

SELF-OBSERVATION OF MENTAL PROCESSES

by

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## ABSTRACT

The purpose of this study was to compare the effects of mindfulness meditation and cognitive training on the mental health and well-being of college students. The idea that self-awareness might have influence in promoting health and well-being provided a theoretical basis for the study. Self-observation methods were identified as a means to promote self-awareness. The two self-observation strategies providing the focus were mindfulness meditation and cognitive restructuring.

Subjects were 24 students registered in the second year of a college level psychiatric nursing training program. There were six males and 18 females; 14 were between the ages of 18 and 25 years and 10 were between the ages of 26 and 41 years. Two standardized dependent measures were used: the Personal Orientation Inventory and the Symptoms of Stress Inventory. They were administered before and after the self-observation training programs.

The prediction that mindfulness meditation training and cognitive training would be equally effective in promoting mental well-being was supported. Findings suggest that the implementation of a mindfulness meditation training program or a cognitive training program for college students has potential for improving their level of mental health and well-being.

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## CHAPTER I INTRODUCTION

The idea that self-awareness might have significance in human affairs has been presented since the time of the early philosophers who admonished the individual to "know thyself". Ouspensky (1951) suggested that knowledge of oneself was the first principle and demand of the old schools of psychology. According to Thoreson and Mahoney (1974) insight and awareness are at the heart of all major systems of psychology whether they be psychoanalytic, humanistic or behavioural. In spite of this recognition of the importance of self-awareness it is only in the last two decades that the emergence of a self-awareness movement has been observed.

Many of the participants in the self-awareness movement have proposed ideas as to the benefits of self-awareness for health and well-being. Self-awareness has been suggested as a means of developing qualities of openness, spontaneity, authenticity, improved interpersonal relations and personal growth (Schur, 1976). Assagioli (1971) indicated that by cultivating the attitude of an observer the individual can develop awareness which can lead to inner integration and control of various elements of personality. Increased self-awareness can arouse a sense of hopefulness and faith by developing a view of oneself as an active

contributor to one's experiences (Meichenbaum, 1977).

Poise, equilibrium and balance can be engendered by self-awareness (Goldstein, 1979). Ferguson (1980) suggested that the part played by awareness in health may be the single most important discovery in modern medical science and to support her position lists a range of illnesses that have been treated by biofeedback, such illnesses include high blood pressure, seizures, ulcers, paralysis after stroke, headaches, arthritis, cardiac arrhythmias and diabetes. Biofeedback is a self-awareness strategy that makes available to the mind information about the individual's physiological processes. Brown (1983) has stated that people become sick because of lack of accurate information about their social situations and how they are reacting and that if they are given this information stress reactions can be prevented or reversed. A strong case is thus presented for further investigation of the relationship between awareness and health.

Means to develop self-awareness have been proposed in a proliferation of often simplistic self-help books as well as by empirically-oriented scientists. Ouspensky (1951) suggested that one must begin by studying oneself as one studies any new and complicated machine, through systematic self-observation. Some of the behavioural scientists particularly since the early seventies have given attention to systematic self-observation as a strategy for self-change.

Thoreson and Mahoney (1974) defined self-observation as the systematic gathering of data about one's own behaviour. Self-observation in the self-change framework includes such methods as log recording, charting, use of check-lists, personal journals, wrist-counters and biofeedback equipment. Overt behaviours, cognitive and affective phenomena and such physiological processes as muscle tension, skin resistance and blood pressure have been the focus of self-observation procedures. Self-observation strategies also include techniques derived from the encounter movement, Eastern psychological and religious traditions and such new therapies as gestalt, primal scream and rational-emotive therapy. Two approaches to self-observation of psychological processes that are receiving increasing research interest are Mindfulness Meditation and Rational-Emotive Therapy. The latter two approaches are the focus of this study and will be discussed in detail.

### Mindfulness

Shapiro (1980) defines meditation as "a family of techniques which have in common a conscious attempt to focus attention in a nonanalytical way." Attention is trained to focus inwards. A permissive attitude is developed toward thoughts, images and sensations arising during meditation.

The most common meditation technique in the West is

transcendental meditation (T.M.). A less well publicized form of meditation is mindfulness. Mindfulness is part of a system of Buddhist psychology designed to enhance mental health through mental training (Deatherage, 1980). In the Buddhist approach to mental health, a key concept is the quality of the factors which compose one's mental states from moment to moment. There are healthy and unhealthy mental factors. Mental health is achieved by the reciprocal inhibition of unhealthy factors by healthy ones. One of the major healthy factors is mindfulness (Goleman, 1981). Mindfulness meditation is a way of developing this factor. Mindfulness meditation has been described as a way to begin to observe the constantly changing process of experience and to disidentify with personal dramas. (Epstein & Lieff, 1981). Mindfulness training can be used to see and name mental processes in action (Deatherage, 1980). Mindfulness meditation is sometimes referred to as insight meditation (Sayadaw, 1980) because of its function of promoting insight into basic mental processes.

Definition. Of the various approaches taken to mindfulness meditation, the position adopted in this study is that mindfulness meditation is a method of training attention to focus inwards. Attention is also trained to observe the activities of mind and body without judgement, without reaction, simply seeing, noticing, watching.

### Rational-Emotive Therapy.

Rational-emotive therapy also emphasizes the development of insight. Ellis (1979) suggests that insight and awareness are cognitive processes that significantly affect behaviour change. Insight in rational-emotive therapy is however sharply focused on identifying self-defeating statements and irrational beliefs. A basic assumption of the rational-emotive approach is that people become emotionally disturbed through acquiring irrational beliefs, attitudes and thoughts. These irrational beliefs become apparent in self-defeating statements. Two of the most commonly held irrational beliefs are "I must be loved and approved by virtually everybody" and "I must excel in all possible activities to be considered a worthwhile person" (Ellis, 1970).

In rational-emotive therapy a large variety of cognitive, affective and behavioural techniques are used, the most central being cognitive restructuring (Ellis & Whiteley, 1979). There are many variations of cognitive restructuring. These variations differ in degree of emphasis on insight into negative self-statements and knowledge and rehearsal of positive coping statements (Glogawer, Fremouw & McCroskey, 1978). There are differences of opinion as to whether insight contributes more to cognitive restructuring or whether the use of coping statements contributes more (Wine, 1970; Thorpe, Amatu, Blakey & Burns, 1976). Behavioural techniques such

as homework assignments, self-management and operant-conditioning are incorporated into a rational-emotive approach. Ellis (1982) suggests that a humanistic outlook requires self-direction and that rational-emotive therapy has relevance for the pursuit of self-direction and self-actualization. Rational-emotive therapy espouses the humanistic philosophy that people be present in the immediacy of the moment, and that they accept their limitations.

Definition Ellis' (1973) description of rational-emotive therapy as a cognitive-behavioural system designed to assist individuals change their thinking patterns is a basic premise accepted for the purpose of this study. Of the various approaches to the technique of cognitive restructuring, the position adopted in this study is to emphasize the development of insight into negative self-statements. No attention is given to coping statements. Although the development of coping statements is an integral part of most rational emotive programs, the current treatment stopped short of developing coping statements. This was done to emphasize the self-awareness aspects of the initial stages of rational emotive therapy and to make the purpose of the cognitive treatment more closely parallel the meditative treatment.

### The Problem.

Mindfulness and rational-emotive therapy have been proposed as means to achieve improved health and well-being through self-awareness. Since they operate in different modes of consciousness their respective effectiveness may be influenced by these different modes. Deikman (1966, 1971) and Ornstein (1972) identified receptive and active modes of consciousness. The receptive mode is characterized as holistic, atemporal, intuitive and as opening consciousness to the immediacy of experience. The active mode is characterized by the focusing and discriminating aspects of consciousness. It is analytic and sequential. Mindfulness relies on integration and openness and thus exemplifies the receptive mode. The rational-emotive approach relies on analysis and discrimination, thus exemplifying the active mode. What each dimension has to contribute to health and well-being independently is a fascinating question still open to research.

The purpose of this study is to compare the effects of mindfulness meditation and cognitive restructuring on health and well-being, as defined by the Personal Orientation Inventory and the Symptoms of Stress Inventory.



## CHAPTER II

### LITERATURE REVIEW

The areas of research that have relevance for this study focus on self-observation, meditation and rational-emotive therapy. Each of these areas will be discussed separately.

#### Self-observation Research

Self-observation studies have been applied to a variety of overt behaviours and have involved a variety of populations such as children, adolescents, college students, teachers, families and institutionalized individuals (Haynes & Wilson, 1979). Some of the targeted behaviours have been smoking (Conway, 1977; Lando, 1977), alcohol consumption (Dericco & Carlington, 1977; Miller, 1978) and headache (Epstein & Abel, 1977; Feverstein & Adams, 1977). Application of self-observation to cognitive and affective phenomena has focused on discrete clinical behaviours such as obsessive thinking (Emmelkamp & Kwee, 1977), anger (Novaco, 1977), hallucinations (Turner, Hersen & Bellack, 1977). Anxiety has also been explored by a number of people (Hiebert & Fox, 1981; Hamilton & Boorstein, 1977; Mathews & Shaw, 1977).

~~Self-observation of anxiety studies have focused on assessment and treatment procedures. When used for treatment purposes the reactive effects are paramount.~~

Reactive effects refers to the finding in a number of research studies (Hiebert & Fox, 1981; McFall, 1977; Vargas & Adesso, 1976; Wark, 1976) that a targeted behaviour often changed merely as a function of the observation procedure. Whatever treatment methods are used, the reactive effects must be considered. It may be that the treatment procedures used are secondary to the fact that the individual is practising self-observation.

### Meditation Research

Scientific meditation research began approximately 20 years ago in the early sixties. Western scientists were interested in exploring Eastern psychological systems and religious practices to determine whether some of the Eastern techniques such as meditation might have value for health and well-being. Studies so far seem to support generally the claim that the practice of meditation promotes psychological and physical health (O'Haire & Marcia, 1980).

Research into the effects of meditation has developed in three major directions, 1. psychophysiological correlates, 2. the therapeutic use of meditation, and 3. personality variables. Since the focus of this thesis is on mental health and well being, physiologically oriented studies are of tangential interest and will be reported

briefly. The therapeutic usefulness and personality variables will be discussed in more detail. The earliest studies were of Zen monks and Indian yogis in their natural environment. (Bagchi & Wenger, 1957, 1958; Anand, Chhina & Singh, 1961; Kasamatsu & Hirai, 1969). These studies were limited until a simple Westernized form of meditation (Transcendental Meditation, T.M.) was introduced into the West. Most of the studies of the last 20 years have focused on T.M. The largest number of these studies have focused on psychophysiological variables with increasing interest in personality studies.

Physiological Correlates. A landmark study of the physiological effects of meditation was published by Wallace, Bensen & Wilson (1971). Their results suggested that meditation produced significant decreases in heart rate, respiration rate, oxygen consumption, blood pressure and skin conductance. These findings have subsequently been confirmed by other researchers (Woolfolk, 1975; Elson, Hauri & Cunis, 1977; West, 1978). Some of the earliest research interest focused on EEG changes (Fenwick, 1960; Wallace et al, 1971; Banquit, 1972, 1973; Williams & West, 1975). These and later studies claim a shift in the EEG pattern to predominantly alpha and theta waves. Information to date has been conflicting but

suggests that the predominance of slow wave alpha activity may indicate the passive observer state (Carrington, 1978).

Therapeutic Uses. The effectiveness of meditation as a therapy has been demonstrated in a number of studies. Findings have indicated a decrease in the use of nonprescription drugs as a result of meditation practice (Bensen & Wallace, 1971; Otis, 1972; Shafii, Lavelly, & Jaffe, 1974; Shapiro & Giber, 1978). Studies have also been published describing the use of meditation for treatment of obesity (Benwick & Oziel, 1973) and anxiety and neurosis (Girado, 1974; Shapiro, 1976). The effectiveness of meditation in the treatment of stress-related disorders has also been reported by Bensen, Klemchuk & Graham, 1974; Woolfold, Carr-Kaffashan & McNulty, 1976; Patel, 1977. Pelletier (1979) also suggests that meditation may have important clinical applications in the alleviation of stress-related disorders. Hospitalized psychiatric patients with a variety of disorders have been reported as benefitting from daily T.M. (Glueck & Stroebel, 1978). A number of studies lead to the conclusion that meditation produces decreases in anxiety, depression and neuroticism (Feher, 1976; Williams, Francis, & Durham, 1976; Shapiro,

1976; West, 1978).

Personality variables. An intriguing aspect of meditation is the possibility of its contribution to personal growth. Carrington (1978) suggests that personal growth involves more than the removal of symptoms "but reaches further, effecting a change which has to do with the unfolding of a sense of personal worth, a growing awareness of self." (p. 215) An important aspect of this sense of self is what is referred to as field independence. Field independent people are apt to see themselves more clearly and to be inner-directed rather than outer-directed (Carrington, 1978). This capacity is found to increase with the practice of meditation. Hines (1970) found that her subjects scored higher on the Embedded Figures Test (1954) after learning to meditate. The Embedded Figures Test is considered a stable measure of field dependence/independence. Linden (1973) found the same results as Hines; her subjects were third-grade children. Pelletier (1974) reported that meditators' scores on the Embedded Figures Test and the Rod and Frame Test (1954) improved significantly while those of nonmeditators had not improved at all. James (1976) found that field-independence scores as measured by the Embedded Figures Test improved significantly even after one twenty minute meditation practice. A study by Goldman (1979) failed to detect

effects of Zen practice on field-independence but the practice period was extremely short, only five days. Hjelle (1974) reported increased internal locus of control. Inner-directedness appeared augmented using the Personal Orientation Inventory (Seemen, Nidich & Banta, 1972; Nidich, Seeman & Dreskin, 1973) as was spontaneity, acceptance of aggression and capacity for intimate contact. Studies have also shown that subjects who learned meditation had higher self-concepts than did control subjects (Johnson, 1974; Blanz, 1974; Valois, 1976). Increase in positive self-statements and feelings of creativity have also been reported (Shapiro, 1978). Lesh (1970) reported that counsellors who had practiced Zen meditation for one half-hour per day for one month were more open to their own inner experiences and thus demonstrated substantially increased accurate empathy.

Methodological limitations. After reviewing current research on meditation Murray (1982) indicates a number of methodological limitations e.g. small sample size, lack of control of important variables. After presenting an overview of a number of studies, Otis (1974) suggested that expectations may contribute significantly to the benefits attributed to meditation. Smith (1976) conducted a study in which he attempted to control for the confounding effects

of expectation. He found no significant differences between meditators and controls on a number of measures of anxiety. Decreases in anxiety were obtained with both groups. He concluded that the expectational factor must have been responsible for the decreases in anxiety. A closer examination of his control procedures reveals that they included elements of meditation practice, so it is conceivable that his control conditions were just other kinds of meditation.

According to Shapiro (1980) no articles have been published which assess subjects' expectations prior to meditation. Shapiro (1980) suggested motivation may be an important issue related to expectation. Maupin (1965) noted that those who participated in his study had a strong "therapy-seeking" motivation. Kubose (1976) suggested that course requirement might be a strong motivator. Goldman, Domiter and Murray (1979) explored the relationship between motivation and outcomes and suggested that the subject's initial desire to learn the technique may be an important factor. On the basis of a review of the literature, Shapiro (1980) suggested it would be useful to administer a questionnaire to measure subjects' expectations prior to beginning meditation.

Comparative studies. Several comparison studies have been made with other self-regulation strategies such as

relaxation training and self-hypnosis. These studies have indicated that meditation may not be more effective for clinical problems than relaxation training or self-hypnosis, at least over short time periods. (Kersch & Henry, 1979; Boswell & Murray, 1979; Goldman et al, 1979; Zuroff & Schwantz, 1978; Marlatt, Pagano, Rose & Marques, 1980). Murray (1982) reaches a similar conclusion in his recent review of meditation research. A comparison of meditation effects and simple rest has not thus far been made. Smith (1976) attempted to control for daily sitting. He concluded that T.M. is no more effective in reducing trait anxiety than a parallel control treatment consisting of sitting without meditating.

#### Rational-Emotive Therapy Research.

Ellis (1979) claims that rational-emotive therapy is one of the most influential forms of treatment of the 20th century. It appears to have engendered a large amount of clinical research. (Ellis, 1979; DiGiuseppe, Miller & Trexler, 1979). There is however disagreement about the nature of the evidence. After a review of the literature on rational-emotive therapy, Ellis (1979) concludes that most of a large amount of research data tends to confirm the major hypotheses of rational-emotive therapy. Meichenbaum (1979) and Mahoney (1979) are more conservative



in their conclusions. Meichenbaum is concerned with the fact that Ellis's review is selective and that a number of the studies cited by Ellis have been challenged. Mahoney's position is that Ellis cites references which are only remotely related to "orthodox" rational-emotive therapy. Mahoney (1979) is also concerned about Ellis's selectivity. Mahoney's (1974) conclusion was that it was not possible at that time to reach an evaluative conclusion. DiGiuseppe et al (1979) support the views of Mahoney and Meichenbaum and suggest cautious optimism. Research studies have focused in a number of areas: theoretical formulations, RET as an educational strategy, component studies, outcome studies and comparative studies. Each of these areas will be discussed in more detail.

Theoretical formulations. Ellis (1979) lists a large number of research studies that he believes provide empirical confirmation of the hypotheses of RET. Meichenbaum's (1979) and Mahoney's (1979) reservations about these were indicated above. Stone (1980) also concludes that existing empirical evidence is limited and inconclusive. Lipsky, Kassinove and Miller (1980) list a variety of studies they claim supports rational-emotive therapy's basic premise that there is a relationship between irrational beliefs and psychopathology.

RET as an educational strategy. RET has been presented as an educational model of therapy (Ellis, 1978). Maultsby (1974) developed a rational behaviour therapy program designed for use in educational settings. Through a series of studies Maultsby investigated the efficacy of the above program (Maultsby, Kniffing & Carpenter, 1974; Maultsby, Cosbelto & Carpenter, 1974). Dependent measures included the Rotter Internal-External Scale (Rotter, 1966) and the Personal Orientation Inventory (Shostrom, 1964). Results indicated significant differences in the positive direction. Husa (1982) taught rational self-counselling to college students and found them to be more internally-oriented using the Rotter scale. Knaus (1974) developed a series of rational-emotive modules for use with elementary school children and investigated their effectiveness (Knaus & Boker, 1975).

Component studies. A small amount of research has been done to investigate the separate components of rational-emotive therapy. Wine (1971) concluded that coping statements are the major therapeutic component of cognitive restructuring and that insight into negative self-statements was not effective on its own. Thorpe, Amatu, Blakey & Burns (1976) concluded that insight contributed more to cognitive restructuring than the use of

coping statements. Glogawer, et al (1978) conducted a study which supported Wine's original findings. Conclusions about this issue are thus still unclear.

Outcome studies. Outcome studies of the effectiveness of rational-emotive therapy have generally reported positive results. Many of these studies have focused on anxiety (Jarmon, 1973; Yu & Schell, 1974; Kassinove, 1974; Keller, Crooke & Brooking, 1975; Meichenbaum, 1972; Fremoew & Zitter, 1978). Other studies have focused on anger (Novaco, 1975) and depression (Rush, Beck, Kovacs & Hollor, 1977; Shaw, 1977).

Comparative studies. Comparative studies have compared rational-emotive therapy with some forms of behaviour therapy and client-centered therapy. DiLoreto (1971) compared the effectiveness of rational-emotive therapy, systematic desensitization and client-centered therapy in the treatment of subjects with interpersonal anxiety. Results indicated that all three treatment approaches were effective in reducing interpersonal anxiety, with systematic desensitization being the most effective at termination. Rational-emotive therapy was most effective after a three-month follow-up assessment. Although one of the stronger studies, DiLoreto's study has been criticized on the basis of methodological issues, as have

many of the comparative studies. Generally speaking comparative studies have been inconclusive in terms of the relative effectiveness of rational-emotive therapy. DiGiuseppe et al (1979) reached this conclusion after reviewing a wide range of outcome studies.

### Conclusions

Studies primarily by Maultsby suggest that educational programs based on rational-emotive therapy may be effective in assisting students to analyse their behaviour and emotions, to cope with stress and thus promote a lower incidence of emotional problems. It would seem appropriate then to pursue further studies of a rational-emotive approach with student populations. Meditation studies with student populations have also been promising and would support further studies with this particular groups of subjects.

Since studies seem to suggest that both meditation and rational-emotive therapy have the potential for enhancing psychological well-being, it would seem appropriate to compare the effects of these two treatment approaches on dimensions of personality. The dimensions of personality so far examined include inner/outer directedness, spontaneity, acceptance of aggression, capacity for intimate contact and aspects of self-concept. Whether one

or other of the treatment approaches has differential effects on these dimensions is open to question. Since comparative studies of both meditation and rational-emotive therapy with other strategies have been inconclusive, it may be profitable to compare them with each other.

Studies concerned with methodological issues in meditation research have suggested that expectations may contribute significantly to benefits attributed to meditation (Otis, 1974). Rational-emotive therapy studies do not appear to have addressed this issue. Such a variable needs to be addressed further in studies of self-observation strategies.

A further issue of importance in research studies of self-observation is that of reactive effects. It is conceivable that benefits attributed to self-observation strategies may be due to the reactive effects inherent in the process of self-observation. The kind of treatment technique used may be incidental.

### Hypotheses

The present study was designed to explore some of these issues. Using college students divided into two equal treatment groups, the effects of mindfulness meditation and a specific rational-emotive technique,

cognitive restructuring, were compared. The critical component being investigated in both treatments was self-observation. The two treatments were conceptualized as two differing approaches to enhancing self-observation.

It was hypothesized that subjects in both treatment groups would score equally well on the pre-post dependent measures. Specifically the following hypotheses were investigated.

#### Hypothesis #1

Mindfulness training and cognitive training will be equally effective in enhancing psychological well-being as evidenced by pretreatment and posttreatment score comparisons on the subscales of the POI.

#### Hypothesis #2

Mindfulness training and cognitive training will be equally effective in reducing the frequency of stress symptoms experienced by subjects as evidenced by pretreatment and posttreatment score comparisons on the subscales of the SOSI.

## METHOD

Sample

Demographic data for 24 participants according to treatment condition is presented in Table 1.

Of the 24 subjects 14 were between the ages of 18 and 25 years and 10 were between the ages of 26 and 41 years. Equal numbers from each age group were in each training group.

There were nine females and three males in each training group with six males and 18 females in the total group.

In terms of the highest level of education completed 19 subjects had completed high school, two had completed a community college programme and three had completed a bachelor's degree. Of those having completed high school, nine were in the mindfulness group and 10 in the cognitive group. The two people who had completed a community college programme were in the cognitive group and the three who had completed a bachelor's degree were in the mindfulness group.

Subjects participated in this project as part of a course assignment in communication and interpersonal relationship training. The purpose of the assignment was for students to increase their self-awareness by observing some of their inner processes. Students in the course were required to choose one of two options. One option was to participate in the research project which would involve completion of pre and posttraining questionnaires and training in either mindfulness meditation or cognitive restructuring. The other option

Table 1

## Demographic Data for 24 Participants According to Treatment Condition

Demographic Descriptors		Number of Persons		Summary
Variable		Mindfulness	Cognitive	Total
Group Size		12	12	24
Age	18 - 25	7	7	14
	26 - 33	2	2	4
	34 - 41	3	3	6
Sex	Male	3	3	6
	Female	9	9	18
Highest Level of Education Completed	High School	9	10	19
	Community College	0	2	2
	Bachelor's Degree	3	0	3



was to participate in a progressive muscle relaxation training program. Subjects read an information sheet and if they wished to volunteer they completed a consent form (See Appendix A). Subjects who volunteered for the research project were randomly assigned to either the mindfulness group or the cognitive restructuring group.

### Dependent Measures

Two standardized dependent measures were used. These were administered pre and posttraining. They were administered on the same day to all subjects. Instructions were read by the test administrator. Questions regarding definition of terms were answered; questions dealing with interpretation of items were responded to by encouraging subjects to use their own judgement. In addition a self-report pretraining survey was administered. (See Appendix B). This survey and the dependent measures are discussed below.

Personal Orientation Inventory. The Personal Orientation Inventory (POI) was used as a measure of the subject's level of positive mental health (Shostrom, 1974). The POI was conceptualized by Shostrom (1964) in consultation with Abraham Maslow. Items were derived from research and theoretical formulations from humanistic, existential and gestalt psychology, a primary influence being self-actualization theory. Items were designed to reflect value orientations commonly held and considered to be important

to a person's approach to living. It consists of two - choice comparative value and behaviour judgements. There are two basic scales of personal orientation, support and time competence. There are also ten subscales measuring conceptually important elements of self-actualization. These subscales are self-actualizing values, existentiality, feeling reactivity, spontaneity, self-acceptance, nature of man, self-regard, synergy, acceptance of aggression and capacity for intimate contact.

Test-retest reliability coefficients (1 week retest interval) of .71 and .77 were obtained for the two basic scales based on a sample of college undergraduates (N=48). The reliability coefficients for the ten subscales ranged from .52 (Acceptance of aggression) to .82 (Existentiality) (Shostrom, 1974). Ilandi & May (1968) reported coefficients ranging from .32 to .74 when measured over a one year period. In general these findings are at a level commensurate with other personality inventories. No information is available on internal consistency.

A number of validity studies are reported in the test manual (Shostrom, 1974). It has been found that 11 of the 12 scales of the POI discriminated between self-actualizing and nonself-actualizing persons significantly, ten at the .01 confidence level and one at the .05 (N=63). Shostrom (1974) presents correlations of POI scales against MMPI scales

and suggests that in some instances the POI may be measuring the healthy complement of some of the pathological scales on the MMPI. Predictive validity seems quite well established in that the POI was able to discriminate relatively healthy from less well functioning groups (Shostrom, 1974). The inventory has been demonstrated to be resistant to faking unless subjects have information about self-actualization (Braun & Faro, 1969). The POI has a lie score profile that can be identified easily.

Symptoms of Stress Inventory. The Symptoms of Stress Inventory (SOSI) was used to make a pre training assessment of the frequency of stress symptoms experienced by subjects in the last two weeks. The SOSI was developed because of a perceived need to quantify stress responses (Leckie & Thompson, 1979). It is a self-administered 118 item questionnaire reflecting ten subscales including peripheral, cardiopulmonary, gastrointestinal, muscle tension, depression, worry and anger. Respondents indicate on a five point scale the frequency with which they have experienced various stress-related symptoms in the previous two weeks.

Reliability information for the SOSI indicates that Chronback's alpha ranges from .71 to .87 for the subscales and .96 for the total score. Test-re-test reliability has not been established. The SOSI has face validity in that

it appears to assess the frequency and type of stress responses being reported in clinical situations and by lay people. The SOSI has been used in a variety of clinical settings and research settings to measure the effectiveness of multimodal headache treatment programs (Pennebaker, 1983) and school based relaxation programs (Hiebert, 1983).

### Pre training Survey

A pre training questionnaire was also developed to solicit information about the subject's experience with the training methods and expectation effect. (See Appendix B for a copy of the Pretraining Survey). Results of meditation research studies have been confounded by the effects of expectation (Smith, 1976; Malex & Supprelle, 1977). Shapiro (1980) designed a form to assess subjects' expectations prior to training and questions 1, 2, 7, and 8 were derived from this form. Parallel questions were designed for the cognitive training.

### Procedure

Adherence to treatment is an important variable in the effectiveness of any self-regulation strategy. Shapiro (1980) recommends a number of methods to ensure practice. He suggests practice in a lab setting, follow-up checking, clear definition of adherence expectations (how long/how often) and understanding of initial motivation. These ideas were incorporated into the training procedure.

Training consisted in attendance at three training sessions of approximately one hour each and daily practice of the method in the participant's own time. Subjects were also required to complete a monitoring sheet after each practice session and submit this sheet to the project supervisor prior to each training session.

The first training session for each method consisted in presenting an overview and rationale followed by a practice period. After the practice period key points in the procedure were reviewed and instructions given for the homework practice.

The first 15-30 minutes of training sessions two and three were spent providing feedback to subjects on information in the monitoring sheets submitted. The remaining 30 minutes was spent discussing any theory related to the procedure followed by a practice period. After the practice period key points in the procedure were reviewed.

Mindfulness training sessions. The mindfulness sessions consisted in teaching subjects two basic exercises for training attention, mindfulness of breathing and mindfulness of thoughts. Mindfulness of breathing was taught in the first session. Subjects were directed to assume a comfortable sitting posture, close eyes in a relaxed way

and focus their attention on the rising and falling of the abdomen without imagining or visualizing but just experiencing the movement. They continued this practice for ten minutes. Subjects reported that their attention strayed to external noises, physical sensations, thoughts and they were instructed to return the attention to the breathing when they noticed this occurring. Subjects were then instructed to practice the instructions one half hour per day for the subsequent week.

The second exercise, mindfulness of thoughts, was taught in the second training session. Subjects were instructed that while they were occupied with the exercise of observing the abdomen other mental activities would occur. Subjects were to make a mental note of each as it occurred. They were to especially notice when thoughts arose and to make a mental note "thinking," "thinking". They were to refrain from getting involved in the content or associating or analyzing the thoughts. Subjects were instructed not to treat thoughts as obstacles or hindrances but just allow them to arise, note them and allow them to pass away.

During the third training session subjects were given further instructions regarding the mindfulness of thoughts exercise. They were instructed to label the emerging

thoughts in a more precise way than just "thinking". They were encouraged to note different kinds of thoughts such as "planning", "imagining", "anticipating", "remembering". Subjects were again advised not to condemn themselves for any of the things they observed. They were instructed just to note the events quietly and gently and then focus the attention back on the rising and falling of the abdomen. (Goldstein, 1976; Thera, 1979; Sayadaw, 1980). See Appendix C for details of the training sessions and a copy of the monitoring sheet.

Cognitive training sessions. In the first cognitive restructuring session subjects were introduced to one of the basic premises of rational-emotive therapy i.e., the way we think or talk to ourselves is a major determinant in how we feel and behave. Ellis's (1979) A.B.C. model for demonstrating the relationship between thoughts, feelings, and behaviour was explained to subjects. Subjects were then introduced to a method for observing systematically their inner dialogue, rational self-analysis. Subjects were given sample situations and asked to identify the A.B.C. components using the rational self-analysis format. They were also asked to analyse situations from their own experience. Subjects were instructed to identify any strong

emotion arising during the day and analyse the situation surrounding the emotion using the rational analysis practice sheet. They were instructed to do this daily for the subsequent week.

In the second training session subjects were given more information about the nature of self-talk and some of the conditions under which it becomes more apparent. The need for careful attention to inner dialogue was emphasized. Some sample activating events and associated feelings were presented so that subjects would have practice identifying some of the self-talk that may be occurring. Opportunities were available for subjects to share their own sample situations if they wished.

Definitions for self-defeating and self-enhancing statements were presented in the third training session. Some clues to assist in differentiating between self-enhancing and self-defeating thoughts were given. Sample situations were provided and subjects were requested to suggest appropriate self-enhancing and self-defeating statements using the rational analysis practice sheet. (Steinmetz, Blankenship, Brown, Hall, & Miller, 1980). See Appendix D for more details of training sessions and a copy of the practice sheet.



Therapist

This study was conducted within the context of a communication and interpersonal skills course taught by the author. (The author acted as trainer for both training groups.) The author is completing a master's degree in counselling, has a bachelor's degree in nursing, diplomas in general and psychiatric nursing and a number of years of clinical experience in mental health settings. She has also practiced meditation for at least fifteen years.

## CHAPTER 4

## DATA ANALYSIS AND CONCLUSIONS

In this study data was obtained from 24 subjects on 16 subscales of the POI and ten subscales of the SOSI. A total SOSI score was also obtained. All 24 subjects completed the training and reported for post testing. The research hypotheses, results of statistical analysis and conclusions are presented in this chapter.

Missing Data

On five of the SOSI scales, one case was deleted due to missing data. The subject omitted two pages of the questionnaire. In one of the POI scales two cases were deleted due to missing data. Scores for the scales were completed using the remaining cases.

HypothesesHypothesis #1

It was hypothesized that mindfulness training and cognitive training will be equally effective in enhancing psychological well-being as evidenced by pretreatment and post treatment score comparisons on the subscales of the POI.

Results. Table 2 presents the means and standard deviations for the pre and post testings for the two treatment groups for all the subscales of the POI.

Table 2  
Means and Standard Deviations for Subjects POI Scores

POI Subscale	Group	n	Time		Mean	S.D.	Mean	S.D.	Marginals		
			Pre test							Post test	
			Mean	S.D.						Mean	S.D.
Innerdirected Support	Mindfulness	12	85.66	11.97	93.41	12.10	89.54				
	Cognitive	12	91.66	13.89	96.33	12.10	94.00				
	Column Marginals		88.66		94.87						
Time Competence	Mindfulness	12	17.00	2.17	17.33	3.31	17.16				
	Cognitive	12	16.66	3.84	17.75	3.69	17.20				
	Column Marginals		16.83		17.54						
Values Self- Actualizing	Mindfulness	12	20.75	3.16	22.50	2.11	21.62				
	Cognitive	12	20.41	3.52	20.75	3.07	20.58				
	Column Marginals		20.58		21.62						
Existentiality	Mindfulness	12	21.08	4.88	23.66	4.75	22.37				
	Cognitive	12	23.16	4.97	24.25	3.84	23.70				
	Column Marginals		22.12		23.95						
Feeling Reactivity	Mindfulness	12	16.08	3.75	17.50	3.55	16.79				
	Cognitive	12	17.50	2.81	18.25	2.00	17.87				
	Column Marginals		16.79		17.87						
Spontaneity	Mindfulness	12	12.66	2.80	13.91	2.42	13.29				
	Cognitive	12	12.75	2.30	14.16	2.36	13.45				
	Column Marginals		12.70		14.04						
Self-Regard	Mindfulness	12	12.58	2.39	13.25	2.22	12.91				
	Cognitive	12	13.25	3.10	13.91	2.19	13.58				
	Column Marginals		12.91		13.58						
Self-Acceptance	Mindfulness	12	14.41	2.67	15.41	3.08	14.91				
	Cognitive	12	16.91	3.70	19.50	3.82	18.20				
	Column Marginals		15.66		17.45						
Nature of Human Kind	Mindfulness	12	12.16	1.64	13.50	1.56	12.83				
	Cognitive	12	11.33	1.43	12.00	1.95	11.66				
	Column Marginals		11.75		12.75						
Synergy	Mindfulness	12	7.33	1.37	8.00	0.95	7.66				
	Cognitive	12	6.83	1.46	7.00	1.34	6.91				
	Column Marginals		7.08		7.50						
Acceptance of Aggression	Mindfulness	12	16.25	4.09	17.75	3.79	17.00				
	Cognitive	12	19.00	3.46	19.25	2.70	19.12				
	Column Marginals		17.62		18.50						
Capacity for Intimate Contact	Mindfulness	12	18.75	4.20	20.66	4.65	19.70				
	Cognitive	12	20.75	4.59	22.08	3.11	21.41				
	Column Marginals		19.75		21.37						
Time Incompetence	Mindfulness	11	6.18	1.99	6.18	2.92	6.18				
	Cognitive	11	6.72	3.66	5.27	3.60	6.00				
	Column Marginals		6.45		5.72						
Outer Directed Support	Mindfulness	12	39.58	11.31	33.50	12.13	36.54				
	Cognitive	12	35.08	14.06	29.50	12.35	32.29				
	Column Marginals		37.33		31.50						
Time Ratio	Mindfulness	12	0.35	0.24	0.51	0.59	0.43				
	Cognitive	12	0.48	0.57	0.65	0.61	0.57				
	Column Marginals		0.42		0.58						
Support Ratio	Mindfulness	12	0.24	0.10	0.34	0.21	0.29				
	Cognitive	12	0.30	0.16	0.35	0.16	0.33				
	Column Marginals		0.27		0.34						

Figures 1 and 2 provide profiles of the POI subscale means for the pre and post testings of the two treatment groups.

Data from the POI subscales was analysed using a two-way analysis of variance for repeated measures. The between subjects factor was Group (mindfulness, cognitive) and the within subjects factor was Time (pretest and posttest). Although each subscale was analysed, only those subscales demonstrating significant results will be discussed. Specifically, no significant within or between group differences were found in the time, self-regard, synergy and acceptance of aggression subscales. However some significant between or within group differences were found in the support, self-actualizing value, existentiality, feeling reactivity, spontaneity, self-acceptance, nature of man, capacity for intimate contact and on the time and support ratio subscales. The Summaries of Analysis of Variance for these subscales are presented in Appendix E. The subscales are discussed below.

Inner Directed Support Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change toward increased inner directedness from pretesting to posttesting  $F(1,22) = 13.87$ ,  $p < 0.01$ . Inner directedness measures the degree to which an individual is guided by inner principles, forces, motivations (Shostrom, 1974).

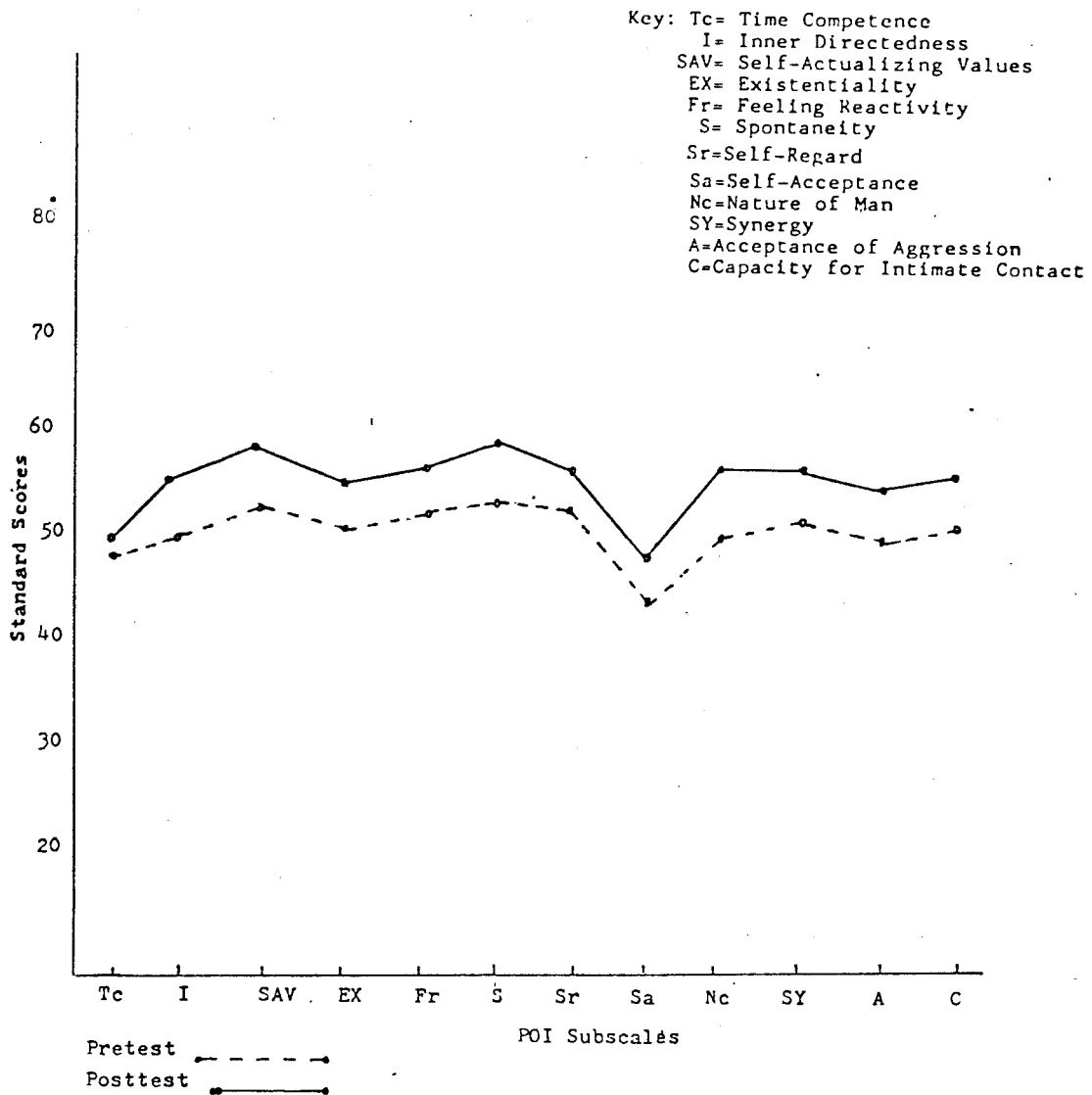


Figure 1 Profile of POI Subscale Means for Mindfulness Group Before and After Training

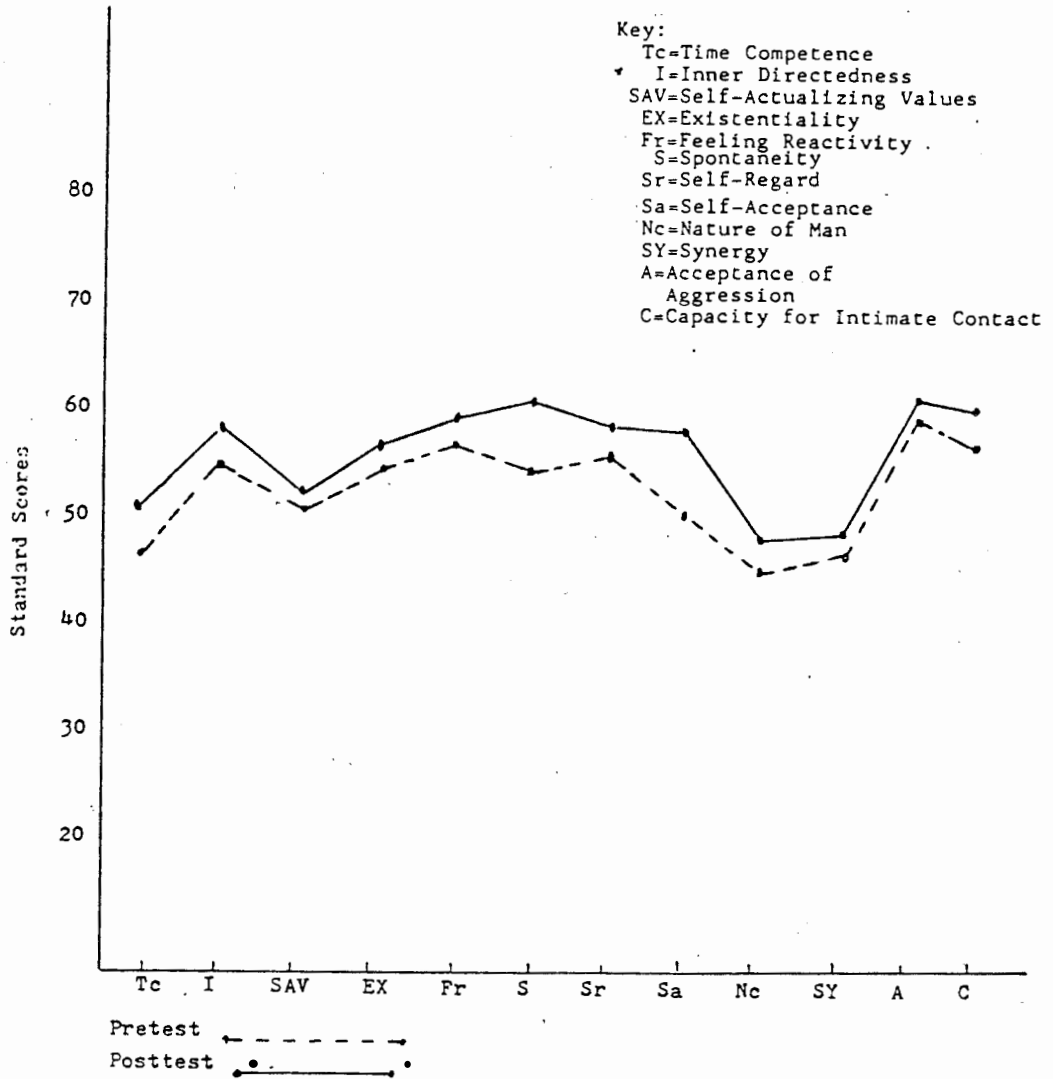


Figure 2 Profile of POI Subscale Means for Cognitive Group Before and After Training

Self-Actualizing Value Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change towards increased affirmation of self-actualizing values from pre testing to post testing  $F(1,22) = 6.30, p = 0.02$ . The self-actualizing value scale was derived from Maslow's concept of self-actualizing people and measures the degree to which one affirms the primary values of self-actualizing people (Shostrom, 1974).

Existentiality Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change toward greater flexibility in applying values and principles to one's life from pre testing to post testing  $F(1,22) = 6.21, p = 0.02$ . The existentiality scale measures one's flexibility in applying values and principles to one's life (Shostrom, 1974).

Feeling Reactivity Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change toward greater sensitivity to their own needs and feelings from pre testing to post testing.  $F(1,22) = 6.01, p = 0.02$ . Shostrom (1974) says that feeling reactivity measures the sensitivity of responsiveness to one's own needs and feelings.

Spontaneity Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change toward an increased ability to express feelings in spontaneous action from pre testing to post testing  $F(1,22) = 8.44, p < 0.01$ . Spontaneity measures freedom to express feelings behaviourally or to be oneself (Shostrom, 1974).

Self-acceptance Scale. There was a significant effect for Group on this variable indicating that the cognitive group was more self-accepting than the mindfulness group.  $F(1,22) = 6.82, p = 0.01$ . There was also a significant effect for Time indicating that both groups experienced a change toward an increased acceptance of themselves from pre testing to post testing  $F(1,22) = 11.08, p < 0.01$ . Self-acceptance measures affirmation of oneself in spite of weaknesses (Shostrom, 1974).

Nature of Man Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change toward a more constructive view of man from pre testing to post testing  $F(1,22) = 12.18, p < 0.01$ . The nature of man scale measures the degree to which the person sees man as essentially good (Shostrom, 1974).

Capacity for Intimate Contact Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change toward increased ability to develop



meaningful intimate relationships from pre testing to post testing  $F(1,22) = 8.52$ ,  $p < 0.01$ . Capacity for intimate contact measures ability to develop intimate relationships with others without being burdened by expectations and obligations (Shostrom, 1974).

Outer Directed Support Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change toward decreased dependence on the opinions and values of others from pre testing to post testing  $F(1,22) = 12.14$ ,  $p < 0.01$ . Other directedness measures the degree to which the individual is influenced by peer group, authority figures or other external forces (Shostrom, 1974).

Time Ratio Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change towards living more fully in the here-and-now from pre testing to post testing  $F(1,22) = 5.67$ ,  $p = 0.02$ . The time ratio is the ratio of time incompetence to time competence and measures the degree to which a person is present oriented (Shostrom, 1974).

Support Ratio Scale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a change toward having a more autonomous self-supportive orientation from pre testing to post testing  $F(1,22) = 4.84$ ,  $p = 0.04$ . The support ratio reflects the balance of other to inner directed-ness.

This balance is a relationship between being dependent upon and supported by other people's views and being independent and self-supportive (Shostrom, 1974).

Conclusion. The results of this study support the hypothesis that mindfulness training and cognitive training will be equally effective in enhancing psychological well-being. It must be noted however that significant results were found in most but not all of the POI subscales. Significant time effects were found in the time and support ratios, and the subscales support, self-actualizing values, existentiality, feeling reactivity, spontaneity, self-acceptance, nature of man, and capacity for intimate contact. No significant differences were found in the time, self-regard, synergy and acceptance of aggression subscales.

#### Hypothesis #2

It was hypothesized that mindfulness training and cognitive training will be equally effective in reducing the frequency of stress symptoms experienced by subjects as evidenced by pre treatment and post treatment score comparisons on the subscales of the SOSI.

Results. Table 3 presents the means and standard deviations for the pre and post testings of the two treatment groups for all the subscales of the SOSI as well as for the total SOSI score. Figures 3 and 4 provide profiles of the SOSI subscale means for the pre and post testings of the two treatment groups.

Table 3  
Means and Standard Deviations for Subjects' SOSI Scores

SOSI Subscale	Group	n	Time		Post test		Row Marginals
			Pretest Mean	S.D.	Mean	S.D.	
Peripheral	Mindfulness	12	7.000	4.264	4.333	3.229	5.56
	Cognitive	12	5.500	4.338	4.000	3.618	4.75
	Column Marginals		6.250		4.167		
Cardiopulmonary	Mindfulness	12	10.333	4.519	6.833	4.783	8.58
	Cognitive	12	7.833	5.391	6.667	8.794	7.25
	Column Marginals		9.083		6.750		
Neural	Mindfulness	12	1.667	1.875	1.000	1.537	1.33
	Cognitive	12	1.333	1.923	1.000	1.758	1.16
	Column Marginals		1.500		1.000		
Gastrointestinal	Mindfulness	11	7.182	5.173	4.091	4.346	5.53
	Cognitive	12	5.333	5.483	3.000	3.717	4.16
	Column Marginals		6.217		3.522		
Muscle Tension	Mindfulness	11	8.818	5.076	6.636	5.143	7.72
	Cognitive	12	7.250	8.454	4.583	8.062	5.91
	Column Marginals		8.000		5.665		
Habit Patterns	Mindfulness	11	17.091	8.549	10.636	5.537	13.86
	Cognitive	12	12.917	8.764	8.750	8.667	10.83
	Column Marginals		14.913		9.652		
Depression	Mindfulness	12	8.583	7.740	5.167	5.906	6.87
	Cognitive	12	6.917	6.403	3.333	4.313	5.12
	Column Marginals		7.750		4.250		
Anxiety	Mindfulness	11	9.636	7.366	5.545	3.804	7.59
	Cognitive	12	9.083	7.342	4.833	4.783	6.95
	Column Marginals		9.348		5.174		
Anger	Mindfulness	12	10.833	5.797	5.833	5.167	8.33
	Cognitive	12	11.000	7.084	5.583	7.465	8.29
	Column Marginals		10.917		5.708		
Cognitive Disorganization	Mindfulness	12	6.000	3.954	4.250	2.340	5.12
	Cognitive	12	5.667	3.822	3.000	3.104	4.33
	Column Marginals		5.833		3.625		
Total	Mindfulness	11	90.091	39.521	55.909	29.327	73.00
	Cognitive	12	72.833	48.682	44.750	45.444	58.79
	Column Marginals		81.087		50.087		

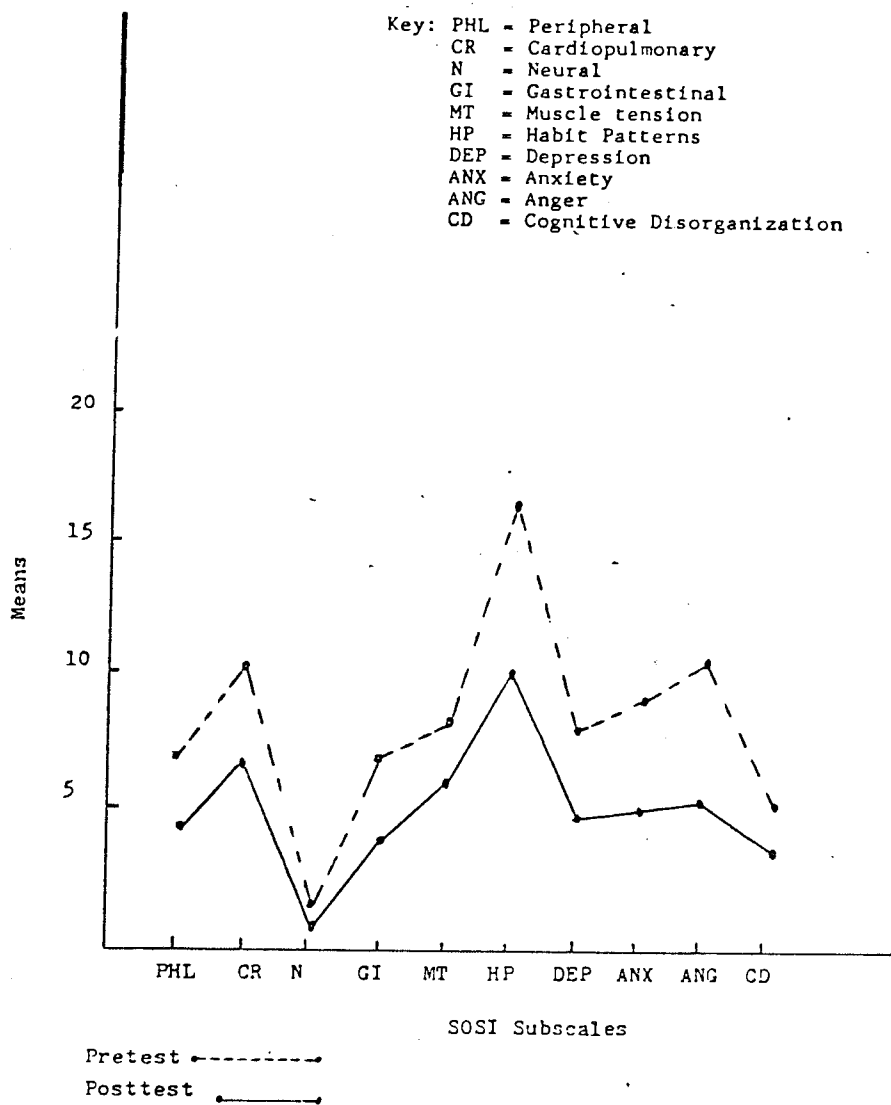


Figure 3 Profile of SOSI Subscale Means for Mindfulness Group Before and After Training

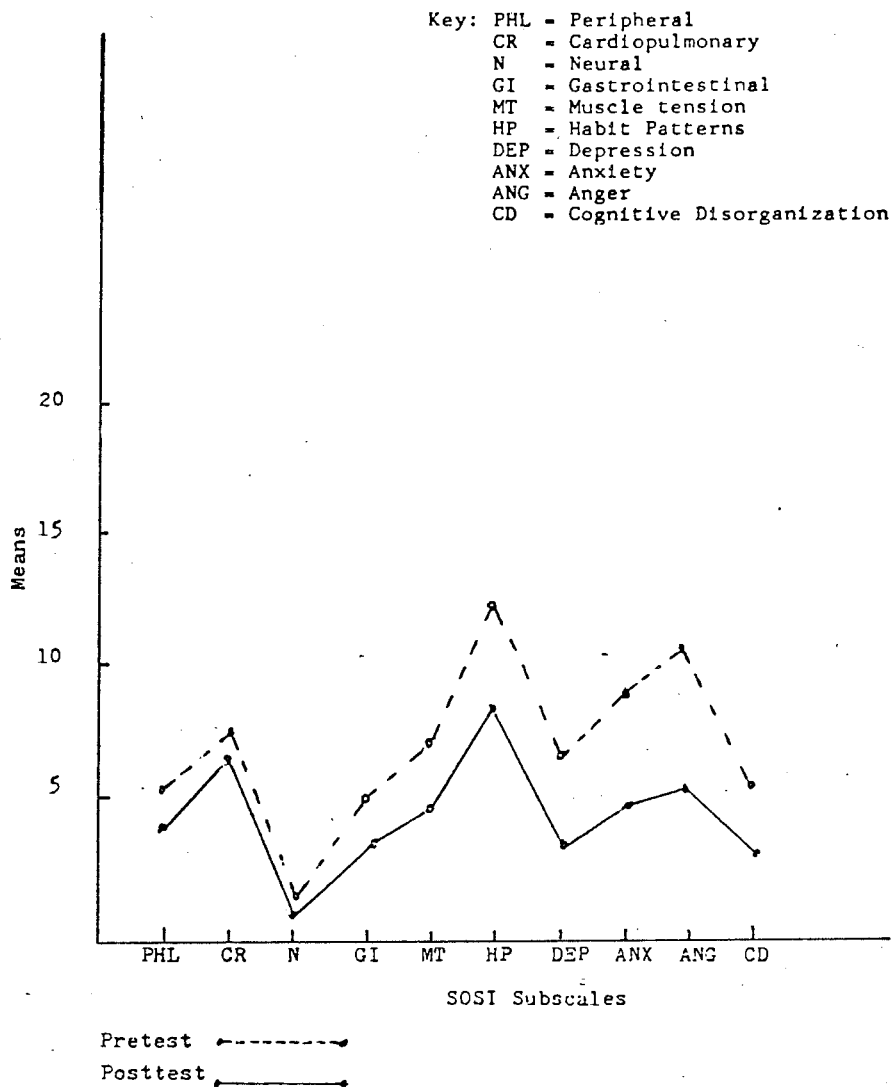


Figure 4 Profile of SOSI Subscale Means for Cognitive Group Before and After Training

Data from the SOSI subscales was analysed using a two-way analysis of variance for repeated measures. The between subjects factor was Group (mindfulness, cognitive) and the within subjects factor was Time (pretest, posttest). Although each subscale was analysed, only those subscales demonstrating significant results will be discussed. Specifically, no significant differences were found in the cardio pulmonary and neural subscales. However significant differences were found in the peripheral, gastrointestinal, muscle tension, habit patterns, depression, anxiety, anger and cognitive dis-organization subscales and in the total SOSI scores. The Summaries for Analysis of Variance on these subscales and the total SOSI scores are presented in Appendix F and are discussed below.

Peripheral Subscale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a decrease in peripheral symptoms from pre testing to post testing  $F(1,22) = 8.89, p < 0.01$ . Peripheral symptoms include flushing of the face, severe itching and skin rashes, cold hands or feet and hot or cold spells.

Gastrointestinal Subscale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a decrease in gastrointestinal symptoms from

pretesting to posttesting  $F(1,21) = 18.13, p < 0.01$ .

Gastrointestinal symptoms include indigestion, nausea, severe pains in the stomach, increased or poor appetite, loose bowel movements, constipation and heartburn.

Muscle Tension Subscale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a decrease in muscle tension from pretesting to posttesting  $F(1,21) = 14.89, p < 0.01$ . Symptoms of muscle tension include feelings of tension, stiffness, soreness or cramping in the neck, jaw, shoulders, forehead, eyes, hands, arms, legs, abdomen or stomach.

Habit Patterns Subscale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced changes in habit patterns from pretesting to posttesting  $F(1,21) = 20.10, p < 0.01$ . Symptoms reflecting habit patterns include fidgeting, pacing, increased eating or smoking, nail-biting, early morning waking, urinary frequency, changes in sexual relationship.

Depression Subscale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a decrease in depressive symptoms from pretesting to posttesting  $F(1,21) = 15.12, p < 0.01$ . Symptoms of depression

include feeling alone, sad, unhappy, like crying easily, that one wishes they were dead, and life is hopeless.

Anxiety Subscale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a decrease in anxiety symptoms from pretesting to posttesting  $F(1,21) = 11.6, p < 0.01$ . Symptoms of anxiety include worrying about one's health, stuttering or stammering, shaking or trembling, feeling keyed up, jittery, weak, being uneasy and apprehensive.

Anger Subscale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a decrease in symptoms of anger from pretesting to post testing  $F(1,22) = 30.29, p < 0.01$ . Symptoms of anger include little things getting on one's nerves, being easily annoyed and irritated, wanting to strike something, little annoyances building up until one explodes.

Cognitive Disorganization Subscale. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a decrease in symptoms of cognitive disorganization from pre testing to post testing  $F(1,22) = 13.49, p < 0.01$ . Symptoms of cognitive disorganization include



getting directions and orders wrong, doing things very slowly to avoid mistakes, being unable to keep thoughts from running through one's mind, becoming suddenly frightened for no good reason and having difficulty concentrating.

Total SOSI Score. There were no significant main effects for Group on this variable. There was however a significant effect for Time indicating that both groups experienced a decrease in frequency of total symptoms of stress from pretesting to posttesting  $F(1,22) = 44.83$ ,  $p < 0.01$ . The total SOSI score is a summation of the frequency designations for each of the items of the subscales.

Conclusion. The results of this study support the hypothesis that mindfulness training and cognitive training will be equally effective in reducing the frequency of stress symptoms. It must be noted however that significant results were found in most but not all of the SOSI subscales. Significant time effects were found in the peripheral, gastrointestinal, muscle tension, habit patterns, depression, anger and cognitive disorganization subscales but not in the cardiopulmonary and neural subscales. Significant results were also found in the total SOSI scores.

#### Additional Data

##### Pre training Survey

Appendix G presents the response frequencies for the core training survey items.

Of the 12 subjects in the meditation group three had practised some form of meditation. Of the 12 subjects in the cognitive group, five had practised some form of meditation.

All 12 subjects in the meditation group claimed to have spent some time trying to become aware of their self talk. In the cognitive group eight made a similar claim.

In the meditation group, seven claimed some previous knowledge of meditation. In the cognitive group six made a similar claim.

Data from the pretraining survey suggests that subjects in both groups were similar with respect to past experience.

On the expectation factor, eight members of the meditation group did not know how effective cognitive training would be and 11 in the cognitive group made a similar response. Six in the meditation group and five in the cognitive group did not know how effective meditation would be.

The expectation factor was higher in the meditation group in that five people expected that meditation would have some effect whereas only one person in the cognitive group expected that cognitive training would have some effect. This difference in expectation did not appear to have influenced the outcome.

### Conclusions

Two types of data were obtained for assessing the treatment effects of mindfulness meditation and cognitive training.

The results indicate that there was no difference between treatment effects as hypothesized.

It can be concluded that mindfulness training and cognitive training were equally effective in enhancing psychological well being. Both training methods were equally effective in increasing the subjects' affirmation of self-actualizing values, in promoting a greater degree of sensitivity to their own needs and feelings and in increasing spontaneity. Subjects in both groups experienced an increased acceptance of themselves and an increased capacity for intimate contact. Subjects in both groups also experienced a change toward being able to live primarily in the present and were increasingly guided by inner principles and values while at the same time being influenced by external forces.

Data indicated that there was a significant difference between the two training groups on the self-acceptance variable. The pre and posttest means for the mindfulness group were both lower than the pretest mean of the cognitive group. However, the fact that there was no significant interaction suggests that the two treatments were equally effective in increasing self-acceptance.

The results from the SOSI measure indicate that mindfulness training and cognitive training were equally effective in reducing the frequency of symptoms of stress,

specifically peripheral, gastrointestinal and muscle tension symptoms as well as symptoms reflecting habit patterns, depression, anxiety, anger and cognitive disorganization.

Discussion of the results, implications arising from the study and some directions for future research in this area are offered in Chapter 5.

CHAPTER 5  
DISCUSSION, IMPLICATIONS AND DIRECTIONS  
FOR FUTURE RESEARCH

Several important issues were addressed in this study. Previous studies reported earlier in this thesis have indicated that self-awareness procedures produce changes in various aspects of mental well-being. This study was designed to determine the differential effectiveness of a meditative type of self-awareness strategy and a cognitive type strategy in producing changes in mental well-being. In this chapter the results of this study are considered, implications are discussed and recommendations for future directions in research are presented.

Discussion

The results of this study indicate that a meditative self-awareness strategy is equally effective to a cognitive self-awareness strategy in producing changes in personality variables as measured by the POI or in reducing a range of stress-related symptoms. Both strategies produced significant changes in a positive direction on all but three subscales of the POI and on all but two subscales on the SOSI. This result supports previous findings that increased self-awareness of mental processes appears to be accompanied by an increase in mental and physical well-being. Since

there were no significant differences between training methods it can be deduced that perhaps the training methods used were of secondary importance to some other factors. It may be that the reactive affects of self-observation in mental processes are conducive to health and well-being (Assagioli, 1971; Deatherage, 1980). It could also be that the training of attention is a more important factor in the results than the training methods used since both methods involve some kind of attentional training. Shapiro (1980) has defined meditation as a means for training attention. Cognitive training involves training the mind to attend to particular mental content.

Another possibility hinges around the observation that both training methods possessed as a common factor the development of insight. Perhaps the development of insight is a more important factor in increasing health and well being than a particular training method. Further component analysis studies will be necessary to address these possibilities.

Since both training methods operate in different modes of consciousness, it is possible that training methods reflecting these modes of consciousness may produce differential effects. This study does not support such an hypothesis.

Another factor that has been important in previous

meditation studies is the expectation effect (Otis, 1974; Smith, 1976; Shapiro, 1980). Since there were no significant differences in outcomes for both training groups one could conclude that the changes observed may be due to the expectational effect. Subjects' expectations were assessed prior to training and it was found that approximately 21% thought the cognitive training would have some effect and 41 percent thought the meditation would have some effect. Based on these observations alone, one would suspect that the meditation training would produce a stronger effect. The fact that this did not occur suggests that expectancy was not a major factor in this study, or that in the least, the expectancy effects were consistent across groups.

#### Limitations of the Study

The conclusions drawn from the data presented are subject to a number of limitations. These limitations are discussed in terms of assessment procedures, lack of control group, absence of follow-up, sample size and training procedure.

#### Assessment Procedures

Two types of data were used to assess the comparative effectiveness of the two training methods, a self-report inventory of symptoms of stress and a self-report measure of dimensions of mental health. Since both dependent

measures were of a self-report nature there was no direct measure of behavioural changes occurring as a result of training. The changes in stress-related symptoms could have been monitored in terms of physiological parameters such as pulse, blood pressure, hand temperature, galvanic skin response or symptom records such as headache charts or cognitive variables such as self-talk diaries. The changes measured by the POI were related to attitudes and values and therefore developing an objective tool would be a much more difficult undertaking. However including some objective measures of change would strengthen future research.

#### Lack of Control Group

A control group was not considered essential since it had been established by previous research findings that both training methods produced changes in mental well being. The purpose of this study was to identify differential effects. The results of this study would suggest that the inclusion of a control group may have provided useful information as to other possible factors influencing outcomes. For example, perhaps the completion of the test measures in itself produced some effect. Both measures could have produced an increased level of awareness in subjects.

#### Absence of Follow-up

Another limitation involves the lack of follow-up. Although incorporating a follow-up procedure in the design was considered, the nature of the experimental setting made



this difficult to achieve. Subjects were in the final term of their educational program on campus and would thereafter be much less available for follow-up testing.

### Sample Size

There were 24 subjects in this study. The smallness of the sample places the results in question. There was little control over this since subjects were asked to volunteer for the project. Sample size could be increased by repeating the project with similar groups of students on a subsequent semester.

### Training Procedure

The cognitive training procedure focused on the insight component of cognitive restructuring. Expansion of the training to include rehearsal of coping statements may enhance the effectiveness of the cognitive training. There was very little focus on underlying beliefs proposed by Ellis (1979) as important for a cognitive restructuring approach to behaviour change. Adjustment of the training program to more strongly emphasize this aspect of training could also increase the effectiveness of the cognitive training.

When considering the results of this study, any conclusions are limited by the following factors. Subjective data only was collected. A control group was not used, follow-up data was not collected and sample size was small. Also, limiting the components of the training

procedure may have had an effect on the results.

### Implications

The results of this study suggest that teaching college students to become more aware of their mental processes can have a positive effect on mental and physical well-being. Such a finding has implications for curriculum content, student counselling and noncurriculum activities such as alternate educational experiences.

### Curriculum Content

This study was conducted as a course assignment in a psychiatric nursing program as part of a communications skills course. It is therefore possible to incorporate the teaching of self-awareness strategies into a college curriculum. The participants' comments on a course evaluation indicated that they perceived the self-awareness assignment to be beneficial in terms of increasing their sense of well-being. Individual benefits to participants were also indentified such as assisting to control stressful situations, feeling more in control of their lives, feeling more confident. The inclusion of self-awareness strategies could also enhance the communication skills of students since some of the outcomes were increased spontaneity, self-acceptance and capacity for meaningful relationships with other people.

The results of this study suggest that courses or

training programs in stress reduction and personal development which included a cognitive strategy and/or a meditative strategy would be a beneficial addition to college programs generally.

### Student Counselling

The results of this study would suggest that cognitive and meditative strategies could be useful in individual student counselling situations. Students who were experiencing problems coping with the many stressful aspects of student life could benefit as could students who were interested in enhancing their interpersonal effectiveness and developing their potential for enhanced mental well-being.

### Alternate Educational Experiences.

Alternate educational experiences in self-awareness could be offered to students as part of extracurricular activities in a similar manner to sports and physical fitness programs. These experiences could be offered as adult education courses in community education programs and through T.V. knowledge networks. They could also be offered through independent study materials.

### Conclusion

The results of this study seem to support the claims of previous researchers (O'Haire & Marcia, 1980) that the practice of a meditative or a cognitive self-awareness technique enhances psychological well-being.

Since there were no significant differences between training methods no further light has been thrown on the question of what the active and receptive modes of consciousness contribute to the effectiveness of self-awareness training. This suggests that perhaps the differences between the receptive and active modes is less distinct than initially supposed, and/or that the meditation and the cognitive procedures are perhaps less "pure" exemplars of one camp or the other.

Scientific inquiry into the myriad activities of the mind and consciousness has been very limited. We have little scientific knowledge about what Brown (1983) refers to as "the ultimate activity of thought - the faculty for introspection, for self-awareness, for self-analysis and for analyzing one's own thought processes". (p. 18) We know little about the possible presence of a sane healthy center of our being, about possible inner sources of integration and harmony (Ferguson, 1980) or about the nature of a particular kind of awareness in the human being called consciousness (Ouspensky, 1951).

The recent emergence of a science of consciousness (Pelletier, 1978) may provide further information about the untapped sources of mind. Such information may provide clarification of the processes which contribute to the effectiveness of self-awareness training in promoting health and well-being.

APPENDIX A  
PARTICIPANT INFORMATION SHEET  
AND CONSENT FORM

In the Spring of 1983 Yvonne Greene, graduate student in counselling at Simon Fraser University will be conducting a research project. The purpose of this project is to teach the systematic self-observation of mental processes and to explore the effects of such teaching on mental well-being. Two different methods of self-observation will be compared. One of these methods is based on cognitive psychology and the other is derived from Eastern psychology.

Before and after training physiological and psychological responses to stress will be measured as will personal attitudes and values.

The entire process will involve four scheduled one hour training sessions as well as the completion of pre and post training questionnaires. During the four training weeks participants will be expected to practice the technique at their own convenience.

At the end of the project participants will have learned a procedure that will help them to be more aware of their own mental processes and enhance their level of mental well-being.

This project has been approved by the University Ethics Committee at Simon Fraser University.

CONSENT FORM

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I, \_\_\_\_\_ have read the accompanying information sheet and agree to take part in a self-monitoring of mental processes research project.

I understand my participation will involve completing a checklist providing information about my physiological and psychological responses to stress, the Symptoms of Stress Inventory and an inventory providing information about my attitudes and values, the Personal Orientation Inventory.

The data obtained during the project will be kept confidential. My responses will be coded on a computer file for the purpose of data analysis and the original responses will then be destroyed.

I understand that I can obtain the results from my questionnaire and a copy of the results of the research project by contacting Yvonne Greene.

I understand that I am free to decide the degree to which I will follow the techniques outlined to me.

I understand that if I have any concerns or questions about the project I can telephone Y. Greene at 584-0595 or 434-5734, Local 568.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

APPENDIX B  
PRETRAINING QUESTIONNAIRE



PRE-TRAINING QUESTIONNAIRE

I.D.

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			5
1	2	3	4

The purpose of this questionnaire is to obtain some information about your experience with meditation and cognitive psychology. Please circle the answer that best represents your response to the questions below.

1.0 Have you ever practised any form of meditation? 1. yes 5  
If yes, go to question 1.1 2. no  
If no, go to question 2.0

1.1 Are you still meditating? 1. yes 6  
2. no

1.2 What form of meditation do you use? 1. T.M. 7  
Please circle all that apply. 2. Zen 8  
3. Insight 9  
4. Ben-sen's method 10  
5. Other. 11  
Specify

1.3 If you are no longer practising, why did you stop? 1. No time 12  
Please circle all that apply. 2. Disappointed with results. 13  
3. Having difficulty. 14  
4. Lost interest 15  
5. Other 16  
Specify

2.0 Do you have any knowledge of meditation? 1. yes 17  
If yes, please elaborate. 2. no

- |     |   |                 |           |
|-----|---|-----------------|-----------|
| 3.0 | Have you ever spent time trying to become aware of your self-talk, i.e. what you are thinking or saying to yourself?<br>If yes, go to question 3.1<br>If no, go to question 4.0 | 1. yes<br>2. no | Col<br>18 |
| 3.1 | Did you do this in a<br>1. systematic way<br>2. casual way  |                 | 19        |
| 3.2 | Was this under the direction of a trained person?   | 1. yes<br>2. no | 20        |
| 4.0 | Do you have any knowledge of cognitive psychology? If yes, please elaborate.  | 1. yes<br>2. no | 21        |
| 5.0 | If you are assigned to the "cognitive" training group, how effective do you think the training will be in helping you become more aware of yourself?                            |                 | 22        |
|     | 1. Not effective  |                 |           |
|     | 2. A little bit effective   |                 |           |
|     | 3. Don't know   |                 |           |
|     | 4. Moderately effective   |                 |           |
|     | 5. Extremely effective  |                 |           |
| 6.0 | What kinds of effects (see below) do you think training might have on your life? Please circle all that apply.  |                 |           |
|     | 1. Help me to be more relaxed.  |                 | 23        |
|     | 2. Help me to be more confident.  |                 | 24        |
|     | 3. Help me to be more in control of my life.  |                 | 25        |
|     | 4. Other  |                 | 26        |
|     | 5. Cannot decide  |                 | 27        |
| 7.0 | If you are assigned to the "mindfulness meditation" training group, how effective do you think the training will be in helping you become more aware of yourself?               |                 | 22        |
|     | 1. Not effective.   |                 |           |
|     | 2. A little bit effective   |                 |           |
|     | 3. Don't know.  |                 |           |
|     | 4. Moderately effective.  |                 |           |
|     | 5. Extremely effective.   |                 |           |

8.0 What kind of effects (see below) do you think "mindfulness" training might have on your life? Please circle all that apply.

- |  |    |
|--|----|
| 1. Help me to be more relaxed                | 23 |
| 2. Help me to be more confident              | 24 |
| 3. Help me to be more in control of my life. | 25 |
| 4. Other                                     | 26 |
| 5. Cannot decide                             | 27 |

APPENDIX C  
OUTLINE FOR MINDFULNESS TRAINING SESSION

FIRST TRAINING SESSIONOVERVIEW AND RATIONALE

In the past fifteen years a new concept of the individual has begun to emerge within the Western scientific community. This concept has involved a new view of the individual's potential for self-regulation. Because of reports from India and the Orient detailing extraordinary feats of bodily control and altered states of consciousness by Zen and Yoga masters, Western science has begun to explore Eastern religions to determine whether some of their techniques such as meditation and yoga might have medical and therapeutic value in a Western setting.

Mindfulness meditation is a method for achieving and maintaining healthy mental states. It is an attempt to be responsive to all stimuli in the internal and external environment without dwelling on any particular response. Mindfulness is being aware of what is happening in the present moment, noticing the flow of things. One of its goals is to bring the mind to an experiential level rather than a conceptual one. Other goals are to bring about poise, equilibrium, to live more in the present moment. The term "mindfulness" implies a watching of every activity that the mind and body embark on and this sensation of being a watcher becomes stronger as continuity of mindfulness improves. Mindfulness in its elementary form is known as attention.

Many meditation techniques are methods for training attention.

The first important requirement in learning to control the mind is to restrict its activity.

Two basic exercises are the beginning of this restriction process - mindfulness of breathing and mindfulness of thoughts.

In mindfulness meditation the meditator directs his/her attention to the breath while simply noticing whatever thoughts and feelings may arise without getting caught up in them. As we observe our thoughts, (which graphically portray what is driving us) we get a very intimate sense of areas of our life where we are afraid, fixated or grasping too tightly. At the same time by releasing our attention from these concerns and coming back to the breath, we may also glimpse how we are already free from their grip. Thus mindfulness is a practice of letting go, dropping our problem-centered focus and returning to simply being there.

The orientation of mindfulness practice is not finding release but letting be. This practice of letting be - allowing thoughts and feelings to arise while continually coming back to one's sense of aliveness through the breath - is also a practice of letting oneself be vulnerable and open to whatever comes.

Mindfulness meditation does not require any ideology or belief system and so can be separated from its cultural context.

It is important to be aware that like any other discipline it takes practice and patience.

As long as it is practised according to instructions given there are no dangers involved. The only instances of adverse effects have been associated with over-meditation such as a three hour session instead of half hour over a period of time. Unusual experiences are common initially such as sudden sharp irritations and itching due to the restriction of the mind's activity and are a sign that the intensity of wandering thoughts has been reduced. The way to get over them is to ignore them or if they persist to temporarily focus attention and note "itching, itching".

Studies have shown that various forms of meditation can produce relaxation, a state of intense awareness of the environment and feeling of deep rest and quiet. It can bring about physiological changes such as slower heart rate and breathing and psychological changes such as decrease in anxiety and depression, increase in internal self-control, feelings of creativity, spontaneity and a sense of personal meaning in the world.

I'm wondering about your reactions to what I've said so far. Do you have any questions? (Discussion time). I'll read through the instructions for practising mindfulness of breathing and discuss any questions then we'll proceed with practice. Just listen to the instructions this first time through.

MINDFULNESS OF BREATHING INSTRUCTIONS

Choose a quiet environment where you will not be interrupted for a half hour.

Assume a sitting posture that is comfortable for you, keeping the back reasonably straight without being stiff or strained. If you are in a cramped or bent-over position you will more quickly become uncomfortable. You can sit in a chair if you like. The important thing is not to move very often. The eyes should be closed in a relaxed way.

We'll begin with practice of mindfulness of breathing. When you breathe in the abdomen naturally rises or extends and when you breathe out it falls. Keep your attention on the movement of the abdomen, not imagining not visualizing anything, just experiencing the sensation of the movement. Don't control or force the breath in any way, merely stay attentive to the rising falling movement of the abdomen. If these movements are not clear to you in the beginning, the place both hands on the abdomen to feel these rising and falling movements. After a time the upward movement of inhalation and the downward movement of exhalation will become clear.

It is helpful in the beginning of practice to make a mental note of "rising, falling". This helps in keeping the mind on the object. Remember however, it is not a breathing exercise; it is the beginning exercise of mindfulness. Never verbally repeat the words rising and falling



and do not think of rising and falling as words. Be aware only of the actual process of the rising and falling movement of the abdomen.

Avoid deep or rapid breathing for the purpose of making the abdominal movements more distinct, because this procedure causes fatigue that interferes with the practice. Just be totally aware of the movements of rising and falling as they occur in the course of normal breathing.

Since you are a beginner whose attentiveness and power of concentration are still weak, you may find it difficult to keep the mind on each successive rising movement and falling movement as it occurs. In view of this difficulty you may be inclined to think "I just don't know how to keep my mind on each of these movements". Then simply remember that this is a learning process. The rising and falling movements of the abdomen are always present, and therefore there is no need to look for them.

(DISCUSSION TIME)

Now follow the instructions as I read them to you.

(Read instructions again).

Continue to meditate quietly for the next ten minutes. I'll let you know when the time is up. (Quiet practice).

Let's go over some of the key points in practice. (Use Check List For Monitoring Mindfulness Practice - review items I-3.)

(Further practice if needed).

I'd like to go over the instructions for your practice at home and for recording in your log. (Use Mindfulness Training Instructions for Homework and Log Recording).

CHECKLIST FOR MONITORING MINDFULNESS PRACTICE

1. Have you chosen a quiet setting with few distractions?
2. Have you been sitting comfortably with back straight and eyes closed?
3. Have you been focusing attention on the rising and falling of the abdomen without making changes in your breathing and without focusing on the breath itself?
4. Did you have any difficulty with finding time to do your practice?
5. Did you do your recording immediately after practice?
6. Did you have any disturbing experiences?
7. Each time the mind has strayed have you noted the fact and brought the attention back to the breathing?
8. Have you been treating straying thoughts as obstacles or hindrances?
9. Have you mentally labelled each straying thought?

HOMEWORK INSTRUCTIONS FOR MINDFULNESS PRACTICE AND MONITORING

1. Practice mindfulness for one half hour daily according to instructions given in the training session.
2. Record the following on your monitoring sheet daily:
  - a) Date practiced
  - b) Setting
  - c) When recording done
  - d) Whether your attention strayed from your breathing
  - e) Any unusual experiences
  - f) Any changes in daily living
  - g) The kinds of mental activities you noticed
  - h) Any changes in nighttime dreaming
  - i) Any changes in breathing
  - j) Any periods of drowsiness during the half-hour
3. Submit your monitoring sheet at each weekly IPR lab.

I.D. No.

MINDFULNESS PRACTICE MONITORING SHEET

Date

- |  |  |
|--|--|
| <ol style="list-style-type: none"><li>1. Setting - Quiet<br/>Distraction free</li><li>2. Posture - Back straight<br/>Eyes closed</li><li>3. Amount of time spent</li><li>4. Changes in breathing eg.<br/>Attempts to Control</li><li>5. Changes in Nighttime dreaming</li><li>6. Periods of Drowsiness<br/>during Meditation</li><li>7. Unusual Experiences<br/>egs.</li><li>8. Attention straying from<br/>your breathing?<br/>eg. Sometimes, frequently</li><li>9. Have you made any changes<br/>in daily living?<br/>If yes, describe.</li><li>10. What kinds of mental events<br/>did you notice?</li><li>11. When was recording done?</li></ol> |  |
|--|--|

SECOND TRAINING SESSION

During this session I would like to do three things with you. I'd like to check the key points from last week's instructions regarding the mindfulness of breathing instructions and homework instructions. I'd like to look over your log-recording and give you instructions for practicing mindfulness of thoughts.

(Review items 1 - 6 on checklist. It may be necessary to review instructions and discuss utilization of time.)

I'll read mindfulness of thoughts instructions and discuss any questions then we'll proceed with practice. Just listen to the instructions this first time through.

Mindfulness of thoughts instructions

While occupied with the exercise of observing the abdominal movements, other mental activities may occur. They cannot be disregarded. A mental note must be made of each as it occurs. It is important to make thoughts the object of mindfulness also.

Be aware as thoughts arise, that the mind is thinking, without getting involved in the content, not going off on a train of association, not analyzing the thought and why it came, but merely be aware that at any particular moment "thinking" is happening. It is helpful to make a mental note of "thinking, thinking" every time a thought arises, without reaction to the content, without identifying with it,

without taking the thought to be I, or self, or mine. You will see that when there is a strong detachment from the thought process, thoughts don't last long. As soon as you are mindful of a thought, it disappears and the attention returns to the breath.

Thoughts should not be treated as obstacles or hindrances. Just let things happen as they do. Let all images and thoughts arise and pass away without being bothered, without reacting, without judging, without clinging, without identifying with them. Observe carefully all the waves coming and going. This attitude will quickly bring about a state of balance and calm. Don't let the mind get out of focus. As you are mindful of a thought it disappears and the attention returns to the breath.

Any questions or comments? (Discussion time)

Now follow the instructions as I read them to you. I'll begin with mindfulness of breathing and then on to mindfulness of thoughts.

(Read instructions for mindfulness of breathing and thoughts).

Continue to meditate for the next ten minutes. I'll let you know when time is up.

(Quiet practice.)

Let's go over some key points in practice.

(Use items 2, 3, 7)

(Further practice if needed.)

Follow your homework instructions and monitoring for the next week.

### THIRD TRAINING SESSION

During this session I would like to check the key points from last week's mindfulness instructions and homework instructions. I'd also like to look over your log recording and give you instructions regarding another aspect of mindfulness of thoughts, it is called "labelling".

(Review items 1-8 on checklist.)

#### Labelling

Sometimes when people are observing their mental activities they find it helpful to label the thinking process in a more precise way than just "thinking". It is helpful to note different kinds of thoughts whether "planning" or "imagining" or "anticipating" or "remembering." This sharpens the focus of attention. The non-judgemental naming of mental events might include remembering events from the past, fantasizing about or planning future events. Much of our mental time is spent in one or other of these two time dimensions, past or future. We may long for past days, indulge in vain regrets, relive incidents in the past, worry about events to come, anticipate how things might be.

In this next period of practice note what kinds of mental events occur for you. Don't get involved with the content, don't try to analyse the thought, just try to put a label on it. Don't condemn yourself for any of the things you observe. Just note them quietly and gently and then focus



the attention back on the rising and falling of the abdomen.

(Quiet practice.)

Let's go over some key points in practice.

(Use checklist items 6-9). Further practice may be needed with labelling.

Follow your homework instructions and monitoring for the next week.

APPENDIX D  
OUTLINE FOR COGNITIVE TRAINING SESSIONS

Content under the heading The Structure of Emotional Responses, Exercise III-1 and the Rational Analysis Practice Sheet are represented from the book *Managing Stress Before It Manages You* with the permission of the senior author Dr. J. Steinmetz.

## THE STRUCTURE OF EMOTIONAL RESPONSES

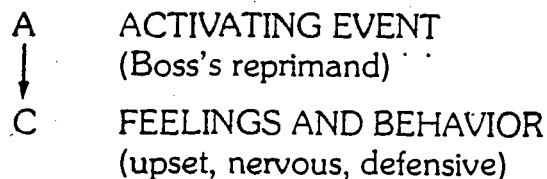
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### *The A-B-C's Model*

Many people think that thoughts, feelings and behavior are separate and distinct categories. You often hear people say things such as: "I have a gut-level feeling about this," or "I can't help the way I feel—it just happens." This assumes that thoughts and feelings occur independently and are not directly related. However, quite the opposite is true. Rarely does a feeling "just happen," and you do have the capability to change the way that you feel.

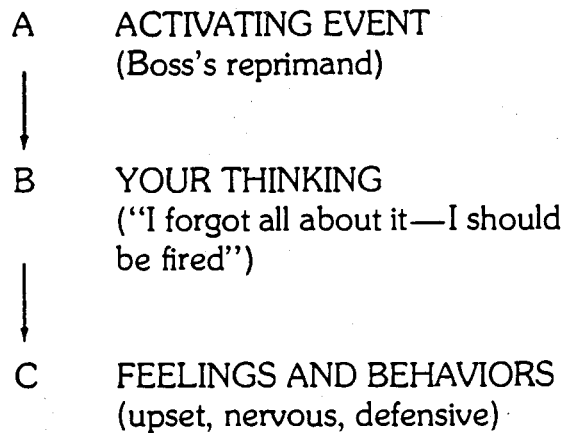
One model for examining the relationship between thoughts, feelings and behaviors was developed by Dr. Albert Ellis: the A-B-C model.

Point A in the ABC framework refers to the activating event. For example, your boss might reprimand you for failing to complete a project on time. Following this, you feel upset or nervous about your work-performance. Point C represents your feelings about the event. It also includes your *behavior*. For example, you might, upon being criticized, become defensive and retort back with: "Well, what do you think I am—a work horse?" Many people mistakenly believe that Point A—the event—leads directly to Point C—feelings and behavior:

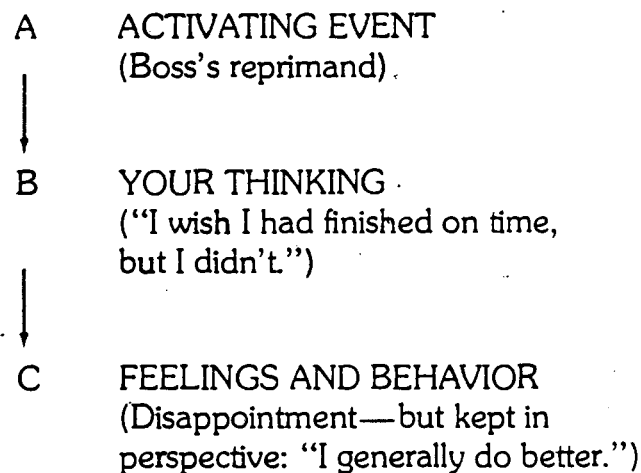


So it is the boss that makes you upset. After all, he did reprimand you, didn't he?

Something very important, however, occurs between A and C; and indeed, produces C. That something is Point B, our self-talk, and that self-talk influences our feelings and behavior.



Now we can see that the boss does begin the process, but that it is *your* own thinking that produces your feelings. The self-talk can be rational or irrational, functional or dysfunctional. Since even the best of us make errors and are unable to live up to our self-expectations, it is important to look at the sources of Point B, and our most common self-statements. These self-statements can become habitual responses to stress, like smoking or drinking coffee, and need to be changed—just like other undesirable habits. A different example of self-talk on *your* part would be:



Thus, one event can be perceived in a variety of ways and can result in a number of different emotional responses. It is not the stress event that makes you tense, but how you think of the event. Often our feelings of stress rise from thinking that is incorrect or irrational. For example, if our internal self-talk about failing at an attempted task is that it is not only unfortunate and inconvenient, but that it is *awful* and *catastrophic*, we are likely to experience feelings such as depression, anxiety, or tension.

## Exercise III-1

---

1. Is it the *facts and events* in our lives that upset us and lead to stress or the *view* that we take of them? Explain and give an example.

---

2. Do feelings always arise from within, or can other people *make us feel* a certain way? Explain.

---

3. Where do feelings come from?

---

4. How are our thoughts important in leading to our emotional responses?

---

5. Feelings of stress often arise from \_\_\_\_\_ thinking.

6. What is cognitive restructuring?

---

7. How can we use cognitive restructuring to reduce stress and alter unwanted emotional responses?

---

8. Fill in the outline below describing the A-B-C theory of human behavior.

A. \_\_\_\_\_

B. \_\_\_\_\_

C. \_\_\_\_\_

9. Think of the last time you were feeling a strong, unpleasant emotion. Write that emotion under C in the following diagram. Now, under A, write in the event that happened before the emotion occurred. Finally, under B, put your best guess as to what you were thinking between the event and the emotion. Was your thinking rational? Was it functional, i.e., did it help you?

A ACTIVATING EVENT

↓

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

B YOUR THINKING

↓

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

C FEELINGS AND BEHAVIOR

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Recognising that the way we think determines the way we feel is the most important message so far.

In order to bring about change in our self-talk it is important to attend to our inner dialogue. I am going to teach you a method for systematically observing your self-talk. This method is called Rational Self Analysis.

Before continuing with this however I would like to review the material we have covered so far.

I'm wondering about your reaction to what I've said so far.

(Use exercise for test for understanding of content.)

(Discussion time)

Doing a Rational Self-Analysis involves the use of the A-B-C model we have just discussed.

Let's practice using that.

(Give sample situations and have subjects identify A, B, C components.

Have subjects use examples from their own experience.

Give homework instructions.

HOMEWORK INSTRUCTIONS FOR OBSERVATION OF SELF-TALK

1. As often as possible during the day identify any strong emotion as it is occurring. Note as much of the activating event as possible and the kinds of things you are saying to yourself. As soon as possible write it up in the A B C format using your rational analysis practice sheet.
2. If you find you are not able to do this during the day as events occur set aside a half hour each day for this purpose.
3. If you have difficulty identifying the actual things you were saying at the time, make a note of this on your practice sheet and identify some of the things you think you could be saying.
4. Enter on the practice sheet in the appropriate column any additional thoughts about the situation you think may be relevant.
5. If you think you have noticed any changes in how you are experiencing situations make a note of this on your practice sheet too.
6. Be sure to date each entry on your practice sheet and write down the amount of time you spent doing the analysis.
7. Submit your practice sheet at your IPR lab session each week.



SECOND TRAINING SESSION

During this session I would like to check the key points in doing a Rational Self-Analysis and homework instructions, look over your log recording and spend some more time focusing on section B on the Self-Analysis exercise.

(Review items 1-3 on checklist.)

Self-talk

Talking to oneself or self-directed speech is often considered comical, if not aberrant. Only children and crazy people talk to themselves. On the contrary, self-directed speech is common, useful and often highly adaptive, and, during certain periods of life, routine and normal. For most adults however, self-directed speech is sub-vocal ie. silent, covert or mentally thinking in words.

Difficult situations make us more likely to use self-speech. Thus you are probably talking to yourself in precisely those situations that you find most fearful, most depressing or most difficult to cope with. Self-talk is often difficult to identify because it often occurs in a still small voice. It therefore requires careful attention.

Do you recall saying to yourself: "This is one of those parties where I don't know anybody." When you have labelled a party in this way you probably do what you always do at such parties - sit in a corner, leave early, feel bad. The things you have said to yourself have influenced the outcome for you.

I'm going to give you some activating events and associated feelings and I would like you to identify some of the self-talk that might be happening.

Follow your homework instructions and log recording for the next week.

CHECKLIST FOR MONITORING COGNITIVE PRACTICE

1. How much time are you spending each day?
2. Are you using the A B C format correctly and recording your analysis?
3. When are you doing the practice?
4. Are you identifying self-defeating and self-enhancing statements?
5. Are you experiencing difficulty identifying your self-talk?

During this session I would like to check the key points in doing a Rational Self-Analysis and homework instructions, look over your log recording and spend some time focusing on self-enhancing and self-defeating self-talk.

(Review items 1 - 4 on checklist.)

You may have noticed from your observations of your self-talk that one event can be perceived in a variety of ways and can result in a number of different emotional responses. For example if your internal self-talk about failing at an attempted task is that it is not only unfortunate and inconvenient, but that it is awful and catastrophic, you are likely to experience such feelings as depression, anxiety or tension.

If you think in this way your self-talk is likely to be self-defeating. For example, we may say such things as "I should be fired or how stupid I must have sounded." We could on the other hand say self-enhancing kinds of statements such as "I didn't do what I was supposed to this time but generally I do." What examples of self-enhancing and self-defeating statements do you have from your own experience?

A self-defeating thought is a distorted unproductive way to view a situation; a self-enhancing thought is a realistic productive interpretation of a situation or one-self.

Sometimes it's difficult to identify if our self-talk is self-defeating or self-enhancing. Some clues to identifying self-defeating thoughts may be helpful. It is not self-defeating for a person to express unhappiness with a situation which they do not like; it is self-defeating if the person assumes the situation should be different because they don't like it as it is. Another clue is that very strong unpleasant emotions often signal that the person is telling themselves something self-defeating. Other clues are the use of shoulds, awfuls, and overgeneralizations. The shoulds include such words as ought, must, have to.

I'll give you some examples to practice.

For your homework practice, follow the instructions for the last two weeks. Also when you are writing up the B part of your practice sheet identify whether your self statements are self-defeating or self-enhancing.

APPENDIX E  
SUMMARY OF ANALYSIS OF VARIANCE  
POI SUBSCALES

Summary of Analysis of Variance  
POI Subscale Inner Directed Support

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	238.50	1.	238.50	0.84	0.36
Subjects Within	6191.50	22.	281.43		
<u>Within Subjects</u>					
Time (B)	462.51	1.	462.51	13.87	< 0.01
Group x Time (AB)	28.54	1.	28.54	0.85	0.36
Subjects Within	733.50	22	33.34		

Summary of Analysis of Variance  
POI Subscale Self-Actualizing Values

Source	SS	df	MS	F	p
<u>Between Subjects</u>		23			
Group (A)	13.02	1	13.02	0.80	0.37
Subjects Within	354.96	22	16.13		
<u>Within Subjects</u>		24			
Time (B)	13.02	1	13.02	6.30	0.02
Group x Time (AB)	6.01	1	6.01	2.91	0.10
Subjects Within	45.45	22	2.06		



Summary of Analysis of Variance  
POI Subscale Existentiality

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	21.33	1	21.33	0.58	0.45
Subjects Within	802.58	22	36.48		
<u>Within Subjects</u>					
Time (B)	40.33	1	40.33	6.20	0.02
Group X Time (AB)	6.75	1	6.75	1.03	0.31
Subjects Within	42.91	22	6.49		

Summary of Analysis of Variance  
POI Subscale Feeling Reactivity

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	14.08	1	14.08	0.82	0.37
Subjects Within	373.58	22	16.98		
<u>Within Subjects</u>					
Time (B)	14.08	1	14.08	6.00	0.02
Group x Time (AB)	1.33	1	1.33	0.57	0.45
Subjects Within	51.58	22	2.34		

Summary of Analysis of Variance  
POI Subscale Spontaneity

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	0.33	1	0.33	0.03	0.85
Subjects Within	215.92	22	9.81		
<u>Within Subjects</u>					
Time (B)	21.33	1	21.33	8.44	< 0.01
Group x Time (AB)	0.08	1	0.08	0.03	0.85
Subjects Within	55.58	22	2.52		

Summary of Analysis of Variance  
POI Subscale Self-Acceptance

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	130.02	1	130.02	6.82	0.01
Subjects Within	419.29	22	19.05		
<u>Within Subjects</u>					
Time (B)	38.52	1	38.52	11.08	<0.01
Group x Time (AB)	7.51	1	7.51	2.16	0.15
Subjects Within	76.45	22	3.47		

Summary of Analysis of Variance  
POI Subscale Nature of Man

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	16.33	1	16.33	3.60	0.07
Subjects Within	99.66	22	4.53		
<u>Within Subjects</u>					
Time (B)	12.00	1	12.00	12.18	< 0.01
Group x Time (AB)	1.33	1	1.33	1.35	0.25
Subjects Within	21.66	22	0.98		

Summary of Analysis of Variance  
POI Subscale Capacity for Intimate Contact

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	36.02	1	35.02	1.11	0.30
Subjects Within	690.29	22	31.37		
<u>Within Subjects</u>					
Time (B)	31.68	1	31.68	8.52	< 0.01
Group x Time (AB)	1.02	1	1.02	0.27	0.60
Subjects Within	81.78	22	3.71		

Summary of Analysis of Variance  
POI Subscale Outer Directed Support

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	216.75	1	216.75	0.77	0.38
Subjects Within	6143.92	22	279.26		
<u>Within Subjects</u>					
Time (B)	408.32	1	408.32	12.14	< 0.01
Group x Time (AB)	0.75	1	0.75	0.02	0.88
Subjects Within	739.91	22	33.63		

## Summary of Analysis of Variance

## POI Subscale Time Ratio

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	0.21	1	0.21	0.42	0.52
Subjects Within	11.03	22	0.50		
<u>Within Subjects</u>					
Time (B)	0.32	1	0.32	5.67	0.02
Group x Time (AB)	0.00	1	0.000	0.00	0.94
Subjects Within	1.24	22	0.05		



Summary of Analysis of Variance  
POI Subscale Support Ratio

Source	SS	df	MS	F	p
<u>Between Subjects</u>					
Group (A)	0.01	1	0.01	0.42	0.52
Subjects Within	0.91	22	0.04		
<u>Within Subjects</u>					
Time (B)	0.06	1	0.06	4.84	0.03
Group x Time (AB)	0.00	1	0.00	0.64	0.43
Subjects Within	0.29	22	0.01		

APPENDIX F  
SUMMARY OF ANALYSIS OF VARIANCE  
SOSI SUBSCALES

Summary of Analysis of Variance  
SOSI Subscale Peripheral

Source	SS	df	MS	F	p
<b>Total</b>					
<u>Between Subjects</u>					
Group (A)	10.08	1	10.08	0.41	0.52
Subjects Within	536.83	22	24.40		
<u>Within Subjects</u>					
Time (B)	52.08	1	52.08	8.89	< 0.01
Group x Time (AB)	4.08	1	4.08	0.69	0.41
Subjects Within	128.83	22	5.85		

Summary of Analysis of Variance  
SOSI Subscale Gastrointestinal

Source	SS	df	MS	F	p
<b>Total</b>					
<u>Between Subjects</u>					
Group (A)	24.79	1	24.79	0.61	0.44
Subjects Within	841.42	21	40.06		
<u>Within Subjects</u>					
Time (B)	84.43	1	84.43	18.13	< 0.01
Group x Time (AB)	1.64	1	1.64	0.35	0.55
Subjects Within	97.78	21	4.65		

Summary of Analysis of Variance  
SOSI Subscale Muscle Tension

Source	SS	df	MS	F	p
<b>Total</b>					
<u>Between Subjects</u>					
Group (A)	37.62	1	37.62	0.41	0.52
Subjects Within	1928.19	21	91.81		
<u>Within Subjects</u>					
Time (B)	67.45	1	67.45	14.88	< 0.01
Group x Time (AB)	0.67	1	0.67	0.14	0.70
Subjects Within	95.15	21	4.53		

Summary of Analysis of Variance  
SOSI Subscale Habit Patterns

Source	SS	df	MS	F	p
<b>Total</b>					
<u>Between Subjects</u>					
Group (A)	105.40	1	105.40	0.93	0.34
Subjects Within	2370.43	21	112.87		
<u>Within Subjects</u>					
Time (B)	323.71	1	323.71	20.10	< 0.01
Group x Time (AB)	15.01	1	15.01	0.93	0.34
Subjects Within	338.19	21	16.10		

Summary of Analysis of Variance  
SOSI Subscale Depression

Source	SS	df	MS	F	p
<b>Total</b>					
<u>Between Subjects</u>					
Group (A)	36.75	1	36.75	0.54	0.46
Subjects Within	1484.25	22	67.46		
<u>Within Subjects</u>					
Time (B)	147.00	1	147.00	15.11	< 0.01
Group x Time (AB)	0.08	1	0.08	0.00	0.92
Subjects Within	213.91	22	9.72		

## Summary of Analysis of Variance

## SOSI Subscale Anxiety

Source	SS	df	MS	F	p
Total					
<u>Between Subjects</u>					
Group (A)	4.59	1	4.59	0.08	0.77
Subjects Within	117.27	21	55.82		
<u>Within Subjects</u>					
Time (B)	199.63	1	199.63	11.65	<0.01
Group x Time (AB)	0.07	1	0.07	0.00	0.94
Subjects Within	359.58	21	17.12		



## Summary of Analysis of Variance

## SOSI Subscale Anger

Source	SS	df	MS	F	p
<b>Total</b>					
<u>Between Subjects</u>					
Group (A)	0.02	1	0.02	0.00	0.98
Subjects Within	1591.79	22	72.35		
<u>Within Subjects</u>					
Time (B)	325.52	1	325.52	30.28	< 0.01
Group x Time (AB)	0.51	1	0.51	0.04	0.82
Subjects Within	236.45	22	10.74		

Summary of Analysis of Variance  
SOSI Subscale Cognitive Disorganization

Source	SS	df	MS	F	p
<b>Total</b>					
<u>Between Subjects</u>					
Group (A)	7.52	1	7.52	0.41	0.52
Subjects Within	403.45	22	18.33		
<u>Within Subjects</u>					
Time (B)	58.52	1	58.52	13.48	< 0.01
Group x Time (AB)	2.52	1	2.52	0.58	0.45
Subjects Within	95.45	22	4.33		

Summary of Analysis of Variance  
SOSI Total Score

Source	SS	df	MS	F	p
<b>Total</b>					
<u>Between Subjects</u>					
Group (A)	2317.17	1	2317.17	0.71	0.40
Subjects Within	67794.50	21	3228.30		
<u>Within Subjects</u>					
Time (B)	11125.12	1	11125.12	44.83	< 0.01
Group x Time (AB)	106.75	1	106.75	0.43	0.51
Subjects Within	5211.31	21	248.15		

APPENDIX G  
RESPONSE FREQUENCIES FOR  
PRETRAINING SURVEY ITEMS

PRE-TRAINING QUESTIONNAIRE

			5
1	2	3	4

The purpose of this questionnaire is to obtain some information about your experience with meditation and cognitive psychology. Please circle the answer that best represents your response to the questions below.

		Frequency *	
		M.M	C.R.
1.0	Have you ever practised any form of meditation?		
	1. Yes	3	5
	2. No	9	7
	If yes, go to question 1.1 If no, go to question 2.0		
1.1	Are you still meditating?		
	1. Yes	2	3
	2. No	1	2
1.2	What form of meditation do you use?		
	1. T.M.	1	3
	2. Zen	0	0
	3. Insight	1	1
	4. Bensens method	0	1
	5. Other Specify.	0	0
1.3	If you are no longer practising, why did you stop? Please circle all that apply.		
	1. No time	0	0
	2. Disappointed with results.	0	0
	3. Having difficulty.	0	0
	4. Lost interest	1	1
	5. Other Specify.	1	4
2.0	Do you have any knowledge of meditation? If yes, please elaborate.		
	1. Yes	7	6
	2. No	5	4

\* M.M. = Mindfulness Meditation

C.R. = Cognitive Restructuring

## Frequency

3.0	Have you ever spent time trying to become aware of your self-talk, ie., what you are thinking or saying to yourself?	1. yes	12	8
		2. no	0	4
	If yes, go to question 3.1 If no, go to question 4.0			
3.1	Did you do this in a	1. systematic way	1	8
		2. casual way	11	4
3.2	Was this under the direction of a trained person?	1. yes	1	8
		2. no	11	4
4.0	Do you have any knowledge of cognitive psychology? If yes, please elaborate.	1. yes	2	0
		2. no	10	12
5.0	If you are assigned to the "cognitive" training group, how effective do you think the training will be in helping you become more aware of yourself?			
	1. Not effective		0	0
	2. A little bit effective		1	0
	3. Don't know		8	11
	4. Moderately effective		3	1
	5. Extremely effective		0	0
6.0	What kind of effects (see below) do you think "cognitive" training might have on your life? Please circle all that apply.			
	1. Help me to be more relaxed.		5	6
	2. Help me to be more confident		6	5
	3. Help me to be more in control of my life		7	6
	4. Other		1	3
	5. Cannot decide		1	1
7.0	If you are assigned to the "mindfulness meditation" training group, how effective do you think the training will be in helping you become more aware of yourself?			
	1. Not effective		1	2
	2. A little bit effective		1	1
	3. Don't know		6	5
	4. Moderately effective		3	4
	5. Extremely effective		1	0

## Frequency

8.0 What kind of effects (see below) do you think "mindfulness" training might have on your life? Please circle all that apply.

- |  |   |    |
|--|---|----|
| 1. Help me to be more relaxed                | 8 | 10 |
| 2. Help me to be more confident              | 2 | 5  |
| 3. Help me to be more in control of my life. | 4 | 5  |
| 4. Other.                                    | 0 | 1  |
| 5. Cannot decide                             | 3 | 1  |

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