

Experience Delivering Tele-practice Services among Upcoming and Working Professionals of Speech Language Pathology

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Abstract

Introduction Since the outbreak of the COVID-19 epidemic, tele-practice has become the new normal in the field of Speech-Language Pathology. Students and professionals throughout the country are embracing this new normal. Both groups confront problems; documentation of the problems may provide insight into how to improve tele-practice services.

Aim The purpose of this study was to compare the problems that undergraduate students, postgraduate students, and working professionals in the field of Speech-Language Pathology experience in daily practice.

Methods A descriptive cross-sectional survey study using a web-based questionnaire was conducted to examine the obstacles experienced by students and working professionals in the field of speech-language pathology, as well as their perspectives about tele-practice. There was a total of 20 questions. Divided into four sections, closed questions and Likert scale questions were used for demographic details, practice aspects, experience during telerehabilitation, and evaluation and treatment.

Results The study had 118 participants (47% postgraduate students, 29% undergraduate students, and 24% professionals). Only 16% of clinicians were properly trained to provide services via tele-mode. All participants reported providing service to the pediatric population to be challenging, with autism spectrum disorder, fluency disorders, and hearing impairment to be difficult to handle cases. In tele-mode, undergraduate students reported a decrease in the number of cases and difficulties selecting therapy materials when compared with the other two groups. All three groups reported a lack of evidence-based teletherapy resources available. There was no difference in perceived difficulty between the three groups while conducting assessment and achieving treatment goals via tele-mode.

Conclusion Tele-practice is generally recognized and employed, according to data availability. In terms of resource selection, evaluation, and treatment sessions, the difficulties faced by students and experts are disturbing. In the realm of speech-

Keywords

- tele-practice
- challenges
- communication disorders
- assessment
- evidence-based resources
- quality of service

language pathology, strategies to address these issues could pave the way for tele-practice. As a result, better policies are strongly advised to address these difficulties to improve future tele-mode service quality.

Introduction

Coronavirus disease 2019 (COVID-19) is caused by a new coronavirus strain dubbed “2019 novel coronavirus” or “2019-nCoV” at the time of its discovery.¹ Due to the current COVID 19 pandemic, different measures such as wearing masks, hand washing, and social distancing have been implemented all around the world to prevent the disease from spreading. Due to limited movement and lockdown limitations, it has influenced the quality of services provided to residents.² This has had a significant impact on the health care profession, as treating patients in person has become increasingly difficult. As a result, the potential of technology in nearly every aspect of life has been investigated for health care providers to reach the unreached.³

As health care has become a primary issue for any country, a range of models and ways for providing services to people with health problems have arisen, including tele-practice services.⁴ Tele-practice is the use of telecommunications technology to provide speech-language pathology and audiology professional services from a distance, allowing clinicians and clients to communicate for consultation.

Tele-practice has also been investigated as a means of providing services to people with communication impairments.^{4–10} Communication problems provide special challenges in service delivery because chronic problems typically demand long-term “rehabilitation” rather than traditional medical therapy for physical ailments. As a result, “tele-practice” appears to be a viable option for providing services to people with communication impairments who are separated by geographic, physical, social, and cultural barriers.^{11,12} There are several different ways to provide tele-practice services. Asynchronous (i.e., capture and transmit images or data for viewing or interpretation by a professional) services may connect a client or a group of clients with a clinician, or they may include consultation between a clinician and a specialist or synchronous (service provided in real-time) paradigm or hybrid mode of tele-practice are some examples.^{11,12} Both of these techniques are frequently employed in tele-practice due to concerns such as inadequate connectivity, lack of client compliance, and/or caregiver availability throughout the sessions.

India has a population of 1.34 billion people, of which around 4% have communication challenges.¹³ There are roughly 84 training institutions in India providing speech and hearing courses. The number of competent professionals required to meet the demands of a 4% population (1,854 speech-language pathologists (SLPs) and audiologists in India, according to the Indian Speech and Hearing Association [ISHA] directory) is 48,000,000, which is insufficient, resulting in a supply-demand ratio of roughly 1:32,000.¹⁴ In

India, even though the majority of professionals feel that tele-practice is a useful type of service delivery, only a small percentage of professionals are engaged in providing these services.⁸ Professionals may be hesitant to provide services for a variety of reasons, including a lack of infrastructure, restricted access to resources, a lack of training opportunities, among others.^{4,5,8,15} Although tele-practice instruction and practice standards are becoming more widely available, little is known about the training provided to pre-service speech-language pathology students. Most studies have considered professional experiences with tele-practice^{4,5,9,15} but only a few have considered the perspectives of speech-language pathology students who are also involved in providing tele-practice services as part of their clinical practicum.

The current situation of speech-language pathology and audiology tele-practice training at the university level was investigated in a study.¹⁶ A survey was distributed to directors of graduate programs in speech-language pathology and audiology. Most of the respondents (37.9%) thought that tele-practice should be made available to graduate students in speech-language pathology and audiology programs. Only 26% of reporting universities, on the other hand, teach clinical and academic components of the tele-practice service delivery paradigm.¹⁶ As a result, more research is needed to learn more about the experiences of students and professionals who provide tele-practice services. The purpose of this research is to compare the challenges that students and professionals in the fields of speech-language pathology experience during tele-practice.

Methods

Participants

A descriptive cross-sectional study was conducted among students (both undergraduate [UG] and postgraduate [PG]), and professionals of speech-language pathology practicing in India. UG students included third-year students and those practicing as Interns (fourth-year BASLP students). PG students included students from both first and second-year masters in the field of Speech-Language Pathology. Professionals included were those who practiced with patients having speech and language disorders. The study included both male and female participants who had prior experience of at least 1 year delivering telerehabilitation services.

Questionnaire Development and Validation

The main aim of the questionnaire to collate evidence about the work experience of both students and professionals practicing speech-language pathology during the COVID-19 pandemic. For the present study, approximately 30

relevant questions from previous studies^{15,17} were selected. The questionnaire comprised of four sections. Questions were either closed end or open ended. Responses to closed questions were in a Likert scale or in the form of multiple choice. The questionnaire elicited demographic details in first section, practice aspects (years of experience, training received, age group working with, difficulty handling cases, types of case-load, difficulty taking specific cases) in the second section. These questions were followed by questions related to availability and evidence-based tele resources in Indian context in section three. Final section of questionnaire assessed evaluation and treatment-related experience of the clinicians.

Validation

These questions were distributed among three SLPs and were asked to rate the relevancy of the questions along with three parameters, i.e., relevant, quite relevant, somewhat relevant, and not relevant. Items rated as relevant or quite relevant were considered for study while other items were discarded. Scale content validity index¹⁹ was used and a calculated score of 0.90 was obtained. Finally, a 20-item questionnaire was developed and a pilot study among five SLPs was performed. The final version of the questionnaire was developed in the form of google form (Appendix).

Data Collection

Data was collected from June 20th, 2021 to July 5th, 2021. The developed google form was sent via various social networking platforms like WhatsApp, Messenger, and Gmail to 200 practicing clinicians from various institute hospitals, and clinics in India. Exponential non-discriminative snowball sampling was used for data collection.

Data Analysis

The data obtained were descriptively analyzed for continuous variables while discrete variables were analyzed with frequency and percentage. A central theme of the open-ended questions was taken. All the analyses were performed using IBM Statistical Package for Social Sciences (SPSS) version 25.0. (SPSS Inc., Chicago, Illinois, United States)

Results

The survey received responses from 118 respondents (56 postgraduate students, 34 undergraduate students, and 28 SLPs). In total, 77.97% (92) of the participants worked in an institutional setting, whereas 12.71% (15) worked in a private clinic. The remaining 9.32% (11) were connected to hospitals. Four of the PG students and professionals, as well as three UG students, reported being practicing at hospitals. When asked about their tele-practice experience, all UG and PG students, and 97.5% of professionals reported having less than 5 years of experience, while the remaining 2.5% of professionals said they had more than 5 years. Only 16% (18) of participants said they received some form of training, including 44.44% (8) of PG students, 38.89% (7) of professionals, and 16.67% (3) of UG students. Participants

Table 1 Age group of clients

Age group of clients (years)	Post graduate students (N = 56)	Undergraduate students (N = 33)	Professionals (N = 29)
0–5	49	33	25
5–10	31	13	12
10–20	17	6	6
20–50	19	4	8
50–70	14	1	7
Above 70	0	0	6

Table 2 Difficult to handle patient group

Difficult to handle patient group	Post Graduate student	Undergraduate student	Professionals
Children	54	30	19
Adult	3	0	0
Geriatric	8	1	6
None	3	2	5

were asked to list the types of patients they dealt with, as well as those who were difficult to deal with. ►Table 1 displays the age group with which three groups of participants are working, whereas ►Table 2 depicts the most challenging cases to tackle.

The participants were asked an open-ended question on the types of communication difficulties they were dealing with. Participants provided a variety of responses. The most common type of case they dealt with was child language disorder (CLD), followed by fluency disorder, voice disorder, adult language disorder (ALD), dysarthria, speech sound disorder, and swallowing disorder. These data are summarized in ►Fig. 1. When compared with two other groups, the number of cases handled by PG students is higher.

The participants were asked if they had any trouble taking cases online. In total, 67.5% said it was more difficult to take cases online than in person. Out of the 67.5% who reported difficulty taking online sessions for communication problems, 48.75% (39) were PG students, followed by 26.25% (21) UG students, and 25% (20) professionals. Following that, in an open-ended question, participants were asked to name three disorders that they had trouble managing during their tele-practice. Participants predominantly reported difficulty with pediatric cases. Children with behavioral difficulties, such as autism spectrum disorder (ASD), attention-deficit hyperactivity disorder (ADHD), and hearing impairment (HI), were particularly challenging to manage in pediatric cases. Also mentioned were disorders such as intellectual disability, learning disability, cleft lip and palate, and swallowing abnormalities, which were categorized as "others."

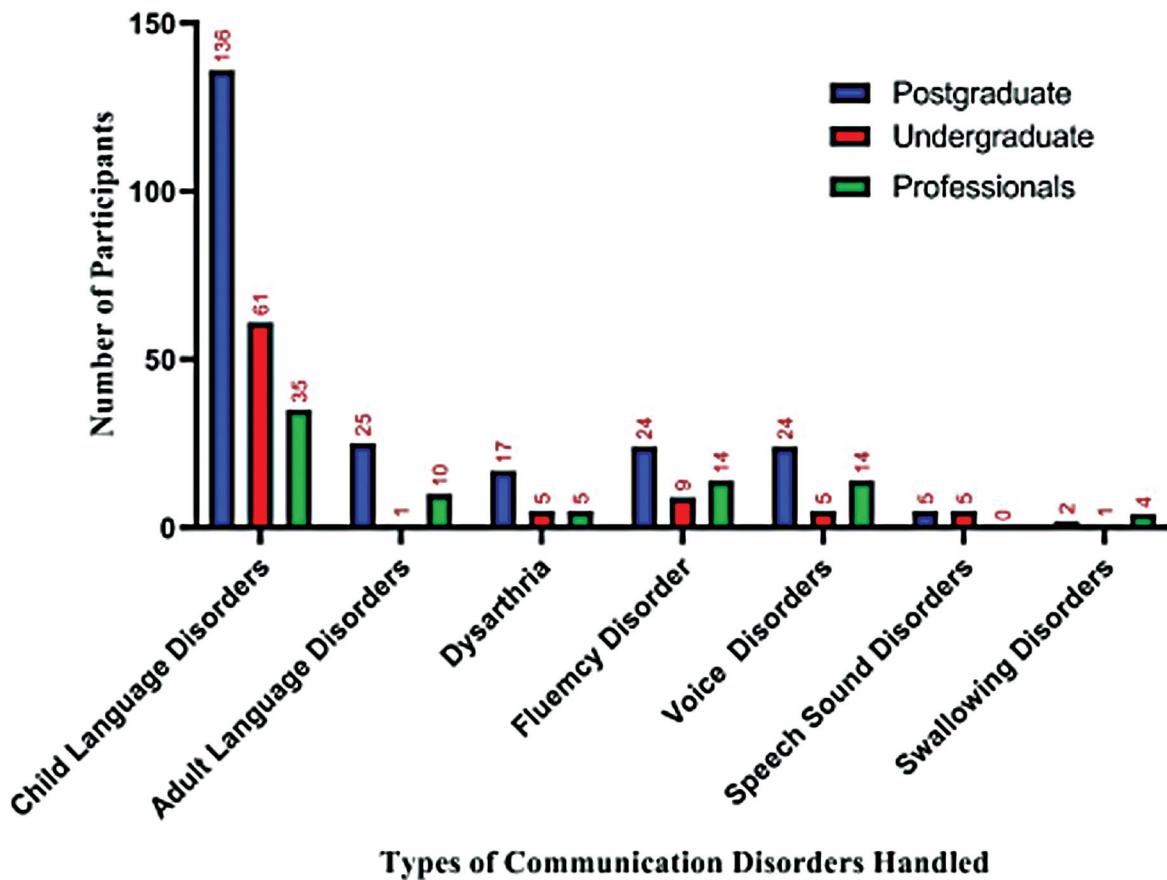


Fig. 1 Number of participants handling various communication disorders.

The responses' specifics have been summarized in ►Fig. 2 below.

Section I had two questions. The reduction in the number of cases experienced by both students and professionals as a result of the shift to online service delivery was measured using a multiple-choice question with a 5-point Likert scale, with 1 indicating strongly disagree and 5 indicating strongly agree. Participants' average responses for PG students, UG students, and professionals were 3.48, 4.27, and 3.34, respectively, indicating that there was no difference in caseload between in-person and online service provided. The second question focused at how interested clinicians thought their clients were in online treatment versus face-to-face therapy, with mean averages of 2.78, 3.51, and 2.96 for the three groups, respectively. This indicates that UG students (3.51) believed their clients were less engaged in online sessions, while the other two groups experienced no difference in service delivery methods.

Participants' perspectives regarding choosing evidence-based culturally and linguistically appropriate teletherapy resources were assessed through three questions in section II of the questionnaire, with a 5-point Likert scale where 1 indicated strongly disagree and 5 indicated strongly agree. Postgraduate and undergraduate students revealed they faced difficulty choosing tele resources, with 3.30 and 4.03

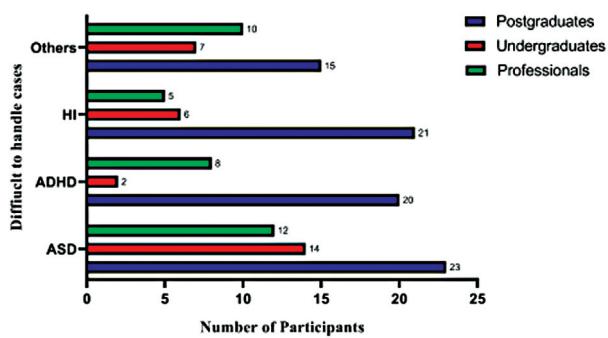


Fig. 2 Difficult to handle cases.

as an average response on the Likert scale, while professionals neither reported to have difficulty nor felt easy in accessing tele resources with an average response of 2.72. All the participants from three groups agreed on the lack of evidence-based tele resources globally and in the Indian language too, with an average response of 3.62 and 4.11, respectively. Following this, an open-ended question was asked regarding the sources of tele resources they used for their clients. Approximately 72% of participants responded to use various freely available online-based resources like Boom Cards, Pinterest, Pinkcatgames, tiny taps, ABCYA, etc., while

the rest stated that they develop tele resources by themselves as per the need of the clients.

The final section marked out the challenges that participants faced while undergoing assessment and treatment via telemedicine. During tele-practice, questions about assessing clients, completing goals, and training caregivers were evaluated on a 5-point Likert scale. In the absence of a caregiver, participants from three groups (PG, UG, and professional) reported difficulty assessing clients, with average responses of 4.35, 4.60, and 4.31, respectively. The average response of PG students and professionals to the question about accomplishing goals via tele method was 2.91 and 3.24, respectively. While UG students stated that they have trouble accomplishing their goals, the average response from this group was 3.90. Similarly, with an average response of 3.14, postgraduate students were neutral when asked about the difficulty of educating caretakers via tele method. UG groups and professionals, on the other hand, agreed that training caregivers is challenging, with average ratings of 3.87 and 3.48, respectively.

Discussion

The purpose of this study was to examine the experiences of students and professionals in the fields of speech-language pathology who provide tele-practice services. Postgraduate students responded most to the survey, followed by undergraduate students and working professionals. The majority of them had less than 5 years of experience providing tele-practice services, with only a few having more than 5 years of experience. This finding is in line with other research that has identified tele-practice as an emerging modality of service delivery.^{6,8,15,20} One reason for such findings could be the increased need to take up services in the current scenario of the pandemic as opposed to previous situation when face-to-face therapy was still an option.

Training Experience

When questioned if the respondents had gotten any training, it was discovered that postgraduate students followed by working professionals, and undergraduate students had received training. This could be because the first two groups had greater hands-on experience with patients. Also, because these groups of clinicians are more experienced, they are more likely to seek out training opportunities to develop their independence in their practice, which is still developing at the undergraduate level. A similar study reports that a minimum qualification of postgraduation is needed.⁸ Similar findings were found in a study regarding the inclusion of tele-practice services in students' curriculum which reported only 26% of the programs to include these services in curriculum.¹⁶

Types of Disorders Served

The most common type of communication disorder dealt with by the respondents was CLD, followed by fluency disorder, voice disorder, ALD, dysarthria, speech sound disorder, and finally swallowing disorder when asked about

specific disorders in the caseload and challenges faced. The majority of the cases are related to CLDs because of the higher prevalence of these groups of communication disorders.²⁰ With an increase in awareness regarding early identification and early intervention, the number of CLDs is being diagnosed more. The majority of the participants (refer to **Table 2**) reported facing difficulty handling children with communication disorders through online mode. This finding is in agreement with findings of a study by Indian SLPs in Kerala.¹⁷ CLDs are found to be the most challenging in the online mode probably because it is difficult to gauge their attention, maintain interest and their movement is sometimes confined.^{9,15} Responses from participants revealed that children diagnosed with spoken language disorders secondary to conditions such as ASDs, attention deficit hyperactivity disorder, and HI were three groups of children difficult to deal with through online mode. Because of their underdeveloped pre-linguistic skills (e.g., sitting and attention), these youngsters have trouble understanding the directions given throughout the session, resulting in obstinacy. A study found that the majority of the pediatric population had difficulty dealing with child language challenges such as ASD, intellectual disability, multiple impairments, ADHD, and HI. This is due to the behavioral issues young kids have, as well as their inability to understand and communicate their needs in their environment.²¹

Comparison of Face-to-Face versus Online Therapy

Because parents/caregivers are more aware of the repercussions of communication difficulties on a client's quality of life, there was no reduction in the number of instances in the online mode compared with face-to-face counseling for all responders. Furthermore, because of the COVID-19 epidemic, telerehabilitation was the only modality of therapy available. Because of their lack of experience in the sector, undergraduate students believed their clients were less engaged in the online format. As a result, this set of professionals failed to adequately counsel caregivers. Since counseling is an important aspect to be present in one in the field of speech-language pathology, UG students with less clinical exposure tend to be less confident in addressing the questions of caregivers and thus do not gain sufficient trust from them. In a similar study when students were asked about challenges faced during tele-practice, the most essential tele-practice clinical skills students needed to learn were how to choose appropriate tele-practice materials and how to communicate with clients via the internet. Because of the difficulty in selecting appropriate tele-practice clinical materials, managing technology problems, and engaging with clients over the internet, several participants indicated that teaching and learning tele-practice was more difficult than in-person service delivery.²²

Choosing Resources for Teletherapy

When it came to selecting teletherapy materials, undergraduate and postgraduate students had more trouble than working professionals. This is owing to a shortage of training opportunities in the speech-language pathology academic

curriculum. Professionals, on the other hand, are allowed to attend national and worldwide workshops on a variety of topics, including teletherapy. Because the subject of tele-rehabilitation is still in its infancy and no research has been conducted in this sector, all respondents believe there is a shortage of evidence-based, culturally, and linguistically suitable resource materials.

The finding is consistent with other studies^{9,15,23,24} which also state the lack of appropriate resource materials for teletherapy. When questioned about specific apps/websites/materials used for teletherapy, the majority of respondents said they used freely available websites such as ABCYA, Pinterest, Pinkcatgames, and others, and that only a few custom-designed materials for their patients. Therefore, there is a lack of consensus among SLPs for use of teletherapy resources. This uneven choice of resources is due to a lack of monitoring and appropriate guidelines framed for tele-practice by the governing body (Rehabilitation Council of India and the ISHA) in the field. With the rise of digitization, finding required resources via websites has never been easier. It is imperative to note that the freely available websites are made for children in general, therefore they may not help to target specific goals of intervention for children with communication disorders. There is a need for field-tested and evidence-based resources for such resources.

Assessment and Management during Tele-Practice

In the absence of a caregiver, all three groups reported difficulty assessing patients in the online mode, most likely because clients do not understand the instructions provided to them, necessitating the presence of a caregiver during most sessions to explain the goals and follow the patient's home program. Because there are numerous sorts of tasks offered during this process that require regular monitoring and prompting from caregivers, a caregiver is required during evaluation and intervention.

The third component of the questionnaire was designed to highlight issues that arise during the evaluation and treatment of speech and language disorders. It was revealed that most sessions require the presence of a caregiver to explain the goals and implement the patient's home program. There was a positive reaction in terms of the patient's goals being met as compared with face-to-face therapy. Improved communication, expanded accessibility, online resource sharing, and even increased teletherapy session frequency could all have contributed to this. SLPs must determine whether clients or caregivers are comfortable using computers and technology, which are essential for tele-practice, whether or if children can use tele-practice equipment, and whether or not their cognitive function or motor ability is sufficient to acquire speech.¹⁹ Another intriguing conclusion from our research is that PG students had no trouble or difficulty accomplishing goals during teletherapy, however, UG students and working professionals had difficulties attaining goals. Because there are more PG students in this study, the results may have been influenced due to this. In comparison to UG students and professionals, PG students and profes-

sionals have a leg up as rising professionals with more tele-practice experience. This could be due to the fact that PG students' continued with their theoretical knowledge and practical experience, which assisted them in providing services.

Conclusion

Tele-practice has become the new model of service delivery in the field of speech-language pathology. Students and professionals in this field were involved in providing service to the needy during the pandemic and this is currently being effective too. Both clinicians and clients are benefitting from this new mode of service. However, due to the lack of appropriate training for service delivery through tele mode, the quality of service being provided is questionable. Both the clinicians and clients do face multiple challenges. Poor connectivity, lack of quality gadgets, uncooperative clients and caregivers, and lack of evidence-based tele resources are frequently encountered challenges by the clinicians. To overcome the challenges of poor connectivity and expensive data packs, a hybrid teleservice delivery approach (asynchronous and synchronous) can be utilized. Therefore, it is highly recommended to address these aspects before delivering services via tele-mode to enhance the quality of service.

Future Directions

The authors propose creating a curriculum for academic and professional tele-practice training, highlighting the main aspects of effective clinical training in a tele-practice service model, establishing how to translate clinical instruction from an in-person service model to a live, engaging teleconferencing model, and trying to establish a tele-practice service delivery model with minimal connectivity. The graduate training program should explore merging clinical and academic training in the tele-practice service model to successfully prepare students for a future work setting that incorporates a tele-practice service model.

Ethical Standards

The manuscript adheres to the ethical standards according to the Declaration of Helsinki.

Ethical Approval

All procedures performed in this study were in accordance with the ethical guidelines of bio-behavioral research involving human subjects of the All India Institute of Speech and Hearing, Mysore.

Informed Consent

Informed consent was obtained from the patient to participate in the study.

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None.

Conflict of Interest

None declared.

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