How acceptable is the use of linguistic-phonological intervention in children with cleft palate? A qualitative study in speech therapists

Abstract

Background. Even though evidence for the use of linguistic-phonological intervention approaches in children with a cleft (lip and) palate (CP±L) is still limited, these approaches are being used by speech-language pathologists (SLPs) to treat active or compensatory cleft speech disorders in clinical practice. It is, however, unknown to what extent linguistic-phonological intervention is acceptable to SLPs.

Aims. The purpose of this study is to investigate the retrospective acceptability of linguistic-phonological intervention in children with a CP±L from the perspective of SLPs using the TFA.

Methods & Procedures. Eighteen female community SLPs, aged between 23 and 63 years, were included in this study. An independent interviewer conducted semi-structured interviews. Data were analyzed using a deductive coding approach. Statements of the SLPs were related to the seven constructs of the Theoretical Framework of Acceptability: affective attitude, burden, ethicality, intervention coherence, opportunity costs, perceived effectiveness, and self-efficacy.

Outcomes & Results. The affective attitude and perceived effectiveness of linguistic-phonological intervention differed among the SLPs: some therapists had positive attitudes towards these approaches while others did not. Positive attitudes were related to the successful use of linguistic-phonological intervention in the past. The construct 'ethicality' revealed that negative attitudes towards these approaches were attributed to the limited available scientific evidence or negative experiences while using these approaches. In contrast, SLPs who had positive attitudes considered these interventions as 'important' and 'valuable'. Some SLPs had negative reflections on linguistic-phonological intervention as these approaches were considered demanding in terms of time needed to gain knowledge on using them in children with a CP±L (constructs 'burden' and 'opportunity costs'). Additionally, some SLPs doubted their self-efficacy to use these approaches in clinical practice.

Conclusions & Implications. The acceptability of linguistic-phonological intervention differed between the SLPs in this sample and was most likely related to their previous experiences with these linguistic-phonological approaches. It is not only important to increase the amount of scientific evidence for linguistic-phonological approaches, but also to increase the supply of evidence-based workshops and training courses on this topic.

These initiatives should distribute scientific information that is translated into guidelines that are immediately applicable in clinical practice. This may potentially reduce the time-related burden that some SLPs currently experience to gain expertise in this matter. In future research, it is necessary to investigate if there exist differences in acceptability between the different types of linguistic-phonological therapy.

Keywords

Cleft lip and palate, speech-language pathologists, phonological therapy, qualitative research, acceptability

What this paper adds

What is already known on this subject.

Linguistic-phonological speech intervention approaches are often used by speech-language pathologists to treat active or compensatory cleft speech disorders in clinical practice.

What this study adds.

This study investigated whether linguistic-phonological intervention cleft speech intervention is acceptable to speech-language pathologists. Some therapists had positive attitudes towards these approaches while others did not. Positive attitudes were related to the successful use of these approaches in the past. If SLPs indicated to have negative attitudes, these negative feelings were attributed to the limited available scientific evidence or negative experiences while using these approaches.

Clinical implications of this study.

Even though linguistic-phonological speech intervention approaches are being used in clinical practice, these approaches are not always considered acceptable by speech-language pathologists. Acceptability could be enhanced by increasing the amount of scientific evidence for linguistic-phonological approaches, but also by increasing the supply of workshops and training courses on this topic. These initiatives should distribute hands-on information that is immediately applicable in clinical practice. This may potentially reduce the time-related burden that some SLPs currently experience to gain expertise in this matter.

Data availability statement

Data is available from the authors upon request due to privacy reasons

Funding statement

The first author was funded by a PhD grant of the Research Fund Flanders (12ZO323N)

Conflict of interest disclosure

There are no conflicts of interest.

1. Introduction

For a long time, a motor-phonetic perspective has dominated the literature on the occurrence of active or compensatory cleft speech characteristics (CSCs) in children with a cleft of the (lip and) palate (CP±L) (McWilliams & Musgrave, 1971; Morley, 1945). In the 1980s, the description of active or compensatory CSCs moved from a motor-phonetic orientation to a linguistic-phonological orientation (Kuehn & Moller, 2000). This linguistic-phonological perspective emphasized the importance of higher speech processes including the child's knowledge and perception of the speech sound system of his/her mother language (Chapman, 1993). This shift in viewpoint on compensatory CSCs was supported by several authors (Bishop & Adams, 1990; Chapman, 1993; Grunwell & Russel, 1988). Children with a CP±L whose speech problems persisted beyond the age of 5 years were considered at risk for literacy problems, suggesting there was more than a purely anatomical (i.e. motor-phonetic) etiology for the occurrence of compensatory speech errors (Bishop & Adams, 1990). Grunwell and Russell (1988) reported that a delay in early phonetic acquisition could impact children's later phonological development. Chapman (1993) was the first to perform a larger group investigation of phonological development showing that children with a CP±L exhibited more early delays in phonological development compared to children without a CP±L. It was hypothesized that ongoing or past articulatory and/or structural constraints (e.g. due to the palatal cleft) influenced the process of phonological acquisition in these children. Before palatal closure, children with a CP±L have limited experience with the production of high-pressure sounds due to anatomical problems. It seems that these early limitations become integrated into the children's developing phonological systems and could explain delays in the phonological development of children with a CP±L, even after palatal closure (Jørgensen & Willadsen, 2020). This literature suggests that phonetic errors produced by a child with a CP±L become, over time, a part of the phonological rule system because the abnormal motor patterns dominate the phonological development (Harding & Grunwell, 1998; Russell & Grunwell, 1993). In other words, the motor-phonetic speech error evolves into a linguistic-phonological speech error. Recently, Hardin-Jones and Chapman (2021) reviewed the etiology, frequency, and treatment of non-oral CSCs (compensatory speech errors produced behind the velopharyngeal port, for example, pharyngeal or glottal productions and active nasal fricatives). The authors hypothesized that the persistence of non-oral errors in children with a repaired CP±L is linked to a lack of expansion of their consonant inventory during early babbling development (i.e. delays in early phonological development) rather than an integration of atypical motor-error patterns in later phonological development.

With the emergence and growth of this theoretical evidence for delays in early phonological development in children with a CP±L, literature began to pay more attention to the use of linguistic-phonological approaches to treat active or compensatory CSCs.

There exists a wide array of linguistic-phonological intervention approaches described in the literature. Most of these approaches have their origin in the treatment of speech sound disorders not related to CP±L. Linguistic-phonological treatment strategies include contrast approaches (which focus on improving phonemic contrasts by emphasizing sound contrasts) (Gierut, 1989; Weiner, 1981; Williams, 2000), complexity approaches (which emerged from the view that the use of more complex linguistic stimuli helps promote generalization to untreated but related targets) (Baker & Williams, 2011), the Core Vocabulary Approach (Dodd et al., 2006), The Cycles Approach (Hodson et al., 1983), Distinctive Feature Therapy (McReynolds Leija & Bennett, 1972), and the Metaphon Therapy (Dean et al., 1995). Unfortunately, there exist limited intervention studies that support the use of linguistic-phonological approaches in children with a CP±L (Bessell et al., 2013). Perhaps, the limited evidence prevents speech-language pathologists (SLPs) from using linguistic-phonological approaches in clinical practice. Literature has demonstrated that many SLPs continue to advocate for the traditional motor-phonetic articulation approach when describing treatment of active or compensatory CSCs (Trost-Cardamone & Rockville, 2013).

Hardin-Jones et al. (2020) examined practice patterns and opinions that speech-language pathologists (SLPs) have about speech-language intervention in children with a CP±L using a 37-item online survey. The SLPs were members of the American Speech-Language-Hearing Association Special Interest Group 5: Craniofacial and Velopharyngeal Disorders Special Interest Group. An interesting finding was observed regarding linguistic-phonological approaches. Even though the literature indicates that traditional motor-phonetic articulation therapy is the preferred method for treating active or compensatory CSCs (Bessell et al., 2013), only 52% (47/91) of the SLPs indicated that this is the best therapy approach for active or compensatory CSCs. The authors argued that their finding probably signals recognition that linguistic-phonological intervention is appropriate in some cases. In accordance, Williams et al. (2021) described the range of speech and language therapy interventions being used with children with a CP±L in the United Kingdom up to 5 years of age using 9 semi-structured focus groups in SLPs. Different linguistic-phonological approaches were used by SLPs in clinical practice. In children aged 0 to 18 months, SLPs indicated to use complexity approaches, Core Vocabulary approach, Maximal

Opposition approach, Metaphon, and Multisensory Input Modelling. Auditory bombardment, complexity approaches, Core Vocabulary approach, Maximal Opposition approach, Metaphon, minimal pair therapy, Multisensory Input Modelling, and Multiple Opposition approach were used in children with a CP±L aged 18 months to 3 years. The same approaches were also used to treat active or compensatory CSCs in children with a CP±L aged 3 to 5 years. Interestingly, SLPs indicated that phonological intervention was one of the most frequently used therapy approaches in all the different age groups (i.e., 0-18 months, 18 months – 3 years, and 3 – 5 years). Another qualitative study, performed by Alighieri et al. (2021), investigated the practice patterns of 11 Dutch-speaking Flemish community SLPs when treating children with a CP±L. Semi-structured interviews were conducted. SLPs indicated that they used linguistic-phonological approaches, mostly in the context of early intervention in younger children (up to the age of 4 years). These approaches included whole-language approaches and metaphonological strategies.

Even though many SLPs prefer to use the traditional motor-phonetic articulation approach in children with a CP±L (Trost-Cardamone & Rockville, 2013), the latter studies suggest that linguistic-phonological approaches are being used in clinical practice (Alighieri et al., 2021; Hardin-Jones et al., 2020; Williams et al., 2021). The acceptability of these linguistic-phonological approaches to SLPs is, however, unchartered territory. This is an important factor to consider as Sackett et al. (1996) pointed out that there needs to be an integration of the scientific evidence with the opinions and needs of the patients and the views and practices of the health professional for health care to be truly evidence-based. The Theoretical Framework of Acceptability (TFA) is a tool that divides acceptability into different measurable key dimensions (Sekhon et al., 2017). Acceptability is defined as a 'multi-faceted construct that reflects the extent to which people delivering or receiving a healthcare intervention consider it to be appropriate, based on anticipated or experienced cognitive and emotional responses to the intervention'. This concept consists of seven constructs: 'Affective Attitude' (how an individual feels about the intervention), 'Burden' (the perceived amount of effort that is required to participate in the intervention), 'Ethicality' (the extent to which the intervention has a good fit with an individual's value system), 'Intervention Coherence' (the extent to which the participant understands the intervention and how it works), 'Opportunity Costs' (the extent to which benefits, profits or values must be given up to engage in the intervention), 'Perceived Effectiveness' (the extent to which the intervention is perceived as likely to achieve its purpose), and 'Self-efficacy' (the stakeholders' confidence that they or their children can perform the behavior(s)

required to participate in the intervention). This study will investigate the retrospective acceptability of linguistic-phonological intervention in children with a CP±L from the perspective of SLPs using the TFA.

2. Methods

This study was approved by the Ethics Committee of the Ghent Hospital (2019/1350). All SLPs participated voluntarily and signed an informed consent.

2.1 Participants

Flemish-speaking community SLPs based in Flanders were recruited through the social media using a stratified purposive sampling strategy. An invitation to participate in this study was put on a platform for Flemish-speaking SLPs (Logopedie Vlaanderen). If SLPs were interested to participate, they were asked to contact the primary investigator to receive more information and to discuss practical arrangements. SLPs were included if they were treating at least one child (age ≤ 12 years) with a CP±L. Exclusion criteria were: being a member of a cleft team, having a craniofacial anomaly, or having a family member with such a condition. Twenty-one SLPs contacted the primary investigator of which two were excluded because they were related to a cleft team. Another SLP was excluded because she could not attend the interview because of personal circumstances. In total, 18 female community SLPs (mean age: 32.4 years, *SD* = 10.99 years, range = 23 – 62 years) were included in the study. The therapists had an average of 7.3 years of experience treating children with a CP±L (*SD* = 5.32 years). Each SLP was self-employed and worked in a private clinic (i.e. private practice). Detailed characteristics per participant are provided in Table 1.

[Please, insert Table 1 approximately here]

2.2 Data collection

The primary investigator conducted individual face-to-face semi-structured interviews with the 18 SLPs in Flemish. The investigator had three years of experience in treating cleft palate speech disorders. The interviews took place at a location and at a time convenient to the participants. Each conversation was audio-taped using a Roland R-05 high-quality audio recorder. Minimal field notes were taken to note remarkable non-verbal communication. In addition, the interviewer made notes to follow-up with the participant's responses.

An interview guide with open-ended questions was constructed (Appendix 1). Each interview started with an open question: “How do you experience treating children with a cleft palate with or without a cleft lip?” to introduce the focus of the interview without suggesting any specific theme. When the interviewer referred to linguistic-phonological intervention, no distinction was made between the different phonological intervention approaches that exist. The SLP expanded on the participant’s responses by asking follow-up questions (e.g. “Can you tell me more about that?” or “How do you feel about that?”).

2.3 Data analyses

Each interview was transcribed verbatim excluding possible identifiers that were used by the participants. The data analysis was performed using the qualitative analysis software program NVivo 12 © (NVivo, 2018). Data were analyzed using a content analysis technique with deductive coding (Atkins et al., 2017). This method was chosen to deductively organize the data in line with the seven TFA constructs. This means that the interview guide did not contain any TFA constructs. The TFA framework was applied afterwards, i.e. during the phase of data analyses. The first author acted as the primary deductive coder. After familiarisation with the data, the data were organized into each construct of the TFA. The other authors read the coded extracts and verified these extracts in relation to the TFA constructs. Disagreements were discussed between all the authors until a consensus was reached. This mutual coding guideline increased the reliability of the deductive coding process (Atkins et al., 2017). As stated by Atkins et al., (2017) some data may fit in different TFA constructs. If this was the case, data were coded into one or more constructs that best reflected the key theme. TFA constructs were, for example, combined if statements of the participants had a good fit with different TFA constructs. Supporting quotes for each TFA component are presented in the results section. If a participant emphasized a specific word, this part of the quote is presented in bold.

2.4 Reflexivity and trustworthiness

The involved researchers critically reflected on their preconceptions which were formed by their previous scientific and clinical experiences. The semi-structured interviews were conducted by a researcher who did not have any previous relationship with the SLPs. The interviewer developed a personal reference framework that mentioned possible preconceptions on the research topic. This personal reference document was also provided to the other researchers when discussing data. This document described their thought processes during the data

collection and analyses. Possible preconceptions that may have influenced the data analyses were discussed among the authors. This reflection demonstrates that the researchers monitored their preconceptions. The present study provides a thorough and transparent description of the research process, the data collection and analysis, and the rationale of meaning assigned to the data to increase the confirmability and dependability of the results (Lincoln, 2007).

3. Results

The results are presented per construct of the Theoretical Framework of Acceptability. Table 2 provides a summary of the retrospective acceptability of linguistic-phonological intervention by SLPs.

[Please, Insert Tables 2 and 3 approximately here]

3.1 Affective Attitude and Perceived Effectiveness

Affective Attitude reflects how SLPs feel about linguistic-phonological intervention whereas perceived effectiveness reflects the extent to linguistic-phonological intervention is perceived as likely to achieve its purpose. Different SLPs made statements that related to both TFA constructs. Obtained data indicated differences in affective attitude among the SLPs: about half of the participants had positive attitudes towards linguistic-phonological intervention whereas the other half of the participants had negative attitudes towards linguistic-phonological intervention. SLPs who had positive feelings about linguistic-phonological intervention explained that they had used this type of intervention previously in their clinical practice. With regard to the perceived effectiveness, they observed different benefits while using linguistic-phonological intervention including improved speech outcomes, improved phonemic awareness in the child, and an increase of the child's motivation for therapy. Most SLPs who indicated to have negative attitudes toward linguistic-phonological intervention explained that they did not use these approaches in clinical practice because of the limited available evidence. One of these SLPs experienced that the occurrence of active or compensatory CSCs did not reduce in a child while using a linguistic-phonological approach.

"I use phonological approaches, for example, the Metaphon Approach with the reference pictures. I established some experience in children with speech sound disorders without a CP±L. When I began to treat children with a CP±L, I used this approach and I have different positive experiences." (Interview 3)

"I do not use phonological approaches. I am aware that there is no scientific evidence." (Interview 1)

3.2 Burden

Burden reflects the perceived amount of effort that is required to use linguistic-phonological intervention. SLPs who had negative attitudes toward linguistic-phonological intervention explained that the use of these approaches in clinical practice would increase burden for them. They wanted to develop certain expertise and experience in the use of linguistic-phonological intervention in children with a CP±L. Workshops and training courses were named as possibilities to support them. However, the time investment needed to participate in such initiatives was experienced as burdensome in their busy schedules. Besides, the SLPs said that they experienced a shortage of workshops or courses. Most initiatives that were organized, focused on the treatment of speech sound disorders in children without a CP±L. SLPs who had positive feelings about linguistic-phonological intervention did not report any burden.

"I want to gain some experience before I use such (note: linguistic-phonological) approaches. I have looked upon workshops that target intervention in this specific population, but I did not find anything." (Interview 2)

3.3 Opportunity Costs

Opportunity Costs reflect the extent to which benefits, profits, or values must be given up to engage in the intervention. The constructs opportunity costs and burden are closely related. The only opportunity cost that was expressed was related to concerns about time. Some SLPs indicated that they were less familiar with the use of linguistic-phonological intervention in children with a CP±L compared with the use of motor-phonetic intervention. They were concerned that immersing themselves in the use of linguistic-phonological approaches would divert time away from other important tasks.

"Time, and a lack thereof, is often the issue." (Interview 11)

"I have some books on intervention in children with a CP±L, but they are still in my cupboard. (laughs)" (Interview 16)

3.4 Ethicality

Ethicality reflects the extent to which the use of linguistic-phonological intervention has a good fit with the SLPs' value system. SLPs who had positive feelings about linguistic-phonological intervention indicated that this type

of intervention as “valuable” and “important”. Linguistic-phonological therapy was considered an enrichment in terms of both speech and language development of the children. Some of the SLPs who had negative attitudes towards linguistic-phonological intervention reported that they had some ethical issues with the use of these approaches. When asking them to explain these experienced issues, the SLPs reported that they did not want to use intervention approaches for which no scientific evidence exists. They wanted to use the available financial resources most ethically by applying evidence-based intervention techniques. The SLPs explained that they would feel guilty if they would provide ineffective therapy to their patients.

“I think that phonological intervention is valuable and that it can be an enrichment for our patients.” (Interview 3)

“I often experience pressure. Pressure from myself and the parents. If therapy is ineffective, I feel guilty. Yes (…) It is difficult sometimes.” (Interview 15)

3.5 Intervention Coherence

Intervention coherence is a construct that reflects the extent to which SLPs understand linguistic-phonological intervention and how it works in children with a CP±L. One SLP (interview 17) was reluctant to use linguistic-phonological approaches in children with a CP±L because she thought that this intervention stood alone and could not be combined with other approaches.

“It is difficult to combine phonological intervention with other speech therapy techniques. Perhaps this is the reason why I do not completely support this type of intervention.” (Interview 17)

Two SLPs (interview 3 and 18) talked about stimulability testing when they considered the use of linguistic-phonological intervention in children with a CP±L. They said that they considered stimulability as an essential part of the assessment and that they preferred to treat stimulable consonants. Stimulability testing included the imitation of possible target sounds.

3.6 Self-efficacy

Self-efficacy reflects the SLPs’ confidence that they can perform the behavior(s) required to use linguistic-phonological intervention in children with a CP±L. Different SLPs doubted that they had enough knowledge to use linguistic-phonological intervention in this population. Every SLP indicated that she was more familiar and

had more experience with motor-phonetic articulation therapy in this population. Even though some SLPs were receptive to use these linguistic-phonological approaches in clinical practice, they were concerned about the required skills to apply these techniques. When the interviewer asked what initiatives could increase the SLPs' self-efficacy, they indicated that discussing cases with colleagues or receiving confirmation from more experienced SLPs would be helpful. SLPs who had positive attitudes towards linguistic-phonological intervention had no doubts regarding their own knowledge and skills to use these approaches. Different SLPs said that they had acquired experience with linguistic-phonological intervention in children with speech sound disorders without a CP±L.

"'It would be useful if they (note: the cleft team SLPs) confirmed that I was using appropriate techniques [...] that I was doing well." (interview 5).

3.7 Strategies to enhance acceptability

Table 3 provides an overview, per TFA construct, of suggested strategies to enhance the acceptability of linguistic-phonological intervention.

During the interviews, SLPs suggested different strategies to enhance acceptability. Increasing the amount of scientific evidence for the use of linguistic-phonological intervention approaches in children with a CP±L was a common suggestion postponed by the SLPs. This action point was considered to increase ameliorate the way SLPs felt about linguistic-phonological intervention (construct 'affective attitude'). Besides, SLPs suggested that scientific evidence would increase the extent to which linguistic-phonological intervention has a good fit their value system ('ethicality') and the extent to which the intervention is perceived as likely to achieve its purpose ('perceived effectiveness'). Similarly, they proposed to increase the amount of practical, straightforward, and evidence-based workshops and training courses on the use of linguistic-phonological intervention approaches in children with a CP±L to decrease the amount of effort and values that must be given up required to use these approaches in clinical practice (constructs 'burden' and 'opportunity costs'). Collaboration with colleagues was mentioned as a possibility to increase their self-efficacy in using these approaches (Table 3).

[Please, insert table 3 approximately here]

Discussion

In the past few years, scientific research has begun to pay more attention to the use of linguistic-phonological approaches in children with a CP±L. Even though the evidence is still limited, these approaches are being used in clinical practice (Alighieri et al., 2021; Hardin-Jones et al., 2020; Williams et al., 2021). This study investigated the retrospective acceptability of linguistic-phonological intervention in children with a CP±L from the perspective of SLPs using the TFA.

The SLPs' affective attitudes toward linguistic-phonological intervention differed: some SLPs had positive attitudes toward these approaches while others did not. Positive attitudes were related to the successful use of linguistic-phonological intervention in the past. If SLPs indicated to have negative attitudes, these negative feelings were attributed to the limited available scientific evidence or negative experiences with the use of a linguistic-phonological approach in terms of therapy progress. At present, a limited amount of studies exist that have yet investigated the effect of linguistic-phonological approaches on the speech of children with a CP±L (Bessell et al., 2013). Besides, there is not yet a consensus on which patients would benefit most from linguistic-phonological intervention. A recently performed pilot study by Alighieri et al. (2022) took a first step in unraveling this issue. The authors compared the effect of a motor-phonetic articulation approach with the effect of a linguistic-phonological approach in children with anterior oral CSCs and posterior oral CSCs. Children who received linguistic-phonological intervention to eliminate anterior oral CSCs had significantly higher correctly produced consonant scores and health-related quality of life (HRQoL) scores compared to children who received motor-phonetic intervention to eliminate anterior oral CSCs. This superior effect of the linguistic-phonological intervention was not observed in children who presented with non-oral CSCs. This finding suggested that children who present with different subtypes of active or compensatory CSC may benefit from different intervention approaches. The authors suggested that children with non-oral CSCs may perhaps benefit from a hybrid phonetic-phonological approach. Indeed, linguistic-phonological intervention does not necessarily need to stand alone. Different studies have yet demonstrated some positive effects of combined phonetic-phonological intervention in children with a CP±L (Derakhshandeh et al., 2016; Pamplona et al., 1999). Increasing the amount of scientific

evidence for the use of linguistic-phonological intervention approaches in children with a CP±L can perhaps enhance the attitudes of SLPs toward these intervention approaches. This evidence should not necessarily include randomized controlled trials with large sample sizes. A recently published systematic review and meta-analysis called for more research on the individual level with an eye on considering clinically relevant improvements rather than statistical significance (Sand et al., 2022). This call opens some interesting perspectives for SLPs who are active in clinical practice. To avoid a research-practice gap, it will be important to communicate scientific findings adequately and comprehensively to SLPs especially since our findings revealed that they are reluctant to carry out interventions with no evidence. Scientific intervention programs will need to be translated into practical and straightforward guidelines so that course information is immediately implementable in the SLPs' clinical practice. This would not only decrease the time-related burden for SLPs, but also the extent to which other job tasks should be given up to use linguistic-phonological intervention (i.e. the construct opportunity costs).

For some SLPs, linguistic-phonological intervention approaches did not match their value system. They felt that it was unethical to use these approaches as there is a lack of scientific evidence. The SLPs felt responsible for providing effective and evidence-based therapy to their patients. Our previous qualitative study (Alighieri et al., 2021) has uncovered similar issues. Some SLPs desire to stick to evidence-based guidelines. If no therapy progress is seen in therapy, they cannot blame themselves as they were handling in accordance with expert guidelines (Alighieri et al., 2021). This finding does not solely point out the pressing need for intervention studies on the effect of linguistic-phonological intervention in children with a CP±L. It also illustrates the need to raise more awareness of the fact that the effectiveness of an intervention does not solely depend on the available scientific evidence for the approach. For health care interventions to be truly evidence-based, there needs to be integration and harmonization of the available scientific evidence for a specific intervention approach with the opinions and needs of the patients and the views and practices of the health professional (Steglitz et al., 2015). As the SLPs in this sample suggested, working groups between more and less experienced therapists could perhaps increase some individuals' self-confidence to use linguistic-phonological approaches in clinical practice. These working groups may provide the opportunity to discuss cases and to receive confirmation from more experienced therapists which may, in turn, increase some SLPs' self-efficacy.

The TFA construct 'intervention coherence' included reports on stimulability testing before initiating linguistic-phonological intervention in children with a CP±L. Stimulability reflects a child's ability to correctly imitate a specific phoneme when provided with models of the phoneme (Rvachew, 2005). Some studies suggest that speech improvements are more likely to occur when the child is stimulable for a particular phoneme rather than unstimulable (Miccio et al., 1999). Other studies report that children who demonstrated poor stimulability for a specific target should be prioritized for speech-language services given that their speech errors are less likely to resolve spontaneously (To et al., 2022). Stimulability in itself does, however, not inevitably lead to phoneme acquisition (Miccio et al., 1999; Rvachew et al., 1999). Phoneme acquisition will only occur if a child demonstrates stimulability and phonemic perception prior to the onset of the linguistic-phonological intervention (Rvachew, 2005; Rvachew et al., 1999). These studies were based on children with speech sound disorders not related to CP±L. It is unknown to what extent these findings on phoneme stimulability are also applicable to children with a CP±L. As stimulability testing is recommended as an essential part of the assessment before the intervention phase (Miccio, 2002), it is required to investigate this matter in children with a CP±L.

This was the first study that investigated the acceptability of linguistic-phonological intervention in children with a CP±L from the perspective of SLPs using the TFA. The SLPs were interviewed by a peer SLP. Even though this study adopted peer interviews, the included participants reported that they felt comfortable to speak freely about their perceptions and experiences.

The data collected for this study was part of a larger project that investigated the perceptions, experiences, emotions, and practice patterns of Flemish-speaking community SLPs (Alighieri et al., 2021). Hence, the opening question that was used during the interviews was rather broad (i.e., namely "How do you experience treating children with a cleft palate with or without a cleft lip?") and was not specifically related to linguistic-phonological intervention. It is possible that other statements could have been obtained if interview questions specifically targeted the SLPs' perspectives on linguistic-phonological intervention. Besides, this study did not make any distinction between the different types of linguistic-phonological therapy (e.g., contrast approaches, complexity approaches, Core Vocabulary Approach, Cycles Approach, Metaphon, Distinctive Feature Therapy). It is plausible that SLPs have different experiences with the acceptability of these different linguistic-phonological approaches. It would be interesting to investigate the acceptability of these linguistic-phonological approaches after training of the SLPs with a specific phonological intervention program. During and following the intervention provision,

semi-structured interviews or focus group discussions can be organized to investigate the intervention program's acceptability. This would allow investigators to make concrete adaptations to the intervention programs which are directly relevant to the SLPs. This will eventually facilitate the implementation of intervention approaches in clinical practice (Sekhon et al., 2017).

This study specifically excluded SLPs who were being a member of a cleft team. Specialized cleft team SLPs may have other perceptions on speech therapy approaches than community SLPs. In the future, it would be valuable to make a comparison between the perceptions of cleft team SLPs and community SLPs.

Conclusion

Linguistic-phonological intervention approaches are often used in clinical practice to treat active or compensatory cleft speech disorders. Besides limited scientific evidence, it is unknown to what extent linguistic-phonological intervention is acceptable to SLPs. Therefore, this study investigated the retrospective acceptability of linguistic-phonological intervention in children with a CP±L from the perspective of SLPs using the TFA. The affective attitude and perceived effectiveness of linguistic-phonological intervention differed among the SLPs: some therapists had positive attitudes towards these approaches while others did not. Positive attitudes were related to the successful use of linguistic-phonological intervention in the past. The construct 'ethicality' revealed that negative attitudes towards these approaches were attributed to the limited available scientific evidence or negative experiences while using these approaches. In contrast, SLPs who had positive attitudes considered these interventions as 'important' and 'valuable'. Some SLPs had negative reflections on linguistic-phonological intervention as these approaches were considered demanding in terms of time needed to gain knowledge on using them in children with a CP±L (constructs 'burden' and 'opportunity costs'). Additionally, some SLPs doubted their self-efficacy to use these approaches in clinical practice. Our results emphasized that it is not only important to increase the amount of scientific evidence for linguistic-phonological approaches. To improve acceptability, it will also be important to increase the supply of evidence-based workshops and training courses on this matter. Scientific findings should be communicated adequately and comprehensively to SLPs. These initiatives should distribute hands-on information that is immediately applicable in clinical practice. This will potentially reduce the time-related burden that some SLPs currently experience to gain expertise in this matter. In future research, it is necessary to investigate if there exist differences in acceptability between the different types of linguistic-phonological therapy.

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