

EFFICACY OF MEDITATION IN GENERALIZED ANXIETY DISORDER

VIHANG N. VAHIA, HARISH K. SHETTY, SHAKERA MOTIWALA, GIRA THAKKAR, LIZABETH FERNANDES, JAGDISH CHANDRA SHARMA

SUMMARY

A study was conducted to compare the efficacy of meditation with that of imipramine and chlordiazepoxide in the treatment of Generalized Anxiety Disorder. At the end of five weeks, meditation was found to be as effective as pharmacotherapy in controlling symptoms of anxiety. It was superior in altering trait anxiety (TMAS Scores). Meditation is an easy to learn and cost effective therapy. It has a distinct edge over pharmacotherapy in that it does not have the associated problems of habit formation, withdrawal effects, overdose or other undesirable effects.

INTRODUCTION

Ever since the first century A.D., clinicians have noted the significance of anxiety in psychiatric disorders (Spitzer & Williams, 1984). The clinical approach to anxiety varies with the orientation of the therapist. Contemporary schools of psychology offer different hypotheses to explain the psychodynamics of anxiety genesis, and the therapeutic techniques used varies with the theoretical construct. Behavior therapists advocate desensitizing a person to anxiety provoking stimuli. Cognitive therapists attempt to modify cognition of the anxiety provoking event. Existentialists highlight non-defensive therapeutic encounter. Psychoanalysts endeavor to bring about conscious awareness of unconscious motives. (Frank, 1984). It is interesting to note that all the schools of psychology take cognisance of the factors that generate anxiety. They attempt to deal either with the emotional response to or the subjective perception of a stressful event, or with symptoms of anxiety.

Wright's model, (1988) (with some modifications) incorporates the contemporary schools of psychology into a theoretical construct of anxiety.

Stage 1: Biopsychosocial stimulus (Frank 1984)

Stage 2: Appraisal/Subjective Interpretation of the stimulus

Stage 3: Emotional response to the appraisal/interpretation (perceived danger/threat/demoralizing effect)

Stage 4: Behavioral inclination

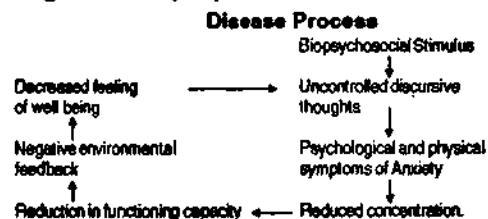
Stage 5: Maladaptive Behavior/Anxiety

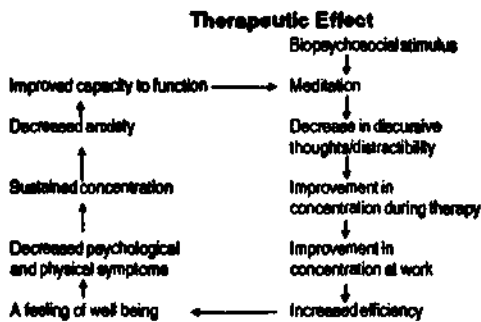
Psychotherapy, behavior therapy and cognitive therapy deal with anxiety by effecting a change at Stage 3 of this model. A stimulus response model dominates the clinical appraisal. Emphasis on "internal determinism" as opposed to the conventional concept of "external determinism" is considered by cognitive therapists to be a specific feature of their clinical approach. (Shaw & Segal, 1988). Relaxation therapy and pharmacotherapy attempt to alleviate symptoms of anxiety; they modify Stage 5 of the cycle. Patanjali, an Indian Philosopher (Vivekananda, 1966) advocates the practice of meditation to combat anxiety. His concept differs in its basic presumptions from other schools of psychology; it attempts intervention at

Stages 2 and 4 of the model. According to Patanjali, an individual's thoughts and behavior tend to depend on environmental feedback. Every action of an individual results in a feedback from the environment. Positive feedback is reassuring, while negative feedback induces a subjective feeling of inadequacy and anxiety. Anxiety reduces the attention span and increases distractibility; such a state adversely affects personal and occupational efficiency, thus reinforcing the negative feedback and a subjective feeling of unpleasantness is then generated. This would, in turn, aggravate psychological and physiological symptoms of anxiety. This feeling leads to further deterioration in efficiency, causing greater anxiety. The cycle then self-perpetuates. (Frank, 1984; Vivekananda, 1966). Thus, preoccupation with environmental feedback contributes to psychological and physiological symptoms of anxiety. This view is generally accepted in contemporary psychiatry (Frank, 1984; Shaw & Segal, 1988; Wright, 1988).

In this pattern of stimulus response behavior, repercussions of behavior become the determinants of a personal sense of well being (Vivekananda, 1966). Patanjali, in his concept, advocates a change in the orientation towards the environment and suggests that environment should be viewed as an opportunity for the utilization of one's abilities and not as a measure or a determinant of a sense of well being and adequacy. It should be delinked from stimulus response behavior and its repercussions, and the practice of meditation enables the individual to achieve this (Vivekananda, 1966).

Meditation is defined as "... a family of techniques, which have in common a conscious attempt to focus attention in a non-analytical way, and attempt not to dwell on discursive ruminating thought" (Shapiro, 1984). The process of therapeutic efficacy of meditation can be diagrammatically explained as follows:





The practice of meditation combats anxiety by reducing distractibility; reduced distractibility and improved concentration enhance personal and occupational efficiency, which in turn induces a positive self image resulting in a reduction in the level of anxiety. Improvement is thus brought about by optimal utilization of one's abilities in the chosen field of activity and reduced preoccupation with environmental influences.

The study of meditation in psychiatric illness is an area of active interest amongst researchers. Literature regarding its usefulness, potential dangers and limitations has been previously published (Vahia et al, 1973). This study aims at investigating the efficacy of meditation in comparison to currently accepted pharmacotherapy in the management of Generalized Anxiety Disorder.

AIMS OF THE STUDY

1. To determine whether the practice of meditation is effective in the management of anxious patients seeking medical help.
2. To compare the efficacy of meditation and pharmacotherapy in decreasing symptoms and reducing the predisposition to anxiety.

MATERIAL AND METHOD

The study was conducted in the psychiatry out patient department of a teaching general hospital in Bombay.

a. Inclusion Criteria

1. DSM-III (American Psychiatric Association, 1980) diagnosis of Generalized Anxiety Disorder, independently confirmed by two psychiatrists.
2. Age Group 18-45 years.

b. Exclusion Criteria

1. Concomitant physical illness
2. Substance Use Disorder
3. Mental Subnormality

Untreated patients who approached the psychiatric OPD and fulfilled the criteria were included in this study. They were randomly distributed to Index and Control groups. The Index group was treated with meditation and

a placebo (glucose powder in opaque capsules). The Control group received individualized dose of imipramine 75 to 225 mg and Chlordiazepoxide 10 to 40 mg per day in opaque capsules (Kahn et al, 1986) and pseudomeditation. The dose of medication was adjusted by a therapist (HKS) who was open to the study. All patients received one capsule thrice a day.

Individual meditation/ pseudomeditation sessions were conducted for 30 minutes for each patient. Meditation/ pseudomeditation was practiced as follows:

Meditation (Index Group)

The aim of therapy was to learn to focus attention on chosen imagery and to learn not to dwell upon discursive thoughts. Patients were helped to select an appealing, everlasting and unchanging mental image. They were asked to assume a comfortable, supine posture and concentrate on the chosen imagery, while regulating breathing. They were informed that concentration would be interrupted by various thoughts and that a voluntary effort would have to be made to exclude these discursive thoughts and to focus attention on the chosen imagery; with practice, the ability to discard discursive thoughts and retain concentration on the chosen imagery would improve. Over a period of time, this ability of focussing on the chosen task, free of discursive thoughts, would be noticed in their daily life situation. Such a state would enable them to function effectively with reduced vulnerability to environmental feedback.

Pseudomeditation (Control Group)

This group was reassured that with therapeutic sessions and drugs, there would be a gradual improvement. They were advised to lie down on a couch in a relaxed state and regularize breathing during the sessions.

All patients in both the groups had six sessions per week, each lasting 30 minutes for five weeks, i.e., a total of 30 sessions. All sessions were supervised. At the end of each session, patients in both groups were asked to record the frequency and details of their discursive thoughts.

Assessment:

All cases were assessed on the following measures:

1. Hamilton Anxiety Rating Scale (HARS), (Hamilton, 1959)
2. Taylor's Manifest Anxiety Scale (TMAS), (Taylor 1953)

all cases.

3. Subjective records of discursive thoughts of cases in the Index Group were analyzed for numerical frequency of the discursive thoughts experienced during the therapeutic session. 50% or more reduction in frequency of the discursive thoughts at the end of 30 sessions was considered to be an indicator of effective meditation).

HARS (by a rater blind to the treatment modality) and TMAS were rated pretreatment, at the end of 15 and 30 sessions.

Analysis of Data:

This paper presents a part of an ongoing study. Data from 67 cases are presented here. Of the 67 cases, 23 belonged to the Index (I) Group, 23 belonged to the Control (C) Group, and 21 cases formed a Drop Out (D) Group. The (D) Group Cases had dropped out of the study within a week of pretreatment evaluation. However, they continued to be followed up in the psychiatry out patient department. Their HARS and TMAS were rated pretreatment and at the end of five weeks.

Analysis of records of discursive thoughts of the (I) Group revealed that of the 23 patients in the meditation group, 16 patients had a 50% or more reduction in the numerical frequency of discursive thoughts. This group of effective meditators was designated I₁. Seven cases from the Index Group had less than 50% reduction in the numerical frequency of discursive thoughts. This group which could not meditate effectively was designated the I₂ group. Division of the I group into I₁ and I₂ was not predesigned.

Thus, the 67 patients fell into the following four groups:

- I₁ (n = 16) : Patients who could meditate effectively + placebo.
- I₂ (n = 7) : Patients who could not meditate effectively + placebo.
- C (n = 23) : Patients on pharmacotherapy + pseudomeditation.
- D (n = 21) : Patients on pharmacotherapy only.

Comparing I₁ group with the I₂, C & D groups would elicit the differences, if any, in the efficacy of meditation, placebo and pharmacotherapy.

The pretreatment scores of HARS & TMAS and scores at the end of 30 sessions / 5 weeks were analyzed using the following tests.

1. "t" test (Garret, 1971).
2. Analysis of Covariance with Independent Variables and Covariates (ANOVA) (Norusis, 1986).

RESULTS

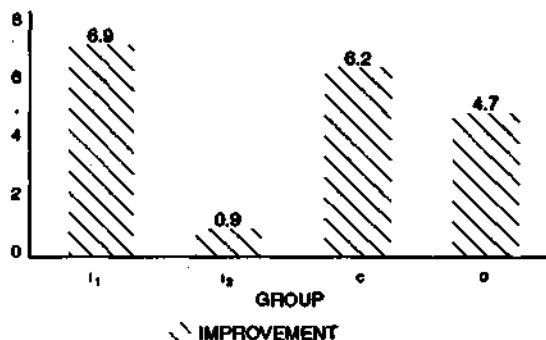
Pre-treatment analysis of variance:

Analysis of variance was undertaken to determine impact of age, gender, religion, per capita income and duration of illness on the pretreatment HARS & TMAS scores. These variables did not have any impact on the scores. HARS: F=0.605, p=0.615 NS; TMAS: F=0.399, p=0.754 NS; Hence, I₁, I₂, C, D groups were comparable for covariates.

HARS Scores: Improvement in State Anxiety

Analysis of difference between pre-treatment and post-treatment HARS Scores within the four groups revealed that patients who could meditate effectively (50% or more reduction in frequency of discursive thoughts) and those who received anxiolytic pharmacotherapy (imipramine + chlordiazepoxide) responded to treatment; Group I₁: t=3.97, df=15, p=0.001; Group C: t=4.07, df=22, p=0.001; Group D: t=3.25, df=20, p=0.004 (Chart I). The I₂ group

MEAN IMPROVEMENT IN HARS SCORES

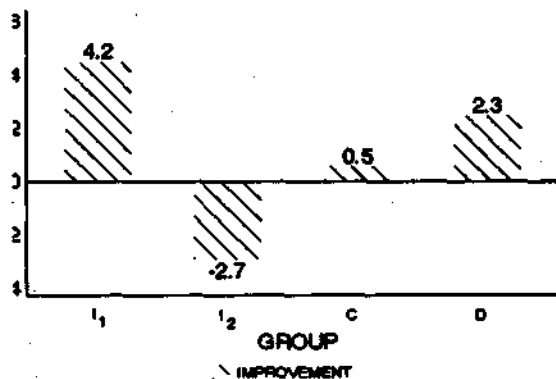


which could neither meditate effectively nor receive anxiolytic medication, did not show any significant change in its HARS scores (t=1.00, df=6, p=0.356). Comparison of the mean improvement between the four groups confirmed the observation that meditation is as effective as pharmacotherapy in controlling state anxiety. The C group had received pharmacotherapy and pseudomeditation, while Group D had received only pharmacotherapy identical to that of Group C. The improvement between C group and D group is comparable. Hence, it is inferred that pseudomeditation had no impact on treatment efficacy.

TMAS Scores - Improvement in Trait Anxiety (Spielberger, 1966)

Trait anxiety ie., the tendency of responding in an anxious manner to stressful stimuli (Thomas & Abbas,

MEAN IMPROVEMENT IN TMAS SCORES



1978) was studied by comparing pre and post-treatment TMAS scores (Chart II). It was noticed that the I₁ group had a statistically significant reduction in the TMAS scores after treatment (t=2.31, df=15, p=0.036). The reduction in the C and D groups was not statistically significant (Group C: t=0.1, df=18.0, p=0.9; Group D: t=1.54, df=19.0, p=0.139). This suggests that meditation alters the pattern of responding to biopsychosocial events

(Frank 1984). It is thus inferred that only those who meditated were able to learn to respond to biopsychosocial stimuli without experiencing anxiety. Here again, pseudo-meditation did not contribute to the improvement.

DISCUSSION

Therapeutic goals for intervention in Generalized Anxiety Disorders are symptom alleviation and long term management, to prevent the re-emergence of symptoms. With reference to Wright's model (1988), meditation achieves both the goals in a manner which is unique for this therapeutic strategy. Our sample exhibited the alleviation of symptoms with meditation which was comparable to the symptom relief produced by pharmacotherapy.

Apart from symptom alleviation, trait anxiety (TMAS scores) showed a superior response to meditation at the end of 30 sessions. The authors contend that this is a specific feature of meditation as a treatment modality. It alters the basic response pattern, thereby preventing the genesis of anxiety. Meditation is also devoid of the adverse effects of pharmacotherapy (American Psychiatric Association, 1990; Priest, 1989; Vahia et al, 1988).

The emergence of a group of 7 patients, designated as the I2 group, formed an interesting aspect of the study. This group was not under experimental control. During the course of the treatment, this group was designated and treated as a part of the index group. The 7 patient in I2 group did not differ in their pre-treatment HARS and TMAS scores from the rest of the sample. At the end of 30 sessions, their TMAS scores had deteriorated.

The I2 group in effect, did not receive any specific therapeutic intervention. Cases in this group were given a placebo and were expected to practice meditation. However, they were not able to meditate effectively and their disease process continued unabated. In this sense, I2 became the true "double blind" group of the study. The reason behind this group's difficulty in practicing meditation is currently being studied.

The improvement observed in our sample could be due to the contribution of covariates, the effect of the therapeutic milieu, or due to the primary and specific therapeutic effect of the treatment (meditation, pseudo-meditation or pharmacotherapy).

The pretreatment ANOVA confirmed that there was no sample bias, and the study was double blind. The milieu was thus identical for the four groups. Hence, the observed improvement could be attributed to either a drug effect or pseudomeditation or to the specific effects of meditation. The effect of pseudomeditation would reflect in the improvement in group C as compared to group D. The results show that both these groups had identical improvement as gauged by HARS & TAMS; Hence, pseudomeditation did not offer any specific advantage. The efficacy of pharmacotherapy in generalized anxiety disorder is well established (Kahn, 1986). Our results so far indicate that meditation by itself is effective in the management of Generalized Anxiety Disorder.

Literature describes several methods of practice of

meditation (Corby et al, 1978; Fischer, 1971; Thomas & Abbas, 1978; Walrath & Hamilton, 1978). In this study, Patanjali's method of meditation was selected as it is (i) Simple to conceptualize (ii) Easy to practice and (iii) Free of cultural and religious bias.

The first 30 sessions of meditation were supervised; at the end of this, the patients in Group I1 were interviewed to determine their confidence in practicing meditation without continuous supervision. They were asked to report if their confidence in practicing meditation independently was felt to be unsatisfactory; they were also asked to report every month for assessment. None of the 16 patients reported difficulties in practicing meditation independently, and we hope to be able to furnish the experience of this group and other data from the currently ongoing study in due course of time.

Adverse Effects

In the course of our study, no adverse effects were manifest. However, Carrington (1978) cautions against advocating meditation for borderline states. Feeling of dissociation and dizziness are reported to be adverse effects of meditation. Efficacy of meditation in patients with depression and migraine is controversial (Carrington, 1978; Vahia, 1973).

CONCLUSIONS

- i. Meditation is effective in the management of Generalized Anxiety Disorder.
- ii. Meditation and Imipramine + Chlordiazepoxide are equally effective. Meditation is superior to medication as it is devoid of untoward effect of pharmacotherapy.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the guidance and encouragement of Dr. N.S. Vahia. We thank the Medical Superintendent, Dr. R.N. Cooper Hospital, and the Dean, Seth G.S. Medical College for permitting us to conduct the study. Above all, we thank our patients for their cooperation.

REFERENCES

- American Psychiatric Association (1980) *Diagnostic and Statistical Manual of Mental Disorders* (3rd edn.) (DSM III). Washington DC: APA.
- American Psychiatric Association (1990) *Benzodiazepine dependence, toxicity and abuse*. A task force report of the American Psychiatric Association, Washington DC: APA.
- Carrington, P. (1978) *Freedom in Meditation*. New York: Anchor Press.
- Corby, J.C., Roth, W.T. & Zarzone, V.P. (1978) Psychophysiological correlates of the practice of tantric Yoga meditation. *Archives of General Psychiatry*, 35, 571-580.
- Fischer, R. (1971) A cartography of the ecstatic and meditative states. *Science*, 174, 897-904.

- Frank, J.D. (1984) The Psychotherapy of Anxiety. In *Psychiatry Update*, Vol. III, (ed. L.Grinspoon), pp. 418-426. Washington: American Psychiatric Press.
- Garret, H.E. (1971) The Significance of Difference between Means and other Statistics. In *Statistics in Psychology and Education*, pp. 212-232. Bombay: Vakil Feffer Simons Ltd.
- Hamilton M. (1959) The assessment of Anxiety States by Rating. *British Journal of Medical Psychology*, 32, 50-55.
- Kahn, R.J., McNair, D.M., Lipman, R.S. (1986) Imipramine and chlórdiazepoxide in Depressive and Anxiety Disorders. *Archives of General Psychiatry*, 43, 76-85.
- Norusis, M.J. (1986) Analysis of Variance: Procedure ANOVA. In *SPSS/PC Plus*, pp. B165-B175. Chicago, Illinois: SPSS Inc.
- Priest, R.J. (1988) Benzodiazepines and dependence. *Bulletin of the Royal College of Psychiatrists*, Vol. 12.
- Shapiro, D.H. (1984) Overview: Clinical & Physiological Comparison of Meditation with other Self Control Strategies In *Meditation : Classic and Contemporary Perspectives* (eds. D.H.Shapiro & R.N.Walsh), pp. 5-12. New York: Aldiene.
- Shaw, B.F. & Segal, Z.V. (1988) Introduction to Cognitive Theory and Therapy. *Review of Psychiatry*, Vol. 7, (eds. A.J.Frances & R.E.Hales), pp. 538. Washington, DC: American Psychiatric Press.
- Spielberger, C.G. (1966) Theory and Research on Anxiety. In *Anxiety and Behavior*. New York: Academic Press.
- Spitzer, R.L. & Williams, J.B.W. (1984) Diagnostic issues in DSM-III Classification of Anxiety Disorders. In *Psychiatry Update*, Vol. III, (ed. L.Grinspoon), pp. 392. Washington, DC: American Psychiatric Press.
- Taylor, J.A. (1953) A Personality Scale of Manifest Anxiety. *Journal of Abnormal Psychology*, 48, 285-290.
- Thomas, D. & Abbas, K.A. (1978) Comparison of transcendental meditation and progressive relaxation in reducing anxiety. *British Medical Journal*, 2, 1749.
- Vahia, N.S., Doongaji, D.R. & Jeste, D.V. (1973) Psychophysiologic therapy based on the concepts of Patanjali. *American Journal of Psychotherapy*, 27, 557-565.
- Vahia, V.N., Shetty, H.K., Mehta, A. (1988) Drug Treatment of Depression. In *Continuing Medical Education*, Vol. 6, (ed. G.Singh), pp. 54-74. Patiala: Indian Psychiatric Society.
- Vivekananda Swami (1966) *Patanjali's Yoga Sura (Aphorisms) in Raja Yoga*, pp. 123-286. Calcutta: Advaita Ashram.
- Walrath, L., & Hamilton, D. (1975) Autonomic Correlates of meditation and hypnosis. *American Journal of Clinical Hypnosis*, 17, 190-197.
- Wright, J.H. (1988) Cognitive Therapy of Depression. In *Review of Psychiatry*, Vol. 7, (eds. J.A.Frances & R.E.Huler), pp. 555. Washington, DC: American Psychiatric Press.

Vihang N. Vahia MD,DPM,MA,PA,* Honorary Psychiatrist & Asst. Professor of Psychiatry, Department of Psychological Medicine; Harish K. Shetty MD,DPM, Research Officer; Shaker Motiwala MA, Gira Thakkar MA, Lizabeth Fernandes MA, Research Psychologists, Cooper Hospital & Seth G.S. Medical College, Juhu Vile Parle, Bombay 400 056; Jagdish Chandra Sharma MSc,MPhil, Professor, Dept. of Research Methodology, Tata Institute of Social Sciences, Bombay.

*Correspondence