



NURSES' AND CAREGIVERS' EXPERIENCES OF VIRGIN COCONUT OIL PERIANAL CARE IN CHILDREN WITH DIARRHEA: A PHENOMENOLOGICAL STUDY IN BENGKULU, INDONESIA

Shelvia Purnama Pratiwi, Andra Saferi Wijaya*

Department of Nursing, Poltekkes Kemenkes Bengkulu, Bengkulu, Indonesia

*Correspondent: andrasaferi@poltekkesbengkulu.ac.id

Abstract

Diarrhea in children frequently leads to increased bowel movements resulting in perianal skin irritation, discomfort, and potential infection. Virgin Coconut Oil (VCO), with its anti-inflammatory and antimicrobial properties, is gaining attention as a natural topical treatment to alleviate such irritation. This phenomenological case study explores the lived experiences of seven nurses and caregivers administering VCO perianal care for children with diarrhea at RSHD Bengkulu, Indonesia, in 2024. Data were gathered through semi-structured interviews and observations, and analyzed using thematic methods to capture the essence of participants' experiences. The findings indicate that VCO application effectively improved skin integrity and reduced irritation, contributing to enhanced patient comfort. Participants noted challenges, including initial child resistance and the necessity for caregiver education on appropriate application techniques and hygiene maintenance. Positive caregiver-patient interactions and comprehensive training increased confidence and adherence to perianal care practices. Thematic analysis revealed important aspects such as the natural efficacy of VCO, the holistic benefit to child well-being, and the critical role of thorough caregiver support and education in successful care implementation. This study offers valuable insights into integrating natural products like VCO into pediatric nursing care and emphasizes the need for tailored strategies to manage child cooperation during care. The results can inform clinical protocols and family education programs aiming to provide effective, culturally appropriate, and child-friendly interventions for managing perianal irritation in pediatric diarrhea cases.

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INTRODUCTION

Diarrhea remains a major global health concern, especially among children under five, contributing significantly to childhood morbidity and mortality. According to the World Health Organization (WHO), diarrhea is the second leading cause of death in children under five worldwide, with approximately 500,000 deaths annually (Fadhilah et al., 2023). The burden is higher in low- and middle-income countries, including Indonesia, where factors such as poor sanitation and limited healthcare increase incidence and severity (Oktavianisya et al., 2023).

In Indonesia, diarrhea continues as a persistent health problem. The Indonesia Basic Health Research Survey (Risikesdas) 2018 reported a diarrhea prevalence of 4.3% across age groups, highest in under-five children (Qisti et al., 2021). In Bengkulu Province, prevalence hit 7.54% among under-fives, above the national average (Febrianti et al., 2022). Local data from Bengkulu Health Office recorded increasing toddler diarrhea cases: 3,995 in 2021 rising to 5,062 in 2022, with Puskesmas Jembatan Kecil as a hotspot (Kemenkes RI, 2024). This highlights urgent needs for effective interventions.

Frequent bowel movements during diarrhea often cause perianal skin irritation in children. Repeated exposure to feces and urine leads to compromised skin integrity, manifesting as diaper dermatitis or perianal dermatitis. This results in increased discomfort, pain on defecation, disrupted comfort, and heightened risk of infections (Paramita & Paramita, 2023). Globally, skin diseases affect 24–43% of young children, with irritant contact dermatitis common due to diaper use (Negera et al., 2025). Millions of cases occur annually, underscoring the scale (Safitri et al., 2025). In Asia, climate and environmental factors contribute to persistent skin issues (Sharma & Gupta, 2024).

Managing perianal irritation emphasizes hygiene, frequent diaper changes, and barrier creams. However, synthetic treatments may cause adverse reactions or be culturally/financially unsuitable. Thus, natural alternatives like Virgin Coconut Oil (VCO) are gaining interest (Kurniawan & Alfiyanti, 2022). VCO contains lauric acid and antioxidants, offering antimicrobial, anti-inflammatory, and moisturizing effects. Studies show VCO reduces diaper rash severity with minimal side effects, making it suitable for clinical and home use (Varma et al., 2019). A recent case study demonstrated VCO's effectiveness in accelerating healing and improving skin moisture in children with diaper rash (Kurniawan & Alfiyanti, 2022). While quantitative data support VCO's efficacy, less is known about nurses' and caregivers' lived experiences implementing VCO care. Understanding these experiences reveals practical challenges, perceptions, and cultural acceptance, informing tailored care protocols (Wijayaningsih et al., 2024).

Phenomenological research captures these subjective experiences, crucial in pediatric nursing where emotional and cultural factors influence care success (Sillero Sillero et al., 2024). This study at Rumah Sakit Harapan dan Doa (RSHD) Bengkulu explores seven nurses' and caregivers' experiences using VCO for perianal care. It investigates perceptions of effectiveness, child cooperation challenges, and education for optimizing care. Filling gaps in literature, this qualitative study offers insights to improve nursing protocols, caregiver training, and culturally appropriate pediatric care. Results aim to enhance comfort and quality of life for children with diarrhea.

This study at Rumah Sakit Harapan Danau (RSHD) Bengkulu explores seven nurses' and caregivers' experiences using VCO for perianal care. It investigates perceptions of effectiveness, child cooperation challenges, and education for optimizing care.

Despite the high prevalence and significant morbidity associated with diarrhea in children, persistent challenges remain in optimizing care, especially regarding management of perianal skin irritation from frequent defecation. Current nursing protocols predominantly emphasize fluid replacement and hygiene, yet perianal dermatitis remains a frequently encountered complication that exacerbates discomfort and delayed recovery (Jongen et al., 2008). This highlights a critical need to explore and integrate effective skin care interventions that are culturally acceptable, feasible, and evidence-based.

Virgin Coconut Oil (VCO) has attracted attention as a natural adjunct for perianal care due to its demonstrated anti-inflammatory, antimicrobial, and skin barrier-enhancing properties (Evangelista et al., 2014). Clinical trials report VCO's efficacy in reducing diaper rash severity and promoting skin healing in pediatric patients (Ari Pangesti et al., 2024). However, despite this promising evidence, there is a scarcity of research focusing on healthcare providers' and caregivers' lived experiences with VCO application in the context of pediatric diarrhea care. Such qualitative insights are crucial as they reveal practical challenges, facilitate cultural acceptability, and inform tailored training and education needed for successful implementation (Septianingsih et al., 2025).

Furthermore, the "know-do" gap remains a major impediment in childhood diarrhea care globally. While oral rehydration salts (ORS) are universally recognized as the most effective treatment for preventing dehydration-related deaths, provider misperceptions and caregiver hesitations continue to limit its uptake. This signals broader systemic issues about translating knowledge into practice, especially in resource-limited settings. Consequently, investigating how new interventions like VCO are perceived and integrated within existing nursing care provides vital knowledge to bridge these gaps.

Phenomenological studies in nursing care for children with diarrhea are relatively limited, with most research focusing on quantitative outcomes rather than experiential aspects of care delivery. This is a significant void because caregiving efficacy is influenced not only by clinical knowledge but also by emotional support, cultural beliefs, and practical obstacles such as child cooperation and resource constraints. By conducting a phenomenological case study within RSHD Bengkulu, this research aims to fill these crucial gaps by exploring in-depth the experiences of seven nurses and caregivers using VCO for perianal care in children with diarrhea. This approach allows for nuanced understanding of barriers and facilitators, caregiver-child interaction dynamics, and the contextual factors influencing the success of this intervention.

Addressing this gap advances the pediatric nursing field by providing evidence to develop culturally sensitive, holistic, and sustainable care protocols incorporating natural remedies alongside conventional treatment. It also aligns with national health priorities to improve child health outcomes through integrated nursing interventions that respect local cultural practices while maintaining scientific rigor.

In sum, this study responds to the pressing need to enhance perianal care in pediatric diarrhea by investigating an understudied aspect of care delivery—lived experiences with Virgin Coconut Oil application. The insights gained are expected to inform nursing education, empower caregivers, and ultimately improve children's comfort and recovery trajectories in settings similar to Bengkulu.

METHODS

This study employed a qualitative phenomenological case study design to explore the lived experiences of nurses and caregivers implementing Virgin Coconut Oil (VCO) perianal care for children with diarrhea. The phenomenological approach was chosen to gain deep insights into participants' perceptions, emotions, and meaning-making processes related to this care intervention. By focusing on subjective experiences rather than quantitative measures, this design facilitates a rich understanding of the practical and psychosocial aspects of care delivery, which are critical in pediatric nursing contexts.

The research was conducted at Rumah Sakit Harapan Danau (RSHD) Bengkulu, a regional referral hospital in Bengkulu Province, Indonesia. RSHD Bengkulu provides pediatric care, including management for acute diarrhea cases prevalent in the region. The hospital's cultural context supports the use of traditional remedies such as VCO, which is locally familiar and accessible, providing an ideal setting for this study.

The study involved seven purposively selected participants comprising nurses and primary caregivers who directly provided perianal care to pediatric patients with diarrhea. Selection criteria included: Active involvement in perianal care during hospitalization or home care; Minimum six months of experience in pediatric nursing or caregiving; and Willingness to share personal experiences through interviews.

The relatively small but focused sample size aligns with the phenomenological qualitative approach that prioritizes depth over breadth of data. Data were collected from March to May 2024 using a combination of semi-structured interviews and participant observations. The primary data source consisted of audio-recorded, semi-structured interviews lasting 45 to 60 minutes. Interviews were

conducted in Bahasa Indonesia by the researcher using a prepared guide covering topics such as experiences with VCO application, perceived benefits and challenges, child cooperation dynamics, and educational needs. Open-ended questions encouraged participants to freely describe their feelings and reflections. Naturalistic observations were conducted during routine perianal care sessions to triangulate interview data. The researcher took detailed field notes on caregiver techniques, child responses, and environmental context without intruding in care delivery.

Data analysis followed Colaizzi's seven-step method, appropriate for phenomenological research aiming to distill the essence of lived experiences: 1). Familiarization: Transcribed interviews and observation notes were read repeatedly to understand overall content; 2). Extracting Significant Statements: Statements relevant to VCO perianal care experiences were identified and extracted for further analysis. 3). Formulating Meanings: Meanings were formulated from significant statements to capture implicit and explicit ideas; 4). Clustering Themes: Related meanings were grouped into thematic clusters representing shared aspects across participants; 5). Developing an Exhaustive Description: A detailed comprehensive description of the phenomenon was developed integrating all themes; 6). Producing the Fundamental Structure: The exhaustive description was distilled into a concise statement capturing the core essence of the experience; 7). Validation: Participants were invited to review the summary of findings to verify accuracy and authenticity, ensuring credibility.

The research protocol was approved by the Institutional Review Board of Politeknik Kesehatan Kemenkes Bengkulu (Approval No. 2024/IRB/082). Prior to data collection, informed consent was obtained from all participants emphasizing voluntary participation, confidentiality, and the right to withdraw at any time without consequences. Participant anonymity was maintained by using coded identifiers in transcripts and reports.

To ensure the rigor and trustworthiness of this qualitative study, several key strategies were employed. Credibility was enhanced by returning the findings to participants for verification, a process known as member checking, which allows participants to confirm the accuracy and authenticity of the interpreted data. Additionally, prolonged engagement during the observation period enabled the researcher to develop a deep understanding of the care setting and participants' behaviors. Triangulation was also applied by combining data from different sources, such as interviews and observations, to corroborate findings and reduce bias.

For transferability, the study provided rich, thick descriptions of the research context, participant demographics, and detailed accounts of the experiences shared. These thorough descriptions enable readers to assess whether the findings may apply to other similar settings or populations, supporting applicability beyond the immediate study context. Dependability was maintained through

comprehensive documentation of all research processes, including data collection, coding, and analysis techniques. The researcher's decisions and reflections were recorded in an audit trail, allowing others to follow the study methodologically and assess its consistency and reliability. Confirmability focused on minimizing researcher bias by employing reflexive journaling throughout the study. By consciously reflecting on personal assumptions and their potential impact, the researcher ensured that the findings remained grounded in participants' perspectives and the data collected, rather than influenced by preconceived notions.

Together, these approaches create a robust framework that strengthens the validity and reliability of the study's findings, providing confidence that the insights genuinely reflect the lived experiences of the nurses and caregivers involved.

RESULTS AND DISCUSSION

Overview of Participants

Seven participants were included in this study: four nurses (coded as N1–N4) and three caregivers (coded as C1–C3). All participants were directly involved in providing or receiving perianal care using Virgin Coconut Oil (VCO) for children with diarrhea during hospitalization at the pediatric ward of Harapan dan Doa Regional Hospital (RSHD), Bengkulu, Indonesia. The nurses' ages ranged from 25 to 36 years, with 3–10 years of pediatric nursing experience, while caregivers were mothers aged 23–32 years whose children were diagnosed with acute diarrhea.

Thematic analysis revealed three main themes and several subthemes describing participants' lived experiences:

1. Perceived Effectiveness of VCO in Reducing Irritation
2. Comfort and Satisfaction in Care Delivery
3. Empowerment through Natural Nursing Practice

Each theme is described in detail below, supported by participants' quotations that illustrate key experiences and perceptions.

Theme 1: Perceived Effectiveness of VCO in Reducing Irritation

Visible Skin Improvement and Healing Response.

All participants reported noticeable improvements in skin integrity within two to three days of consistent VCO application. The redness and soreness in the perianal area significantly decreased, and the children appeared less fussy and more comfortable during diaper changes.

A nurse (N2) described her observation:

“After we started applying VCO twice a day, the skin looked less reddish and the child stopped crying during cleaning. On the third day, it looked almost normal again.”



Figure 1 . Skin Changes After VCO Application

The image illustrates significant improvements in the perianal skin condition of children following the use of Virgin Coconut Oil (VCO). Before treatment, the skin exhibited visible redness, inflammation, and irritation typical of diaper dermatitis caused by frequent diarrhea. After two to three days of consistent VCO application, the affected areas showed marked reduction in redness and swelling, with restored skin integrity and reduced discomfort

Caregivers echoed similar perceptions. One mother (C1) shared:

“Before using the oil, my child cried every time I cleaned him. But after two days, the skin was softer and not as painful. I was surprised how fast it worked.”

These accounts align with previous findings by Komalasari et al. (2023), showing that topical VCO promotes epithelial repair and reduces irritation due to its anti-inflammatory and antimicrobial properties. The consistency of VCO, which leaves a thin protective layer, was perceived as advantageous compared to traditional diaper creams that sometimes caused stickiness or discomfort.

Observational Changes and Quantitative Improvement

Although the study's primary approach was qualitative, nurses also recorded irritation scores based on the Skin Grading Area Scale, showing improvement from grade 2.0 (moderate irritation) to grade 1.0 (mild) after three consecutive days of application. N3 reflected:

“We could clearly see the healing. The area became less moist, and the skin color turned normal faster than usual with regular creams.”

This subtheme supports the clinical relevance of natural nursing interventions in pediatric dermatologic care, where observable outcomes reinforce nurses' confidence in their practices.

Theme 2: Comfort and Satisfaction in Care Delivery***Enhanced Child Comfort and Emotional Relief***

Participants emphasized the emotional aspect of care—children's comfort was the most meaningful indicator of intervention success. Caregivers described their sense of relief when their children appeared calmer and slept better after VCO treatment.

C2 expressed:

"My child slept longer and didn't cry at night after the second day. For me, that was the biggest relief as a mother."

Nurses also noticed this behavioral improvement. N4 mentioned:

"We always observe the child's reactions. With VCO, they seemed more relaxed, even when we cleaned the area. It helped us to perform care without resistance."

This finding resonates with humanistic nursing theory, emphasizing comfort as a core component of pediatric care (Kolcaba, 2003). By integrating a gentle, non-irritating material such as VCO, nurses provided not only physiological healing but also emotional reassurance to both child and caregiver.

Caregiver Satisfaction and Perceived Natural Safety

The use of VCO was strongly associated with the perception of naturalness and safety. Caregivers appreciated that VCO had no strong odor, was easily absorbed, and was a familiar product in Indonesian households.

As C3 stated:

"I felt calm because it's a natural oil. I've used it for my own skin before, so I didn't worry about allergies or chemicals for my baby."

This perception enhanced caregivers' trust in nurses' interventions and contributed to shared decision-making in care delivery. From the nurses' perspective, offering a natural-based product strengthened therapeutic communication and engagement with families. N1 explained:

"When we told mothers that it was Virgin Coconut Oil, they immediately agreed. They trusted the product, and that made our work easier."

The theme of comfort and satisfaction reflects not only physical but also psychological well-being. The integration of culturally familiar remedies fostered a sense of partnership between nurses and caregivers—an essential element in family-centered pediatric nursing (Coyne et al., 2016).

Theme 3: Empowerment through Natural Nursing Practice***Professional Confidence and Motivation***

Nurses expressed a sense of empowerment and pride in applying an evidence-based yet culturally grounded intervention. They viewed the use of VCO as a practical form of innovation that enhances their professional autonomy and demonstrates nursing's independent role in improving child outcomes.

N3 described this empowerment:

"Usually we just follow doctor's orders for topical treatment. But with VCO, we initiated it ourselves as part of nursing care. It made us feel capable and responsible."

This experience aligns with the concept of nursing empowerment, which emphasizes autonomy, professional recognition, and the ability to contribute meaningfully to patient well-being (Laschinger et al., 2014). The nurses' ability to independently select and implement a safe intervention reinforced their clinical judgment and confidence.

Cultural Relevance and Holistic Approach

Participants perceived the integration of VCO as consistent with Indonesian cultural values that appreciate traditional and natural remedies. The alignment between cultural belief and professional practice enhanced care acceptance and sustainability.

As N4 reflected:

"Our culture already uses coconut oil for many things—massage, skin, even hair. Using it in the hospital feels natural and close to our community."

This finding echoes Leininger's Culture Care Theory (1991), which highlights that culturally congruent care enhances health outcomes and patient satisfaction. By acknowledging traditional knowledge, nurses strengthened the cultural competence of hospital-based pediatric care.

Interprofessional Support and Systemic Barriers

While nurses felt empowered, they also mentioned institutional limitations—specifically, the lack of official hospital guidelines or documentation related to natural product use. N2 explained:

"We used VCO because we saw good results, but it's not yet part of the hospital's standard protocol. Sometimes we need approval or extra explanation to other staff."

This points to an important systemic issue: although natural interventions may be effective and well-accepted, institutional support is necessary for integration into formal care standards. Literature also notes that without clear protocols, evidence-based natural practices may remain underrecognized

(Raja et al., 2024). Nevertheless, participants expressed optimism that the positive results from VCO use could encourage hospital management to include it as part of standard nursing interventions for pediatric diarrhea.

The findings of this study highlight that perianal care using Virgin Coconut Oil (VCO) is perceived as effective, comfortable, and empowering by both nurses and caregivers (Nugroho & Rusmarina, 2024). The discussion integrates these findings with existing evidence and theoretical frameworks in pediatric and holistic nursing (Ari Pangesti et al., 2024). The participants' observations of improved skin integrity corroborate quantitative studies showing the clinical efficacy of VCO in treating mild skin irritation and dermatitis (Nikmah., et al., 2021). VCO's lauric acid content acts as an antimicrobial agent against *Staphylococcus aureus* and *Candida albicans*, while vitamin E and polyphenols promote skin healing (Bose et al., 2025).

Multiple recent studies affirm the clinical efficacy of VCO in reducing diaper rash severity and promoting skin healing. A pre-experimental study in Indonesia reported significant decreases in diaper rash scores among infants treated with VCO, demonstrating reductions in redness and inflammation within days (Septianingsih et al., 2025). Another study found VCO's medium-chain fatty acids, notably lauric acid, possess potent antimicrobial and anti-inflammatory activities that facilitate epithelial repair and protect against infections common in compromised perianal areas (Komalasari et al., 2023). VCO's ability to form a thin protective layer was viewed favorably over synthetic creams which might cause discomfort or allergic reactions (Deuschle et al., 2015).

The participants' observations of noticeable skin improvement within two to three days further substantiate previous quantitative evidence regarding the efficacy of Virgin Coconut Oil in promoting skin recovery. Their reports that children appeared less irritable, slept better, and tolerated cleaning procedures more comfortably highlight the multidimensional benefits of VCO. These outcomes extend beyond physiological skin repair to encompass psychosocial well-being, reflecting a meaningful improvement in the overall quality of life for both children and their caregivers. Such holistic outcomes—reduced distress, enhanced comfort, and diminished caregiving burden—represent essential indicators of effective pediatric nursing care. As noted by (Kurniawan & Alfiyanti, 2022), interventions that address both physical and emotional dimensions of child health contribute significantly to comprehensive recovery and family-centered care.

The themes of comfort and caregiver satisfaction elucidate the psychological dimension of care, where natural products like VCO foster trust and emotional reassurance among mothers and families. This trust is important for adherence to care regimens, as confirmed by nurse and caregiver testimonies regarding VCO's safety, cultural familiarity, and absence of harsh chemicals. Such factors

support adherence and strengthen nurse-family partnerships, in line with family-centered care models widely advocated in pediatric nursing literature (Putri et al., 2022).

Further, nursing empowerment emerged as a key insight, reflecting the professional benefits of innovating with natural, evidence-based interventions. Nurses expressed increased confidence and autonomy in selecting VCO, which enhanced satisfaction and professional identity. This finding mirrors recent nursing workforce research that links empowerment and autonomy to improved care outcomes and job satisfaction (Alsadaan et al., 2023). Empowerment is a recurring theme in nursing research, often linked to autonomy, competence, and recognition. In this study, nurses experienced empowerment not merely as independence but as self-efficacy—the confidence to apply knowledge creatively within their professional boundaries. Implementing VCO perianal care allowed them to exercise evidence-based judgment while honoring cultural wisdom, bridging modern science and local practice.

The integration of natural care also reinforces *Leininger's Cultural Care Diversity and Universality Theory* (1991), demonstrating that culturally congruent interventions can strengthen nurse-patient relationships and improve adherence. In Indonesia's pluralistic healthcare environment, such culturally aligned practices may serve as a model for sustainable innovation. Despite efficacy and acceptance, participants noted systemic barriers including the absence of formal hospital guidelines supporting the use of natural products like VCO. This barrier limits integration into official protocols and may inhibit wider adoption. Literature highlights that institutional endorsement of complementary therapies requires robust evidence, standardized procedures, and interprofessional collaboration (Harris et al., 2018). Developing such frameworks could ensure consistency, safety, and shared understanding among clinical teams, facilitating broader implementation of VCO in pediatric care. Furthermore, interprofessional collaboration is crucial to ensure safety and consistency. Pharmacists, dermatologists, and nursing administrators should be involved in reviewing the formulation, dosage, and application protocols. Building such interdisciplinary support can help institutionalize natural care within the evidence-based framework of modern healthcare.

Implications for Practice and Policy. This study reinforces recent calls for integrating traditional remedies supported by scientific evidence into child healthcare. Health institutions should consider developing protocols incorporating VCO as part of standard pediatric dermatologic care, accompanied by training programs to enhance nurse and caregiver competency. Policymakers should recognize the potential of natural products to offer culturally accepted, cost-effective options to standard treatments, especially in resource-limited settings (Mortada, 2024).

The findings of this study carry several important implications for pediatric nursing practice, education, policy development, and future research. Clinically, the successful application of Virgin Coconut Oil (VCO) demonstrates that natural-based interventions can serve as safe and effective adjuncts in managing perianal irritation among children with diarrhea. When produced under appropriate purity standards and applied hygienically, VCO offers a low-cost, culturally acceptable alternative that supports both physiological healing and emotional comfort.

From an educational perspective, integrating traditional yet evidence-based interventions such as VCO into nursing curricula may enhance students' cultural competence and stimulate innovation in clinical decision-making. This approach encourages future nurses to value indigenous knowledge while maintaining scientific rigor in their practice. At the policy level, hospital administrators and professional nursing bodies should consider developing standardized clinical guidelines that support the safe integration of natural care modalities into pediatric practice. Such guidelines should outline clear indications, contraindications, dosage forms, and documentation standards to ensure consistency, safety, and accountability in care delivery.

Finally, the study highlights the need for continued research. Future investigations might adopt mixed-method or randomized controlled designs to further validate the clinical outcomes of VCO while deepening understanding of patient, caregiver, and nurse experiences across diverse healthcare settings. Expanding the evidence base in this area will strengthen the legitimacy of natural, culturally grounded interventions as part of comprehensive, family-centered pediatric care.)

CONCLUSION

This phenomenological case study explored the experiences of nurses and caregivers implementing perianal care using Virgin Coconut Oil (VCO) for children with diarrhea at RSHD Bengkulu, Indonesia. Three key themes were identified: the perceived effectiveness of VCO, comfort and satisfaction in care delivery, and empowerment through natural nursing practice. The study found that consistent VCO application led to visible improvements in perianal skin integrity within two to three days, reducing redness, irritation, and discomfort. Children became calmer and slept better, reflecting both physical healing and enhanced emotional well-being. Caregivers trusted this natural, culturally familiar product, while nurses felt professionally confident and autonomous applying an evidence-based, affordable intervention. These outcomes support VCO as a safe and culturally appropriate adjunct in pediatric nursing care, addressing clinical and psychosocial needs. However, institutional support and standardized guidelines are necessary for safe and consistent practice integration. Future research should expand with larger, more diverse samples to further validate natural, contextually suitable pediatric care interventions.

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Declaration of Interest Statement

The authors declare that they have no conflict of interests.

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