

Telepractice in Speech and Language Pathology: An Investigation into its Effectiveness and
Potential Barriers

by

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Introduction

The World Health Organization defines telepractice as the use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health and health administration (World Health Organization, n.d.). Telepractice has the potential to provide individuals with access to care they may not otherwise be able to receive using traditional measures in the field of speech-language pathology. Despite evidence supporting it as a beneficial service delivery model, some clients face barriers when seeking telepractice for speech-language pathology.

Telepractice has been implemented for clients across the lifespan. However, prior to COVID-19, telehealth was used sparingly by speech-language pathology clinicians working in pediatric and adult populations (Campbell & Goldstein, 2021a). In fact, before March 2020, only 1.6% to 9% of global pediatric speech-language pathology services were provided via telehealth and using telecommunication technologies for video conferencing (American Speech-Language-Hearing Association [ASHA], 2020b; Fong et al., 2020; Hill & Miller, 2012; Lam et al., 2021; Mohan et al., 2017; Taylor et al., 2014; Tucker, 2012). This percentage has increased dramatically since the start of the pandemic. For example, Campbell and Goldstein (2021a) recently surveyed 293 speech-language pathology clinicians working predominately with pediatric populations. 87% reported using telepractice following the wake of the pandemic. Prior to that, only 18% reported using telehealth prior to the pandemic. Bolden (2022) reported similar results from speech-language pathologists, occupational therapists, and physical therapists working in clinical settings stating that, prior to the pandemic, less than 4.5% of therapists were routinely providing services via telepractice; that percentage has since increased to over 62.2% routinely utilizing telehealth at the time of the study. Together, these findings provide evidence

that there has been a significant increase in the use of telepractice in recent years in the field of speech-language pathology.

The U.S. Department of Human Services stressed the need to increase individuals' access to healthcare in the 2020 Healthy People initiative (US Department of Health and Human Services (2020)). Telehealth may help bridge the gap between patient care and access in speech-language pathology (Weidner & Lowman, 2019). In a survey of 259 speech-language pathologists, 87% reported they believed telehealth would either continue or increase (Campbell & Goldstein 2021b). Thus, telepractice is likely to continue or increase in a range of populations and settings, potentially increasing patient access to care. Therefore, it is important to examine barriers to and effectiveness of telehealth due to this new widespread use in speech-language pathology. This paper aims to provide an overview of the effectiveness of telepractice in speech-language pathology and examines significant barriers that persist for clinicians and patients.

Background

Terms associated with telepractice are often used interchangeably however, they do differ. Telepractice, telemedicine, and telehealth are all terms that refer to the use of telecommunications technology to deliver services to individuals in a different physical location than the practitioner (Cason & Cohn 2014). The term telepractice has been adopted by ASHA rather than telehealth or telemedicine because speech and language services are not confined strictly to healthcare settings and occur in other environments (American Speech-Language-Hearing Association, telepractice, n.d.). Other terms often used within the field of speech and language pathology to refer to telepractice include; teleaudiology, telespeech, and speech teletherapy. Audiology and speech and language pathology services that are provided to

individuals through telepractice are also sometimes referred to using the term telerehabilitation (American Telemedicine Association, 2010).

Telepractice can be utilized through synchronous or asynchronous forms. Synchronous is a form of telepractice in which there is live interaction between an individual and practitioner in real-time through video or phone chat. Asynchronous is a form that includes transmitting data, images, videos, or patient information, not in real-time, to or from the patient and healthcare professional remotely (Weidner & Lowman 2020). A combination of both asynchronous and synchronous forms is called a hybrid; an example would be using an app to store data asynchronously in between synchronous visits (American Speech-Language-Hearing Association, telepractice, n.d.). ASHA approves the use of telepractice as a means of providing assessment, intervention, and consultation services to individuals when appropriate (American Speech-Language-Hearing Association, telepractice, n.d.). However, there are guidelines in terms of clinician competence, client selection, state regulations, and reimbursement that impact whether telepractice is an appropriate form of assessment or intervention unique to the individual and clinician (American Speech-Language-Hearing Association, telepractice, n.d.). For many individuals, telepractice provides a viable means to be connected to care and treatment they may otherwise not have access to (Morton et al., 2022). As barriers are addressed, there is research that provides evidence that telepractice is a valid practice that could be utilized in a variety of populations to individuals across a lifespan with varying diagnoses (Alfano et al., 2022; Weidner & Lowman, 2020). There is evidence that it can be used in both evaluation of communication disorders and treatment. Below is a brief discussion of the effectiveness of telepractice across assessment and treatment of communicative disorders.

Effectiveness of Telepractice

Assessment

Evaluation plays a key role in treatment. It allows the clinician to create a profile of the individual and obtain information that gives insight into the strengths and weaknesses of the patient or client. Information that is gathered through evaluation allows clinicians to determine if an individual is appropriate for speech and language services. Once eligibility is determined it provides the clinician with the information necessary to create a plan of care to direct future therapy. Evaluation also plays a role for monitoring progress towards goals as well. Therefore, it is important to determine what assessments can be administered with validity and reliability through telepractice.

Various research provides evidence for use of telepractice as a mode for test administration for individuals with aphasia post-stroke, cognitive impairments, and dementia with findings showing a strong correlation between in-person versus telehealth administration (Weidner & Lowman, 2020). A common standardized test often used for adults post-stroke to determine speech and language needs is the Western Aphasia Battery-Revised (WAB-R; Kertesr, 2007). Rao and Colleagues (2021) conducted a research study to determine the efficacy of the administration of the WAB-R in person and via telepractice. Their study included 19 participants with a primary progressive aphasia (PPA) diagnosis, each of which had the WAB-R administered at two points in time both in person and via telepractice. 4 participants received administration of the WAB-R using each delivery method at distinct time points 1 year apart. This resulted in 23 test administrations. 19 of the 23 administrations were first done in person with the second administration being done via telepractice within 90 days of the first in-person administration. Each individual was sent a laptop and the stimuli needed to complete the test

administration. Results indicated that there was a strong agreement between scores that were obtained in person and remotely. These findings provide evidence for strong reliability for remote test administration for the WAB-R which could indicate telehealth is appropriate for other standardized tests for individuals with aphasia. While this study provides evidence for use of remote administration of the WAB-R, they did find a contrast in scores for one subtest, the Spontaneous Speech summary. This section of the assessment was reported to have the lowest agreement between in-person and remote administration, indicating the need for clinicians to use caution when utilizing this form of the assessment.

Similar findings were reported by Cullum and colleagues (2006) for tests administered to adults diagnosed with either Alzheimer's Disease or mild cognitive impairment. Their study included 14 individuals with mild cognitive impairment and 19 individuals with possible or probable Alzheimer's Disease. Participants were tested using the Mini-Mental State Exam (MMSE; Folstein, Folstein, & McHugh, 1975), the Hopkins Verbal Learning Test-Revised (HVLT-R; Benedict, Schretlen, Groninger, & Brandt, 1998), Boston Naming Test (BNT; Mack, Freed, Williams, & Henderson, 1992), Clock Drawing Test (Goodglass & Kaplan, 1983), Digit Span (Randolph, 1998), Category Fluency (fruits and vegetables; Spreen & Strauss 1991), and letter fluency (FAS and CFL versions; Benton, Hamsher, & Sivan, 1994). Participants were tested both in person and through video conferencing. In accordance with administration and re-administration guidelines, tests that had alternate forms were utilized for test re-administration. The MMSE and clock drawing assessment items were the same in both in-person and telepractice administration as these tests do not provide an alternate form for re-administration. Cullum and Colleagues (2006) reported that video conferencing and face-to-face testing scores were highly similar providing evidence of good agreement between each testing platform.

Together, Cullum et al. (2006) and Rao et al. (2021) provide evidence of use of remote testing for adults with cognitive and language impairments.

In addition to adults, research indicates the reliability of remote test administration for individuals within pediatric populations as well (Pratt et al., 2022). For example, Pratt and Colleagues (2022) conducted a study comparing in-person and virtual modalities for child language and cognitive assessment administration. Their study investigated how to adapt and enhance testing materials to be virtual through use of the replacement, amplification, transformation model (RAT). In this model, three categories are used to support technology functioning. They include technology as replacement which involves technology substituting established assessment practices without any changes. An example of this would be testing stimuli shared through a document camera using teleconferencing software during the telepractice assessment. Technology as amplification means using technology to accomplish tasks more efficiently and effectively. An example of this would be using recordings for assessment prompts. This could further standardize the assessment. Lastly, transformation refers to using technology to change an assessment. An example of this would be using technology to make new content available or by involving new people in the assessment. Their study focused on bilingual pediatric populations. Participants included 10 adult-child dyads. Children ranged in age from 4;1 to 8;5. Half of the children were male while the other half were female. Half of the child participants were Spanish-English bilinguals. Adults were parents and clinically certified SLP's. Parent interviews were utilized prior to the start of the study in order to obtain demographic information as well as information about the children's language abilities. Parent interviews included questions from the Bilingual Input Output Survey (BIOS; Peña et al., 2018) and the Inventory to Assess Language Knowledge (ITALK; Peña et al., 2018). Parent responses

from BIOS were used to calculate the children's language exposure based on language input and output for each hour of the day in their home and school environment. ITALK is an indirect measure of children's proficiency in each of the child's two languages. It was used to determine the potential risk for a developmental language disorder. Parents reported their child's level of performance in each language based on their perception. Performance included five areas (vocabulary, grammar, sentence production, comprehension, and phonology). Parents rated their child on a 5-point Likert scale, 1 indicating minimal proficiency and 5 high proficiency. Children were then tested during one or two 30-60 minute sessions in person and virtually. The order of testing was randomized via Qualtrics via the Randomizer and Embedded Data. The child measures used included the Bilingual English-Spanish Assessment (BESA; Peña et al., 2018) which is used to identify language disorders in children who speak English and/or Spanish, the Multilingual Assessment Instrument for Narratives (MAIN; Gagarina et al., 2019) which measures narrative production and comprehension skills through stories of six-picture sequences for children 3-10, and the Primary Test of Nonverbal Intelligence (PTONI; Ehrler & McGhee, 2008) which measures nonverbal reasoning for children ages 3-9. Materials were adapted for virtual use through digitizing stimuli by using digital formats of the testing stimuli and by using audio recordings for of stimuli prompts during assessment, remote mouse control was also given to the child so that they could control the mouse to select various stimuli during the virtual assessment. SLP's participated in a debriefing interview in which they shared their feedback about the testing experience. Based on SLP feedback adjustments were made to testing. For example, SLP's reported that the digital testing stimuli in the MAIN were too small which resulted in researchers enlarging the stimuli.

The results reported a strong agreement between in-person and virtual assessments. Results from the MAIN indicated a significant positive association between in-person and virtual performance. This was consistent with performance on the BESA which also resulted in a significant positive association between in-person and virtual performance. Results from this study provide evidence that it is feasible to administer standardized language and cognitive tests via telepractice. It also provides evidence of how the RAT model can be utilized when adapting assessments for the virtual platform by using audio recordings, automatic scoring, remote mouse control and touch screen to allow the child to engage with the testing stimuli.

Treatment

Multiple studies have resulted in patient/client progress towards goals as a result of treatment via telepractice. Furthermore, individuals and families surveyed have widely indicated a high level of satisfaction with treatment performed remotely. Crutchley and Campbell (2010) conducted a pilot study in rural North Carolina to investigate the overall satisfaction of parents/caregivers, teachers, and administration with telepractice services over the course of an academic school year. In rural areas, like this one, access to speech and language services can be sparse. In their study, students received treatment remotely while at school. Participants included all teachers who taught students receiving speech and language services via telepractice, parents and guardians of students receiving therapy, and administrators associated with speech therapy administered via telepractice. This included 20 teachers, 33 parents/guardians, and 6 administrators. Surveys were returned by 13 teachers, 3 administrators, and 8 parents. Parents/caregivers, teachers and principals rated their satisfaction with services using a 5-point Likert scale at the end of the academic school year. The survey quantified satisfaction regarding student progress towards their speech and language goals, responsiveness, and accessibility of

clinician. Lastly, they indicated if they would or would not recommend telepractice therapy to other school districts. All responding groups added comments stating they felt that telepractice was a good alternative if access to a speech-language pathologist in person was not available, but still preferred in-person services. Each group responding also acknowledged that all of their students either made progress towards or met their speech and language goals identified in their individualized educational plans. One of the main criticisms indicated by teachers was various technological issues that would sometimes present during therapy. This research indicates satisfaction and efficacy resulting in progress toward goals for treatment performed remotely in a school environment. Aside from school-aged children, remote services have also been used for pediatric populations that fall into early-intervention populations in birth-3 ages (Cason & Cohn, 2014).

Early intervention is effective in helping at-risk children move toward acquisition of developmental milestones. Traditionally, early intervention has been done in the home by providers. In a survey, Cason and Colleagues (2012) investigated the use of telepractice services with individuals receiving early intervention. The survey evaluated the use of telepractice as well as identified barriers, reimbursement, and services. At the time of the survey, only 30% of participants were using or planned to use telehealth services for early intervention. Participants reported that telepractice provided an ability to provide care to families in rural areas who did not otherwise have access to care. The biggest concerns reported by clinicians were limited evidence for telepractice as a service delivery model for early intervention.

In addition to pediatric populations, research indicates feasibility of telepractice for speech-language pathology services across adult populations in intervention (Griffin et al., 2017, Meltzer et al., 2017). Intervention for individuals with aphasia, Parkinson's, and voice disorders

are largely represented in current research. Griffin et al. (2017) conducted a study of patients diagnosed with Parkinson's receiving the Lee Silverman Voice Treatment program (LSVT LOUD) via telepractice. Their study included 29 participants that were diagnosed with idiopathic Parkinson's Disease with moderate hypokinetic dysarthria. 8 participants used an iPad for LSVT remotely; these participants had a mean age of 67. 21. The participants that made up the in-person treatment group was derived from existing data from LSVT conducted in person, these participants had a mean age of 69 (n=21). Each group completed a total of 18 sessions which included the pre-therapy assessment, treatment sessions 1-16, and a post-treatment review six months post-treatment. Both groups conducted pre- and post- assessments in person. All sessions were completed by an LSVT certified SLP. Performance measures were recorded for all tasks. The study compared vocal intensity outcomes of patients who participated in the program remotely and in person. Results for both groups were largely in agreement with each other. Researchers concluded that the use of telepractice within adult populations for programs such as LSVT LOUD was equally effective as in-person treatment.

Some research has shown intervention (i.e. telerehabilitation) to also be effective in adult populations with aphasia and cognitive disorders (Meltzer et al., 2017). For example, Meltzer et al. (2017) examined the effect of intervention through telerehabilitation of 44 participants diagnosed with aphasia or cognitive-linguistic communication disorder. The researchers conducted a randomized trial to test if gains made as a result from telerehabilitation were equivalent to those made for clients receiving services in person. Individuals with aphasia had progress tracked using the WAB-R while individuals with a cognitive-linguistic communication disorder were monitored with the Cognitive Quick Test (CLQT; Helm-Estabrooks, 2017). They also collected subjective data through the Communication Effectiveness Index (CETI; Lomas et

al., 1989) and the Communication Confidence Rating Scale for Aphasia (CCRSA; Cherney, Babbit, Semik, & Heinemann, 2011). Participants in the study improved on all measures and improvements were equivalent to the gains made in-person apart from the CCRSA, which yielded higher results for the in-person group. The researchers concluded that remote treatment is equally effective in improving language and communication gains for individuals with aphasia and cognitive linguistic communication disorders. These results further support the use of telepractice for treatment of cognitive and communication disorders.

Client Attitudes

Individuals who have used telepractice seem to have positive experiences overall. A variety of factors contribute to their experience and willingness to use this platform for therapy. Harkey & Colleagues (2020) conducted a systematic review that analyzed patient satisfaction with telehealth in rural settings. Overall, patients in rural settings receiving occupational, physical, and speech therapy, through both synchronous and asynchronous forms of telepractice reported high patient satisfaction (Harkey et. al., 2020). Factors contributing to satisfaction included: cutting down on driving, quicker responses to questions, less wait time, and personable clinicians. Kruse et al. (2017) also conducted a systematic review of the literature that analyzed the association of telepractice with patient satisfaction to determine facilitators that provided either a positive or negative association with telepractice (2017). Consistent themes in patient satisfaction included decreased travel time and wait time (Kruse et. al., 2017).

Barriers to Telepractice

In recognizing the unique role telepractice can play in bridging gaps in patient care, it is necessary to identify barriers that hinder individuals and clinicians from utilizing this mode of intervention. Reimbursement, clinician-patient relationships, environment, clinician competence,

and varying state-to-state regulations are common barriers presented to individuals and clinicians.

Reimbursement

Dorsey and Topol (2016) discuss reimbursement trends, stating that 28 states have reimbursement laws requiring private insurers cover telehealth. Further, 48 state Medicaid programs also cover telehealth, however, each state has its own restrictions. Varying state-to-state reimbursement rates requires both the practitioner and client to know the reimbursement rate for their specific private insurance, and lack of consistent regulations make understanding coverage a barrier to both patients and clinician (Cason & Cohn 2014). Future cohesiveness in terms of reimbursement among federal, state, and private insurances could alleviate some of the barriers that persist as a result of wide-ranging policy.

Perhaps the starkest barrier in terms of reimbursement presents itself to individuals receiving coverage through Medicare. Currently, Medicare regulations for telehealth limit reimbursement to clinical facilities that are in areas in which there is a shortage of health professionals (Dorsey & Topol 2016). It should be noted that in a response to the COVID-19 Public Health Emergency, Medicare has expanded its coverage to individuals using telehealth regardless of physical address through December 31st, 2024 (Medicare Coverage, telehealth, n.d.). Once this period ends, individuals in rural areas must be at an office or medical facility located in the rural area for telehealth services with the exception of services including Monthly End -Stage Renal Disease visits, services for diagnosis, evaluation, and treatment of symptoms for an acute stroke, and treatment for substance use disorder with a co-occurring mental health disorder (Medicare Coverage, telehealth, n.d.). This is a limitation of the Medicare benefit because it is not providing continuity of care among its recipients if a shortage is not reported in

the area which a patient resides. Individuals who need and would benefit from services that can be provided through telehealth should not be limited to the community in which the individual resides.

Finally, a significant burden in access to healthcare (although not necessarily specific to telepractice) include the growth of high deductible plans which makes self-pay more common (Dorsey & Topol, 2016). Patients may not be able to meet higher deductibles and opt to not undergo treatment. In turn, providers struggle to gain a client base large enough to self-pay making telepractice less financially viable for practitioners (Dorsey & Topol 2016). In summary, current trends in reimbursement impact the clients and patients in which it could help because clients either do not have coverage, are unable to pay high deductibles, or providers lose money on telepractice services and so do not offer it.

Regulations

Regulatory consistency poses a barrier for both clinicians and patients administering and receiving services via telepractice (Cason & Cohn, 2014; Cason et al., 2012). Licensure, state law, and federal legislation all have components creating regulatory barriers for telepractice. Currently, ASHA requires clinicians be licensed in the state they are physically in as well as the state where the client is physically located (ASHA, telepractice, n.d.). This results in challenges for clinicians who must hold multiple licenses in order to provide services via telehealth. Holding multiple licenses can become costly and time-consuming (Cason & Chohn, 2014). Telepractice could also potentially prevent lapses in care when patients move across states. Clients who move to a different state and who were previously receiving services via telepractice likely will need to find a new clinician (especially if their current clinician is not licensed in the

state they are moving to). Consistency in licensure across state lines could help prevent this lapse while they seek out new care.

Clinicians must also be versed in the state laws and regulations for each state they are licensed in (ASHA telepractice, n.d.). Because state laws and regulations vary, it is important that clinicians adhere to and are knowledgeable of all state regulations and laws in which they are providing care. Varying laws make this barrier for clinicians providing services via telepractice (Cason & Cohn, 2014). For example, as Cason and Cohn (2014) point out, some states, like Wisconsin, require individuals to obtain teaching certification as well as state licensure in order to provide telehealth services for school-based settings. In other states like Delaware, telepractice cannot be the only form of service delivery, meaning individuals must also have an in-person component of care (Cason & Cohn, 2014). Clinicians must stay abreast of varying state laws and regulations, which may be time-consuming.

In addition to licensure and law and regulations at the state level, there are federal laws for telepractice as well, mandated through the Health Insurance Portability and Accountability Act of 1996 (Health Insurance Portability and Accountability Act [HIPAA] of 1996, Pub. L. No. 104-191) and the Family Education Rights and Privacy Act of 1974 (Family Educational Rights and Privacy Act [FERPA], of 1974). The Center for Disease Control and Prevention (2022) explains the public health law of HIPAA is a federal law that protects sensitive patient information from being disclosed without the patient's knowledge (Center for Disease Control and Prevention, Public Health Law n.d.). FERPA is a federal law that protects the privacy of student education records, gives parents and students more control over their educational records, and prohibits educational settings (including private, public, elementary, secondary, and post-secondary schools) from disclosing any personally identifiable information in education records without

consent from parents or student (Center for Disease Control and Prevention, Public Health Law, n.d.). The Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH) expands on HIPAA, specifically by providing incentives for using electronic health record systems (EHR) among providers as well as increasing accountability for noncompliance and offering reinforcement of the law through penalties and regulations (US Department of Health and Human Services, Health Information Privacy, n.d.).

Several factors are necessary for individuals to be in full compliance with federal laws, including using protected health information systems such as electronic health record systems (HER), using passwords, virtual private networks, firewalls, and software to transmit health information (Cason & Cohn, 2014). In addition, clinicians also need to maintain patient privacy by providing services while in a secure area where non-authorized persons are barred from entering the physical space of the clinician (Cason & Cohn, 2014). This could result in a barrier for clinicians who are providing services who do not have access to secure a secure environment or who are providing services via telepractice without the required electronic safeguards to maintain privacy. This is also a barrier to clients who want to receive services via telepractice while also maintaining their privacy.

Client Access

Another important barrier to consider when implementing telepractice is client access. ASHA outlines the roles and responsibilities of clinicians using telepractice stating only clients who ***are appropriate*** for assessment and intervention via telepractice should be recommended services via telepractice (American Speech-Language Association, telepractice, n.d.). Euben (2020) lists ethical considerations when recommending individuals for telepractice including; access to technology, education level, and home-support resources. All are important factors that

could have a significant impact on client outcomes. For example, if an individual has limited exposure to using a computer and lacks the support needed to learn to use it, they may struggle with this platform. Another factor could be access to reliable internet; if internet is not reliable it would impact the individual's ability to access care online. Campbell and Goldstein (2021a) identified barriers recognized by clinicians implementing telehealth and reported of the clinicians surveyed, 25% or more found client lack of connectivity, lack of family involvement or access to a suitable environment for therapy, client behaviors, and an inappropriate alternative for in-person therapy to be common barriers. These findings provide evidence that while a large percentage of clinicians are currently using telehealth, they have identified downfalls to this mode of treatment in certain populations. Speech-language pathology clinicians must use their clinical judgment when deciding if a patient or client is appropriate for telepractice. This expands beyond deciding whether a person is appropriate based on diagnosis or age but, also based on their environment. As stated from the above survey, many clinicians found that lack of connectivity impacted individuals' ability to participate in telepractice. It is important to know if individuals have steady and reliable access to the internet to decide if they are suitable candidates for telepractice. Along with access to the internet, the environment has been reported as a common barrier. Many clinics will recommend that the individual have access to a quiet space and a computer or laptop in order to engage in telepractice. While telepractice provides an alternative for individuals that cannot receive services in person, it requires them to have access to internet, technology, and an environment conducive to treatment, which creates barriers for populations that do not have access to this (Campbell and Goldstein, 2021a)

Clinician Competency

A common barrier reported by speech-language pathologists is lack of competence and access to the resources needed to provide services via telepractice (Sylvan, Goldstein, & Crandall, 2020). Sylvan, Goldstein, & Crandall conducted a survey of school-based speech-language pathologists' experiences following the COVID-19 pandemic. In their survey, they aimed to identify perceptions and experiences of clinicians in 5 key areas, including their confidence and personal reactions utilizing telepractice. Speech-language pathologists felt their workload increased and their lack of technological resources and experience prior to the pandemic put them at a significant disadvantage when providing therapy to students. Many clinicians report they lacked the training necessary to make them competent telepractice practitioners. 28% of those surveyed indicated that they felt confident, while 72% reported a lack of confidence or mixed feelings utilizing telepractice. Of those surveyed, 35% indicated they lacked confidence with equipment and resources while 24% reported they felt lack of guidance and training contributed to their overall discomfort with telepractice (Sylvan, Goldstein, & Crandall, 2020). Furthermore, speech-language pathologists reported lack of knowledge of evidence-based practices for utilizing telepractice, and many reported using platforms such as teacherspayteachers (Sylvan, Goldstein, & Crandall, 2020) for resources to use in therapy and evaluations. While some strategies and resources found on this platform maybe evidence-based, some are not. There is research that supports the validity of telepractice as a means of intervention and assessment within the field of speech-language pathology, however, there appears to be a research-to-practice gap and many clinicians are not offered the appropriate training needed to use telepractice validly and confidently (Sylvan, Goldstein, & Crandall, 2020). Speech-language pathologists would greatly benefit from consistent training around how to

properly administer evaluations via telepractice as well as commonly used evidence-based strategies that can easily be adapted to go online. Furthermore, they would also benefit from being provided access to resources and materials that can be utilized in telepractice. Training of these components could be done on the job, but also at the college level. Given the fact that telepractice is now a common part of our field, graduate programs in speech and language pathology could offer students training in telepractice in order to bridge the gaps that currently persist.

In recent years, research for telepractice has significantly increased. Much of the research points to strong correlations between in-person and remote services in terms of effectiveness. However, limitations persist within current research when determining the feasibility of telepractice. Much of the current research lacks control groups that would provide stronger results for services offered remotely (Weidner & Lowman, 2019). Future research should incorporate control groups to further evaluate the effectiveness of services provided remotely. Other limitations within the field of telepractice are attributed to sample size (Rao et al., 2021; see also Meltzer et al., 2017; Griffin et al., 2018). Additionally, determining barriers for utilization of telepractice remains a large concern. Identifying common barriers in terms of clinical training, reimbursement, access to technology, and environment conducive to remote services would help in determining the feasibility of implementation on a case-by-case basis. Further considerations should be considered when evaluating and planning for future research.

Future research should aim to increase sample size and utilize control groups in order to increase generalizability of findings. When analyzing current research, common barriers should be considered when determining recommendations for clinical use. Despite current challenges, research examining and evaluating the reliability and barriers of telepractice within populations

across the lifespan with various speech and language disorders is reasonable. Current results are promising and further inquiry has the potential to significantly increase individuals access to effective remote services, allowing individuals to progress towards their speech and communication goals.

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