EFFECTS OF FOOT REFLEXOLOGY ON POST-MENOPAUSAL HYPERTENSIVE WOMEN AMONG FABRIC PRODUCTION WORKERS IN SELECTED COMPANIES AT TRICHY

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ABSTRACT
Blood pressure is typically lower in pre-menopausal women than in men. However, after menopause, the prevalence of hypertension in women is higher than in men. Hypertension is a major risk factor for cardiovascular disease in women and men. Cardiovascular disease is the leading cause of death in women. The prevalence of post-menopausal hypertension is rapidly increasing all over the world, at an alarming rate over the recent years. The aim of the study was to assess the effectiveness of foot reflexology to reduce blood pressure among fabric production workers in selected companies at Trichy. Materials and methods: An experimental study with quantitative approach with pre-test and post-test design was used in this study. 60 (sixty) female post-menopausal hypertensive clients (30 in experimental and 30 in control group) were selected by simple random sampling technique. An interview schedule was used to collect data. The tool used for the study includes a questionnaire and blood pressure monitoring using sphygmomanometer and stethoscope. They were given foot reflexology for both the feet at a frequency of 3 per day for 20 minutes. It was done for 5 consecutive days. On the 5th day the researcher reassessed the blood pressure using the sphygmomanometer and stethoscope. Results: Foot Reflexology was found to be effective in experimental group by considering SBP level; blood pressure was reduced by 6.8% than in the pre-test and by considering DBP level, blood pressure was reduced by 11.9% than in the pretest. And in control group, 0.89% reduction of systolic blood pressure and 2.60% reduction of diastolic blood pressure were monitored than in the pre-test. Conclusion: The study concluded that, the systolic blood pressure difference in experimental group was 10.17 and in control group, it was 1.33 and the ‘t’ value was 6.68 which is statistically significant with p value at 0.001 Then the diastolic blood pressure difference in experimental group was 10.67 and in the control group it was 2.33 which is statistically significant with the ‘t’ value being 6.10 and p value at 0.001. Thus, Foot Reflexology was more effective for experimental group in the reduction of systolic and diastolic blood pressures.

Keywords: Foot Reflexology, Hypertension, Post-menopausal hypertensive women

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INTRODUCTION
Hypertension in women is often undiagnosed or inadequately treated, especially after menopause when cardiovascular risk increases. In pre-menopausal women, endogenous estrogens maintain vasodilation and thus contribute to blood pressure control. Ageing and the loss of endogenous estrogen production after menopause are accompanied by increases in blood pressure, contributing to the high prevalence of hypertension in older women. Currently, 75% of post-menopausal women in the United States are hypertensive. The high prevalence of obesity, the lack of regular physical exercise, and dietary salt are important factors contributing to post-menopausal hypertension and aggravating it. In view of the ongoing population ageing throughout the world, diagnosis and treatment of hypertension in post-menopausal women are important to reduce the excess burden of associated cardiovascular disease and to improve outcomes of potentially fatal complications such as stroke and myocardial infarction.

More than 25% of the female adult world population is hypertensive. Elevations in blood pressure in women are related to cardiovascular risk, with the prevalence of hypertension being particularly high among women aged 60 years and above. In the United States, 75% of post-menopausal women are hypertensive. Hypertension is often accompanied by other cardiovascular risk factors like obesity, dyslipidemia, and diabetes mellitus. It is noteworthy that the prevalence of hypertension-related cardiovascular complications is greater in post-menopausal women than in age-matched men. Indeed, these complications represent the leading cause of deaths in women. Clinical studies have documented beneficial effects of anti-hypertensive therapy on cardiovascular outcome, even in patients at 80 years of age. Overall recognition, control and treatment of hypertension in post-menopausal women are still poor in primary care, and hypertension is often not being treated aggressively enough. Thus, further improvements of medical and public health measures, awareness of patients and physicians and improved information policies are needed.

NEED FOR THE STUDY
Massage therapy is one of the earliest treatment methods of ancient cultures. However, this old technique still provides significant benefits and more researches are still continuing for exploring its effects on human beings. Embong and Wong documented that reflexology is a study which describes connection of certain body parts especially feet and hands to other body segments. Reflexologists depend on the reflexology chart which displays connection of pressure points in sole of feet and palm of hands with related body organs. Reflexologists count on proper pressure and gentle strokes on specific points on feet and in hands to revitalise the associated organs. Massage accelerates the stimulation of the sympathetic nervous system which leads to the anabolic cross-over effect which can be from either direct neural mechanisms or via endocrine system. Sympathetic nervous system stimulation reduces blood pressure by vasodilation.

PROBLEM STATEMENT
‘A study to assess the effectiveness of foot reflexology to reduce blood pressure among fabric production workers in selected companies at Trichy’

OBJECTIVES
1. To assess the blood pressure among patients with hypertension in experimental and control groups.
2. To find out the blood pressure before and after foot reflexology among patients with hypertension in the experimental group
3. To compare the mean difference in blood pressure among hypertensive patients between experimental and control groups.
4. To determine the association between the mean difference in blood pressure and selected demographics among patients with hypertension in the experimental group

HYPOTHESIS
$H_1$: There will be a significant difference in blood pressure before and after foot reflexology among patients with hypertension in the experimental group.
$H_2$: There will be a significant difference in the post-test blood pressure among hypertensive patients between experimental and control groups.
$H_3$: There will be a significant association between the levels of blood pressure and selected demographic variables among patients with hypertension in the experimental group.
MATERIALS AND METHODS
An experimental study with quantitative approach with pre-test and post-test design was used in this study. 60 (sixty) female post-menopausal hypertensive clients (30 in experimental and 30 in the control group) were selected by simple random sampling technique. An interview schedule was used to collect data. The tool used for the study included a questionnaire and monitoring of blood pressure using sphygmomanometer and stethoscope. They were given foot reflexology for both the feet at a frequency of 3 per day for 20 minutes. It was done for 5 consecutive days. On the 5th day the researcher reassessed the blood pressure using the sphygmomanometer and stethoscope.

RESULTS

Table – 1: n 1 = 30, n 2 = 30

<table>
<thead>
<tr>
<th>Groups</th>
<th>Blood Pressure</th>
<th>Pre-test &amp; Post-Test</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>Percentage Hypertension Difference With 95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SBP</td>
<td>Pre-test</td>
<td>148.00</td>
<td>10.17</td>
<td>6.80 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-test</td>
<td>137.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DBP</td>
<td>Pre-test</td>
<td>89.00</td>
<td>10.67</td>
<td>11.90 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-test</td>
<td>78.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Group</td>
<td>SBP</td>
<td>Pre-test</td>
<td>148.33</td>
<td>1.33</td>
<td>0.89 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-test</td>
<td>147.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DBP</td>
<td>Pre-test</td>
<td>89.67</td>
<td>2.34</td>
<td>2.60 %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-test</td>
<td>87.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table - 1 explains that the mean SBP difference with 95% CI is 10.17 and DBP difference is 10.67 in the experimental group. In the control group, the mean SBP difference is 1.33 and DBP difference is 2.34. It is concluded that there was a statistically significant difference in blood pressure levels among hypertensive clients between experimental and control groups.

Foot Reflexology was found to be effective in the experimental group by considering SBP level; blood pressure was reduced by 6.8% than in the pretest and by considering DBP level, blood pressure was reduced by 11.9% than in the pre-test. In the control group, 0.89% reduction of systolic blood pressure and 2.60% reduction of diastolic blood pressure were monitored than in the pre-test.

CONCLUSION

The study concluded that the systolic blood pressure difference in experimental group was 10.17 and in the control group, the difference was 1.33 and the ‘t’ value was 6.68 which is statistically significant with the p value at 0.001. Then the diastolic blood pressure difference in experimental group was 10.67 and in the control group, it was 2.33 which is statistically significant with the ‘t’ value being 6.10 and p value at 0.001. Thus, Foot Reflexology is more effective for experimental group in the reduction of systolic and diastolic blood pressures.

RECOMMENDATIONS

- A similar study could be replicated using a large sample
- A similar study can be conducted with randomisation
- A similar study can be conducted with experimental and control group
REFERENCES