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The combination effect of Ruesri Dat Ton with Thai Traditional Massage on the improvement of knee osteoarthritis symptoms

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Abtract

This study investigated the effectiveness of Thai Traditional Massage combined with Ruesri Dat Ton on improving the symptoms of knee osteoarthritis. The study was a randomized controlled trial, which consisted of 26 subjects, over 50 years of age divided into RDT group (Thai Traditional Massage combined with Ruesri Dat Ton Program) while the TTM group (Thai Traditional Massage). The research intervention took 6 weeks. Knee participants were evaluated in every pre – post treatment in WOMAC and physical examination. Outcomes were analyzed using ANOVA for evaluating differences within group and compare with treatment between two groups using Man-Whitthey U-test. The result showed that RDT group and TTM group had significant improvement variables when comparing pre and post test within group ($p<0.05$). The RDT group had increased knee range of motion (flexion) than the TTM group when compared between groups, although it showed no significant difference ($p<0.05$). However, the RDT group decreased knee range of motion (extension) than the TTM group when compared between groups although it showed no significant difference ($p<0.05$) and the RDT group decreased WOMAC scale: total, pain, stiffness and lifestyle than the TTM group when compared between groups although it showed no significant difference ($p<0.05$) It seemed that the effect of Ruesri Dat Ton combined Thai Traditional Massage and Thai Traditional massage can improve knee range of motion and WOMAC scale in the same way.

Keywords: Thai Traditional Massage /Ruesri Dat Ton / knee osteoarthritis / WOMAC scale

Introduction

Osteoarthritis is a major cause of disability among elderly population around the world. It is the most common musculoskeletal condition and a long-term chronic disease involving, stiffness pain, and impaired movement. Knee Osteoarthritis is also known as wear-and-tear arthritis, the condition in which the natural cushioning between joints - cartilage wears away (Rachel et al, 2014). Treatment of Knee Osteoarthritis aims to reduce pain and improve function or mobility. The best approach is multidisciplinary and relies on pharmacological and non-pharmacological measures. Non-pharmacological modalities include education, exercise, weight loss, while pharmacological includes supportive devices; acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen or nutritional supplements such as glucosamine and chondroitin (David et al, 2007). The goals of treatment OA is changes in lifestyle such as weight loss and exercise. It help reduces the pain and improves physical function : range of motion, stiffness (especially after rest) and quality of life (Araya and Vijay, 2013).

Traditional Thai massage (TTM) is an alternative medical treatment used for pain relief . It is an old-traditional manual form of treatment, which is used equally for physical and mental relaxation, as well as specific therapeutic treatment of different pains and illnesses. (Piyaporn and Wichai, 2014).The benefits of traditional Thai massage have been found to stress-related parameters including heart rate variability (HRV), anxiety, muscle tension, pain intensity, pressure pain threshold, and body flexibility (Buttagat et al, 2011) (Chalongsuk, 2015).

Ruesri Dat Ton (Hermit's Self-Stretching Exercise). These strength and flexibility exercises focus on 127 uniquely styled positions. The intention of the practice is to realign and/or adjust each part of the body to promote health and vitality. The stretching movements and the breathing exercises stimulate blood circulation. Ruesri Dat Ton's positions, when practiced correctly, are gentler than many Yoga postures and few people risk injury or have difficulty with the postures. (David, 2010). A study found that after one month of regular Reusi Dat Ton practice there was an improve range of joint motion with potential benefit for joint and cognitive function (Lokachet et al, 2015).

The researchers wanted to study the effects of combining Ruesri Dat Ton with Thai traditional massage whether it can help reduce pain of knee osteoarthritis. This research shows that having wisdom (of Thailand) could support self-care. Ruesri Dat Ton was the treatment used to care for the patients with osteoarthritis. Which is more common in older Thai people in the present society. Also, guide others that are interested in learning.

Method

Research design was a randomized controlled trial. Population was patients suffering from knee pain from the Applied Thai Traditional Clinic, Abhaibhubejhr College of Thai Traditional Medicine, Prachinburi and Find Sample was Thirty-four research participants were recruited according to the eligibly criteria to join the clinical study. Patients were divided randomly into two groups using draw lots. Then, explain the objectives, process, expected purpose, benefits and complications of the treatment to participants. After attending the orientation session participants to fill in and sign a consent paper. Evaluate baseline in WOMAC and physical examination of knee participants was measured by the use of goniometer by Massage Therapist who has the physical knowledge of two group participants. Patients in two groups were treated with Thai Traditional Massage once a week for 6 weeks. (Receive the 30-minute massage, and receive the 15-minute herbal compress). Group A (TTM) were treated with Thai Traditional Massage but Group B (RDT) were treated with Thai Traditional Massage combined Ruesri Dat Ton program three times per week, 35 minutes at a time. Evaluate every participants pre –post treatment in WOMAC and physical examination which was measured (the use of goniometer) by Massage Therapist who has knowledge of physical with two groups participants using a goniometer.

The results were shown as mean ± standard deviation (Mean ± SD). The differences of the 2 measurements in study were compared, before and after the intervention, in each group. and Outcomes were analyzed using repeated measures of analysis of variance (ANOVA) for evaluating differences within groups, compare with treatment between the two groups using statistical two-way repeated measures of analysis of variance (ANOVA) and Compare with sum of treatment between the two groups using t-test the data are normally distributed or Man-Whitthey U-test if the data is not normally distributed.

Result

This study showed the data of the treatment of patients of knee pain in Applied Thai Traditional Clinic, Abhaibhubejhr College of Thai Traditional Medicine, Prachinburi from 1 January – 31 March 2017. and 26 patients OA of the knees agreed to join the study follow up within 6 weeks. 13 Patients in TTM were treated Thai Traditional Massage and 13 patients in RDT were treated Thai Traditional Massage combined Ruesri Dat Ton program. The baseline characteristics of RDT group and TTM group were generally similar but nothing statistically significant (Table 1). RDT group had 1 male and 2 female similar with TTM Groups. Age of subjects in RDT groups were : 6 subject in 50-60 years old, 5 subject in 61-70 years old and 2 subject more than 71 years old. In TTM group were: 8 subject in 50-60 years old, 3 subject in 61-70 years old and 2 subject more than 71 years old. Domain of pain in RDT group were 2 left knee subjects, 7 right knee subjects and 4 both knee subjects similar with TTM. Body mass index were 26.89±4.01 in RDT groups and 26.73±5.45 in TTM Groups. Visal Analogue Scale are 5.15±1.14 in RDT groups and 5.15±1.21 in TTM Groups.

Table. 1 Subject characteristics were generally similar but no statistically significant

Characteristics	RDT Groups	TTM Groups	p-value
Sex			
Male	1	1	
Female	12	12	
Domain of pain(n)			
Left knee	2	2	
Right knee	7	7	
Both knee	4	4	
Age			
50-60	6	8	> 0.05
61-70	5	3	
>71	2	2	
BMI (Body mass index) mean±SD	26.89±4.01	26.73±5.45	> 0.05
VAS (Visal Analogue Scale) mean±SD	5.15±1.14	5.15±1.21	> 0.05

p-value : $p < 0.05$ significant differences between groups by T- test

The results of data analysis were presented in 6 parts.

Part 1 : Comparison of flexion within group and between of RDT and TTM groups

Part 2 : Comparison of extension within group and between of RDT and TTM groups

Part 3 : Comparison of WOMAC scale (total) within group and between RDT groups and TTM groups

Part 4 : Comparison of WOMAC scale (pain) within group and between RDT groups and TTM groups

Part 5 : Comparison of WOMAC scale (stiffness) within group and between RDT groups and TTM groups

Part 6 : Comparison of WOMAC scale (lifestyle) within group and between RDT groups and TTM groups

1. Comparison of flexion within group and between of RDT and TTM groups

A comparison of flexion before and after the treatment found significant increase in the degree of flexion in RDT and TTM Groups when compared within groups ($p<0.05$) but it showed no significant difference when compared between groups ($p>0.05$). (Figure. 1)

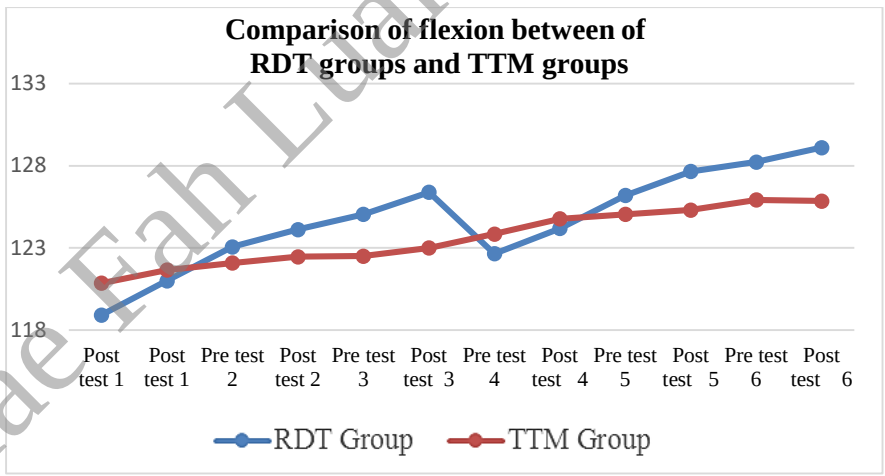

Figure. 1 Comparison of flexion between RDT group and TTM group

2. Comparison of extension within group and between of RDT and TTM groups

A comparison of extension before and after treatment. It founds significant increase in the degree of of extension in RDT group and TTM group when compared within group($p<0.05$) but it showed no different statistically significant when compared between group ($p>0.05$) except week 4 found decrease significant degree of extension in TTM group (2.39 ± 0.31) than RDT group (1.23 ± 0.31) ($p<0.05$). (Figure. 2)

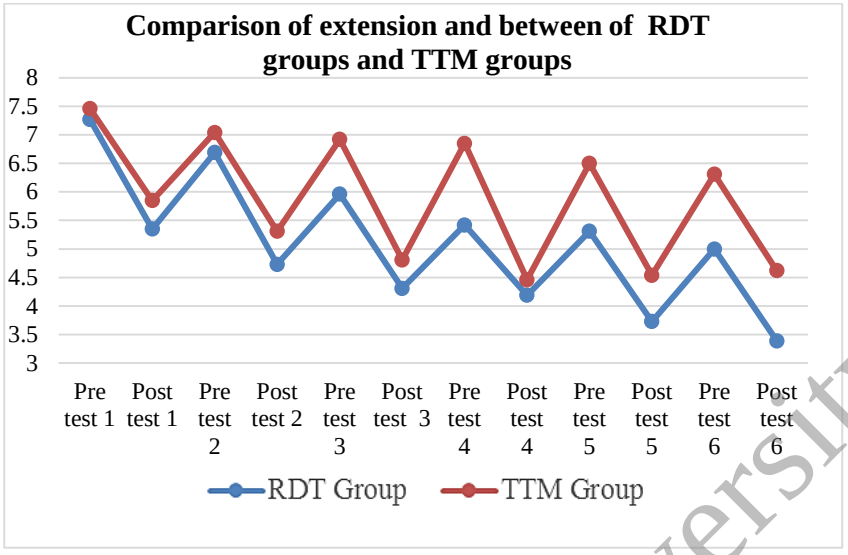

Figure. 2 Comparison of extension within group and between of RDT and TTM groups

3. Comparison of WOMAC scale (total) within group and between RDT groups and TTM groups

Comparison of WOMAC scale: total before and after treatment. It was found that there was a significant decrease in the WOMAC scale: total in RDT group and TTM group when compared within groups ($p<0.05$) and found RDT group decrease in the WOMAC scale: total more than TTM group but it showed nothing different statistically significant when compared between group ($p>0.05$). (Figure. 3)

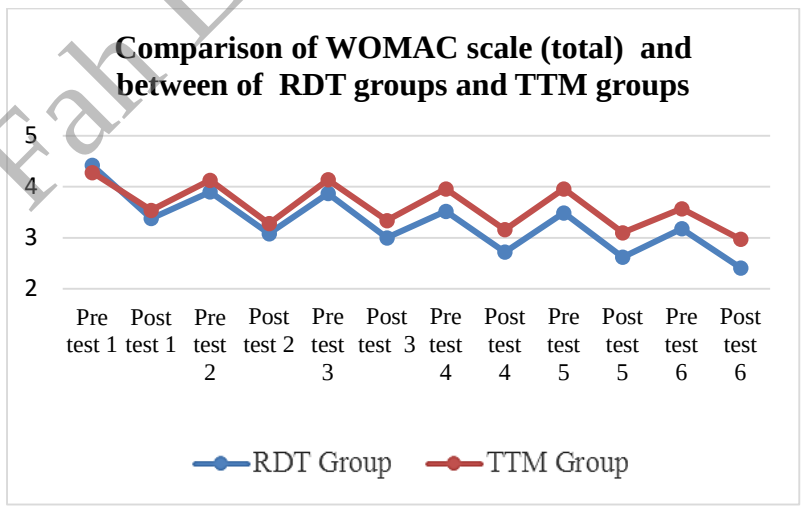

Figure. 3 Comparison of WOMAC scale (total) within group and between RDT and TTM group

4. Comparison of WOMAC scale (pain) within group and between RDT groups and TTM groups

A comparison of the WOMAC scale: pain before and after treatment. It was found that a significant decrease in the WOMAC scale: pain in RDT group and TTM group when compared

within groups ($p<0.05$) and It was found RDT group decrease in the WOMAC scale: total more than TTM group but it showed no statistically significant difference statistically when compared between group ($p>0.05$) (Figure. 4)

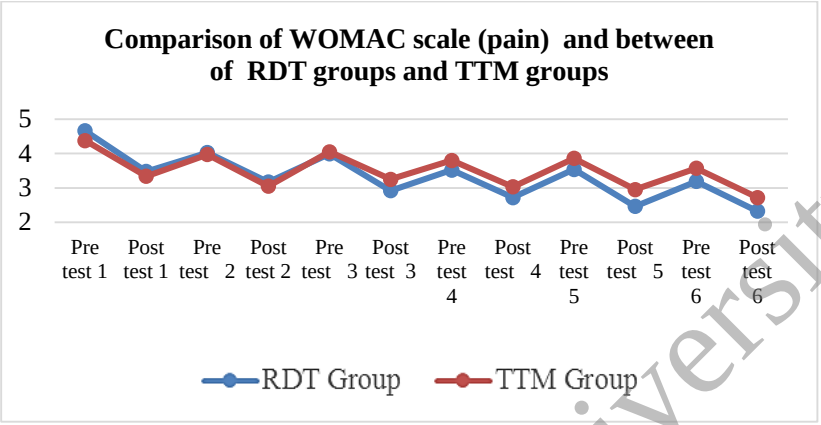

Figure. 4 Comparison of WOMAC scale (pain) within group and between RDT and TTM group

5. Comparison of WOMAC scale (stiffness) within group and between RDT groups and TTM groups

A comparison of WOMAC scale: stiffness before and after treatment. It was found that there was a significant decrease in the WOMAC scale: stiffness in RDT group and TTM group when compared within groups ($p<0.05$) and It was found RDT group decrease in the WOMAC scale: total more than TTM group but it showed no statistically significant difference when compared between group ($p>0.05$). (Figure. 5)

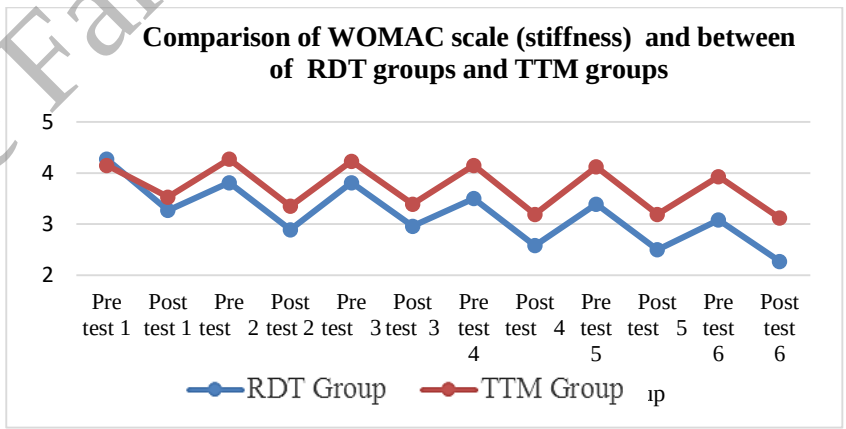

Figure. 5 Comparison of WOMAC scale (pain) within group and between RDT and TTM group

6. Comparison of WOMAC scale (lifestyle) within group and between RDT groups and TTM groups

A comparison of the WOMAC scale: stiffness before and after treatment. It was found that there was a significant decrease in the WOMAC scale : stiffness in RDT group and TTM group

when compared within groups ($p<0.05$) and It was found RDT group decrease in the WOMAC scale: total more than TTM group but it showed no statistically significant difference statistically when compared between groups ($p>0.05$). (Figure. 6)

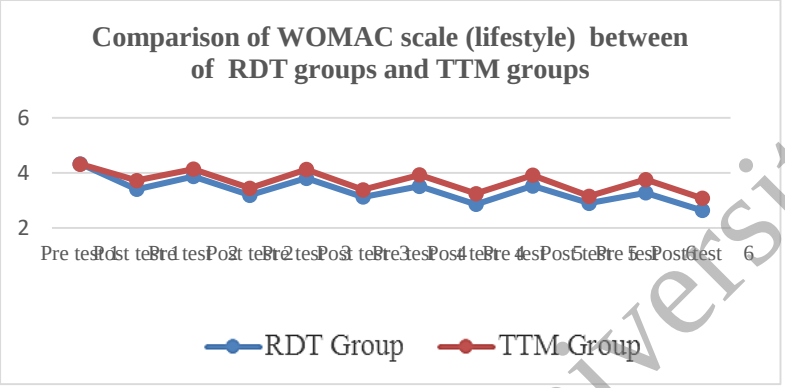

Figure. 6 Comparison of WOMAC scale (lifestyle) within group and between RDT and TTM group

Discussion

The results from this study showed Ruesri Dat Ton (Hermit's Self-Stretching Exercise) maybe one-way to improve the symptoms of osteoarthritis of the knee. It showed that Thai Traditional Massage might help reduce pain and improve flexibility for Osteoarthritis of the knees and is more effective when combined together. Although there were decreased and no statistical significance, the results could be better may be if the treatment were for a longer period. Other risk factors are not excluded in this study such as obesity, nutrition. It was found that most subjects in study BML > 25. Researches found diet plus exercise was reducing pain and improves physical function (Stephen and et al., 2004). However, more research explained Ruesri Dat Ton improved physical performance and decrease psychological problems such as anxiety and depression (Weerapong, 2009). It should be studied in next or should be compared with Tai Chi exercise because it was found that Tai Chi exercise is nearly similar to Ruesri Dat Ton exercise.

Suggestion

1.Studies on other types of exercise such as Ti Chi exercise, Hydrotherapy that may have a positive effect to improve the symptom of knee osteoarthritis

2. Studies to measure the effectiveness of Thai Traditional Massage combine with Ruesri Dat Ton on improving psychological of patients with osteoarthritis of the knee.

Conclusion

The main findings of this study were that the RDT group (Thai Traditional Massage combined with Ruesri Dat Ton Program) showed better improvement in knee range of motion and in WOMAC scale after 6 weeks of treatment than that of the TTM group (Thai Traditional Massage).

At the beginning of the program, the data collected were for baseline characteristics; the main outcome, and other outcomes between the two groups were not significantly different. No significant difference was seen in most of the outcome measures when comparing the TPT and SPT groups.

This study found that RDT group and TTM group had significant improvement variables when comparing pre and posttest within group ($p<0.05$).

The RDT group increased knee range of motion (flexion) better than the TTM group. When comparing between groups although it showed no significant difference ($p<0.05$). However, the RDT group decreased knee range of motion (extension) better than the TTM group. When compared between both groups there is no significant difference ($p<0.05$) on WOMAC scale: total, pain, stiffness and lifestyle. Athough, it showed no significant difference ($p>0.05$) It seemed that the effect of Rue sri Dat Ton combined with Thai Traditional Massage and Thai Traditional Massage can improve the knee range of motion and WOMAC scale in the same way. However, it showed in both groups improvement of knee range of motion and WOMAC scale after 6 weeks of treatment.

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