THE TRANSCENDENTAL MEDITATION PROGRAM AND ESSENTIAL HYPERTENSION

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Borderline hypertensives demonstrated normal blood pressure when measured a mean of eight months after instruction in the Transcendental Meditation technique. —EDITORS

This investigation tests the hypothesis that regular practice of the Transcendental Meditation technique can reduce blood pressure in borderline hypertensives. Five out-patients with essential hypertension volunteered for regular monitoring in the study. Cardiovascular disease and renal disease were ruled out as etiologies in these patients. All subjects were monitored regularly with the Arteriosonde (automated blood pressure recorder) for a period of at least six weeks prior to and for several months following instruction in the Transcendental Meditation technique. They were taught the technique by a qualified instructor in the standard seven-step, four-day format. All subjects regularly practiced this mental technique for 20 minutes twice daily over the several months comprising the experimental period. Blood pressure was measured outside of the period of practice of the technique.

The results are shown in table 1 and fig. 1. All five hypertensives demonstrated decreased systolic and diastolic blood pressure after practicing the Transcendental Meditation technique for a mean of 31.6 weeks. Systolic blood pressure fell from the hypertensive range to the normal range in four of the five patients. The mean decrease of 15.2 mm Hg was statistically significant ($t = 4.0, p = .016$; one-tailed $t$-test for paired samples). Diastolic blood pressure was on the borderline between the normal range and the hypertensive range prior to instruction in the Transcendental Meditation technique and fell well within the normal range in four of the five subjects after the Transcendental Meditation program was begun. The mean decrease, 8.6 mm Hg, was significant ($t = 6.5, p = .003$; one-tailed $t$-test for paired samples). These results suggest that the Transcendental Meditation program has a significant positive effect in reducing blood pressure from a borderline hypertensive level to a normal level.

This beneficial influence of the Transcendental Meditation program on hypertension could be accounted for by other reported effects of the program, such as reduced anxiety (2, 4) and increased autonomic stability (5). Wallace and others, in their studies of physiological changes during the Transcendental Meditation technique, reported that the technique produces a broad range of physiological changes characteristic of a state of deep rest accompanied by alertness and suggested that these changes are responsible for the effects of the technique outside of the period of practice (1, 6, 7, 8). Heart rate and EEG were examined during the TM technique in two of the subjects in the

FIG. 1. CHANGE IN BLOOD PRESSURE. The figure shows the change in systolic and diastolic blood pressure for each individual from before instruction in the TM technique (dots) to after instruction in the technique (open circles). The mean and range in systolic and diastolic blood pressure for the normal population at various ages are also shown in the shaded areas (3, p. 298).
TABLE 1

<table>
<thead>
<tr>
<th>PATIENT</th>
<th>SEX</th>
<th>AGE</th>
<th>Monitored Weeks</th>
<th>Average Blood Pressure (mm Hg)</th>
<th>Weeks since Instruction</th>
<th>Average Blood Pressure (mm Hg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WJ</td>
<td>F</td>
<td>38</td>
<td>7</td>
<td>150 100</td>
<td>35</td>
<td>135 91</td>
</tr>
<tr>
<td>DD*</td>
<td>F</td>
<td>31</td>
<td>6</td>
<td>149 103</td>
<td>13</td>
<td>138 100</td>
</tr>
<tr>
<td>CB</td>
<td>F</td>
<td>49</td>
<td>6</td>
<td>153 99</td>
<td>22</td>
<td>130 94</td>
</tr>
<tr>
<td>CA</td>
<td>F</td>
<td>25</td>
<td>6</td>
<td>153 103</td>
<td>32</td>
<td>151 98</td>
</tr>
<tr>
<td>HW*</td>
<td>M</td>
<td>48</td>
<td>8</td>
<td>160 100</td>
<td>28</td>
<td>139 95</td>
</tr>
</tbody>
</table>

Mean 38.2 6.6 153.0 101.0 31.6 137.8 92.4
S.D. 10.5 0.9 4.3 1.9 5.8 7.9 4.4
Mean difference (after learning TM technique – before)
15.2 8.6
4.0 6.5
4 4
0.016 0.003

*Results at two intervals after the TM program was begun are listed for patients DD and HW. The second value in both cases is used for calculation of means and for the t-test.
†One-tailed t-test for paired samples.

The present experiment; they showed a reduction in heart rate and an increase in brain wave coherence in all channels at both alpha and theta frequencies, consistent with a restful state accompanied by alertness. This state is apparently very beneficial to hypertensives, and therefore its full clinical potential for this and other areas of stress-related disorders should be fully explored.

REFERENCES

4. LAZAR, Z.; FARWELL, L.; and FARROW, J. T. 1972. The effects of the Transcendental Meditation program on anxiety, drug abuse, cigarette smoking, and alcohol consumption. (Published in this volume.)