been practicing well, relaxation may

be induced by merely focusing attention on the muscle groups, and instructing the subject to "concentrate on muscles becoming relaxed", "warm", etc. However, if any subject has difficulty following straight suggestions, return to the use of tension-release.

5. Desensitization proper -- working through the hierarchy under relaxation. Preparatory to desensitization proper, usually at the end of the first session, the subject's imagery should be tested. This may be done by asking him to visualize item (1): On the hierarchy. "Describe what you see. Do you see it clearly? Do you see color? Do you feel as if you were there? All right, now stop visualizing that and go on relaxing". Some subjects may report clear, distinct images, as if they were watching a movie; this is fine, but not necessary. The minimum requirement is that their visualizations be as clear as a very vivid memory. Describing these visualizations as a dream is often helpful. With more practice, images will usually become clearer. It is also important that the subject can start and stop an image on request, and this should be determined. If difficulties arise in any of these areas, present a few more common, nonanxious images, describing for the subject just what he should experience; for example, entering the office. It is important that the subject visualize situations as if he were there-not watching himself!

Before inducing relaxation in the second session, explain exactly what you'll be asking the subject to do, since his verbalizations are to be kept at a minimum. Tell him that if anytime during the session he feels any tension or nervousness whatever, to signal by raising his (right) index finger. This important, and should be made clear from the beginning.

After relaxation is induced, presentation of images begins with item (3) "Now I want you to visualize yourself sitting in class at the beginning of the semester, and the instructor mentions when the mid-term and final will be (10 seconds). Stop visualizing that, and go on relaxing". Ask if the subject felt any tension and if he was able to start and stop the image on request. Then repeat item (3) again. "One more time, visualize yourself, sitting in class at the beginning of the semester and the instructor mentions when the mid-term and final will be (10 seconds). Stop visualizing that, and go on relaxing--completely relaxed, no tension anywhere in your body, warm and relaxed".

Follow the above paradigm throughout the hierarchy if the subject does not become anxious: e.g., present each item in the hierarchy, specifying all major aspects of the image. Allow 10 seconds to elapse after each presentation, then instruct the subject to "stop visualizing that, and go on relaxing". Continue suggestions of warmth, relaxation, lack of tension, heaviness, etc. for 30 to 45 seconds, and again present the image. Present each item in the hierarchy at least twice. If the subject does not signal anxiety, and the therapist does not detect anxiety during two 10-second presentations of an item, move on to the next item in the hierarchy.

If, on the other hand, the subject signals anxiety to the therapist, immediately instruct the subject to "stop visualizing that, and go on relaxing". Then continue with suggestions of relaxation (at least one minute) until the subject reports as deep a relaxation as before. Then inform him that you will shorten the presentation

so that anxiety will not occur. Present the same item again for a period of only 3 to 5 seconds. If anxiety is still aroused, drop back to a 10-second presentation of the previous item in the hierarchy. If, however, the 3-to 5-second presentation does not arouse anxiety, give 30 to 45 seconds of relaxation suggestions, and present the same item again for 5 seconds, then 10 seconds, then 20 seconds. If the item can be presented for 20 seconds, move on the the next item in the hierarchy.

It is precisely at these points that clinical sensitivity must guide the presentations; one must know when to go back, when to construct new items, and when to move on up the hierarchy. However, the above guides should handle most situations. Some items may require as many as 8 to 12 presentations of differing time intervals, with lower level items interspersed. Most items will be handled successfully in 2 to 4 presentations.

Never end a session with a presentation that arouses anxiety. Approximately 5 to 10 minutes before the end of a session, either stop with a successful item, or go back to the previous item in the hierarchy. "Awaken" the subject, and discuss the session with him, reassuring him about any difficulties that may have come up. If by some quirk, any of the presentations are nullified, or they do not carry over into real life, rapidly repeat those items in the next session. Normally, each session will begin with a single presentation of the last successfully completed item. All subjects should easily complete the hierarchy in the five sessions.

APPENDIX L

SUMMARY SHEET OF RELAXATION PROCEDURES

You cannot be anxious while you are relaxed. Practice these excercises twice a day for about ten minutes. Sit in a comfortable chair or lie in bed.

1. Make a fist with your right hand. Tense the muscles of your hand, forearm and biceps until they tremble. Feel the tenseness of the muscles(5-7 seconds). Now relax and "let go" - fell how they relax. Repeat several times until you can feel them relax.

2. Same with left hand, forearm and biceps

3. Forehead and top of head(frown)

4. Clench teeth, jaw muscles and cheeks

5. Chin and throat

6. Chest and back muscles

7. Abdominal muscles

8. Right leg, calf and foot. Extend and relax

9. Left leg, calf and foot. Exten and flex

Practice stretching and yawning throughout the day....When you start to tense up, THINK RELAXATION.

APPENDIX M

TRAINING SESSION FOR INSIGHT THERAPIST

The behaviors listed below are to be emphasized and practiced:

1. Talking in a deep, soft tone. Speak slow with eye contact...in a thoughtful way...

2. Exhibit calmness...be relaxed but interested.

3. Respond to feelings..nod often..be concerned...use frequent "hm mmmm's

4. Convey to the client that you understand...check with them to see if you understand what they are saying...don't "beat them to the punch."

5. Focus on the client..be intense..and interested in the client

6. Lean forward once in a while. Give him your attention.

7. Help the client discuss his historical and current problems so that he may achieve meaning and insight into the reasons for his anxiety. (college and family pressures, goals, etc.)

8. Review tapes in tape library.

9. In summary, emphasize client self-reference statements and what they mean to him. Affective rather than cognitive statements are to be reinforced.

APPENDIX N

EXPLICATION OF RELIABILITY COMPUTATION FOR OBSERVERS

Interclass Correlation of Observer's Reliability based on Ebel's Revision of Hoyt's Analysis of Variance

Trials (One minute time span)	Seconds of anxious behavior Rater #1 X	X^2	Seconds of anxious behavior Rater #2 Y	Y^2	Sum XY	XY^2
1.	21	441	17	289	38	1444
2.	10	100	19	361	29	841
3.	7	49	11	121	18	324
4.	17	289	25	625	42	1764
5.	12	144	12	144	24	576
6.	11	121	17	289	28	784
7.	28	784	34	1156	62	3844
8.	13	169	9	81	22	484
9.	13	169	15	225	28	784
10.	8	324	20	400	38	1444
11.	3	9	2	4	5	25
	153	2599	181	3695	334	12314
Sum^2	(23409)	56170	(32761)	(111556)		

	df	Sum of Squares	Variance
Individuals (rows)	R-1	$SS_R = \frac{\sum^R(\sum^C X)^2}{C} - \frac{(\sum^R\sum^C X)^2}{RC}$	$S_R^2 = SS_R/R\text{-}1$
Raters (columns)	C-1	$SS_C = \frac{C(\sum^R Y)^2}{R} - \frac{(\sum^R\sum^C X)^2}{RC}$	$S_C^2 = SS_C/C\text{-}1$
Error	(R-1)(C-1)	$SS_E = SS_T - SS_R - SS_C$	$S_E^2 = SS_E/(R\text{-}1)(C\text{-}1)$
Total	RC-1	$SS_T = {}^R\,{}^C X^2 - \frac{(\sum^R\sum^C X)^2}{RC}$	

$SS_R = 1087$ $\quad SS_C = 36$

$SS_E = 101$ $\quad$ Total = 1224

Reliability of raters $r_{tt} = \frac{S_R^2 - S_E^2}{S_R^2}$ or $\frac{1087 - 101}{1087} = \frac{103}{1087}$ $\quad r = .90$

APPENDIX C

This is an example of a test anxiety hierarchy. Construct your own based on your individual experiences.

(1). Beginning of quarter, instructor hands out course outline. On glancing over outline you see the words "Mid-term" and "Final" and how much each is weighted in grading.

(2) Sitting down to study the third week of the quarter, having difficulty concentrating, think about an important mid-term coming up.

(3) While sitting in an important class, the instructor mentions that the mid-term will be on Thursday.

(4) You have started to look over a chapter in your textbook for a test in a few days. You realized that the material is very difficult and hard to understand and start thinking about the test coming up.

(5) The day before an important exam your roommate asks you a question about the material to be covered on the test. You don't know the answer.

(6) You are lying in bed the night before the final trying to sleep.

(7) You are sitting in the exam room, watching the clock, looking at your notes and trying to memorize certain facts, trying to anticipate what is going to be on the exam.

(8) The instructor has just handed you the final. You glance at the first question.

(9) You have just read a test question slowly and carefully. You don't understand it so you reread it but still don't seem to understand it.

(10) You are looking at the test and realize that you did not study for these questions.

(11). Sitting in the room taking the final you glance up at the clock and realized that only a little time remains.

APPENDIX P

TABLE I

S-R INVENTORY OF ANXIOUSNESS[1]

"You are going into an interview for a very important job"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means Pre	Means Post	Means Difference	Standard Deviations Pre	Standard Deviations Post	t
A	Desensitization	35.95	29.75	6.20	7.61	7.40	3.08**
	Insight	35.75	34.25	1.50	10.39	9.88	.96
B	Professional Counselors	33.57	31.42	2.15	7.98	8.66	1.16
	Subprofessional Counselors	37.90	32.52	5.38	9.54	11.33	2.97**
C	High Arousal Level	33.11	28.47	4.64	8.10	9.52	2.12*
	Low Arousal Level	37.86	34.60	3.20	9.25	9.80	2.00
	Wait Control (N=8)	40.12	40.25	-.13	6.87	3.99	-.05
	No Contact Control (N=11)	31.63	33.18	-1.55	9.57	12.27	-.84

*= p< .05

**= p< .01

[1] Total N for Variables A, B, and C = 44

TABLE II

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	322.09	1	322.09	5.47*
B Counselors	57.65	1	57.65	.98
C Arousal Level	25.62	1	25.62	.43
AB	229.83	1	229.83	3.90
AC	162.09	1	162.09	2.75
BC	1.44	1	1.44	.02
ABC	188.47	1	188.47	3.20
Within	1882.36	36	58.82	1.00
Total	2869.55	43		

*= p<.05

TABLE III

S-R INVENTORY OF ANXIOUSNESS[1]

"You are alone in the woods at night"

MEANS, STANDARD DEVIATIONS, AND t VALUES
FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	39.45	34.55	4.90	12.27	12.75	3.90**
	Insight	37.75	37.10	.65	12.26	12.15	.33
B	Professional Counselors	38.68	36.42	2.26	13.62	13.08	1.23
	Subprofessional Counselors	38.52	35.28	3.24	10.98	11.97	2.04*
C	High Arousal Level	37.70	34.17	3.53	10.54	11.80	1.62
	Low Arousal Level	39.26	37.04	2.22	13.40	12.88	1.65
	Wait Control (N=8)	37.25	43.25	-6.00	16.59	9.66	-1.30
	No Contact Control (N=11)	41.27	37.63	3.64	12.90	12.85	1.77

*= $p < .05$

**= $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE IV

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES
BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	R Ratio
A Treatments	221.00	1	221.00	3.78
B Counselors	.87	1	.87	.01
C Arousal Level	20.82	1	20.82	.35
AB	103.79	1	103.79	1.77
AC	52.53	1	52.53	.90
BC	2.47	1	2.47	.04
ABC	12.17	1	12.17	.20
Within	1886.05	36	58.31	1.00
Total	2299.70	43		

TABLE V

S-R INVENTORY OF ANXIOUSNESS[1]

"You are entering a competitive contest before spectators"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means Pre	Means Post	Difference	Standard Deviations Pre	Standard Deviations Post	t
A	Desensitization	39.60	33.10	6.50	8.69	10.94	3.69**
	Insight	38.40	34.40	4.00	8.78	10.50	1.43
B	Professional Counselors	37.42	34.84	2.58	8.47	10.73	1.51
	Subprofessional Counselors	40.42	32.76	7.66	8.76	10.65	2.90**
C	High Arousal Level	37.00	31.70	5.30	6.73	10.59	2.47*
	Low Arousal Level	40.47	35.26	5.21	9.70	10.58	2.16*
	Wait Control	39.12	39.00	.12	8.04	7.85	.04
	No Contact Control	37.45	36.72	.73	9.20	9.57	.45

*= $p < .05$

**= $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE VI

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	69.67	1	69.67	.61
B Counselors	248.41	1	248.41	2.19
C Arousal Level	.17	1	.17	.00
AB	211.23	1	211.23	1.87
AC	28.41	1	28.41	.25
BC	31.20	1	31.20	.27
ABC	22.73	1	22.73	.20
Within	3614.71	36	112.95	1.00
Total	4262.53			

TABLE VII

S-R INVENTORY OF ANXIOUSNESS[1]

"You are starting out in a sailboat on a rough sea"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	34.90	30.00	4.90	12.59	11.68	2.79*
	Insight	35.55	35.85	-.30	9.57	11.02	.16
B	Professional Counselors	34.21	31.68	2.53	8.96	11.18	1.39
	Subprofessional Counselors	36.14	34.04	2.10	12.79	12.12	1.07
C	High Arousal Level	36.35	32.47	3.88	11.52	13.56	1.59
	Low Arousal Level	34.39	33.26	1.13	10.87	10.21	.79
	Wait Control	29.12	32.75	3.63	10.90	10.16	-2.01*
	No Contact Control	41.54	35.72	5.82	12.12	11.61	2.82

*$= p < .05$

[1]Total N for Variables A, B, and C = 44

TABLE VIII

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	318.89	1	318.89	4.85*
B Counselors	10.45	1	10.45	.15
C Arousal Level	59.41	1	59.41	.90
AB	16.41	1	16.41	.24
AC	142.23	1	142.23	2.16
BC	13.08	1	13.08	.19
ABC	81.67	1	65.73	1.24
Within	2103.38	36		
Total	2745.52	43		

*$= p < .05$

TABLE IX

S-R INVENTORY OF ANXIOUSNESS[1]

"You are getting up to give a speech before a large group"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	38.95	32.80	6.15	10.53	11.00	2.89**
	Insight	42.05	39.25	2.80	11.66	13.64	1.24
B	Professional Counselors	40.63	37.10	3.53	9.34	11.87	1.78
	Subprofessional Counselors	40.38	35.04	5.34	12.68	13.55	2.23*
C	High Arousal Level	37.76	34.23	3.53	10.20	13.79	1.14
	Low Arousal Level	42.52	37.34	5.18	11.48	11.89	3.41**
	Wait Control	48.37	48.37	.00	8.97	9.80	.00
	No Contact Control	37.81	37.36	.45	10.19	9.72	.15

*= $p < .05$

**= $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE X

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCE BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	154.37	1	154.37	1.58
B Counselors	36.40	1	36.40	.37
C Arousal Level	12.08	1	12.08	.12
AB	342.59	1	342.59	3.52
AC	.37	1	.37	.00
BC	1.90	1	1.90	.01
ABC	194.84	1	97.21	1.00
Within	3110.80	36		
Total	3853.35	43		

TABLE XI

S-R INVENTORY OF ANXIOUSNESS[1]

"You are crawling on a ledge high on a mountain side"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means Pre	Means Post	Difference	Standard Deviations Pre	Standard Deviations Post	t
A	Desensitization	47.05	41.90	5.15	8.97	12.62	2.83**
	Insight	47.20	47.10	.10	11.21	10.54	.04
B	Professional Counselors	46.84	45.10	1.74	8.72	12.57	.66
	Subprofessional Counselors	47.38	43.95	3.43	11.28	11.29	2.08*
C	High Arousal Level	45.11	42.47	2.64	8.78	12.49	1.25
	Low Arousal Level	48.60	46.00	2.60	10.79	11.26	1.22
	Wait Control (N=8)	46.12	42.50	3.62	9.47	10.12	1.43
	No Contact Control (N=11)	47.63	42.85	4.78	8.60	9.16	1.03

*= $p < .05$

**= $p < .01$

[1]Total N for Variables A, B, and C = 44

TABLE XII

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	311.17	1	311.17	3.60
B Counselors	11.91	1	11.91	.13
C Arousal Level	3.20	1	3.20	.03
AB	434.13	1	434.13	5.03*
AC	5.29	1	5.29	.06
BC	17.79	1	17.79	.20
ABC	36.09	1	36.09	.41
Within	2759.16	36	86.22	1.00
Total	3578.74	43		

*= $p < .05$

TABLE XIII

S-R INVENTORY OF ANXIOUSNESS[1]

"You are going to a counseling bureau to seek help in solving a personal problem"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	34.25	30.00	4.25	7.47	9.00	2.50*
	Insight	35.40	35.05	.35	11.13	10.31	.15
B	Professional Counselors	32.26	30.89	1.37	7.66	8.53	.73
	Subprofessional Counselors	37.14	34.00	3.14	10.33	10.98	1.44
C	High Arousal Level	33.58	32.17	1.41	8.95	10.25	.52
	Low Arousal Level	35.73	32.78	2.95	9.78	9.84	1.89
	Wait Control (N=8)	39.75	38.75	1.00	8.43	7.97	.37
	No Contact Control (N=11)	33.90	34.27	-.37	10.06	10.82	.13

*
**= p< .05
= p< .01

[1]Total N for Variables A, B, and C = 44

TABLE XIV

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	147.77	1	147.77	1.77
B Counselors	24.98	1	24.98	.30
C Arousal Level	15.80	1	15.80	.18
AB	242.80	1	242.80	2.91
AC	28.96	1	28.96	.34
BC	19.00	1	19.00	.22
ABC	2.71	1	2.71	.03
Within	2662.45	36	83.20	1.00
Total	3144.47			

TABLE XV

S-R INVENTORY OF ANXIOUSNESS[1]

"You are going into a psychological experiment"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	30.10	28.90	1.20	6.69	9.07	.86
	Insight	32.25	32.20	.05	10.15	9.76	.02
B	Professional Counselors	30.94	27.63	3.31	8.81	6.61	1.89
	Subprofessional Counselors	31.38	33.19	-1.81	8.52	10.92	-.97
C	High Arousal Levels	29.88	29.94	-.06	7.95	11.17	-.02
	Low Arousal Levels	32.13	31.00	1.13	9.02	8.19	.64
	Wait Control (N=8)	33.62	33.25	.37	11.41	9.66	.22
	No Contact Control (N=11)	24.00	25.18	-1.18	7.66	5.91	-1.10

[1]Total N for Variables A, B, and C = 44

TABLE XVI

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	49.60	1	49.60	.80
B Counselors	231.00	1	231.00	3.72
C Arousal Level	3.72	1	3.72	.06
AB	5.23	1	5.23	.08
AC	204.60	1	204.60	3.29
BC	89.23	1	89.23	1.43
ABC	180.49	1	180.49	2.91
Within	1984.28	36	62.00	1.00
Total	2748.15			

TABLE XVII

S-R INVENTORY OF ANXIOUSNESS[1]

"You are going to meet a new date"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Means			Standard Deviations		
		Pre	Post	Difference	Pre	Post	t
A	Desensitization	34.00	29.35	4.65	7.64	9.89	2.37*
	Insight	30.75	29.90	.85	6.58	7.39	.58
B	Professional Counselors	31.26	28.36	2.90	7.54	6.54	1.96
	Subprofessional Counselors	33.38	30.76	2.62	6.96	10.18	1.31
C	High Arousal Level	30.17	28.17	2.00	6.93	9.56	1.10
	Low Arousal Level	34.00	30.69	3.31	7.15	7.90	1.91
	Wait Control (N=8)	31.70	31.90	-.20	5.79	9.17	-.05
	No Contact Control (N=11)	28.18	25.72	2.46	6.09	5.95	1.21

*$p < .05$

[1]Total N for Variables A, B, and C = 44

TABLE XVIII

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	149.64	1	149.64	2.36
B Counselors	.22	1	.22	.00
C Arousal Level	10.79	1	10.79	.17
AB	61.40	1	61.40	.96
AC	22.00	1	22.00	.34
BC	16.00	1	16.00	.25
ABC	131.47	1	131.47	2.07
Within	2027.55	36	63.36	1.00
Total	2403.07	43		

TABLE XIX

S-R INVENTORY OF ANXIOUSNESS[1]

"You are just starting off on a long automobile trip"

MEANS, STANDARD DEVIATIONS, AND t VALUES FOR MEAN DIFFERENCE SCORES

	Variables	Pre	Post	Differences	Standard Deviations Pre	Post	t
A	Desensitization	22.15	21.80	.35	5.43	6.01	.23
	Insight	21.26	22.31	-1.05	4.77	6.07	-.98
B	Professional Counselors	19.83	20.05	-.22	4.39	4.54	-.17
	Subprofessional Counselors	23.23	23.71	-.48	5.15	6.55	-.40
C	High Arousal Level	22.37	21.31	1.06	5.43	5.58	1.09
	Low Arousal Level	21.22	22.63	1.41	4.84	6.29	-1.09
	Wait Control (N=8)	21.00	23.25	2.25	6.14	5.82	-.72
	No Contact Control (N=11)	20.00	15.45	4.55	10.80	6.89	1.36

[1]Total N for Variables A, B, and C = 44

TABLE XX

ANALYSIS OF VARIANCE TABLE FOR THE DIFFERENCES BETWEEN MEAN DIFFERENCE SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	R Ratio
A Treatments	28.80	1	28.80	1.02
B Counselors	1.71	1	1.71	.06
C Arousal Level	59.91	1	59.91	2.12
AB	.66	1	.66	.02
AC	22.78	1	22.78	.80
BC	1.98	1	1.98	.07
ABC	116.80	1	116.80	4.13*
Within	847.03	36	28.23	1.00
Total	1079.67	43		

* = $p < .05$

APPENDIX Q

TABLE XXI

POST TREATMENT ANALYSIS OF DATA
TEST ANXIETY INVENTORY[1]

ANALYSIS OF VARIANCE TABLE FOR MEAN SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	1262.98	1	1262.98	2.13
B Counselors	53.35	1	53.35	.09
C Arousal Level	378.27	1	378.27	.63
AB	105.33	1	105.33	.17
AC	278.85	1	278.85	.47
BC	1629.35	1	1629.35	2.75
ABC	1140.66	1	1140.66	1.92
Within	19528.69	36	591.77	1.00
Total	24377.48	43		

[1]Total N for Variables A, B, and C = 44

TABLE XXII

TEST ANXIETY RATING[1]

ANALYSIS OF VARIANCE TABLE FOR POST MEAN SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	170.21	1	170.21	6.44*
B Counselors	54.04	1	54.04	2.04
C Arousal Level	1.26	1	1.26	.04
AB	10.52	1	10.52	.39
AC	14.24	1	14.24	.53
BC	.73	1	.73	.02
ABC	16.32	1	16.32	.61
Within	924.58	36	26.41	1.00
Total	1191.40	43		

[1]Total N for Variables A, B, and C = 44 *= $p < .05$

TABLE XXIII

THAYER ACTIVATION-DEACTIVATION CHECK LIST[1]

ANALYSIS OF VARIANCE TABLE FOR POST MEAN SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	7.44	1	7.44	.09
B Counselors	8.19	1	8.19	.10
C Arousal Level	.01	1	.01	.00
AB	1.81	1	1.81	.02
AC	93.20	1	93.20	1.19
BC	8.97	1	8.97	.11
ABC	.01	1	.01	.00
Within	2655.86	36	78.11	1.00
Total	2775.49	43		

[1]Total N for Variables A, B, and C = 44

TABLE XXIV

OBSERVERS' CHECKLIST[1]

ANALYSIS OF VARIANCE TABLE FOR POST MEAN SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	128.55	1	128.55	1.61
B Counselors	21.53	1	21.53	.26
C Arousal Level	260.64	1	260.64	3.26
AB	145.30	1	145.30	1.82
AC	12.53	1	12.53	.15
BC	92.64	1	92.64	1.16
ABC	1.87	1	1.87	.02
Within	26.32	36	26.32	1.00
Total	689.38	43	689.38	

[1]Total N for Variables A, B, and C = 44

TABLE XXV

PULSE RATE[1]

ANALYSIS OF VARIANCE TABLE FOR POST MEAN SCORES

Source of Variance	Sum of Squares	Degrees of Freedom	Variance Estimate	F Ratio
A Treatments	143.40	1	143.40	3.07
B Counselors	35.85	1	35.85	.76
C Arousal Level	4.73	1	4.73	.10
AB	6.01	1	6.01	.12
AC	21.41	1	21.41	.46
BC	46.30	1	46.30	.99
ABC	75.83	1	75.83	1.62
Within	1676.19	36	46.56	1.00
Total	2009.72	43		

[1]Total N for Variables A, B, and C = 44

APPENDIX R

TABLE XXVI

MEANS, STANDARD DEVIATIONS AND t VALUES FOR MEAN DIFFERENCE SCORES FOR ALL MALES (N=13) AND ALL FEMALES (N=50)

	Males		Females		
Criterion Measure	Mean	S. D.	Mean	S. D.	t Score
S-R Inventory of Anxiousness					
"Final Exam"	6.84	9.73	2.88	13.12	1.00
"Interview for Job"	6.61	13.54	3.40	13.72	.74
"Alone in Woods"	2.61	9.40	3.38	17.78	.14
"Competitive Contest"	6.92	15.81	5.15	16.00	.35
"Boat on Rough Sea"	1.61	10.09	3.42	13.80	.43
"Counseling Bureau"	7.92	14.76	2.59	14.49	1.16
"Speech with Group"	7.76	14.39	3.98	15.85	.77
"Mountain Ledge"	9.38	14.50	5.21	17.40	.78
"Psychological Experience"	5.30	13.28	.17	11.62	1.36
"Meet new Date"	4.61	10.29	2.00	11.03	.76
"Automobile Trip"	1.46	9.50	1.23	10.63	.07
Test Anxiety Inventory	14.69	27.55	14.48	28.36	.02
Test Anxiety Rating*	2.07	4.13	4.78	6.64	1.38
Adjective Checklist*	3.92	5.38	6.89	9.39	.51
Therapists' Ratings Checklist*	.53	.87	.82	.96	.96
Observers' Checklist*	6.33	17.88	4.78	16.32	.28
Pulse Rate*	4.08	7.39	5.16	11.10	.31

*The 11 subjects in the no contact control group (3 males, 8 females) did not take these measures.

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