THE TRANSCENDENTAL MEDITATION PROGRAM AND REHABILITATION: A PILOT PROJECT AT THE FEDERAL CORRECTIONAL INSTITUTION AT LOMPOC, CALIFORNIA

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Prisoners practicing the Transcendental Meditation technique showed a reduction in anxiety and an increase in positive behavior. This finding points to the usefulness of the Transcendental Meditation program in the field of rehabilitation.—EDITORS

The Transcendental Meditation program was examined as a possible solution to the difficult problem of inmate rehabilitation. Spielberger's State-Trait Anxiety Inventory was administered to prisoners at the Federal Correctional Institution at Lompoc, California, twice before and twice after they learned the Transcendental Meditation technique. At the final testing they were also administered a Shelly Questionnaire and a Likert Scale to assess self-perceived personality changes. At both pretest sessions (four and one-half weeks and one to two days before the experimental group received instruction in the Transcendental Meditation technique), the mean transitory and general anxiety test scores of the experimental subjects were insignificantly different from those of a comparison group of nonmeditating inmates. At the first posttest (six weeks after beginning Transcendental Meditation), the meditators showed anxiety scores significantly below the prison norm (p < .001 for transitory anxiety; p < .001 for general anxiety). This marked reduction in anxiety was maintained at the second posttest 15 weeks after Transcendental Meditation was begun (p < .001 for transitory anxiety; p < .001 for general anxiety). Regularity of meditation was correlated with reduction in anxiety. The Likert Scale administered at the second posttest session suggested positive personality changes in the meditating inmates. Comments elicited by a questionnaire indicated enthusiastic acceptance of the Transcendental Meditation program by the inmates. Because anxiety is associated with the most common problems facing inmates, and because Transcendental Meditation markedly reduces anxiety, the Transcendental Meditation program shows great promise for rehabilitation programs.

INTRODUCTION

In the field of correction and rehabilitation, over a hundred years of research and experimentation have yielded few, if any, treatment or rehabilitation techniques that effectively reduce the hostility and aggression characteristic of inmate populations and criminals on the street (23). Indeed, during the past five years violent riots have occurred with increasing frequency in prisons across the nation.

As citizens of our society have felt increasingly more lonely and helpless, the suicide, drug abuse, and crime rates have risen. Prisons exacerbate these feelings of helplessness (11), thereby stimulating the “fight-or-flight” reflex postulated by Cannon (7) and increasing crime, violence, and self-destructive behavior such as drug abuse and suicide. Our ineffectiveness in dealing with this situation may relate to the fact that we are working around the problem instead of confronting its cause by finding a way to decrease the over-stimulation of this basic “fight-or-flight” reflex system in the individual.

However, a number of recent studies on the effects of the Transcendental Meditation (TM) program suggest that it may offer a new hope for dealing with the difficult problem of correcting criminal behavior patterns. Practiced for 15–20 minutes twice daily, TM is a simple technique that requires no special beliefs, practices, or changes in lifestyle. Proponents of the technique argue that problem behavior and a lack of full personal development arise from the rigidifying effects of the accumulation of stressful experiences. They state that TM produces an especially deep state of rest that progressively ameliorates accumulated tensions and strains as well as increases the ability to withstand the effects of new stressful experiences as they arise.

Studies by Wallace and Benson (30, 31, 32) and Allison (2) indicate that during TM subjects experience reduc-
tions in oxygen consumption, cardiac output, skin conductance, and concentration of blood lactate as great or greater than is found at any point during a typical night of sleep. Furthermore, EEG studies indicate that during TM a pattern of coherent slow alpha waves and cross-hemispheric synchrony occurs. This pattern may be unique and appears to be clearly different from what is observed in ordinary states of waking, dreaming, deep sleep, or hypnotic trances.

In addition, studies of short- and long-term effects of the regular practice of the TM technique on subjects in the general population lend substantial support to the claims of its proponents. Controlled experimental studies have yielded significant positive results on measures of short- and long-term memory (1), reaction time (25), perceptual-motor coordination (6), intelligence (29), personality traits (9, 12, 18, 24), and self-actualization (10, 24). Clinical findings also show beneficial effects on insomnia (16), bronchial asthma (13), and high blood pressure (4).

The problems of anxiety, stress, and aggression that are typical of inmate populations have also been shown to be positively affected by the TM program. Meditators have been shown to have significantly lower rates of spontaneous skin resistance responses (a physiological measure of generalized anxiety) and to show faster physiological recovery from stressful stimuli (19). Using the Spielberger State-Trait Anxiety Inventory, Ferguson and Gowan (10) found a significant reduction in anxiety in subjects after only six and one-half weeks of TM, compared to a matched control group, and a second comparison group of four-year meditators showed very much lower scores than the six and one-half–week group. Substantial and cumulative reductions in anxiety (as measured by the Cattell IPAT Anxiety Scale) and reductions in the use of drugs, alcohol, and cigarettes were reported in another study (15). Anxiety, neuroticism, and aggression have all been shown to be lower among meditators in at least ten independent experiments using general personality inventories (5, 9, 10, 12, 15, 18, 20, 21, 22, 24).

Finally, the possibility that the TM program may be highly valuable for inmate populations was suggested by the results of a pilot study conducted at the La Tuna Federal Penitentiary in La Tuna, New Mexico (22). In that study, 12 narcotic addict–prisoners from the Narcotics Rehabilitation Act program at La Tuna were measured for spontaneous changes in skin resistance, a physiological index of anxiety, and were given the Minnesota Multiphasic Personality Inventory (MMPI) before beginning TM and again two months later. They were compared with a control group of seven nonmeditating prisoners measured at the same times. Also, results for regular meditators were compared with those for irregular meditators. Over the two-month period, the percentage of decrease of spontaneous skin resistance responses was significantly greater for regular meditators than for irregular meditators ($p < .001$). The correlation between the number of times subjects meditated during the two-month period and percentage of decrease in spontaneous skin resistance responses was also significant ($r = .74, N = 12, p < .01$). There was a significant correlation between the decrease in spontaneous skin resistance responses and the decrease in MMPI scale 7, which measures obsessiveness-compulsiveness ($r = .68, p < .025$). A reduction in compulsiveness indicates an increase in behavioral flexibility. Thus, the more regularly a subject meditated, the more he simultaneously grew in physiological stability and behavioral flexibility, accompanied by increased social outgoingness. It was concluded that the Transcendental Meditation program provides a profound physiological and psychological basis for the rehabilitation of prisoners and that regularity of meditation is vital to its effectiveness.

These positive research results were taken as the basis for developing a new treatment program at the Federal Correctional Institution at Lompoc, California. The objective was to determine whether TM has strong potential as a rehabilitation technique compatible with the correctional atmosphere.

The first hypothesis was that TM would have an immediate and strong effect in reducing anxiety, as defined by a self-report inventory (Spielberger’s State-Trait Anxiety Inventory, STAI). The second hypothesis was that personality traits closely associated with criminal behavior would change in meditating prisoners.

A correlation between the regularity of meditation and changes in anxiety was also hypothesized.

METHOD

SUBJECTS—The subjects were male inmates, with a mean age of 25 years, at the Federal Correctional Institution at Lompoc, California. Participation in the experimental program was completely voluntary with no rewards except those directly resulting from the practice of Transcendental Meditation. Most subjects were involved in the Peer Counseling Program and other programs but were not participating as a group in any specialized treatment. The TM program was open to all who wished to begin.

PROCEDURE—Stage I. Inmates who had expressed an interest in beginning TM attended an introductory lecture at the Education Department of the institution. All those who attended completed the State-Trait Anxiety Inventory (STAI), a Shelly Questionnaire, and a contract that outlined their commitment to the TM course in a group.
setting. Two weeks later they attended a second preparatory lecture on the TM program.

Stage II. Four and one-half weeks after the first lecture, the STAI was individually administered to nine subjects. Within 48 hours of taking the test all subjects were individually instructed in the TM technique by a qualified instructor of TM. Ten men from the original group were required to wait before being instructed in TM because they had not abstained from the use of drugs for 15 days prior to the date of instruction. This is a standard requirement for learning the technique. (TM can only be taught by teachers trained by the International Meditation Society in order to ensure that all subjects learn properly. Instruction cannot be duplicated by untrained individuals.) Following the initial instruction in TM, all subjects were required to attend a two-hour group meeting on each of three consecutive days.

Each subject was asked to meditate twice a day for 15 minutes. After the initial four-day instruction period he met with a trained instructor to verify the correctness of his practice three times a week for the first three weeks and then once a month for the remainder of the experiment. This verification of correct practice was conducted primarily in the Education Department on weekends. Group meditation and classes were also offered twice a week during the work-week for three months for those meditators interested in gaining additional knowledge of the theory behind the technique. In addition, three guest speakers from Maharishi International University in Santa Barbara, California, gave programs on Saturday evenings that were open to the entire inmate population.

Stage III. The STAI was administered again during the sixth and the fifteenth weeks after the inmates began TM. The first testing at six weeks after instruction in TM was administered individually before a verification session to the 16 subjects who attended the session. The last testing was administered to 15 subjects either in a classroom before one of the twice-weekly group meditation classes or individually to some subjects who did not attend the class. This last testing included not only the STAI, but also a Shelly Questionnaire, a Likert Scale for reporting changes in various feelings and attitudes, and a general questionnaire on the subject’s experiences with the Transcendental Meditation program.

INSTRUMENTS—The test battery consisted of the following:

1. The State-Trait Anxiety Inventory (STAI), a short measure of “transitory” and “general” anxiety (27), was administered to the experimental group at all four test sessions and to the nonmeditating comparison group at one test session before the experimental group began TM.

2. The Shelly Questionnaire (26), developed by Shelly at the University of Kansas, consists of questions relating to tension, relaxation, optimism, depression, boredom, and happiness. This test was administered to the experimental group during the final test session (15 weeks after beginning TM).

3. A Likert Scale, which asks the subject to mark on a five-point scale the degree of change he has experienced on several psychological variables, was administered to the experimental group during the final test session.

4. A general questionnaire asking for personal data, comments on the subject’s experiences with the Transcendental Meditation program, and information on how to improve the program was filled out by the meditating inmates during the final test session.

RESULTS

The most important result of this experiment was marked and significant reductions in both transitory and general anxiety scores after the inmates learned the Transcendental Meditation technique, as measured by the State-Trait Anxiety Inventory (tables 1 and 2, and figs. 1 and 2). At both pretest sessions, four and one-half weeks and one to two days before the inmates received instruction in Transcendental Meditation, their mean transitory and general anxiety test scores (table 1) were insignificantly different from those of a comparison group of nonmeditating inmates (tested only once, before the

### Table 1

<table>
<thead>
<tr>
<th>ANXIETY INVENTORY</th>
<th>NO. OF WEEKS BEFORE BEGINNING TM</th>
<th>NO. OF WEEKS AFTER BEGINNING TM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitory anxiety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean score</td>
<td>38.43</td>
<td>27.88</td>
</tr>
<tr>
<td>S.D.</td>
<td>14.07</td>
<td>5.84</td>
</tr>
<tr>
<td>t*</td>
<td>1.14</td>
<td>3.96</td>
</tr>
<tr>
<td>df</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>p</td>
<td>NS (13)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

| General anxiety   |                                 |                                 |
| Mean score        | 38.27                           | 27.20                           |
| S.D.              | 11.91                           | 4.62                            |
| t*                | 0.50                            | 4.99                            |
| df                | 9                               | 60                             |
| p                 | NS (.31)                        | <0.001                          |

*The mean test score for experimental subjects was compared to the mean test score for a group of nonmeditating inmates measured once, by means of a one-tailed t-test for independent samples. The mean score for transitory anxiety for the nonmeditating controls was 31.35 ± 11.58 (S.D.) (N = 48) and for general anxiety was 39.38 ± 9.05 (S.D.) (N = 47).

NS = not significant.
TABLE 2
MEAN REDUCTION IN ANXIETY IN INMATES PRACTICING TRANSCENDENTAL MEDITATION (n = 15)

<table>
<thead>
<tr>
<th>STATE-TRAIT ANXIETY INVENTORY</th>
<th>MEAN DIFF. SCORE* (post-pre)</th>
<th>S.D. OF DIFF.</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitory anxiety</td>
<td>-10.71</td>
<td>9.13</td>
<td>4.54</td>
<td>14</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>General anxiety</td>
<td>-7.72</td>
<td>7.80</td>
<td>3.83</td>
<td>14</td>
<td>&lt; .001</td>
</tr>
</tbody>
</table>

NOTE: The pretest score (or mean pretest score if two pretests were taken) for each of the 15 subjects tested 15 weeks after beginning TM was subtracted from the mean posttest score to give an indication of the change in anxiety test score after inmates started TM. The group mean of these individual differences is given here.

* A negative value indicates a reduction in anxiety test score.
† One-tailed t-test for the null hypothesis that the group mean of difference scores equals zero.

The pretest score (or mean if two pretests were taken) for each of the 15 subjects tested at 15 weeks after beginning the TM technique was subtracted from his mean posttest score, and the group mean of these difference scores was determined; the group decreased in transitory anxiety by 10.71 points, a highly significant decrease (p < .001), and decreased in general anxiety by 7.72 points, also a highly significant decrease (p < .001) (table 2).

The relation between anxiety reduction and regularity of meditation was also examined. The number of meditations missed in the last week of the experimental period for each of the 15 subjects tested at 15 weeks after beginning TM was correlated with the difference between the subject's pretest and posttest anxiety scores. For the group as a whole, the correlation coefficient was -0.34 for general anxiety (p = .11) and -0.39 for transitory anxiety (p = .074). For the 15 subjects the mean number of meditations missed in the last week was 3.53. Thus, the more meditations missed, the less reduction in anxiety occurred.

[Graphs showing mean pretest and posttest anxiety scores for inmates before and after beginning Transcendental Meditation, with significant p-values indicated.]
The subject indicated, by means of the Likert Scale, his change in various psychological factors since starting TM 15 weeks earlier. The 40 variables on the questionnaire were ranked according to the amount of reported change (i.e., the mean change for the group on the five-point scale for each item). The ten items that changed most are listed in table 3 and illustrated in fig. 3.

To compare changes on the Likert Scale items with changes on the two anxiety scales, the difference between each subject's mean pretest and posttest anxiety test scores was compared with the sum of the changes he reported on the 40 Likert Scale items. The correlation coefficient for changes in transitory anxiety and Likert Scale changes was 0.33 (N = 15, p = .12). The same comparison for general anxiety gave r = .18 (N = 15, not significant).

Shelly Questionnaire data for all but eight of the subjects were lost. A comparison of the pretest and posttest means for the eight subjects indicated decreased tension (t = 2.35, p = .026), increased relaxation (t = 1.81, p = .056), increased optimism (t = 1.84, p = .054), decreased depression (t = 1.62, p = .075), and decreased boredom (t = 1.06, p = .16; one-tailed t-test).

Below are typical comments from the subjects who completed the general questionnaire. Spelling and grammatical errors have been corrected, and material not relating to how a person felt about meditation has been omitted for clarity of presentation. These comments reflect the acceptance of the program by the subjects.

This is the greatest gift the Federal Institution at Lompoc has ever received. I definitely want this program to remain available to those in search of greater knowledge, self-relaxation, and harmony in a hostile environment. This brings tremendous well-being.

I think the TM program has helped me develop clarity of thought and emotion. The course seems to have inspired within myself a greater capacity for creativity and seems to generally make me feel mellow.

I've found TM to be very enlightening and very relaxing. To me, it brings about an inner calm that makes doing time in prison that much easier. I've found it to relieve a great deal of stress, and being in prison can be and is a very stress-filled experience.

After just the short time I've been meditating my outlook on life has become better, my rapport with people has become better, I don't get excited, tense, or nervous, and I can feel a general mellowing of my inner self.

In an environment like this prison, where tempers tend to run on short fuses, I strongly urge the continuation of the class. The more people meditating, the easier it will be for everyone to live in this place.

I feel better not only mentally, but physically and emotionally as well. I'm not as nervous or tense as I was prior to beginning meditation. I firmly believe that meditation...
can be of great benefit to all people. Plus, I think the staff in the institution would appreciate a portion of the inmate population mellowing out to some degree, as accomplished in meditation. TM is one of the best things for helping a person get his head straight.

This is a stress-filled environment; so is the world of cities and human habitation, but the stress here is more concentrated and definitely more blatant. I have noticed in myself and others instructed at the same time a decided decline in the adverse effect tension can have. Little by little I myself am becoming less tense, experiencing a little more peace, quiet, and relaxation; but the finest quality that meditation has allowed me to see is the possibility of autonomy—living in a world full of clutter, absurdity, and tension as a peaceful human. Let meditation reach more people. This feeling should be going around.

DISCUSSION

The three hypotheses testing for evidence of the positive effects of the TM program were all supported.

An immediate and lasting reduction of anxiety was recorded for the inmates who began TM. This reduction on both the transitory anxiety and general anxiety scales supports previous reports of reduction of anxiety through TM (3, 10, 15). So large were these reductions in anxiety among the inmates that Spielberger, the author of the State-Trait Anxiety Inventory used in this project, commented that he had never seen such large reductions in anxiety as those reported for the meditators in this study.*

The role of anxiety in causing maladjustment is recognized by many people in the correctional field. A large number of studies have developed this relationship between anxiety and maladjustment. Jackson (14) found a significant relationship among anxiety, aggression, and impulsivity. Mooney and Gordon (17) found that high anxiety is associated with reports of a larger number of problems in almost every area of adjustment. Further research on this issue is necessary, but there are strong indications that the level of anxiety a person experiences does affect his ability to cope with stress. As a person develops the ability to cope with stress more effectively, he experiences less frustration, which is considered a major source of aggression. The Frustration-Aggression Hypothesis presented by Dallard (8) is still felt by many to be an important one in any explanation of violence and aggression (28).

A high degree of positive personality change was reported by the meditating inmates. Several of the ten variables that changed the most are relevant to improvement in the sociopathic personality, e.g., increased emotional stability, decreased irritability, reduced desire for and use of drugs, and decreased depression. These improvements are key factors in any program of effective rehabilitation. Pre- and posttest scores using the Shelly Questionnaire supported these significant changes in people practicing the TM technique. These results have implications for ameliorating the rates of suicide and drug addiction in prisons; depressive symptoms that are reduced by TM include irritability, agitation, insomnia, and pessimism.

Finally, of critical importance to any rehabilitation treatment method is its acceptability to the inmates. The acceptance of the technique of TM is reflected in the comments reported here and by the fact that over 100 men have been on the waiting list to begin TM since the third week of the program. Staff support for those involved in the program has been very favorable. Only five of the original subjects had stopped meditation by the end of the experimental period.

The design of this preliminary study does not allow us to entirely rule out the possibility that these results are due (at least in part) to subject self-selection. However, since the decrease in anxiety was correlated with regularity of meditation, it seems likely that TM was the causative factor. Another possibility is that the recorded changes might be typical of the inmate population; but common experience with inmates renders this possibility extremely unlikely. The very substantial changes in anxiety and personality deserve further exploration.

In conclusion, the practice of Transcendental Meditation was found to significantly reduce both transitory and general anxiety among inmates, as measured by the STAI. Furthermore, Likert Scale scores reflected a high degree of positive personality change. These results suggest the potential value of Transcendental Meditation for rehabilitation programs as a means for reducing anxiety-related behavioral problems as well as an aid in fulfilling the broader purpose of rehabilitation—the integration of personality as the basis for a socially rewarding life.

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