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The Effectiveness Of Rational-Emotive Therapy In The Reduction Of Trait Anxiety Of College Undergraduate Students

Thomas Stanley Golabek
University of the Pacific

THE EFFECTIVENESS OF RATIONAL-EMOTIVE THERAPY IN THE REDUCTION OF TRAIT ANXIETY OF COLLEGE UNDERGRADUATE STUDENTS

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Thomas S. Golabek

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Abstract of Dissertation

The purpose of this study was to determine the effectiveness of Rational-Emotive Therapy (RET) in reducing levels of trait anxiety in undergraduates who enrolled in anxiety reduction workshops. S's were 44 volunteer male and female students from the University of the Pacific who enrolled in either an independent study or a mini-course series of 8 sessions, and were assigned to one of the three randomly designated groups: Rational-Emotive Therapy (RET), Attention Placebo (AP), or No-Treatment (NT). The AP procedure consisted of exposure to various nutritional aspects of physical fitness which focused on vitamin and mineral intake. Two self-report measures, the State-Trait Anxiety Inventory (STAI) and the Multiple Affect Adjective Checklist (MAACL) were used, as well as a behavioral measure, the Anxiety Rating Scale (ARS), to assess the effectiveness of each treatment on anxiety. It was hypothesized that the self-report scales would reflect a decrease in anxiety which would be greatest for the RET treatment. The second hypothesis was that students in the RET treatment would show the greatest amount of anxiety reduction according to the behavioral measure. The third hypothesis stated that there would be no sex differentiation in anxiety reduction within any of the treatments.

A two-way analysis of variance (ANOVA) on the difference scores was the method of statistical analysis for both of the self-report measures, and an analysis of co-variance (ANCOVA) on the difference scores was the method used for the behavioral measure, with alpha set at .05 for all analyses. Results showed that there was a significant difference, according to the STAI, in the effectiveness of anxiety reduction of the RET and AP groups. The MAACL failed to reveal any significant differences between treatments. The ARS did find significantly more effectiveness in anxiety reduction in the RET treatment over the two control groups. All instruments revealed no differences for sex differentiation in anxiety reduction within any of the treatments.

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Chapter 1

THE PROBLEM, AND HYPOTHESES

Introduction

There have been many studies on various situational types of anxiety, such as interpersonal anxiety (Kanter & Goldfried, 1979); speech anxiety (Straatmeyer, 1974); public speaking anxiety (Trexler, 1971); test anxiety (Maes & Heimann, 1970); interpersonal-social (Fishman, 1970); stage fright anxiety (Kondas, 1967); dating anxiety (Taylor, 1972), and social evaluative anxiety (Watson, 1969). Almost all individuals experience a feeling which they would label as "anxiety" sometime in their lives, and those concerned with the study of behavior have noted that individuals differ in the intensity and/or frequency of these feelings. Spielberger (1966) has noted the following concerning the general concept of anxiety:

> Anxiety is found as a central explanatory concept in almost all contemporary theories of personality, and it is regarded as a principle causative agent for such diverse behavioral consequences as. . .debilitating psychological and psychosomatic symptoms, and idiosyncratic mannerisms of endless variety. (p.4)

The concept of trait anxiety (Gorsuch, 1969; Hodges, 1970; Johnson, 1968) refers to the characteristic level of anxiety in the individual. In contrast, state anxiety (A-State) is the transitory emotional state or condition of the human organism that is characterized by subjective, conciously perceived feelings of tension and apprehension, and heightened autonomic nervous system

activity in response to specific situations. Trait anxiety (A-Trait) refers to relatively stable individual differences in anxiety proneness, that is, to differences between people in their tendency to respond to situations perceived as threatening. As a psychological concept, trait anxiety has the characteristics of a class of constructs that Atkinson (1964) calls "motives", and which Campbell (1963) refers to as "acquired behavioral dispositions." Motives are defined by Atkinson as dispositions that remain latent until the cues of a situation activate them. Acquired behavioral dispositions, according to Campbell, involve residues of past experience that predispose an individual both to view the world in a particualr way and to manifest "objective-consistent" response tendencies (Spielberger, 1970).

The concept of trait anxiety can be likened to potential energy in physics. The "trait" or "potential" construct indicates the difference in the strength of a latent disposition to manifest a certain type of reaction (Spielberger, 1970).

The A-Trait levels in college students are associated with reports of large numbers of problems in almost every area of adjustment, and have important implications for this population. They suggest that students disposed to experience anxiety develop problems in many different areas. Some of these areas are listed in Table 1 (Spielberger, Gorsuch, & Lushene, 1970).

Historically, anxiety and its related adjustment difficulties have been treated by many types of therapies including client-

centered (Rogers, 1942), gestalt (Perls, 1969), interpersonal (Sullivan, 1956), psychoanalytic (Freud, 1949), behaviorism (Wolpe, 1958), and cognitive (Ellis, 1957). Rogers (1942) focused

Table 1

Correlations of the STAI A-Trait Scales with the Mooney Problem Checklist for Two Groups of College Students

Problem Area	Psychology Class (N=77)	Counsel. Ctr. (N=83)
Health & Physical Development	.385*	.476*
Finances, Living Conditions, & Employment	.345*	.245
Social & Recreational Activities	.385*	.341*
Social-Psychological Relations	.539*	.383*
Personal-Psychological Relations	.623*	.492*
Courtship, Sex & Marriage	.450*	.341*
Home & Family	.359*	.299*
Morals & Religion	.361*	.410*
Adjustment to College Work	.485*	.239
The Future: Vocational & Educational	.496*	.050
Curriculum and Teaching Procedure	.230	.178

Correlations underlined are significant at the .05 level; Correlations followed by an asterisk are significant at the .01 level.

on the therapeutic relationship, and emphasized the factors of acceptance, genuiness, and empathy. Perls (1969) suggested that

the anxious person, in the process of socialization, gets his integrity of thinking, feeling, and acting fragmented, and needs assistance in redeveloping a unitary outlook. Harry Stack Sullivan (1956) emphasized that the client must be helped to understand the significance of his past reactions to people and their influence on personal modes of interaction. Freud (1949) suggested that repression prevents the patient from realizing the cause of his symptoms, and that the goal of therapy is the development of insight. Wolpe (1958), one of the many proponents of behavior therapy, emphasized the point that an individual will increase the expectancy of a desired behavior, and encouraged a desensitization process in reducing anxiety. Cognitive therapists (Johnson, 1946) point out that emotionally disturbed persons think and talk themselves into conflicts. Many of the aforementioned schools of therapy have their individual approaches. Just as Systematic Desensitization, Progressive Relaxation, and Bio-Feedback are classified under the main heading of behaviorism; Fixed Role Therapy (Kelly,1955) and Rational-Emotive Therapy (Ellis & Harper, 1977) are but two subclassifications of the cognitive school of thought. While Fixed Role Therapy entails having the client writing and role playing a "self-characterization" sketch, Rational-Emotive Therapy (RET) uses a different approach.

Rational-Emotive Therapy. RET is a comprehensive approach to psychological treatment that deals not only with the emotional and behavioral aspects of human disturbance, but also places a great

deal of focus on the thinking component (Ellis, 1970). RET is based on the thesis that psychological problems arise from the individual's misperceptions and mistaken cognitions about what is perceived, and from emotional overreactions to normal and/or unusual stimuli.

The basic tenet of RET is that the person feels the way he thinks. RET theory holds that emotions rarely have an independent existence in themselves, but are closely allied to and are the products of human thinking. If we think something is bad, we will feel bad in connection with it; if we feel something is good, we will feel delighted about it. Most emotions follow from simple exclamatory sentences or meanings which the individual consciously or unconsciously tells himself, such as, "If I fail this test, people will think I'm an idiot" or "If I ask this girl for a date she might say no, and everybody will know." Anxiety, and other debilitating emotions such as anger and depression, essentially consist of mistaken, illogical, and unvalidatable sentences which the individual believes without challenge. Ellis (1971) has outlined twelve irrational ideas which cause and sustain emotional disturbance (see Appendix A).

The goal of RET is to help the client to identify these irrational beliefs and then to challenge them. Central to RET theory and practice is the A-B-C concept of therapy (Ellis, 1973; Ellis & Harper, 1977; Goodman & Maultsby, 1973). The therapist, beginning with C, the negative emotional CONSEQUENCE that the

client recently experienced, shows that the ACTIVATING event, at point A, did not cause C, the anxiety, fear, depression, and so on. Rather, his mistaken BELIEF system, at point B, is responsible for his emotional difficulties, such as, "What an idiot I must look like now" or "How awful it is to be rejected." One of the twelve irrational beliefs is then identified as the causative factor of the debilitating emotion. Once the person realizes that the irrational beliefs create the dysfunctional consequence, (s)he is then taught how to DISPUTE, at point D, and challenge these beliefs in order to change and surrender them. The client can then proceed to E, the better functioning EFFECTS where he adopts new rational philosophies of living, thus losing feelings of anxiety. Eventually, the client will almost automatically stop creating anxiety when facing disappointing activating experiences (Ellis, 1974).

Evidence has accumulated in support of Ellis' views concerning the causative relationship of cognitions on emotional states. Schachter and Singer (1962) have found that the emotional state experienced by an individual is dependent upon his interpretation of the situation. Various other studies have explored the effectiveness of cognitive variables on perceived psychological stress (Geer, Davison, & Gatchel, 1972); and increased tolerance of noxious stimuli (Nisbett & Schachter, 1966). Other evidence comes from research involving the effectiveness of self-instructions (Meichenbaum, 1972; Meichenbaum, Gilmore, & Fedoravicus, 1971). Significant reduction in anxiety level has been found by Trexler

and Karst (1972) using group methods of RET and employing as few as a five session program, as did Straatmeyer (1974), and Reister, Stockton, and Maultsby (1977). Kanter (1975) found significant reduction in anxiety level using a seven session program. Thus, it appears that significant change in levels of anxiety can be found in short-term treatment using a cognitive approach. The number of group sessions which have shown significant reduction in anxiety ranges from five to fifteen and more.

Sex Differences. Sex differences in anxiety, measured by questionnaire or self-report, have been consistently obtained, with females having higher scores (Forbes, 1969; Phillips, 1966; Ruebush, 1963). Several explanations have been given for this, the most frequent being that males are more defensive (Hill, 1963). For males, an admission to being anxious tends to be socially disapproved and unmasculine, but for females the admission or non-admission of anxiety carries no similar implications regarding their femininity (Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960). No studies focusing on sex differences and the effectiveness of RET in anxiety reduction have been reported in the literature. A computer search of Dissertation Absracts International, Psychological Abstracts, and Educational Resources Information Center files revealed no studies which addressed this issue.

Statement of the Problem

There are numerous therapeutic methods employed today for the treatment of anxiety, one of which is Rational-Emotive Therapy.

In this era of supersonic travel and fast food service, the "Zeitgeist" of the long term therapeutic treatments such as psychoanalysis and other psychodynamic based therapies, are in decline. Therapies oriented in this direction appear to be extremely wasteful for the client in time and energy (Ellis, 1957). A desire for short-term therapy is of increasing concern and has promulgated the growth of therapies which have strong foundations in behaviorism and/or cognitive styles. The purpose of this study was to examine the effectiveness of an eight week program of RET in reducing anxiety. There also appears to be a dearth of information on sex differences concerning RET and its effectiveness in reducing anxiety. The study examined any differential effects which RET may have on male and female students.

Significance of the Study

The significance of this study is four-fold:

1. It is the first doctoral dissertation to study the effectiveness of Rational-Emotive Therapy on the reduction of trait anxiety.
2. It investigates the relative effectiveness of Rational-Emotive Therapy for treating anxiety, compared to an Attention Placebo and No-Treatment group.
3. It contributes to the body of knowledge concerning the effectiveness of an economical, "short-term" treatment for anxiety reduction.
4. It is one of the few studies which investigates the

variable of sex on the effectiveness of RET in anxiety reduction.

Hypotheses

H_1: There will be a significantly greater reduction in self-reported anxiety for undergraduate students who are instructed in the Rational-Emotive Therapy procedure than those in the Attention Placebo and No-Treatment control groups as measured by the Trait Anxiety Inventory and the Multiple Affect Adjective Checklist.

$$RET > AP = NT$$

H_2: There will be a significantly greater reduction of observed anxiety for undergraduate students who are instructed in the Rational-Emotive Therapy procedure than those in the Attention Placebo and No-Treatment control groups as perceived by external observers utilizing the Anxiety Rating Scale.

$$RET > AP = NT$$

H_3: Both males and females will gain equally in anxiety reduction within any treatment.

Male Anxiety Reduction (RET) = Female Anxiety Reduction (RET)

Male Anxiety Reduction (AP) = Female Anxiety Reduction (AP)

Male Anxiety Reduction (NT) = Female Anxiety Reduction (NT)

Procedure

Three groups were formed as described in more detail in chapter three. They were:

1. Rational-Emotive Therapy (RET)
2. Attention Placebo (AP)
3. No-Treatment (NT)

The RET and AP groups were exposed to eight, one hour sessions, held weekly. The NT group met during the same week as the other groups for the first session and the last session for pre and post testing. The AP group was exposed to various nutritional aspects of physical fitness which focused on vitamin and mineral intake. The RET group was informed on the A-B-C theory of Albert Ellis, irrational belief systems, and taught how to dispute them. Two self-report measures, the State-Trait Anxiety Inventory (STAI) (A-Trait scale) (Spielberger, Gorsuch, & Lushene, 1970), and the Multiple Affect Adjective Checklist (MAACL) (Zuckerman & Lubin, 1966) were employed, as well as a behavioral measure, the Anxiety Rating Scale (ARS), devised for this study, to assess the effectiveness of each treatment on anxiety.

Limitations

The selection of subjects from a single, private, and small academic institution limits the generalizability of the findings. There may be several differences which distinguish the population of students at the University of the Pacific from those of public or large colleges or universities. Two of these may be the higher socio-economic level, and the higher degree of personal attention a

student is likely to receive at a small private institution. It is recommended that the reader, when generalizing the data to students attending large or non-private universities, keep this in mind.

A lack of inter-rater training of the Anxiety Rating Scale may tend to make the data derived form that instrument somewhat suspect. One other limitation the reader should be aware of is the lack of a follow-up testing session to obtain a measurement of the longevity of treatment effectiveness.

Summary

The first chapter of this dissertaion has presented an introduction to several studies on various types of anxiety, as well as noting the concept and construct of trait anxiety. Brief descriptions of how several schools of therapy approach the treatment of anxiety, as well as the basic tenets and goals of RET were described. In the statement of the problem, a need for the testing of a short-term therapy procedure as well as the testing of sex differences was presented. The hypotheses stated that RET would be most effective in reducing trait anxiety, and that sex would not be a differential factor in its effectiveness. The significance of the study stated that this was the first doctoral dissertation to test RET and the reduction of trait anxiety, and the variable of sex in its effectiveness. The procedure was also briefly outlined, and the limitations of the study, concerning the generalizability of the data to a large or non-private school population, lack of inter-rater

training on the Anxiety Rating Scale, and the non-inclusion of a follow up testing session, was offered.

Four additional chapters complete the remainder of this dissertation: Chapter Two gives a review of the relevant literature; Chapter Three describes the design and procedures of the study; Chapter Four gives a presentation of the data gathered in this investigation and Chapter Five states conclusions based upon the investigation and offers some recommendations for further study.

Chapter 2

REVIEW OF THE LITERATURE

Of all the literature that has been compiled on the reduction of anxiety, only those studies which dealt with Rational-Emotive Therpay (RET) (and specific cognitive restructuring therapies), anxiety reduction, and college students were reviewed, since the objective of this study was to measure the effectiveness of RET in the reduction of trait anxiety in college students. This chapter presents three major categories: cognitive restructuring therapies; outcome research concerning RET and anxiety reduction; and the relationship between sex and anxiety. The latter explored the differences by sex in reporting anxiety; and differences by sex concerning the effectiveness of treatments in reducing anxiety.

Cognitive Restructuring Therapies

There are many cognitive therapies which are slight modifications of Rational-Emotive Therapy. Some of these are called Cognitive- Behavior Modification, Systematic Rational-Restructuring, and Rational-Behavior Therapy. These therapies all subscribe to the same premise and contain the key philosophic underpinnings of RET, and are thus included in the following studies concerning the efficacy of RET.

Although there are major distinctions among the above therapeutic strategies, they vary mostly in terms of relative

emphasis. RET highlights the implicit assumptions and premises that give rise to negative self-statements and emotional disturbance. The central task of therapy is the challenging of these negative or maladaptive self-statements employing the system of rational analysis of these beliefs.

Cognitive-Behavior Modification. Cognitive-Behavior Modification also attempts to have the clients increase their awareness of the negative self-statements and images they emit but without formally doing a rational analysis of the so-called irrational belief system. Instead, the focus is on the client's learning and employing new problem-solving and coping skills (Meichenbaum, 1978). The initial component of the cognitive-behavior modification treatment procedure attempts to make the client aware of his thoughts, self-verbalizations, and self-instructions prior to and during anxiety arousing situations. This aspect of therapy was designed to make the anxious client aware of the internal and external cues which signal anxiety and task-irrelevant behaviors. This insight procedure, which was principally derived from Ellis' rational-emotive therapy techniques, helps the client to become aware of both his anxiety-engendering self-verbalizations and ways by which he might inhibit such thoughts. The second component of the cognitive-behavior modification treatment procedure is an alteration of systematic desensitization which includes a "coping" imagery procedure. The coping imagery procedure requires the client for each of the proposed imagery scenes to visualize

himself becoming anxious and tense and then initiating coping strategies such as taking slow deep breaths and giving himself self-instructions to attend to the task. This coping imagery procedure is in marked contrast to the mastery-type imagery used in standard desensitization procedures, where the client is told to signal if the visualized image elicits anxiety and then to terminate that image and relax. The mastery imagery procedure is consistent with the principle of counterconditioning which pairs the client's state of relaxation with the visualization of anxiety-eliciting scenes. The coping imagery procedure, used in cognitive-behavior modification of the desensitization procedure was based on the premise that when desensitized clients are instructed to imagine hierarchy scenes, they are in fact providing themselves with a model for their own behavior. The desensitized client imagines himself behaving in some particular fashion in relation to the anxiety arousing situation. In summary, the cognitive modification treatment procedure combines a specific insight oriented therapy which fosters an awareness of anxiety-engendering thoughts with a modified desensitization procedure which employs coping imagery to handle anxiety by means of relaxation and task relevant self-instructions. (Meichenbaum, 1972).

Systematic Rational Restructuring. Systematic Rational Restructuring (Goldfried, Decenteceo, & Weinberg, 1974) incorporates RET within a behavioral framework. Goldfried, Decenteceo, and

Weinberg (1974) state that the way a client labels or evaluates a situation determines his subsequent emotional reactions. Thus an individual can acquire a more effective coping repertoire by learning to modify his cognitive "set" in dealing with anxiety-provoking situations. Systematic Rational Restructuring includes the following: recognition by the client that many maladaptive feelings are the result of what he "tells" himself; presentation of various irrational self-statements in such a way that the client can understand their irrationality; analysis of the client's problems in rational-emotive terms; practice in the use of anxiety cues as a signal to analyze thoughts; allowing the client to progress along a hierarchy of imaginal situations and use anxiety sensations to rethink the situation in a more rational manner. It allows for the implementation of a procedure quite similar to self-control desensitization and suggests a means of providing clients with systematic practice in cognitive restructuring. A five step treatment procedure is employed to teach the coping skills to combat anxiety. These include (1) exposing the client to anxiety-provoking situations by means of imagery and/or role playing, (2) requiring the client to evaluate his anxiety level, (3) noticing the anxiety-provoking cognitions he is experiencing in the situation, (4) rationally reevaluating these cognitions or self-statements, and finally, (5) noting the level of anxiety following the rational reevaluation.

Rational-Behavior Therapy. Rational-Behavior Therapy (RBT) (Reister, Stockton, Maultsby, 1977) states that since the habit of irrational thinking is learned, the therapeutic process involves encouraging the client to recognize irrational thoughts and to practice formulating rational beliefs. This is the basic personality change procedure of RBT in which old habits are extinguished by replacing them with new, more effective habits. RBT, just as in RET, employs homework assignments, in vivo desensitization, assertion training, behavior rehearsal, operant conditioning, and many other forms of behavioral techniques. The dichotomy between the two is not clear. Albert Ellis, in the forward of Max Maultsby's book on Rational-Behavior Therapy (1978) states, "When Dr. Maultsby first started using the term Rational-Behavior Therapy as a synonym for Rational-Emotive Therapy, I thought that was a good idea. . ." Dr. Maultsby also fails to make a distinction between the two terms.

Outcome Research Concerning RET and Anxiety Reduction

There have been many studies within the last ten years investigating the efficacy of RET on the reduction of various types of anxiety. These include research on speech anxiety (Meichenbaum, Gilmore, & Fedoravicus, 1971; Straatmeyer, 1974); public speaking anxiety (Hyman & Warren, 1978; Maes & Heinman, 1972; Meichenbaum, 1972); interpersonal anxiety (DiLoreto, 1971; Kanter, 1975; Tiegerman, 1976); and emotional health (Maultsby, Costello,

Carpenter, 1974; Maulstby, Knipping, Carpenter, 1974). To date there have been no studies reported on the efficacy of RET on the reduction of trait anxiety. This does not mean that there is an absolute deficiency of data in this area. The aforementioned studies have contributed to the understanding of not only the specific types of anxiety reduction, but also anxiety reduction in general. Much can be extrapolated from this research and a review of this literature can give the reader a focused view of the work done in specific subcategories on anxiety, and yet allow him/her to incorporate the above and attain a global overview of the problem. Except for the first study cited (Ellis, 1957) in this chapter, all research involved college populations.

The very first study which documented the efficacy of RET was authored by the "father" of RET, Albert Ellis (1957). He evaluated his own effectiveness as a therapist during the three periods (psychoanalytic, analytic-oriented, and rational-emotive) of his professional practice. According to his own rating, Ellis found that with the patients receiving orthodox psychoanalysis, 50% showed little or no improvement, 37% some distinct improvement, and only 13% considerable improvement. With analytical oriented therapy the respective figures were: 37%, 45%, and 18%. The clients treated with rational-emotive therapy showed the greatest amount of movement toward successful outcome of therapy: 10%, 46%, and 44%. One of the noteworthy points of this research

revealed that there was considerable improvement in 22 clients using RET in one to five sessions, as compared to only seven analytically oriented cases, and no orthodox analysis cases, receiving the same small range of sessions. Ellis admitted that the outcomes are somewhat suspect because they may reflect his own energy and zeal for a therapy of his own construction. Meltzoff and Kornreich (1971) also criticized this study for the lack of controls and inadequate dependent variables. Their most incisive criticism is that the study lacks generalizability and cannot be judged as representative, mainly because Ellis was the sole judge of his own case records, and founder of the approach which was judged most successful (DiGiuseppe, Miller, & Trexler, 1977).

Jacobs (1971) investigated the efficacy of RET on college students using the Irrational Beliefs Inventory (Jones, 1968), the Mooney Problem Checklist, and the State-Trait Anxiety Inventory. Unfortunately, the Jacobs study not only employed only self-report inventories, but used only one index to measure anxiety. Nevertheless, the research demonstrates that RET can be effective in a short period of time, with only a few therapy sessions, in reducing irrational thinking, perceived problems, and anxiety level.

Karst and Trexler (1970) compared the effectiveness of RET, Fixed Role Therapy (Kelly, 1955), and a no-treatment group, in reducing public speaking anxiety in college students during a three session program. They obtained results which showed no significant difference between the two active therapies but both

treatments significantly reduced anxiety levels over the control group. Support for the results was secured from the self-report data, but the behavioral data revealed no significant difference. Failure in finding a significant difference on the behavioral data was attributed to the low reliability of the measure. The greatest limitation of this study is that the design does not include a placebo control group, and thus does not separate specifice therapeutic effects from the effects of suggestion or attention. A placebo group was originally planned but was discarded in favor of two different treatment groups when the number of subjects fell short of what was expected. It was reasoned that since this was an initial study, it would be more valuable to see if any treatment efffects could be shown rather than separating treatment from suggestion. For that reason further studies can be planned to test each of the therapies against placebo groups.

Trexler & Karst (1972) later, partially replicated their 1970 study and compared the effectiveness of RET, Attention Placebo, and No-Treatment in reducing public speaking anxiety. Their Attention Placebo (AP) group consisted of the typical training in relaxation used in systematic desensitization. Two of the three self-report measures indicated that RET was significantly more effective in the reduction of public speaking anxiety over the AP or NT groups. Unexpectedly, the third self-report measure, a 15-point anxiety scale, revealed that the AP was significantly more beneficial in anxiety reduction than RET and NT. RET was found superior on

the behavioral check list and post therapy self-report measures. Their conclusion was that RET is effective for short term counseling of public speaking anxiety, but that it may be more useful to combine RET with systematic desensitization or other proven behavioral methods. Unfortunately, the AP group was given a shortened modification of Jacobsen's "Progressive Relaxation", which can be more accurately described as a treatment procedure rather than an Attention Placebo. The AP group was given four sessions devoted to typical training in identification and differentiation between muscle groups and between the relaxed and tensed states of those muscle groups. Other sessions consisted of tape recordings of basic introductions and instructions, and relaxation exercises. Subjects were also given homework exercises to practice relaxation at home for two 15 minute periods, along with reading excerpts on relaxation. Trexler defends his Attention Placebo group as being that by stating that direct connections between relaxation and public speaking were avoided by the therapist, and if brought up by a subject, he would be told that the treatment was directed toward reducing general anxiety. This author feels that this tactic had minimal influence on eradicating the relaxation effect on subjects in this group. A treatment directed toward the reduction of "general" or "trait" anxiety, may have a direct effect on "public speaking" or "state" anxiety, It is expected that those who are high in A-Trait will exhibit A-State elevations more frequently and with more intensity than those with lower A-Trait levels

(Spielberger, 1970). Thus, the mere fact that the treatment of the AP was directed toward the reduction of general anxiety does not negate an effect on the level of public speaking anxiety. Trexler also cited several studies which reported that the result of relaxation training, when given alone or in conjunction with systematic desensitization are not consistently positive. He added that the Attention Placebo group in this study was legitimate, despite the inconsistent results cited, and that if, in fact, this group did have a treatment effect, it would have served to make the comparison to RET all the more rigorous.

Another study along the same line as Trexler and Karst (1972) was that of Straatmeyer (1974). He attempted to determine the effectiveness of RET in the reduction of speech anxiety with its generalization to interpersonal anxiety in college students. A five 50-minute session program was employed, as well as four groups: RET with disputing; RET without disputing; Attention Placebo; and a No-Treatment. The Attention Placebo treatment focused on anxiety and the self-perpetuating circles it generates. An analysis of co-variance revealed that there were no significant differences in the treatments administered. A closer look at the data revealed massive within cell variances. It is possible that the increasing number of treatment sessions beyond the five used in this study would create a more pronounced treatment effect. Straatmeyer, upon reviewing the outcomes of his study, suggested that it might have been better to divide the 57 subjects into six

cells instead of the eight he employed. This would have increased the number of subjects in each cell.

Maultsby, Knipping, and Carpenter (1974) showed significant positive improvement in a college student population in emotional health using a series of 16 two and a half-hour sessions of Rational Behavior Training (RBT). The classroom experience in this study was intentionally permissive, allowing students to leave when they wanted to, to view or not to view the video tapes, and to ignore weekly self-analysis. As expected, over half the class (N=40) made full latitude of the permissive format. The subjects were recruited from a health education class and did not necessarily experience feelings of emotional distress. Notation of this is included in the present paper because it illustrates the effectiveness of RET in a "normal" population, and that RET does not necessarily have to be limited to clinical problems.

Maultsby, Costello, and Carpenter (1974) again attempted to validate the efficacy of RET as a preventive mental health program with college students. The results, as measured by scores on a mental health adjustment scale yielded more positive results with the RET group than with the control group (DiGiuseppe, Miller, & Trexler, 1977).

DiLoreto (1971) compared the effectiveness of RET, Systematic Desensitization, Client-Centered, and an Attention Placebo, on college students bothered with interpersonal anxiety. Results were found which showed that RET was most effective in reducing

interpersonal anxiety with introverts, while Client-Centered was most beneficial to extroverts. He also concluded that if the personality distinctions of Introvert-Extrovert were partialed out, the most effective treatment was Systematic Desensitization. Ellis (DiGiuseppe, Miller, & Trexler, 1977), in his review of this study, noted that the therapist used a "watered down" RET approach. According to Ellis, the therapists did not demonstrate why the students' beliefs were irrational, did not give enough emphasis on the necessity of practice, and tended to be too didactic. Another criticism of the study focused on the placebo group which centered on discussion of university life. These subjects may well have been cued that they were not in a "treatment" group, and were not expected to change.

Maes and Heiman (1972) compared the effectiveness of RET, Systematic Desensitization, Client-Centered, and No-Treatment on the reduction of test anxiety. Results showed no significant differences on self-report measures of anxiety between any of the groups. When the autonomic-physiological measures (galvanic skin response and heart rate) were analyzed, it was found that RET and Systematic Desensitization were more effective in anxiety reduction than Client-Centered Therapy or the No-Treatment.

Kanter (1975) compared the effectiveness of four treatment conditions on the reduction of interpersonal anxiety: self-control desensitization, a variation of standard systematic desensitization; systematic rational restructuring, a variation of RET; self-control desensitization plus systematic rational restructuring; and a

waiting-list group. While all treatments showed significant reductions in anxiety from pre- to post-tests, except for No-Treatment, the rational restructuring treatment was found to be most effective. The hypothesis of differential effectiveness at various levels of anxiety, specifically that cognitive therapy would be least effective with high anxiety subjects was not supported (DiGiuseppe, Miller, and Trexler, 1977).

Although these data were interpreted as indicating that each active treatment contained therapeutic components, a complete analysis of the data requires that other alternative explanations be investigated. The Kanter study used a waiting-list condition as a base-line control group against which the other treatments were compared. Kanter states that for a variety of ethical and practical considerations, an attention placebo control group was not included. It could be reasoned that the effects of the treatments were due solely to attention from the therapist and placebo components but in the opinion of Kanter, this is a weak and improbable alternative explanation. He cites Paul's (1966) and DiLoreto's (1971) studies for stating that a good deal of data in the experimental literature demonstrates that AP treatments, although more effective than waiting-list control groups, are less effective than the active treatments. Thus he concludes that it is highly probable that all three treatments were effective in reducing anxiety, and that his effectiveness was due to the active therapeutic components of the treatments. It is

of low probability that the treatment effectiveness was due solely to placebo factors in general, but this interpretation cannot be completely dismissed.

One of the explanations for the discrepancy between Kanter's findings and those of DiLoreto (1971) in the effectiveness of rational therapy over systematic desensitization, was Kanter's incorporation of the comments of Ellis (1971) on DiLoreto's rational therapy methods:

> The method. . .never seems to stress the great difficulty and the enormous amount of everyday practice that the client will probably have to undergo to overcome his severe tendencies toward irrational thinking; the method. . . does not. . .specifically show the client why his basic philosophical assumptions are untenable and what he can do about constantly challenging them (p. 215).

Kanter's study emphasized continuous practice in using rational thinking skills, and the clients were expected to apply this skill each day in social and non-social situations. This focus is in line with Ellis' (1971) comments and may have been the variable which influenced the discrepancy in the outcome.

Meichenbaum, Gilmore, & Fedoravicus (1971) compared group RET, group desensitization, group RET combined with group desensitization, and attention placebo, and a no-treatment group in its effectiveness in reducing speech anxiety during an eight session program. These researchers found that RET and desensitization were equally effective, and were more effective than the combined group. They explained that the combination group received RET treatment for

only four of eight sessions. As with the study by Karst and Trexler (1970), it is believed that his group did not have a sufficient amount of time to integrate the principles and philosophies of RET.

This study was one of a series designed to assess the role of cognitive factors in behavior modification. The insight approach used emphasized making the client aware of his self-verbalizations and then modifying them. It was found that attending to the client's self-verbalizations as well as his overt maladaptive behaviors has led to significant behavioral change, greater generalization, and persistence of treatment effects. Meichenbaum (1972) investigated the relative efficacy of group cognitive modification, group desensitization, and a waiting-list control group in the reduction of test anxiety. Results showed that the cognitive modification group was most effective in significantly reducing test anxiety. The exact reasons why the cognitive modification group was most effective was confounded by the various components of cognitive-behavior modification, that is, the emphasis placed on relaxation, coping imagery or suggestions, and modeled examples of task-relevant self-instructions. These factors made it impossible to isolate the above from the cognitive aspects and the researcher suggested further research was needed.

A review of the research studies and literature on the efficacy of RET in the reduction of various forms of anxiety has been presented. While the results appear promising that RET is

effective in reducing trait anxiety, it is far from conclusive. The goal, as stated so eloquently yet simply by DiGiuseppe, Miller, and Trexler (1977) is "not to 'prove' RET, but to test it."

Sex and Anxiety

Of the studies in the literature reporting on the relationship of sex and anxiety, two areas are presented in this study. They are: (1) difference by sex in reporting anxiety; and (2) differences by sex concerning effectiveness of treatment on the reduction of anxiety.

Differences by Sex in Reporting Anxiety. Sex differences in anxiety, measured by questionnaire or self-report have consistently shown girls to have higher scores (Ruebush, 1963). This holds for test anxiety (Forbes, 1969; Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960); general anxiety (Casteneda, McCandless & Palermo, 1956; Phillips, 1962); and school anxiety (Phillips, 1966). Spielberger (1970) in his test manual notes that the A-Trait measures for males and females in the two college samples are approximately the same, while the means for female high school students are slightly higher than for those of males. Table 2 presents the STAI means for high school and college students. The A-State means are included for purposes of an overview on the area of anxiety self-reporting on the STAI.

Table 2

STAI Means for High School and College Students

	Freshmen		Undergraduate		H.S. Students	
	Male	Female	Male	Female	Male	Female
A-Trait	38.07	38.22	37.68	38.25	39.37	41.61
A-State	40.01	39.39	36.35	35.12	36.99	37.57

Further, sex differences tend to vary with respect to different aspects of anxiety (Phillips, 1978). The literature indicates that anxiety over death, for instnace, is higher among females than males. Lester (1967, 1970, 1971) reported large differences between the sexes, females expressing higher anxiety scores. Templer, Ruff, and Franks (1971) and Templer (1970) also substantiated that females report higher anxiety scores than do males.

Chiappella, Floyd, and McSeveney (1976) report in their study at the University of New Orleans, that the 97 female college students tended to manifest higher anxiety levels than their 43 male counterparts.

Panucci (1977) investigated the relationship of anxiety and sex among other variables, and found significant differences in anxiety associated with sex, females measuring more anxiety than males. The construct of anxiety, in this study, was operationally defined through group administered instruments developed at the University of Southern California.

Peterson (1977) employed the Spielberger STAI to measure

anxiety in an interview setting. No significant differences between sexes on the state anxiety scale were reported for college students.

Lugo-Quinones (1975) compared students at the University of New Mexico in regard to state and trait anxiety by sex, as measured by the STAI. Results indicate that among those subjects in their own ethnic group, no significant differences were found in anxiety level.

Sex differences in relation to a general variety of fears was investigated by Manosevitz and Lanyon (1965). Seventy four college students at Rutgers University were examined with the Fear Survey Schedule (FSS) (Wolpe & Lang, 1964) and revealed a significant difference between males and females, with females reporting a higher mean item rating score. Although the authors stated that the factors responsible for this sex difference was not clear, one interpretation they offered was that females actually were more upset and disturbed by the situations assessed in the FSS. Alternatively, they continued that it was also plausible that females were more honest in reporting these feelings and fears, possibly because it was more socially undesirable for men than for women to admit these fears. The implication appears to be that women tend to be more open than males in reporting maladjustments.

The explanation most frequently given for sex differences in anxiety scores is that boys are more defensive because

manifestations of anxiety are more ego-alien for them (Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960). In support of this, boys usually have higher scores on tests of defensiveness (Hill, 1963; Lighthall, 1963). This defensiveness hypothesis receives support, also, from studies using projective measures of anxiety (Phillips, 1966). Still another possibility for explaining sex differences is that girls are more acquiescent than boys (Phillips, 1978). Thus, it would appear to be necessary to include factors in addition to defensiveness to adequately explain sex differences in anxiety.

In summary, sex differences in regard to levels of anxiety, and in relations between anxiety and personality functioning, may be interpreted as being partly attributable to defensiveness on the part of males admitting anxiety. For males, such admission would be socially disapproved as unmasculine, but for females the admission or non-admission of anxiety carries no similar implications regarding feminity (Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960). Thus it would appear that masculinity-femininity ought to have a special significance in the development and personality implications of anxiety.

Difference by Sex in Effectiveness of Treatment.

There is a surprisingly limited amount of data concerning the effectiveness of treatment on anxiety reduction in relation to sex differences in the literature. No studies have investigated this issue in connection with Rational-Emotive Therapy.

Coursey (1977) conducted a study which examined the effectiveness of relaxation techniques measured by the Taylor Manifest Anxiety Scale and the Spielberger State-Trait Anxiety Inventory. Of the four groups involved, one consisted of progressive relaxation training similar to that used by Arnold Lazarus; another group received information on methods of coping with anxiety and irrational beliefs. The results not only showed no difference in group effectiveness, but did not show any differences for sex in any of the measures.

Electromyograph tension, a concept relative to anxiety level, was investigated by Sheridan, Vaughan, Wallerstedt, & Ward (1977). Findings showed that women had higher ratings on the EMG readings after treatments of EMG Biofeedback and progressive relaxation. Another study which investigated sex differences in anxiety reduction after a treatment of meditation was conducted by Handmacher (1978). Using both the STAI and MAACL, she found no significant difference between males and females.

In summary, it appears that few studies concerning the effectiveness of therapy, have focused on sex differences. The previously cited studies not only represent an extensive manual search, but also a computer search of Dissertation Abstracts International, and Psychological Abstracts.

Summary

Other cognitive systems of therapy contain the same key philosophic underpinnings of RET, and were included in this

review of the literature for this reason. They are Cognitive-Behavior Modification, Systematic Rational-Restructuring, and Rational Behavior Therapy. Many of the outcome research studies concerning RET and anxiety reduction were investigated. While the results appear promising that RET is effective in reducing trait anxiety, it is far from conclusive.

Sex differences in the reporting of anxiety also appear to be inconclusive. Conflicting data has been found on whether females report higher levels than males or whether there are no sex differences between the two genders. It is also unclear what differences sex has concerning the effectiveness of treatment on anxiety. Few studies have been done and further investigation is needed.

Chapter 3

METHOD OF THE STUDY

Chapter three presents the method and the instruments used to examine the effectiveness of Rational-Emotive therapy in the reduction of trait anxiety in college undergraduate students. Furthermore, in this chapter, a detailed description of the population and sample, the leader of the groups, and statistical analyses are presented. The various treatments used are also carefully delineated for the purpose of future replication. The three treatments include: Rational-Emotive Therapy, Attention Placebo, and a No-Treatment group. The two independent variables are treatment and sex. The dependent variables are the State-Trait Anxiety Inventory (STAI) (A-Trait scale), Multiple Affect Adjective Checklist (MAACL), and the Anxiety Rating Scale (ARS).

Population and Sample

The parent population for this study consists of all presently attending undergraduate college students in the United States. The target population consists of all presently attending undergraduate college students at the University of the Pacific in Stockton, California. A total of 44 subjects volunteered to participate. All of them either enrolled in a one-half unit independent study course, or enrolled in a non-credit mini-course at the above named university. Table 3 illustrates the distribution

of students according to sex and treatment.

Table 3

Distribution of Students According to Sex and Treatment

	RET	AP	NT
Males	6	5	6
Females	9	8	10
Total	15	13	16 = 44

Whereas the one-half unit of credit was an added incentive for those who enrolled for matriculation, a $10 deposit was required from the mini-course enrollees to ensure full participation. Course description and advertisements (Appendix B) for subjects publicized that the research workshops were designed to help undergraduates overcome various types of anxiety, whether in social situations, test taking situations, or being alone among others. Advertisements were posted in various locations on campus, and also distributed to students in eight randomly selected classes along with an oral presentation of the course description. All subjects were asked to make a commitment to the group to attend all sessions, and to read all required material, as well as to complete any homework assignments which may be assigned. Those who missed more than two sessions were dropped from the study. It was required that subjects not be engaged in group or individual

therapy at the time of sessions. All subjects were caucasian except for two Blacks and two Orientals, ranged from 17 to 24, and majored in various fields of study.

Leader

One male group leader, the researcher, was involved in this study so as to control for different experimenter effects. The leader has completed all requirements for his doctoral degree, except for dissertation, and is a certified rational therapist, having studied at the Institute for Rational Living in New York and in San Francisco. The leader is also an avid health enthusiast, well read in the field of nutrition and physical fitness, and has been on a regular daily program of vitamin/mineral intake for four years.

An objective observer was employed in this study to assess the leader's presentation of material. This helped identify any biased presentation of one treatment over another. The objective observer attended two sessions of each treatment, and was blind to the stated hypotheses. She is a doctoral candidate in Educational Administration, a supervisor of student teachers, and was selected because of her extensive experience in making objective observations of teachers. A checklist used by the objective observer is included in Appendix C.

Instrumentation

To assess the comparative effectiveness of the treatments,

three dependent measures were employed measuring the affective and behavioral domains.

State-Trait Anxiety Inventory (STAI) (A-Trait scale). This measurement, devised by Spielberger, Gorsuch, and Lushene (1970), is a self-evaluation questionnaire used to identify the subjects' level of trait anxiety. The STAI consists of twenty statements that ask people to describe how they generally feel (Appendix D). Test-Retest reliability data on the STAI are presented in Table 4 for subgroups of subjects who were included in the normative sample of undergraduate college students. As may be noted, the test-retest correlations for the A-Trait scale are reasonably high, ranging from

Table 4

Test-Retest Reliability Statistics for the State-Trait Anxiety Inventory for College Undergraduates

Time lapse	1 hour T/R		20 Day T/R		104 Day T/R	
	N	r	N	r	N	r
Males	88	.84	38	.86	25	.73
Females	109	.76	75	.76	22	.77

.73 to .86. Internal consistency, using the K-R 20 revealed from .86 to .82 for the A-Trait Scale. Concurrent validity with the Taylor Manifest Anxiety Scale (TMAS) yielded from .73 to .85; and yielded .75 to .76 with the IPAT Anxiety Scale (Cattell & Scheir, 1963). Buros Eighth Mental Measurement Yearbook (1978) noted 45 references

on the STAI. Research with the STAI indicates that the A-Trait scale is highly correlated with other measures of trait anxiety (Gorsuch, 1969; Hodges, 1967; Lamb, 1969; Sachs, 1969).

Multiple Affect Adjective Checklist (MAACL). This checklist (Appendix E) contains 132 adjectives, alphabetically arranged in three columns, and has two forms; "In General" and "Today". Only the "In General" form was used, with the following standard instructions given to the subject; "Mark an 'X' beside the words which describe 'how you generally feel'." This instrument measures three affects namely anxiety, depression and hostility. Only the anxiety scale was employed in this study. The manual reported test-retest reliability at .68 for the anxiety scale for a period of seven days, and an addendum to the manual reports a coefficient of .70. As for validity, the MAACL correlated with the TMAS with a coefficient of .44 (p .05, one-tailed). The MAACL anxiety scale was also found to have correlation coefficients of .4 to .7 when rated with clinical observation and interview data.

Anxiety Rating Scale (ARS). This instrument was constructed by the researcher as a supplemental measurement. It is a one item, ninepoint index which asks the rater to check the appropriate level of anxiety of another individual. All subjects in the study were required to complete a Personal Data Questionnaire (Appendix F) which included names, addresses, and phone numbers of at least two friends who would likely have frequent interaction with them during the current semester. The ARS was distributed to two of

these friends, who were asked to complete and return it in the enclosed, self-addressed, stamped envelopes. The letters were mailed immediately after the first session, and immediately after the last session of the workshop series. The ARS and the two cover letters are included in Appendix G.

Procedures

All subjects were given a choice of a specific day to enroll into the study (Tuesday, Wednesday, Or Thursday). These groups were then randomly assigned to a treatment as listed in table 5.

Table 5

Schedule of Sessions

RET	Tuesday	7-8 p.m.
AP	Wednesday	7-8 p.m.
NT	Thursday	7-8 p.m.

Classes began the first week of the Spring semester on the weekday assigned, and were held for eight consecutive weeks. The NT group only attended the first and the eighth sessions. The number of subjects in the groups were adequate in providing diverse interpersonal interactions and some variety of personal concerns, yet the groups were not so large as to preclude every members' participation or overloading the leader with its complexity. The size of the groups has been previously presented in table 3.

Treatments

All subjects were administered the Personal Data Questionnaire, Consent form, STAI, and MAACL during the first session. After this, each group was given a brief introduction to its treatment program. The consent form (Appendix H) was included in the study for legal reasons, thus allowing the researcher to contact the persons listed by the subject on their Personal Data Questionnaire in order to complete the ARS. All subjects were readministered the STAI and MAACL on the eighth session, and at that time the ARS was again forwarded to all previous recipients for a second time. Subjects were not told what the other treatments consisted of, nor were they told anything about the design of the study. A briefing on honestly answering the test questions was presented, and subjects were told that the data could only be identified by code numbers. Strict confidentiality was emphasized in order to elicit candid responses. A more detailed breakdown of the procedures employed in each of the groups follows.

Rational-Emotive Therapy Group. This group was conducted in an open-topic format in the sense that members could present and learn to cope with a variety of personal concerns rather than attending to only one specific area such as test anxiety, self-acceptance, self-esteem, shyness, and other. A circular arrangement and private setting was used and audiotaping was encouraged to permit interested members to relisten to the contents of specific meetings. The latter also applied to the AP group

The RET group members were briefed about the didactic nature of the groups early sessions, and the expectation that each member would work between sessions to practice skills taught within the group. The content of the sessions were a modification of The Leader's Guide to Time Limited Rational-Emotive Group Psychotherapy (Ball & Grieger, 1978). The first few sessions had a didactic emphasis and were structured in nature, and progressed toward increasingly less structure. The goal of the sessions were to first help the subjects overcome the particular problems that brought them to the session, and secondly, to teach them skills of thinking and problem solving to use in coping throughout life. A more detailed explanation of the individual sessions follows:

Session 1. Completion of Pretest material and brief introduction to the treatment.

Session 2. Explanation of the A-B-C formula of RET, emphasizing that events or "things" do not cause debilitating emotions, but rather that the view or belief of these events do. Subjects were given a homework assignment of identifying, according to the A-B-C formula, any emotional difficulties that occured during the week.

Session 3. Presentation of the twelve common irrational beliefs, and discussion of subject's reaction to these beliefs.

Session 4. Review of the irrational beliefs, with an emphasis on how to make these irrational beliefs, rational. The class was also given a homework assignment of identifying any irrational

beliefs they might be using in their personal life. A handout of Common Irrational Ideas (Appendix I) was distributed.

Session 5. Presentation of Disputing Irrational Beliefs (DIBS), and helping subjects to learn disputing skills. A copy of a handout on disputing irrational beliefs was distributed to subjects (Appendix J).

Session 6. Review of DIBS, with a focus on setting realistic goals and the subjects responsibility for their own behavior. During this session, specific difficulties students listed in their Personal Data Questionnaire were disputed and discussed.

Session 7. Continuation of disputing specific difficulties subjects had reported. Subjects were also assigned homework of answering the DIBS questions on a problem which might occur, in vivo, during the week.

Session 8. Summary of course content, and readministration of post-test material. Those subjects who completed the assignment of answering the DIBS questions were individually counselled.

Attention Placebo Group. This group was included to assess the extent of improvement resulting from non-specific group treatment factors such as expectation from relief, suggestion, workshop relationships, and/or group spirit. The focus was on involving these subjects in a treatment procedure which was designed to be therapeutically neutral.

Subjects in this group were exposed to the belief that through proper diet, and nutrition, they would achieve a better life, both

physically and mentally. This program did not deal in depth, nor with substantial rigor, with the weekly topics, but educated the subjects on various aspects of vitamins such as: where they come from, how they are used in the body, their effects on the body, and other similar material. The students were guided to focus their attention on what they eat, and how it might affect the way they feel. Since this was an attention placebo group, the prime purpose was to expose the student to nutrition and health, its possible effect on mental processes, assisting them in attending to what they were eating (preservatives, additives, sugar), and educating them on how to change their life style (if desired) to attain a higher level of physical health thus influencing their mental well-being. Homework for this group consisted of daily intake of vitamin/mineral intake during the study. Subjects digested vitamin/mineral supplements during the study but the effects on the mental well being of the individual, at the time of post-test, was kept to an absolute minimum by changing vitamins weekly, thus strengthening the validity of the placebo effect. To further negate any effect of the supplements on the post-test, subjects were administered vitamins E and C which have minimal (if any) (Davis, 1970) effect on the mental processes. To help give the study credibility, and closure to the weekly topics, a saliva sample was taken on several occasions. This was done by having the

subjects complete name tags on small bottles, then placing a sample of their saliva on a cotton ball, and inserting it into the bottle. The researcher, between sessions, cleaned out the bottles for the next week's use. Homework assignments consisted of taking the vitamin/mineral, and reading brief handouts about the particular vitamin/mineral. A more detailed description of the individual sessions follows:

Session 1. Completion of the Pretest material and brief introduction to the treatment.

Session 2. Recorded names of those already taking vitamin/minerals. Presented a movie on nutrition, "Eat, Drink, and be Wary", (study guide in Appendix K), followed by a discussion about the film. The researcher demonstrated the method of taking a saliva sample as subjects modeled.

Session 3. Class discussion was held on the subjects view and experinces of vitamin/mineral intake; what vitamins/minerals are; when and how to take them for optimal effectiveness. A weeks supply of multivitamin/minerals was dispensed.

Session 4. A lecture-discussion period was held on the physiological effects of vitamin/minerals. A saliva sample was taken, and calcium tablets were dispensed. A handout of excerpts from "Let's Eat Right To Keep Fit" (Davis, 1970) (Appendix L) was distributed.

Session 5. Lecture and discussion of B-complex vitamins concerning their physiological effects on the body, where it comes

from, and so on. A week's supply of B-complex was dispensed, and a saliva sample was taken. A handout about B-complex was distributed (Appendix M). A slide presentation, "your Greatest Gift" (Shaklee, 1970) (Appendix N) focusing on the nutritional deficiencies in the American diet was shown.

Session 6. Lecture and discussion about vitamin E. A week's supply was dispensed as well as a handout on the vitamin (Appendix O). Another saliva sample was taken.

Session 7. Lecture and discussion about vitamin C. A week's supply was dispensed as well as a handout on the vitamin (Appendix P). Another saliva sample was taken.

Session 8. Post-test material was administered. The program was summarized and students were briefed about the design and purpose of the study. At this time subjects in this group were advised that they would be welcome to participate in another anxiety reducing group with a Rational-Emotive orientation, which was briefly described, and would begin in three weeks.

No-Treatment Group. This untreated control group received the same pre-post assessments as the treatment groups. This group was included to assess the extent of improvement from (a) non-specific therapeutic factors in the environment, (b) "spontaneous remissions" (Goldstein,1960, 1962), (c) assessment procedures, and (d) the promise of treatment in the future.

Those subjects who were assigned to the No-Treatment group were assembled at the time of the first session and were administered

the pre-test material. It was explained to them that because of scheduling difficulties, the next session would be delayed for seven weeks. They were administered the post-test material and those who wished to participate in the RET workshop series could enroll at that time. The second presentation of RET workshops was offered for ethical reasons to those who were assigned to the Attention Placebo and the No-Treatment groups.

Hypotheses

H_{1a}: There will be a significantly greater reduction in self-reported anxiety for undergraduate students who are instructed in the Rational-Emotive Therapy procedure than those in the Attention Placebo and No-Treatment control groups as measured by the pre-to post difference scores of the State-Trait Anxiety Inventory.

H_{1b}: There will be a significantly greater reduction in self-reported anxiety for undergraduate students who are instructed in the Rational-Emotive Therapy procedure than those in the Attention Placebo and No-Treatment control groups as measured by the pre-to post difference scores of the Multiple Affect Adjective Checklist.

H_2: There will be a significantly greater reduction of observed anxiety for undergraduate students who are instructed in the Rational-Emotive Therapy procedure than those in the Attention Placebo and No-Treatment control groups as measured by the pre-to post difference scores as perceived by external observers utilizing the Anxiety Rating Scale.

H_{3a}: Both males and females will gain equally in anxiety reduction within any treatment according to the pre-to post difference scores of the State-Trait Inventory.

H_{3b}: Both males and females will gain equally in anxiety reduction within any treatment according to the pre-to post-difference scores of the Multiple Affect Adjective Checklist.

H_{3c}: Both males and females will gain equally in anxiety reduction within any treatment according to the pre-to post-difference scores of the Anxiety Rating Scale.

Statistical Analysis

The manner of statistical analysis is illustrated in Table 6.

Table 6

Method of Statistical Analysis

Hypotheses	Analysis	Dependent Variable(s)	Independent Variable(s)
H_1, H_3	ANOVA on the pre-to post-test difference scores	STAI: A-Trait MAACL: "In General"	Treatment RET, AP, NT Sex
H_2, H_3	ANCOVA on the pre-to post-test difference scores	ARS	Treatment: RET, AP, NT Sex

The alpha levels were set at the .05 level of significance. This alpha level balances out the possibility of a Type 1 and a Type 2 error. The nature of this study does not lend itself to the need of maximizing or minimizing either of the above mentioned errors.

Summary

Chapter three has discussed the method of the study. It has described the population and sample, who are college undergraduate students, as well as the group leader, who was the researcher. The instrumentation used was explained (STAI, MAACL, and the ARS), and the procedure of the study was outlined (RET group compared against two control groups, AP and NT). The methods of statistical analyses for hypotheses one and two was ANOVA, and for hypotheses three was ANCOVA. All analyses were computed on the difference scores. Chapter four will discuss the collected data and will present an analysis of that data.

Chapter 4

RESULTS OF THE STUDY

This chapter is organized into six major sections: descriptive data; regression analysis; statement and analysis of the first null hypothesis; statement and analysis of the second null hypothesis; statement and analysis of the third null hypothesis; and a summary.

Descriptive Data

Of the 46 students who initially enrolled in the present study, 44 completed the pre- and post-tests, and attended a minimum of six sessions. Ten of the forty four enrolled for .5 units of college credit. All of the 88 anxiety ratings were received from cooperating friends, and computed in the analysis of the Anxiety Rating Scale (ARS).

The observer, using the Observer Checklist for Identification of Biased Presentation (Appendix C), reported no observed differences concerning biased presentation of the leader between the RET and AP groups. She made two comparisons of bias checks, attending two classes of the above mentioned groups and reported no observed bias on any of the seven criteria. The criteria included: amount of enthusiasm, eye contact, planning, vocal expression, logical sequence, rapport, and focus of lesson.

Regression Analysis

In order to determine whether an analysis of variance (ANOVA) or an analysis of co-variance (ANCOVA) would be the most appropriate statistical procedure, because of lack of random subject assignment, two regression equations were employed. These equations were calculated to answer the following two questions:

1. Is there a relationship between the pre-test and difference scores? and

2. If a relationship exists between pre-test and difference scores, is it the same for all groups?

It was found, through a general linear analysis (Table 7),

Table 7

Regression Coefficients, Standard Errors, F Values for Regression Coefficients, and Critical F Values For all Indeptendent Measures on Pre-tests

Measure	Regression Coef.	Std Error	F	Crit. F
ARS	.75	.16	20.88	3.32
TAI	.24	.22	1.21	3.32
MAA	.24	.17	1.97	3.32

that there was no relationship between pre-test and difference scores for the Multiple Affect Adjective Checklist (MAACL) or the State-Trait Anxiety Inventory (STAI). A significant relationship was found for the Anxiety Rating Scale (ARS).

A follow-up regression analysis on the interaction between covariate and independent variables showed that the relationship between the pre-test and the difference scores was the same for all groups and sexes. This data indicated that the most accurate and appropriate analyses to conduct on the dependent measures was an ANOVA for the STAI and MAACL; and an ANCOVA on the ARS.

Statement and Analysis of the First Null Hypothesis

Hypothesis number one can be stated in two parts:

H_{1a}: There will be no significant differences in the reduction of self-reported anxiety for college students who participate in Rational-Emotive Therapy (RET), Attention Placebo (AP), or No-Treatment (NT) groups, as measured by the pre- to post-test difference scores of the STAI.

The mean scores for the college sample specified by Spielberger, Gorsuch, and Lushene (1970) are 36 for males and 37 for females. None of the subjects in this study scored below this mean on the pre-test of the STAI, with several scoring at the mean. The range of scores for males was 36 to 46, and 37 to 55 for females. According to the pre-tests of the STAI, all subjects were moderately to highly anxious at the beginning of the treatments. The mean scores and standard deviations of the pre-tests and post-tests of the STAI are presented by group in Table 8.

Table 8

Means and Standard Deviations of Pre-Test and Post-Test Scores on the State-Trait Anxiety Inventory for Three Treatment Groups

		Pre-test		Post-test	
Group	n	Mean	Std.Dev.	Mean	Std.Dev.
RET	15	41.60	4.28	34.27	6.57
AP	13	41.46	3.84	38.54	4.82
NT	16	41.56	5.09	41.69	7.49

Table 9 presents an analysis of variance (ANOVA) on the STAI difference scores from pre-test to post-test, and reveals group differences to be significantly different at the .05 level. The interaction between sex and group was not significant.

Table 9

Analysis of Variance of the State-Trait Anxiety Inventory Difference Scores from Pre-test to Post-test By Group and Sex

Source	SS	df	MS	F	p
Group	443.41	2	221.70	6.33	$<.05$
Sex	123.37	1	123.37	3.52	$>.05$
Group X Sex	13.68	2	6.84	0.20	$>.05$
Error	1330.96	38	35.03		
Total	1901.54	43			

The Scheffe method of analysis (Glass & Stanley, 1970) was computed on the STAI ANOVA data and revealed a significant amount of anxiety reduction of the RET group from the NT group, and no significant difference between the RET and AP, or the AP and NT groups (Table 10).

Table 10

Scheffe Analysis for the State-Trait Anxiety Inventory; A-Trait Scale

Contrast	S.D. of Psi	Psi	$\frac{\text{Psi}}{\text{S.D. of Psi}}$	Scheffe Critical Value	Outcome
u_1-u_2	2.24	4.41	1.97	2.52	Fail to reject null
u_1-u_3	7.21	2.12	3.40	2.52	Reject null
u_2-u_3	2.79	2.21	1.26	2.52	Fail to reject null

According to the findings of the State-Trait Anxiety Inventory (A-Trait scale) H_{1a}, as stated in the null, is rejected.

The second part of hypothesis one can be stated in the null as:

H_{1b}: There will be no significant differences in the reduction of self-reported anxiety for college students who participate in Rational-Emotive Therapy (RET), Attention Placebo (AP), or No-Treatment (NT) groups, as measured by the pre-to post-test difference scores of the MAACL.

The MAACL manual (Zuckerman & Lubin, 1965) lists mean scores

for the college students norm group at 5.6 for both males and females. Four of the subjects in this study scored less than this mean on the pre-tests. The two males and two females who scored below the college norm on the MAACL reported at least moderate to high levels of anxiety on the A-Trait scale of the State-Trait Anxiety Inventory at the beginning of the study. The range of scores for males was 4 to 12, and 5 to 13 for females. The means and standard deviations of the pre-test and post-test scores of the MAACL are presented by group in Table 11.

Table 11

Means and Standard Deviations of Pre-test and Post-test Scores on the Multiple Affect Adjective Checklist For Three Treatment Groups

		Pre-test		Post-test	
Group	n	Mean	Std.Dev.	Mean	Std. Dev.
RET	15	7.80	2.25	5.60	3.44
AP	13	8.39	1.98	7.00	2.55
NT	16	8.38	2.78	8.12	3.44

Table 12 presents an analysis of variance (ANOVA) on the MAACL difference scores from pre-test to post-test, and reveals no group differences at the .05 level. Results also failed to show any differences in group by sex interaction.

According to the findings of the MAACL, H_{1b}, as stated in the null form, cannot be rejected.

Table 12

Analysis of Variance of the Multiple Affect Adjective Checklist Difference Scores from Pre-test to Post-test by Group and Sex

Source	SS	df	MS	F	p
Group	29.94	2	14.97	1.97	>.05 NS
Sex	0.66	1	0.66	0.09	>.05
Group X Sex	3.62	2	1.81	0.23	>.05
Error	288.20	38	7.58		
Total	322.25	43			

The findings of the self-report inventories were inconclusive. The A-Trait scale revealed a significant difference between the RET and NT groups, but failed to show any difference from the AP group. Sufficient evidence was attained to reject H_{1a}. The MAACL, on the other hand, failed to show any significant difference between treatments. The data from this instrument did not allow the researcher to reject the null, as stated in H_{1b}.

Statement and Analysis of the Second Null Hypothesis

Hypothesis number two can be stated in the null form as:

H_2: There will be no significant differences in the reduction of anxiety for college students who participate in Rational-Emotive Therapy, Attention Placebo, or No-Treatment groups, as measured by the pre- to post-test difference scores on the Anxiety Rating Scale (ARS).

The range of ratings for both males and females spanned from "0" to "9". The pre-treatment and post-treatment means and standard deviations are presented by group in Table 13.

Table 13

Means and Standard Deviations of Pre- and Post-Treatment Ratings on the Anxiety Rating Scale For Three Treatment Groups

Group	n	Pre-treatment		Post-treatment	
		Mean	Std. Dev.	Mean	Std. Dev.
RET	30	5.51	1.34	3.12	1.40
AP	26	6.62	1.10	5.73	1.50
NT	32	5.08	1.81	5.53	1.69

A Pearson product-moment correlation was computed on the results obtained from the raters of the ARS. This coefficient, which yielded .40 is considered significant at the .01 level (Glass & Stanley, 1970). Thus the reader can interpret the results of the ARS with a moderate level of reliability.

As stated previously in this chapter, because of the high relationship between the co-variate (pre-test scores) and the difference scores as computed by the linear regression calculations (Table 7), the most appropriate analysis to use on the ARS was analysis of co-variance (ANCOVA) on the difference scores from pre-test to post-test. The ANCOVA data is listed in Table 14.

Table 14

Analysis of Co-variance of the Difference Scores from Pre-test to Post-test on the Anxiety Rating Scale with Pre-test Scores as a Co-variate

Source	SS	df	MS	F	p
Group	59.94	2	29.97	36.18	$< .05$
Sex	0.74	1	0.74	0.88	$> .05$
Group X Sex	3.42	2	1.71	2.06	$> .05$
Error	30.65	37	0.83		
Total	99.89	43			

There were two observer evaluations on each subject. The mean of these evaluations was used in the calculations of the ANCOVA. Concerning H_2, the results of the ANCOVA indicate that there were significant group differences in anxiety reduction according to the ARS. Using the Scheffe method of analysis, the researcher found a significant difference in anxiety reducation between the RET treatment and both control groups, as well as a difference between the AP and NT groups (Table 15).

According to this instrument, H_2, as stated in the null form, is rejected.

Table 15

Scheffe Analysis of the Anxiety Rating Scale
For Three Treatment Groups

Contrast	S.D. of Psi	Psi	$\frac{\text{Psi}}{\text{S.D. of Psi}}$	Scheffe Critical Value	Outcome
u_1-u_2	.39	2.44	6.24	2.52	Reject Null
u_1-u_3	.33	.87	2.64	2.52	Reject Null
u_2-u_3	.86	.32	2.71	2.52	Reject Null

Statement and Analysis of the Third Null Hypothesis

All three instruments, the A-Trait scale, MAACL, and the ARS, were employed as measurements to test this hypothesis. Hypothesis number three can be stated in the null form in three parts. The first part can be stated:

H_{3a}: Both males and females will gain equally in anxiety reduction within any treatment according to the pre- to post-test difference scores of the State-Trait Anxiety Inventory (A-Trait scale).

The means and standard deviations of the pre-test and post-test scores on the A-Trait scale, according to sex, are presented in Table 16. The ANOVA, used to determine if there were any sex differences in the effectiveness of anxiety reduction within treatments, revealed no differences, according to the STAI. This data, presented in Table 9, indicates insufficient evidence to reject the null.

Table 16

Means and Standard Deviations of Pre-test and Post-test Scores on the State-Trait Anxiety Inventory According to Sex

		Pre-test		Post-test	
Sex	n	Mean	Std. Dev.	Mean	Std. Dev.
Male	17	40.00	3.16	38.71	5.61
Female	27	42.52	4.64	37.93	7.95

The second part of hypothesis number three can be stated in the null form in the following manner:

H_{3b}: Both males and females will gain equally in anxiety reduction within any treatment according to the pre- to post-test difference scores of the MAACL.

The means and standard deviations of the pre-test and post-test scores on the MAACL are presented in Table 17.

Table 17

Means and Standard Deviations of Pre-test and Post-test Scores on the Multiple Affect Adjective Checklist According to Sex

		Pre-test		Post-test	
Sex	n	Mean	Std. Dev.	Mean	Std. Dev.
Male	17	8.18	2.56	7.06	3.29
Female	27	8.19	2.39	6.85	3.38

The ANOVA used to determine if there were any sex differences in the effectiveness of anxiety reduction within treatments on the MAACL revealed no differences. This data, presented in Table 12, indicates insufficient evidence to reject the null.

The third part of this hypothesis is stated in the null form as follows:

H_{3c}: Both males and females will gain equally in anxiety reduction within any treatment according to the pre- to post- difference scores of the ARS.

The means and standard deviations of the pre-treatment and post-treatment scores on the ARS are presented according to sex in Table 18.

Table 18

Means and Standard Deviations of Pre- and Post-Treatment Ratings on the Anxiety Rating Scale According to Sex

		Pre-treatment		Post-treatment	
Group	n	Means	Std. Dev.	Means	Std. Dev.
Males	34	6.22	1.49	5.03	2.31
Females	54	5.34	1.56	4.60	1.67

The ANCOVA used to determine if there were any sex differences in the effectiveness of anxiety reduction within treatments on the ARS revealed that there were no differences. The data, presented in Table 14, provide insufficient evidence to reject the null.

The findings of the self-report inventories and the behavioral measurement, concerning sex, are quite conclusive. None of the instruments used to test hypothesis three indicated any differences between sexes in anxiety reduction within treatments, nor was there any interaction between group or sex. According to all the instruments, hypothesis three, as stated in the null form, cannot be rejected.

Summary and Evaluation of Outcome Data on Hypotheses

Hypothesis 1_a, as stated in the null, suggested that there would be no difference in the amount of anxiety reduction for students between treatments according to the STAI. This hypothesis was rejected.

Hypothesis 1_b, as stated in the null, suggested that there would be no difference in the amount of anxiety reduction for students between treatments according to the MAACL. Evidence was not obtained to reject the null.

Hypothesis 2, as stated in the null, suggested that there would be no difference in anxiety reduction for students between treatments according to the ARS. This hypothesis was rejected.

Hypothesis 3_a, 3_b, 3_c, as stated in the null, suggested that there would be no differences in anxiety reduction between males and females within any treatment according to the STAI, MAACL, and ARS respectfully. Evidence required to reject the null on all measures were not obtained.

Chapter 5

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is divided into four sections: (1) a Summary: which briefly reviews the purpose, methodology, and results of the study; (2) the Discussion: a presentation of various considerations pertaining to the study; (3) the conclusions derived from the study; and (4) Recommendations for further study.

Summay

The purpose of this research project was to determine the effectiveness of Rational-Emotive Therapy (RET) in the reduction of trait anxiety in college undergraduate students. The instruments used to measure the levels of anxiety consisted of two self-report measures, the State-Trait Anxiety Inventory (STAI) A-Trait Scale, and the Multiple Affect Adjective Checklist (MAACL), and a behavioral rating scale, the Anxiety Rating Scale (ARS). If it could be found that an eight week treatment program in Rational-Emotive Therapy was significantly effective in reducing anxiety, then this "short-term" treatment system might prove useful to both counseling and guidance services, and to mental health centers.

Method. Forty four moderate to highly anxious undergraduate volunteers enrolled in an eight week program to reduce anxiety. Group One received training in Rational-Emotive Therapy; Group Two received an attention placebo oriented toward nutritional awareness and the intake of nutritional supplements; and Group

Three was a no-treatment group which was promised treatment at a later date. The assessment instruments were administered during the first session (pre-test) and during the eighth session (post-test).

Results. Two of the instruments used in this study measured a significant reduction of anxiety. The STAI, the measurement with the highest rating of validity and reliability, showed a significant reduction in anxiety of the RET group over the NT group, however, it did not show a significant reduction in anxiety in comparison to the AP group. The MAACL failed to demonstrate any significant differences between treatments. The ARS revealed that RET was significantly effective in anxiety reduction over both control groups. The results also showed that there were no sex differences as a result of treatments.

Discussion

The only hypothesis which was not fully substantiated by the instruments was hypothesis one. An inspection of the data of the self-report inventories indicated that the results in this case were inconclusive. One self-report measure, the STAI, showed significant differences between the RET and NT groups but failed to show a difference between the RET and AP, or the AP and NT groups. The other self-report measure failed to show any significant difference between any of the groups. Although the mean scores were in the predicted direction, they did not reach statistical significance.

The reason why the STAI reported significance and the MAACL did not is not altogether clear. The researcher offers the fol-

lowing as a possible explanation for the divergent results of the self-report measures. The MAACL offered the subjects the option to check or not to check the respective adjectives, which in all likelihood, inherently equated differentiating judgements such as "extremenly applicable," "applicable," and possibly "questionable" under a single checking response. This discrete checking response, for example, provided a minimum of quantifiable information in comparison to procedures in which the subject is, say, required to respond to each adjective, on a five-point continuum scale as on the STAI, from highly applicable to totally inapplicable. (An adjective checklist which requires an "all or none" response to each adjective is distinctly different quantitatively from one which imposes a quantitative dimension in the form of a rating scale (Masterson, 1975).) Dichotomous responses such as those required on the MAACL are less precise than those which can be quantified. Wendt, Cameron, and Specht (1962) suggested that measuring change is more restricted and less sensitive with checklists than with other methods of assessment. On an all-or-none response to an adjective which has already been checked nor decrease his response to one left blank. The STAI, being a more sensitive instrument in this regard might have been a more accurate index of anxiety level than that of the "all-or-none" MAACL.

Although the RET group did show a significant difference in anxiety reduction over the NT group, the AP group proved to be power-

ful enough in its effectiveness in anxiety reduction, according to the STAI, to show no significant difference between it and the RET group. The results of no significant differences between the RET and AP groups deserves further discussion. It appears that in the present time period the American culture has shown a rise in health awareness. Americans are exercising more, watching their diets, and becoming more interested than ever before in nutrition and nutritional supplements (Davis, 1970). Bookstores are experiencing high sales on health oriented literature, and health food stores have found sales increasing. Supermarkets have designated specific areas in the store strictly for health foods and food supplements, and private dealers of these products have increased in number. What seems to be evident here is a general tendency for the average American to believe that supplements are important to a healthy existence. The subjects in the current study may have had a belief that vitamin and mineral supplements were so beneficial to their well-being and healthy mental state that the placebo effect, instead of being mainly strictly attention, might have included the belief that the nutritional supplements were actually helping them cope with their anxiety. Thus, the strength of this effect may have been the reason why the AP group attained the power of anxiety reduction that it did. The fact that the AP group did not attain significance over the NT group confuses the interpretation of the results somewhat. The RET group when compared to the AP was shown to be just as effective, and the

AP when compared to the NT was shown to be no more effective than the latter. Yet the RET treatment was shown to be significantly different from the NT. An examination of the post-test mean scores of the STAI (Table 8) indicates that the AP was effective in reducing the mean scores about half as much as the RET treatment. This point evidently falls within the lower confidence level of the RET group and the higher confidence level of the NT group, thus indicating that RET=AP=NT. Although one can logically surmise from this data that RET=NT, this would be in error because the AP means fell within the confidence intervals of both of the other groups. The interpretation of the above data is more accurate when stated that the RET treatment was more effective than the NT, and that the AP was strong enough to show no significant difference from the RET treatment, yet not strong enough to show a significant difference from the NT group.

The ARS showed a significant superiority of RET over both the AP and NT groups. This last instrument was administered to friends of the subjects who indicated on a nine point scale, the perceived level of anxiety in the subject. The lack of inter-rater training on this instrument may cause the reader to question the results. The researcher felt that since this was a repeated measure, the comparison of subject ratings on the pre- and post-treatment ratings of each rater was of the utmost importance. Although inter-rater training (Glass & Stanley, 1970) would have added to the rigor of the measurement, the process involved in gathering and personally

instructing 88 individuals, who were not volunteers, seemed like a monumental task. A Pearson product-moment correlation calculated on the ARS ratings between raters yielded .40, a respectable magnitude of reliability. This coefficient indicates that the lack of inter-rater training was not a crucial issue concerning the reliability of this instrument.

It is important to note that no "post-hoc" analyses were computed on the data as done on a number of previous studies (Maes & Heimann, 1972; Meichenbaum, Gilmore, & Fedoravicus, 1971). This type of analysis is sometimes considered suspect and encourages the computation of data to bring about a desired statistical significance instead of the actual outcome. The current study computed only the initially selected analyses, and opted to reject any use of post-hoc analyses such as t-tests.

Another strength of this study was the inclusion of the attention placebo and no-treatment control groups which had been excluded from some of the anxiety reduction research (Kanter, 1975; Karst & Trexler, 1970; Maes & Heimann, 1970). This helped the researcher assess the effect that non-specific group treatment factors such as suggestion, and attention had on the subjects.

A point which deserves some clarification is that some individuals may not be aware of their anxiety level, or lack the resources to identify anxiety in themselves, thus fail to report it on a self-report measure. Others may actually be in a non-anxious state yet may show signs of anxiety (nail-biting, sweating, among others) (Paul, 1966). It was not the purpose of this research study to de-

cide whether to put more value on an individual's expression of anxiety through his behavior, or through the reporting of it.

Experimenter bias has been a problem in past research (Kanter, 1975). This researcher included the observation evaluation of an experienced supervisor of student teachers into the study. This helped identify any biased presentation of one treatment over another. The fact that she was blind to the hypotheses also enhanced the credibility of her evaluations. The researcher feels that this procedure increased the likelihood of detecting the presence of experimenter bias, and therfore, adds confidence to the results obtained.

Another addition to the present study which added more rigor to the design was the inclusion of measurements other than just self-report measures (Jacobs, 1971). Optimally, a good design should include more than one domain, that is more than just the cognitive, behavioral, or emotional. This study, tapped both the cognitive and behavioral domains.

One of the purported weaknesses that may have been noted by the reader is the lack of follow-up data. Not all studies on anxiety reduction have included follow-ups in their design (Jacobs, 1971; Maultsby, Costello, & Carpenter, 1974). This study focused on whether RET was beneficial in the short-term reduction of trait anxiety. Once this has been established then a follow-up study could be integrated into the design. This researcher made the first step by building on the data and recommendations of previous researchers, and it is expected that other researchers will build on the present study.

The researcher discovered that under the present treatment period of one hour sessions, the time afforded to the review of homework on disputing in the RET treatment was too minimal. This part of the program series, the review of homework on disputing, was an important part of the treatment process. The subjects in the RET group were, timewise, only allowed parts of two sessions to discuss their homework on disputing. Thus, the effect of this process might not have been as penetrating as desired. It was found that more time than expected was needed to present, review, and answer questions on the irrational beliefs and the disputing process in general, which, in turn, took away time from the period calculated to raising the skills concerning disputing outside of the treatment sessions. The researcher felt that more time should have been spent on responding to the subjects completed homework assignments on disputing. An extra twenty minutes per session would have allowed a more adequate amount of time to present the preliminary material and include the desired amount of homework review. It is, of course, unclear without actually conducting a replication to determine what effect an additional twenty minutes would have had for the AP condition.

Although not all hypotheses were supported, an eight week program of RET has shown itself to be a viable, short-term treatment of anxiety in college students. This can have important implications to the college community. The rate of dropouts, suicides, and emotional disorders due to anxiety in students are found on every campus in the country (Houston, 1971). A program of RET offer-

ed for a nominal number of college units could be very advantageous to a variety of students on more than one level. First, it allows the student who is hesitant to seek counseling at a clinic or counseling center to become exposed to an effective treatment without any negative, self-perceived stigma. Secondly, it helps the student to explore a rational philosophy of everyday living which is oriented to help him/her overcome negative emotional reactions, and live a happier self-fulfilling life (Ellis & Harper, 1977). Thirdly, it is a preventative system of treatment which is economical, can be taught in groups, and, as shown in the present study, is generalizable to a variety of difficulties. The outcome of such a course integrated into a college curriculum could mean a decrease in the demands on the college counseling center, as well as a form of outreach to those who are hesitant about seeking formal therapy.

Conclusions

This researcher concludes from the data that RET appears to be an effective treatment in the reduction of externally observed anxiety. Another conclusion is that there are no sex differences in relation to the effectiveness of RET, as well as attention placebo and no-treatment. Regarding the effectiveness of RET according to the self-report measures, the results are inconclusive as to whether RET is any more effective than a placebo, however, it is more effective than no treatment at all.

Recommendations

Six recommendations are suggested in the replication of this study. The most important is the lengthening of the sessions from one hour, to at least one hour and twenty minutes:

(1) An extra twenty minutes per session would allow the leader to cover all desired aspects of the treatment, especially review of homework on disputing irrational beliefs.

(2) A replication of this study on students enrolled at a state and/or large institution of higher learning would also be desireable. This would allow for greater generalizability.

(3) Now that a basis has been established on the study of RET and trait anxiety, is the integration of follow-up data urged. The replication of this study with the inclusion of a follow-up could prove to be a valuable addition.

(4) A replication of this study using socio-economic level and/or urban/suburb/rural status would add to the existing body of literature.

(5) The inclusion of two leaders into future studies would help minimize the variable of experimenter bias.

(6) It might be useful to identify more specific states, intensities, or situation-specific anxieties, in understanding how and to what extent RET and/or other therapeutic approaches are anxiety-reducing. It would also be important to keep in mind that any therapeutic intervention, in relation to specific client problems, may be helpful or may be non-effective or even create additional problems (such as increasing anxiety).

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Appendix A

Irrational Beliefs

Irrational Beliefs

1. The idea that it is a dire necessity for an adult to be loved by everyone for everything he does- instead of his concentrating on his own self-respect, on winning approval for practical purposes, and on loving rather than being loved.

2. The idea that certain acts are awful or wicked, and that people who perform such acts should be severely punished- instead of the idea that certain acts are inappropriate or antisocial, and that people who perform such acts are behaving stupidly, ignorantly, or neurotically and would be better helped to change.

3. The idea that it is horrible when things are not the way one would like them to be- instead of the idea that it is too bad, that one would better try to change or control conditions so that they become more satisfactory, and, if that is not possible, one had better temporarily accept their existence.

4. The idea that human misery is externally caused and is forced on one by outside people and events- instead of the idea that emotional disturbance is caused by the view that one takes of conditions.

5. The idea that if something is or may be dangerous or fearsome one should be terribly upset about it- instead of the idea that one would better frankly face it and render it non-dangerous and, when that is not possible, accept the inevitable.

6. The idea that it is easier to avoid than to face life difficulties and self-responsibilities- instead of the idea that the so-called easy way is invariably the much harder in the long run.

7. The idea that one needs something other or stronger or greater than oneself on which to rely- instead of the idea that it is better to take the risks of thinking and acting independently.

8. The idea that one should be thoroughly competent, intelligent, and achieving in all possible respects- instead of the idea that one would better do rather than always need to do well and accept oneself as a quite imperfect creature, who has general human limitations and specific fallibilities.

9. The idea that because something once strongly affected one's life, it should indefinitely affect it- instead of the idea that one can learn from one's past experiences but not be overly attached to or prejudiced by them.

10. The idea that one must have certain and perfect control over things- instead of the idea that the world is full of probability and chance and that one can still enjoy life inspite of this.

11. The idea that human happiness can be achieved by inertia and interaction- instead of the idea that humans tend to be happiest when they are vitally absorbed in creative pursuits, or when they are devoting themselves to people or projects outside themselves.

12. The idea that one has virtually no control over one's emotions and that one cannot help feeling certain things- instead of the idea that one has a major amount of control over how they feel.

Appendix B

Advertisement

CLASSES IN ANXIETY REDUCTION

The School of Education at U.O.P. is planning a research program designed to help undergraduate students overcome various types of anxiety, including shyness, nervousness over taking tests, anxiousness related to social situations, or from just being alone, among others.

A treatment program, utilizing various forms of group workshops, is being coordinated by doctoral candidate Tom Golabek and other psychologists to help individuals in handling difficulties with anxiety. The psychologists plan to use several different techniques during the one hour long sessions presented once weekly for eight weeks, ending before the Easter break.

Golabek said, "A surprising number of students are experiencing anxiety, not only in academic related areas, but also with dating, public speaking, and in situations which tend to promote feelings of inadequacy, rejection, and/or criticism."

Students must be at least 2nd semester freshmen, and not be undergoing personal therapy. There are two methods of enrolling in the workshop series. The student may either sign-up for .5 units through the Registrar's Office, or register for a no-unit, no fee mini-course. The initial class begins on Feb 5th, 6th, or 7th, and only those committed to attending all 8 sessions are requested to apply. Students have the option of choosing either a Tues, Wed, or Thurs evening, with classes commencing at 7:00 p.m. in Wendell Phillips 232. You may sign-up for the mini-course option by contacting the secretary (Ms Dee Filippone) at 946-2171, or with the Registrar's Office if college credit is desired. Those who select the college credit will need the following information to register:

Call No	Dept	Course No.	Course	Units	Days	Hours	Instr	Rm
372360	FEP	193	Special Projects: Anxiety Reduction for College Students	.5	Tues, Wed, or Thurs	7p.m.	Riemer	W.P.C 232

For further information contact: Tom Golabek at 946-2336 or 462-3153.

Appendix C

Observer Checklist for Identification

Of A Biased Presentation

OBSERVER CHECKLIST FOR IDENTIFICATION OF BIASED PRESENTATION

	Observation #1 of PET & AP		Observation #2 of PET & AP	
1. Were compared lessons planned and presented in a logical sequence?	yes	no	yes	no
2. Were lessons presented with an equal amount of enthusiasm?	yes	no	yes	no
3. Did the leader maintain an equal amount of eye-contact in each lesson?	yes	no	yes	no
4. Did the leader present the lesson with an equal amount of expression in his voice?	yes	no	yes	no
5. Did the respective lessons have a logical beginning, middle, and end?	yes	no	yes	no
6. Did the leader include student-initiated questions and ideas in the discussion, yet keep the lesson "on track?"	yes	no	yes	no
7. Do you feel that equal rapport was established in each group?	yes	no	yes	no

Appendix D

Self-Evaluation Questionnaire

Trait Anxiety Inventory, Form X-2

SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-2

NAME _____ DATE _____

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

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

Appendix E

Self-Evaluation Questionnaire

Multiple Affect Adjective Checklist

"In General" Form

MULTIPLE AFFECT ADJECTIVE CHECK LIST

IN GENERAL FORM

By Marvin Zuckerman
and
Bernard Lubin

Name..... Age..... Sex.....

Date..... Highest grade completed in school.....

DIRECTIONS: On this sheet you will find words which describe different kinds of moods and feelings. Mark an ☒ in the boxes beside the words which describe how you generally feel. Some of the words may sound alike, but we want you to check all the words that describe your feelings. Work rapidly.

PUBLISHED BY EdITS
P.O. BOX 7234
SAN DIEGO, CA 92107

1 ☐ active
2 ☐ adventurous
3 ☐ affectionate
4 ☐ afraid
5 ☐ agitated
6 ☐ agreeable
7 ☐ aggressive
8 ☐ alive
9 ☐ alone
10 ☐ amiable
11 ☐ amused
12 ☐ angry
13 ☐ annoyed
14 ☐ awful
15 ☐ bashful
16 ☐ bitter
17 ☐ blue
18 ☐ bored
19 ☐ calm
20 ☐ cautious
21 ☐ cheerful
22 ☐ clean
23 ☐ complaining
24 ☐ contented
25 ☐ contrary
26 ☐ cool
27 ☐ cooperative
28 ☐ critical
29 ☐ cross
30 ☐ cruel
31 ☐ daring
32 ☐ desperate
33 ☐ destroyed
34 ☐ devoted
35 ☐ disagreeable
36 ☐ discontented
37 ☐ discouraged
38 ☐ disgusted
39 ☐ displeased
40 ☐ energetic
41 ☐ enraged
42 ☐ enthusiastic
43 ☐ fearful
44 ☐ fine
45 ☐ fit
46 ☐ forlorn
47 ☐ frank
48 ☐ free
49 ☐ friendly
50 ☐ frightened
51 ☐ furious
52 ☐ gay
53 ☐ gentle
54 ☐ glad
55 ☐ gloomy
56 ☐ good
57 ☐ good-natured
58 ☐ grim
59 ☐ happy
60 ☐ healthy
61 ☐ hopeless
62 ☐ hostile
63 ☐ impatient
64 ☐ incensed
65 ☐ indignant
66 ☐ inspired
67 ☐ interested
68 ☐ irritated
69 ☐ jealous
70 ☐ joyful
71 ☐ kindly
72 ☐ lonely
73 ☐ lost
74 ☐ loving
75 ☐ low
76 ☐ lucky
77 ☐ mad
78 ☐ mean
79 ☐ meek
80 ☐ merry
81 ☐ mild
82 ☐ miserable
83 ☐ nervous
84 ☐ obliging
85 ☐ offended
86 ☐ outraged
87 ☐ panicky
88 ☐ patient
89 ☐ peaceful
90 ☐ pleased
91 ☐ pleasant
92 ☐ polite
93 ☐ powerful
94 ☐ quiet
95 ☐ reckless
96 ☐ rejected
97 ☐ rough
98 ☐ sad
99 ☐ safe
100 ☐ satisfied
101 ☐ secure
102 ☐ shaky
103 ☐ shy
104 ☐ soothed
105 ☐ steady
106 ☐ stubborn
107 ☐ stormy
108 ☐ strong
109 ☐ suffering
110 ☐ sullen
111 ☐ sunk
112 ☐ sympathetic
113 ☐ tame
114 ☐ tender
115 ☐ tense
116 ☐ terrible
117 ☐ terrified
118 ☐ thoughtful
119 ☐ timid
120 ☐ tormented
121 ☐ understanding
122 ☐ unhappy
123 ☐ unsociable
124 ☐ upset
125 ☐ vexed
126 ☐ warm
127 ☐ whole
128 ☐ wild
129 ☐ willful
130 ☐ wilted
131 ☐ worrying
132 ☐ young

Appendix F

Personal Data Questionnaire

PERSONAL DATA QUESTIONNAIRE

1. Today's date:
2. Name:
3. Sex:
4. Address:
5. Phone Number:
6. Age:
7. Academic Status: Freshman, Sophomore, Junior, Senior
8. Please describe your major complaints, symptoms, and problems that caused you to be interested in our program.
9. Please give a brief account of the history or development of your complaints (from onset to present).
10. Do you feel you are discomforted by moderate or high levels of anxiety?
11. How often (how many times a week or times a day) do you feel discomfort from anxiety?
12. What persons, situations, or activities seem to help this distress once you feel it?
13. What makes the distress worse?
14. Are you presently involved, or plan to become involved, in a therapy situation during the next eight weeks?

15. Please list the names, addresses, and phone numbers of three friends whom you will likely have frequent contact with during the current semester, and whom the researcher can contact for feedback.

Name: _____
Address: _____

Phone # _____

Name: _____
Address: _____

Phone # _____

Name: _____
Address: _____

Phone # _____

Appendix G

Anxiety Rating Scale

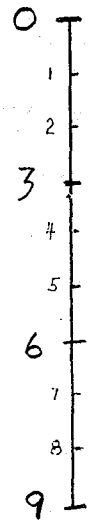
and

First and Second Cover Letters

ANXIETY RATING SCALE

_____
SUBJECT

DIRECTIONS: Below is a continuum (1 through 9) which describes various levels of anxiety. Read all statements, then check the point which you feel MOST ACCURATELY indicates the recent general level of anxiety in the person named above.



(S)he seems to have no anxiety.

(S)he appears to experience some mild tension but less than most people.

Her/his anxiety is somewhat more than most people feel.

Her/his anxiety is quite strong, and readily interferes with her/his everyday living.

_____
Name of Rater

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION Stockton, California Founded 1851
95211

Dear

I am conducting a research program through the Education & Counseling Department in the School of Education, and would like to include your observations into the study.

A personal friend of yours, named at the top of the attached ANXIETY RATING SCALE, has indicated you as a possible source whom I may ask to complete the aforementioned scale. It is simply designed and will require a minimum amount of your time. After checking the appropriate level of anxiety, please use the self-addressed, stamped envelope to return the scale to me.

I sincerely thank you for your attention and time.

Respectfully,

Thomas S. Golabek

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION Stockton, California Founded 1851
95211

DEPARTMENT OF EDUCATIONAL
AND COUNSELING PSYCHOLOGY

Dear

Thank you very much for your cooperation in completing and returning the ANXIETY RATING SCALE which was previously mailed to you. Your input into the current research study is very valuable.

I would like to ask you to complete the same scale, on the same individual, but this time, please indicate the general anxiety level in that person for the last week to ten days.

After checking the appropriate level of anxiety, please use the self-addressed , stamped envelope to return the scale to me.

I sincerely thank you for your attention and time.

Respectfully,

Thomas S. Golabek

Appendix H

Consent Form

CONSENT FORM

_____
date

I, _____, understand that Tom Golabek will contact two of three friends (whom I have listed on a personal data questionnaire) for feedback concerning a research study being conducted at the University of the Pacific. This is done with my full knowledge and permission.

_____
signature

Appendix I

Handout of Common Irrational Ideas

INSTITUTE FOR RATIONAL LIVING

2435 Ocean Avenue
San Francisco
334-3450

~~1399 Ygnacio Valley Rd.~~
Walnut Creek
~~938-5700~~ 932-8967
2820 Shadelands Dr.

327 N. San Mateo Dr.
San Mateo
343-2721

COMMON IRRATIONAL IDEAS*

1. It is a DIRE NECESSITY to be loved and approved of.
2. I SHOULD be THOROUGHLY competent, adequate and achieving in ALL possible respects.
3. Some people are BAD, WICKED OR VILE and SHOULD (or MUST) be punished.
4. If things do not go (or stay) the way I very much wamt them to, it would be TERRIBLE, HORRIBLE, AWFUL AND CATASTROPHIC!
5. Unhappinessis externally caused and I CANNOT control it (unless I control the other person).
6. One SHOULD remain upset or worried about a dangerous or fearsome reality.
7. It is EASIER to avoid responsibility and difficulties than to face them.
8. I have a RIGHT to be dependent and people (or someone) SHOULD be strong enough to rely on (or take care of me).
9. My early childhood experiences MUST continue to CONTROL me and determine my emotions and behavior.
10. I SHOULD become upset over my and other peoples problems or behavior.
11. There is invariably ONE right, perfect and precise solution, and it would be TERRIBLE, HORRIBLE, AWFUL AND CATASTROPHIC if this perfect solution is not found.
12. The world (and especially other people) SHOULD be fair and justice or mercy MUST triumph.

Appendix J

Handout for Disputing Irrational Beliefs

Institute For Rational Living
2435 Ocean Avenue
San Francisco, CA 94127
(415) 334-3450

Techniques for Disputing Irrational Beliefs (DIBS)

ALBERT ELLIS, Ph.D.
Institute for Advanced Study in Rational Psychotherapy,

If you want to increase your rationality and reduce your irrational beliefs, you can spend at least ten minutes every day asking yourself the following questions and carefully thinking through (not merely parroting!) the appropriate answers. Write down each question and your answers to it on a piece of paper; or else record the questions and your answers on a tape recorder.

1. WHAT IRRATIONAL BELIEF DO I WANT TO DISPUTE AND SURRENDER?
   ILLUSTRATIVE ANSWER: I must receive love from someone for whom I really care.
2. CAN I RATIONALLY SUPPORT THIS BELIEF?
   ILLUSTRATIVE ANSWER: No.
3. WHAT EVIDENCE EXISTS OF THE FALSENESS OF THIS BELIEF?
   ILLUSTRATIVE ANSWER: Many indications exist that the belief that I must receive love from someone for whom I really care remains false:
   a) No law of the universe exists that says that someone I care for *must* love me (although I would find it nice if that person did!).
   b) If I do not receive love from one person, I can still get it from others and find happiness that way.
   c) If no one I care for ever cares for me, I can still find enjoyment in friendships, in work, in books, and in other things.
   d) If someone I deeply care for rejects me, that will seem most unfortunate; but I will hardly die!
   e) Even though I have not had much luck in winning great love in the past, that hardly proves that I *must* gain it now.
   f) No evidence exists for *any* absolutistic *must*. Consequently, no proof exists that I must have *anything*, including love.
   g) Many people seem to exist in the world who never get the kind of love they crave and who still lead happy lives.
   h) At times during my life I know that I have remained unloved and happy; so I most probably can feel happy again under nonloving conditions.
   i) If I get rejected by someone for whom I truly care, that may mean that I possess some poor, unloving traits. But that hardly means that I rate as a rotten, worthless, totally unlovable individual.
   j) Even if I had such poor traits that no one could ever love me, I would still not have to down myself as a lowly, bad individual.
4. DOES ANY EVIDENCE EXIST OF THE TRUTH OF THIS BELIEF?
   ILLUSTRATIVE ANSWER: No, not really. Considerable evidence exists that if I love someone dearly and never get loved in return that I will then find myself disadvantaged, inconvenienced, frustrated, and deprived. I certainly would prefer, therefore, not to get rejected. But no amount of inconvenience amounts to a *horror*. I can still *stand* frustration and loneliness. They hardly make the world *awful*. Nor does rejection make me a turd! Clearly, then, no evidence exists that I *must* receive love from someone for whom I really care.
5. WHAT WORST THINGS COULD *ACTUALLY* HAPPEN TO ME IF I DON'T GET WHAT I THINK I MUST (OR DO GET WHAT I THINK I MUSTN'T)?
   ILLUSTRATIVE ANSWER: If I don't get the love I think I must receive:
   a) I would get deprived of various pleasures and conveniences that I might receive through gaining love.
   b) I would feel inconvenienced by having to keep looking for love elsewhere.
   c) I might *never* gain the love I want, and thereby continue indefinitely to feel deprived and disadvantaged.
   d) Other people might down me and consider me pretty worthless for getting rejected—and that would prove annoying and unpleasant.
   e) I might settle for pleasures other than and worse then those I could receive in a good love relationship; and I would find that distinctly undesirable.
   f) I might remain alone much of the time: which again would prove unpleasant.
   g) Various other kinds of misfortunes and deprivations might occur in my life—none of which I need define as *awful, terrible,* or *unbearable.*
6. WHAT GOOD THINGS COULD I MAKE HAPPEN IF I DON'T GET WHAT I THINK I MUST (OR DO GET WHAT I THINK I MUSTN'T)?
   a) If the person I truly care for does not return my love, I could devote more time and energy to winning someone else's love—and probably find someone better for me.
   b) I could devote myself to other enjoyable pursuits that have little to do with loving or relating, such as work or artistic endeavors.
   c) I could find it challenging and enjoyable to teach myself to live happily without love.
   d) I could work at achieving a philosophy of fully accepting myself even when I do not get the love I crave.

You can take any one of your major irrational beliefs—your *shoulds, oughts,* or *musts*—and spend at least ten minutes every day, often for a period of several weeks, actively and vigorously disputing this belief. To help keep yourself devoting this amount of time to the DIBS method of rational disputing, you may use operant conditioning or self-management methods (originated by B. F. Skinner, David Premack, Marvin Goldfried, and other psychologists). Select some activity that you highly enjoy that you tend to do every day—such as reading, eating, television viewing, masturbation, or social contact with friends. Use this activity as a reinforcer or reward by ONLY allowing yourself to engage in it AFTER you have practived Disputing Irrational Beliefs (DIBS) for at least ten minutes that day. Otherwise, no reward!

In addition, you may penalize yourself every single day you do NOT use DIBS for at least ten minutes. How? By making yourself perform some activity you find distinctly unpleasant—such as eating something obnoxious, contributing to a cause you hate, getting up a half-hour earlier in the morning, or spending an hour conversing with someone you find boring. You can also arrange with some person or group to monitor you and help you actually carry out the penalties and lack of rewards you set for yourself. You may of course steadily use DIBS without any self-reinforcement, since it becomes reinforcing in its own right after awhile. But you may find it more effective at times if you use it along with rewards and penalties that you execute immediately after you practice or avoid practicing this rational-emotive method.

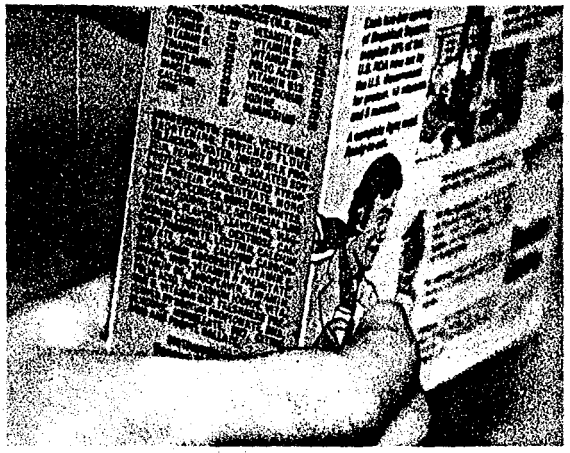
Summary of Questions to Ask Yourself in DIBS

1. WHAT IRRATIONAL BELIEF DO I WANT TO DISPUTE AND SURRENDER?
2. CAN I RATIONALLY SUPPORT THIS BELIEF?
3. WHAT EVIDENCE EXISTS OF THE FALSENESS OF THIS BELIEF?
4. DOES ANY EVIDENCE EXIST OF THE TRUTH OF THIS BELIEF?
5. WHAT WORST THINGS COULD *ACTUALLY* HAPPEN TO ME IF I DON'T GET WHAT I THINK I MUST (OR DO GET WHAT I THINK I MUSTN'T)?
6. WHAT GOOD THINGS COULD I MAKE HAPPEN IF I DON'T GET WHAT I THINK I MUST (OR DO GET WHAT I THINK I MUSTN'T)?

Appendix K

A Study Guide for the Film:

"Eat, Drink, and Be Wary"



A study guide for the film

EAT, DRINK AND BE WARY

Subject areas: social studies, health, home economics
Grade levels: jh, SH, C, A
Length: 21 minutes

CONTENT

Shoppers, cooks, kids and critics (the latter including Dr. Jean Mayer) vent their views on our eating habits and on processed foods which now make up much of our diet. The nutritional losses from processing and the refining of grain and rice are explored. The reasons for increased use of food additives and the controversies over such additives as nitrites and food colorings are examined. A sour look is taken at the high sugar content in foods, especially breakfast cereals. The role of advertising in changing our food habits is dramatically illustrated. The film encourages a good, basic diet containing a high proportion of unprocessed, natural foods.

OBJECTIVES

Persons viewing the film will:

become aware of changes in our diet;

learn that there are nutritional losses in refining and processing of foods, and that there is a need to read package labels;

be motivated to investigate the nutritional value of various foods commonly eaten;

be motivated to reexamine some of their own eating habits.

BEFORE THE FILM

Tell the class they are going to see a film about how foods have changed in the last 20 years. Ask them to guess what food has the following ingredients: sugar, citric acid, calcium phosphates, gum arabic, natural flavor, potassium citrate, vitamin C, cellulose gum, hydrogenated coconut oil, artificial flavoring, artificial color, vitamin A, BHA. (Answer: Tang instant breakfast drink)

Use this simply to focus interest, then show the film.

DISCUSSION AND ACTIVITIES

Discuss our food habits and why we eat what we eat. Do we choose foods based on nutritional value, advertising promotion, easy availability, habit, or simply what "tastes good"?

Do a survey in a market of several "convenience" foods. Compare the price of the individual ingredients from which they are made. Make an estimate of how much "convenience" costs.

Compare the cost per serving with the nutritional value of different breakfast cereals. Which ones are the best buys? Which the worst?

Find out what foods do not have to list their ingredients (e.g. ice cream) and what clues can be used to determine what is in the foods. For example, "vanilla ice cream", "vanilla flavored ice cream", and "artificially flavored vanilla ice cream" are all different.

Have students do research on a single food additive. The additive selected may be one that is accepted, controversial or banned. Have them investigate what it does, why it is used and what kinds of assurances of safety exist. Report finding to the class. (See bibliography for suggestions)

Examine the layout of a supermarket. What foods are emphasized? Which foods are at eye level, which ones emphasized by special displays? What foods are displayed at check-out counter lines. How does nutrition fare?

Set up a television monitoring project and determine which foods are advertised to children, teenagers and adults. Is there any relation between nutritional value and most advertised foods?

Have the students do research and then conduct a debate in your class on the question of whether television advertising of non-nutritious "junk foods" should be controlled or limited.

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A CHURCHILL FILM

662 North Robertson Boulevard, Los Angeles, California 90069

Appendix L

Handout on Calcium

EXCERPTS FROM

"LET'S EAT RIGHT TO KEEP FIT"
by Adelle Davis

ON CALCIUM

No person aware of the rewards of adequate calcium would allow himself to be even slightly deficient in this nutrient. Calcium can be as soothing as a mother, as relaxing as a sedative, and as life-saving as an oxygen tent.

For example, calcium aids in the transportation of nerve impulses. When this mineral is undersupplied, nerves become tense, and you become grouchy. The calcium-deficient person wastes energy, and his nervous tension and inability to relax induce fatigue out of all proportion to the work he actually does. His irritability and quick temper add nothing to his popularity.

A calcium deficiency often shows itself by insomnia, another form of inability to relax. Since milk is our richest source of calcium, warm milk drinks taken before retiring have long been advertised for relief of insomnia; heat quickens digestion, calcium soothes the nerves, and restful sleep may follow.

The amount of calcium in a woman's blood parallels the activity of the ovaries; the blood calcium falls to such an extent during the week prior to menstruation that nervous tension, irritability , and perhaps mental depression result.

Another reason for an adequate intake of calcium, and for keeping calcium tablets in the medicine chest at all times is that this mineral is a pain killer par excellence. For years I have told people to take calcium tablets before visiting a dentist; the mineral helps them relax and feel less pain.

Numerous surveys have shown that the deficiency of calcium is more widespread than that of any other nutrient; milk is our only dependable source.

There are few nutrients which can increase the graciousness of a home as much as can calcium. Without it, tempers flare and irritabilities are constant. With it, serenity can at times prevail.

Appendix M

Handout of B-Vitamins

EXCERPTS FROM

"LET'S EAT RIGHT TO KEEP FIT"

by Adelle Davis

ON B Vitamins

The 15 or more B Vitamins are so meagerly supplied in our American diet that almost every person lacks them.

Two-thirds of our calories are now supplied by foods from which the original nutrients are largely or wholly discarded.

All the B Vitamins dissolve in water and for this reason cannot be stored in the body.

Any B Vitamins not needed are excreted in the urine.

Vitamin B_1 and B_{12} are necessary for the normal functioning of the nervous system.

Now that our breadstuffs are refined, no food rich in the B vitamins is ordinarily eaten daily. In fact, there are only four good sources of these vitamins: liver, brewers' yeast, wheat germ, and rice polish. A few foods are high in one or two B vitamins, but to obtain our daily requirement of all of them from such foods is impossible.

Deficiencies of at least 4 B vitamins affect hair color.

During any type of stress (illness, emotional upsets etc) the requirement for pantothenic acid increases proportionately. Nervousness, dizziness, headaches, and exhaustion are also symptoms of a defiency of pantothenic acid.

For people who suffer from nervousness or insomnia, B_6 often works as a tranquilizer.

B_6 is also particularly effective in preventing tooth decay.

When volunteers have stayed on a diet adequate in all respects except in niacin, the first symptoms noticeable are psychological. The entire personality changes. Persons who were formerly strong, courageous, forward-looking, and unafraid of life become cowardly, apprehensive, suspicious, and mentally confused. They worry excessively and are emotionally unstable, moody, forgetful, and uncooperative.

Appendix N

A description of the Slide Presentation

"Your Greatest Gift"

Your Greatest Gift

Made by the Shaklee Corporation (1970).

The slide presentation consists of 67 slides (color), and a cassette tape (21 minutes).

The content focuses on a description of a proper diet, a breakdown of what foods offer what vitamins, proteins and minerals, and an orientation toward natural nutrition.

Also included is a presentation of the different supplements made and distributed by the Shaklee Corporation.

Appendix O

Handout on Vitamin E

EXCERPTS FROM

"LET'S EAT RIGHT TO KEEP FIT"

by Adelle Davis

ON Vitamin E

Vitamin E is found in the oils of all grains, nuts, and seeds.

Not one unit of vitamin E remains in refined flour and packaged cereals.

Vitamin E deficiency reveals itself by brown ceroid pigment. The ugly brown spots on the backs of hands of persons middleaged or older result from a vitamin-E deficiency; they usually appear at the menopause, when the vitamin requirement skyrockets, especially when female hormones are taken which increase the vitamin-E need tenfold.

Anemia caused by a lack of vitamin E is impossible to distinguish from iron-deficiency anemia unless tests for vitamin-E adequacy are made. Since physicians make no such tests and are usually unaware of the value of vitamin-E, they merely recommend larger and larger amounts of iron. Unfortunately, most iron salts, if not all, destroy vitamin E.

Vitamin E given to men frequently increases the number, quality, and motility of sperm. In a study of families who had had one or more defective children, after the fathers had taken vitamin E several months prior to a later conception, all had normal infants.

Muscular dystrophy, produced in every type of animal severely deficient in Vitamin-E, is said to have doubled in the past 10 years. In this disease, muscle cells break down and are replaced by useless scar tissue. If vitamin-E is given before the disease becomes advanced, recovery occurs quickly. It is usually advanced before being diagnosed, however, and no amount of vitamin-E can then reverse it. Diets unusually high in all nutrients appear to retard the disease.

Athletes have more and far greater endurance when taking vitamin-E.

The excruciating agony of severe burns usually stops within minutes if capsules of vitamin E are pierced with a sterile needle and their contents squeezed over the burned areas.

In the absence of vitamin E, the breakdown of cells in blood-vessel walls causes clots to form. Varicose veins, for example, are caused by clots and have been repeatedly produced in animals lacking vitamin E.

Because oral contraceptives increase the need for vitamin E, women using them have suffered from varicose veins, phlebitis, pulmonary embolisms, and even strokes.

Appendix P

Handout on Vitamin C

EXCERPTS FROM

"LET'S EAT RIGHT TO KEEP FIT"
by Adelle Davis

ON Vitamin C

Despite the fact that we live in a land of plenty and our need for this vitamin can scarcely be called news, surveys show that three-fourths of our population receive less than the minimum daily allowance recommended by the National Research Council.

The richest sources are citrus fruits, guavas, ripe bell peppers and pimentos, and the seed pods of wild roses, rose hips.

One function of vitamin C is to help form and maintain a strong cement-like material, known as collagen, which holds together all the cells in your body. The collagen serves much the same purpose as cement does in a brick building except that the "concrete" in a healthy body is in the form of a stiff jelly, like gristle or a tough gelatin, known as connective tissue.

Gum tissue fits tightly around the base of each tooth in a healthy mouth; it does not bleed even when brushed vigorously with a stiff-bristled brush. If vitamin C is undersupplied, the gums become puffy and spongy and bleed easily. Ever-present bacteria live on the dead cells of the gum tissue, and infections such as pyorrhea pockets often develop. When such patients have the pockets cleaned out and an adequate diet is eaten, soreness and inflammation often show marked improvement in a few days. A lack of vitamin A or niacin, however, also causes susceptibility to gum infections.

The vitamin C in all plants is produced, by the aid of enzymes, under conditions of warmth and moisture at which the plant grows best. Unfortunately, the action of the enzymes is reversible; they can quickly destroy what they have made. After a food is harvested, the destruction of the vitamin occurs most rapidly under the same conditions as those at which the plant grew best, that is, in a heated market or a warm room. Furthermore, the enzymes destroy the vitamin by combining it with oxygen; hence, if a fruit or vegetable is peeled or chopped, the destruction is unusually rapid. The enzymes are kept inactive by refrigeration or are destroyed by heat at about 140 degrees F. Since the vitamin dissolves in water, much or all of it is lost when foods are washed slowly, soaked, or boiled. The average housewife, untrained in nutrition, extravagantly destroys vitamin C before the food can be swallowed.