



นิพนธ์ต้นฉบับ

The Efficacy of Thai Massage in Relieving Low Back Pain among Pregnant Women in the Third Trimester

Thanaporn Issarata*

Orawan Lekskulchai**

**Graduate Program in Applied Thai Traditional Medicine, Faculty of Medicine, Thammasat University, Patum Thani 12121*

***Department of Obstetrics and Gynecology, Faculty of Medicine, Thammasat University, Patum Thani 12121*

Corresponding author: mania_j3@hotmail.com

Abstract

Objective: To determine the efficacy of the Thai massage in relieving low back pain among women in the third trimester of pregnancy and study of correlation between lordosis scale and low back pain score **Methods:** 62 pregnant women, aged 20-35 years, with the gestational age of 34 weeks or more, were recruited to participate in the study. They were equally separated into two groups by randomization. The first group, the massage group, received Thai massage therapy. The second group (control group) was treated by taking a rest (lying down and sleeping). The women in both groups had their group specific intervention once a week for 3 weeks. The paired t-test and the independent t-test were used for within and between the group comparisons.

Results: At the end of the study, 59 women, 29 in massage group and 30 in control group completed all the sessions. The efficacy of Thai massage between the two groups showed a statistically significant difference ($p < 0.05$). The mean of the decreases in pre- and post-massage pain scores in the massage group was greater than that in the control group. However, there was no difference in the pre- and post-lordosis scales in both groups. In both groups, the means of the impacts on quality of life scores of the women decreased significantly at the end of the study ($p < 0.05$). There was no severe side effect reported except only mild bruises in the massage group which disappeared in 1 or 2 days.

Conclusion: Thai massage therapy can relieve low back pain in the third trimester of pregnancy better than taking rest (lying down and sleeping). The pain scores before getting massage after each visit tends to decline continuously.

Key words: Thai massage; low back pain; third trimester of pregnancy

Introduction

Back pain is a symptom that occurs in both men and women at any ages. In pregnant women, back pain can also happen due to changes in the anatomical posture and hormone. Recent studies indicated that the prevalence of back pain during pregnancy was 57.3%.¹ Nearly one-third of these women suffered from severe back pain that affected their daily life.² Symptoms of back pain could occurred from early in pregnancy until giving birth, the pain became more severe during the third trimester of pregnancy.^{1,3} Low back pain is the most common symptom and usually presents as a dull pain. Also most of these pain (75.78%) does not radiate to the other part of the body.⁴ Changes in the biomechanics of the body by the increasing weight and the width of the body, especially at the abdomen, can increase the action force exerted to the back.² Changes in hormone levels also affect the ligaments and muscles drawing the chest and abdomen resulted in flabbiness, which generates pressure to the uterus and makes it protrude forward. In late pregnancy, the woman with a weak abdominal muscle will have a lumbar lordosis.⁵ From Mahawanakul and Chaiwanichsiri's study, the average lordosis scale, by measuring the depth of the backs, in pregnant woman was 3.63 ± 0.65 centimeters.² They found that 61.4% of the pregnant women with low back

pain were more likely to have a massage or acupuncture for relieving their pain, whereas the remaining used relaxation and yoga.⁶ Many studies conducted domestically and internationally, show a concordant conclusion that back pain is a critical problem for pregnancy. It can act as a nuisance and affect the quality of life. We have recognized the importance of this critical problem. The benefits of the massage that affects most of the body's systems and helps increasing blood flow to muscles and relaxing cramp has been realized.^{7,8} Therefore, the aim of this study was to see the efficacy of the Thai massage on relieving low back pain in the third trimester pregnancy and study of correlation between lordosis scale and low back pain score.

Methods

At the antenatal clinic, Thammasat university hospital, 62 pregnant women with the symptom of low back pain were recruited. They were 20-35 years old and had the gestational age equal to or more than 34 weeks. After getting and understanding the study's detail and procedure, they were asked to sign the informed consent and randomly allocated into two groups.

The massage group received three sessions of a one-hour Thai massage therapy for 3 consecutive weeks. The control group had

three sessions of a one-hour taking a rest (lying down and sleeping) for the same period of time.

The women in both groups were expected to be eligible to participate throughout the trial. Once the subjects passed the inclusion criteria, general history, the level of low back pain score which were measured by Numeric Rating scale method, and the lordosis scale were recorded by measuring the depth of a line drawn from the upper back to the coccyx², both before and after each intervention. The impact on quality of life scores were also recorded before and after the study. The women who could not be followed up during the study nor who suffered from more pain during the interventions and those who used any analgesic drugs were discarded from the study. SPSS version 13 was used for statistical analysis. The differences between pre and post intervention means were analyzed by using paired t - test, and the differences between the two groups

were analyzed by using t-test

Results

At the end of the study, there were 59 women remained. One woman in the massage group was excluded because she could not lie in the supine position for a long period due to severe coughing. In addition, there were two women, one in the massage group and another in the control group, could not come back for the second visit. Moreover, Comparison of general information of the two groups showed no statistical difference.

In table 1, there were statistically significant decrease in the pain scores in both groups after the sessions and every visit. Moreover, it seemed like the pre-massage pain score in the massage group decreased continuously which was different from the pre-pain score in the control group.

In table 2, the mean difference in pain scores in the massage group were significantly higher than those in the control group.

Table 1: The comparison of the low back pain score between pre and post intervention in both groups.

Visit	Low back pain score (mean $\pm$ S.D)					
	Massage group (n=29)			Control group (n=30)		
	Pre-	Post-	P-value	Pre-	Post-	P-value
First	5.41 $\pm$ 1.05	2.48 $\pm$ 1.27	0.001*	5.55 $\pm$ 0.91	4.05 $\pm$ 1.10	0.001*
Second	4.24 $\pm$ 1.60	1.81 $\pm$ 1.27	0.001*	5.37 $\pm$ 1.37	3.95 $\pm$ 1.64	0.001*
Third	3.72 $\pm$ 1.71	1.28 $\pm$ 1.39	0.001*	5.00 $\pm$ 1.36	3.63 $\pm$ 1.67	0.001*

*statistically significant (P-value < 0.05)

Table 2: Comparison of the mean difference (pre test – post test) in pain scores in each visit between the two groups

Visit	The mean difference in pain score (mean±SD)		P-value
	Massage group (n=29)	Control group (n=30)	
First	2.93±1.10	1.50±1.17	0.001*
Second	2.43±1.18	1.42±1.40	0.004*
Third	2.45±1.02	1.37±1.38	0.001*

*statistically significant (P – value <0.05)

Table 3: Comparison of the decreasing lordosis scales between the two groups.

Visit	The average decreasing lordosis scale (mean±SD, cm.)		P-value
	Massage group (n=29)	Control group (n=30)	
First	0.31±0.29	0.24±0.27	0.341
Second	0.19±0.21	0.37±0.44	0.050
Third	0.17±0.26	0.28±0.38	0.223

*statistically significant (p<0.05)

Table 3 showed no statistical difference between the decreasing lordosis scales between the two groups.

There was no correlation between lordosis scale and low back pain score (RR = -0.028, P-value =0.83)

There was no serious complication of Thai massage found during the study. Only some women in the massage group reported that they had superficial skin bruising (9.7 % in the first time and 3.2 % in the second time) which disappeared in a few days.

As shown in Table 4, the average impact on quality of life score in the control group before treatment was slightly higher

than the pre- treatment score of the massage group. However, there were statistically significant decrements in the scores after treatment in both groups. The impact on quality of life score after treatment in the massage group was significantly lower than that the control group.

Discussion and Conclusions

The study showed the significant improvement in low back pain in the third trimester of pregnant women after massage and taking rest. However, it seemed like by that the effect in decreasing the pain score of the Thai massage persisted after the treatment.

Table 4: The average of the impacts on quality of life scores in both groups (Full score was 24 points)

	The impacts on quality of life score (mean $\pm$ S.D)		
	Pre-	Post-	P-value
Massage group (n=29)	8.07 $\pm$ 3.47	3.03 $\pm$ 3.03	0.001*
Control group (n=30)	8.27 $\pm$ 3.52	5.37 $\pm$ 2.17	0.0001*

*statistically significant ($p < 0.05$)

In the massage group, the pre- pain score in the second visit was lower than in the first visit and in the third visit is lower than in the second visit respectively. In additional, when compared the decreasing level of the pain score between the two groups, the women in the massage group had significant decreased pain score level than the women in control group. According to a previous study about acupressure and massage in patients with lower back pain, the authors concluded that acupressure and massage could help reduction of low back pain.⁹ From our study, concluded that Thai massage could reduce low back pain in the third trimester pregnancy more effectively than taking rest.

This study could not find any correlation between lordosis scale and low back pain in the third trimester pregnancy. We found a reduction in the lordosis scale after treatment in both groups. However, all of the reductions in lordosis scale were not more than a half of centimeter which might not have any effect on the severity of back pain. The individual factors such as the woman's posture,

daily activity, wearing abdominal support should be the significant factors for decrease lordosis and back pain. To improve the lumbar lordosis, the women have to build up the strong abdominal muscles.⁵ Thai massage can relax muscles and increase blood flow to the back area but could not strengthen the abdominal muscle. It was concluded that Thai massage and taking rest may not have any effect on the lordosis scale.

As the impact on quality of life scores before treatment in both groups were very high, these could confirm that low back pain could create a critical problem for the third trimester pregnancy. Thai massage and taking rest can relieve low back pain and improve the quality of life score. It was thought that because of increasing blood flow and relaxing the back muscle resulting from Thai massage, the women in massage group showed a significant improvement in the quality of life score.

There was no serious complication found in Thai massage group in this study. From the study of Jintana Wattanakon et al,¹⁰ the

only short-term effects of Thai massage such as tiredness, paleness, pain, stiffness, back pain, numbness would disappear shortly after treatment. For safety reason, it was suggested that the massage therapist should control their hands and not press too firmly when providing massage.

In conclusion, Thai massage has a significant efficacy on relieving low back pain in the third trimester pregnancy. It can help improve the quality of life of these women. There is no serious complication nor harmful on pregnancy and their babies. We could promote this Thai massage and motivate to conduct this procedure in all antenatal clinics. As all third trimester pregnant women have to visit the clinic every week, the cooperation between Thai alternative medicine and conventional medicine would help to improve the standard of antenatal care and the quality of life for Thai pregnant women.

Acknowledgment

This study was supported by the grants from the Thammasat University by Professor Pornchai Trakulwaranon and the research fund and reserves of Professor Somboon Kietinun, M.D. The author would like to express the gratitude to Associate Professor Orawan Lekskulchai, M.D., the research advisor, nurses, and staff at antenatal clinic and

the clinic of Applied Thai Traditional Medicine, Thammasat University hospital, as well as, the authors' parents for their supports.

References

1. Ansari NN, Hasson S, Naghdi S, Keyhani S, Jalaie S. Low back pain during pregnancy in Iranian women: Prevalence and risk factors. *PhysiotherTheory Pract.* 2010;26(1):40-8.
2. Mahawanakul S, Chaiwanichsiri D. Back pain during pregnancy in women at Chulalongkorn Hospital. *Thai Rehabil.* 1999;9(1).
3. Novaes FS, Shimo AK, Lopes MH. Low back pain during gestation. *Rev Lat Am Enfermagem.* 2006;14:620-4.
4. Tonsura W, Sakornntanun W, Rattanagason J. Back pain in pregnant women. *Khon Kaen Hospital* 2002;26(3).
5. Pinmas N. Problems in physical therapy for women during pregnancy. Department of Science, Faculty of physical therapy. Chiangmai: Chiangmai University; 1991.
6. Wang SM, DeZinno P, Fermo L, William K, Caldwell-Andrews AA, Bravemen F, Kain ZN. Complementary and alternative medicine for low-back pain in pregnancy: a cross-sectional survey. *J Altern Complement Med.* 2005; 11:459-64.
7. Puengpai C. Results of applied Thai massage in relaxation.. Master's Thesis (Field of Sport Science). Faculty of Sciences. Bangkok: Srinakharinwirot University; 2007.
8. Mori H, Ohsawa H, Tanaka TH, Taniwaki E, Leisman G, Nishijo K. Effect of massage on blood flow and muscle fatigue following isometric lumbar exercise. *Medicine Science Monitor.* 2004;10(5).
9. The Institute of Thai Traditional Medicine, Ministry of Public Health. Status of Thai traditional medicine Bangkok: Express Transportation Organization Publishers; 2001.
10. Wattanathorn J, Leelayuwat N, Aungpinijphon W, Ichida W, Manimnagorn N, Manimnagorn A, et al. Study of physiological effects of Thai massage in reducing muscular pain and complications. Medicine Development Foundation, Thailand, 1998.

บทคัดย่อ

การศึกษาประสิทธิผลของการนวดไทยในการบรรเทาอาการปวดหลังส่วนล่างในหญิงมีครรภ์ไตรมาสที่สาม

ธนพร อิศระทะ*, อรวรรณ เล็กสกุลไชย**

*หลักสูตรวิทยาศาสตรมหาบัณฑิต สาขาการแพทย์แผนไทยประยุกต์ คณะแพทยศาสตร์ มหาวิทยาลัยธรรมศาสตร์

**ภาควิชาสูติ-นรีเวชวิทยา คณะแพทยศาสตร์ มหาวิทยาลัยธรรมศาสตร์ ศูนย์รังสิต จังหวัดปทุมธานี 12121

ผู้รับผิดูชอบบทความ: mania_j3@hotmail.com

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาประสิทธิผลของการนวดไทยในการบรรเทาอาการปวดหลังส่วนล่างในหญิงมีครรภ์ไตรมาสที่สาม โดยคัดเลือกอาสาสมัครในหญิงมีครรภ์ที่มีอายุระหว่าง 20-35 ปี มีอายุครรภ์ตั้งแต่ 34 สัปดาห์ขึ้นไป จำนวน 62 คน ได้รับการคัดกรองตามเกณฑ์การคัดเข้าและรับเชิญเข้าร่วมโครงการวิจัย หลังจากนั้นทำการสุ่มอาสาสมัครออกเป็น 2 กลุ่ม กลุ่มละเท่าๆ กัน กลุ่มที่ 1 เป็นกลุ่มทดลองได้รับการนวดรักษาแบบราชสำนัก กลุ่มที่ 2 เป็นกลุ่มควบคุมซึ่งใช้วิธีการนอนพัก ทั้ง 2 กลุ่มได้รับการทดลองติดต่อกัน 3 ครั้ง แต่ละครั้งห่างกัน 1 สัปดาห์ โดยมีการวัดระดับความปวด ความอ่อนของหลังก่อนและหลังการรักษาทุกครั้ง และมีแบบประเมินระดับคะแนนผลกระทบคุณภาพชีวิตก่อนและหลังจบโครงการ เมื่อสิ้นสุดการทดลองมีอาสาสมัครคงเหลือ 59 คน โดยกลุ่มทดลองมีอาสาสมัคร 29 คนและกลุ่มควบคุมมีอาสาสมัครจำนวน 30 คน จากการเปรียบเทียบประสิทธิผลของการนวดไทยในการบรรเทาอาการปวดหลังเทียบกับการนอนพัก พบว่า มีความแตกต่างอย่างมีนัยสำคัญทางสถิติ โดยพบว่าคะแนนเฉลี่ยระดับความปวดก่อนและหลังการรักษาในกลุ่มทดลองลดลงมากกว่ากลุ่มควบคุม ค่าเฉลี่ยความอ่อนของหลังก่อนและหลังการทดลองไม่พบว่ามีค่าแตกต่างทางสถิติ ค่าเฉลี่ยระดับคะแนนผลกระทบคุณภาพชีวิตก่อนเข้าโครงการและหลังจบเข้าโครงการพบว่ามีความแตกต่างอย่างมีนัยสำคัญทางสถิติ ส่วนผลการศึกษาผลข้างเคียงจากการนวดไม่พบอาการข้างเคียงที่รุนแรง

คำสำคัญ : การนวดไทย, ปวดหลังส่วนล่าง, หญิงมีครรภ์ไตรมาสที่สาม