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THE EFFECTS OF THE TRANSCENDENTAL MEDITATION PROGRAM ON LEVELS OF HOSTILITY, ANXIETY, AND DEPRESSION

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The Transcendental Meditation programme was found to reduce levels of hostility, anxiety, and depression.—EDITORS

The following is a revised version of the original paper which was presented at the 53rd Annual Meeting of the California Education Research Association, November 1974, and is based on the first author's original master's thesis presented to the Graduate Faculty of California State University, Hayward, in partial fulfilment of the requirements for the degree of Master of Science in Counseling.

This study investigated the effects of the Transcendental Meditation (TM) program on levels of hostility, anxiety, and depression. The effects of regularity of the practice of the TM technique and the factors of age and sex were studied to see if they influenced results. The Multiple Affect Adjective Check List (MAACL) was used to test the levels of hostility, anxiety, and depression of five groups of subjects. One experimental group was tested before instruction in the TM technique and again after three months of practice of the technique, and it was found that levels of hostility, anxiety, and depression were significantly reduced; the levels of a control group of nonpractitioners of the technique showed no significant change when tested over a similar interval.

A second experimental group, when tested once only after three months of the TM technique, exhibited significantly lower levels of hostility, anxiety, and depression, when compared with a second control group of nonpractitioners also tested once only; the levels of a third experimental group of long-term practitioners were even lower, indicating that the effects of the TM program are cumulative over time. The reduction in the levels of hostility, anxiety, and depression of regular practitioners was greater than that of irregular practitioners. Age and sex did not influence the results.

INTRODUCTION

Over one million people throughout the world have learned the Transcendental Meditation (TM) technique in the past 18 years, creating interest in the international scientific community. Initial studies indicated that there were significant physiological changes occurring during the TM technique in the direction of decreased metabolic rate (17); subsequent research makes it appear that the TM technique produces a unique state of physiological rest and mental alertness (3, 18).

There is evidence to indicate that the practice of the TM technique reduces anxiety (2, 6, 9, 13, 14), neuroticism (12, 15, 16), depression (12), negative personality traits (5), nervousness, instability, inhibition and sense of deprivation (4); and increases creativity (7), tolerance (13), self-esteem (1, 13), ego strength, satisfaction (1), sociability, self-confidence, emotional stability, self-reliance (4), warmth in interpersonal relationships, helpfulness (10) and measures of self-actualization (1, 2, 5, 6, 8, 11, 12).

The present study was undertaken to provide further information concerning the psychological effects of the TM program. Some of the earlier studies of a similar nature suffered from small samples and lack of proper controls; in addition, research investigating the importance of regularity of the practice is limited.

METHOD

TEST—This study utilized the Multiple Affect Adjective Check List (MAACL) by Zuckerman and Lubin (20) (1964). The MAACL was designed to fill a need for a self-administered test which would provide valid measures of three clinically relevant negative effects: hostility, anxiety, and depression; one advantage of the MAACL is that it only takes five minutes to administer. The validity, reliability and internal consistency of the MAACL has been well established (19, 20) and is an instrument which was felt to be more reliable than others used in earlier studies.

The MAACL is a list of 132 adjectives alphabetically arranged. There are 91 adjectives which are actually scored and 41 filler items. Each of the scored adjectives corresponds to one and only one of the scales for hostility, anxiety, and depression. The endorsement of certain of the adjectives increases the score on the respective scales; the endorsement of the other adjectives does not increase the respective score (e.g. see table 1). Higher scores indicate higher levels of hostility, anxiety, and depression.

There is a "general" form and a "today" form of the test; in this study only the "general" form was used. The same adjectives are involved , but the instructions for each form differ as follows:

> General Form: "Mark an 'X' beside the words which describe how you generally feel."

TABLE 1

ADJECTIVE	SCALE	EFFECT ON SCORE IF ENDORSED	CHECKLIST CODE
Agreeable	Hostility	No Change	H−
Angry	Hostility	Score Increased	H+
Calm	Anxiety	No Change	A−
Afraid	Anxiety	Score Increased	A+
Active	Depression	No Change	D−
Alone	Depression	Score Increased	D+

TABLE 2

GROUP	CODE	PRETEST	TREATMENT (TM TECHNIQUE)	POSTTEST
1st Experimental Group	E1	+	+	+
1st Control Group	C1	+	−	+
2nd Experimental Group	E2	−	+	+
2nd Control Group	C2	−	−	+
3rd Experimental Group	LT	−	+	+*

*After at least 12 months of practice of the TM technique.

Today Form: "Mark an 'X' beside the words which describe how you feel *now* today."

The MAACL has high correlations with the Welsh Anxiety Scale and the Taylor Manifest Anxiety Scale. The general form of the anxiety scale on the MAACL correlates with the 0.01 level on eight scales of the MMPI.

PROCEDURE—The MAACL was used to test the levels of hostility, anxiety, and depression on five groups of subjects: three groups were experimental, and two groups were used as controls. All subjects were matched for age, sex, and education. In order to investigate the effects of the TM program, one experimental group (E1) of 54 subjects was tested on the day of personal instruction in the TM technique, prior to instruction, and then again after three months of practicing the technique. A control group (C1) of 52 subjects was also tested at a similar interval. This group (C1) was tested twice in order to control against any influence on the MAACL scores due to a learning effect or the passage of time. The second experimental group (E2) of 37 subjects was tested once only, after three months of practicing the TM technique. The third experimental group (LT: Long-Term), also tested once, consisted of 43 subjects who had been practicing the TM technique for at least one year. Another group which consisted of 37 nonparticipants of the TM program (C2) was tested once as a control for the two experimental groups (E2 and LT) that were tested once only. The overall experimental structure, a variant of Soloman's four group design, was used to control for a possible sensitizing effect on the MAACL. By including groups that were not pretested, it was felt that it would be possible to determine if an interaction or learning effect had occurred due to the pretesting. The addition of a long-term experimental group (LT) provided a means of determining whether the TM program had any cumulative effects. Table 2 displays the various groups and the experimental design.

A one-way analysis of variance was conducted to determine if a significant difference was evident between the various groups. Duncan's Multiple Range Test was computed to determine exactly where differences occurred.

A further analysis was made to determine how the subjects in the first experimental group (E1) changed their responses to specific adjectives from the pre- to the posttest. Finally levels of hostility, anxiety, and depression of the experimental groups were examined to investigate the effects of age, sex, and regularity of practice on the effectiveness of the TM program.

SUBJECTS—The experimental subjects for this study were associated with the San Jose and Palo Alto TM Centers in California, U.S.A. The subjects in group E1 were selected from people who enrolled for a course of instruction in the TM technique; the subjects for groups E2 and LT were taken from an advanced lecture and from a weekend residence course.

The control subjects were community college students in general psychology in San Jose, California. They were similar in age and educational background to the experimental subjects. All subjects ranged in age from 18 to 40. The males averaged 2.8 years of college education, and the females 1.4 years. Although the experimental subjects were not selected randomly from a larger population of practitioners of the TM technique, it was felt that they were representative of a typical group of young adults starting the TM technique.

For the purposes of investigation on the effects of age, the experimental group E1 was divided into two groups, with age ranges from 18 to 24 years and 25 to 40 years. Irregular practitioners were defined as those who missed on average more than one TM technique session a week. Normally, participants in the TM program practice the technique twice a day for 15 to 20 minutes on a regular basis. In order to carry out the posttest, subjects were sent check lists

TABLE 3

SUMMARY OF MEAN SCORES AND STANDARD DEVIATIONS FOR HOSTILITY, ANXIETY, AND DEPRESSION

			MAACL SCORES					
			Hostility		Anxiety		Depression	
		N	Mean	SD	Mean	SD	Mean	SD
Experimental 1 (E1)	Pretest	54	8.04	4.39	8.39	4.62	13.46	7.40
	Posttest	33	4.97	3.06	4.43	3.04	8.82	6.54
Experimental 2 (E2)	3-month Practitioners	37	5.14	2.86	4.32	3.10	8.27	4.73
Control 1 (C1) (Nonpractitioners)	Pretest	52	7.12	3.92	6.25	3.83	10.42	5.56
	Posttest	38	7.61	3.62	6.32	3.51	10.11	4.12
Control 2 (C2) (Nonpractitioners)	Tested once	37	7.43	3.83	7.38	3.99	12.70	6.11
Long-term (LT) Practitioners	1 year or more	43	2.84	1.80	1.35	1.41	4.14	3.08
Controls—Total	C1 pre + C2	89	7.25	3.86	6.72	3.92	11.36	5.90

NOTE: Numerically lower MAACL Mean Scores indicate lower levels of hostility, anxiety and depression.

in the mail, which they filled out and returned. Sometimes, one or two reminders were necessary. The numbers reporting in the posttests were lower due to individuals leaving the area; there was effectively no difference in the nonreturn rate, when comparing the experimental and control groups.

RESULTS

The MAACL mean scores of the various groups tested are listed for each scale in table 3; additionally the Standard Deviations and number of subjects reporting are given. The five groups in this study, and the three variables being measured, produced a large number of possible comparisons, only the more important ones are dealt with here.

The scores of the experimental group E1 were lowered significantly on all scales ($p < .001$) between the pretest, before instruction, and the posttest, after three months of practice (fig. 1). The control group C1, when tested over a similar period, showed no significant change. It is also noticed that the levels of hostility, anxiety, and depression of group E1-pre is significantly higher than the control group C1-pre; but when E1-pre is compared with the total controls there is no significant difference. The scores of the long-term group LT were significantly lower than those of the subjects who had been practicing the TM technique for only three months (group E1-post) for hostility ($p < .01$), anxiety ($p < .001$), and depression ($p < .001$). Figure 2 shows the scores of groups E1-pre, E1-post, and LT with the corresponding length of time each group had been practicing the TM technique.

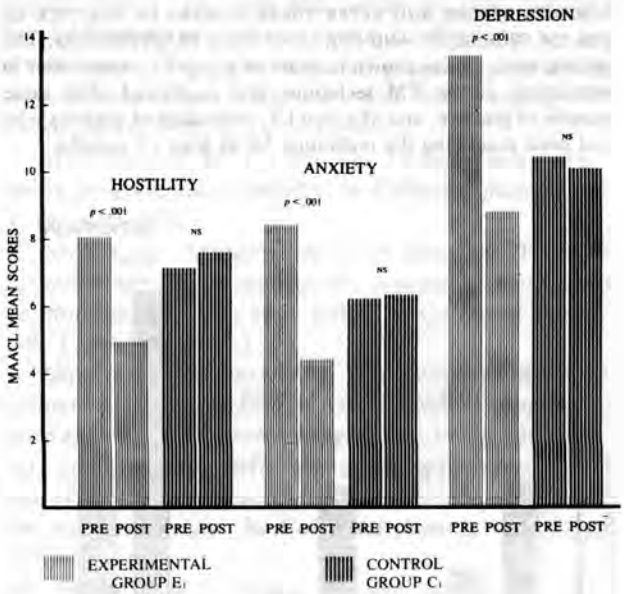


FIG. 1. LEVELS OF HOSTILITY, ANXIETY, AND DEPRESSION OF PRACTITIONERS OF THE TM TECHNIQUE BEFORE AND THREE MONTHS AFTER INSTRUCTION, AS COMPARED WITH CONTROLS. Experimental group E1 was pretested before instruction in the TM technique, and posttested after three months of practice; the control group C1 consisted of nonparticipants of the TM technique pre- and posttested at a similar interval. The groups were matched for age, sex, and education.

The mean scores of the groups tested once only are given in figure 3. Group E2 exhibited lower levels of hostility ($p < .01$), anxiety ($p < .001$), and depression ($p < .001$) when compared with the control group C2; the levels of the long-term group LT were even lower ($p < .001$ on all scales compared with C2). There is no significant difference between the scores of the two different three-month experimental groups E1-post and E2.

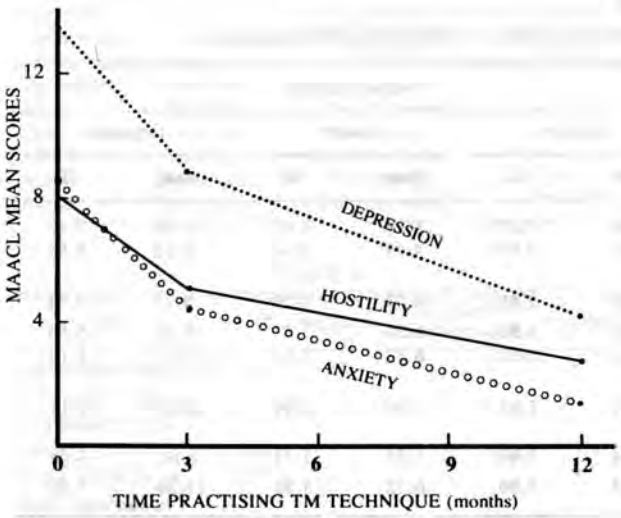
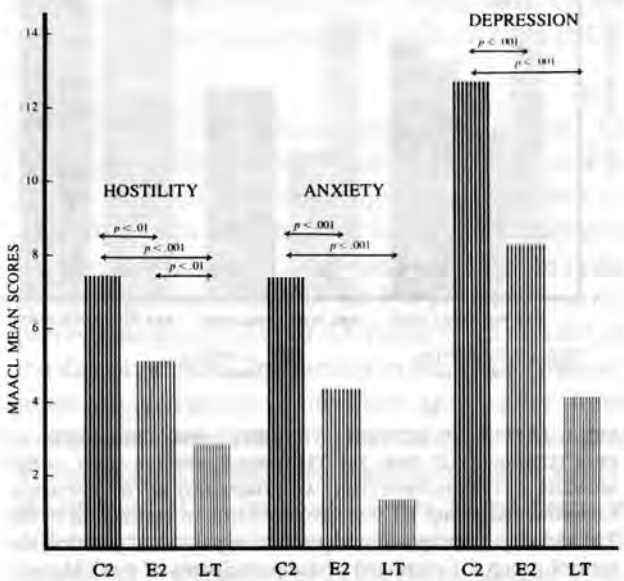


FIG. 2. CHANGE IN HOSTILITY, ANXIETY, AND DEPRESSION OF SUBJECTS BEFORE AND AFTER THREE MONTHS OF PRACTICE OF THE TM TECHNIQUE, AND FOR LONG-TERM PRACTITIONERS. The MAACL mean scores shown here are of group E1, tested prior to instruction in the TM technique and posttested after three months of practice, and of group LT, consisting of subjects who had been practicing the technique for at least 12 months.



C2 = NONPRACTITIONERS
E2 = 3-MONTH PRACTITIONERS
LT = LONG-TERM PRACTITIONERS

FIG. 3. LEVELS OF HOSTILITY, ANXIETY, AND DEPRESSION OF NONPRACTITIONERS OF THE TM TECHNIQUE, THREE-MONTH PRACTITIONERS AND LONG-TERM PRACTITIONERS. The experimental group E2 consisted of subjects who had been practicing the TM technique for three months; the experimental group LT consisted of subjects who had been practicing for at least 12 months, and the control group C2 consisted of nonpractitioners. All the three groups were tested once only and were matched for age, sex, and education.

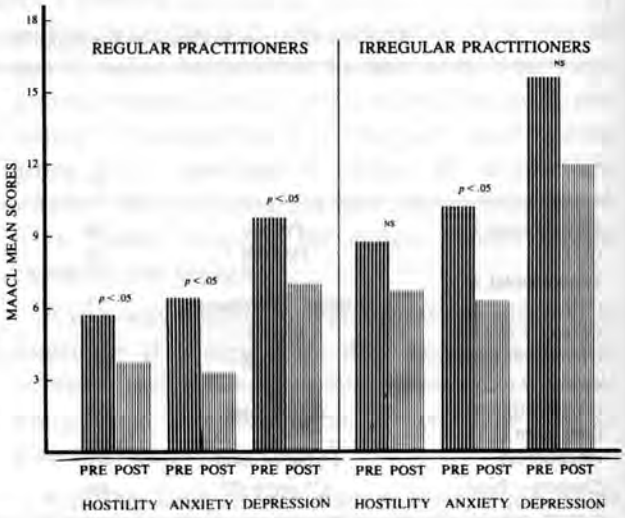


FIG. 4. LEVELS OF HOSTILITY, ANXIETY, AND DEPRESSION BEFORE AND AFTER THREE MONTHS OF PRACTICE OF THE TM TECHNIQUE FOR REGULAR AND IRREGULAR PRACTITIONERS. The prescore is of subjects in group E1 prior to instruction in the TM technique. The postscore is of group E1-post and E2, both consisting of subjects who had been practicing the TM technique for three months. 'Irregular' practitioners were subjects who missed one or more technique sessions per week (participants in the TM program usually practice the technique for 15–20 minutes morning and evening, on a regular basis).

Figure 4 shows the comparison of regular and irregular practitioners before instruction and after three months of practice. The reduction in the mean scores between the pre- and posttest is significant on all scales for regular practitioners, and significant ($p < .05$) on the anxiety scale for irregular practitioners. It is also evident that the levels of hostility, anxiety, and depression of those who became regular practitioners were lower than those who became irregular practitioners.

For those who had been practicing the TM technique for three months, there was no significant difference when comparing younger and older practitioners, and male and female practitioners.

DISCUSSION

It appears that the TM technique had a beneficial effect on its practitioners, particularly when considering the reduction in levels of hostility, anxiety, and depression and the change in adjective endorsement frequency on the MAACL of the experimental group E1, over the three-month period used in this study. No reduction of levels was noticed in the corresponding control group C1, so one can assume

that there was no significant influence on the experimental group due to retesting, the passage of time or any other interaction. Additionally, the levels of the second experimental group E2 (three-month practitioners) were significantly lower than those of its corresponding control group. The levels of hostility, anxiety, and depression of the long-term group were even lower than those of the two groups of three-month TM practitioners, which would indicate that the effects of the TM program are cumulative over time.

The levels of hostility, anxiety, and depression of the experimental group E1, before instruction in the TM technique, were higher than those of the control group C1 at the pretest. This could be explained by the fact that this group was about to embark on a new endeavor (learning the TM technique) and this could easily have effected responses to the check list. However this difference in levels is small, and when compared with the total controls, there is no significant difference.

It is also noticed that those who became irregular practitioners had higher levels of hostility, anxiety, and depression at the pretest, than those who became regular practitioners; this might indicate that irregularity is associated with the psychological state of the practitioners, rather than with any other factor (e.g. dissatisfaction with the TM program). There was a reduction in levels between the pre- and the posttest, which was significant on all scales for regular practitioners, and significant on the anxiety scale for irregular practitioners. So although irregular practitioners experienced positive effects, it appears that regularity in practice of the TM technique is important to maximize results. For the irregular practitioners, the reduction on the hostility and depression scales was not significant, which might indicate that anxiety levels are more easily reduced. The factors of age and sex did not appear to influence the results, as there was no significant difference in levels of hostility, anxiety, and depression when comparing younger and older practitioners, or comparing male and female practitioners.

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