TELE SPEECH-LANGUAGE PATHOLOGY AND AUDIOLOGY IN INDIA - A SHORT REPORT

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Abstract

Background: The discipline of Speech-Language Pathology and Audiology is half-a-century old in India. Speech language pathologists and audiologists (SLPs and AUDs) have identified the need to 'reach-the-unreached' in India by using a telehealth model for rehabilitation of persons with communication disorders. The aim of this paper is to present a panoramic view of telepractice in India right from its emergence to its current state, drawing support from a review of published work by SLPs and AUDs in India. Methods: A questionnaire was developed to elicit responses on barriers for telepractice and similarities and differences in face-to-face and telepractice of speech-language pathology service delivery. Using survey research design, 17 speech-language pathologists practicing in India were purposively selected for the study. Results: 15 questionnaires were completed. Most respondents (53.3% - 86.6%) reported technical issues as barriers for telepractice. Face-to-face and telepractice of speech language pathology service delivery was reported to be different in terms of instructions for caregivers, documentation, face validity, acceptance and responsibility on caregivers. Many participants felt that more sensitivity and caution, special ICT skills for clinician and caregiver/client, exclusive software, dedicated professionals to trouble shoot technical issues are additional requirements for telepractice. Concerns about client confidentiality were expressed and lack of direct feedback and environmental distractions at client end were reported as challenges in telepractice delivery. Conclusions: The study demonstrates that service delivery through tele model is mostly positively embraced in India, despite the challenges.

Keywords: telepractice; telemedicine; speech-language pathology; audiology; videoconference; India

Introduction

Telepractice (telemedicine) is changing the face of speech-language pathology and audiology. It is the application of telecommunication technologies for the delivery of speech-language pathology and audiology professional services at a distance by linking clinician to client or clinician to clinician for assessment and intervention and or consultation.[1] Factors such as rapid developments in technology, the audio-visual nature of the interaction between clinician and the client, improving access to care, and equitable access, make delivery of speech-language pathology services eminently suitable for telepractice.[2] Added advantages are timely delivery of services in a natural environment and fewer cancellations.[3]

Telepractice is a swiftly emerging field globally. In Australia, one of the international "early adopters" of telepractice significant investment of time, effort and funds are made at the federal government level to promote telepractice. The Royal Institute for Deaf and Blind Children receives federal funding to initiate the teleschool programme with dedicated video-conferencing equipment installed in homes to facilitate interaction between practitioners and families of children who are deaf and hard of hearing.[4] In the United States of America, as early as 1998, the National Institute on Disability and Rehabilitation Research recognised the potential benefits of telerehabilitation in primary, secondary and tertiary prevention. As technology evolved, Internet-based videoconferencing using a computer with a web-camera and Voice over Internet Protocol software (e.g., Skype, Facetime) was used and the efficacy for delivering habilitative and rehabilitative services has been demonstrated.[5-8]

Through the work of the American Speech and Hearing Association (ASHA)'s Special Interest Group 18-Telepractice, more than 1,000 speech-language pathologists and audiologists were listed as affiliates for telepractice within a span of four years. To spread

the significance of telepractice, the 2015 ASHA convention earmarked telepractice as a topic for discussion.[9] Across the European countries, although 'telehealth' was not defined by the European Commission until 2013, the European Code of Practice for Telehealth Services defined it as the means by which technology and related services concerned with people's health and wellbeing are accessed by them or provided to them at a distance.[10] While the focus is on health in the European countries, a survey in Croatia in Eastern Europe suggests that there is awareness of the benefits of remote and online rehabilitation and that the speech-language pathologists and audiologists have the minimum ICT and computer literacy requirements necessary for 'telehealth'.[10]

In India, speech language pathology and audiology is only a decade old and already making promising strides in telepractice. The infrastructure available in 'digital India' is one of the factors facilitating this growth.[11] The few published reports on telepractice in India, suggest that the speech-language pathologists and audiologists are making their own efforts towards effective telepractice in various ways. The launch and inauguration of a specialised centre for rehabilitation and education through distance mode in 2009, by a premier national institute in South India may be considered as a formal beginning of teleservices.[12] Intensive efforts are being made to overcome the lack of skills for telepractice, spread awareness about its benefits and build-up the necessary technological, human resources, as well as resources for clinical service delivery in speech-language pathology and audiology.

The first case report of the use of telepractice in India in 2012 was of a person with Aphasia.[13] It marked the acceptance of telepractice by the client and caregiver that encouraged expanding the sphere of telepractice. The patient showed significant improvement in the domains of expression, repetition, naming and memory achieved through telepractice. The impact of communication, activity limitation and emotional wellbeing was assessed, and significant improvement in the domains of Communication Difficulty and Communication Associated Psychological Distress was reported.[13] The case report provided evidence that telepractice is feasible and an effective mode of therapy for persons with aphasia. The authors proposed the need to explore the efficacy of telepractice across various communication disorders as

well as age groups in the Indian context.

A thirteen year review of telemedicine in a tertiary care hospital in south India was published in 2016.[14] It emphasised the scope of telepractice with respect to revenue model not only for clinical applications but also for continuing education and research. Despite use of the term telemedicine in the report, the authors explained how speech-language pathologists and audiologists' skills were interspersed within the healthcare system. The paper substantiated the role of speech-language pathologists and audiologists in the overall healthcare through telepractice.

In the light of increased interest in telepractice and in the absence of information on its status in India, the first ever survey on telepractice in India was carried out.[15] Speech-language pathologists and audiologists across the country were requested to respond to an Internet-based questionnaire. The questionnaire explored the status of telepractice in speech-language pathology and audiology in India, and collated the opinions of speech-language pathologists and audiologists providing services through telepractice model (n=25) or face-to-face model (n=180) about telepractice in India. Of those in the face to face group the majority reported that they were aware of telepractice, perceived that telepractice can be a viable form of service delivery, 73% were of the opinion that the professional must be certified for telepractice and 82% felt that the infrastructure required for telepractice is different from conventional in-person service delivery. All telepractitioners and 28% of the face to face group felt that telepractice should be provided by those with postgraduate degree in speech-language pathology or audiology and 28% of telepractitioners and 9.4% of the face to face group were of the opinion that a short-term training certification course in telepractice should be made mandatory for professionals to deliver clinical services through telepractice. Both groups (telepractitioners 68% and face to face 86%) noted that there are insufficient resources (i.e., structural framework; technical support, materials) to provide appropriate speech-language pathology and audiology services through telepractice in India. Over 90% of both groups expressed the need for mandatory legal guidelines for the conduct of telepractice in speech-language pathology and audiology and that policies and technologies should protect clinician and client privacy and security in telepractice. Over 70% of the telepractitioners felt that

a standard protocol to document the services delivered via telepractice is essential. The findings of the survey endorse the feasibility of providing speech-language pathology and audiology services through telepractice to enable better quality care in settings and regions where the physical presence of experts is unavailable.

Traditionally, clinical practice with persons with communication disorders has been through face-to-face model. As telepractice is an emerging trend in India, there is need evaluate the feasibility of telepractice as against face-to-face. The aim of this study was to evaluate whether the barriers reported for telepractice in speech language pathology in India are similar to those reported in the USA. The second aim was to explore the differences in face-to-face and the tele model in speech-language pathology service delivery and to study the practical implications of this.

Methods

A survey research design using a locally developed questionnaire for the purpose was used. The study was carried out in two stages. In the first stage, review of literature on barriers for telepractice was undertaken and similarities and differences in face-to-face and telepractice of speech-language pathology service delivery as perceived by speech-language pathologists were shortlisted and questions developed. Content validity was checked by professionals certified for clinical practice in Audiology/Speech language pathology. All questions were considered valid and modification of the sentence structure of two questions was suggested and these were revised.

The questionnaire was e-mailed to the participants involved in telepractice with instructions. The initial part of the questionnaire elicited socio demographic details. The body of the questionnaire had seventeen questions. (Appendix A) All the questions were binary choice questions with "yes" and "no" answers. An additional column to fill in any comment or remarks relevant to the answer for the particular question was provided. Seventeen speech-language pathologists practicing in Mysore and Bangalore districts of Karnataka, India who were known to use telepractice were purposively sampled and reminders to respond to the questionnaire were sent to elicit response from all participants. The All India Institute of Speech and Hearing Ethical Guidelines for Bio-Behavioural Research 2.1e and 2.4c were followed for the current study.[16]

Results

Fifteen of the 17 participants (88.3%) responded to the questionnaire. All fifteen participants were aged in their twenties and 13 were female. All had experience in face to face consultation and three to 18 months experience of tele speech language pathology service delivery. They were all multilingual, speaking at least three languages and all spoke English. Telepractice services were provided mostly in the native language of the clients. In instances of children who went to school with English as medium of instruction, and clients who sought therapy in two languages, speech-language therapy services were provided in two languages, mostly in the native language and English as required by the clients and caregivers.

Internet bandwidth used for telepractice ranged from 10 Mbps to 20Mbps. All but one respondent worked in a Government of India funded clinical setting. Those in government services made extensive use of freeware such as Skype and Teamviewer and used the dedicated videoconferencing facility sparingly for telepractice and the respondent in the private sector used Skype. Telepractice services were provided locally and to clients in other states across the country.

The responses to the 17 items in the questions are presented in Table 1.

Discussion

Although there was acceptance of telepractice, both the service receivers and the service providers perceived certain differences between the two models of service delivery. From the service providers' view, the technical barriers such as network problems and issues with videoconferencing software packages reported are similar to studies conducted in other countries.[17-19] From the service receivers' end, the concerns were enhanced responsibility of caregivers, uncertainty about professionals' skills, and lack of face validity that would ensue automatically in a physical setting.

Despite the above, and given the acceptance and the enthusiasm among the speech-language pathologists and audiologists and the clients, a previous survey reflected on the prospects and challenges for telepractice in India, and noted that the platform for telepractice in India is well set with considerable number of people being 'digitally literate'.[20] However, there are certain concerns to be addressed. The immediate concerns are development of: professional

Table 1. Questionnaire and responses.

Questions	Yes (%)
Technical barriers for telepractice	
Are there any issues in establishing internet connectivity (poor, slow, intermittent connectivity errors)?	13 (86.7)
Are there any issues related to software (Skype, Team viewer, Google hangout etc.) for video conferencing with the clients?	5 (53.3)
Is the infrastructure at the client end liable for connectivity errors? (camera resolution, speed of the internet, microphone sensitivity)	13 (86.7)
Differences in face-to-face and tele model at provider end	
Is there a difference in the usage of descriptive instructions for the caregivers in tele model and face-to-face model of speech-language pathology service delivery?	11 (73.3)
Is the documentation and record maintenance similar in both tele model and face-to-face model of speech-language pathology service delivery?	7 (46.7)
Differences in face-to-face and tele model at patient end	
Is the face validity for face-to-face model and tele model of speech-language pathology service delivery similar?	2 (13.3)
Is the acceptance of tele model by clients similar to face-to-face model of speech language pathology service delivery ?	6 (40.0)
Is the responsibility on the caregiver at the client end for tele model similar to face-to-face model of speech language pathology service delivery?	5 (33.3)
Additional requirements for telepractice	
Does it require more sensitivity and caution in tele model than in face-to-face model of speech-language pathology service delivery?	15 (100)
Are special ICT skills required for tele of speech-language pathology service delivery	13 (86.7)
Is the preparation time required to deliver speech-language pathology services through face-to-face model and tele model similar?	4 (26.7)
Is the tele model of speech-language pathology service delivery dependent on the exclusive tools and software?	12 (80.0)
Is there a requirement of a dedicated professional to fix technical issues, troubleshoot and update technological options available in tele model of service delivery?	14 (93.3)
Does the caregivers at the client end required to have computer knowledge to avail tele model of service delivery?	14 (93.3)
Concerns about client confidentiality	
Are there issues to protect clients' personal details and resource materials disseminated from unethical users?	6 (40.0)
Challenges in telepractice delivery in relation to face-to-face model	
Does lack of direct feedback in person affect the quality of tele model of speech language pathology service delivery?	14 (93.3)
Are the effects of environmental distractions at the client end more in tele model than in face-to-face model of speech language pathology service delivery?	13 (86.7)

skills for telepractice; validation of digital resources in the different languages of India that are bi/trilingual in nature to suit the population; empirical studies on mode of service delivery in telepractice (face-to-face, virtual or hybrid); mechanisms to protect client's privacy on e-platforms; and revision of code of ethics for speech-language pathologists and audiologists who are using telepractice.

The positive attitudes of speech-language pathologists and audiologists to embrace service delivery through telepractice has resulted in several organizations and independent clinics offering teleservices across India.[21,22] The Rehabilitation Council of India's 2016 document on scope of practice for speech-language pathologists and audiologists approved screening, assessment, management and rehabilitation through either direct (Face-to-Face) or telepractice.[23] However, the lack of ethical guidelines, and issues related to privacy and confidentiality on e-platforms, cost-benefit and risk analysis, evidence-based practice measures, data protection, and an audit of clinical services need immediate attention. This paper serves as a starting point.

In view of telepractice gearing-up at a fast pace in India, there is a need for a regulatory body to ensure privacy of beneficiaries, adherence to code of ethics for

telepractice by speech-language pathologists and audiologists, uniformity in training for telepractice skills, for which efforts are made at institutional level to frame terms and conditions for Indian context.[24,25] It should be noted that as yet, no such regulations or regulatory body exists for telemedicine of any form in India. The authors hope that telepractice would reach greater heights in India as witnessed with its decade growth in all dimensions.

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Appendix A

Name					
Age/Sex					
Qualification					
No. of years of experience					
Do you have the experienced to provide (place a tick mark against suitable option)	Face-to-face Speech language therapy		Tele speech language therapy		Both

Languages in which telepractice service delivery is provided to the clients	
Speech, language and hearing disorders served through telepractice	
Duration of experience in telepractice	
Internet bandwidth used for telepractice	
Setup in which telepractice is carried out	
Software packages used to connect through videoconferencing	

Instruction: Please respond with a tick mark for the most appropriate answer and provide remarks, if necessary.

Sl. No	Question	Yes	No	Remarks
1.	Are there any issues in establishing internet connectivity (poor, slow, intermittent connectivity errors)			
2.	Are there any issues related to software (Skype, Team viewer, Google hangout etc.) for video conferencing with the clients?			
3.	Is the infrastructure at the client end liable for connectivity errors? (camera resolution, speed of the internet, microphone sensitivity)			
4.	Is there a difference in the usage of descriptive instructions for the caregivers in tele model and face-to-face model of speech-language pathology service delivery			
5.	Is the documentation and record maintenance similar in both tele model and face-to-face model of speech-language pathology service delivery			
6.	Is the face validity for face-to-face model and tele model of speech-language pathology service delivery similar?			
7.	Is the acceptance of tele model by clients similar to face-to-face model of speech language pathology service delivery?			

8.	Is the responsibility on the caregiver at the client end for tele model similar to face-to-face model of speech language pathology service delivery?			
9.	Does it require more sensitivity and caution in tele model than in face-to-face model of speech-language pathology service delivery?			
10.	Are special ICT skills required for tele of speech-language pathology service delivery			
11.	Is the preparation time required to deliver speech-language pathology services through face-to-face model and tele model similar?			
12.	Is the tele model of speech-language pathology service delivery dependent on the exclusive tools and software?			
13.	Is there a requirement of a dedicated professional to fix technical issues, troubleshoot and update technological options available in tele model of service delivery?			
14.	Does the caregivers at the client end required to have computer knowledge to avail tele model of service delivery?			
15.	Are there issues to protect clients' personal details and resource materials disseminated from unethical users?			
16.	Does lack of direct feedback in person affect the quality of tele model of speech language pathology service delivery?			
17.	Are the effects of environmental distractions at the client end more in tele model than in face-to-face model of speech language pathology service delivery?			