Effects of foot reflexology on reducing blood pressure in patients with hypertension

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Abstract

Background

The incidence of hypertension is increasing in developing countries such as Thailand (Chaiteerapan et al 1997; Ministry of Public Health 2001; National Library of Thailand Cataloguing in Publication Data 2001) as a result of sociological, political and economic changes. These changes are producing enormous alterations in people’s lifestyles, following similar trends in western countries (National Economic and Social Development Board 1997). Negative changes in food consumption, alcohol consumption, level of physical activity, smoking, stress and tension have led to an increase in chronic health problems for Thai people (National Economic and Social Development Board 1997). Age, gender, ethnicity, genetic background, family health history and hyperlipidaemia are likely to influence hypertension (Kaplan, Lieberman & Neal 2002; Mancia et al 2002; Manger & Gifford 2001; National Heart Foundation of Australia 2003).

It has been found that health care professionals and patients with chronic disease have increased their use of complementary therapies to help relieve uncomfortable symptoms and suffering (Long, Huntley & Ernst 2001). Foot reflexology is a well known complementary therapy which claims to help the body achieve homeostasis (Byers 2001; Dougans 2002). It is believed that pressing specific areas on the feet related to specific glands or organs of the body can help these glands and organs to function at their peak, allowing the body to heal itself (Byers 2001; Dougans 2002). The principle difference between massage or touch and foot reflexology is that foot reflexology provides not only the relaxation effect obtained from massage or touch is said to also improve body’s immunity contributing to healing process (Byers 2001;
Doughans 2002). Foot reflexology has been scientifically researched in many studies to explore the claimed benefits (Bishop 2003; Kohara et al 2004; Oleson & Flocco 1993; Siev-Ner et al 2003; Yang 2005). Some studies have supported its ability to reduce anxiety and pain (Gambles, Crooke & Wilkinson 2002; Launso, Brendstrup & Arnberg 1999; Stephenson, Dalton & Carlson 2003; Stephenson, Weinrich & Tavakoli 2000). However, there has been little scientific evidence to support the claim that foot reflexology can reduce blood pressure and serum lipids, and can improve the quality of life in patients with hypertension (Hodgson 2000; Milligan et al 2002; Park & Cho 2004). The purpose of this study was to begin to fill this gap by investigating the influence of foot reflexology on blood pressure, serum lipids and quality of life.

**Aim**

The aim of this study was to investigate the effect of foot reflexology on reducing blood pressure in patients with hypertension. To this end, patients receiving reflexology were compared with patients receiving a light foot massage, thus controlling for any effects contributed by massage or touch alone.

**Null hypotheses**

1. There is no difference in mean blood pressure level between the foot reflexology group and the light foot massage group at the end of four weeks of treatment.

2. There is no difference in mean low density lipoprotein (LDL) cholesterol and triglyceride levels between the foot reflexology group and the light foot massage group at the end of four weeks of treatment.
3. There is no difference in mean quality of life scores between the foot reflexology group and the light foot massage group at the end of four weeks of treatment.

Sample

A sample size of 128 was required to yield a power of 80%, if the difference in mean diastolic blood pressure between the two groups was 5 mmHg. One hundred twenty eight patients with hypertension who attended the hypertensive clinic in the medical outpatients department of Phramongkutklao Hospital, Bangkok, Thailand were enrolled and participated in the study.

Methods

Data collection

This study used a randomized controlled trial design. Participants were randomly allocated into one of two groups – 64 participants in the foot reflexology group (intervention) and 64 in the light foot massage group (control). Data collection took place over 4½ months between 26 July and 9 December 2004. Ethics approval was obtained from both the university and hospital ethics committees.

Prior to randomization, participants were asked to complete a demographic data questionnaire and the World Health Organization Quality of Life-BREF (WHOQOL-BREF) (World Health Organization 1996) questionnaire. Blood was drawn to test LDL cholesterol and triglyceride levels. Using an intervention protocol based on previous literature (Byers 2001), participants in the foot reflexology group received their usual medical treatment and a 50-minute foot reflexology treatment twice a week for four weeks. Participants in the light foot massage group received their usual...
medical treatment and a 30-minute light foot massage session without pressure on
specific reflexology areas twice a week for four weeks. Blood pressure was recorded
before and after each treatment. At the end of the study, participants were asked to
complete the WHOQOL-BREF (World Health Organization 1996) again and blood
was once more drawn to test LDL cholesterol and triglyceride levels.

Data analysis
An independent samples t-test followed by analysis of covariance was used to test for
difference in mean diastolic blood pressure between treatment groups both
unadjusted and adjusted for baseline values respectively. Descriptive statistics were
used to present the demographic data.

Results
Demographic data
Control and intervention groups were similar in gender, age, educational background,
economic factors, lifestyle characteristics, co-morbidities and medical treatments.

Demographic data which were substantially different between groups were marital
status, the length of time experiencing hypertension and the length of time having
treatment for hypertension. The study showed that fewer participants in the foot
reflexology group (57.8%) were married than in the light foot massage group
(70.3%). The foot reflexology group also had a higher rate (32.8%) of
‘divorced/separated/widowed’ compared with the light foot massage group (20.3%).
Participants in the light foot massage group had almost nine times the number of
participants who had had hypertension for more than 15 years, and almost eight
times the number of participants who had been having treatment for hypertension for more than 15 years, compared with those in the foot reflexology group.

**Outcome variables**

For both the unadjusted and adjusted analyses, there was no statistically significant difference between treatment groups post-intervention.

**Conclusions**

The results from this study did not support the claim that foot reflexology can decrease blood pressure, LDL cholesterol and triglyceride levels. Similarly, there was no evidence that it could improve the quality of life in patients with hypertension.
Declaration

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Candidate:

……………………………………….

Jeranut Somchock
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