

# Opinion of Speech-Language Pathologists regarding Articulation Therapy after Cleft Lip/Palate Surgery

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## Abstract

### Background:

Cleft lip and cleft palate (CLP) are openings or splits in the upper lip, the roof of the mouth (palate) or both. CLP results when facial structures that are developing in an unborn baby don't close completely. Children with a cleft lip could even develop a cleft palate as well. Articulation and nasal resonance are important factors in cleft palate speech outcomes. Some articulation problems are thought to be compensatory actions caused by velopharyngeal insufficiency (VPI)

### Objective:

To find out the opinion that Speech-Language Pathologists (SLPs) have about articulation therapy after cleft lip/palate surgery

### Methodology:

One-twenty Speech-Language Pathologists (SLPs) were completed online surveys regarding articulation therapy after cleft lip or palate surgery in which convenient sampling technique was used. Speech-Language Pathologists (SLPs) who had only Speech Pathology recognized diploma/degree or any experience was included in this study. While special education teachers & parents of cleft children were excluded in this study

### Results:

The majority of SLPs (49.2%) said that any therapy other than articulation therapy may be more effective, 30.0% of speech language pathologists (SLPs) said that any therapy other than articulation therapy will be more effective & 20.8% said that no therapy other than

articulation therapy will be more effective. Overall result shows that 54.3% of participants have good opinion about articulation therapy that it is effective after cleft lip/ palate surgery.

### Conclusions:

It was concluded from this study that there was a large degree of variability in opinion of SLPs regarding articulation therapy. These findings probably reflect differences in both education and experience of the participating SLPs.

### Key words:

Speech-Language Pathologists (SLPs), Cleft lip or palate, Velopharyngeal, Opinion.

### Introduction:

Orofacial cleft, also known as cleft lip and cleft palate (CLP), is a term used to describe a group of conditions which involves cleft lip, cleft palate, and both. CLP are genetic abnormalities which arise even if a lip or mouth of a baby does not develop properly during pregnancy. Children with a cleft lip could even develop a cleft palate as well. These genetic abnormalities are known as oral clefts and craniofacial clefts. If there will be inadequate membrane inside the mouth or lip zone, or the membrane which is present will not join around each other appropriately, opening develops.<sup>1,2</sup> Split in upper lip (present with split in the roof of mouth or without) affects 1 in every 700 children, while cleft palate affects one out of every 2,000 children.<sup>3,4</sup> An upper bone of the jaw as well as the entire midface of a child with a cleft can become retrusive (too far back), as he or she develops. The pharyngeal airway can be compromised as a result of this.<sup>5,6</sup> Children with a cleft lip whether it is combined with cleft palate

or without, and a cleft palate only, possess difficulty in eating, communicating properly as well as they are prone to ear infections. They may also be suffering from hearing and dental issues. Hyper-nasality, exhalation of air via the nose or articulation behaviors that are unusual are speaking problems associated with cleft palate.<sup>7,8</sup> Articulation and nasal resonance are important factors in cleft palate speech outcomes. Some articulation problems are thought to be compensatory actions caused by velopharyngeal insufficiency (VPI).<sup>9</sup> Children's articulation problems come in the form of either phonemes generated on every language or phonemes generated on specific language. Problems associated with phonemes generated on every language will be linked to incorrect teaching along with functional, biological and motor dysfunction. Problems associated with phonemes generated on specific language, on the other hand, are thought to be linguistic in nature and reflect a child's difficulty in organizing and representing the language's sound system. Children who have articulation problems due to CLP are less likely to initiate conversation and are less likely to add to or comment on a topic in conversation.<sup>10-12</sup> Clefts are believed to be caused by a variety of factors. As a result, in mostly situations, the opening in the upper lip or roof of mouth becomes primarily accompanied by a combination of genetic component and certain environmental factors that occur during embryological development.<sup>13</sup> Woman that smoke during pregnancy have a higher chance of bringing up a child with cleft than those that don't. Diabetic women are at increased danger of bringing up a newborn with an opening in the upper lip or roof of the mouth.<sup>14,15</sup> Surgery of an opening in the upper lip is normally done during first six months after birth, but it has been advised to get it done within the first 12 months of life. Surgical correction of an opening in the roof of mouth should have been done throughout the first one and a half year after birth, if at all necessary.<sup>16,17</sup> The study is designed

to find out the opinion of SLPs regarding articulation therapy after cleft lip/palate surgery.

### **Methods:**

The cross-sectional study was conducted and date was collected through online form or surveys, over the period of 6 months from start of 2021 till the mid of 2021. A total of 120 surveys were completed by Speech-Language Pathologists (SLPs). Only Speech pathology recognized diploma or degree (Bs, Ms) were included in this study & any experience was also be accepted. The convenient sampling technique was selected to collect the data. Data was collected through structured questionnaire which developed through expert opinion and with the help of literature review consisting of 26 questions, demographical data is added. The questionnaire consists of two parts, the first part consisted of demographics i.e. age range, work experience, work setting etc. Second part of questionnaire consisted on to measure the opinions of SLPs regarding articulation therapy after cleft lip/palate surgery. Data was analyzed through Statistical Package of Social Sciences (SPSS).

### **Results:**

A total of 120 surveys were completed by Speech Language Pathologists, in which 71.7% of SLPs did not had well opinion on resonance of a patient with cleft before articulation therapy (table 1). 45% of SLPs did not had good opinion about prosody in cleft patients before articulation therapy, but 64.2% SLPs agree that prosodic features improved after articulation therapy. In cleft patient nasality was bad before therapy & 70.8% of SLPs agree on this statement, and overall result shows that 54.3% of SLPs have good opinion about articulation therapy that it is effective after cleft lip/ palate surgery (table 2).

Variables		N	Percentage(%)
Age (Years)	18 to 25	79	63.3
	25 to 30	39	32.5
	30 or above	5	4.2
Gender	Female	109	90.8
	Male	11	9.2
Gender	BS SLP	86	71.7
	MS SLP	30	25.0
	Diploma	2	1.7
	Other	2	1.7
Work-Setting	Public	46	38.3
	Private	74	61.7
Experience (Years)	18 to 25	85	70.8
	25 to 30	29	24.2
	30 or above	6	5.0

**Table 1:** Demographics of study participants

Questions	Response	N	Percentage(%)
Have you ever seen a patient with cleft lip or palate?	Yes	106	88.3
	No	14	11.7
How would you categorize resonance of a patient with cleft before articulation therapy?	Good	10	8.3
	Neutral	24	20.0
	Bad	86	71.7
How would you categorize understandability in a cleft patient before articulation therapy?	Good	26	21.7
	Neutral	44	36.7
	Bad	50	41.7
How would you categorize prosody in a cleft patient before articulation therapy?	Good	15	12.5
	Neutral	51	42.5
	Bad	54	45.0
How would you categorize prosody in a cleft patient after articulation therapy?	Good	77	64.2
	Neutral	41	34.2
	Bad	2	1.7
How would you categorize nasality in a patient with cleft before articulation therapy?	Good	12	10
	Neutral	23	19.2
	Bad	85	70.8
Do you think any therapy other than articulation therapy will be more effective?	Yes	36	30
	No	25	20.8
	May be	59	49.2
Total			

**Table 2:** Response of participants

## Discussion:

This study was conducted to find out the opinion that Speech-Language Pathologists (SLPs) had about articulation therapy, their effectiveness & prognosis after CLP surgery. For this purpose, data was collected through online survey. A

study on speech correction for children with CLP in Community was led by Pichsinee Sritacha *et al.*, in 2016. The results of this study seems similar to this one and purpose of this study was to make a comparison between pre-articulation errors and post- articulation errors of children with CLP who enrolled in Khon Kaen University Community-Based Speech Therapy Model. The children's were assessed for speech and language skills, including language, understandability, articulation, resonance and voice by SLPs before and after each phase. According to this study, there was significant decrease in articulation errors. The second research was led by Alighieri, *et al.*, in Belgium, this study was similar to this one because it determined the effectiveness of speech therapy but the difference between was that it compare the two specific speech approaches: motor-phonetic and linguistic phonological, to see which one is more effective for cleft patients. According to this report, both motor-phonetic and linguistic-phonological speech interventions can have a positive impact on the occurrence of cleft speech characteristics.<sup>19</sup> However, a linguistic-phonological approach was observed to be more effective in terms of improving speech outcomes compared with a motor-phonetic approach.<sup>20</sup>

## Conclusions:

There was a large degree of variability in opinion of SLPs regarding articulation therapy. These findings probably reflect differences in both education and experience of the participating SLPs.

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