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ORIGINAL RESEARCH

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EFFECT OF LO'I KARANA ON PAIN LEVEL IN POSTPARTUM MOTHERS

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Abstract

Background: Lo'i karana is one type of traditional therapies that has existed for more than one hundred years in the midst of society of Bima and Dompu to overcome the discomfort due to labor. However, lack of research has been conducted to examine its effect on pain in postpartum mothers.

Objective: To examine the effect of Lo'i karana on muscle pain in postpartum mothers.

Methods: This was a quasi-experimental study with posttest only control group design. Thirty mothers were selected using purposive sampling, which 10 assigned in 3 groups (standard-dose group, minimal-dose group, and maximal-dose group). Wong-Baker Faces Pain rating scale was used to measure pain on day 1 and day 3. Kruskal-Wallis Test and Mann Whitney test were used for data analysis.

Results: There were significant effects of Lo'i karana in minimal, standard and maximal dosage on pain level in the first day ($p=0.004$) and the third day ($p=0.009$) in postpartum mothers. The results revealed that the higher doses were used for the treatment, the less pain of the mothers would be.

Conclusion: Lo'i karana has a significant effect in reducing pain level in postpartum mothers. It is recommended that this intervention can be applied as a part of nursing intervention in caring postpartum mothers.

Keywords: effectiveness; Lo'i karana; pain; postpartum pervaginam

INTRODUCTION

Traditional herb is one of the potential development in the field of health, so its existence needs to be explored, developed and utilized in the framework of equity of service in the field of health ([Pribadi, 2015](#)). Some traditional ingredients that are efficacious to overcome the discomfort due to the process of birth are a herb of Java chili, cloves, ginger, nutmeg and kencur ([Handayani, 2003](#)). Java Chili has long been known to the public as a traditional herb. Chili pepper contains piperine spicy substances, which have

antipyretic power, analgesic, anti-inflammation, and the central nervous system suppression. In some women, Java chili s also believed to increase uterine contractions that affect the process of cleaning the uterus after giving birth. Clove (*Syzygium aromaticum*) is a flavorful dried flower stalk that also serves as a warmer, as well as ginger and nutmeg seeds that can provide a sense of warmth when it is supplied to the body ([Lentera, 2002](#)).

Until today, there has been little systematic research on postpartum morbidity, except for cases of postpartum depression. Macarthur et al in Birmingham first documented physical morbidity during the puerperium on a large scale of 8, largely unreported for health personnel and continued after the end of routine maternity care at the sixth week. The study of 11,000 women identified the spread of morbidity that begins after delivery. As many as 47% of women reported experiencing one problem, or more than 25 health problems existed right after delivery and lasted more than six weeks. This suggests that very few women report these health problems to their doctors ([MacArthur, Lewis, & Knox, 1991](#)). Glazner et al in a one-year randomized study at Grampian, Scotland, found that 76% of women had at least one health problem eight weeks after delivery ([Glazner et al., 1995](#)). The study of Bick & Macarthur that examines the severity and impact of postpartum morbidity, found that although some health problems were mild or only occasionally presented, many women suffered symptoms every day and this has significant impact on various aspects of life woman ([MacArthur et al., 2002](#)).

In the postpartum period, not a few mothers experience problems of discomfort. Comfort is the central concept in meeting the basic needs of clients as one of the goals of nursing care. Through comfort and action for comfort, nurses can provide strength, support, encouragement and leverage ([Perry & Potter, 2005](#)). The discomfort of muscle pain especially during postpartum is one of the signs that must be watched and dealt immediately because it affects the needs of rest and sleep where postpartum is recommended to have enough rest to reduce fatigue. Less rest can result in reducing the amount of breast milk, slowing the involution, which can eventually lead to bleeding and depression ([Perry & Potter, 2005](#)). The impact of the discomfort of muscle pain in the puerperal mother can affect various aspects of woman's life, thus alternative solution is needed, which is safe, affordable, and pleasant. One of the alternative solutions is

the utilization of traditional herb of Lo'i Karana.

Lo'i karana derived from word "Lo'i" and "Karana". Lo'i means medicine, and Karana means warmed potion. Lo'i karana in Mbojo tribe (Bima) is a traditional warming herb that is often smeared on the body, usually its use is dressed after heavy work, during cold temperature, and when having muscle pain and postpartum complaints ([Syukur & Hernani, 2001](#)). In Bima, the use of this herb on postpartum mother has long been done since hundreds of years ago and still remains an herb of choice to reduce the discomfort of muscle pain in postpartum, but there has been no research conducted about the effect of Lo'i karana. The results of preliminary study conducted on 10 postpartum mothers on March 2016 in Ambalawi Public Health Center using interview method, it was found that 7 mothers (70%) experienced comfort problems, especially muscle pain. Of 5 mothers who experienced muscle pain were using mixed ingredients of Java chili, clove, ginger and kencur to treat the complaints, the results showed that 4 mothers had lower pain after 1-2 hours, while 1 person claimed to require treatment many times and adequate rest to relieve complaints of muscle pain, and 2 mothers only consumed drugs from health personnel said that they felt muscle aches for days accompanied by nausea and headache. Of 3 postpartum mothers who did not experience muscle pain complaints, they also use Javanese chili just to warm and refresh the body. The aim of this study was to examine the effect of Lo'I Karana on muscle pain in postpartum mothers.

METHODS

Study design

This was a quasi-experimental study with posttest only control group design.

Setting

This research was conducted from July to November 2016 in the working area of Ambalawi Public Health Center of Bima.

Sample and sampling

The population in this study was all mothers with postpartum pervaginam in Ambalawi Public Health Center area from July to November 2016, which amounted to 78 people. The sample was 30 mothers selected using purposive sampling, which 10 assigned in 3 groups (standard-dose group, minimal-dose group, and maximal-dose group). The inclusion criteria of the sample were: normal postpartum mothers in day 1 to day 3, with only child, did not take anti-pain medication for 3 days, and were not sensitive to Lo'i karana material. The exclusion criteria were postpartum mothers with action (vacuum, extracellular forceps, Caesarea section and postpartum complications such as pre-eclampsia, eclampsia, hemorrhage, cardiac abnormalities or other conditions requiring serious treatment).

Intervention

The first group was given a standard treatment of Lo'i Karana consisting of 10 grams of dried Java chili, 5 grams of dried cloves, 5 grams of dried nutmeg, and three of them fried without using oil, plus 10 grams of fresh ginger, 10 grams of kencur, 5 grams of turmeric and 150 grams of rice white rice soaked. All ingredients pounded until smooth and then covered in the neck and all over the body except the breast and genital area, and abdominal area until the back was wrapped with octopus' cloth, this was done after a morning shower for 1 day or until a sense of muscle aches was gone.

The second group was treated with Lo'i Karana with minimum dose consisting of: 5 grams of dried Java chili, 2 grams of dried clove fruit, and 2.5 grams of dried nutmeg. All of them fried without using oil, plus 5 grams of fresh ginger, 5 grams of kencur, 2 grams of turmeric and 100 grams of soaked white rice. The process is the same as the standard dosage.

The third group was given the treatment with Lo'i karana with maximum dose, namely: 15

grams of dried Java chili, 10 grams of dried clove, and 7.5 grams of dried nutmeg, which all of them fried without using oil, plus 20 grams of fresh ginger, 20 grams of kencur, 10 grams of turmeric and 200 grams of soaked white rice. The process is the same as the standard dose.

All materials were taken from the crops grown by the people in Wera Regency. The results in each group were analyzed to see which doses were most effective in reducing pain. The intervention was implemented by 3 therapists, assisted by 12 midwives who had been trained on how to implement Lo'i Karana and how to observe the pain reaction with pain scale.

Instruments

Wong-Baker Faces Pain rating scale was used to measure pain on day 1 and day 3.

Ethical clearance

This study has been approved by the Research Ethics Commission of Health University of Mataram with approval number: 116 / UN18.8 / ETIK / 2016.

Data analysis

Data analysis used in this research was descriptive and inferential analysis. Descriptive analysis was performed by presenting data through frequency distribution, while inferential analysis used was Kruskal-Wallis Test to examine the effect of Lo'i Karana on pain in postpartum mother, followed by Mann Whitney test to see differences in dose of Lo'i karana on pain scale.

RESULTS

Table 1 shows that the majority of the respondents aged 20-35 years (93.3%), had senior high school level background (56.7%), worked as housewives (80%), and parity of the second child.

Table 1 Frequency distribution of characteristics of respondents based on age, education, occupation, parity, birth baby weigh, and dosage of intervention

Category	n	Percentage (%)
Age		
20-35 Year	28	93.3
> 35 Year	2	6.7
Education		
Elementary school	2	6.6
Junior High School	8	26.7
Senior High School	17	56.7
University	3	10.0
Occupation		
Housewife	24	80
Farmer	4	13.3
Farm laborer	1	3.3
Honorarium	1	3.3
Parity		
1	8	26.7
2	14	46.7
3	1	3.3
4	5	16.7
5	2	6.7
Birth Baby weight		
< 2500 gram	1	3.3
2500 - 4000 gram	29	96.7
Dosage of intervention		
Minimal dose	10	33.3
Standard dose	10	33.4
Maximal dose	10	33.3

Table 2 Frequency distribution of pain level in day I and day III

Pain level	Day I		Day III	
	n	%	n	%
No pain	-	-	4	13.3
Mild pain	23	76.7	24	80.0
Severe pain	7	23.3	2	6.7

Table 3 Pain level in the groups of standard, minimum and maximum dose on day I and day III

Group	Pain scale day I		Pain scale day III	
	n	%	n	%
Standard-dose group				
No pain	0	0	0	0
Mild pain	9	90	10	100
Severe pain	1	10	0	0
Minimal-dose group				
No pain	0	0	0	0
Mild pain	4	40	8	80
Severe pain	6	60	2	20
Maximal-dose group				
No pain	0	0	4	40
Mild pain	10	100	6	60
Severe pain	0	0	0	0

Table 2 shows that on day 1 there were 23 postpartum mothers (76.7%) had mild pain, while on the day III 24 mothers (80%) had mild pain and 2 mothers (6.7%) had severe pain. As shown in the table 3, 90% of respondents in the standard-dose group had mild pain in day I, and 100% of them had mild pain in day III. In the minimal-dose

group there were 40% of respondents had mild pain and 60% with severe pain in day I, and in day III 80% of respondents had mild pain and 20% with severe pain. And in the maximal-dose group 100% of participants had mild pain and in day III there were 60% with mild pain and 40% with no pain.

Table 4 Effect of Lo'i karana on pain level using Kruskal-Wallis test

Pain	Group	p-value
Day I	Minimal-dose group	0.004*
	Standard-dose group	
	Maximal-dose group	
Day III	Minimal-dose group	0.009*
	Standard-dose group	
	Maximal-dose group	

Table 5 Differences of pain level in in minimal, standard and maximal-dose groups in day I and day III

Minimal-dose group and Standard-dose group			
Pain level	p-value	Mean rank (Minimal-dose group)	Mean rank (Standard-dose group)
Day I	0.022	13.00	8.00
Day III	0.146	11.50	9.50
Standard-dose group and Maximal-dose group			
Pain level	p-value	Mean rank (Standard-dose group)	Mean rank (Maximal-dose group)
Day I	0.317	11.00	10.00
Day III	0.029	12.50	8.50
Minimal-dose group and Maximal-dose group			
Pain Level	p-value	Mean rank (Minimal-dose group)	Mean rank (Maximal-dose group)
Day I	0.004	13.50	7.50
Day III	0.015	13.10	7.90

Table 4 shows that there were significant effects of Lo'i karana in minimal, standard and maximal dosage on pain level in day I ($p=0.004$) and day III ($p=0.009$) in postpartum mothers. While Table 5 shows that there was a significant difference in pain level on day I between minimal-dose group (mean 13) and standard-dose group (mean 8), which means the standard dose was more effective in reducing the pain level compared with minimal dose; while on the third day there was no difference in pain level. It also showed that there was no significant

difference in pain level on day I between standard-dose group and maximal-dose group, whereas on day III p-value was 0.029 ($p < 0.05$), which means there was a significant difference in pain level on day III between standard-dose group and maximal-dose group. The mean rank value showed maximal doses was more effective in reducing pain on day III compared to standard dose.

In addition, there was a significant difference in pain level on day I between minimal-dose group (mean 13.50) and maximal-dose group

(mean 7.50). Similar with pain level in day III, which the mean rank value of pain in minimal-dose group was 13.10 and in maximal-dose group was 7.90, which indicated that maximal dose was more effective in reducing pain level on day I and III compared to minimum dose.

DISCUSSION

The results of this study showed that there were significant effects of Lo'i karana (with minimal standard and maximal dose) on pain levels in postpartum mothers. This study suggests that the higher doses used for the treatment, the better effect in reducing pain will be.

The differences in effectiveness in reducing pain from the three groups were due to the different doses given in each group. Lo'i karana with maximal dose gives a very warm effect on the mother's body, so that many respondents got sweat and felt fresher and had new energy. The treatment with Lo'i karana with maximum dose is interesting to be understood and scrutinized further because of its pharmacological effects in reducing the pain among postpartum mothers.

Lo'i karana consists of core ingredients, namely: Javanese chili seeds, cloves and dried nutmeg, ginger, kencur and turmeric which are efficacious to contain analgesic, anti-inflammatory and antipyretic properties, so that when combined can reduce postpartum pain. Study stated that piperine (Java chili) has antipyretic effect, analgesic, anti-inflammatory, and central nervous system suppression effect ([Rukmana, 2003](#)). Ginger has a primary efficacy for blood circulation; while the benefits of cloves, nutmeg, and turmeric are as analgesics, and clove oil content can be a painkiller. And if mothers get fever or not feeling well, it is advisable to consume kencur. The heat effect of this medicinal plant is very good for sweating and helps to nourish the body. It is also indicated that the basic ingredients used in Lo'i karana

are useful for antiseptics, aromatherapy, anti-oxidants and anti-microbial ([Nasution, 2009](#)).

The results of this study were also in line with Sembiring stated that the basic ingredients of Lo'i karana is effective for postpartum care as it can reduce post-partum discomfort and increase the freshness of mothers after childbirth. It is revealed that traditional medicine is still recognized and can answer various health problems. Traditional medicine is also a well-known treatment system for its devotees and believed to be safer than modern medicine. Traditional herbs as one of the treatment efforts that have been widely known and used by the community with the aim of treating minor ailments, preventing disease, maintaining endurance and health of the body including for the care of postpartum mothers ([Sembiring, 2012](#)).

Lo'i karana treatment is an integral part of the socio-cultural environment that has values that are worth maintaining and enhanced as well as contributing positively to health improvement efforts. Lo'i karana is one type of therapies that has existed for more than one hundred years in the midst of society of Bima and Dompu that still survive, even growing rapidly in the community because of its effective properties and materials are easy to obtain and affordable.

CONCLUSION

It can be concluded that there was a significant effect of Lo'i karana on pain level in postpartum mothers. It is recommended that this intervention can be applied as a part of nursing intervention in caring postpartum mothers.

Declaration of Conflicting Interest

None declared.

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Author Contribution

All authors contributed equally in this study.

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