

Online Speech Therapy for Cleft Palate Patients in Rural Nepal: Innovations in Providing Essential Care during COVID-19 Pandemic

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ABSTRACT

Background: Speech therapy is important for ideal functional outcome after cleft palate surgery. Nationwide lockdown due to outbreak of COVID-19 in Nepal restricted the ability of patients to travel to nearby outreach centers for regular speech therapy. The objectives were to assess the feasibility and challenges of conducting online speech therapy with postpalatoplasty children during COVID-19 pandemic; and evaluate the ways to overcome them.

Methods: Patients with cleft palate surgery done at least 3 months prior were given online speech therapy. Feasibility, advantages and challenges of online speech therapy were evaluated through interviewing the guardians and speech therapy providers.

Results: A total of 89 patients were included in the study. Only 11.2% had secondary palatine procedures. Almost all the children (97.8%) had face to face speech therapy prior to study period. Best use of time, use of audiovisual aid, no need to travel and rapid progress were the most commonly perceived strengths of online speech therapy. The most frequent challenges were internet connectivity, unclear voice, lack of direct interaction and unstable power supply. Recommended ways to improve online speech therapy were cited as better internet connectivity, having a fixed schedule and availing free or affordable Wifi.

Conclusions: Despite the challenges, online speech therapy provided us with a way to reach out to the cleft palate children when face-to-face therapy was not possible due to COVID-19 pandemic. We see its role even during non-pandemic situations for the children who are unable to visit the speech therapy centers.

Keywords: COVID-19; online speech therapy; palatoplasty

INTRODUCTION

Speech therapy is important for the correction of compensatory speech errors in cleft palate.¹ Surgery alone is not sufficient in most of the cases.² Delivery of speech therapy in Nepal is quite challenging. ReSurge International Surgical Outreach Program (RISOP) centers have been providing outreach speech therapy in Nepal since 2001. The challenge of limited number of speech pathologists has been met by training nurses.^{3,4}

The COVID-19 outbreak resulted in an unanticipated cessation of outreach speech therapy both at the outreach centers and central hospital in Kathmandu. Online speech therapy was provided to obviate the need

to travel long distances and decrease the chance of contact with other children/families thus reducing the risk of transmitting the disease.

The objectives were to assess the feasibility of conducting online speech therapy to the postpalatoplasty children during COVID-19 pandemic; and assess the facilitators and barriers to the success of the program.

METHODS

A descriptive cross-sectional study was conducted. This study took place at Kirtipur Hospital and RISOP outreach centers in 5 different locations around Nepal with data

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collection in May and June 2020. Ethical clearance was obtained from Institutional Review Committee of PHECT-NEPAL before initiating the study. The study included children who were at least 3 years of age and had cleft palate repair at least 3 months prior to the start of the study. Convenience sampling methodology was used and the eligible children's guardians were approached using contact telephone numbers available in the Smile Train database. Of the 307 guardians contacted, 89 consented to participate in the study. Syndromic children, children younger than 3 years of age, those who had surgery within 3 months of start of the study and those without access to internet were excluded. Once the guardians received the written consent form through instant messaging service (IMS) platforms, it was read and explained by the assigned speech therapy provider until understanding was verified. The guardians were then asked to sign the consent and return the photographed or scanned consent form.

An initial speech assessment was conducted and the therapy needs of the child were determined. Plans were formulated of seven one-hour long speech therapy sessions to correct one sound over the course of two weeks. In the ideal scenario during speech therapy camps in the outreach centers, patients and guardians are given one week to work on a sound. Considering the unreliable power supply and wireless internet connection, it was decided to give them a maximum duration of two weeks to complete the session in such a way that any one subject would receive no more than one session per day. At the completion of all the therapy sessions, a questionnaire was sent to each of them to assess the demographic data and surgical data. Multiple choice questionnaire was incorporated to evaluate their perception about the positive and negative aspects of online speech therapy along with ways to make it more acceptable. Perceptions were measured using 5 point Likert Scale.

RESULTS

Among the respondents, 20.2% (n=18) were males and 79.8% (n=71) were females. Their age ranged from 15 to 48 years (average 31.4). They were mostly mothers (n=62, 69.7%), followed by fathers (n=16, 18%), brothers (n=10, 11.2%) and sisters (n=1, 1.1%). Academic qualifications and occupation of the respondents are represented in Table 1. The age of patients in the study ranged between 3.5 and 29 years. Most belonged to the age group of 5-10 years (n=47, 52.8%). One fifth of

them belonged to 3-5 years of age group (n=19) (Figure 1). Out of 77 districts of Nepal, the enrolled patients were from 35 districts. Most of the patients came from Province 1 followed by Lumbini Province. Among six centers, Biratnagar was attended by the most followed by Bharatpur. Clustering of patients around the speech centers can be seen in Figure 2.

Almost one third (n=26, 29%) of patients had only one surgery (cleft palate) and rest had two or more surgeries (Table 2). Primary palate repair was done in a total of 72 (88.8%) patients; 46 (51.7%) of whom also cleft lip had repaired. Velopharyngeal incompetence (VPI) correction was done only in 10 patients and 4 patients had fistula repair. Almost 98% (n=87) of the patients underwent face-to-face speech therapy prior to the study period and only two patients were newly recruited. Under normal circumstances, one third (n=29, 32.6%) received speech therapy 2-5 times a year during speech therapy camps. Almost same number of patients received the therapy 1-3 times a month and 1-2 times a week on a regular basis (31.5 and 29.2% respectively). Intensive therapy (3-5 times a week) was given to about 4.5% (n=4) patients as per the patient needs.

The providers and recipients used either cellular data or wireless internet via Wi-Fi. Wi-Fi was more commonly used but cellular data was also used by significant portion in the study. Among the Instant Messaging Services (IMS) platforms, Facebook messenger was used by almost 60% (n=53) of the recipients for OST which was followed by Imo. Other tools used were WhatsApp and Viber. It was observed that Smartphones were used to record the pre- and post-speech therapy in about 97% (n=86) cases.

The strength and weakness of OST are presented in Table 3. A total of 10 strengths were identified in the study. The use of audio-visual technique was accepted as strength by almost 17% (n=15) of guardians. Internet connectivity was considered as the major weakness. However, about 16% (n=14) of them believed that OST needs some improvement as listed in Table 4. More than 85% (n=74) of participants agreed to the fact that OST was useful and providers were helpful. The participants were satisfied with OST and 76 (85%) of them would like to continue in future. Same number perceived that the providers were helpful. More than 80% would like to continue it in future and would recommend it to others.

Table 1. Academic qualification and occupation of the respondents.

Academic qualifications	Frequency	Percentage
Primary school level (up to class 5)	13	14.6
Middle school level (class 6-8)	11	12.4
High school level (class 9-10)	21	23.6
Higher secondary school level (class 11-12)	17	19.1
Graduation	21	23.6
Post-graduation	3	3.4
Illiterate	3	3.4
Total	89	100
Occupation		
Unemployed	3	3.4
Student	10	11.2
Government service	15	16.9
Agriculture	11	12.4
Housewife	22	24.7
Grocer	8	9
Teacher	4	4.5
Others	16	17.9
Total	89	100

Table 2. Surgical procedures.

Surgical procedure	Frequency	Percent
Cleft palate only	26	29.2
Cleft lip and palate	46	51.7
Cleft lip, palate and VPI correction	3	3.4
Cleft palate and VPI correction	3	3.4
Cleft lip, lip revision, palate, VPI correction, rhinoplasty, ABG (alveolar bone grafting)	2	2.2
Cleft lip, lip revision, palate	4	4.5

Cleft lip, palate, ABG	1	1.2
Cleft lip, palate, fistula	2	2.2
Cleft lip, palate, fistula, VPI correction	2	2.2
Total	89	100

ABG= alveolar bone graft, VPI= velopharyngeal incompetence

Table 3. Strengths and weaknesses of OST

Strength	Frequency	Percentage
Best use of time	23	25.8
Use of audiovisual technique	15	16.9
No need to travel	12	13.5
Rapid progress	10	11.3
Happy children	7	7.9
Convenient	7	7.9
Proper use of modern technology	6	6.7
Easy scheduling	5	5.6
Easier to do the therapy	2	2.2
Continuation of face-to-face therapy	2	2.2
Weakness		
Internet connectivity	31	34.8
Unclear voice	14	15.7
Not as effective as face-to-face speech therapy	14	15.7
Unreliable power supply	13	14.6
Distraction	10	11.3
Affordability	7	7.9

Table 4. Improvement to OST.

Improvements needed	Frequency	Percentage
Better internet connectivity	29	32.6
Fixed schedule	21	23.6
Availing free Wi-Fi (NTC has provided low cost Wi-Fi)	10	11.3

Regular attendance	7	7.9
Games and attention	5	5.6
Parental training on use of internet	3	3.4
No issues	5	5.6
Others	9	10
Total	89	100

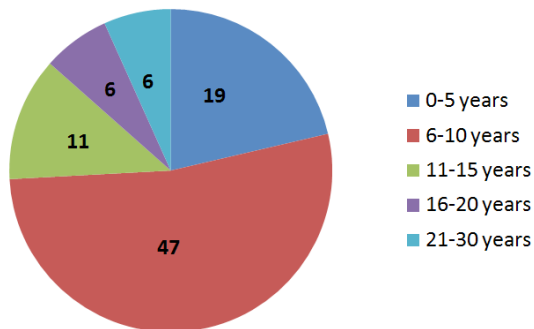


Figure 1. Age of children.



Figure 2. Location of speech centers and patient distribution.

DISCUSSION

Despite the challenges, online speech therapy to the postpalatoplasty children during situations like COVID-19 pandemic seems feasible in Nepal as demonstrated in this study. As this is only a feasibility study, further large scale study is needed to prove its use during present context and also during normal situation.

Delivery of speech therapy following cleft palate surgery is quite challenging in countries like Nepal even during the normal circumstances because access to already limited number of speech therapists is difficult due to poor transportation system.⁵ Moreover, speech therapy is not a one-time intervention unlike surgery. Surgery is available in many circumstances whereas speech therapy is not adequately taken into consideration.⁶

Time commitment and country specific issues cannot be addressed by expatriate speech therapists thus demanding local availability of speech therapy through training.⁷

Feasibility of OST in resource limited settings has been shown by Furr MC, et. al.⁸ Drawbacks of OST include less opportunity for direct interaction, clinical observations and therapeutic interventions. American Speech-Language Hearing Association demands that quality of service provided through OST must be equivalent to but not less than face-to-face speech therapy.⁹ Grogan-Johnson S, et. al. reported comparable progress with conventional speech therapy in a rural setup in the USA.¹⁰ However, OST cannot substitute face-to-face speech therapy but can be used to complement it. It has been used along with face-to-face therapy by some for better outcome.^{11,12} Advantages of OST are multitude and have been reported by several studies. It reduces the time and cost involved in travelling for parents and children¹³⁻¹⁵ and increases access of the service to the children living in remote areas.¹⁶ These factors are very useful in our setup where patients have to travel long distances even during normal times.^{3,4} Despite the lack of direct interaction with the therapist, OST does not necessarily have negative impact on the rapport between the therapists and the children.¹⁷ Incorporation of online role play, cognitive behavioural therapy and intervention technique have been recommended by Amichai-Hamburger et. al, to make online therapy more effective.¹⁸

OST also allows children to be paired up with the therapist who speaks the same dialect as the child but resides far away from the later. A meta-analysis from Griner and Smith t shown that interventions targeted to a specific cultural group were four times more effective than interventions provided to groups consisting of clients from a variety of cultural backgrounds; and similarly interventions conducted in clients' native language were twice as effective.¹⁹

We would like to mention limitation of the study. Only less than one third of the contacted parents agreed to participate in the study. Taking consent over the telephone seems to be challenging as many things cannot be clarified like in face to face conversation. For future studies, direct communication can help the researchers convince more people to join the study. The study presents the perceptions of the only those who participated in it. Further, we did not evaluate the effectiveness of online speech therapy as it was a feasibility study. Another study will be required to look into it.

CONCLUSIONS

Online speech therapy is feasible in the situations when the children cannot meet the provider in person. Depending upon the familiarity of participants with technologies, OST can be an alternative to face-to-face therapy. Further studies are required to assess the outcome of speech following OST and compare it with face-to-face speech therapy.

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CONFLICT OF INTEREST

The authors declared no potential conflict of interest with respect to research, authorship and publication of the article.

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