Jurnal Info Kesehatan
Vol. 22, No. 4, December 2024, pp. 881-890
P-ISSN 0216-504X, E-ISSN 2620-536X
DOI: *10.31965/infokes.Vol22.Iss4.1664*
Journal homepage: *https://jurnal.poltekkeskupang.ac.id/index.php/infokes*

RESEARCH **Open Access**

Hemorrhoid Degrees of Pregnant Women in the Use of Suppository *Phaleria macrocarpa*

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Received: 26 August 2024 Revised: 20 November 2024 Accepted: 31 December 2024

Abstract
Increased progesterone levels during pregnancy can lead to haemorrhoids, which require proper management to minimize risks to both the mother and fetus. Since haemorrhoidectomy is not a suitable option for pregnant women, alternative treatments with minimal side effects are needed. This study aimed to evaluate the effectiveness of *Phaleria macrocarpa* suppositories in reducing the degree of haemorrhoids in pregnant women. This study employed a true experimental design with a cross-sectional approach. The study population consisted of pregnant women selected through purposive sampling. Data were collected using observation sheets and analyzed using the Wilcoxon test. The results study show that among pregnant women who used standard suppositories, 23 participants (71.8%) showed no change in the degree of haemorrhoids, while 9 participants (28.8%) experienced a reduction in severity. In contrast, all 32 participants (100%) who used *Phaleria macrocarpa* suppositories experienced a decrease in haemorrhoid severity. Statistical analysis showed a significant difference ($p < 0.05$) between the two groups, with a p-value of 0.0013, indicating that *Phaleria macrocarpa* suppositories were significantly more effective in reducing haemorrhoids compared to standard suppositories. The conclusion is *Phaleria macrocarpa* suppositories effectively reduce the severity of haemorrhoids in pregnant women and may serve as a safer alternative to conventional treatments. Further research with larger sample sizes and long-term follow-ups is recommended to validate these findings and explore the potential mechanisms of *Phaleria macrocarpa* in haemorrhoid treatment.

Keywords: Haemoroid, *Phaleria macrocarpa*, Pregnant, Suppository.

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1. INTRODUCTION

Haemorrhoids are a condition that often occurs without specific symptoms so they require a clinical examination to relieve symptoms (Sheikh et al., 2020; Salusso et al., 2021; Abdul-Kadir & Gomez, 2022; Haider, 2023). Haemorrhoids occur worldwide with a presentation of 54% and 50% of these numbers are found in pregnant women in trimester 3 (Andarkhor et al., 2019). The incidence of haemorrhoids in Indonesia is 12.5 million people and this number is expected to continue to increase, especially in pregnant women with a second child pregnancy and so one of the health centres in Indonesia that continues to experience an increase in haemorrhoid cases is the Kabila Health Center, Bone Bolango Regency, Gorontalo Province, with as much as 44% of the total pregnant women in 2022.

An increase in the hormone progesterone during pregnancy can increase the risk of developing haemorrhoids, so appropriate management is needed to minimize side effects on the mother and fetus (Beksac et al., 2018; Parés et al., 2021; Poskus et al., 2022; Rao et al., 2022). Improper management of haemorrhoids during pregnancy can worsen the situation to the point that it can cause rectal bleeding (Bohl et al., 2017). The management of haemorrhoids in pregnant women is adjusted to the degree of haemorrhoids (Buckshee et al., 2017). The most common way to do a hemorrhoidectomy in cases is to perform a hemorrhoidectomy (Carolina et al., 2019). This method is considered the most effective but also has many drawbacks such as taking a long time to be hospitalized, surgical pain, and postoperative complications and not being done in pregnant women (Ebrahimi et al., 2021). For this reason, an alternative to the management of haemorrhoids that is effective and has minimal side effects is needed.

To minimize the side effects of haemorrhoid management in pregnant women, *Phaleria macrocarpa* can be used (Christina et al., 2022). The pharmacological effects of this plant have been proven to have low toxicity in all parts including the fruit with a dose of 500 mg the content of *Phaleria macrocarpa* fruit is tannins that are useful as antioxidants, terpenoids useful as anaesthetics, alkaloids as antiedema and flavonoids as anti-inflammatory (Shwter et al., 2016). *Phaleria macrocarpa* is processed into a suppository to facilitate its use in the management of haemorrhoids (Andrean et al., 2014). Excess suppositories can provide a faster effect than oral, do not irritate the stomach, prevent drug damage due to digestive enzymes and can be used for unconscious patients (Alara et al., 2017). The novelty of this study lies in the utilization of *Phaleria macrocarpa* as a suppository for haemorrhoid management in pregnant women, combining its proven low toxicity and pharmacological effects—such as antioxidant, anaesthetic, antiedema, and anti-inflammatory properties—with the advantages of suppository administration, including faster action, reduced gastrointestinal irritation, and enhanced suitability for diverse patient conditions.

Specifically, this study aims to analyze the effect of 5-gram *Phaleria macrocarpa* suppository intervention on the degree of haemorrhoids in pregnant women, analyze the effect of oleum cacao on the degree of haemorrhoids in pregnant women, analyze the difference in the intervention of 5 grams of *Phaleria macrocarpa* suppositories and oleum cacao on the degree of haemorrhoids in pregnant women in the third trimester at the Kabila Health Center. In general, the output of this study can be used as government input in midwifery practice to reduce maternal mortality caused by anaemia in pregnant women if bleeding occurs due to an increased degree of haemorrhoids in pregnant women. In particular, this research is important because it can reduce discomfort and reduce the risk of cesarean delivery due to indications of haemorrhoids due to improper management and prevent bleeding in haemorrhoids in pregnant women. From an economic perspective, this research can also reduce the burden on mothers who experience haemorrhoids. This study aimed to evaluate the effectiveness of *Phaleria macrocarpa* suppositories in reducing the degree of haemorrhoids in pregnant women.

2. RESEARCH METHOD

The research design used is a true experimental pre-post-test control group design. Design is used to test two related samples. The sample in this study was all pregnant women who had haemorrhoids and met the inclusion criteria at the Kabila Health Center, a total of 64 pregnant women. The sampling technique of this study uses purposive sampling with the inclusion criteria of mothers who are willing to be respondents, pregnant women with haemorrhoids, aged 20-35 years and exclusion criteria of obesity, acute diarrhoea, abdominal tumours, and anal fissures. Assessment of haemorrhoid degrees using observation sheets. The research was carried out at the Kabila Health Center. The intervention that will be given is the *Phaleria macrocarpa* suppository which will be inserted into the anus of pregnant women who have haemorrhoids. *Phaleria macrocarpa* suppositories are administered 3 times a day for 3 days at a dose of 5 grams for each use. For the control group, the therapy was administered only using an oleum cacao-based suppository without active substances. Data analysis to see the research variables descriptively and determine the relationship between the independent variable and the bound variable using the Wilcoxon test. The research time was from March to August. This research already has a permit from the Research Ethics Commission of the Health Polytechnic of the Ministry of Gorontalo, numbered DP.04.03/KEPK /138/2024.

3. RESULTS AND DISCUSSION

Table 1. Characteristics of Pregnant Women with Hemorrhoids.

Characteristic	Suppository Base		Suppository *Phaleria macrocarpa*	
	Frequency	%	Frequency	%
Parity				
Child 1	10	29.4	9	28.1
Child 2	14	41.2	16	50.0
Child 3	7	23.5	6	16.0
≥Child 4	1	5.9	1	5.9
Total	32	100	32	100
Gestational Age				
Trimester 1	5	15.6	1	5.9
Trimester 2	6	16.0	6	16.0
Trimester 3	21	68.4	25	78.1
Total	32	100	32	100
Work				
Not Working	15	44.1	14	43.8
Work	17	55.9	18	56.2
Total	32	100	32	100

Based on Table 1, respondent characteristics are based on parity in the suppositories group on the basis that the majority of respondents had 2 children, namely 14 people (41.2%). The rest consisted of 10 people (29.4%) who had 1 child, 7 people (23.5%) who had 3 children, and only 1 person (5.9%) who had 4 or more children. This shows that the majority of respondents in this group are mothers with a relatively moderate number of children, namely two children, while in the god crown suppositories (*Phaleria macrocarpa*) group, the parity characteristics in this group show a similar pattern. Most of the respondents had 2 children, namely 16 people (50.0%). The rest, 9 people (28.1%) have 1 child, 6 people (16.0%) have 3 children, and 1 person (5.9%) have 4 or more children. Overall, both groups showed the same tendency, namely the majority of respondents had two children.

For the characteristics of respondents based on gestational age, the majority of respondents were in the 3rd trimester, as many as 21 people (68.4%). The other small number was in the 2nd trimester, namely 6 people (16.0%), and in the 1st trimester as many as 5 people

(15.6%). Thus, most of the respondents in this group are in the late stages of pregnancy, which often requires special medical attention. In the god crown suppositories (*Phaleria macrocarpa*) group: In this group, the majority of respondents were also in the 3rd trimester, namely 25 people (78.1%). The rest consisted of 6 people (16.0%) in the 2nd trimester, and only 1 person (5.9%) was in the 1st trimester. Higher percentages in the 3rd trimester suggest that respondents in this group tend to be closer to the time of delivery, which is relevant to the influence of suppositories on birth preparation.

Characteristics of respondents based on suppository group occupation base the majority of respondents were working, namely 17 people (55.9%), while 15 people (44.1%) did not work. This suggests that most mothers in this group participate in economic activities, although there is still a significant proportion of housewives. Overall, the characteristics of respondents in these two groups of suppositories showed similarities in the composition of parity and gestational age. However, there was a more pronounced difference in the characteristics of the work, where most of the respondents of the base suppository group worked. This information is important to understand the socio-economic context of respondents that can influence the results of research or interventions carried out during pregnancy.

Table 2. Hemorrhoid Degrees Before and After Use of Suppository Base and Suppository *Phaleria macrocarpa*.

Intervention	**Pre**		**Post**	
	Frequency	**%**	**Frequency**	**%**
Suppository Base				
Degree 1	1	3.1	1	3.1
Degree 2	6	18.7	15	46.9
Degree 3	14	43.8	5	15.6
Degree 4	11	34.4	11	34.4
Suppository *Phaleria macrocarpa*				
Degree 1			18	56.2
Degree 2	8	25.0	14	43.8
Degree 3	13	40.6		
Degree 4	11	34.4		

Based on Table 2, the degrees of haemorrhoids in pregnant women before the administration of suppositories in the suppositories group on the basis that the majority of pregnant women experienced grade 3 haemorrhoids as many as 14 people (43.8%). In addition, 11 people (34.4%) had 4th-degree haemorrhoids, 6 people (18.7%) had 2nd-degree haemorrhoids, and only 1 person (3.1%) had 1st-degree haemorrhoids. This shows that most pregnant women in this group experience haemorrhoids at a fairly severe level, namely degrees 3 and 4. In the group of god crown suppositories (*Phaleria macrocarpa*) before the administration of god crown suppositories, the majority of pregnant women also experienced grade 3 haemorrhoids as many as 13 people (40.6%). In addition, 11 people (34.4%) had 4th-degree haemorrhoids, and 8 people (25%) had 1st-degree haemorrhoids. In this case, more severe degrees of haemorrhoids (degrees 3 and 4) also dominated this group, although there was a slight difference compared to the basal suppository group, as there were more pregnant women who developed grade 1 haemorrhoids.

The degree of haemorrhoids in pregnant women after the administration of suppositories there was a significant change in the degree of haemorrhoids in pregnant women. The majority of pregnant women experience grade 2 haemorrhoids, which is as many as 15 people (46.9%). In addition, 11 people (34.4%) still have 4th-degree haemorrhoids, 5 people (15.6%) have 3rd-degree haemorrhoids, and 1 person (3.1%) have 1st-degree haemorrhoids. Although there is a fairly obvious decrease in the degree of haemorrhoids, especially with the increase in the

number of pregnant women who experience degree 2 haemorrhoids, there are still some pregnant women who continue to experience more severe degrees of haemorrhoids (degrees 3 and 4). In the god crown suppositories (*Phaleria macrocarpa*) group after being given the god crown suppositories, the majority of pregnant women experienced a decrease in the degree of haemorrhoids to 1st degree, as many as 18 people (56.2%). Of the rest, 14 people (43.8%) had 2nd-degree haemorrhoids. A more significant decrease was seen in this group, where more than half of pregnant women experienced a fairly good improvement, namely a decrease in the degree of haemorrhoids to degree 1 (Abdul-Kadir & Gomez, 2022). This suggests that the god crown suppository may be more effective in reducing the severity of haemorrhoids in pregnant women compared to the basal suppositories (Christina et al., 2022). Effectiveness of treatment in general, both types of suppositories (base and crown of gods) show a positive effect in decreasing the degree of haemorrhoids in pregnant women (Alara et al., 2017). However, the suppositories of the crown of the gods (*Phaleria macrocarpa*) seem to give better results, with more pregnant women experiencing a decrease in the degree of haemorrhoids to degree 1. This may be due to the active content in the crown of the god which is more effective in relieving inflammation and swelling in the affected area (Shwter et al., 2016). The Importance of therapy selection these results show the importance of choosing the right therapy to treat haemorrhoids in pregnant women, especially considering that this condition can worsen the quality of life of pregnant women if not treated properly (Andarkhor et al., 2019). The changes that occurred after the administration of suppositories from both the base group and the crown of gods showed the potential use of suppositories as an alternative treatment for haemorrhoids in pregnant women (Astriyai et al., 2017). Thus, this study provides important insights related to the effectiveness of suppositories in overcoming haemorrhoids in pregnant women, as well as guiding the development of more optimal therapies in the future.

Table 3. Effect of Suppository Before and After on Hemorrhoid Degree

Degrees of Hemorrhoids	**Suppository Base**		**Suppository *Phaleria macrocarpa***	
	N	**%**	**N**	**%**
Decrease	9	28.2	32	100
Increase	0	0	0	0
Same	23	71.8	0	0
Total	32	100	32	100

Based on the results presented in Table 3, the findings regarding the effectiveness of the suppository base and suppository *Phaleria macrocarpa* in reducing the degree of haemorrhoids in pregnant women show notable differences. Suppository base no change in the degree of haemorrhoids. The majority of pregnant women using the suppository base, 23 individuals (71.8%), experienced no change in the degree of their haemorrhoids. This indicates that for a significant portion of the participants, the suppository base did not have a substantial impact on alleviating the severity of haemorrhoid symptoms. Decrease in the degree of haemorrhoids In contrast, 9 individuals (28.8%) experienced a decrease in the degree of their haemorrhoids. While this represents a smaller proportion of the group, it still suggests that for some pregnant women, the suppository base had a positive effect in reducing haemorrhoid severity.

Suppository *Phaleria Macrocarpa* decreased in the degree of haemorrhoids remarkably, all 32 pregnant women (100%) who used the *Phaleria Macrocarpa* suppository experienced a decrease in the degree of their haemorrhoids. This finding is significant as it demonstrates the complete efficacy of the *Phaleria macrocarpa* suppository in reducing the severity of haemorrhoids in every participant. The absence of any women experiencing no change in their condition highlights the potential of *Phaleria macrocarpa* as a highly effective treatment option for haemorrhoids during pregnancy.

Comparison between the two groups' efficacy suggests a clear difference in the efficacy of the two types of suppositories. While the suppository base only had a positive effect on

28.8% of the participants, the suppository *Phaleria macrocarpa* showed a 100% success rate in reducing the degree of haemorrhoids. This indicates that *Phaleria macrocarpa* might be a more reliable and potent treatment for haemorrhoids in pregnant women (Awad et al., 2023).

Implications for treatment these findings are important for healthcare providers when considering treatment options for pregnant women suffering from hemorrhoids. The results support the idea that *Phaleria macrocarpa* could be a more promising alternative to traditional suppository bases, offering a higher likelihood of symptom relief.

Table 4. Difference Between Suppository Base and Suppository *Phaleria macrocarpa* on Hemorrhoid Degree.

Variable	Kolmogorov Smirnov	p-value
Suppository Base	0.0001	0.0013
Suppository *Phaleria macrocarpa*	0.0001	

Based on the results from Table 4, the analysis of the data using the Kolmogorov-Smirnov Z Test for normality Kolmogorov-Smirnov Z test was conducted to assess whether the data for both groups (suppository base and suppository *Phaleria macrocarpa*) were normally distributed. The test results showed a p-value of 0.0001 for both groups, which is less than 0.05. This indicates that the data for both groups are not normally distributed, meaning they do not follow a normal distribution pattern. This is an important step in determining the appropriate statistical test for further analysis.

Wilcoxon test non-parametric test since the data are not normally distributed, the appropriate statistical test to analyze the difference in the decrease in hemorrhoid severity between the two groups is the Wilcoxon test, a non-parametric test used to compare paired samples. This test is commonly used when the data does not meet the assumptions of normality, such as in this case. Results of the Wilcoxon test yielded a p-value of 0.0013, which is less than the significance level of 0.05. This indicates that there is a statistically significant difference in the decrease in the degree of haemorrhoids between the two groups—pregnant women who used the suppository base and those who used the suppository *Phaleria macrocarpa*.

Interpretation of results significant difference in the significant p-value (0.0013) suggests that the reduction in the degree of haemorrhoids in the group using *Phaleria macrocarpa* is significantly greater than in the group using the suppository base. This confirms the earlier findings that *the Phaleria macrocarpa* suppository was more effective in reducing the severity of haemorrhoids in pregnant women compared to the suppository base (Awad et al., 2023). Clinical implication These results emphasize the efficacy of *Phaleria macrocarpa* as a more reliable treatment for reducing hemorrhoid symptoms in pregnant women (Beksac et al., 2018). The statistical significance of the difference between the two groups suggests that healthcare providers may consider *Phaleria macrocarpa* as a more favourable option for managing haemorrhoids during pregnancy (Zhang & Zhang, 2021). Conclusion The findings from the Kolmogorov-Smirnov Z test and the subsequent Wilcoxon test provide strong evidence that the *Phaleria macrocarpa* suppository is significantly more effective than the suppository base in reducing the degree of haemorrhoids in pregnant women. This conclusion underscores the potential of *Phaleria macrocarpa* as an alternative treatment for haemorrhoids, offering greater relief for expectant mothers. The significant difference in outcomes between the two groups justifies further exploration into the long-term effectiveness and safety of *Phaleria macrocarpa* for pregnant women with haemorrhoids.

Haemorrhoids are swollen blood vessels in the rectum or anus, often experienced by pregnant women due to increased pressure in the pelvic region caused by weight gain and hormonal changes (Deshpande et al., 2022). Multipara mothers are at a higher risk than primipara mothers due to repetitive pressure in the pelvic area from multiple pregnancies, which weakens the blood vessels and muscles, increasing susceptibility to haemorrhoids (Gold

et al., 2023). Other contributing factors include gestational age, particularly in the second and third trimesters, as increased fetal size and hormonal changes (e.g., elevated progesterone levels) promote blood vessel relaxation and constipation (Hinchee-rodriguez et al., 2022). Lifestyle changes, like higher fibre intake and hydration, are essential preventive measures. Jobs requiring prolonged sitting, standing, or heavy lifting, as well as those inducing stress or irregular schedules, exacerbate the risk (Poskus et al., 2022). Research confirms that constipation and inactivity are major contributors to haemorrhoids in such cases.

A study examined the efficacy of base suppositories and *Phaleria macrocarpa* suppositories in reducing haemorrhoid severity among pregnant women. Before treatment, 43.8% of participants experienced degree 3 haemorrhoids, while 34.4% had degree 4. After base suppository treatment, most participants (46.9%) had reduced symptoms to degree 2. However, only 28.8% showed improvement, as base suppositories mainly alleviate symptoms without addressing root causes.

In contrast, all participants using *Phaleria macrocarpa* suppositories experienced a reduction in haemorrhoid severity (Jiang et al., 2017). The bioactive compounds, such as flavonoids, saponins, and alkaloids, exhibit anti-inflammatory, wound-healing, and antibacterial properties, promoting tissue healing, reducing swelling, and improving blood circulation (Katata-seru et al., 2020). These suppositories also alleviate pain and inflammation naturally, making them effective for managing haemorrhoids in pregnancy without pharmacological risks (Kavitha et al., 2017).

Limitations of the research sample size was limited, and findings may not generalize to broader populations, the study focused on immediate outcomes, lacking long-term data on haemorrhoid recurrence, the study compared two treatments but did not explore other possible interventions or combinations, variables like diet, physical activity, and individual health history were not controlled, which might influence results, while effectiveness was measured, the precise biochemical mechanisms of *Phaleria macrocarpa's* active compounds require further study.

Base suppositories and *Phaleria macrocarpa* suppositories effectively alleviate haemorrhoid symptoms (Lim et al., 2019). However, *Phaleria macrocarpa* offers more comprehensive benefits due to its natural anti-inflammatory and wound-healing properties, making it a promising option for haemorrhoid management during pregnancy (Kavitha et al., 2018). Further research with larger samples, longer follow-ups, and controlled variables is needed to validate and expand upon these findings (Lie et al., 2020).

4. CONCLUSION

The conclusion is *Phaleria macrocarpa* suppositories effectively reduce the severity of haemorrhoids in pregnant women and may serve as a safer alternative to conventional treatments. Further research with larger sample sizes and long-term follow-ups is recommended to validate these findings and explore the potential mechanisms of *Phaleria macrocarpa* in haemorrhoid treatment.

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