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"*It's not just another task*": Pediatric nurses' perspectives on using lavender oil chest wraps as complementary treatment for infants with bronchiolitis

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ABSTRACT

Background: Bronchiolitis is a leading cause of hospitalization during the first year of life, but currently no effective treatment exists. The supportive management of bronchiolitis is therefore often associated with frustration by both caregivers and healthcare professionals. We explored nurses' perceptions of lavender chest wraps (LCWs) as a complementary approach to routine care.
Methods: Semi-structured interviews were conducted with pediatric nurses from two Swiss hospitals involved in a clinical trial on LCWs for bronchiolitis. Interview transcripts were analyzed using a qualitative descriptive approach, aimed at providing a rich summary of participants' ideas, experiences and opinions.
Results: Eighteen nurses were interviewed. They identified positive impacts of LCWs on infants, parents and the therapeutic relationship, in the context of limited conventional care for bronchiolitis. However, site-specific differences raised questions regarding how to effectively integrate LCWs into standard care practices while preserving their identity as a complementary therapy. Nurses identified time constraints, organizational issues and specific training needs as important factors for routine integration of LCWs in hospital settings.
Discussion: This study contributes to a better understanding of the potential effects of LCWs on infants, parents and the therapeutic relationship, and highlights the added value of LCWs for supporting minimal handling. Our findings also underline nurses' role in integrating and delivering complementary medicine interventions in hospital settings, while identifying organizational barriers to successful implementation. Methodologically, this study demonstrates the contribution of qualitative research in the context of RCTs, offering context-specific insights that may aid in interpreting clinical outcomes.

1. Introduction

Bronchiolitis is an acute viral lower respiratory tract infection in infants and young children and the leading cause for infant hospitalization worldwide.[1,2] While many viruses can cause similar signs and symptoms, respiratory syncytial virus (RSV) accounts for the vast majority of bronchiolitis presentations during the first years of life. It was estimated that RSV causes more than 30 million lower respiratory tract infections with 3.2 million hospitalizations and 200'000 deaths worldwide each year.[2] Although an injection of the recently introduced

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monoclonal antibody nirsevimab reduces the risk of hospitalization for RSV bronchiolitis,[3] management of infants with bronchiolitis remains a major challenge due to the lack of effective pharmacotherapy.[2,4] This is often associated with frustration and concern in both parents/caregivers and healthcare professionals (HCPs).[5–8]

International guidelines stress supportive care and de-implementation of unnecessary diagnostic and ineffective therapeutic interventions.[2,4] Supportive care for hospitalized patients is generally limited to maintaining oxygenation and hydration through respiratory support and assisted feeding. While "minimal handling" of the patient is considered a mainstay and condition of supportive care to prevent agitation and stress that increases work of breathing,[9] uncomfortable and somewhat invasive interventions such as nasal irrigation and suctioning, placement of respiratory support systems and nasogastric feeding tubes are frequently needed. In addition, symptoms such as nasal congestion, breathing difficulties and especially coughing contribute to agitation, unease and sleep problems. As such, hospitalization for bronchiolitis is highly stressful for both infants and parents,[10–12] many of whom report feeling isolated and excluded from care decisions, heightening emotional distress.[13]

Therapies from complementary medicine (CM) as an adjunct to standard supportive care for bronchiolitis are gaining popularity among parents and HCPs, but evidence on effectiveness and safety is lacking.[14] To address this lack of evidence, we designed a prospective, multicenter, randomized controlled trial (RCT) based on positive clinical experience[15] to evaluate the efficacy of additional lavender oil chest wraps (LCWs) compared to standard care alone in reducing cough frequency and respiratory distress as well as improving sleep quality in infants hospitalized with bronchiolitis. The ongoing RCT therefore provided an excellent opportunity to explore the experiences and perspectives of nurses directly involved in the implementation of LCWs within the trial. We aimed to explore nurses' views regarding the impact of LCWs on patients, parents and nursing practice. Due to different starting points in the participating centers, the findings from this qualitative study may be of general interest to inform future implementation processes for complementary therapies in hospital settings.

2. Methods

2.1. Setting

We conducted a qualitative study in the context of an ongoing RCT on the efficacy of LCWs in infants hospitalized with bronchiolitis. The RCT takes place in the pediatric departments of the Geneva University Hospitals (HUG) and the Fribourg Cantonal Hospital (HFR) in Switzerland (https://clinicaltrials.gov/study/NCT06108648). Toge ther, around 80 nurses are involved at both sites and have been trained in the standardized application of the LCWs. However, the two study sites present important differences: at the HUG site, LCWs were newly introduced for the RCT as an add-on to standard care of bronchiolitis; at the HFR site, LCWs were already being used since 2015 as part of an integrative treatment concept for respiratory disorders including bronchiolitis, involving different chest wraps as well as oral and inhaled medications from anthroposophic medicine.[15] In order to create similar conditions at both study centers, to ensure unlimited randomization to LCWs or standard care alone and to avoid confounders, all complementary treatments other than LCWs were stopped at HFR during the study period. These contrasting settings provide a unique opportunity to explore and compare the nurses' perceptions of implementing a complementary nursing approach for the first time and the experience of nurses having to reduce a more comprehensive integrative nursing approach to a single intervention.

2.2. Study design

We employed a qualitative descriptive design, which focuses on accurately describing and contextualizing the target phenomena and exploring the meanings that participants attribute to those phenomena.[16,17] It is particularly useful in the context of intervention development, and aims to produce usable results for healthcare improvement.[18] Our focus was to explore how nurses experience the use of LCWs for infants with bronchiolitis, with the aim of identifying the contextual factors that influence their experiences and perceptions as well as the issues to be considered when introducing a new complementary therapy to routine practice. The research group comes from both medical (BMH, FS, TVSA) and social sciences (EP, PH) backgrounds.

2.3. Participants and sampling

Nurses from both study centers were eligible to participate in the qualitative study if they had experience using LCWs during the RCT. To recruit nurses following a convenience sampling method, emails and oral presentations were used to inform nurses involved in the RCT about the qualitative study, and to invite their participation. All nurses who agreed to participate were interviewed. Participation was voluntary and all participants provided written consent. Individual interviews took place during their working hours with the approval of their superiors.

2.4. Data collection

Individual interviews were semi-structured, using an interview guide to focus discussion on nurses' experiences, perceptions and opinions of LCWs for bronchiolitis. The interview guide was developed from discussions with the research team (see Supplementary file 1). All interviews were conducted by EP (a qualitative researcher with a master's degree in social sciences and PhD candidate in sociology) between November 2024 and February 2025, corresponding to the bronchiolitis season in Switzerland, when nurses were most likely to have recently performed LCWs on patients of the clinical trial. All but one interview were audio recorded and transcribed verbatim. One participant declined to be recorded but accepted that the interviewer takes detailed notes of the discussion. All participants were asked to fill out a personal data form listing participants' age, gender and nursing experience. Informal interviews were also conducted with research and head nurses involved in coordinating the RCT at both the HUG and HFR, to gain insight into site-specific contextual issues regarding the RCT and standard care practices.

2.5. Data analysis

A qualitative description approach was used for data analysis.[16,17] Qualitative description aims to provide a rich description of experiences, perceptions, or events, with "data near" interpretation and presentation.[18] Interview transcripts were read by EP in order to identify key topics in the data and develop an initial coding scheme. Initial coding was refined in discussion with the research team, and codes were reorganized into several themes. Final coding and analysis were then reviewed by the entire research team, which consisted of pediatricians involved in the RCT (FS, TVSA, BMH) and a medical anthropologist and senior qualitative researcher (PH). Data management and coding were carried out using the qualitative analysis software Atlas.ti.[19] Once analysis was complete, participant quotes were translated to English by EP and reviewed by PH (both native English speakers). We referred to the Consolidated criteria for Reporting Qualitative research (COREQ) checklist in presenting our study.[20]

2.6. Ethics approval

The Cantonal Commission for the Ethics of Human Research (CER-VD) waived the need for formal ethics approval for this study because no health-related personal data were collected (Reference Req-

2024–01569). However, all procedures performed in this study were in accordance with the Swiss Federal Act on Research involving Human Beings and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The RCT within which this qualitative study took place was approved by the relevant cantonal ethics committees and is registered at https://clinicaltrials.gov/study/NCT06108648.

3. Results

A total of 18 pediatric nurses were interviewed. Table 1 summarizes the characteristics of the participants included in the study. The sample included a diverse range of profiles in terms of age and work experience, with a similar distribution between HUG and HFR nurses. All participants were women. Individual interviews lasted between 20 and 40 min.

3.1. A lack of curative treatment perceived as "doing nothing"

For nurses, caring for bronchiolitis was characterized by the absence of curative treatment: *"we don't really have any medicines for bronchiolitis, it's really the child who fights the virus"* (HFR 7). The nurse's role was mainly seen to provide supportive care and to ensure clinical monitoring of breathing and fluid intake, focusing on symptom management rather than direct intervention (Table 2). As one nurse summarized: *"we treat the symptoms, not the illness*" (HUG 16).

In the context of "minimal handling", in which nurses refrain from unnecessary measures or manipulations to avoid agitation and to conserve the patient's energy, parents sometimes perceived nurses to be absent or inactive, despite their constant monitoring and vigilance. As one nurse reflected: *"When we're there and we're monitoring them and we're just watching [the patient's] clinical progress, [parents] sometimes think, 'we could just go home, you're not doing anything, other than checking up from time to time'"* (HFR 12). Parents' frustration was exacerbated by the severity of symptoms in bronchiolitis, which include respiratory distress, persistent coughing, vomiting, crying and in some cases, apathy. Nurses used terms like "*shocking*" (HFR 8) "*stressful*" (HUG 2) and "*disturbing*" (HFR 6) to characterize the emotional toll on parents induced by seeing one's child struggle to breathe.

3.2. LCWs offer a sense of agency to both nurses and parents

In response to these challenges, LCWs emerged as a valuable complementary care strategy, both for parents and nurses. At first glance, they provided a tangible intervention, reassuring parents that something was being done. In addition, LCWs offered nurses a sense of agency, allowing them to actively contribute to the infant's comfort rather than solely relying on seemingly passive observation. *"As a nurse, I have the impression that we need to do things. Here I feel like I'm active, like I'm offering something to parents, and they also have that impression and see us doing something. I think […] that they're reassured by our care"* (HFR 4), described one nurse.

Table 1
Characteristics of interviewees.

	All interviewees (n = 18)	HUG nurses (n = 7)	HFR nurses (n = 11)
Age (years) Mean [Range]	39,7 [23–59]	38,4 [23–58]	40,5 [25–59]
Women [%]	100	100	100
Years working in current position Mean [Range]	10,8 [0,5–32]	9,9 [0,5–25]	11,4 [1-32]
Previous work experience in another department or hospital			
Yes	11	4	7
No	7	3	4

Table 2
Conventional bronchiolitis care according to nurses.

Components of conventional bronchiolitis care	Supportive quotes
Supporting bodily functions (eating and breathing)	*"We're there to help them breathe and eat […] we intervene on a respiratory level if they become [oxygen] desaturated, and then on a nutritional level, by inserting a nasogastric tube, if they can no longer eat."* (HFR 7)
Minimal handling	*"Minimal handling really means putting children to rest, with as little stimulation as possible. That is, not taking them in your arms, not transferring them from the changing table to the bed, really by leaving them in their own bed."* (HUG 1)
Clinical observation	*"These are children that we really need to keep a close eye on, because it's possible that within an hour, the child's general condition deteriorates, or gets better, in the other direction too."* (HUG 2)
Isolation	*"These are often children that we have to put in isolation, if it's an RSV or something like that, we put them together."* (HFR 5)

In the context of the RCT, nurses from both study sites expressed frustration when patients were placed in the control group, feeling restricted in their ability to take action. This frustration was particularly pronounced among HFR nurses, who were accustomed to having access to a broader range of complementary therapies as part of an integrative care concept, as described below:

> *"We used to put a lot of therapies in place […] we had other means compared to [now] just lavender, or even nothing at all if we're in the control group… so it's quite frustrating […] compared to all the procedures we could put in place to help them when they're in respiratory distress."* (HFR 12)

3.3. Nurses perceive physical, psychological and relational effects of LCWs

In terms of clinical outcomes, nurses observed that LCWs had a calming effect on infants, helping to reduce coughing, improve sleep, and ease distress. These physical and psychological effects were often described as interconnected, as one nurse described:

> *"When we apply the lavender, it has all this anxiolytic effect […] and at the same time, if they're less stressed, less anxious, they'll breathe better, maybe cough less. And at night, I find that it really helps them sleep."* (HFR 12)

Nurses noted that these effects were not limited to the patient; LCWs also soothed parents and contributed to a more peaceful environment: *"It diffuses in the room as well, it's a pleasant smell, I think it can also help parents relax. So, it could have a two-for-one effect (laughs)"* (HFR 4), indicated one nurse.

While there was general agreement on these perceived physical and psychological benefits, perspectives differed between hospitals. HFR nurses, who had long integrated complementary therapies into their practice, expressed strong confidence in LCWs' effects, stating "*[LCWs] really helped the baby's progress [and nurses] really saw positive effects"* (HFR 12), while HUG nurses were more cautious about making claims regarding their impact. Some mentioned that their confidence in LCWs' effects was based more on personal experience with complementary therapies than on professional practice. Many looked to the RCT as a way to validate these effects*: "In the end, we really don't know anything, we're expecting a lot from the study, to find out what the numbers really are"* (HUG 16).

Apart from the calming effects of the LCWs, relational effects were significant to nurses. In bronchiolitis care, nurses described how many treatments can be invasive and distressing, which creates resistance in infants and complicates minimal handling: *"they're already stressed, just*

seeing us enter with our white coats…" (HUG 17), observed one nurse. Building trust with the patient was therefore described as essential for their cooperation. In contrast with conventional bronchiolitis care, LCWs provided a rare opportunity for gentle, positive interaction with the patient, as described by one nurse: *"It's softer, something nicer, less… we're less like torturers coming to hurt their child. Instead, we come to do something nice. Even though it's true that by giving oxygen and putting on a nasal cannula, we're doing their child some good, but it's not necessarily taken in that way."* (HFR 10).

Nurses also emphasized that involving parents could make nursing procedures more reassuring for infants, while empowering parents in care. *"Involve the parents, they know their child and they can give us some ideas and tips to improve how we implement the care procedure. Parents are a big help. Sometimes they even apply [LCWs] themselves"* (HFR 12), stated one nurse.

Nurses saw LCWs as more than just a physical intervention aiming at symptom relief: they were also perceived as encouraging a more holistic approach to care, by promoting the therapeutic relationship between infant, parent and nurse. LCWs elicited conversations between nurses and parents, raising discussions about complementary therapies and views on healthcare in general. Some nurses saw this as a way to build trust with families who were skeptical of hospital care:

> *"I don't have a lot of experience. Making conversation, it doesn't come easily yet. [LCWs] allow you to focus on other things, and you end up learning things about the family, their point of view on medical matters… the case history, without realizing it."* (HFR 6)

> *"We often meet patients who are a little… distrustful of the hospital. I think that integrating these types of medicine […] it shows an openness, on the caregivers' part, or on the hospital's part, towards them, towards their way of seeing things. […] I think that having these things to offer, it would be an opening that could be reconciling."* (HUG 17)

3.4. LCWs as a complementary but distinct approach to caring for bronchiolitis

Nurses consistently emphasized that LCWs were complementary to conventional care: "*it's a plus*" (HUG 16), not a replacement. However, they also described LCWs as belonging to a distinct therapeutic approach, one that contrasted with the conventional biomedical model in terms of principles, priorities, and methods. Rather than viewing these two approaches as opposing forces, nurses placed them on a continuum, where conventional and complementary care could sometimes overlap.

Table 3 summarizes nurses' perceptions of the characteristics of conventional and complementary care models. However, nurses underlined that individual procedures sometimes differed from these models in some respects: *"there is some [conventional] care that's actually comfortable for the child, where we're going to have a reassuring presence"* (HFR 12), for example bottle-feeding or cleaning eye secretions. In contrast, some CM procedures (though not used during this RCT), such as aerosols, were perceived as somewhat invasive: *"children don't like it when you put something on their nose and mouth […] It's true that aerosols are sometimes constraining for children"* (HFR 14).

Although LCWs were seen as strongly positioned on the complementary side of the continuum, the rigid structure of the RCT somewhat blurred this perception. The standardization required for clinical research meant that LCWs were no longer as adaptable as they had been in routine practice. HFR nurses, who had prior experience using LCWs outside of the RCT, described how research constraints altered their usual approach and the possibility for parental involvement: *"We don't dare ask parents to apply it themselves, we have to be sure because it's for the study […] we have to be very precise on the schedule, how it's applied, and have control over it"* (HFR 10).

3.5. Challenges to integrate LCWs in hospital settings

In discussing the integration of LCWs into routine hospital care, nurses reflected on a key tension: the need to make LCWs a routine part

Table 3
Differential characteristics of conventional and complementary medicine according to nurses.

Dimensions	Conventional medicine characteristics	Complementary medicine characteristics	Illustrative quotes
Protocol	Highly structured, strict protocol with fixed schedules	Flexible protocol with adaptable schedules	*"If a child is asleep already, and at 8 pm I was supposed to give them a [complementary] aerosol, I'm not going to wake them up for that, although if I had to give them an antibiotic, I would have to wake them up"* (HFR 14)
Focus	Outcome-driven, with effectiveness being the primary objective for care, focusing on measurable physiological improvement	Patient-centered, revolving around the patient's well-being and receptivity, in a holistic vision of care	*"We tell [the parents] 'it's going to be okay, the oxygen will help your baby breathe better, he'll be able to rest, you'll see, the glasses aren't pleasant for him at the moment, they're painful, but afterwards he won't worry about them at all'. So, we try to look ahead to the hours to come, saying, 'at the time of the treatment it's painful, but afterwards you'll see it's going to be okay, your little one will recover better, he'll heal faster'. We try to reassure them like that."* (HUG 18)
Nature of procedures	Invasive, aggressive procedures	Gentle, comfort-oriented procedures	*"Respecting the child's calm, well-being… […] in a sense, that the child also accepts care. [CM] is like an exchange that the baby also accepts."* (HFR 12) *"[LCWs] are a kind, gentle treatment… so it's true that it contrasts with other treatments that are much more aggressive…"* (HUG 17)
Complexity of procedures	Technical procedures which limit parent involvement to a reassuring presence	Easy, accessible procedures which encourage active parent involvement	*"It depends on the treatment, of course if we're drawing blood, the parent may be there but…. […] Anything that's invasive, the parents stay close by to reassure the child, but it's not care in which they feel involved."* (HFR 7) *"Often, if [the parents] can do it, we let them do it […] also, that the parents understand what we're doing, and that it's not just, 'we're doing our thing, you wait', that's not the point. It's that they accompany the child."* (HFR 13)
Decision-making	Medical authority in decisions and prescriptions relating to biomedical, conventional care	Higher nurse autonomy in implementing complementary care	*"We can prescribe it too […] There's less of this… 'it's the doctor who decides' attitude. […] We still have this autonomy in managing [CM care], which is also satisfying, to be able to evaluate, and also to introduce it. We see that the child is coughing a lot, and we can say, 'I'm going to suggest that', from our autonomous role, so that's also nice."* (HFR 14)

of care, while preserving their core principles as complementary therapy.

Nurses from both sites acknowledged that integrating LCWs required repetition and familiarity. They noticed *"a phase where there can be some reluctance"* (HUG 17), but emphasized that frequent use would allow them to develop expertise and confidence in the method: *"It's always in the beginning, when we don't know, we haven't practiced, sometimes it seems a little… almost a little complicated, or that it's going to take a lot of time. And in the end, once we've done it a few times, it's OK."* (HFR 5), described one nurse. However, nurses viewed the RCT context as a barrier to this process, since the control group and strict recruitment criteria limited opportunities for more hands-on experience. HUG nurses, who were still in the early stages of working with LCWs, were particularly concerned about overcoming this learning curve.

In contrast, HFR nurses, who had more experience with LCWs, focused less on practice and more on maintaining the core principles of this approach: *"For me, it really shouldn't become just another procedure. For the study, I understand that it's like that, but not for integrating it into a hospital"* (HFR 11), stated one nurse. Nurses underlined finding the *"right moment"* (HFR 10, HFR 11, HFR 14) and *"the right conditions"* (HFR 11, HFR 12) for complementary therapies such as LCWs: *"You almost have to create a little atmosphere, ideally a calm one"* (HFR 5). They highlighted respecting the patient's rhythm and being attentive to the patient's receptiveness of the therapy: *"If the patient doesn't want it, we don't do it"* (HFR 6), *"if the patient doesn't collaborate, we let it go"* (HFR 7). Nurses also noted that being in the right state of mind to perform the therapy was essential: *"It's about being able to take the time, that it's calm, restful […] For me, you can't apply [LCWs] in a « quick quick, I still have to do this » manner"* (HFR11), *"These care procedures are done calmly, without any stress, you take your time. It's not something you just apply and then leave"* (HFR 4).

For HFR nurses, developing expertise in CM was indispensable in order to successfully implement therapies such as LCWs in hospitals. Alongside specific training in CM, they viewed having nursing and medical experts in CM as *"pillars"* (HFR 12) supporting their activity. Expertise in CM was also considered useful for developing the parent-nurse relationship. One nurse reflected on the early stages of integrating complementary therapies, recalling that *"the most stressful part was knowing how to explain it to parents what it is, and also where it comes from. It's so varied, and it has to seem, like not just plants, but that it really has an effect. Knowing how to explain to them, that was the most difficult for me."* (HFR 13).

A main issue for implementing LCWs was time. HFR nurses noted that it was important to find *"the right moment [to apply LCWs], amidst patient occupations, sleeping, eating, changing diapers… and the unit's activity, breaks, visits, etc."* (HFR 11). Some HFR nurses suggested that it might even be better to skip the LCW altogether rather than to apply it under less-than-ideal conditions, implying that LCWs require specific conditions and a particular nursing attitude, being different from other technical procedures:

> *"If you're in the middle of four other nursing procedures, there isn't much time, you're stressed, maybe you don't feel like it, there are days like that (laughs) […] in that case, the [complementary] treatment isn't going to be interesting at all. At that level, you might as well not do it at all."* (HFR 6).

Concerns about time management were echoed by HUG nurses, who, despite being earlier in the implementation process, anticipated future difficulties for integrating complementary therapies such as LCWs. They worried about what would happen when LCWs became a standard part of care for many patients at once, rather than an occasional intervention. One nurse reflected on this tension:

> *"I'm a bit torn between the two. [On the one hand] as a nurse, I want all children to be able to benefit from this chest wrap. But on the other hand, I'm thinking, aren't we really going to become overwhelmed with these therapies?"* (HUG 16)

4. Discussion

We conducted a qualitative study within the context of an ongoing RCT to explore nurses' experiences with LCWs. In summary, nurses viewed LCWs as a useful therapy in a context where conventional care is limited due to the absence of curative treatment of bronchiolitis. In addition to the physical and psychological effects of LCWs observed on patients and their parents, LCWs were thought to strengthen the therapeutic relationship between patient, parents and nurses by providing a gentle interaction with the patient and by involving parents in the care of their infant. LCWs were seen as a distinct but complementary approach to conventional care for bronchiolitis, but time pressure was identified as a potential obstacle to the successful integration of LCWs in hospital settings.

Our findings suggest that LCWs may enhance the effects of minimal handling by fostering a calming environment for care. Parental distress and negative emotions such as guilt, anxiety and a sense of helplessness[7,8,13,21] have been previously documented in relation to bronchiolitis hospitalization. By providing nurses and parents with a sense of agency, LCWs may reduce frustration related to "doing less" associated with minimal handling.[9,22] In addition, the use of lavender, which is known to have a calming and anxiolytic effect,[23–28] may contribute to creating a soothing environment and preventing distress, a central aim of minimal handling.[9,22] Moreover, LCWs may be useful to develop the mutual support between infant and parents in the context of bronchiolitis, when considering the impact of parents' emotional status on the infant's well-being and healing forces.[29] Put together, these elements suggest that LCWs present specific benefits for minimal handling which, to our knowledge, has not yet been explored.

Therapies from CM are increasingly integrated into hospital settings.[15,30,31] In our study, nurses played a central role in implementing LCWs. As a holistic discipline grounded in caring and healing,[32] nursing is particularly well positioned to bridge complementary and conventional approaches in hospital care settings.[33] CM may provide nurses with opportunities to enhance their practice and provide more personalized care. However, successful integration may be hindered by organizational barriers, time constraints, and the need for appropriate training.[34–36] An evaluation of the cost-effectiveness of LCWs is warranted, given their potential multiple benefits for patients, parents and the nursing practice, especially considering that this is a low-cost intervention. The results from the ongoing RCT, within which this qualitative analysis was conducted, will help confirm or refute quantifiable benefits and provide the needed effect sizes to support a robust cost-effectiveness analysis.

A key strength of our study lies in its ability to provide in-depth insights into the perceived effects of LCWs not only on clinical outcomes, but also on the therapeutic relationship, care practices, and team dynamics. Qualitative research is particularly well suited to explore the context, processes, and lived experiences associated with specific interventions, while also identifying potential barriers and facilitators to their real-world successful implementation beyond the strict constraints of RCT protocols.[37,38] By capturing the perspective of nurses directly involved in delivering LCWs, our study highlights both the added value of this intervention in the care of infants with bronchiolitis and also the practical challenges of integrating complementary therapies into routine care for infants with bronchiolitis.

Our study was limited to a convenience sample of nurses in two Swiss pediatric departments, in the context of an ongoing RCT, which may limit the transferability of our findings to other settings. Furthermore, nurses with a more favorable view of CM might have been more inclined to participate, potentially leading to an overrepresentation of positive attitudes toward LCWs. Although we only included two hospitals in our

study, differences between the two sites in terms of prior experience with complementary therapies allowed us to explore more broadly how contextual factors may impact integration of complementary therapies under real-world conditions, and provide insights that can inform future research, clinical practice, and the development of integrative care strategies within pediatric settings. Future research should also include the perspectives of parents and other HCPs which could provide a more comprehensive understanding of acceptability and feasibility of LCWs in routine care. This broader range of stakeholder views could inform integrative implementation strategies.

5. Conclusion

In this qualitative study based on semi-structured interviews, nurses perceived LCWs as a valuable therapy for infants with bronchiolitis, as it provided them with a sense of agency, appeared to calm patients and reduce coughing, reassured and involved parents, and strengthened the therapeutic relationship. LCWs were viewed as a distinct yet complementary approach to conventional bronchiolitis care. Our findings underline nurses' role in integrating and delivering CM interventions in hospital settings, emphasizing that adequate time and prioritization of complementary therapies are essential for their successful implementation. Addressing time constraints, organizational issues and specific training needs is important so that LCWs can be successfully integrated into routine care. Qualitative research on complementary therapies should be encouraged to provide a comprehensive understanding of the impact of such therapies on both patients and HCPs, as well as insights into how interventions can be implemented under real-world conditions.

CRediT authorship contribution statement

Emma Perneger: Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization. **Benedikt M. Huber:** Writing – original draft, Supervision, Resources, Project administration, Methodology, Formal analysis, Conceptualization. **Patricia Hudelson:** Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization. **Tido von Schoen-Angerer:** Writing – review & editing, Project administration, Formal analysis, Conceptualization. **Fabiola Stollar:** Writing – review & editing, Resources, Project administration, Formal analysis, Conceptualization.

Consent for publication

Not applicable.

Consent to participate

Nurses were informed that participation was voluntary and that the decision to participate or not would have no impact on their working conditions. Consent was obtained in writing at the start of the interview, following a written and oral presentation of the study.

Ethical considerations

The Cantonal Commission for the Ethics of Human Research (CER-VD) waived the need for formal ethics approval for this study, as no health-related personal data were collected (Reference Req-2024–01569).

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Declaration of competing interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.ctim.2025.103236.

Data Availability

The datasets generated and analyzed during the current study are not publicly available, as consent for sharing data was not granted by the participants for confidentiality purposes.

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