

Speech Correction for Children with Cleft Lip and Palate by Networking of Community-Based Care

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Background: Prevalence of cleft lip and palate (CLP) is high in Northeast Thailand. Most children with CLP face many problems, particularly compensatory articulation disorders (CAD) beyond surgery while speech services and the number of speech and language pathologists (SLPs) are limited.

Objective: To determine the effectiveness of networking of Khon Kaen University (KKU) Community-Based Speech Therapy Model: Kosumphisai Hospital, Kosumphisai District and Maha Sarakham Hospital, Mueang District, Maha Sarakham Province for reduction of the number of articulations errors for children with CLP.

Material and Method: Eleven children with CLP were recruited in 3 1-year projects of KKU Community-Based Speech Therapy Model. Articulation tests were formally assessed by qualified language pathologists (SLPs) for baseline and post treatment outcomes. Teachings on services for speech assistants (SAs) were conducted by SLPs. Assigned speech correction (SC) was performed by SAs at home and at local hospitals. Caregivers also gave SC at home 3-4 days a week.

Results: Networking of Community-Based Speech Therapy Model significantly reduced the number of articulation errors for children with CLP in both word and sentence levels (mean difference = 6.91, 95% confidence interval = 4.15-9.67; mean difference = 5.36, 95% confidence interval = 2.99-7.73, respectively).

Conclusion: Networking by Kosumphisai and Maha Sarakham of KKU Community-Based Speech Therapy Model was a valid and efficient method for providing speech services for children with cleft palate and could be extended to any area in Thailand and other developing countries, where have similar contexts.

Keywords: Networking, Cleft palate, Speech correction, Community-based care

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Prevalence of cleft lip and palate (CLP) was 1-2 child/1,000 live births in Thailand with a very high rate in the Northeast of approximately 800 children/year⁽¹⁾ CLP resulting in many problems⁽¹⁾, included feeding, hearing abnormality, language delay, compensatory articulation disorders (CAD)⁽²⁻⁶⁾ resonance disorders^(3,4,7), voice disorders^(3,7-14), unintelligibility, malocclusion, etc. Children with CAD also presented significant language delays⁽¹⁵⁾. Even though the first line of management in CLP is surgery for normal anatomical facial appearance, residual problems beyond cosmetic or configuration, particularly speech and language problems, were still stigmas. Pre-school

children in transitional phase from preschool to school period is very important for development of cognitive skills and critical adaptation to others for living in society⁽¹⁶⁾. Speech and language skills are also crucial factors that affect the quality and appropriateness in school during this period. Therefore, early intervention for speech therapy should be provided during this period as soon as possible for prevention of long CAD that is difficult for speech therapy. Speech therapy needs formal and consistent practices, as well as continuous treatment from preschool period to around 19 years old for the best results⁽¹⁷⁾.

There are limitations in speech services or none in some developing countries such as Thailand⁽¹⁸⁾, Lao People Democratic Republic⁽¹⁹⁾, Indonesia⁽²⁰⁾, Sri Lanka^(21,22), Mexico^(23,24), etc. Many approaches, with both local and international speech therapy team, were applied for early solving of speech problems in these

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countries.

Thailand has a limited speech services and number of speech and language pathologists (SLPs)⁽¹⁾, therefore, most children with CLP needed to get speech therapy from the nearest speech center, tertiary health care, which took around 1-3 days per visit. Most of them had many reasons which resulted in lack of speech therapy and difficulty to get speech services including limitation of public transportation, budget, as well as low economic status⁽¹⁸⁾. Combining the principles of Community-Based Rehabilitation (CBR), Primary Health Care (PHC) and institutional medical approaches for reaching and treating speech disordered children with cleft lip and/or palate in remote areas, was one of the best speech therapy models for providing speech therapy in Thailand^(18,25,26). This would help children with CLP to have early normal or near normal speech skills as soon as possible within limiting contexts. This strategy needed cooperation among local health care providers, families, and SLP, as well as support from primary, secondary, and tertiary health care units^(27,28). Networking of co-operation for the establishment of speech correction (SC) for CLP by community local health care providers was an effective model in decreasing the number of articulation errors^(7,29-31). Local health care providers or speech assistants (SAs) were the important mechanisms in this model. SAs could be a good SLPs' helper for SC and monitoring caregivers in the community. These helped children with CLP reach speech services and save budget for travel by getting speech services from the nearest center. The objective of this study was to determine the effectiveness of networking of Khon Kaen University (KKU) Community-Based Speech Therapy Model: Kosumphisai Hospital, Kosumphisai District and Maha Sarakham Hospital, Mueang District, Maha Sarakham Province for the reduction in the number of articulation errors for children with CLP.

Khon Kaen University Ethic Committee approved this study. According to the Helsinki Declaration (The 1st year project: HE531358; The 2nd year project: HE55116; and The 3rd year project: HE561402), the Ethics Committee of Khon Kaen University reviewed and approved the research protocols.

Material and Method

Study design

A prospective community-based study, which was a part of Khon Kaen University community-based speech therapy model for clefts.

Participants

Children with CLP aged 3; 6-15 years who lived in Kosumphisai and Mueang Districts, Maha Sarakham. They already had repaired cleft lip and palate and had medical history in Srinagarind Hospital. There were 4, 4, and 3 children with CLP recruited in the 1st, 2nd, and 3rd year projects, respectively.

A comprehensive meeting for health care providers at the beginning of each year's project was conducted. Children were formally assessed by qualified SLPs for baseline parameters and post treatment including

Oral examination and facial grimace.

Speech abnormality with perceptual assessment of speech for cleft using the Thai Universal Parameters of Speech Outcomes for People with Cleft Palate⁽³²⁾. Outcomes were summarized by consensus between two qualified SLPs, a researcher and an external evaluator. Speech characteristics were assessed as follows: Articulation, Resonance, Voice, Intelligibility, Nasal emission/turbulence.

Language screening test (adapted Thai Early Language Milestone)⁽³³⁾.

SCs by SAs, a physiotherapist and an occupational therapists who worked in Kosumphisai and Maha Sarakham Hospitals, were monitored via teaching on services by SLP as follows:

1) The 1st year project: Teachings services were conducted by SLPs in a 3-day speech camp, followed by 1-day follow-up speech camp at Maha Sarkham Hospital every 2-months. SCs were performed by SAs at home, every week, for 9 months.

2) The 2nd year project: Teachings on services were conducted by SLPs in a 1-day speech camp at Maha Sarkham Hospital. A 1-day follow-up activities and site visit were established at Kosumphisai and Maha Sarakham Hospitals. SCs by SAs were conducted at local hospitals, twice a month, for 9 months. Counseling between SLP and SA could be done any time.

3) The 3rd year project: Teachings on services were conducted by SLPs in a 1-day speech camp at Srinagarind Hospital. A 1-day follow-up activities and site visit were established at Kosumphisai and Maha Sarakham Hospitals. SCs by SAs were conducted at local Hospitals twice a month, for 9 months. Counseling between SLP and SA could be done any time.

Assessment and demonstration were simultaneously conducted in each speech camp and follow-up. SLPs assigned individual home programs for SAs and caregivers. Children were provided speech

therapy approximately 3-4 45-minute-sessions by SLP in each speech camp and follow-up activities. SAs provided SC approximately 2 30-minute sessions a month. Caregivers also carried out home programs for children approximately 3-4 20-30 minute sessions a week. The Manual of Speech Correction for Children with Cleft Palate: Paraprofessionals and Caregivers⁽³⁴⁾ and Exercises for Articulation Correction⁽³⁵⁾ was used for reference. Daily Home Record of Speech Correction⁽³⁶⁾ was monitored for giving check list for both SAs and caregivers in follow-up camp by SLP. This article was a part of the effectiveness of networking of KKU Community-Based Speech Model.

Formal assessment of post-perceptual speech abnormality using the Thai Universal Parameters of Speech Outcomes for People with Cleft Palate⁽³²⁾ was performed to quantify the number of articulation errors in post treatment.

Analysis

The main outcome was the number of articulation defects calculated from pre- and post-speech camps. Perceptual assessments were also scored: resonance as normal (0), hyponasality (-1), mild hypernasality (+1), moderate hypernasality (+2), severe hypernasality (+3); nasal emission/turbulence as none and appear; voice as normal and abnormal; language was scored as pass and delay.

Descriptive analysis was performed for general children's characteristics and satisfaction assessment. Paired-test was used to demonstrate the effectiveness of "Networking of KKU Community-Based Speech Therapy Model: sites of Kosum Phisai and Maha Sarakham Hospitals" by comparing the number of pre- and post-articulation errors in children with cleft palate

(these data were parts of total of 44 children with clefts, who enrolled on the main project that were tested by Shapiro-Wilk and indicated they were in normal distribution).

Results

General characteristics of 11 children with CLP in the study are presented in Table 1. Most children with CLP (6 of 11 children or 54.54%) were diagnosed as bilateral cleft lip and cleft palate followed by left cleft lip and cleft palate (3 of 11 or 27.27%), and cleft palate (2 of 11 or 18.18%) (Table 2).

Children with CLP's speech and language abilities were presented in Table 2. Paired t-test for comparison between the number of pre- and post articulation errors were displayed as Table 3.

Discussion

Most children with CLP were male and diagnosed as bilateral cleft lip and palate (Table 1). Seven of 11 children with CLP aged >4; 4 years (63.63%) were in projects and received formal therapy. Four of them aged >7 years old needed to leave school to get services and might have a negative effect on education in school. These age periods also got speech therapy late and might need a longer duration of SC than children who received therapy at earlier age period. Two children (No. 1 and 10, Table 2) had significant improvement of resonance scores in perceptual assessment in post-treatment evaluation.

It is possible that resonance scores were functional resonance abnormality from CAD and the decrease of resonance scores were significantly remedied by means of speech therapy. For another child who had high resonance scores after project for a year

Table 1. Children with CLP's general characteristics

Code	Age (year: month)	Gender	Diagnosis
1	7:1	Male	Bilateral cleft lip and cleft palate
2	8:0	Male	Cleft palate
3	3:11	Male	Bilateral cleft lip and cleft palate
4	8:1	Male	Bilateral cleft lip and cleft palate
5	8:11	Male	Cleft palate
6	4:3	Male	Bilateral cleft lip and cleft palate
7	4:4	Male	Left cleft lip and cleft palate
8	10:4	Female	Left cleft lip and cleft palate
9	7:7	Male	Bilateral cleft lip and cleft palate
10	5:2	Male	Bilateral cleft lip and cleft palate
11	5:4	Male	Left cleft lip and cleft palate

Table 2. Speech and language abilities

Code	Language		Resonance		Understandability		Acceptability		Voice		Number of articulation			
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Word			
											Pre	Post	Pre	Post
1	Pass	Pass	+2	+1	N/A	Mild	N/A	Mild	Abnormal	Abnormal	14	5	12	4
2	Pass	Pass	+1	0	N/A	Normal	N/A	Normal	Normal	Normal	6	1	6	0
3	Pass	Pass	-1	-1	Normal	Normal	Mild	Normal	Normal	Normal	16	1	11	1
4	Pass	Pass	+2	+2	Moderate	Moderate	Moderate	Moderate	Abnormal	Normal	14	5	5	3
5	Pass	Pass	0	0	Normal	Normal	Normal	Normal	Normal	Normal	7	1	1	0
6	Delayed	Delayed	+1	+1	N/A	Mild	N/A	Mild	Normal	Normal	17	11	16	9
7	Pass	Pass	0	0	N/A	Normal	N/A	Normal	Normal	Normal	11	1	10	1
8	Pass	Pass	0	0	Normal	Normal	Normal	Normal	Normal	Normal	2	0	3	0
9	Pass	Pass	0	0	Mild	Normal	Moderate	Normal	Normal	Normal	10	1	10	1
10	Delayed	Delayed	+2	0	Mild	Mild	Mild	Mild	Normal	Normal	11	6	11	7
11	Pass	Pass	0	0	Normal	Normal	Normal	Normal	Normal	Normal	1	1	1	1

* Normal = Within normal limits; Speech is always easy to understand; Mild = Speech is occasionally hard to understand; Moderate = Speech is often hard to understand; Severe = Speech is hard to understand most or all of the time

** Normal = Within normal limits; Speech is always easy to understand; Mild = Speech deviates from normal degree; Moderate = Speech deviates from normal to a moderate degree; Severe = Speech deviates from normal to a severe degree
N/A: Data were not available

Table 3. Comparison the number of pre- and post- articulation errors

Level (n = 11)	Pre-test	Post-test	Mean difference (95% CI)	p-value
Word	9.91±1.62	3.00±3.38	6.91 (4.15, 9.67)	<0.001
Sentence	7.82±4.92	2.45±3.05	5.36 (2.99, 7.73)	0.001

(No. 4), he might have had velopharyngeal insufficiency that might need further investigation and treatment. For understandability, score (No. 9) had improvement from significant reduction of the number of articulation errors. This might confirm that articulation correction improves children with CLP's quality of speech for both functional resonance abnormality and understand ability.

Pre- and post- perceptual articulation tests were performed by a principle investigator and an external evaluator, a qualified SLP, so outcomes were with consensual agreement, ensuring a reliable result. Paired t-test revealed that Community-Based Speech therapy Model in Kosumphisai and Maha Sarakham Hospitals under SLP's supervision produced significant improvement of articulation skills. In addition, improvement of qualities of speech on both resonance and understandability by decreasing the number of articulation errors after treatment were displayed (No. 3 and No. 9 in Table 3). Other positive effect was practices on home program by CLP's caregivers that might be encouraged by SAs' SC. These results support the previous studies^(7,23,29,37-39). This model with cooperative commitment among community, local hospitals, and tertiary or institutional health care units was one of the models that solved problems of limited speech services and SLPs in Thailand.

Networking of Community-Based Speech Model could be adapted for interdisciplinary or multidisciplinary approaches⁽⁴⁰⁾. Improvement of articulation skills in this study supported a previous study that compared speech therapy improvements on conventional approach and speech summer camp, this article concludes that speech camp was a valid and efficient method for providing speech therapy in cleft palate children with compensatory articulation disorder⁽²³⁾.

Regarding psychosocial improvement, children with CLP are generally more likely to have emotional and psychosocial problems due to speech, language, and configuration abnormalities, thus, they do not have good relationship and avoid social activities^(41,42). In post treatment observations, SAs

found that 2 children with CLP and delayed speech and language development had also improvement of personality including social relationship and interaction, even though, they still were in delayed speech and language development. It might be possible that this was preliminary to an increase of language ability in the near future from the benefit of having good speech and social stimulation activities during treatment, which convey language skills via SC activities.

Conclusion

Kosumphisai and Maha Sarakham Networkings of Community-Based Speech Therapy Model was a valid and effective way for providing speech therapy in cleft palate children with CAD.

What is already known on this topic ?

Speech abnormalities are common problems in clefts. Children with clefts should be provided with early speech therapy as soon as possible for prevention of long lasting compensatory articulation habits that need a longer duration for treatment. Most children with clefts in developing countries cannot reach speech therapy because of limitation or lack of speech services.

What this study adds ?

Kosumphisai and Mueang, Maha Sarakham, Networkings of Khon Kaen University Community-Based Speech Therapy Model for Cleft, were effective sites for providing speech therapy for reduction of the number of articulation errors in clefts in Thailand, where there are a limitation of speech services.

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Potential conflicts of interest

None.

References

1. Prathanee B. Introduction. In: Prathanee B, editor. Cleft lip and palate: speech problems and multidisciplinary approaches. Vol. 1. Khon Kaen: Khon Kaen University Print; 2014: 3-26.
2. Lohmander-Agerskov A, Soderpalm E. Evaluation of speech after completed late closure of the hard palate. *Folia Phoniatr (Basel)* 1993; 45: 25-30.
3. Prathanee B, Thanawirattananit P, Thanaviratananich S. Speech, language, voice, resonance and hearing disorders in patients with cleft lip and palate. *J Med Assoc Thai* 2013; 96 (Suppl 4): S71-80.
4. Schonweiler R, Lisson JA, Schonweiler B, Eckardt A, Ptok M, Trankmann J, et al. A retrospective study of hearing, speech and language function in children with clefts following palatoplasty and veloplasty procedures at 18-24 months of age. *Int J Pediatr Otorhinolaryngol* 1999; 50: 205-17.
5. Dorf DS, Curtin JW. Early cleft palate repair and speech outcome. *Plast Reconstr Surg* 1982; 70: 74-81.
6. Dorf RS, Curtin JW. Early cleft palate repair and speech outcome: a 10-year experience. In: Bardach J, Morris HI, editors. *Multidisciplinary management of cleft lip and palate*. Philadelphia: Saunders; 1990: 341-8.
7. Prathanee B, Makarabhirom K, Jaiyong P, Pradubwong S. Khon Kaen: a community-based speech therapy model for an area lacking in speech services for clefts. *Southeast Asian J Trop Med Public Health* 2014; 45: 1182-95.
8. Bressmann T, Sader R, Merk M, Ziegler W, Busch R, Zeilhofer HF, et al. Perceptive and instrumental examination of voice quality in patients with lip-jaw-palate clefts. *Laryngorhinootologie* 1998; 77: 700-8.
9. Brondsted K, Liisberg WB, Orsted A, Prytz S, Fogh-Andersen P. Surgical and speech results following palatopharyngoplasty operations in Denmark 1959-1977. *Cleft Palate J* 1984; 21: 170-9.
10. D'Antonio LL, Muntz HR, Province MA, Marsh JL. Laryngeal/voice findings in patients with velopharyngeal dysfunction. *Laryngoscope* 1988; 98: 432-8.
11. Hamming KK, Finkelstein M, Sidman JD. Hoarseness in children with cleft palate. *Otolaryngol Head Neck Surg* 2009; 140: 902-6.
12. Lohmander-Agerskov A, Soderpalm E, Friede H, Lilja J. A longitudinal study of speech in 15 children with cleft lip and palate treated by late repair of the hard palate. *Scand J Plast Reconstr Surg Hand Surg* 1995; 29: 21-31.
13. Robison JG, Otteson TD. Prevalence of hoarseness in the cleft palate population. *Arch Otolaryngol Head Neck Surg* 2011; 137: 74-7.
14. Takagi Y, McGlone RE, Millard RT. A survey of the speech disorders of individuals with clefts. *Cleft Palate J* 1965; 45: 28-31.
15. Pamplona MC, Ysunza A, Gonzalez M, Ramirez E, Patino C. Linguistic development in cleft palate patients with and without compensatory articulation disorder. *Int J Pediatr Otorhinolaryngol* 2000; 54: 81-91.
16. Child and Adolescent Health Service. Child development 4-5 years [Internet]. 2013 [cited 2015 Aug 4]. Available from: http://www.health.wa.gov.au/docreg/Education/Population/Child_Health/Growth_and_Development/HP3425_child_dev4-5years.pdf
17. Peterson-Falzone SJ, Trost-Cardamne J, Karnell MP, Hadin-Jones MA. Articulation therapy for school-age children. In: Peterson-Falzone SJ, Trost-Cardamne J, Karnell MP, Hadin-Jones MA, editors. *The clinician's guide to treating cleft palate speech*. St. Louis: Mosby; 2006: 124-62.
18. Prathanee B, Dechongkit S, Manochiopinig S. Development of community-based speech therapy model: for children with cleft lip/palate in northeast Thailand. *J Med Assoc Thai* 2006; 89: 500-8.
19. Prathanee B, Pumnum T, Jaiyong P, Seepuham C, Xayasin V. Speech and language therapy model for children with cleft lip/palate in Lao People's Democratic Republic. *J Med Assoc Thai* 2011; 94 (Suppl 6): S27-32.
20. Willcox DS. Cleft palate rehabilitation: interim strategies in Indonesia. *Cleft Palate Craniofac J* 1994; 31: 316-20.
21. Wirt A, Wyatt R, Sell D, Mars M, Grunwell P, Lamabadusuriya S. Training counterparts in cleft palate speech therapy in the less developed world: an extended report. *Br J Disord Commun* 1990; 25: 355-67.
22. Wirt A, Wyatt R, Sell DA, Grunwell P, Mars M. Training assistants in cleft palate speech therapy in the developing world: a report. *Cleft Palate J* 1990; 27: 169-74.

23. Pamplona C, Ysunza A, Patino C, Ramirez E, Drucker M, Mazon JJ. Speech summer camp for treating articulation disorders in cleft palate patients. *Int J Pediatr Otorhinolaryngol* 2005; 69: 351-9.
24. Pamplona MC, Ysunza A, Chavelas K, Aramburu E, Patino C, Marti F, et al. A study of strategies for treating compensatory articulation in patients with cleft palate. *J Maxillofac Oral Surg* 2012; 11: 144-51.
25. Prathanee B. Development of speech services for people with cleft palate in Thailand: lack of professionals. *J Med Assoc Thai* 2012; 95 (Suppl 11): S80-7.
26. Prathanee B, Lorwatanapongsa P, Makarabhirom K, Suphawatjariyakul R, Thinnaitorn R, Thanwiratananich P. Community-based model for speech therapy in Thailand: implementation. *J Med Assoc Thai* 2010; 93 (Suppl 4): S1-6.
27. Prathanee B. Development the system of speech services for solving speech and language problems in children with cleft and palate. In: Prathanee B, editor. *Cleft lip and palate: speech problems and multidisciplinary approaches*. Vol. 1. Khon Kaen: Khon Kaen University Print; 2014: 699-700.
28. Prathanee B. Development the system of multidisciplinary approaches in Thailand. In: Prathanee B, editor. *Cleft lip and palate: speech problems and multidisciplinary approaches*. Vol. 1. Khon Kaen: Khon Kaen University Print; 2014: 27-52.
29. Prathanee B, Lorwatanapongsa P, Makarabhirom K, Suphawatjariyakul R, Wattanawongsawang W, Prohmtong S, et al. Speech camp for children with cleft lip and/or palate in Thailand. *Asian Biomed* 2010; 1: 111-8.
30. Prathanee B. Cost effectiveness of speech camps for children with cleft palate in Thailand. *J Med Assoc Thai* 2011; 94 (Suppl 6): S33-9.
31. Prathanee B, Lorwatanapongsa P, Makarabhirom K, Suphawatjariyakul R, Wattanawongsawang W, Prohmtong S, et al. Speech camp for children with cleft lip and/or palate in Thailand. *Asian Biomed* 2011; 5: 111-8.
32. Prathanee B, Lorwatanapongsa P, Anantapong D, Buakanok N. Thai Speech Parameters for Patients with Cleft Palate in a Universal Reporting System. *Asia Pac J Speech Lang Hear* 2011; 14: 31-49.
33. Lorwatanapongsa P, Isarasena Na Adhuya P, Ahsiravej P, Prathanee B. Adapted Thai early language milestone. Khon Kaen: Department of Otorhinolaryngology, Faculty of Medicine, Khon Kaen University; 2011.
34. Dechongkit S, Prathanee B, Lorwatanapongsa P, Manochiopinig S, Makarabhirom K, Suphawatjariyakul R, et al. *Manual of speech and language therapy for children with cleft and palate*. Khon Kaen: Klangnanawitaya Press; 2007.
35. Prathanee B. *Exercises for articulation correction*. KhonKaen: Department of Otorhinolaryngology, Faculty of Medicine, Khon Kaen University; 2010.
36. Prathanee B. *Book record of speech therapy for children with cleft lip and palate in KhonKaen community-based speech therapy model*. Khon Kaen: Klangnanawittaya Press; 2010.
37. Pamplona MC, Ysunza A. Active participation of mothers during speech therapy improved language development of children with cleft palate. *Scand J Plast Reconstr Surg Hand Surg* 2000; 34: 231-6.
38. Pamplona MC, Ysunza A, Jimenez-Murat Y. Mothers of children with cleft palate undergoing speech intervention change communicative interaction. *Int J Pediatr Otorhinolaryngol* 2001; 59: 173-9.
39. Scherer NJ, D'Antonio LL, McGahey H. Early intervention for speech impairment in children with cleft palate. *Cleft Palate Craniofac J* 2008; 45: 18-31.
40. Prathanee B, Chowchuen B. Community-based network system and interdisciplinary management for children with cleft-lip/palate. *J Med Assoc Thai* 2010; 93 (Suppl 4): S63-70.
41. Prathanee B. Emotional and psychosocial problems in children with cleft lip and palate. In: Prathanee B, editor. *Cleft lip and palate: speech problems and multidisciplinary approaches*. Vol. 1. Khon Kaen: Khon Kaen University Print; 2014: 249-64.
42. Prathanee B. Assessment and treatment for emotional and psychosocial problems. In: Prathanee B, editor. *Cleft lip and palate: speech problems and multidisciplinary approaches*. Vol. 1. Khon Kaen: Khon Kaen University Print; 2014: 265-85.

การฝึกพูดเด็กปากแหว่งเพดานโหว่โดยเครือข่ายในการดูแลรักษาในชุมชน

ยศศักดิ์ หาญชาญเลิศ, วรวรรณ ประมาณคะเต, สุธีรา ประดับวงษ์, เบญจมาศ พระธานี

ภูมิหลัง: ความชุกของภาวะปากแหว่งเพดานโหว่มีสูงในภาคตะวันออกเฉียงเหนือของประเทศไทย เด็กปากแหว่งเพดานโหว่ส่วนใหญ่มีปัญหาหลายอย่าง โดยเฉพาะเรื่องพูดไม่ชัดแบบซัดเซยหลังผ่าตัด ในขณะที่การบริการด้านการแก้ไขการพูดและนักแก้ไขการพูดมีอยู่อย่างจำกัด

วัตถุประสงค์: เพื่อศึกษาประสิทธิภาพของเครือข่ายของรูปแบบการฝึกพูดในชุมชนของมหาวิทยาลัยขอนแก่นในพื้นที่ของโรงพยาบาลโกสุมพิสัย และโรงพยาบาลมหาสารคามในการลดจำนวนเสียงที่พูดไม่ชัดของเด็กปากแหว่งเพดานโหว่

วัสดุและวิธีการ: เด็กปากแหว่งเพดานโหว่จำนวน 11 คนเข้าร่วมโครงการฝึกพูดแบบชุมชนของมหาวิทยาลัยขอนแก่น 3 โครงการ โครงการละ 1 ปี การประเมินการพูดอย่างเป็นทางการโดยนักแก้ไขการพูดเพื่อเป็นข้อมูลพื้นฐานก่อนเข้าโครงการฯ และผลลัพธ์หลังการฝึกพูด นักแก้ไขการพูดทำการสอนแสดงการฝึกพูดสำหรับผู้ช่วยฝึกพูด ผู้ช่วยฝึกพูดเด็กตามโปรแกรมที่ได้รับจากนักแก้ไขการพูดที่บ้านและที่โรงพยาบาลในพื้นที่ ส่วนผู้ปกครองช่วยฝึกที่บ้าน 3-4 ครั้งต่อสัปดาห์

ผลการศึกษา: เครือข่ายของรูปแบบการฝึกพูดในชุมชนโรงพยาบาลโกสุมพิสัยและโรงพยาบาลมหาสารคาม สามารถลดจำนวนเสียงพูดไม่ชัดในเด็กปากแหว่งเพดานโหว่ทั้งในระดับคำและประโยคได้อย่างมีนัยสำคัญทางสถิติ (mean difference = 6.91, 95% confidence interval = 4.15-9.67; mean difference = 5.36, 95% confidence interval = 2.99-7.73 ตามลำดับ)

สรุป: เครือข่ายของโรงพยาบาลโกสุมพิสัยและโรงพยาบาลมหาสารคามของรูปแบบการฝึกพูดในชุมชนของมหาวิทยาลัยขอนแก่นเป็นวิธีการที่ดี และมีประสิทธิภาพสำหรับการจัดการบริการด้านการแก้ไขการพูด และสามารถขยายรูปแบบไปยังพื้นที่อื่นของประเทศไทยและประเทศที่กำลังพัฒนาที่บริบทคล้ายกัน
