

The Effect of Murottal and Lavender Aromatherapy on Post-Circumcision Pain in Pediatric Patients at Oerip Putra Brebes Clinic

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ABSTRACT

Background: Circumcision is a medical procedure involving the removal of the prepuce, resulting in wound and significant postoperative pain that disrupts daily activities. The use of nonsteroidal anti-inflammatory drugs (NSAIDs) to manage pain has associated side effects, prompting the exploration of non-pharmacological therapies such as murottal and aromatherapy as alternatives for pain management in post-circumcision pediatric patients. Method: This quantitative study utilized a pre-experimental design with a one-group pre-and-post-test approach. A sample of 20 respondents was selected using non-probability purposive sampling at Oerip Putra Brebes Clinic. Pain level was measured using the Wong-Baker Faces Pain Rating Scale. The respondents were being asked three times for the pain scale before the intervention, to make sure the pain scale is not temporarily but it's their final answer. Data analysis employed the Wilcoxon Signed Rank Test. Data collection was conducted between December 2022 and February 2023. Results: The average pain scale value before intervention was 4,20, and after intervention, it was 4,70. The Wilcoxon test yielded a p-value of 0,197, indicating no significant impact from murottal and lavender aromatherapy on post-circumcision pediatric patients. Conclusion: The administration of murottal and lavender aromatherapy did not yield a significant impact on post-circumcision pain in pediatric patients.

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1. INTRODUCTION

Circumcision is a practice that is recommended both in religious and health contexts. During the circumcision procedure, the preputium is removed to expose the glans penis, making it easier to clean and preventing it from becoming a breeding ground for infections [1]. Circumcision is a minor surgical procedure aimed at fulfilling Islamic religious requirements and medical indications. Islam teaches its followers about the natural practices, which refer to actions taught by the prophets that are related to purity. Circumcision leaves behind a wound and considerable discomfort that can disrupt daily activities. The wound and restricted movement can affect the patient's comfort, although they usually heal within a few days [2].

Following circumcision, there is a removal of the preputium that can lead to tissue damage in the glans penis and preputium. As the effects of anesthesia wear off, pain often arises in that area [3]. In a study by Putri

(2019), 75% of circumcision patients at the Crescent Moon Primary Clinic in Klaten experienced pain within one hour after the circumcision procedure due to the depletion of local anesthesia effects.

Post-circumcision pain is managed pharmacologically by administering pain relievers such as analgesics, paracetamol, and mefenamic acid when the patient experiences pain. Pharmacological therapy with analgesic drugs, which are classified as non-steroidal anti-inflammatory drugs (NSAIDs), is effective in reducing pain. However, NSAIDs have side effects, such as dyspepsia and other gastrointestinal mucosal irritations [4]. The side effects of NSAIDs can affect various vital organs in the body, such as the gastrointestinal tract, heart, and kidneys. On the other hand, vital organs in children are still undergoing development towards maturity. This should be a matter of concern, especially concerning the pharmacokinetics and pharmacology of drugs or the pathophysiology of the disease being treated. With the development of NSAID formulations, experts are striving to create drug formulations with minimal side effects, including changing formulations and discovering new NSAID preparations. However, even the latest formulations may not provide the best solution, as they may minimize side effects on one specific organ but cause greater side effects on other organs [5]. Therefore, non-pharmacological therapy can be used as an alternative to alleviate pain. Non-pharmacological therapy utilizes physiological processes, making it relatively free from side effects and safer than NSAIDs. Thus, non-pharmacological therapy can be considered an alternative for mild to moderate pain [4]. Pain management combining non-pharmacological methods can reduce both chronic and acute pain levels [6]. For example, in the study by Rahmah & Astuti (2019), combining non-pharmacological therapy involving muromental therapy with lavender aromatherapy was found to be effective in reducing dysmenorrhea pain.

Based on a survey conducted by researchers at the Oerip Putra Brebes Clinic in October 2022, it was found that the majority of circumcision patients experienced post-circumcision pain. The data revealed that in October 2022, out of 11 patients, 8 complained of pain after circumcision. These 8 patients experienced such intense pain that they cried in agony and had difficulty finding comfort. For pain management, they relied solely on the prescribed pain relievers. Some of them even reported feeling nauseous after consuming the pain relievers for a few minutes.

Therefore, the researchers will provide a non-pharmacological therapy intervention for post-circumcision pain in children, which includes muromental therapy and lavender aromatherapy.

2. RESEARCH METHOD

This study employs a pre-experimental one-group pre-post test design, where the sample will be treated as one intervention group. In this study, univariate and bivariate data analysis methods are employed. The sampling technique used is purposive sampling from a population of 20 respondents with the inclusion criteria such as circumcised clients from Oerip Putra Brebes Clinic (conventional or electrocautery methods), children 9-12 years old, post-circumcision pain < 7, home-to-clinic distance < 10 KM and with the exclusion criteria such as respondents with asthma and lavender scent allergies, respondents with mental disorders, specifically autism, respondents with impaired hearing and sense of smell. Pain levels measured before and after the intervention using the Wong-Baker Faces Pain Rating Scale. The respondents were being asked three times for the pain scale before the intervention, to make sure the pain scale is not temporarily but it's their final answer. Data collection conducted over a period of approximately 2 months, starting from late December 2022 to February 2023.

3. RESULT AND DISCUSSIONS

RESULT

Table 1. Characteristics of Respondents (n=20)

Characteristics	<i>f</i>	%
Age (years)		
9	7	35
10	7	35
11	5	25
12	1	5
Education (ES)		
4 th	2	10
5 th	15	75
6 th	3	15
Pain Experience		
Have	7	35
None	13	65

According to Table 1., the majority of the respondents are aged 9 to 10 years, with a total of 14 individuals falling into this age group. In terms of education, the majority are in the 5th grade of primary school, totaling 15 respondents. Additionally, the majority of respondents have prior experience with pain, with 13 individuals not having experienced pain before.

Table 2. Before-After Intervention and Wilcoxon Test (n=20)

Pain Scale	Mean	Std. Deviation	p-value
Before	4,20	1,105	0,197
After	4,70	1,342	

Based on Table 2., the average pain scale score before the intervention was 4.20 with a standard deviation of 1.105. The minimum score was 2, and the maximum score was 6. After the intervention, the pain scale score was 4.70 with a standard deviation of 1.342. The minimum score remained 2, and the maximum score was 6. The p-value was found to be 0.197.

The Effects of Murottal Therapy and Lavender Aromatherapy

Before assessing the intervention's impact, the researcher conducted a normality test on the data. The normality test used by the researcher was the Shapiro-Wilk test. After confirming that the data did not follow a normal distribution, the bivariate test used was the Wilcoxon test. Based on the Wilcoxon test in the table above, the calculated significance value is 0.197, which means that $p\text{-Value} > 0.05$. Therefore, this study indicates that there is no significant influence on reducing post-circumcision pain scale. Thus, it can be concluded that the null hypothesis (H_0) regarding the influence of murottal therapy and lavender aromatherapy on post-circumcision pain is supported.

DISCUSSION

A. Characteristic of Respondents

It can be concluded that the majority of children undergoing circumcision are in the age range of 9 to 12 years. In Indonesia, circumcision is a common practice influenced by factors such as tradition, cultural identity, and religious values. Many families consider it a religious obligation and a cultural symbol. Some parents choose to have their children circumcised for health reasons. Typically, circumcision procedures are performed at a relatively young age, around 9-12 years old. This age is considered appropriate because it is associated with physical maturity and a child's ability to cope with the procedure. Environmental factors also play a role, such as the presence of mass circumcision traditions in the local community or support from family and peers. All of these factors provide insight into why circumcision in young boys is so common in Indonesia [7]. During this age, children go through puberty, marked by significant physical and hormonal changes. Adolescence is a transition from childhood to adulthood, where they will strive to adjust their roles as individuals on the path to adulthood. The development of children in late childhood is a transitional phase, where children begin to enter adolescence, typically from the ages of 11 to 18. Notable developments during this period include sexual identity maturation with the development of reproductive organs and the achievement of self-identity as adolescents who are leaving childhood behind and entering adulthood [8]. Puberty is an important period in a child's growth and development because it involves both sexual development and more complex cognitive development.

B. Comparison of Pain Scale Before and After Murottal and Lavender Aromatherapy in Pediatric Patients Post-Circumcision.

The average pain scale score of respondents before the intervention with murottal and lavender aromatherapy was 4.20, with the majority of respondents rating their pain at 4. However, after the intervention, there was an increase in the average score to 4.70, with pain scales ranging from 4 to 6. Eight respondents experienced an increase in pain scale, eight respondents showed no change in pain scale, and four respondents experienced a decrease in pain scale (Table 2).

This research does not align with a study conducted by Rahmah & Astuti (2019), where there was a significant influence of murottal and lavender aromatherapy in reducing dysmenorrhea pain in female students at Muhammadiyah University of Yogyakarta. The average pain scale before murottal and lavender aromatherapy was 5.40, and the pain scale after the intervention was 2.90.

The findings of this study indicate that murottal therapy and lavender aromatherapy did not have a significant impact on the pain scale before and after the therapy. In this research, respondents who received murottal therapy and lavender aromatherapy did not experience a significant change in the pain scale.

From a pathophysiological perspective, murottal therapy and lavender aromatherapy can influence the autonomic and limbic nervous systems, releasing chemicals like gamma-aminobutyric acid, enkephalin, and beta-endorphins that help alleviate pain. This assists in reducing the stimuli perceived by pain receptors due to tissue

damage from the preputium skin removal and stimulates the brain to produce natural opioid analgesics in response to pain nociceptors [9]. According to the gate control theory, pain signals resulting from tissue damage caused by circumcision procedures will transmit signals to open the pain gate. Nerve impulses are sent through the spinal cord to the brain, and then new pain stimuli reach the brain, causing pain. However, the influence of murottal therapy and lavender aromatherapy in the form of gamma-aminobutyric acid, enkephalin, and beta-endorphins, which are less effective in inhibiting the pain gate, results in pain stimulation still being transmitted. Consequently, pain reduction does not occur optimally [10].

Furthermore, according to Munevveroglu and Gunduz [11], the administration of analgesics such as paracetamol, antalgin, and mefenamic acid has been proven effective in reducing post-circumcision pain. Post-circumcision pain is better managed pharmacologically because this approach is generally more effective in relieving intense and acute pain that may occur after the procedure. Analgesic drugs or pain relievers used in the pharmacological approach have the ability to work quickly and provide significant relief from pain. The circumcision process involves the cutting or removal of the penile prepuce, resulting in potentially intense pain. According to Sivagnanam [12], the pharmacological approach also provides better control over the level of pain experienced by patients, which can enhance comfort during the recovery period. Additionally, recovery after circumcision typically has a limited timeframe, making the use of pain relievers more practical for immediate relief. Although non-pharmacological therapies like murottal and lavender aromatherapy have the potential to provide relaxation and reduce stress, they may not have the same effectiveness in managing acute post-circumcision pain. Therefore, in this case, the pharmacological approach is often recommended over non-pharmacological therapy.

C. The Effect Before and After the Intervention

In this study, no significant effect was observed, mainly due to internal factors, including pain tolerance, pain sensitivity, pain experience, and anxiety, which varied among each circumcised patient. Pain is a subjective experience, and some children may have a higher pain tolerance and cope better, while others may have a lower pain tolerance and experience more intense pain. Sensitivity to pain may also differ among individuals. Those with high pain sensitivity may experience more intense post-circumcision pain. Emotions such as anxiety, stress, or depression can affect pain perception. If circumcision patients experience high levels of anxiety or stress before or after the procedure, their pain may feel more intense. Additionally, psychological factors such as negative expectations about pain or previous traumatic experiences can influence pain perception. It's worth noting that the majority of circumcision patients in this study either did not have previous pain experience or were not currently experiencing [13].

The increase in pain could also be due to external factors, such as physical factors, beliefs, spiritual values, and an unsupportive environment. According to Kolcaba & DiMarco [14], comfort is closely related to physical, psychospiritual, environmental, and socio-cultural factors in the context of post-circumcision pain increase.

According to Noel [15], age can also affect pain perception. Pain during adolescence can be a stressful experience and can affect their quality of life. Proper management and adequate support are needed to reduce the negative impact of this pain experience. Recent research shows that adolescents have pain perception levels similar to adults. However, their response to pain can be influenced by factors such as previous experiences, cognitive and emotional maturity, and the social support received. Adolescents may be more vulnerable to the negative effects of pain than preadolescent children due to the psychosocial changes and identity development that occur during this period.

Pain experiences are also subjective and can be influenced by complex individual factors. Additionally, each individual may respond to therapy differently. Therefore, while murottal therapy and lavender aromatherapy may not have a significant impact on reducing pain in pediatric post-circumcision patients in general, further research is needed to better understand the effects of this therapy and consider individual variations in response [13].

Physical factors involve adequate pain management and proper wound care to reduce physical pain and discomfort experienced by patients. On the other hand, psychospiritual factors consider the psychological and spiritual aspects of the patient. Emotional support, clear communication, and accommodation of spiritual needs can reduce stress and anxiety that may affect pain perception. Environmental factors include lighting, noise, and temperature, which can influence stress factors that may exacerbate post-circumcision pain. Socio-cultural factors take into account social interactions and the patient's cultural context. Understanding individual needs, respecting cultural traditions, and considering family values can influence patient comfort and overall recovery [13].

Murottal therapy involving listening to Quranic recitations and lavender aromatherapy is used in various non-pharmacological therapy contexts. However, in the case of post-circumcision pain in children, both of these methods may not be suitable as the primary therapy. Murottal therapy involves listening to Quranic recitations, which can provide calmness and comfort to many individuals. However, its effectiveness in directly reducing pain in children has not been scientifically proven. Children experiencing post-circumcision pain may require more specific and direct methods to reduce pain and discomfort.

Aromatherapy using lavender essential oil, known for its relaxation and anxiety-reducing effects, has shown benefits in reducing pain in some conditions. However, scientific evidence supporting the specific use of lavender aromatherapy in post-circumcision pain in children is still limited [9].

In the treatment of post-circumcision pain in children, non-pharmacological therapies are generally recommended, including the use of appropriate analgesics (pain relievers) such as paracetamol or ibuprofen [16].

Therefore, murottal therapy and lavender aromatherapy did not have a significant effect on pain in circumcised pediatric patients because murottal therapy and lavender aromatherapy cannot work alone without therapy capable of directly reducing pain. In fact, patients experiencing post-circumcision pain may experience an increase in pain scale and added stress when given murottal therapy and lavender aromatherapy.

4. CONCLUSION AND RECOMMENDATION

CONCLUSION

There was no significant effect observed in the administration of murottal therapy and lavender aromatherapy in pediatric patients post-circumcision, as evidenced by the p-value of 0.197.

RECOMMENDATION

In the realm of Nursing Science, the discoveries from this research are poised to become a valuable reference for enhancing the teaching and learning processes, particularly within the domain of medical-surgical nursing. These findings hold the potential to inform and shape educational strategies within the field. Moving beyond academia, healthcare facilities stand to benefit from the insights derived from this study. The results serve as a guide, shedding light on non-pharmacological therapies. Notably, the combination of recitation (murottal) and lavender aromatherapy is revealed not to exert a significant impact on post-circumcision pain. This information can aid healthcare professionals in refining their approaches to pain management. For the respondents involved in the study, the obtained results carry implications for their post-circumcision experience. It becomes evident that the combined therapy of murottal and lavender aromatherapy does not present a direct or immediate alternative for alleviating post-circumcision pain. This insight is crucial for managing expectations and understanding the limitations of the intervention.

Furthermore, this research extends a helpful guidepost for future researchers. The suggestion is made to consider additional variables, such as the comfort factors associated with the research environment – a facet not explored in this study. There is also an invitation to explore modifications in content and research techniques, potentially influencing the outcomes of murottal and lavender aromatherapy interventions in pediatric patients post-circumcision. The narrative thus unfolds as a comprehensive exploration, offering valuable insights and directions for various stakeholders in the realms of education, healthcare, and future research endeavors.

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