



DOI:

10.22301/IJHMCR.2502-2508.2043

Article can be accessed online on:

<http://www.ijhmcr.com>

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL
OF HEALTH MEDICINE AND
CURRENT RESEARCH

THE EFFECT OF CONSUMING BOILED PANGI LEAVES ON THE HEALTH RECOVERY OF POSTPARTUM MOTHERS AT THE POLINDESWARE HEALTH CENTER, TOBELO CENTRAL DISTRICT, NORTH HALMAHERA REGENCY 2025

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ARTICLE INFO

Article History:

Received 19th March, 2025

Received in revised form

25th March, 2025

Accepted 15th April, 2025

Published online 25th April, 2025

Key words:

Effect, Pangli Leaves, Recovery Post Partum.

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ABSTRACT

Background: The postpartum period is characterized by various physiological and psychological changes, requiring adequate nutritional support and immune system support to aid recovery. Utilizing local plants as functional foods, including pangli leaves (*Pangium edule*), has the potential to support postpartum recovery through their bioactive compounds with antioxidant and anti-inflammatory properties. **Research Method:** This type of research uses. One group pretest design and observations were made through pretest first, then given treatment, then given a posttest so that it can find out the changes that occur before and after giving treatment **Research Results:** For this study, a normality test was carried out and a pragmatic statistical test (paired sample t-test) was used, namely a testing procedure on the dependent group, with a Chi Square significance level of $P < 0.05$. The results obtained from data processing with a pre and post p value of 0.00. **Conclusion:** The characteristics of the respondents were mostly aged between 20-35 years (75%), health recovery before the intervention of consuming pangli leaves was poor for 5 respondents (25%).

Citation: Ida Laila Nur¹, Nur Fatimah², Salsa Putri Aulia³, Deiby Rumbajan⁴
"Bachelor Of Midwifery Study Program", International Journal of Health Medicine and
Current Research, 10, (02), 2502-2508.

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PRELIMINARY

The postpartum period is the period a woman experiences, beginning after the delivery of the products of conception (baby and placenta) and lasting up to six weeks after delivery. The postpartum period is divided into several stages. The first stage is the immediate postpartum, which occurs within the first 24 hours after delivery. The second stage is the early postpartum, which occurs 24 hours after delivery until the end of the first week postpartum. The third stage is the late postpartum, which occurs from the second to the sixth week after delivery.¹

The maternal mortality rate (MMR) in Indonesia remained high in 2019, at 305 per 100,000 live births, compared to the target of 102 per 100,000 live births set by the International Conference on Indonesian Family Planning and Reproductive Health (ICIFPRH).²

During the postpartum recovery period, mothers experience various changes, both physically and psychologically. During the postpartum period, mothers still have the potential to experience complications, especially those with low socioeconomic status and educational levels, who often have limited understanding of the signs and potential dangers that can occur during the postpartum period.

Pangi (*Pangium edule* Reinw. Ex Blume), also known as a fruit-producing plant, is a consumable plant with potential medicinal and herbal uses. Pangi is used as a snack food, cooking spice, food preservative, and antiseptic medicine. Pangi can be classified as a type of multipurpose tree because almost all parts of this plant can be used..^{4,6,8}

Manuhutu (2011) states that the pangi plant (*Pangium edule* Reinw. Ex Blume) can be used as traditional medicine, the leaves are vegetables, the flesh can be eaten when it is ripe, and the seeds are processed as cooking spices, and can also be eaten as snacks. This pangi seed meat contains antioxidant compounds that function as anti-cancer, including vitamin C, iron ions and β -carotene and flavonoid class compounds that function as antibacterials including cyanide acid, hydrocarbon acid, khaulmograst acid, gorlat acid and tannins.⁵

According to previous research by Pinta, Widya, and Paulina (2017), phytochemical screening of pangi leaves revealed secondary metabolites, including flavonoids, saponins, and steroids. Flavonoids are the active anti-inflammatory compounds. Furthermore, the research results indicate that the flavonoids found in pangi leaves may have antibacterial properties.⁶

Therefore, one effort to support postpartum recovery is to consume boiled pangi leaves as a natural source of nutrition to boost immunity. Pangi leaves are known to contain various bioactive compounds, such as flavonoids, which act as antioxidants and have the potential to boost the immune system.

This nutritional content is expected to help accelerate the recovery process, maintain postpartum health, and reduce the risk of complications in the postpartum period. In this study, the methanol extract of pangi leaves using GC-MS (Gas-Spectrometry Mass Chromatography) proved that the pangi leaf contained squalen compounds. Pangi leaf extract sample in the

table above, that the squalen compound analysis in the sample test used the GC-MS tool with a concentration of 21.22%. While the highest concentration was 24.60% Octadecadienal acid and the lowest concentration was the compound, 3Racetamido-4C, 6C-Bis (acetoxo) -5T-dimethylaminocyclohexene 1.03%. In this study the results of the analysis of squalene compounds were marked by the presence of peaks on the chromatogram and mass spectrum based on the results from the detector

Based on an initial survey conducted by researchers, which included interviews with postpartum mothers, in this case postpartum mothers in Polindeswari Village, there were a total of 20 postpartum mothers.

METHOD

This research is an experimental study with a quasi-experimental design with pre-post tests. The aim of this study was to The effect of consuming boiled pangi leaves on the health recovery of postpartum mothers at the Polindeswari health center, Tobelo Central District, North Halmahera Regency. The intervention group in this study were patients who would undergo the intervention procedure with boiled pangi leaves on the health recovery of postpartum mothers

This study was conducted at the Polindeswari health center, Tobelo Central District, North Halmahera Regency, from June to August 2025. The total population in this study was 20 mother. The sample size for this study was 20 mother who met the inclusion criteria.

RESULTS

Univariate analysis

This analysis aims to describe the average nutritional status after intervention was to The effect of consuming boiled pangi leaves on the health recovery of postpartum mothers at the Polindeswari health center, Tobelo Central District, North Halmahera Regency work area. The following table shows the analysis:

Table 1. Frequency Distribution of Respondents by Age.

Age	N	%
<20-35 Year	14	70
>35 Year	6	30
Total	20	100

Based on table 1 above, it is explained that of the 20 respondents (100%), the majority of respondents in this study were mostly in the age range <20-35 years, namely 5 people (62.5%) and at least >35 years, namely 3 people (37.5%).

Table 2. Frequency Distribution of Respondents by Education.

Education	N	%
SMP	3	15.0
SMA	8	40.0
S1	9	45.0
Total	20	100

2025 Primary Data Source

Meanwhile, education in this study is related to the level of education or the last diploma held by the respondents. Based on Table 3 above, it can be explained that of the 20 respondents (100%), it was found that the majority of respondents had a junior high school education level, namely 3 people

(15.0%), high school level as many as 8 people (40.0%), and bachelor's degree as many as 2 people (45.0%).

Table 3. Frequency Distribution of Respondents by Occupation.

Job	N	%
PNS	5	25.0
Entrepreneur	2	10.0
IRT	13	65.0
Total	20	100

As for the respondents' occupations from table 4 above, it is explained that 20 respondents (100%) found that the majority of respondents were housewives, namely 13 people (65.0%), entrepreneurs as many as 2 people (10.0%) and working as civil servants, namely 5 people (25.0%).

Table 4. Frequency Distribution of Maternity.

Maternity	N	%
Primipara	5	25.0
Multipara	8	40.0
Grandmultipara	7	35.0
Total	20	100

Based on the table above, it shows that of the 20 respondents, namely postpartum mothers, almost all respondents were primiparas (5 people) (25%), multiparas (8 people) and grandmultiparas (7 people) (35%).

Table 5. Distribution of respondents' physical condition before being given the intervention

Phsycal	N	%
Good	15	75.0
Bad	5	25.0
Total	20	100

Based on the results of the questionnaire that had been filled out by the respondents, the results showed that out of 20 respondents (100%), 15 people (75%) were in good condition, and 5 people (25%) were in bad condition.

Table 6. Distribution of respondents' physical condition after being given intervention

Phsycal	N	%
Good	20	100.0
Bad	0	0
Total	20	100

Based on the results of the questionnaire that had been filled out by the respondents, the results showed that out of 20 respondents (100%), 20 people (100%) were in good condition.

Table 7. The effect of consuming pangi leaves on the recovery of postpartum mothers at Polindeswari

Postpartum Maternal Health Recovery Pre	Postpartum Maternal Health Recovery Post	%	P-Value
Good	20	100	0,000
Bad	0	0	
Total	20	100	

Based on the table above, it was found that of the 5 postpartum mothers who previously had poor health conditions, after intervention, all postpartum mothers, namely 20 people (100%), recovered to good health.

Tabel 8. Uji Chi Square

Postpartum Maternal Health Recovery Pre	Postpartum Maternal Health Recovery Post	%	P-Value
Pre	20	100	0,000
Post	20	90	
Total	20	100	

DISCUSSION

Based on Table 1, it can be concluded that the majority of postpartum mothers who participated in the study on pangi leaf consumption were in the productive age range of 20–35 years, which physiologically has the potential to provide an optimal health response to pangi leaf nutritional interventions.

This difference in age groups indicates that the age of postpartum mothers is a factor that needs to be considered in research on pangi leaf consumption, as optimal reproductive age tends to be associated with better metabolic capacity, endurance, and physiological response to the bioactive components of pangi leaves, such as flavonoids and antioxidant compounds, compared to postpartum mothers of older age.^{5,6}

Based on the results of this study, supported by previous research findings, it can be concluded that the characteristics of postpartum mothers, particularly age and education level, play a significant role in the success of the pangi leaf consumption intervention in improving postpartum health. Postpartum mothers of optimal reproductive age (20–35 years) demonstrated a better

physiological response to the intake of nutrients and bioactive compounds from local plants, consistent with other research that suggests that productive age is associated with more optimal metabolism and immunity. Furthermore, higher education levels are associated with increased knowledge, attitudes, and acceptance of the use of functional local foods, including pangi leaves, to restore postpartum maternal health. Therefore, pangi leaf consumption has the potential to be an effective alternative intervention based on local wisdom, especially when accompanied by adequate health education tailored to the sociodemographic characteristics of postpartum mothers.

The effect of pangi leaf consumption on postpartum maternal health indicates a significant effect on postpartum mothers' perceptions of pangi leaves, with a p-value of 0.000. This indicates that health recovery improved after the pangi leaf consumption intervention. This shows a significant difference before and after consuming pangi leaves. Other benefits experienced include feeling refreshed upon waking, no headaches, improved sleep quality, and aiding in the recovery process. After consuming pangi leaves, respondents experienced significant health recovery on average 15 days after the intervention.

Pangi leaves are believed to have benefits for postpartum mothers, particularly in the healing process of postpartum wounds and increasing stamina. Pangi leaves are rich in antioxidants and anti-inflammatory compounds that can help accelerate wound healing.

CONCLUSION

The characteristics of the respondents were mostly aged between 20-35 years (75%), health recovery before the intervention of consuming pangi leaves was poor for 5 respondents (25%), health recovery of postpartum mothers after the intervention of consuming pangi leaves was good, namely 100%, there was an effect of consuming pangi leaves on the recovery of the health condition of postpartum mothers.

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