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Original Research

Effect of consuming lemongrass (*Cymbopogon citratus*) on shortening the postpartum period

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ABSTRACT

Background: Complementary care in some midwifery communities has become important to midwifery practice. One of the reasons why complementary midwifery care is currently widely used is the desire to avoid the side effects of drugs. Based on the birth register at Independent Practice of Midwife Darmawati from September to December 2023, the average number of births was 25 patients a month, with postpartum visit data recorded as 89% of postpartum mothers consuming lemongrass decoction (*Cymbopogon citratus*) during the postpartum period. Lemongrass is a natural resource proven to speed up the healing process. Lemongrass is rich in potassium, which stimulates blood circulation, improves blood flow, and helps increase endurance.

Objective: The aim is to determine the effect of consuming lemongrass decoction on shortening the postpartum period.

Method: This research method uses a quasi-experimental research design with a treatment group and a control group design. The population of this study was all postpartum mothers recorded in the IPM Darmawati birth register from September 2023 to January 2024. This research used a tool in the form of an observation sheet which was filled out by respondents in the treatment group every time they drank lemongrass decoction according to the manual for making lemongrass decoction and how to consume it.

Results: In the intervention group 25% had the postpartum period in the normal category, and 75% in the fast category, while in the control group 100% were in the normal. The Wilcoxon test results show a significant difference between the treatment and control group with a p-value of 0.042.

Conclusion: Consuming lemongrass decoction significantly shortened the postpartum period.

1. Introduction

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Pregnancy complications, childbirth complications, postpartum complications, history of maternal illness, family planning history, and delays in referral can influence maternal mortality. Diana et al. (2018) stated that postpartum complications and a history of maternal illness influence maternal mortality. The time following the placenta's birth until the uterine organs revert to their pre-pregnancy states is known as the postpartum phase. After giving delivery, the postpartum phase lasts for six hours to forty-two days. Since most mother pregnancies occur during the postpartum period, it is crucial to monitor this time (Yuliani & Achyar, 2018).

In general, there has been a decline in maternal mortality rate (MMR) in Indonesia until 2020 to 189 per 100,000 live births from the target in 2024 of 232 per 100,000 live births, accounting for 16.85% of maternal deaths with 4,999 reported deaths and 9,641 unreported cases. Even though there is a trend of decreasing MMR, it has not succeeded in achieving the sustainable development goals (SDGs) targets that must be achieved, namely below 70 per 100,000 live births and reducing IMR to 12.3 per 1000 live births by 2030 (Ministry of Health the Republic of Indonesia, 2021).

SDGs came to replace the Millennium Development Goals (MDGs), which ended in 2015. The third goal of SDGs is to ensure healthy lives and promote prosperity for all people of all ages. By improving health according to the targets set by the SDGs, the target is to reduce the MMR in Indonesia by 2030 to 70 deaths per 100,000 live births and to reduce the infant mortality rate (IMR) by 2030 to 12 deaths per 1,000 live births (Ministry of Health the Republic of Indonesia 2021).

In order to meet the needs of both the mother and the child, postpartum care must be given during the postpartum period. This care includes measures to prevent complications, early detection and treatment of any diseases or complications, breastfeeding support, techniques for spacing out pregnancies, immunizations, and nutrition for mothers. During this crucial time, postpartum care is required for both the mother and the infant. It is estimated that 60% of maternal deaths due to pregnancy occur after delivery, and 50% of postpartum deaths occur within the first 24 hours. Neonatal care is a crucial time in a baby's life; 60% of newborn fatalities happen within 7 days of birth, and two out of every three infant deaths happen within 4 weeks of delivery. These fatalities can be avoided by providing careful observation and postpartum care for the mother and child (Lopez-Gonzalez & Kopparapu,

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2022).

One of the community's therapeutic alternatives is complementary therapy, particularly for women who are pregnant, maternity, or have recently given birth. Many patients inquire about complementary or alternative therapies from medical professionals like midwives in a variety of health care settings. This occurs because clients want to get care in the manner of their choosing. If their desires are met, client happiness will be affected, which may present a chance for midwives to contribute by offering supplemental therapy. Midwives can assist in direct therapy or serve as advisors for clients in selecting suitable substitutes (Erlandia & Gemiharto, 2014). It needs to be further developed through research (evidence-based practice) so that it can be used to reduce medical intervention in `providing complementary midwifery services (Herdiani & Direja, 2022).

In certain midwifery communities, complementary care has grown in significance as a component of midwifery practice. The desire to stay away from the negative effects of medication is one of the reasons alternative midwifery care is so popular today. Complementary therapies have been proven to support the pregnancy and birth process so that it runs comfortably and happily. In Indonesia, the government (community health centers and hospitals) and the private/independent sector both adopt supplementary midwifery services. Complementary midwifery services are more frequently implemented in the private sector since government adoption is hindered by set processes that still need reference to traditional midwifery services (Aprilia & Mukhlishah, 2023).

Indonesian people have utilized complementary and alternative medicine in various aspects of health, including in midwifery, one of which is by using various plant resources which are processed in various ways (Rahmah et al., 2024). Based on the birth register at independent practice of midwife (IPM) Darmawati from September to December 2023, the average number of births was 25 patients a month, with postpartum visit data recorded as 89% of postpartum mothers consuming lemongrass decoction (*Cymbopogon citratus*) during the postpartum period. Lemongrass is a natural resource proven to speed up the healing process. Lemongrass is rich in potassium, which stimulates blood circulation, improves blood flow, and helps increase endurance. This research aims to determine the effect of consuming lemongrass decoction on shortening the postpartum period.

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2. Method

Participant

This research method uses a quasi-experimental research design with a treatment group and control group design. This research was conducted at the IPM Darmawati whose address is at Tanjung Rema Darat, Martapura, Banjar Regency. The population of this study was all postpartum mothers recorded in the IPM Darmawati birth register from September 2023 to January 2024.

Sample size

The sampling technique for this study was accidental sampling, whereas the researcher took a sample of postpartum mothers at IPM Darmawati during the research time period. In this study, researchers got four respondents as the intervention group and four respondents as the control or comparison group.

Data collection

In this research design, the researcher wanted to know the effect of consuming lemongrass decoction during the postpartum period between the treatment groups who were given intervention in the form of lemongrass decoction which was drunk every evening for 3 days during the postpartum period, as a comparison the control group was used which did not consume lemongrass decoction. This research used a tool in the form of an observation sheet which was filled out by respondents in the treatment group every time they drank lemongrass decoction according to the manual for making lemongrass decoction and how to consume it. The postpartum period is broken down into three: normal categories with postpartum ranging from six to eight weeks, the fast category with postpartum less than six weeks, and the long category with postpartum more than eight weeks.

Data analysis

Data is tabulated according to the observed variables. Data in the form of categories is presented in frequency and percentage distributions. Wilcoxon signed-rank test was used to compare the effects of interventions.

Ethical consideration

This research has received ethical clearance with number 093/KEP-UNISM/II/2024. Participants have been given an explanation and understanding of the research carried out.

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They have the right to participate or not in research activities without coercion. Participants can also withdraw from research activities at any time. Participants willing to participate in research activities have filled out the information concern.

3. Results

Several demographics of respondents are presented in frequency and percentage distributions in Table 1. There are several differences in the characteristics of respondents in the intervention and control groups, such as the presence of participants with ages classified as having a high risk of pregnancy (< 20 y.o) in the control group. Maternal parity in the intervention group had an equal composition of primiparous and multiparous (two participants each), while in the control group, more participants came from multiparous mothers (75%). Almost all participants had a high school education, except for one participant from the control group, and all of them did not work or were housewives.

Table 1. Respondent demographics

Characteristics	Intervention		Control	
	F	%	F	%
Age				
< 20 years	0	0	1	25
20-35 years	4	100	3	75
>35 years	0	0	0	0
Maternal parity				
Primipara	2	50	1	25
Multipara	2	50	3	75
Education				
Elementary-Middle School	0	0	1	25
Intermediate (High School)	4	100	3	75
Colleges	0	0	0	0
Employed-status				
Work	0	0	0	0
Not working (Housewife)	4	100	4	100

The postpartum period in the intervention and control groups showed different percentages. In the intervention group, the postpartum period was generally in the fast category (75%), while the other participants experienced a normal postpartum period. Meanwhile, in the control group, all participants underwent a normal postpartum period. The Wilcoxon test results show a significant in effect of using lemongrass concoction on the mother's postpartum period with a p-value of 0.042. The research results can be seen in Table 2.

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Table 2 Postpartum periods in the intervention and control groups

Postpartum period	Intervention		Control	
	Frequency	%	Frequency	%
Long	0	0	0	0
Normal	1	25	4	100
Fast	3	75	0	0
Total	4	100	4	100
Wilcoxon signed-rank test (P-value) = 0.042				

4. Discussions

The use of natural products, better known as herbal plants, for healing and maintaining health among Indonesian people plays a very large role. This happens because most of the natural products are inherited from ancestors whose benefits are beyond doubt and whose use continues to be developed in various regions. The role of herbal plants will be increasingly felt in remote areas, where medical services or modern medicines are difficult to obtain. Besides that, some people still seek traditional medicine and try to self-medicate using traditional methods when they suffer from illness (Pal & Shukla, 2003; Rizvi et al., 2022; Sofowora et al., 2013).

Siagian et al. (2020) stated that herbal plants are able to help the recovery process during the postpartum period. The results of the research show that there are two categories of post-natal medicine, namely external medicine, namely lampok, pilis, and param, which are formulated to be smeared on the stomach, forehead, arms, and thighs. Moreover, the medicine taken is in liquid form, such as herbal medicine or herbal decoctions. The people of Krueng Kluat village believe that using traditional medicine after giving birth can facilitate the discharge of postpartum blood, thereby helping the recovery process during the postpartum period (Fuadi, 2017).

Based on Table 1, it is known that the age of postpartum mothers in the intervention group and control group was mostly 20-35 years old. The age of postpartum mothers was between 20-35 years in the intervention group as many as 4 respondents (100%), and in the control group as many as 3 respondents (75%), and there were postpartum mothers aged under 20 years in the control group as many as one's respondent (25%). This is in line with research conducted by Maulinda and Rusdyati (2018), which states that most mothers give birth at the age of 20 – 35 y.o. 20-35 years old is a mature age and has enough knowledge

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and experience both in terms of maturity in thinking and mentality to run a household. Sexual frequency increases at younger ages and higher incomes, but sexual activity can decrease with age (Arendell, 2000; Łada-Maśko & Kaźmierczak, 2021).

The number of parity in the intervention group and control group was mostly multiparous, where in the intervention group there were 2 respondents (50%), and in the control group there were 3 respondents (75%), while the number of parity in the primipara category in the intervention group was 2 respondents (50%), and the control group was 1 respondent (25%). This shows that there is no relationship between the length of the postpartum recovery process and parity.

The education level in the intervention group and control group was mostly high school, where in the intervention group there were 4 respondents (100%) and in the control group there were 3 respondents (75%). The employment status of all of the intervention and control groups was not working, where in the intervention group there were 4 respondents (100%) and in the control group there were 4 respondents (100%). A person's level of education and employment will be able to indicate their socio-economic level which can influence their ability to absorb information about the postpartum recovery process. Working for mothers will have an influence on family life.

Table 2 shows that in the intervention group, 1 respondent (25%) experienced postpartum in the long postpartum category, 3 respondents (75%) in the normal category, and 3 respondents in the fast category, while in the control group there were 4 respondents (100%) is in the normal category. The Wilcoxon test results show a p-value of 0.042, which shows that there is an effect of consuming lemongrass decoction (*Cymbopogon citratus*) in shortening the mother's postpartum period. This is in line with research that states herbal plants can help the recovery process during the postpartum period (Sibeko et al., 2021). Aprilia dan Mukhlishah (2023), stated that lemongrass is able to help the recovery process during the postpartum period. Maryati and Setyawati (2019) also conveyed the same thing: traditional care can help postpartum recovery. Paulina et al. (2019) stated that lemongrass is able to help the recovery process during the postpartum period. The research results showed that all 10 respondents had consumed lemongrass. Fitriana et al. (2019) stated that some herbal medicines show a significant effect on mother-baby attachment and feelings towards the baby. Babakhanian et al. (2019) stated that herbal plants are able to help the recovery

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process during the postpartum period, especially in curing anemia for mothers who lose a lot of blood after giving birth. As a plant belonging to the grass tribe, lemongrass, which has the Latin name *Cymbopogon citratus*, has a lot of phytochemical content such as saponins, flavonoids, polyphenols, alkaloids, and essential oils in lemongrass. The micronutrients contained include calcium (65 mg), iron (8.17 mg), magnesium (60 mg), phosphorus (101 mg), potassium (723 mg), sodium (6 mg), and zinc (2.23 mg) per 100 grams (Rahim et al., 2020).

5. Conclusion

Lemongrass can reduce the mother's postpartum period by consuming it regularly in the form of a decoction. However, this research only involved a small number of participants, so further proof should be obtained using a larger sample. Apart from that, accompanying variables need to be observed in more detail so that the intervention provided does not become biased.

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