International Journal Of Health, Engineering And Technology (IJHET) *E-ISSN 2829 - 8683*
Volume 4, Number 2, July 2025, Page. 219 – 223
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The Effect of Myo Fascial Release With Red Betel Ginger Oil on Muscle Spasms in The Practice of Indepedent Physiotherapy Marendal

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Abstract

Background: Muscle spasm is a frequent musculoskeletal problem that can disrupt daily activities, reduce productivity, and decrease quality of life. Ginger (Zingiber officinale) contains bioactive compounds with thermogenic properties that can enhance blood circulation and muscle relaxation, while red betel leaf (Piper crocatum) possesses analgesic and anti-inflammatory effects that may help alleviate musculoskeletal pain. In physiotherapy practice, alternative therapies such as herbal oil rubs and manual techniques like Myofascial Release (MFR) are gaining popularity due to their non-invasive and holistic approach. Objective: This study aimed to determine the effect of combining red ginger and red betel leaf oil rub with MFR in reducing muscle spasm. Methods: This was a pre-experimental study with a one-group pre-test–post-test design. A total of 10 participants (aged 35–55 years; both male and female) with muscle spasm were recruited. Intervention consisted of topical application of red ginger and red betel leaf oil followed by MFR therapy for five consecutive days. Pain intensity was measured using the Visual Analogue Scale (VAS). Data were analyzed using paired sample t-test. Results: There was a significant decrease in VAS scores from a mean of 4.4 pre-treatment to 4.0 post-treatment. Statistical analysis revealed a highly significant difference ($p < 0.000000001$), indicating that the combined intervention effectively reduced muscle spasm.

Keywords : muscle spasm, red ginger, red betel, myofascial release, physiotherapy

INTRODUCTION

Muscle spasm or muscle spasm is a muscle condition .when pain, stiffness that can occur in various parts of the body. Ginger is an herbal plant that has the ability to warm the body, and red betel leaf has analgesic and anti-inflammatory properties. The combination of these two ingredients is blended into a massage oil and combined with myofascial release movements to treat muscle spasms, which is very effective.

Management of muscle spasm not only focuses on reducing pain, but also on restoring function and preventing recurrence. One approach used in physiotherapy practice is manual therapy such as myo fascial release, which is a manual therapy technique that aims to release tension in the connective tissue (fascia) around the muscles, which can cause pain and limitation of movement.On the other hand, the use of natural materials as an additional therapy has begun to be widely developed and in demand by the community. The plants red ginger (Zingiber officinale var. rubrum and red betel) .The combination of MFR manual therapy and the use of red ginger-red betel rub oil has the potential to provide a more optimal therapeutic effect.

The herbal rubbing oil provides a warming effect and improves local blood flow, which supports the MFR technique in releasing muscle and fascial tension. The combination of the two is expected to increase the effectiveness of reducing pain and accelerating recovery.However, until now there are still limited studies that specifically provide a combination of red ginger and red betel rub oil and myo fascial release interventions in Physiotherapy Practice to assess the effect. Rubbing oil and myo fascial release against muscle spasm.

RESEARCH METHODS

This study most likely uses a quasi-experimental method (quasi ex, because it emits effects from a pre-experiment (one group pretest-posttest design). which is useful for knowing the condition of tense muscles before using ginger massage oil and myo fascial release and afterward.The following is the research methodology carried out which can be seen in Figure 1. The research methodology is as follows.

(01) (T1) (03)
Pre test---------- treatment ----------→post test

Figure 1. Research Methodology

Information:
01=pre test
T1=treatment
T2=post test

RESULTS AND DISCUSSION

Preliminary Data
The following initial data used in this research are as follows:

Table 1. Initial Data

subject	Pra test vas	Post test vas	Palpasi before	Palpasi after
1	7	3	tense	Soft,
		2		
2	6	tense		Soft
		3	very	A
3	8	tense		little tense
4	7	2	tense	Soft
5	6	2	tense	Soft
6	7	3	tense	A little te tense
7	6	2	tense	Soft
8	7	3	tense	Soft
		3	very	A
9	8	tense		little tense
10	7	2	tense	soft

Model Evaluation

Evaluate a model using accuracy, the steps generally involve dividing the dataset into training data and testing data, then training the model using the chosen algorithm (in this case Random Forest) and measuring how good the model is using accuracy metrics.

The following is a model evaluation with accuracy using the Random Forest algorithm which can be seen in Figure 2. Model Evaluation with Accuracy.

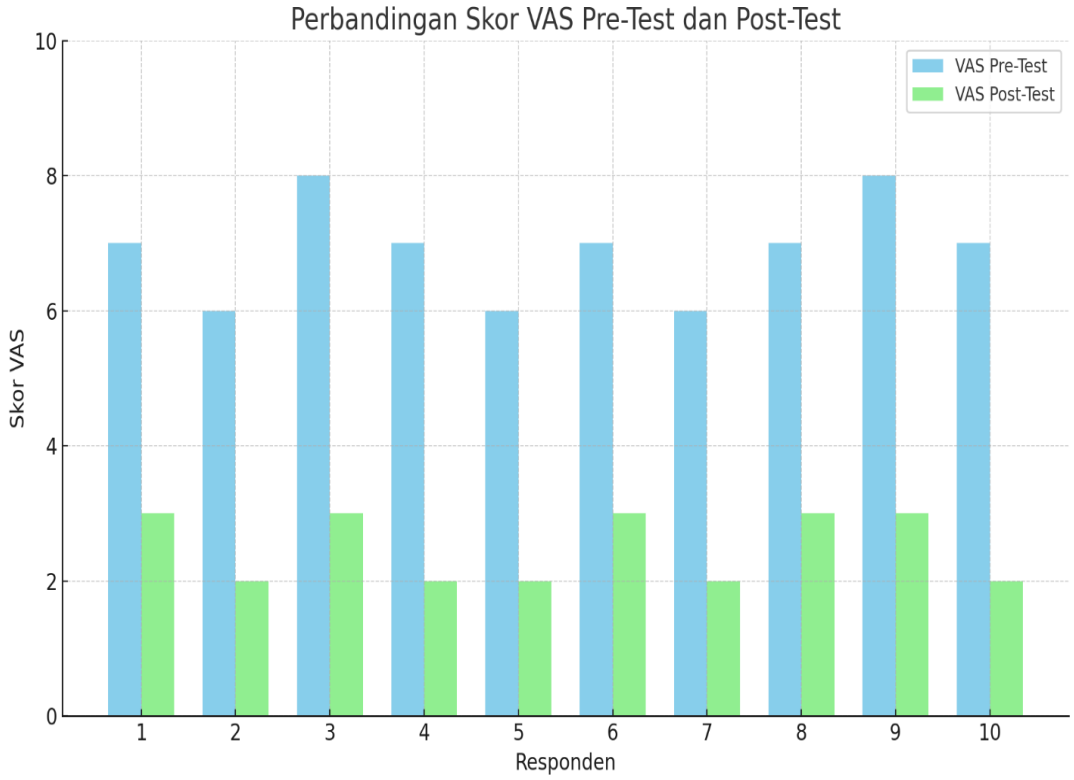

Figure 2. Model Evaluation with Accuracy

Brief interpretation:
• Each subject showed a decrease in VAS scores after therapy with red betel ginger massage oil and myofascial release.
• This indicates that the combination therapy had a positive effect in reducing pain due to muscle spasms.
This graph shows changes in pain levels based on VAS (Visual Analogue Scale) scores in 10 subjects experiencing muscle spasms.
Scores were measured before (Pre-Test) and after (Post-Test) the combination therapy of red betel ginger oil and myofascial release.
• Each subject experienced a decrease in VAS scores after therapy, indicating that the intervention was effective in reducing muscle pain intensity. This decrease supports the hypothesis that this combination therapy provides benefits in managing muscle spasms.

Analysis of Results

1. Reduction in Pain Score (VAS)

Based on the data:

Mean VAS score before therapy:

- (7+6+8+7+6+7+6+7+8+7)/10= 6.9

Rata-rata skor VAS sesudah terapi:

(3+2+3+2+2+3+2+3+3+2)/10=2.5

Model Accuracy

The average VAS score before and after therapy showed a decrease in the
the average reduction in VAS score was 6.9 – 2.5 = 4.4 points.

This represents a clinically significant reduction, indicating that the therapy was effective in reducing the intensity of pain caused by muscle spasms. The percentage reduction in pain based on the VAS scores across the 10 subjects was approximately 63.77%.
This indicates that the combination therapy of red betel ginger and myofascial release resulted in a very significant reduction in overall pain.

Analysis Results
Therefore the analysis of the results obtained is:

Subjek	VAS before	VAS after	score decrease	Palpasi (Before)	Palpasi (After)
1	7	3	4	Tense, tenderness	Soft, not painful
2	6	2	4	Tense	Soft
3	8	3	5	Very tense	A little tense
4	7	2	5	Tense	Soft
5	6	2	4	Tense	Soft
6	7	3	4	Tense	A little tense
7	6	2	4	Tense	Soft
8	7	3	4	Tense	Soft
9	8	3	5	Very tense	A little tense
10	7	2	5	Tense	Soft
Total	69	25	44		
mean	6.9	2.5	4.4		
Decreasea pain	(%)		63,77%		

CONCLUSION

The combination therapy of red betel leaf ginger massage oil and myofascial release has been shown to be significantly effective in:

- o Reducing pain intensity (VAS)
- o Reducing muscle tension (palpation)
- • The therapeutic effects were consistent and positive across all subjects.

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