## Research Paper
# The Lived Experiences of Speech-language Pathologists Regarding the Use of Telepractice During the COVID-19 Pandemic in Iran

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## ABSTRACT

**Background:** The COVID-19 pandemic caused many challenges to various clinicians, including speech-language pathologists (SLPs). Remote rehabilitation or telepractice was widely used during this period as a convenient solution by many therapists who had no experience in this field. This study aimed to survey the lived experience of telepractice by Iranian SLPs during the COVID-19 pandemic to identify the benefits and disadvantages of this method.

**Materials and Methods:** This qualitative study was conducted using content analysis. Twenty SLPs participated in this study. They were selected using a purposive sampling method until data saturation was reached. Semi-structured face-to-face interviews were used to collect information. Data were coded using MAXQDA software. After coding, the data were analyzed using the thematic analysis method, and the main themes were extracted. Finally, the trustworthiness of the data was measured based on Lincoln and Guba's criteria.

**Results:** Five main themes were extracted, including "remote rehabilitation platforms", "increasing efficiency", "advantages", "difficulties", and "special opinions about telepractice". Although telepractice had many difficulties, its advantages led to its widespread use during the pandemic.

**Conclusion:** SLPs in Iran used telepractice as a remote rehabilitation method during the pandemic. This method can be used in future pandemics, although it requires removing existing problems and creating the necessary infrastructure.

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## Introduction

**T**he spread of COVID-19 was one of the disasters that affected the world and created an economic and social crisis [1-3]. Due to its high transmission speed, the World Health Organization (WHO) reported health protocols for preventing its spread. One of the main preventive measures was social distancing [4]. Gradually, with the spread of the virus and the increased number of infection cases, the countries implemented extensive lockdowns and mandated all businesses to shut down to cut the chain of transmission [5, 6]. Speech-language pathology (SLP) was one of the professions affected by COVID-19 due to the closure of businesses. During the COVID-19 pandemic, many speech therapy clients discontinued their therapy. Treatment of speech disorders is time-consuming. It requires repetition and continuity. Interrupting the sessions can cause many problems, especially for those in the golden period of their treatment [7, 8]. Due to non-compliance with health guidelines, the remote rehabilitation method or telepractice was one of the best alternative methods for face-to-face treatment [9]. Telepractice refers to using telecommunication services and the Internet to deliver treatment services with a distance between clinicians and patients, which is a suitable method in speech-language pathology [10].

There were several studies on the effectiveness of online treatments before the pandemic worldwide [11, 12], which increased considerably after the pandemic in online treatments was seen [13, 14]; however, the Iranian studies are limited. Tohidast et al. studied speech therapy services during the COVID-19 pandemic in Iran and only indicated the problems, concerns, and telepractice as a solution [8]. Mansuri et al. concluded that most therapists in Iran have a positive attitude towards telepractice [15]. There are also different studies on online treatment methods for specific speech and language disorders in different countries [7, 16-23]. In some countries, such as the USA and Australia, online therapeutic services have been provided for many years. However, in Iran and some other countries, many therapists had their first telepractice experience during the pandemic [14, 24]. Reviewing the experiences of other countries in the field of speech-language pathology can help pathologists improve the quality of their services and make appropriate decisions. Qualitative research helps obtain deep and rich data by collecting information from the people under study [25]. The present study aims to review the lived experiences of speech-language pathologists in Iran regarding telepractice during the COVID-19 pandemic.

## Materials and Methods

This is a qualitative study using interpretative phenomenological analysis (IPA). IPA is a type of phenomenological approach used to explore people's lived experiences [26]. Twenty Iranian speech-language pathologists who had engaged in clinical activity during the COVID-19 pandemic participated in the study. They were selected from different clinical settings, such as private clinics, hospitals, and rehabilitation centers, using a purposive sampling method and after reaching data saturation. Their work during the pandemic was online or a combination of online and face-to-face methods. They had a long working experience and were young. They had work experience in different speech, language, and dysphagia.

Face-to-face semi-structured interviews were conducted from September 2022 to February 2023. First, the information, including age, educational level, and clinical work history of participants, was recorded. The interviews started with an open-ended question, "Please describe your experience of working remotely during the pandemic," followed by other questions such as "In your opinion, what were the problems and limitations of telepractice?" and "What strategies did you use?". Each interview took 30-60 minutes. Informed consent was obtained from all participants to record the interviews.

Data analysis started after the end of each interview using the thematic analysis method. First, the interviews were transcribed and then read several times. Then, the key features of the statements were coded. Coding was done in MAXQDA software, version 2020. Then, codes were categorized and thematic clusters were prepared. In the next step, specific names were considered for each emerging theme. Finally, the themes and subthemes were reported.

Four criteria proposed by Lincoln and Guba were used to assess the trustworthiness of the data. These criteria included credibility, transferability, dependability, and confirmability [27]. To increase credibility, verbatim transcription and re-reading of the data for more than six months were used. Member checking technique was also used. After transcription, the data were sent to the participants to approve or correct the extracted codes. The data was described precisely to increase the transferability so that the findings can be transferred to other studies and they can judge the degree of compatibility

**Table 1.** Characteristics of the participants

| No. | Sex | Educational Status | Age (y) | Workspace | Work Experience (y) | Field of Clinical Activity |
|---|---|---|---|---|---|---|
| 1 | Female | Master's degree | 29 | Clinic, rehabilitation center | 5 | Developmental disorders |
| 2 | Female | Bachelor's degree | 36 | Private clinic, Hospital | 12 | Voice disorders |
| 3 | Female | Bachelor's degree | 38 | Private clinic | 13 | Developmental disorders |
| 4 | Female | Master's degree | 30 | Private clinic | 10 | Stuttering, phonological disorders |
| 5 | Male | PhD | 56 | Academic centers, private clinics | 30 | All types of disorders |
| 6 | Female | Master's degree | 23 | Private clinic, home visits | 2 | All types of disorders |
| 7 | Female | Bachelor's degree | 23 | Academic centers (intern), private clinics | 2 | Voice, phonological, and developmental disorders |
| 8 | Male | Bachelor's degree | 25 | Private clinics | 3 | Stuttering, aphasia, dysphagia, developmental disorders |
| 9 | Male | Master's degree | 24 | Private clinics, retirement centers | 3 | Dysphagia, aphasia, Stuttering, dyslexia |
| 10 | Female | Bachelor's degree | 23 | Academic centers (intern), private clinics | 2 | Developmental disorders, stuttering |
| 11 | Male | Master's degree | 32 | Private clinics, hospitals, home visits | 13 | Dysphagia, aphasia |
| 12 | Female | Bachelor's degree | 37 | Private clinics, hospitals, home visits | 16 | All types of disorders |
| 13 | Male | Bachelor's degree | 27 | Private clinics, rehabilitation centers, home visits | 5 | All types of disorders |
| 14 | Female | Bachelor's degree | 47 | Private clinics | 22 | Stuttering, developmental disorders, autism |
| 15 | Male | Master's degree | 27 | Private clinics | 5 | Developmental disorders |
| 16 | Male | Master's degree | 31 | Private clinics, home visits | 5 | Developmental disorders |
| 17 | Male | Bachelor's degree | 24 | Hospital, home visits | 4 | Dysphagia |
| 18 | Male | Master's degree | 50 | Hospital, private clinics, home visits | 25 | Voice disorders, dysphagia |
| 19 | Female | Master's degree | 43 | Hospital, private clinics, home visits | 17 | Dysphagia |
| 20 | Female | Master's degree | 32 | Hospitals | 10 | Voice disorders, developmental disorders |

of the findings. All steps and processes were recorded separately to increase dependability so that other studies can follow the study process, make decisions, and conduct audits. The data was provided to the research team members for review and approval to increase the confirmability of the data.

## Results

Table 1 shows the participants' characteristics. In total, 5 themes and 26 sub-themes were extracted from 20 interviews. These themes summarize participants' remote work experiences during the pandemic conditions and are listed in Table 2. The themes include remote rehabilitation platforms, increasing efficiency, advantages, difficulties of telepractice, and special opinions about telepractice.

### Remote rehabilitation platform

WhatsApp, Skype, Skyroom, Google Meet, and Gharar applications, which had can be used for video calling, were the most frequently used platforms for telepractice. Some therapists used phone calls, voice messages,

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**Table 2.** The extracted themes and subthemes

| Theme | Sub-theme |
| --- | --- |
| Remote rehabilitation platform | Mobile applications |
| | Presentation of training and receiving reports |
| | Method of encouragement |
| | Candidate cases |
| Increasing efficiency | Changing the approach |
| | Simplification |
| | Changing the timing |
| | Alternation between face-to-face and online methods |
| | Special individualized services |
| Advantages | Saving time and money |
| | Complete safety from COVID-19 |
| | Geographical spread of patients |
| | Increase in clients |
| Difficulties of telepractice | Rarity of technology |
| | Internet problems |
| | Lack of appropriate tools |
| | Lack of familiarity with the principles of remote rehabilitation |
| | Low cooperation of some patients |
| | Difficulty of the treatment |
| | Lack of some features of the face-to-face method |
| | Low security of information |
| | The need for extra time |
| | Impact on the quality of assessment and treatment |
| Special opinions about telepractice | Families precaution |
| | Preference |
| | Quality |

or texting in WhatsApp and Telegram applications. One therapist said: "I designed a panel and had sessions with patients with voice disorders online and offline. …." (P20). Some therapists used video calling to show how to train, while some texted the training descriptions. Most therapists received family reports through video calling, voice messages, or texts. Most therapists believed that not all patients were candidates for remote rehabilitation. The patients with different types of problems showed good therapeutic results through online therapy. These patients included people with speech disorders, stuttering, voice disorders, learning disorders, children with

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language delays who could attend the online sessions, and young children treated by indirect approach. Most therapists stated that remote rehabilitation was unsuitable for patients with dysphagia, attention and concentration deficits, autism, and hearing loss. Of course, some therapists had different opinions. One therapist said that: "We can visit adult cases with phonological and stuttering disorders online. Cases that need family counseling can also be considered" (P13).

### Increasing efficiency

For children who could not effectively participate in online sessions, most therapists chose indirect approaches and held online counseling with their parents, received feedback, and sent answers and corrections. The next sub-theme was simplification. According to the participants, simple exercises with low numbers of sessions can reduce the confusion and stress of patients and their families. Changing the timing was another factor in increasing efficiency or improving control and communication with the child patients. Most therapists devoted most of the session to family interaction and education, answering questions, and correcting exercises. Alternating between face-to-face and online meetings was another factor in increasing efficiency. Therapists held initial sessions for patients with voice and speech disorders first in person and then online. Special individualized services were also provided in some clinics to improve the efficiency of online sessions. For example, a virtual group was created for a clinic, and all therapists provided a general treatment plan to the patients online and answered their questions. In another clinic, meetings were conducted via video calling only in the first session; the rest of the sessions were conducted offline by sending voice and text messages. One of the therapists said: "In one case, I had a video calling with a mother who was using a handsfree. I told her what to do at each time, and she played with the child, and the child did not notice my online presence at all" (P17).

### Advantages

Saving time and money is an obvious advantage of telepractice during the COVID-19 pandemic, which was perceived by some participants. Another perceived advantage was the complete safety of both patients and therapists from COVID-19. For example, one oral examination was conducted using video calling, in which the patient was asked to bring the camera close to the mouth to get a close-up view. Remote rehabilitation provided good conditions for patients who could not move, patients from cities who did not have access to a therapist,

and Iranian patients from abroad who needed a Persian-speaking therapist. One of the therapists said: "One of the advantages was the possibility to communicate with other cities. I had patients who reported that there was no speech therapy clinic in their cities, and the online method enabled them to have speech therapy" (P16). Another advantage was the increase in the number of clients for some therapists, who previously had no access to a therapist.

### Difficulties of telepractice

Rarity of technology was one of the difficulties of telepractice. Not having access to digital tools in some cities and families' lack of familiarity with them also made it difficult to provide online services for some clients. Internet access problems and frequent disconnections disrupted therapy sessions, turning them into high-energy and time-consuming tasks or preventing them from being held. This factor as well as the speech therapist's vocal fatigue due to speaking loudly, caused them to stop online visits in some cases. Another major difficulty was the lack of suitable communication applications or software to advance treatment programs. The next problem was that some therapists needed to become more familiar with the issue of time management and session management in the presence of parents. Some patients need to recognize online treatments or have the necessary conditions and space at home to hold a remote therapy session [28]. Also, sometimes, they had unrealistic expectations. Some patients did not go online at the appointed time, but many became familiar with online sessions over time. Another difficulty of telepractice was the low cooperation of some child patients during sessions. According to the therapists, it was difficult to control the children and maintain their attention, especially in cases of attention deficits. Another problem was the lack of some features of the face-to-face method in the online method, such as expressions of empathy. The low security of information in cyberspace was another issue. One of the participants said: "I had a treatment session with one of my patients, who shared treatment details with another therapist and gave him my protocol without my permission. The lack of security in this space made me stop remote rehabilitation and focus on the clinic visit" (P14).

Another problem in online sessions was the need for extra time. Therapists had to explain the exercises briefly to the family instead of providing practical training. Patients wanted other exercises for the remaining time of the session, which was not possible until the completion of the previous stage. The impact on the quality of assessment and treatment was another problem of teleprac-

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tice. In face-to-face visits, the therapists could recognize the problems the patients did not express. Most recorded and sent voices were not of good quality for evaluation. In stuttering cases, the personality characteristics of the patients could not be evaluated accurately online. On the other hand, the treatment did not take place in the desired way because the level of anxiety was different between face-to-face and online methods. Online sessions were also problematic for patients with hearing problems due to the low sound quality. For dysphagia, one participant said: "In general, I think online evaluation for dysphagia is incomplete, and even decision-making based on it may be dangerous for the patient" (P18).

### Special opinions about telepractice

Some families preferred online services, while some were worried and had precautions about online treatment so they postponed the treatment. Most therapists believe that face-to-face therapy is preferable, and online therapy can only be used if face-to-face therapy is not possible. Online treatment is preferable for patients with special conditions such as geographic limitations. Most therapists believed that face-to-face therapy was of higher quality with faster progress than remote rehabilitation, while some therapists, especially those working with adults having voice disorders and stuttering, considered the quality of the two methods as similar. Over time, the quality of the online method may increase and become similar to that of face-to-face method.

## Discussion

This study aimed to review Iranian speech-language pathologists' experiences of telepractice during the COVID-19 pandemic. WhatsApp was the platform used widely. Other platforms, such as Skyroom (for targeted meetings), were also used. The used platforms for telepractice are different in different parts of the world according to the conditions of each country. Zoom, Hangouts, Skype, and WhatsApp are among the platforms used in foreign countries [13, 22, 24]. Some therapists used the features of these applications, such as sending stickers, videos, and text. As mentioned in other studies [29], clinicians should consider using a particular platform for holding treatment sessions because it can increase the quality and efficiency of the provided service. Also, online treatments can continue after the end of the pandemic and be used more widely in the future.

Speech-language therapists in our study perceived some factors that could increase the efficiency of telepractice with available facilities. Changing the approach from direct to indirect approach led to favorable family education, and its effect was ideal from the therapists' point of view. Consistent with the current study, Tar-Mahomed et al. considered more family participation in online treatment as a desirable effect [20]. The next factor was the provision of specialized information in simple and clear language and with low number of exercises. Therapists can only attract the child's cooperation for a short time. Simplifying the exercise leads to more cooperation and increased motivation in the family and ultimately increases the efficiency of the treatment. Moreover, speech-language therapists sometimes combined online sessions with face-to-face sessions. In other studies, face-to-face and online sessions have also been considered helpful for some patients [19, 30]. Even in the post-COVID era, alternation between face-to-face and online treatments can help patients and prevent treatment interruption. If protocols are prepared according to the general principles of telepractice, the effectiveness of online sessions will increase. Sylvan et al. also emphasized the necessity of developing telepractice guidelines for therapists present in schools [31].

Other studies confirmed complete safety as an essential advantage of online treatment during pandemics [20, 23]. This finding shows that online services can solve health crises [32]. The lack of access to specialized therapists in some areas, lack of time, and traffic problems in big cities are solved by online treatment [7, 33, 34]. For Iranian people living abroad, it was not easy to find a Persian-speaking speech-language therapist. Campbell and Goldstein found that more than 86% of the participants will continue online treatment even after the COVID-19 pandemic due to its various advantages [23], which increased the number of clients and, thus, the income of some therapists.

One of the difficulties of telepractice perceived by speech-language therapists was that some tools such as smart mobile phones, tablets, and laptops, were unavailable to some patients. Also, in some regions, due to cultural factors or low literacy, it was difficult for patients to use these tools, or they had no access to high-speed Internet. During the pandemic in Iran, most businesses and schools continued their work online through the Internet. This factor sometimes causes the weak status of Internet access. Internet problems have also been mentioned in many studies [13, 17, 20-23, 33]. Frequent Internet disconnections caused the interruption of the sessions, which wasted patients' and therapists' time and energy. Macoir et al. also noted the lack of suitable tools and materials for online therapeutic sessions [21] which is consistent with the present study. In many cases, the used

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applications were not specially designed to implement speech-language therapy. This factor made it difficult for the child patients to maintain attention during the session. Therapists in some countries have access to therapeutic games, and people widely use specialized sites [24]. Therefore, it seems necessary to design specialized software or applications for online speech-language therapy to provide a platform for presenting therapeutic stimuli. Low cooperation of some child patients during online sessions was another problem, which was also reported by some studies [30, 33]. The online sessions may only attract the child patient at home with a few environmental distractions. Due to the lack of familiarity with online treatment among patients and even some speech-language therapists, they needed to receive education. Some ergonomic factors such as noise and space are effective in a child's learning by remote teaching; therefore, these factors should be considered during the online treatment sessions, albeit it is difficult to provide them in some conditions [28]. Poor condition of the house during therapy sessions would double the problem of controlling the child, as noted by Campbell and Goldstein [23]. Unlike the present study, Tar-Mahomed et al. considered the child's presence at home as an advantage because the therapy sessions occur in a living environment [20].

Another issue not mentioned in other studies was the need for extra time in each session. Since the therapists mostly used verbal explanations, patients needed more time to practice. The patients were misunderstood and expected to go to the next stage of the treatment plan without reaching the goals, which was not possible. A solution for this problem is to reduce the number of therapy sessions, which can reduce the income level of the therapist. Contrary to the present study, Eerdenbrugh et al., in investigating the problems of telepractice, indicated that online sessions required more time for therapists than face-to-face sessions [24]. Waste of time to connect, child patients' low tolerance, families' indolence, and the perceived inadequacy of the therapy caused mental exhaustion in the therapist. The continuous use of phone, constant presence at home, and the psychological impact of the COVID-19 pandemic [35] also put additional pressure on the therapists.

Another difficulty of telepractice was low information security. The inability to identify patient information, patients' access to more than one therapist, ease of information exchange, and the possibility of receiving treatment simultaneously from multiple therapists reduce information security during telepractice. Rettinger et al. also indicated the low information security and the need to design highly secure software for therapeutic use [29].

The technical problems related to sound and image quality and the limited features of online tools also caused some problems in the evaluation and treatment. In the studies by Rettinger et al. and Cacciante et al., therapists reported the lack of physical contact as one of the difficulties of telepractice, which resulted in not forming a good therapeutic relationship [19, 29]. In general, most of the therapists in our study preferred the face-to-face method; however, far distance and movement problems made online treatment preferable in some cases, even in the post-COVID era. In Aggarwal et al.'s study, therapists had positive perceptions of online work [13]. Rettinger et al. showed that a small percentage of therapists considered the effectiveness of the online method similar to the face-to-face method [29]. Most speech-language therapists believed that online treatment was impossible for dysphagia, attention deficits, autism, and hearing loss cases. Online methods were possible for people with stuttering, voice, speech, and learning disorders, and language delays. The findings of Eerdenbrugh et al. [24] are consistent with our study. They showed some difficulties in online evaluation and intervention for patients with speech disorders, dysphagia, and attention-deficit/hyperactivity as well as older people. Al Awaji et al. aslo showed that remote rehabilitation was effective for stuttering, voice disorders, and childhood speech disorders but ineffective for autism and cerebral palsy [33].

The limitations of this study included the complexity of qualitative research sampling in the clinical field and the use of interviews to collect information, which may provide biased responses. Also, due to the fact that information was obtained from speech-language pathologists from one city of Iran, the results cannot be generalized to all therapists in Iran or other countries.

## Conclusion

The telepractice method was used by speech-language pathologists during the COVID-19 pandemic in Iran, although there was no appropriate platform and defined rules for this work. They provided online services as a practical solution for providing speech-language therapy in emergency cases. Proper planning for providing the necessary education to these therapists, providing suitable tools and facilities for online visits, and designing a therapeutic platform with high security should be considered to improve the quality of online speech-language pathology. The information provided in this study can help achieve more appropriate performance in future pandemics.

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## Ethical Considerations

### Compliance with ethical guidelines

For this study, ethical approval was obtained from Iran University of Medical Sciences (Code: IR.IUMS.REC.1401.445). Before the interviews, written and verbal informed consent was obtained from the participants. The study objectives and methods were explained to them, and they were free to leave the study at any time. They were assured that recorded interviews would be deleted after the end of the study and that their personal information would remain confidential.

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### Authors' contributions

All authors equally contributed to preparing this article.

### Conflict of interest

The authors declared no conflict of interest.

## References

[1] Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia. New England Journal of Medicine. 2020; 382(13):1199-1207. [DOI:10.1056/NEJMoa2001316] [PMID] [PMCID]

[2] Hite LM, McDonald KS. Careers after COVID-19: Challenges and changes. Human Resource Development International. 2020; 23(4):427-37. [DOI:10.1080/13678868.2020.1779576]

[3] Kabusi M, Sepehr P, Poursadeghian M, Zamani Z, Tahghighi H, Salehi Sahlabadi A, et al. Psychological effects of the outbreak of covid-19 on the mental health of healthcare workers in Iran. Iranian Rehabilitation Journal. 2022; 20(3):379-86. [DOI:10.32598/irj.20.3.1631.1]

[4] No author. About COVID-19 2021 [internet]. 2021 [Updated 2024 August]. Available from: [Link]

[5] Arefi MF, Poursadeqiyan M. A review of studies on the COVID-19 epidemic crisis disease with a preventive approach. Work. 2020; 66(4):717-29. [DOI:10.3233/WOR-203218] [PMID]

[6] Sohrabi C, Alsafi Z, O'neill N, Khan M, Kerwan A, Al-Jabir A, et al. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). International Journal of Surgery. 2020; 76:71-6. [DOI:10.1016/j.ijsu.2020.02.034] [PMID] [PMCID]

[7] Shahouzaie N, Gholamiyan Arefi M. Telehealth in speech and language therapy during the COVID-19 pandemic: A systematic review. Disability and Rehabilitation. Assistive Technology. 2024; 19(3):761-8. [DOI:10.1080/17483107.2022.2122605] [PMID]

[8] Tohidast SA, Mansuri B, Bagheri R, Azimi H. Provision of speech-language pathology services for the treatment of speech and language disorders in children during the COVID-19 pandemic: Problems, concerns, and solutions. International Journal of Pediatric Otorhinolaryngology. 2020; 138:110262. [DOI:10.1016/j.ijporl.2020.110262] [PMID] [PMCID]

[9] Dargahi A, Vosoughi Niri M, Zandian H, Poursadeqiyan M, Hamidzadeh Arbabi Y. Determinants of noncompliance with health guidelines related to covid-19 in Ardebil, Iran based on network analysis process. Health in Emergencies and Disasters Quarterly. 2023; 8(2):133-44. [Link]

[10] American Speech-Language-Hearing Association (ASHA). Telepractice 2020 [internet]. 2020 [Updated 2024 August]. Available from: [Link]

[11] Taylor OD, Armfield NR, Dodrill P, Smith AC. A review of the efficacy and effectiveness of using telehealth for paediatric speech and language assessment. Journal of Telemedicine and Telecare. 2014; 20(7):405-12. [DOI:10.1177/1357633X14552388] [PMID]

[12] Wales D, Skinner L, Hayman M. The efficacy of telehealth-delivered speech and language intervention for primary school-age children: A systematic review. International Journal of Telerehabilitation. 2017; 9(1):55-70. [DOI:10.5195/ijt.2017.6219] [PMID] [PMCID]

[13] Aggarwal K, Patel R, Ravi R. Uptake of telepractice among speech-language therapists following COVID-19 pandemic in India. Speech, Language and Hearing. 2021; 24(4):228-34. [DOI:10.1080/2050571X.2020.1812034]

[14] Fong R, Tsai CF, Yiu OY. The implementation of telepractice in speech language pathology in Hong Kong during the COVID-19 pandemic. Telemedicine Journal and E-Health. 2021; 27(1):30-8. [DOI:10.1089/tmj.2020.0223] [PMID]

[15] Mansuri B, Tohidast SA, Mokhlesin M, Choubineh M, Zarei M, Bagheri R, et al. Telepractice among speech and language pathologists: A KAP study during COVID-19 pandemic. Speech, Language and Hearing. 2022; 25(3):388-95. [DOI:10.1080/2050571X.2021.1976550]

[16] Samadi SA, Bakhshalizadeh-Moradi S, Khandani F, Foladgar M, Poursaid-Mohammad M, McConkey R. Using hybrid telepractice for supporting parents of children with ASD during the COVID-19 lockdown: A feasibility study in Iran. Brain Sciences. 2020; 10(11):892. [DOI:10.3390/brainsci10110892] [PMID] [PMCID]

[17] Kwok EYL, Chiu J, Rosenbaum P, Cunningham BJ. The process of telepractice implementation during the COVID-19 pandemic: A narrative inquiry of preschool speech-language pathologists and assistants from one center in Canada. BMC Health Services Research. 2022; 22(1):81. [DOI:10.1186/s12913-021-07454-5] [PMID] [PMCID]

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Ensafi Z, et al. The Lived Experiences of SlPs of Telepractice During the COVID-19. HDQ. 2024; 10(1):67-76.

[18] Karrim SB, Flack PS, Naidoo U, Beagle S, Pontin A. The experiences of speech-language therapists providing telerehabilitation services to children with autism spectrum disorder. South African Journal of Communication Disorders. 2022; 69(2):e1-12. [DOI:10.4102/sajcd.v69i2.917] [PMID] [PMCID]

[19] Cacciante L, Cieślik B, Rutkowski S, Rutkowska A, Kacperak K, Kuligowski T, et al. Feasibility, acceptability and limitations of speech and language telerehabilitation during COVID-19 lockdown: A qualitative research study on clinicians' perspectives. Healthcare. 2021; 9(11):1503. [DOI:10.3390/healthcare9111503] [PMID] [PMCID]

[20] Tar-Mahomed Z, Kater KA. The perspectives of speech-language pathologists: Providing teletherapy to patients with speech, language and swallowing difficulties during a COVID-19 context. South African Journal of Communication Disorders. 2022; 69(2):e1-7. [DOI:10.4102/sajcd.v69i2.902] [PMID] [PMCID]

[21] Macoir J, Desmarais C, Martel-Sauvageau V, Monetta L. Proactive changes in clinical practice as a result of the COVID19 pandemic: Survey on use of telepractice by Quebec speechlanguage pathologists. International Journal of Language & Communication Disorders. 2021; 56(5):1086-96. [DOI:10.1111/1460-6984.12669] [PMID] [PMCID]

[22] Tambyraja SR, Farquharson K, Coleman J. Speech-language teletherapy services for school-aged children in the United States during the COVID-19 pandemic. Journal of Education for Students Placed at Risk (JESPAR). 2021; 26(2):91-111. [DOI:10.1080/10824669.2021.1906249]

[23] Campbell DR, Goldstein H. Evolution of telehealth technology, evaluations, and therapy: Effects of the COVID-19 pandemic on pediatric speech-language pathology services. American Journal of Speech-Language Pathology. 2022; 31(1):271-86. [DOI:10.1044/2021_AJSLP-21-00069] [PMID]

[24] Van Eerdenbrugh S, Schraeyen K, Leysen H, Mostaert C, D'haenens W, Vandenborre D. Delivery of speech-language therapy and audiology services across the world at the start of the COVID-19 pandemic: A survey. Perspectives of the ASHA Special Interest Groups. 2022; 7(2):635-46. [DOI:10.1044/2021_PERSP-21-00134]

[25] Coolican H. Research methods and statistics in psychology. London: Psychology Press; 2014. [DOI:10.4324/9780203769836]

[26] Larkin M, Flowers P, Smith JA. Interpretative phenomenological analysis: Theory, method and research. London: SAGE Publications Ltd, 2021. [Link]

[27] Boswell C, Cannon S. Introduction to nursing research: incorporating evidence-based practice: Incorporating evidence-based practice. Massachusetts: Jones & Bartlett Learning; 2018. [Link]

[28] Soltaninejad M, Babaei-Pouya A, Poursadeqiyan M, Feiz Arefi M. Ergonomics factors influencing school education during the COVID-19 pandemic: A literature review. Work. 2021; 68(1):69-75. [DOI:10.3233/WOR-203355] [PMID]

[29] Rettinger L, Klupper C, Werner F, Putz P. Changing attitudes towards teletherapy in Austrian therapists during the COVID-19 pandemic. Journal of Telemedicine and Telecare. 2023; 29(5):406-14. [DOI:10.1177/1357633X20986038] [PMID] [PMCID]

[30] Kwok EYL, Pozniak K, Cunningham BJ, Rosenbaum P. Factors influencing the success of telepractice during the COVID-19 pandemic and preferences for post-pandemic services: An interview study with clinicians and parents. International Journal of Language & Communication Disorders. 2022; 57(6):1354-67. [DOI:10.1111/1460-6984.12760] [PMID] [PMCID]

[31] Sylvan L, Goldstein E, Crandall M. Capturing a moment in time: A survey of school-based speech-language pathologists' experiences in the immediate aftermath of the COVID-19 public health emergency. Perspectives of the ASHA Special Interest Groups. 2020; 5(6):1735-49. [DOI:10.1044/2020_PERSP-20-00182]

[32] Smith AC, Thomas E, Snoswell CL, Haydon H, Mehrotra A, Clemensen J, et al. Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19). Journal of Telemedicine and Telecare. 2020; 26(5):309-13. [DOI:10.1177/1357633X20916567] [PMID] [PMCID]

[33] Al Awaji NN, AlMudaiheem AA, Mortada EM. Changes in speech, language and swallowing services during the Covid-19 pandemic: The perspective of speech-language pathologists in Saudi Arabia. Plos One. 2022; 17(1):e0262498. [DOI:10.1371/journal.pone.0262498] [PMID] [PMCID]

[34] Chadd K, Moyse K, Enderby P. Impact of COVID-19 on the speech and language therapy profession and their patients. Frontiers in Neurology. 2021; 12:629190. [DOI:10.3389/fneur.2021.629190] [PMID] [PMCID]

[35] Feiz Arefi M, Poursadeqiyan M. Psychosocial problems during the COVID-19 epidemic crisis. Health in Emergencies and Disasters Quarterly. 2022; 7(2):57-8. [DOI:10.32598/hdq.7.2.189.20]

Ensafi Z, et al. The Lived Experiences of SIPs of Telepractice During the COVID-19. HDQ. 2024; 10(1):67-76.

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