Perception of speech therapists and parents on use of telepractice for paediatric speech therapy in Sri Lanka

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Abstract

The use of communication technology to deliver speech therapy (telepractice) was highly considered during the COVID-19 pandemic. However, a few Speech and Language Therapists (SLTs) and parents engaged in telepractice in Sri Lanka. Therefore, it was essential to identify the factors that encouraged and prevented the successful implementation of telepractice. A descriptive cross-sectional study was followed using a sequential mixed-method approach. Thirty SLTs and sixty-two parents who use telepractice services participated in the study. Quantitative data were collected through a self–administered online survey and analysed using descriptive statistics. The telephone interviews were conducted to obtain qualitative data from five SLTs and ten parents, on which thematic analysis was performed. Sixty percent of SLTs and 84% of parents considered telepractice an effective procedure similar to face–to–face therapy. However, SLTs emphasised that telepractice is applicable, subject to the child's condition and other factors. Participants' perception of telepractice was mainly based on their experience. Parent involvement in the speech therapy sessions was found to be high because of the implementation of asynchronous and hybrid modes of telepractice. Providing appropriate training in therapy strategies and educating parents on the use of technology may improve speech therapy services through telepractice in Sri Lanka.

Introduction

Communication technology in the healthcare system has changed from traditional healthcare procedures to providing high-quality, patient-centered services to patients. Telepractice is defined by the American Speech-Language-Hearing Association (ASHA) as the use of telecommunications technology to provide professional services to a patient or another clinician across a network for diagnostic, treatment, and consultation purposes (ASHA, 2016a). Research showed that conducting assessments and interventions (Allen & Shane, 2014), delivering parental coaching sessions and counselling parents or patients (Meadan et al., 2016) can be successfully implemented via telepractice.

Telepractice provides a meaningful solution to speech and language assessments, interventions, and consultations, minimizing environmental challenges in accessing speech therapy services. ASHA (2018) specifies three types of telepractice: synchronous, asynchronous, and hybrid. The synchronous (client interactive) service provides intervention similar to traditional therapy through interactive video and audio, creating a real-time connection with the client or a group of patients. The asynchronous (store-and-forward) includes images, data, video clips, or independent client practice outcomes transmitted for interpretation by professionals. The hybrid is a mixture of both synchronous and asynchronous or in-person services.

Initial studies on telepractice studies have investigated the efficacy of telepractice in terms of cost-efficiency, travel-related time savings, and as a solution for postponing or cancelling appointments (Anderson et al., 2014; Hill & Miller, 2012). Also, Telepractice allows parents to spend time with their children in a natural environment, understand evidence-based practice, consider self-reflection, and make decisions to improve their children's functional communication (Snodgrass et al., 2016). In studies conducted in Australia, a significant number of speech therapists reported having adequate knowledge, confidence, and positive attitudes and perceived telepractice to be flexible for both clinicians and families (Hill & Miller, 2012; Hines et al., 2015).

Despite the effectiveness, telepractice was hardly employed globally. A survey conducted on 205 SLTs and audiologists in India found that only 12.9% of the SLTs delivered services via telepractice, which was less than in the other countries (Mohan et al., 2017). Uncertainty in following telepractice (Cole et al., 2019; Fairweather et al., 2016) and not having adequate specialized training opportunities, resources, and reimbursement were the main factors that prevented implementation (Dorsey & Topol, 2016; Keck & Doarn, 2014).

Speech therapy through telepractice became a necessity in Sri Lanka, the same as in other countries during the COVID-19 pandemic (Fong et al., 2020). However, the challenges and limitations have remained comparable to pre-pandemic. A study conducted in the United States on 37 parents of children with disabilities showed that most parents prefer face-to-face intervention rather than telepractice. Identified challenges were low knowledge of technology and other facilities, lack of interest in the child on an electronic device, which affects rapport with the clinician, no physical guidance, and fear of using videoconference without a controlled environment (Yang et al., 2020). An online survey of 135 SLTs to obtain details on the clinical use

of telepractice, knowledge, perception, and existing delivery experience toward telepractice during the period of the COVID-19 pandemic in Hong- Kong found that only 35% of SLTs deliver speech therapy service via telepractice. Most SLTs never had specific technical training to implement the telepractice, and they strongly agreed that the applicability of the telepractice depends on the client's condition (Fong et al., 2020).

Telepractice was a relatively new approach for Sri Lankan SLTs. Since there are a smaller number of SLTs and parents involved in telepractice, it was essential to determine the status of the procedure to understand effectiveness, resources, and barriers in clinical services, as well as to determine the possibility of conducting telepractice against any difficult period of health, political and environmental conditions. The present study aimed to explored SLTs' and parents' perceptions of using telepractice in managing paediatric speech and language disorders in Sri Lanka.

Materials and Methods

A sequential mixed-method design was carried out. SLTs providing therapy for paediatric speech and language disorders and the parents of their clientele were the study population in this study. Participants who partially completed the online questionnaire and parents who had not attended telepractice for more than 2 sessions were excluded from the study.

Sample Size

Thirty speech and language therapists who conducted telepractice and 62 parents of children with paediatric speech-language disorders in different clinical settings (government and private hospitals, university, and private clinical settings) were included in the group that received the online survey questionnaire.

Evidence-based research articles supported the mentioned sample size for the study population. Yoo, Yoon, Lee, Hong, and Choi (2020) conducted an online survey on 23 speech and language pathologists and 50 parents to identify the considerable factors for the establishment of telepractice in Korea. The study on family perceptions towards telepractice recruited only 37 participants (Yang et al., 2020). Another pilot study surveyed 33 parents to determine their level of satisfaction towards telepractice (Crutchley & Campbell, 2010).

Five speech and language therapists and ten parents of children with speech and language disorders (selected from the same participants who were recruited for the online survey questionnaire) were included in the phone interview.

Law (2016) conducted a semi-structured individual interview on 10 parents to examine the efficacy of using a mobile application for parent coaching to improve functional communication in children with autism. An article conducted an in-depth qualitative interview with five speech therapists to obtain their perceptions of delivering telepractice in schools for children with communication disorders (Tucker, 2012).

With the limited time allocation and limited resources for the data collection, the sample size of the study was kept relatively small. Also, the telepractice service delivery model was quite new for the speech therapy profession in Sri Lanka. Hence, a few speech therapists were conducting telepractice services. Due to the limited number of participants involved in the telepractice, the same participants were also included in the phone interview. Also, the use of the same participant for both survey and phone interviews increased the data triangulation of the study. The previous study also conducted an online survey, phone interview, and online coaching log. The same participants who attended the online survey were included for phone interviews by considering their interest in the phone interview (Douglas et al., 2019).

Sample technique, Study Instruments and Procedure

Quantitative data were gathered through a self-administered questionnaire., SLTs were included via snowball sampling, while simple random sampling was used to recruit parents. The sampling frame of the parents was made from the list of contact details given by the SLTs of their clients with prior consent. The contact information of the SLTs who use telepractice was obtained from the Department of Disability Studies, Faculty of Medicine, University of Kelaniya. Each participant received an e-mail or message, including the link to the consent form, the research information sheet, and the link to the questionnaire. The questions were demographic details, knowledge, perception, effectiveness, competency in technology, and financial benefits. Details on the clinical population, client progression, environmental barriers, previous experience, and training about telepractice were sought from the SLTs. In contrast, the applicability of telepractice, feedback from SLTs and the perception of parents working with children during telepractice were obtained from the parents.

A qualitative component was included to obtain in-depth details via a telephone interview regarding the SLTs' and parents' perceptions towards telepractice. The SLTs were chosen by simple random sampling from the SLTs who responded to the online survey. On the other hand, parents were categorized into groups based on their child's disorder, and a stratified sampling method was applied. This method ensured no bias in the study findings towards a specific disorder. The interview guide contained open-ended questions related to attitudes, recommendations, and criticisms about the use of telepractice and was developed based on the questions that were used in previous studies (Grogan-Johnson et al., 2010; Overby & Baft-Neff, 2016; Sicotte et al., 2003; Yang et al., 2020).

A pilot study was conducted to obtain face validation of the questionnaires and interview guides. Three SLTs and five parents attempted the data collection materials and provided comments on each item regarding the readability, clarity, and comprehensiveness. The pilot study participants were not included in the main study.

Data analysis

The quantitative data were analysed using descriptive statistics. The information on discrete variables was presented as absolute frequencies and percentages. The thematic analysis method was used to analyse the qualitative data. The steps in the thematic analysis process involved transcribing the recording, a close reading of the text and creation of initial codes, finding themes,

analysis of themes, and describing the themes (Maguire & Delahunt, 2017). Data was collected from October to November 2021.

Ethical consideration

Ethics approval for the study (P/67/09/2020-D) was obtained from the Ethics Review Committee of the Faculty of Medicine Ragama, University of Kelaniya. The participant's information sheet was shared and an informed consent form was obtained for each participant for this study through a web link.

The participants' security and confidentiality were protected by giving a code rather than the use of their names or identification markers. Participants were always allowed to express their ideas and concerns during the interview. All the collected data was accessible only for the supervisor and the researcher. All data was stored in a computer with password-protection which was used only for this study. The data will be destroyed after one year of the completion of the study.

Results

Participant demographics

Thirty SLTs and sixty-two parents of children with paediatric speech-language disorders completed the online questionnaire. The majority of participants were female. Most SLTs had a working experience between 1- 5 years (37%) and worked in both government and private sectors (47%). The majority of participants in the parents' group were mothers (95%) and were from Gampaha (47%) and Colombo (34%) districts. Most of them have children in preschool age (57%).

Table 1: Demographic details of the participants.

SLTs		Frequency (%) n=30	Parents		Frequency (%) n=62
Gender	Male	4 (13%)	Child's Age	< 1 year	4 (7%)
	Female	26 (87%)		1-5 years	35 (57%)
Work experience	< 1 year	7 (23%)		5-10 year	20 (32%)
	1-5 years	11 (37%)		> 10 years	3 (5%)
	6- 10 years	5 (17%)	Primary caregiver	Mother	59 (95%)
	11- 15 years	4 (13%)		Father	1 (2%)
	16- 20 years	1 (3%)		Guardian	2 (3%)
	21- 25 years	2		Sinhala	51

		(7%)	Language Used		(82%)
				English	11 (18%)
Employment setting	Government sector only	10 (33%)	District of residence	Gampaha	29 (47%)
	Private sector only	6 (20%)		Colombo	21 (34%)
	Both	14 (47%)		Other	12 (19%)

Existing telepractice service provision

The majority of SLTs acknowledged that telepractice was initiated mainly due to the Covid-19 pandemic (77%) (Figure 1). All SLTs used telepractice for delivering therapy (100%) followed by conducting assessments (80%) (Table 2). Hybrid mode was the popular method to deliver telepractice (70%) (Figure 2).
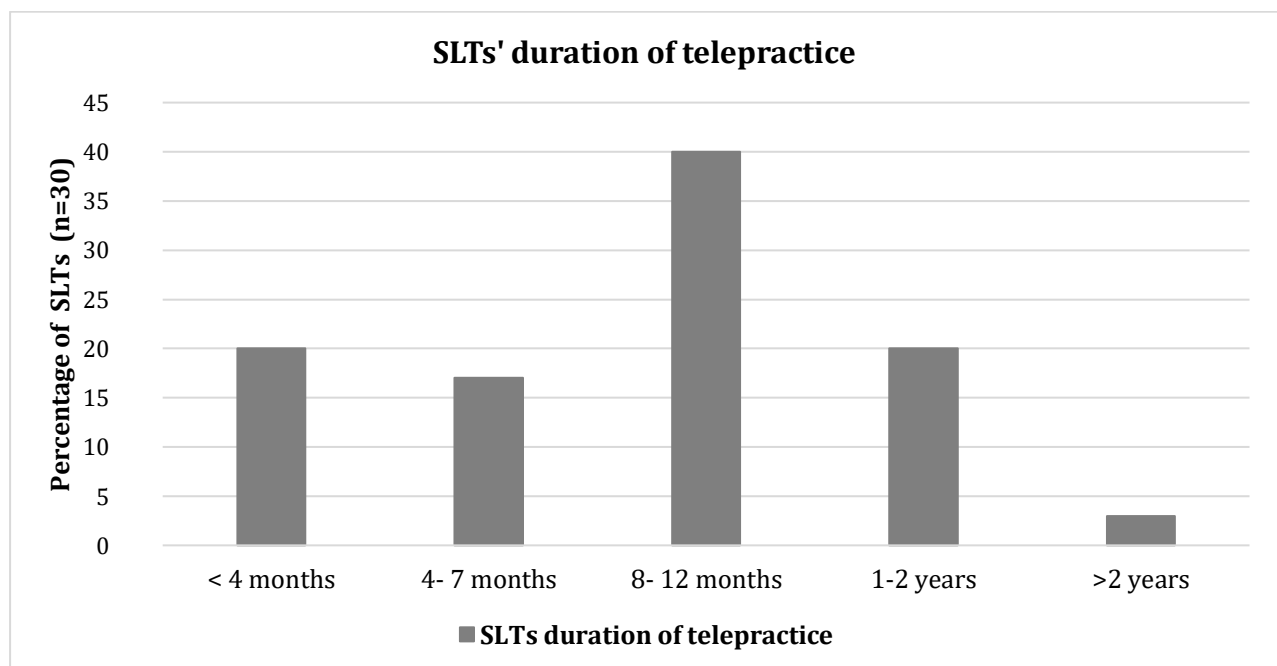

Figure 1:Distribution of SLTs according to the duration of telepractice.

Table 2: Percentage of delivered sessions according to the type of service provided by the SLTs.

Types of sessions	Frequency (%) n= 30
Screening /Assessment/ Intervention/ Counselling	12 (40%)
Screening / Assessment / Interventions	7 (23.3%)
Assessments/ Interventions	4 (13.3%)

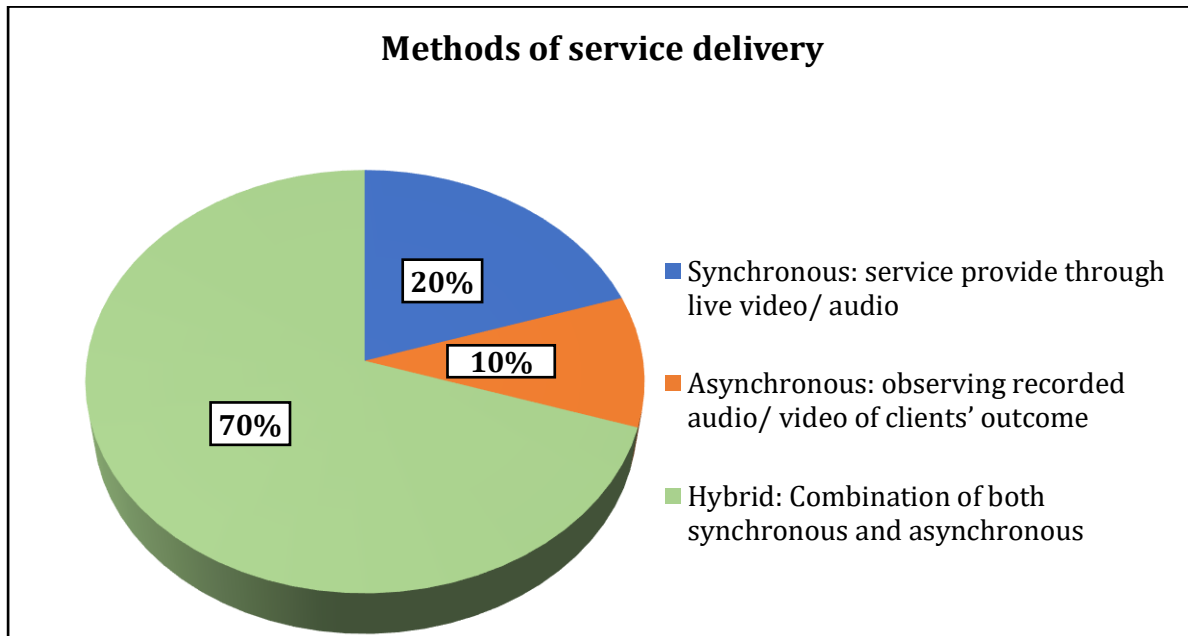|	
Interventions only	5 (16.7%)
Assessment/ Intervention / Counselling	1 (3.3%)
Screening / Intervention/ Counselling	1 (3.3%)

Figure 2: Distribution of SLTs according to the method used to deliver telepractice.

Speech- language therapists' perceptions towards telepractice

While 60% of SLTs have undergone considerable training before implementing telepractice, 93% of SLTs' believed that continuing professional development sessions might decrease their incredulity about the use of telepractice. Though 60% of them believed the telepractice service was as effective as traditional face-to-face sessions, 33% of participants observed that their clients performed less. Most SLTs (90%) agreed that efficacy depends on the child's condition and felt that children can achieve therapeutic goals via telepractice (Table 3).

Table 3: Speech Language Therapists perception on telepractice

How SLT's view on telepractice	Level of agreement (n = 30)				
	Strongly Agree	Agree	Undecided	Disagree	Strongly disagree
I have undergone considerable training before implementing the telepractice	13%	47%	20%	20%	0%
Telepractice service should always be in the manner of real-time relationship and interaction between clinician and the child	17%	40%	30%	10%	3%
My technological competence is sufficient to deliver telepractice	17%	73%	7%	3%	0%

The effectiveness of telepractice is highly dependent on the client's condition	63%	30%	3%	3%	0%
There is a growing body of evidence supporting telepractice	23%	70%	7%	0%	0%
CPDs on telepractice are necessary	53%	40%	7%	0%	0%
I believe the telepractice model is as effective as the traditional model	10%	50%	27%	13%	0%
On average clients' performances are better on telepractice compared to face-to-face therapy	0%	30%	37%	33%	0%
I believe that any child can achieve therapeutic goals through telepractice	7%	83%	7%	3%	0%
I feel that the telepractice service is a useful tool	80%	17%	3%	0%	0%

Parents' perceptions towards telepractice

A considerable number of parents in the study indicated that they understand the objectives of telepractice (92%) and have a positive attitude (84%). Many parents reported adequate access to the therapist, infrastructure, more engagement with their child, and cost & time benefits when the therapy is delivered via telepractice. However, half of the parents were either uncertain or dissatisfied with their child's engagement level in therapy compared to in-person therapy sessions (Table 4).

Table 4: Parents' perception regarding the effectiveness and implementation of telepractice

How parents view effectiveness and implementation of telepractice	Level of agreement (n= 62)				
	Strongly Agree	Agree	Undecided	Disagree	Strongly disagree
I have a good understanding of the objectives of the telepractice procedure	19%	73%	7%	2%	0%
I have difficulties with technology (access to applications and the internet)	0%	10%	15%	53%	23%
I can manage the infrastructure facilities (internet, instruments, connections, and therapy activities)	11%	76%	8%	2%	3%
I have similar positive attitude on telepractice	16%	68%	7%	10%	0%
Taking speech therapist's advice and getting feedback is more convenient via telepractice.	52%	40%	7%	2%	0%
I feel fear, anxiety and uncomfortable when therapy is conducted via telepractice	2%	3%	13%	36%	47%

I had more opportunities to interact with my child through the telepractice.	39%	44%	10%	8%	0%
My child's involvement in both telepractice and face- to face therapy sessions are at the same level.	18%	32%	34%	11%	5%
Telepractice helps in my child's progress further.	29%	47%	21%	2%	2%
It is cost-effective to attend telepractice.	50%	44%	3%	2%	2%
It is time-effective to attend telepractice.	39%	44%	10%	8%	0%

Qualitative study

Fifteen interviews were conducted with five (n= 5) SLTs and ten (n=10) parents, which revealed five themes.

Theme 1: *SLTs tend to have predetermined factors and disability conditions that they consider before delivering services via telepractice.*

Overall, SLTs considered the eligibility of the patient for telepractice based on the availability of devices (smartphone/laptop/tablet) and knowledge to use it, internet connection, an environment with minimal distractions, the child's ability to follow instructions, and severity of the condition (n =4). SLTs admitted that telepractice is successful for relatively older children diagnosed with a learning disability, language delay, autism spectrum disorder (ASD), or cortico-visual impairment. Also, they stated that telepractice is challenging for those with severe ASD, hearing impairment, younger children with stammering, attention deficits, and those who require tactile cues such as cerebral palsy (n= 5).

Theme 2: Procedure- sessions were focused on parent coaching.

SLTs have conducted video-based assessments and focused on parent-coaching programs (n= 4). SLTs had to change materials, documentation, and outcome measurements when conducting sessions via telepractice, such as playing demonstration videos and using animated PowerPoint presentations (n=5). The therapy materials were shared with parents as PDFs, Word documents, power points, and links to related videos through messaging applications or emails (SLTs n = 3 & Parents n =3).

Theme 3: Benefits- Flexibility, safety, time and cost benefits.

Flexibility in conducting sessions in different environments, less structured, hence better engagement of the child for the activities, and more involvement of the fathers were noted by the SLTs (n = 3). According to parents' perception, there is progress in the child when conducting therapy online. (n= 2) Convenience in scheduling sessions, no travelling issues, cost-benefit, safety from the pandemic, increased therapist-parent communication, and an alert child were the advantages of teletherapy (n= 6). Parents also stated an improvement in their understanding of conducting home-based activities with their children (n= 3).

Theme 4: Barriers to implementing telepractice.

SLTs identified barriers like lack of physical guidance for the child, poor internet connection, access to materials, and lack of time management (n= 4) . Also, parents with less motivation and less responsiveness have been reported by some SLTs (n=5). Connectivity issues, difficulty in video recording, lack of child's progress, poor technical skills in using the phone, and children getting highly distracted in the presence of the phone were the barriers faced by parents (n= 6). However, some parents did not report difficulty attending online sessions (n= 5).

Theme 5: Suggestions to improve telepractice.

SLTs suggested that increasing awareness among parents and SLTs by conducting workshops, providing formal training for SLTs and university students, conducting further research for evidence and developing culturally appropriate guidelines are essential for the implementation of telepractice (n= 5). Furthermore, they especially mentioned selecting materials, creating new strategies to improve child's specific skills like pragmatics, social interaction, and learning new techniques needed before implementing the telepractice (n=2). Self-management strategies such as parent education on using online platforms and telecommunication devices, video demonstrations of various tasks/ activities, and sharing online tools/ applications related to speech therapy were the suggestions from parents (n= 6).

Discussion

Despite the existing research on telepractice, which had only focused on one target group, either clinicians or parents, this study examined both parents' and SLTs' knowledge and perception towards telepractice during the COVID-19 pandemic. This study was the first investigation of the use of telepractice in both SLTs and parents in Sri Lanka.

Existing telepractice service

Only one SLT of the current survey has provided telepractice for over two years. Compared with other parts of the world, in Hong Kong (2020), 12.8% continued telepractice for more than 3 years (Fong et al., 2020). According to the American Speech-Language-Hearing Association (2016), 57% of participants used telepractice for > 3 years. Implementation of telepractice rapidly increased during the COVID-19 pandemic, where 40% of participants have started telepractice within the past 8 -12 months.

The group that belongs to preschool children was the popular age group to receive telepractice, followed by school-age children. The recent research also showed a similar finding regarding age groups (ASHA, 2016a; Fong et al., 2020; Kraljevic et al., 2020). Telepractice can effectively be implemented in the paediatric population because they are willing to learn new things using technology (Anderson et al., 2014).

In Sri Lanka, telepractice was mainly used for delivering treatments (33%), followed by assessments (27.5%), which could be an indication that the SLTs started telepractice with familiar patients rather than new patients (Hill & Miller, 2012; Fong et al., 2020).

Telepractice can be delivered in 3 models: synchronous, asynchronous or hybrid. Though the SLTs indicated that they use a hybrid model, the findings from the phone interview show a higher rate of SLTs following the asynchronous model followed by the hybrid model. Real-time interaction supports observing the client's live performance, similar to face-to-face sessions (Grogan-Johnson et al., 2013; Theodoros, 2011). Therefore, SLTs must select the most appropriate method based on individual and family needs.

Perception towards telepractice

Most SLTs agreed with the statement: "Telepractice effectiveness highly depends on the child's condition". This statement was specified by the American Speech and Hearing Association, which has defined ethics to consider before engaging in telepractice (Euben, 2020). Environmental factors, family background, type of speech therapy sessions, and skill level of SLTs are the other factors that need to be considered before implementing telepractice (Cason & Cohn, 2014; Crutchley & Campbell, 2010; Hines et al., 2015).

The importance of professional development, adequate training, access to reliable resources, and evidence-based support for the successful implementation of telepractice were highlighted by the SLTs. A few participants mentioned that they had not undergone training before implementing the telepractice. The American Speech and Hearing Association specifies that clinicians must have adequate training before using telepractice (Euben, 2020; Keck & Doarn, 2014). Training would decrease the SLT's misconception towards the use of telepractice, facilitate following ethical guidelines and increase the effectiveness of telepractice by using evidence-based practice (Fong et al., 2020; Hill & Miller, 2012).

Many SLTs and parents agreed that telepractice sessions were as efficient as face-to-face intervention sessions. Active parent engagement increases natural learning opportunities and improves communication between parent-child and SLTs (Cole et al., 2019; Hill & Miller, 2012; Hines et al., 2015; Yang et al., 2020). Meanwhile, half of the parents experienced specific barriers to continuing telepractice. Linking to the current research findings, the previous researchers also reported several barriers to effective implementation of telepractice, such as lack of technical knowledge, lack of parent support and child engagement, limited personal interaction, restriction to one place, technical errors, and other environmental barriers (Hines et al., 2015; Grogan-Johnson et al., 2013; Keck & Doarn, 2014; Lam et al., 2021; Yang et al., 2020). Kraljevic et al. (2020) suggested that a child's physical, communication, cognitive and sensory level can affect the performance during telepractice.

The participants in this study were not restricted to a particular setting, region, age group, or condition, allowing the findings to be generalized to the entire population. Using both qualitative and quantitative methods enhanced the validity and reliability of data. Furthermore, the study results aligned with the previous studies by Hill & Miller (2012) and Lam et al. (2021), which could be considered a strength of the current study.

The study was limited to a small sample size due to time restriction. Another limitation of this study was the exclusion of participants who do not use telepractice, as their views were also valuable to adopt to enhance the telepractice service for further implementation. Also, during the

study period, there was a rapid increase in the application of telepractice due to several instances of lockdown in the country related to the COVID-19 pandemic. Hence, the participants' responses towards the latter part of the survey showed a positive attitude and higher knowledge. Future studies could focus on the current study's limitations to resolve the barriers and successful implementation of telepractice in Sri Lanka.

Conclusion

Currently, telepractice is conducted for various paediatric clinical populations to provide intervention. However, the results of the study showed most participants effectively use telepractice in current clinical settings because both parents and SLTs reported that they had a high level of confidence, satisfaction, and positive attitudes towards the use of telepractice. Both groups identified a range of advantages, such as enhanced parents' involvement in sessions, improvement in the child, and ability to overcome logistical challenges after conducting several sessions. In addition, speech therapists identified that parents' involvement in therapy sessions significantly increased due to telepractice and showed better outcomes from their children on speech-language therapy. Significant barriers for the participants included difficulties related to the children's and family's needs and the problem of infrastructure facilities. However, most of the participants had rapidly moved to use telepractice due to this COVID-19 pandemic without adequately recognizing the process and addressing the challenges. In that case, some participants had negative attitudes and misconceptions about telepractice. Conducting awareness programs, using self-management strategies, providing training and technological knowledge, developing standard guidelines, and increasing access to resources were the suggestions to improve telepractice.

Conflict of Interest

The authors confirm that they have no conflict of interest.

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