INFLUENCE OF THE TRANSCENDENTAL MEDITATION PROGRAM ON STATE ANXIETY

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The Transcendental Meditation technique was found to effectively reduce anxiety.—EDITORS

The purpose of this study was to examine the influence of the Transcendental Meditation technique on a psychological measure of anxiety (State-Trait Anxiety Inventory A-State scale). The anxiety scale was initially administered to eight experimental subjects and nine control subjects two days before the experimental subjects began the Transcendental Meditation technique. Six weeks later subjects were requested to carry out a demanding task; immediately thereafter the control group was instructed to sit with eyes closed and the experimental group to meditate for 15 minutes. The anxiety scale was then readministered. Mean anxiety scores for the two groups were not significantly different on the first administration of the test. The reduction in anxiety between the two tests was significantly greater for the meditators than for the nonmeditators (p < .05, t-test). As both groups were exposed to knowledge about the Transcendental Meditation program, but only the experimental group was instructed in the technique, the reduced anxiety in the meditators was due to the experience of Transcendental Meditation rather than the knowledge about it. We conclude that the Transcendental Meditation technique effectively reduces the anxiety resulting from a demanding and potentially anxiety-provoking task and suggest further investigation for broad applications of TM in reducing anxiety in the complex and demanding situations of modern life.

INTRODUCTION

Recent studies have indicated that the Transcendental Meditation (TM) technique produces a physiologically quiescent condition opposite to that of the anxiety response. During the Transcendental Meditation technique subjects have shown reductions in oxygen consumption, carbon dioxide elimination, and rate and volume of respiration and a marked decrease in the blood lactate level, a slowing of the heartbeat, an increase in skin resistance, and an intensification of slow alpha waves with occasional theta-wave activity (7). Since Transcendental Meditation has been shown to have a positive influence on a subject’s psychological state as measured by Shostrom’s Personal Orientation Inventory (5), we decided to investigate the influence of the Transcendental Meditation technique on a psychological measure of anxiety, the State-Trait Anxiety Inventory A-State scale (STAI A-State) designed by Spielberger, Gorsuch, and Lushene (6).

METHODS

Two groups of subjects, all undergraduates at the University of Cincinnati, completed the STAI A-State questionnaire under control conditions and again six weeks later under experimental conditions. An experimental group of eight subjects (meditators) completed the questionnaire for the first time two days prior to instruction in the Transcendental Meditation technique. The control group of nine subjects (nonmeditators) completed the questionnaire under similar conditions at the same time, but did not receive instruction in TM. Control subjects were students enrolled in a credit course on the Science of Creative Intelligence at the University of Cincinnati. The course covered the intellectual understanding of Transcendental Meditation, but the actual practice of the TM technique was optional. The members of the control group had chosen not to start the practice. The experimental condition consisted of a demanding task—that of taking the Remote Associates Test (3) under a restricted time limit. Comments made by subjects in both groups indicated that the Remote Associates Test was demanding and made them feel anxious. Directly after taking the test the control group was instructed to sit with eyes closed for 15 minutes, and the meditation group was instructed to meditate for 15 minutes. The anxiety scale was then readministered to both groups.

RESULTS

The results of the two administrations of the STAI A-State scale are shown in table 1 and fig. 1.
TABLE 1

<table>
<thead>
<tr>
<th>GROUP</th>
<th>N</th>
<th>PRETEST</th>
<th>S.D.</th>
<th>POSTTEST</th>
<th>S.D.</th>
<th>CHANGE IN ANXIETY SCORE</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meditators</td>
<td>8</td>
<td>46.50</td>
<td>7.63</td>
<td>30.50</td>
<td>7.34</td>
<td>16.00</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Nonmeditators</td>
<td>9</td>
<td>41.11</td>
<td>9.62</td>
<td>36.22</td>
<td>11.75</td>
<td>4.89</td>
<td>NS†</td>
</tr>
</tbody>
</table>

*t-test.
†NS = not significant.

There was no significant difference in the mean scores for experimental and control groups on the first administration of the anxiety scale (i.e., before the experimental group learned the TM technique). The mean difference between the two test sessions, however, was significantly greater for the meditators than for the non-meditators ($p < .05$, t-test) (fig. 2). The design of the experiment did not permit the separation of the effects of the meditation immediately preceding the second test and the cumulative effects of six weeks of twice-daily meditation.

Since both groups were exposed to extensive intellectual knowledge about the TM program in the classroom, but only the experimental group had actually learned and practiced the technique, it seems evident that the experience of TM rather than the knowledge about it was responsible for the reduction of anxiety in this experiment.

DISCUSSION

It is well known that mental tasks such as math problems produce elevated blood pressure responses in normal and hypertensive subjects (1). Such studies are indicative of the fact that the "recruiting response" and/or the "fight-or-flight" anxiety response (2) can be elicited by circumstances that are not physically threatening. Research in recent years has indicated that the "stress response" can be elicited by any life situation; persons with chronic anxiety react to everyday life situations as if they were emergencies. This form of pathological anxiety resulting from long-term exposure to stressful conditions exemplifies the fact that the degree of stress produced by a particular situation depends not only upon the nature of the external event, but also the internal state of the individual. It is becoming more and more evident to behavioral psychologists that the internal state of the or-

FIG. 1. MEAN ANXIETY SCORES. The figure shows mean anxiety scores at pretest (before the experimental group learned Transcendental Meditation) and at posttest (six weeks later). The posttest was administered after the subjects had recovered from an anxiety-provoking task by either meditating or resting with eyes closed.

FIG. 2. PRE-POSTTEST DIFFERENCE SCORES FOR ANXIETY. Mean difference scores from pretest to posttest are shown for meditators and nonmeditators.
ganism must be taken into account to explain differences in behavioral responses.

The Transcendental Meditation technique, by introducing a physiologically quiescent state, appears to lower anxiety levels and reduce the effect associated with potentially stressful situations, as measured by the STAI A-State scale, allowing the individual to retain emotional equilibrium in the midst of demanding life situations.

Many researchers feel that anxiety is caused by a lack of certainty. The identity crisis in adolescents is related to the uncertainty of what the future will bring. People practicing TM report that uncertainty about the future decreases and that the present takes on more meaning and importance (5). Also, it has been shown that meditators feel more self-confident, have a higher self-regard, and feel more autonomous (4). All of these improvements in psychological traits are related to reduction in anxiety.

Historically, in attempts to improve the quality of life, society has placed emphasis upon the improvement of external factors. In the management of the problem of stress in society, however, it is increasingly apparent that the internal condition of the individual in society is an equally if not more important aspect of the problem. The Transcendental Meditation technique, by adjusting the internal physiological response mechanisms, allows the person to be less perturbed by external demands and thus more effective in responding to potentially stressful environmental influences. Lowering of anxiety through TM may lead to increased energy, self-sufficiency, and flexibility in dealing with an increasingly complex environment.

Further psychological and physiological research is recommended to investigate the effects of the TM program on hypertensives in executive positions and military battle situations. Also, research is indicated in the fields of alcoholism, drug abuse, and mental health.

REFERENCES