

Effectiveness of the Royal Thai Traditional Massage for Relief of Muscle Pain

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ABSTRACT

Objective: To determine the effectiveness of Thai traditional massage for muscle pain relief.

Methods: Adults with muscle pain in the neck and/or shoulder and/or back without organic causes that needed specific treatment who attended the Ayurved Clinic during April to May 2004 received royal Thai traditional massage performed by experienced personnel. An effectiveness of royal Thai traditional massage was determined by pain relief assessed by visual analog scale

Results: There were 115 participants; 88 (76.5%) were females. The mean age of the participants was 47.9 years; 45.2% of them had shoulder pain, 40.9% back pain and 26.1% neck pain. The median duration of the symptom was 4 months. The mean pain scores of the participants before and after the royal Thai traditional massage were 7.0 and 3.2, respectively ($p < 0.001$). The participants who had a pain score < 3 before and after the royal Thai traditional massage were 3.5% and 79.1%, respectively ($p < 0.001$). Adverse effects of the massage were not observed.

Conclusion: Royal Thai traditional massage is probably effective in relieving muscle pain of the neck, shoulder and back.

Keywords: Royal Thai traditional massage; Muscle pain; Myalgia

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Muscle pain is a common complaint of individuals presented to general medical practitioners. The causes of muscle pain are usually related to occupation or bad posture, without any specific organic diseases. These patients usually receive non-steroidal anti-inflammatory agents (NSAIDs) for symptomatic relief. This mode of therapy may lead to side effects such as gastritis, peptic ulcer and upper gastro-intestinal bleeding. In addition, a long-term use of NSAIDs, especially COX-2 inhibitors, is costly. Thai traditional massage has been used to relieve muscle pain in Thai people for centuries. The maneuver may be an appropriate alternative therapy in modern medicine for relieving muscle pain. A meta-analysis of randomized controlled trials of massage therapy in various conditions revealed that its single dose had insignificant effect on immediate pain whereas multiple-doses were found effective¹. The aforementioned meta-analysis was not applicable to our setting in Thailand for two reasons. First, the massage used in the included studies was not Thai traditional massage. Second, the study patients had a wide variety of

pain, including labor, post-operative and cancer pain. Therefore, the present study was carried out to determine whether a single session of the royal Thai traditional massage (RTTM) was effective in relieving muscle pain.

MATERIALS AND METHODS

This was an experimental self-controlled study at the Ayurved Clinic, Siriraj Hospital and Ayurved School, Phaholyotin Campus, Bangkok, from April to May, 2004. The study was approved by the Ethics Committee on Human Research, Faculty of Medicine Siriraj Hospital, Mahidol University.

Participants

The participants were adults, older than 18 years, who had muscle pain either in the neck, shoulder or back and agreed to participate in the study. A participant would be excluded if s/he had an organic cause of muscle pain that needed specific treatment, skin lesion at the massage site or had been receiving massage. Sample size estimation was based on a pilot study of 14 subjects with muscle pain. The mean pain score before RTTM was 7 and the mean pain score after RTTM was 3.

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TABLE 1. Study participants' characteristics

Total	115
Males	27 (23.5%)
Females	88 (76.5%)
Age (Years)	
Mean \pm SD	47.9 \pm 13.8
Body weight (Kg.)	
Mean \pm SD	61.2 \pm 10.9
Site of pain	
Shoulder	52 (45.2%)
Back	47 (40.9%)
Neck	30 (26.1%)
Others	9 (7.8%)
Duration of pain	
Mean	1.8 years
Median	4 months
Range	1day to 20 years
Duration of pain	
Acute pain (\leq 6 months)	66 (57.4%)
Mean	1 month
Median	14 days
Range	1 day to 6 months
Chronic pain (> 6 months)	49 (42.6%)
Median	12 months
Range	8 months to 20 years
History of prior treatment	
Yes	93 (80.9%)
Modern medicine	56 (60.2%)
Current treatment	
Yes	45 (39.1%)
Modern medicine	26 (57.8%)

Approximately, 80% of the subjects had a mean pain score after RTTM ≤ 3 . The aim of the study was to detect any response (mean pain score after massage ≤ 3) of $80\% \pm 10\%$ with 5% type I error (2-sided). Therefore, the appropriate sample size was 108.

Intervention

The massage maneuver used in this study was the Royal Thai Traditional Massage. The practitioners were experienced personnel at the Ayurved Clinic, Siriraj Hospital, and the Ayurved School, Phaholyotin Campus, Bangkok. They used only palms and fingers to compress the area where the clients complained of having pain for 40 to 45 minutes. There was no bone and joint manipulation during the massage procedures.

Main Outcome Measurement

Each participant was asked to provide demographic and relevant clinical data to the study team before receiving the massage. The severity of pain was also assessed by each participant using a visual analog scale of 0 to 10, where 0 was "no pain" and 10 was "unbearable pain". The pain severity was reassessed by

TABLE 2. Effectiveness of the royal Thai traditional massage in 115 participants

	Pain score Mean \pm SD (Range)
Before massage	7.0 \pm 1.9 (3 - 10)
After massage	3.2 \pm 1.2 (0 - 7)
Participants with pain score ≤ 3	
Before massage	4 / 115 (3.5%)
After massage	91 / 115 (79.1%)

each participant immediately after finishing the massage, using the identical scale.

Data Analysis

The data were entered into SPSS for Windows. The data were analyzed by descriptive statistics, paired student t-test and chi-square statistics where appropriate.

RESULTS

In total, there were 115 participants. The characteristics of the studied participants are shown in Table 1. Most participants were middle-aged females. The common sites of pain were shoulder(s), back and neck. The median duration of the symptom was 4 months. Fifty-seven percent of the subjects had muscle pain for less than 6 months. Most subjects had used modern medicine for the treatment of their muscle pain. The effectiveness of RTTM is shown in Table 2. The mean pain scores of the participants before and after RTTM were 7.0 and 3.2, respectively ($p < 0.001$). Subjects who had a pain score of ≤ 3 before and after RTTM were 3.5% and 79.1%, respectively ($p < 0.001$). The response rates in participants with shoulder, back and neck pain were 82.7%, 74.5% and 76.7%, respectively ($p = 0.6$). The response rates in participants with acute pain and chronic pain were 83.3% and 73.5%, respectively ($p = 0.3$). Adverse effects of the massage were not observed.

DISCUSSION

We found that RTTM was safe and effective in relieving muscle pain of the shoulder(s), back and neck. The differences in the effectiveness of RTTM among various sites of pain or between acute and chronic pain were not observed. The explanations for pain relief achieved by the massage included the gate control theory of pain reduction,⁵ promotion of parasympathetic activity,² influence on body chemistry, e.g., an increase in serotonin levels,³ a release of endorphins,⁴ mechanical effects to promote circulation of blood and the lymph.⁵ The magnitude of the effects of treatment in our study was quite obvious. A mean decrease in the pain score was 4 and the response rate (pain score of ≤ 3) after the massage (79.1%) was much higher than that before the massage (3.5%). Since our study is a self-controlled study and there was no concurrent control group, a portion of the responses observed after massage could be due to placebo effect or Hawthorne effect.⁶ The Hawthorne effect is often mentioned as a possible explanation for positive results in intervention studies. It is used to cover many phenomena, not only unwittingly confounding variables under study by the study itself, but also behavioral change due to an awareness of being observed, active compliance with the supposed wishes of researchers because of special attention received, or positive response to the stimulus being introduced. Therefore, the effectiveness and efficiency of RTTM should be confirmed in a randomized controlled study.

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REFERENCES

1. Moyer CA, Rounds J, Hannum JW. A meta-analysis of massage therapy research. Psychol Bull 2004;130:3-18.
2. Field TM. Massage therapy effects. Am Psychologist 1998;53:1270-81.
3. Ironson G, Field T, Scafidi F, Kumar M, Patarca R, Price A, et al. Massage therapy is associated with enhancement of the immune system's cytotoxic capacity. Internat J Neurosci 1996;84:205-18.
4. Andersson S, Lundberg T. Acupuncture - from empiricism to science: Functional background to acupuncture effects in pain and disease. Med Hypotheses 1995;45:271-81.
5. Fritz S. Mosby's fundamentals of therapeutic massage. St. Louis, Mosby, 2000: 475-78.
6. Wickstrom G, T Bendix T. The "Hawthorne effect" - what did the original Hawthorne studies actually show? Scand J Work Environ Health 2000;26:363-67.

บทคัดย่อ

ประสิทธิผลของการนวดแผนไทยแบบราชสำนักในผู้ที่มีอาการปวดกล้ามเนื้อ

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วัตถุประสงค์: เพื่อทราบประสิทธิผลของการรักษาผู้ที่มีอาการปวดกล้ามเนื้อบริเวณไหล่ หลัง และคอด้วยการนวดแผนไทยแบบราชสำนัก

วิธีการ: ผู้ที่มีอาการปวดกล้ามเนื้อบริเวณไหล่ หลัง และคอจำนวน 115 คนได้รับการนวดแผนไทยแบบราชสำนักที่คลินิกอายุรเวช โรงพยาบาลศิริราช และโรงเรียนอายุรเวช พหลโยธิน ระหว่างเดือนเมษายนถึงพฤษภาคม พ.ศ. 2547 ประเมินประสิทธิผลของการรักษาโดยสอบถามความรุนแรงของอาการปวดก่อนและหลังการรักษาด้วยการนวด ด้วยคะแนนความรุนแรงของอาการปวดตั้งแต่ 0 (ไม่ปวด) จนถึง 10 (ปวดมากที่สุดจนทนไม่ได้)

ผลการศึกษา: ผู้ป่วยจำนวน 115 คน เป็นหญิง 88 คน (ร้อยละ 76.5) อายุเฉลี่ย 47.9 ปี ผู้ป่วยร้อยละ 45.2, 40.9 และ 26.1 มีอาการปวดไหล่ หลัง และคอตามลำดับ ระยะเวลาที่มีอาการเฉลี่ย 4 เดือน คะแนนความรุนแรงของอาการปวดโดยเฉลี่ยก่อนการนวดมีค่า 7 และคะแนนความรุนแรงของอาการปวดโดยเฉลี่ยภายหลังการนวดมีค่า 3 ($p < 0.001$), ผู้ที่มีอาการปวดกล้ามเนื้อก่อนได้รับการนวดมีคะแนนความรุนแรงของอาการปวดเท่ากับหรือน้อยกว่า 3 (ปวดเล็กน้อย) เพียงร้อยละ 3.5 ในขณะที่คะแนนความรุนแรงของอาการปวดเท่ากับหรือน้อยกว่า 3 ภายหลังได้รับการนวดมีเพิ่มขึ้นเป็นร้อยละ 79.1 ($p < 0.001$), ไม่พบผลข้างเคียงและภาวะแทรกซ้อนจากการนวด

สรุป: การนวดแผนไทยแบบราชสำนักน่าจะมีประสิทธิผลในการรักษาผู้ที่มีอาการปวดกล้ามเนื้อบริเวณไหล่ หลัง และคอ