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Pre- and Post-Operative Care Protocol for Infants with Tongue-Tie: Clinical and Caregiver Perspectives

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Abstract: *Purpose*: Ankyloglossia or tongue-tie (TT) occurs when the lingual frenulum is visually altered and accompanied by restricted tongue mobility causing feeding and other difficulties for infants. Pre- and post-operative stimulation techniques are known to be effective in preventing tissue reattachment and ensuring feeding success. The aim of this study was to gather feedback from parents and health professionals for an experimental evidence-based pre- and post-operative care protocol for breastfeeding infants undergoing surgical management for TT. *Methods*: A qualitative approach was used to evaluate an experimental pre- and post-operative care protocol for infants with TT, through virtual semi-structured interviews with clinicians and parents of children with TT. Five parents and eight current practicing clinicians were interviewed to obtain feedback on the protocol in development. The results were analyzed using thematic analysis. *Results*: Four themes were generated from participants: (1) parental confidence and competence, (2) the need for individualized and adaptable instruction; (3) supporting the parent and infant equally; and (4) regular and periodic support and adjustment to protocol. *Conclusions*: The findings from the qualitative interviews highlighted the importance of fostering parental confidence and education, adaptability and flexibility in care, and clinician reassurance throughout the process. The participants suggested these factors would contribute to greater adherence to care protocols and improved outcomes for both infants and their families. This research emphasizes the importance of providing care that extends beyond logistics of oral stimulation techniques and instead recommends a mindful, family-centered approach that empowers and motivates families throughout the process.

Keywords: tongue-tie; ankyloglossia; infants; stimulation; pre- and post-operative care

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1. Introduction

Ankyloglossia, or tongue-tie (TT), is a congenital condition of the oral cavity where an unusually short and tight lingual frenulum restricts tongue mobility and function [1]. For infants under twelve months, TT is commonly associated with bottle and breastfeeding difficulties, such as an ineffective latch, nipple pain, mastitis, and poor weight gain due to ineffective sucking and swallowing functions [1]. TT is reported in 7% to 10% of infants, depending on the specificity of diagnostic criteria [2,3]. The consensus statement by the Australian Dental Association (ADA) in 2020 proposes a recommended management pathway for TT, with non-surgical management as a first-line approach, followed by surgical

options if initial interventions prove ineffective [4]. Non-surgical options include positioning and lactation training, feeding therapy, stretching, and lingual massage [5,6]. Surgical interventions to improve tongue mobility and function include frenotomy (incision or lasering of the frenulum), frenectomy (removal of the frenulum), or frenuloplasty (complete release of frenulum) [7]. However, the statement lacks recommendations for pre- and post-operative care and fails to consider the perspectives and needs of parents, who directly implement the stimulation techniques.

Anecdotal evidence recognizes that pre- and post-operative care support symptom resolution and may prevent the re-attachment of the restrictive tie following the surgical intervention [8]. However, there is a significant lack of agreement, consistency, and high-quality evidence regarding stimulation techniques being used in clinical practice [4]. There are currently no universally accepted pre- and/or post-operative care protocols consistently adhered to by clinicians working with infants and children with TT. Additionally, there is no evidence regarding parent opinions of factors that would support the adherence and successful implementation of pre- and post-operative care. Pre-operative care includes lingual stimulation techniques, myofunctional therapy, and lactation or breastfeeding support [9–11]. Post-operative care for infants includes the continuation of lingual stimulation and stretching, wound management (antiseptic, gauze, or analgesics application), follow-up breastfeeding sessions, a recommended diet, and oral hygiene care [9–17]. Several studies have explored various pre- and post-operative care methods, including the frequency, dosage, and duration of their administration. However, many lack control variables and reliable measures to compare the effectiveness of different stimulation techniques. This results in limited high-quality evidence to determine the most appropriate care regime [13].

Research has shown that parent involvement in pre- and post-operative care is associated with improved functional outcomes following TT surgery [12,13,18]. Therefore, understanding parent perspectives of fundamental components of an effective pre- and post-operative care protocol is essential for clinicians and parents alike. Parents are key stakeholders in the implementation of care protocols for their children undergoing surgical management for TT. Quality support from caregivers can and does directly contribute to optimal clinical outcomes and the restoration of breastfeeding function. To address the current gap, the overarching aim of this study was to gather opinions and feedback from parents and clinicians regarding the experimental pre- and post-operative care protocol for infants with tongue-tie.

2. Materials and Methods

Ethical clearance was obtained from the Curtin University Human Research Ethics Committee (HREC2024-0106, Approval Date: 12 March 2024). This study employed a qualitative Participatory Action Research (PAR) approach and used individual semi-structured interviews to explore the feedback and opinions from parents and clinicians regarding the experimental evidence-based pre- and post-operative care protocols. Individual interviews were chosen to facilitate an in-depth exploration of participants' perspectives, experiences, and opinions on the protocols [19]. PAR aims to gather and analyze data to "take action and make a change" and prioritizes experiential knowledge to generate practical information that has value for practice in a collaborative, cyclical process of reflection, action, and change [20]. By involving clinicians, who guide and oversee these practices, and parents, who directly experience the challenges of implementing aftercare, PAR ensured the feedback regarding pre- and post-operative care was relevant, realistic, and responsive to those most affected [21]. Individual interviews and a PAR approach ensured that feedback on the protocol was grounded in practical knowledge and real-world experiences, enhancing the

potential for successful implementation and improving outcomes for parents and clinicians involved in tongue-tie aftercare [21].

In qualitative research, trustworthiness is established through credibility, transferability, dependability, and reflexivity [22]. To enhance credibility, we used a structured interview guide, purposive sampling, and data saturation to ensure comprehensive and relevant data collection. Multiple researchers participated in coding to verify findings and minimize bias. Transferability was addressed by recruiting a diverse sample of clinicians with different roles and experiences, ensuring that diverse perspectives were captured. To ensure dependability, a consistent interview guide was used, and coding was conducted by different researcher pairs, with discrepancies resolved through consensus. Regarding reflexivity and objectivity, we have included a reflexivity statement and employed NVivo version 14 software to enhance transparency. Braun and Clarke's thematic analysis framework was followed to ensure a rigorous coding process [23]. These measures strengthen the methodological rigor of our study.

2.1. Participants

A total of 13 participants were recruited for the qualitative interviews, including five parents from a local tongue-tie community advisory group. Additionally, eight clinicians were recruited, comprising one pediatric dentist, one general dentist, two International Board-Certified Lactation Consultants (IBCLCs), and four Speech–Language Pathologists (SLPs). A summary of the participant demographics is shown in Tables 1 and 2. Health professionals were recruited online and from various face-to-face conferences as outlined in Table 3. Individual semi-structured virtual interviews were conducted with both groups to gather formative feedback on the protocol and clinician-user perspectives.

Table 1. Demographics of clinician participants.

Participant	Healthcare Background/Discipline	Years of Experience	Client Age Range	Pre-Op/ Post-Op Care
C1	Pediatric Dentist	16	2 weeks–14 years	Yes
C2	Dentist	28	All ages	Yes
C3	Speech–Language Pathologist/Certified Orofacial Myologist/Certified IBCLC	20	All ages	Yes
C4	RN/Midwife/IBCLC	20	All ages	Yes
C5	Osteopath	20	Infants	Yes
C6	Speech–Language Pathologist/Certified Orofacial Myologist	12	All ages	Yes
C7	Speech–Language Pathologist/OMT	29	All ages	Yes
C8	Speech–Language Pathologist/OMT	5	3+ years	Yes

Note: C—Clinician, OMT—Oral Myofunctional Therapist, RN—Registered Nurse, IBCLC—International Board-Certified Lactation Consultant.

Table 2. Demographics of caregiver participants.

Participant	Healthcare Background	Age of Child's Tongue-Tie Diagnosis	Age at Time of Procedure	Procedure Type	Pre-Op/Post-Op Care
P1	Medical Administration Role	Shortly after birth	4 months old	Laser (Pediatric Dentist)	None provided.
P2	Carer Peer Worker in Hospital	At birth	10 years old	Supposedly cut during tonsillectomy	None provided.

Table 2. *Cont.*

Participant	Healthcare Background	Age of Child's Tongue-Tie Diagnosis	Age at Time of Procedure	Procedure Type	Pre-Op/Post-Op Care
P3	Speech Pathologist (early intervention and pediatric feeding)	Child 1: 2 weeks old	Child 1: 4–5 weeks old	Child 1: Scissors, then laser (following unsuccessful initial surgery)	Child 1: None provided.
		Child 2: 2 days old	Child 2: 1 week old	Child 2: Laser	Child 2: "Vague" post-op provided (every 4–6 h, unclear instructions for how long).
P4	Speech Pathologist	Child 1: 11 months	Child 1: 18 months	Child 1: Laser (ENT)	Child 1: SP suggested functional stretches (e.g., funny faces, licking lips, licking ice cream, etc.)
		Child 2: At birth.	Child 2: 4 weeks	Child 2: Laser (Dentist)	Child 2: Pre- and post-op care was provided (as part of feeding program/ structured program on app).
P5	Various Medical Administration Roles, Phlebotomist	2 weeks old	Surgery 1: 4 weeks old	Surgery 1: Scissors	Surgery 1: None provided.
			Surgery 2: 5 months old	Surgery 2: Laser	Surgery 2: Only post provided (sweeps and stretches, every 6 h for 2 weeks)

Note: P—Parent.

Table 3. Distribution locations of study infographic and recruitment survey QR code for health professionals.

Event/Platform	Location	Date
Australian Society for Tethered Oral Tissues (ASTOT) Symposium	Gold Coast, Queensland	March 2024
International Consortium of Oral Ankylofrenula Professionals (ICAP) Conference	Cleveland, Ohio, United States of America	May 2024
Speech Pathology Australia (SPA) Conference	Perth, Western Australia	May 2024
International Consortium of Oral Consortium Professionals (ICAP) Active Members Group (186 members)	Facebook	May 2024

2.2. Materials

Materials included: experimental pre- and post-operative care protocols, Microsoft Teams for conducting virtual interviews, Microsoft Stream for automatic transcription generation, Microsoft Word for the cross-checking of interview transcripts, and NVivo14 for data analysis, coding, and theme generation [24–28].

Experimental Pre- and Post-Operative Care Protocol

The experimental pre- and post-operative care protocol used in this study was developed in response to the substantial variability identified in existing care regimens for infants and children undergoing frenotomy. Drawing on the findings of the systematic review by Smart, Grant, and Tseng [24], the experimental protocol aimed to provide a structured yet

flexible approach that aligned with commonly reported practices while addressing gaps in standardization.

The experimental protocols provided comprehensive instructions, including the type, duration, and frequency of exercises, supported by images, video demonstrations, and audio explanations. Each exercise technique was accompanied by a brief rationale written in accessible language for both the parents and clinicians. The exercises were categorized into two types: (1) extra-oral and (2) intra-oral. The pre-operative component consisted of eight stimulation techniques, including cheek, lip, rooting reflex, gum, roof of mouth, sucking reflex, and tongue stimulation. The post-operative component included six techniques, focusing on the cheeks, lips, gums, roof of mouth, and tongue. The protocol recommended performing each exercise technique every four to six hours for 20 to 40 s, with multiple repetitions.

2.3. Procedure

To gather qualitative feedback and insights regarding the protocol in development, 13 individual semi-structured virtual interviews were conducted via videoconference over a two-month period. Prior to data collection, an information sheet was provided to participants and written informed consent was obtained. One week prior to the scheduled interviews, participants were sent an online link to the protocol for review. Interview question guides were developed and tailored to the different contexts of parents and clinicians for use within the interviews and provided one week prior. Interviews with five parent participants lasted between 29 and 77 min, with an average duration of 51 min. Interviews with eight clinician participants lasted between 31 and 65 min, with an average duration of 48 min.

2.4. Analysis

All virtual interviews were videotaped, and audio was recorded and transcribed [25,26]. Transcripts were cross-checked by the research team and sent to participants for review within one week. Thematic analysis (TA) software (NVivo14) was used to identify, generate, and analyze patterns and themes across data collected from the parents and clinicians [28]. Each transcript was independently familiarized and coded by two different researchers to enhance the trustworthiness and reliability of interpretation. Final themes were developed and agreed upon via collaborative discussion within the research team, shown in Figure 1. Researchers engaged in frequent cross-checking and debriefing to reduce researcher bias and enhance overall credibility.

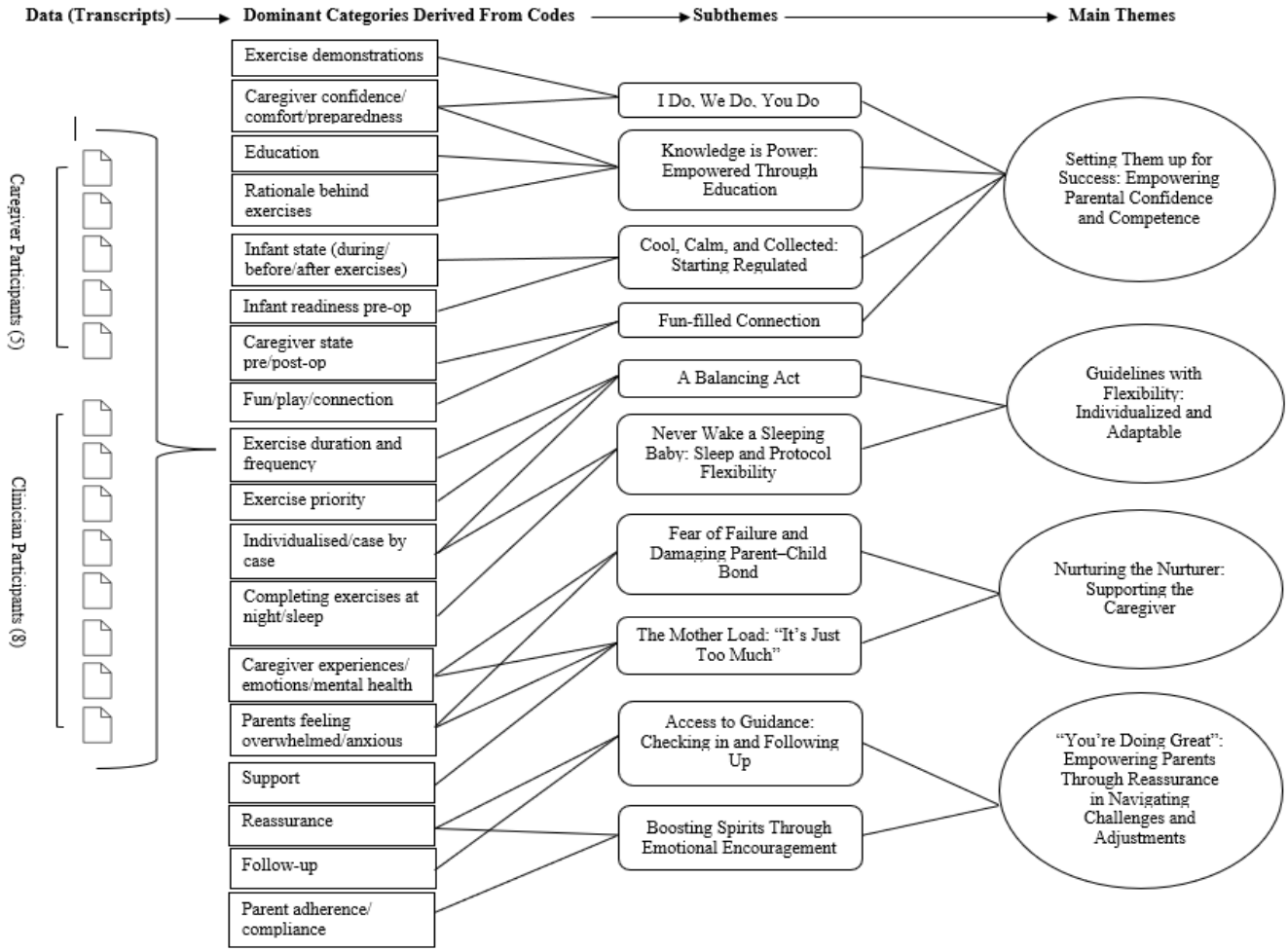

Figure 1. Example of coding tree for theme development.

3. Results

A range of disciplines were represented within the clinician semi-structured interviews, with the majority being speech pathologists (n = 4), along with several other areas of expertise. The experience of clinicians ranged from 5 to 29 years. Clinicians reported working with clients of varying ages and all had experience providing pre- and/or post-operative care for infants undergoing tongue-tie surgery. Four main themes and ten subthemes were generated from a thematic analysis of the participants' experiences and opinions of the protocol. These main themes and subthemes are explored in Table 4.

3.1. Theme 1: Setting Them Up for Success—Parental Confidence and Competence

Key subthemes identified by participants underscored the importance of fostering parental confidence and competence in successfully implementing the protocol. This was achieved through a combination of practical education from clinicians, hands-on guidance, and fostering a supportive, regulated environment for both the parent and the infant. Parents emphasized direct, face-to-face instruction from clinicians. This approach allowed them to observe, practice, and receive immediate feedback on their technique. As a result, their anxiety decreased, and their confidence in independently performing the stimulation techniques increased. Educating parents about the purpose and significance of the stimulation techniques—along with the potential risks of non-adherence—supported parents in understanding their significance, empowering them to feel more "accountable" and "motivated". The emotional state of both the parent and infant was also highlighted as a

crucial factor in successful protocol implementation. Starting the stimulation techniques when both the parent and infant were "regulated"—a state in which both individuals are emotionally balanced, physiologically calm, and able to engage in interactions without signs of distress—was seen as essential for reducing stress and preventing negative associations with the stimulation. Strategies such as co-regulation—where both the parent and child are in a state of "harmony"—along with creating a positive, playful environment, helped strengthen the parent–child bond and fostered a sense of connection within the dyad. This supportive, nurturing atmosphere not only promoted emotional well-being but also increased parental comfort and confidence, thereby enhancing their competence in following the protocol effectively.

Table 4. Main themes and subthemes identified with supporting quotes.

Main Theme	Subtheme	Supporting Quotes
Setting Them up for Success: Empowering Parental Confidence and Competence	I Do, We Do, You Do	"Maybe a demonstration would come in handy with handing out hard copies as well. Even just like when you're at the appointment, you're bringing along the caregiver as well, who's going to be doing it. And you can give them that sort of demonstration on baby and show them how it works with their child". (P1)
		"I think perhaps it would be a face-to-face conversation with a health professional who can show the exercises on your baby in real time to show how it works and then with some opportunity for the parent to give it a go and practise and then receive feedback from that health professional". (P3)
		"I think them really being prepared and seeing how baby responds before, so doing the stretch and seeing the baby's not crying or even if baby does cry, as soon as we pick them up and snuggle and cuddle, they calm down really quickly. That has really helped to reassure them". (C3)
		"But just to have the physician do them first because you do find that because you're scared you're going to squeeze too hard, you're scared you're going to tear their lips open". (P2)
	Knowledge is Power: Empowered Through Education	"You know, I feel that education is key for this. Like, we have to empower parents to take in all the information, you know, make it as easy for them to understand and then let them make their own decisions". (C4)
		"Knowledge is power, so you've got to deliver it in a way that's not scaring the bejeezus out of them". (C5)
		"And I think if parents know the reason, then they're more motivated to do it, or perhaps they may feel more accountable". (P3)
		"And then I think what was really valuable was the specificity. Like you've given a rationale which I think is really important and will help with adherence". (C8)

Table 4. *Cont.*

Main Theme	Subtheme	Supporting Quotes
Setting Them up for Success: Empowering Parental Confidence and Competence	Cool, Calm, and Collected: Starting Regulated	"Also just starting with a regulated baby. So, if the baby is already going crazy and upset, we first have to co-regulate before we would start this. Otherwise, we're setting them up to have that negative association with all of these mouth exercises, which we really don't want to do". (C6)
		"But if you're trying to get the baby's tongue moving in a certain way, the tension can't be there. They have to be in a relaxed state, like a quiet alert state, especially for a young infant". (C4)
		"Consideration needs to be made around when bub is most comfortable". (P2)
		"Because an unsettled baby doing exercises and trying to feed is just not good for anybody. I think it's more stressful in that parent child interaction and I really do think that impacts attachment and bonding and just the enjoyment of feeding as well". (P3)
	Fun-filled Connection	"And I tell parents to be really silly, make silly faces, be happy, give a whole positive experience and only do that at times when the infant is in a state to accept play. Not when they're tired, not when they're hungry". (C4)
		"The more fun oral play we can be doing, even if it's just brief moments, then the more baby's going to be comfortable with that, and the more mum's going to see that they're comfortable with that and be comfortable doing it". (C3)
		"If you can just foster that connection during it. . . So, I do think that like having that real big hit of like, you know, the love hormones and the cuddles and the cuteness before having to do those exercises. . . just like lock eyes, skin to skin cuddles. I don't know, anything. . .playing, laughing, joking, to then move into the exercises and then go back to that connection". (P5)
		"And with a focus on deregulation—downregulation of that nervous system of both mum and baby, and just encouraging that connection from heart to heart, from mum to bub, just into a real place of harmony. And just helping the mum fall in love with her baby over and over and over". (C5)
		"It doesn't matter how much you've stretched, it does not matter if you can't get the brain and the heart and the emotional health and wellbeing of that dyad to a point where they can go baby, we've got this. I've got you. You've got me. We've got this sweetheart, I'm with you". (C5)
Guidelines Guide, but Flexibility Heals: Individualized and Adaptable	A Balancing Act	"And to talk about how to make it achievable for that specific family and to fit it into their day, rather than it being like "Here it is. Go and do it". I think a discussion of "How does your family work? How can we build this into your routine as much as possible? How can we set you up to succeed?" It's definitely not straightforward. It's not a one-size fits all approach for everyone". (P3)
		"I think spending some time with the parents trying to figure out what's the best time for them to do the stretches helps them to work it into their routine". (C3)
		"And I give different options because I don't think there's a one-size-fits-all. It depends on the day, and time of the day. Depends on what's going on in that. . .in the world of that family". (C4)
		"And then just on the bad days like prioritising which exercise is vital. . .Like, which one do you start with? Because if your baby really, really cracks it or something's really bad or there's been a family emergency and you've just got to get one done, which is it? What one are we prioritising?" (P5)

Table 4. *Cont.*

Main Theme	Subtheme	Supporting Quotes
Guidelines Guide, but Flexibility Heals: Individualized and Adaptable	Never Wake a Sleeping Baby: Respecting Sleep Needs and Protocol Flexibility	"I think the sleep part is really important. If you can note down to make that part parent friendly, like if you can let them sleep if they are sleeping for seven hours. . .Yeah, counterintuitive as a parent after you've just rocked them to sleep for three hours. I guess like knowing about that would be good. That would definitely be a part of a good protocol I think". (P5)
		"I think that that instruction should be in there like, you know, try to do this at a point where you don't have to wake your baby up to do it, you know, try and get. . .try not to make this something that's disruptive to your sleep". (C4)
		"I also wonder if there needs to be a little bit of flexibility in that tool allowing parents the flexibility in saying, you know, sometimes particularly overnight, you're not going to wake up before your baby is showing hunger cues to do the exercises and then feed them". (P3)
Nurturing the Nurturer: Supporting the Parent	Fear of Failure and Damaging Parent–Child Bond	"Most parents will take things very literally, so if they don't do it every four to six hours, some parents may be like "I've ruined it. I failed. I'm doing my child a disservice". [. . .] and knowing you're not going to ruin your baby if you miss one of these rounds of exercises". (P3)
		"And if you miss one, you do, you feel like you're the worst parent ever and that you've ruined everything. And now we've ruined everything and we're going to go back to square one. So maybe just some wording around that". (P5)
		"If you're told black and white, this is exactly what you have to do, and you don't do it, you feel like a failure constantly". (P1)
		"I think they're. . .my main nurturing tips that it's OK, or even a video after the hand washing, with a little message from a mum [. . .] saying "It's OK. You only have like, 24 more to go. You're going to get through this, it's going to be OK. Your baby's not going to hate you," because that's genuinely what you think". (P5)
	The Mother Load: "It's just too much"	"A lot of it has to do with especially maternal anxiety. If I've got a mother that is highly anxious and her baby's crying it triggers her anxiety. She's less likely to adhere to a stretching post care protocol". (C5)
		"I had a partner. I wasn't on my own and I didn't have other children, so he was my first child, so it was literally like literally like me and him 24/7 so I could focus all my attention. I wasn't working or anything like that. And coming from me, I still feel like maybe it is a lot". (P1)
		"I think there will be families that are going to read it and go "Far out. That's a lot". You know, every four to six hours". (P2)
		"Because after doing the exercises, you almost want to run away and have a shower, hand the baby off to somebody and remove the trauma from you because you know you have to do it in six hours' time again. It sounds really dramatic, but that is how it feels when you're in the thick of it". (P5)

Table 4. *Cont.*

Main Theme	Subtheme	Supporting Quotes
"You're Doing Great": Empowering Parents through Reassurance in Navigating Challenges and Adjustments	Access to Ongoing Guidance: Checking in and Following Up	"And then also I allow them access to me, which I know not every provider would necessarily want, but I tell them "You're not going to bother me. Please message me photos if you want feedback, please video a stretch if you want feedback. [. . .] if I can respond, I will, and I really do want to see that". I think that's been helpful, just the reassurance for them". (C6)
		"So yeah, after that sort of time. Even maybe day three, day four sort of thing to say. Look, just checking in, making sure everyone's going OK. Any questions? Anything you've noticed those sorts of things at that point, I think people would really appreciate that too". (P1)
		"Follow up would be good. It's not about that authoritative sort of focus. It's more "do you need further support? Is there anything we can help you with if you're having trouble getting them done? Is there anything that can be done to help you get them done?" Things might change for the family, so it's really important that they know that they do have that support there and that it's OK to ask for that help". (P2)
	Boosting Spirits Through Emotional Encouragement	"Comes down to like that whole reassurance that you don't have to complete every exercise, every single time, every minute of every day, like taking that pressure off to make sure that people are aware of that. That's really the main point". (P1)
		"And just again, reassurance around yes, it looks it might look like it's a lot, but once you're actually doing it, you'll get into a rhythm. You'll get used to it. We don't expect you to be doing this day one straight away". (P2)
		"So, a reminder, I remind them that that's it's not forever. You don't have to do this for, you know for more than the four weeks recommend when it comes to the stretches". (C2)
		"It's just reassuring, connection, support. I think it all goes back to that, yeah". (P5)

3.2. Theme 2: Guidelines Guide, but Flexibility Heals—Individualized and Adaptable

Another central theme identified by participants was the importance of tailoring post-operative care protocols to the individual needs and circumstances of each family. Many participants emphasized that a rigid, one-size-fits-all approach was often ineffective and instead highlighted the need for flexibility in the protocol and implementation process. Adapting the protocol to accommodate family dynamics, including the parents' experience, capacity, and daily routines, was seen as crucial for ensuring adherence. Some suggested the inclusion of "priority exercises" for days when full protocol completion is not feasible, with one clinician emphasizing that "it's better to do something, even if you can't do everything". The need for flexibility was also noted with respect to sleep patterns. Both parents and clinicians advocated for prioritizing infant sleep over sleep disruptions due to prescribed post-operative stimulation techniques. A typical reason was due to this feeling "counterintuitive [after] rocking them to sleep for three hours". Acknowledging the emotional and psychological strain on parents, particularly mothers, was also deemed crucial in protocol flexibility and adaptability. Many parents expressed feelings of guilt or failure when unable to adhere strictly to the protocol, underscoring the need for reassurance and supportive communication from clinicians to mitigate additional stress. Participants agreed that fostering a compassionate, adaptable approach to the protocol would not only ease the emotional burden on parents but also increase the likelihood of successful long-term adherence.

3.3. Theme 3: Nurturing the Nurturer—Supporting the Parent

A prominent theme that emerged was the significant emotional and psychological burden that post-operative care places on parents, particularly mothers. It was highlighted that many parents interpret stimulation technique instructions literally, leading to feelings of "failure" and "guilt" when unable to adhere to the prescribed techniques. Missing a session, even for legitimate reasons, often triggered significant stress, with parents expressing concerns that they had "failed" or "ruined everything" in terms of their infant's wound healing. This sense of failure was compounded by a fear that the child might develop negative associations with their parent, associating them with pain or discomfort during the stimulation techniques, jeopardizing the parent–child bond. Parents suggested that incorporating words of encouragement and reassurance from other parents into the protocol could alleviate these feelings and support their emotional well-being. Validation of their efforts, even when they were unable to fully comply with the protocol, was seen as crucial for managing emotional strain and preventing feelings of inadequacy. Many parents, particularly first-time mothers or those with limited external support, described the post-operative care regimen as "overwhelming" and emotionally draining. Several parents emphasized that administering post-operative stimulation techniques often effectuates significant emotional distress, particularly surrounding the fear that their child may develop negative emotional responses toward them or associate them with pain. Additionally, several parents likened the experience to a cycle of "trauma", where the emotional strain of administering the protocol led to stress and anxiety, making it difficult to maintain adherence. They suggested that reassurance could mitigate these feelings through supportive communication both within the protocol and directly from providers. Participants stressed the importance of acknowledging within the protocol the psychological burden parents face and incorporating flexibility or supportive strategies to reduce emotional strain. This recognition would help parents feel understood and supported, ultimately facilitating higher levels of adherence to the prescribed stimulation techniques and improving both the parent's and child's well-being.

3.4. Theme 4: "You're Doing Great"—Empowering Parents Through Reassurance in Navigating Challenges and Adjustments

The critical role of ongoing guidance, emotional support, and reassurance in empowering parents to successfully navigate the challenges of post-operative care also emerged as a core theme. Both parents and clinicians emphasized the importance of regular follow-ups and check-ins, thus providing opportunities for parents to seek clarification, ask questions, and receive feedback on stretching positions, infant comfort, and pain management. This continuous support was seen as essential to validate the efforts, confidence, and capabilities of parents implementing the stimulation techniques. These check-ins also offer a safe space for parents to voice concerns, overcome "whitecoat syndrome", and receive encouragement from clinicians, all of which contribute to a positive and supportive care experience. In addition to logistical guidance, emotional encouragement was also identified as a key factor in sustaining motivation and adherence. Participants noted that while the care regimen may feel overwhelming initially, reassurance that a routine would eventually develop helped reduce anxiety. Emphasizing the temporary nature of the post-operative care plan, with the message that "it's not forever" was highlighted as an effective strategy to alleviate stress and maintain motivation. Clinicians also stressed the importance of focusing on effort rather than perfection, which helped reduce apprehension and supported parents in feeling more confident and competent in conducting the stimulation techniques.

4. Discussion

This current study solicited feedback regarding an experimental pre- and post-operative care protocol in development for infants who underwent tongue-tie surgery. The thematic analysis identified four themes that addressed different facets of parental holistic wellness related to the successful implementation of the protocol. There is currently no literature that addresses the priorities and opinions regarding support for adherence and successful implementation of a care protocol from the perspective of parents and clinicians. Holistic factors driving treatment success and adherence were explored, and quality of care was defined from caregivers' and clinicians' perspectives. With a scarce evidence base, the existing pre- and post-operative protocols need to consider emerging research, ethical considerations, and stakeholder perspectives. This study addressed the gap by providing qualitative feedback focused on empowering and motivating caregivers. It emphasized that a holistic, family-centered approach is crucial for success and adherence to pre- and post-operative management, beyond oral stimulation types, frequency, and dosage.

Empowering and motivating parents within an infant treatment protocol requires fortitude within a clinician–parent relationship. Our findings advocate for ongoing clinician guidance, access, emotional encouragement, and recognition of an individualized approach as key facilitators in parent adherence. These findings corroborate similar studies within the infant neonatal literature, which conclude that clinician empathy and a sense of "family" with the staff contribute to improved therapeutic success and caregiver well-being outcomes [29–32]. Additionally, the emotional capacity of the clinician should be respected. Clinician burnout and compassion fatigue are excessively evident within modern medical literature but lacking application to the TT context [33,34].

Participants defined "setting up for success" by placing value on in-person, face-to-face education and in-depth demonstrations from their providers. These recommendations align with the perspectives of parents and nurses in the neonatal and surgical literature, which suggest that upskilled parents reduce dependency on clinicians. Proficiency instills parental autonomy and self-confidence when providing home care for their infants. This is suggested to facilitate positive overall health outcomes and recovery for the infant [35,36]. Our findings suggest that fostering an experience centered on parental autonomy empowers parents to confidently care for their child, rather than feeling inadequate or hesitant [29].

The findings also suggested that it was counterproductive to focus solely on reducing infant tension without first addressing parental anxiety. Acknowledged within the TT literature, heightened caregiver stress and anxiety are rooted in a lack of education and uncertainty towards the surgical procedure [37,38]. Subsequently, this study found that these emotions stemmed from fear and guilt when implementing post-operative care for their child. Similarly, studies in the infant mental health literature indicate that the fear of jeopardizing the parent–infant bond dictates caregiver adherence to treatment protocols [39,40]. Participants emphasized embedding a routine of play, fun, and skin-on-skin contact into the post-operative practices, further supporting the neonatal evidence base [41,42]. This study and the current literature emphasize parental empowerment, aiming to restore control and harmony within the parent–infant dyad to prevent negative associations with pre- and post-operative care. Additionally to clinician support, parents expressed a desire for peer encouragement, particularly mother-to-mother and parent-to-parent support, emphasizing the value of shared experiences. The emerging literature supports the concept of peer mentoring and lived experience roles within parent mental health practices [43]. Implementing this approach in the context of TT care protocols suggests that validation from those who have faced similar challenges can mitigate feelings of isolation and anxiety. Considering this, the recent literature is placing higher regard for a family-centered care model within an infant health population, calling for "individualization" over "standardization" [29].

Participants disclaimed that with the challenges inflicted by parenthood, it is unlikely and unrealistic that a protocol would be adhered to flawlessly. This is similarly implied within the nursing literature, which states that standardized protocols cannot successfully address all aspects of patient-centered care [44]. The argument for flexibility stems from parents calling for a "low demand" care regime that prioritizes infant sleep routines. Infant sleep literature shows that sleep disturbances lead to increased symptoms of anxiety, depression, and fatigue among new parents, thereby impacting their capacity to adhere to a care protocol [42]. These findings suggest that while standardization is ideal, it should serve as a foundation with flexibility, allowing for clinical judgment and specific patient needs, balancing "parental preferences" with "protocol requirements". This is asserted to be integral in supporting a family-centered approach to TT management.

This current study highlighted that focusing solely on stimulation techniques is simplistic; clinicians must also consider the capacity of parents, providing education and upskilling, and providing ongoing support and reassurance. There is an emphasis on the necessity for standardized pre- and post-operative care protocols by clinicians and the TT literature. However, the findings from this current study underscore the importance of adopting a family-centered, needs-oriented approach to TT pre- and post-operative care. Therefore, these two frameworks are not mutually exclusive but can and should be integrated to complement one another effectively. The voices of both parents and clinicians are important in TT management, and this study allowed clinicians with various years of experience to share their experiences and insights.

This study was limited to the inclusion of a relatively small sample size of 13 parents and clinicians, representing the views of clinicians from Australia, Canada, and the United States of America. Parent participants were all Australian mothers, and hence did not represent lived experiences from the perspectives of fathers nor parents in other countries. Additionally, the time taken by parents and clinicians to comprehensively review each modality of the protocol varied among participants. The protocol was typically sent to participants one week prior to the scheduled interview. However, for some, this was not possible due to rescheduling the interview at an earlier than expected date. Some participants had also not independently reviewed the protocol prior to their interview and hence were required to review in real time. This could have impacted on the amount and specificity of feedback provided, leading to potential variability in the depth of understanding of the experimental pre- and post-operative care protocols. During interviews, occasional leading and closed-ended questions were evident, which may have led participants in a pre-conceived direction unknowingly, reducing the reliability of data collection.

Future research should focus on developing tools to identify and characterize parent needs and wants necessary to facilitate the successful implementation of the protocol efficiently and optimally set up a triad framework whereby the clinician, the infant, and the parent can support each other on all levels to optimize and realize wellness outcomes for all parties.

Clinical Implications

The clinical implications of this study highlight the need for a holistic, family-centered approach to pre- and post-operative care for infants undergoing TT surgery. The findings emphasize the importance of empowering parents through tailored support that addresses both their emotional well-being and practical needs. Providing in-depth education, ongoing clinician guidance, and a focus on stress management and emotional well-being are critical factors in fostering parental confidence and adherence to care protocols. Furthermore, flexibility within standardized care protocols is essential to accommodate the diverse needs of families, allowing for adjustments based on individual circumstances such as infant sleep

routines and parent capacity. This will further optimize outcomes for the infant, parent, and family. This study also emphasizes the value of peer support, particularly mother-to-mother or parent-to-parent networks, to reduce feelings of isolation and anxiety. Clinicians must recognize the emotional aspects of care, ensuring that parents feel supported and confident in their role in the care process. This research recommends that clinicians prioritize parent needs and create a triad framework that optimally supports the infant, parent, and clinician throughout the treatment process.

5. Conclusions

This study sought to contribute to the profession's knowledge base by gathering feedback on an evidence-based protocol from a community advisory group of parents and currently practicing clinicians. This research highlighted the importance of empowering and building parent capacity through education, ongoing clinician support, and peer encouragement to increase confidence and autonomy. The findings outline that a family-centered approach is vital for successful implementation, advocating for individualization over strict standardization. This aligns with the contemporary literature that emphasizes the value of adapting care to meet the unique needs of families—specifically the child and the parent. This study acknowledges the need for broader international representation and suggests that including samples from different countries could help to capture diverse perspectives. Nevertheless, our study contributes valuable insights into the parent experience and highlights areas for future research. This study recommends a pilot evaluation of the proposed care protocol, using standardized outcome measures to assess its effectiveness. The next step in this research is the validation and piloting of the proposed evidence-based care protocol. Overall, this study advocates for a paradigm shift in clinical practices regarding TT management, emphasizing the prioritization of holistic and family-centered care to enhance parental confidence and capacity in supporting treatment adherence.

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