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Using Implementation Science for School-Based Telepractice

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Structured Abstract

Clinical Question: For districts that are hesitant to consider on-site telepractice options because of negative perceptions of telepractice, does research on positive treatment outcomes and strategies for successful program implementation intervention result in reduced barriers and increased consideration of telepractice options for relevant stakeholders?

Method: Structured Review

Study Sources: American Speech-Language-Hearing Association (ASHA) journals, ASHA Clinical Research Education (CREd) Library, ASHA Practice Portal, Google Scholar, National Implementation Research Network (NIRN)

Search Terms: telepractice OR implementation science

Number of Included Studies: 22

Primary Results:

1. Telepractice is a service delivery model that can be used to provide evidence-based interventions in brick-and-mortar schools that lead to positive treatment outcomes

2. Analysis of evidence-based practices is essential for stakeholder buy-in

3. Stakeholder buy-in is best achieved through inclusion of stakeholders at all phases of implementation

Conclusions: Implementation of a new service delivery model requires evidence of successful outcomes for students. In addition, successful program implementation requires including stakeholders in all aspects of planning, adoption, implementation, and maintenance to sustain a successful program. Applying principles from implementation science evidence-based practices to service delivery increases the likelihood of positive treatment outcomes and program sustainability.

Using Implementation Science for School-Based Telepractice

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Clinical Scenario

Aurelia is a speech-language pathology supervisor in a rural school district. There has been an opening for a speech-language pathologist (SLP) at a K–5 school for 3 months with no qualified applicants. The caseload consists of 55 students primarily with articulation/phonological disorders, language learning disorders, and/or fluency disorders. In addition to the need for direct services, the workload also includes screenings, initial evaluations, and triennial evaluations. Thirty of the students have speech and/or language as their only disability designation.

As the school moves from remote learning back to on-site learning, Aurelia is considering the option of telepractice. Aurelia previously worked in a district where telepractice was used successfully. Stakeholders reported satisfaction with the quality of services and the support from the service provider to help integrate telepractice into their brick-and-mortar school. Aurelia discussed the possibility of telepractice with the district superintendent, the building principal, the special education coordinator for the district, the intervention specialists at the school, and several general education teachers. She found the following concerns about using telepractice to provide on-site services at a brick-and-mortar school:

1. The special education coordinator felt that children who received remote services at home during the pandemic did not make progress. She felt that telepractice was acceptable to use as a last resort during remote learning but was reluctant to use the service delivery model in a brick-and-mortar setting.
2. One intervention specialist and two general education teachers worked at a school that used telepractice. The SLP was hired through a service provider and assigned to the school by the district by special education coordinator. The intervention specialist and the teachers felt the remote SLP had difficulty integrating into the school's established procedures, and there did not seem to be a clear mechanism for improving collaboration.

Aurelia concluded that the school did not have sufficient information about treatment outcomes for telepractice and program implementation. She decided to look for evidence of positive treatment using telepractice in a school setting and for guidelines for successful program implementation.

Background Information

Before March 2020, telepractice was slowly gaining acceptance as a service delivery model and was often used in underserved schools. The move to online learning necessitated by the pandemic led to sudden, widespread use of telepractice to provide services at home. Although the impact of the mass move to telepractice will not be fully understood for some time, the range of student and clinician experiences is likely to result in both favorable and unfavorable perceptions of telepractice. Those with negative experiences with telepractice services delivered to the home may be reluctant to implement a program of telepractice in a brick-and-mortar school despite a growing body of evidence supporting telepractice for treatment (Coufal et al., 2018; Grogan-Johnson et al., 2010; Grogan-Johnson et al., 2011; Short et al., 2016).

To address these concerns, service providers can look to implementation science to support using telepractice as a service delivery model. Implementation science uses systematic procedures to translate the use of evidence-based interventions to novel settings (Blase et al., 2012; Fixen et al., 2005). Methodologies from implementation sciences are used to identify factors that could potentially facilitate and/or hinder the use of an evidence-based intervention or new service delivery model in a specific setting. In recent years, researchers in speech-language pathology have advocated to use the principles of implementation science in speech-language pathology (Douglas & Burshnic, 2019; Douglas et al., 2015; Kadervarek & Justice, 2010). Two key concepts used in implementation science are relevant to the clinical question: fidelity of implementation and program evaluation.

Fidelity of Implementation

When an evidence-based intervention is chosen as a treatment for an individual with a communication disorder, it is important that the factors that led to the treatment outcomes (e.g., stimuli, setting, intensity) are replicated in the intervention. Kaderavek and Justice (2010) argue that fidelity of implementation is an essential component when using and evaluating the effectiveness of evidence-based interventions. If the practitioner cannot replicate the conditions under which the treatment outcomes were achieved, it is possible that positive treatment outcomes will not be achieved.

Program Implementation

Redle and Atkins (2013) argued that principles of implementation science could be used to systematically install and evaluate a successful speech-language intervention program. They, and other sources, (e.g., Blase et al., 2012; Metz et al., 2020) describe the characteristics of successful program implementation. These authors point to the importance of stakeholder involvement in all steps of the implementation process. Metz et al. (2020) further argue for an implementation manager who can tailor installation, shepherd the installation process, and provide ongoing support to the building telepractice implementation team including the stakeholder. Before implementation, the stakeholders complete a comprehensive needs assessment. Once the program is installed, the implementation manager, along with the implementation team, will work to develop a program of quality monitoring that includes qualitative measures of stakeholder satisfaction as well as treatment outcomes.

Clinical Question

Aurelia used the framework of a PICO (P: the population, I: the intervention, C: the comparison group, O: the outcome) question to structure her clinical question: (P) For districts that are hesitant to consider on-site telepractice options because of negative perceptions of telepractice (I & C), does research on positive treatment outcomes and strategies for successful program implementation intervention (O) result in reduced barriers and increased consideration of telepractice options for relevant stakeholders?

Search for the Evidence

Aurelia first consulted the ASHA Practice Portal. The goal of ASHA's Practice Portal is to facilitate "clinical decision-making and increase practice efficiency for audiologists and speech-language pathologists by providing resources on clinical and professional topics and linking to available evidence" (ASHA, 2016). She reviewed the reference section of the Telepractice Topic Area and found one review of the literature (Wales et al., 2017) that supported the use of telepractice for speech sound disorders but suggested that the data for treatment outcomes for treating language learning disorders was equivocal. She also remembered reading an article in Pearson's *Evidence-Based Practice Briefs* (Rudolph & Rudolph, 2015) that argued that there was insufficient evidence to support telepractice as a service delivery model.

From these sources, Aurelia found six articles that addressed treatment outcomes for students with speech sound disorders and language learning disorders in brick-and-mortar schools. Two of the studies made direct comparisons of student outcomes for treatment of speech sound disorders using telepractice and on-site intervention (Grogan-Johnson et al., 2013; Grogan-Johnson et al., 2011). Both studies found comparable treatment outcomes for students in both conditions; however, because the subject pools were too small there were insufficient data to perform parametric statistics. Pullins and Grogan-Johnson (2017) compared treatment outcomes for students with speech sound disorders using a high-intensity/high-frequency program delivered via telepractice to weekly on-site group sessions and found similar treatment outcomes.

Aurelia reviewed four studies that used the ASHA National Outcomes Measurement System (NOMS; ASHA, 2021b) to compare patterns of treatment outcomes to a national database. Three of the studies (Short et al., 2017; Gabel et al., 2013; Grogan-Johnson et al., 2010) included students who received services for speech sound disorders and receptive and expressive language disorders. One study compared only students with speech sound disorders (Coufal et al., 2018). All four studies reported similar rates of improvement comparing services received via telepractice to students who received on-site services. Aurelia noted that these studies were with students who received services at brick-and-mortar schools. All the studies reported particular attention to clinician training and audio and video quality. At least three of the studies included trained facilitators who

were present with the students. Aurelia concluded there was sufficient evidence to support the use of telepractice for students with speech sound disorders and language learning disorders in a brick-and-mortar setting with the appropriate technical support and use of a facilitator.

Evaluating the Evidence

Aurelia then searched the ASHA website using the term *successful program implementation*; she had heard the term *implementation science* used during a recent conference. She found two journal articles about implementation science that explained its principles (Douglas & Brushnic, 2019; Olswang & Prelock, 2015). She found that implementation science was a methodology used to systematically evaluate factors that facilitate and impede successful use of evidence-based practices in novel settings. She found the Clinical Research Education (CREd) Library on the ASHA website, which contained information about clinical research, including a section devoted to implementation science (ASHA, 2021a).

Although it was clear that ASHA was committed to improving the knowledge base for implementation science, there were no resources that applied the principles of implementation science to improve service delivery using telepractice. However, many of the publications and resources regarding implementation science referred to a monograph by Fixsen et al. (2005). Aurelia accessed this monograph, which was a synthesis of implementation research across disciplines including industry, health care, psychology, and education, and felt the research on implementation science from other disciplines might provide useful information on implementing a new program in a school setting. Doing a Google search, Aurelia came across a text which included a chapter written by some of the monograph authors (Blase et al., 2012). While reviewing the author affiliations for the book chapters, she discovered there was a National Implementation Research Network. She accessed the website (https://nirn.fpg.unc.edu/) and searched the publications. She discovered an article by Metz et al. (2020) that provided a comprehensive framework for program implementation that included stakeholders in all stages of implementation. The consensus of these publications recommended convening an implementation team consisting of stakeholders to complete a needs assessment to identify 1) potential barriers to the implementation of a telepractice program, 2) existing resources, and 3) additional resources and procedures that would be needed to successfully install and maintain a program. In addition to lack of buy-in, Aurelia anticipated other more tangible barriers including finding funding for a facilitator, improving communication between the service provider and school personnel, and challenges in conducting classroom observations.

The Evidence-Based Decision

Aurelia concluded that the question was not whether telepractice worked, rather, could evidence-based intervention practices be implemented with fidelity at this school. From the review of the literature including communication sciences and disorders and other disciplines, it became apparent that successful program implementation required 1) fidelity of intervention and 2) stakeholder participation at all points in the implementation process.

Aurelia met with the district superintendent, the building principal, and the director of special education and presented evidence of positive-treatment outcomes for students with articulation/phonological disorders and language disorders using telepractice in brick-and-mortar schools by monitoring audio and visual quality and using a facilitator. She then described what she learned from the implementation science literature on program implementation. The group agreed to form an implementation team to 1) conduct a needs assessment and 2) identify a service provider who would work with the team to install the program and provide for continuous quality monitoring.

Intervention

An implementation team convened and included Aurelia, the building principal, the special education director, the intervention specialists, two general education teachers, and a parent. They conducted a comprehensive needs assessment and developed a program for continuous quality monitoring. The team met with several service providers and chose one that they felt best matched their needs. The service provider designated a person as the implementation manager. The implementation manager was an SLP trained both in telepractice and program implementation. She would serve as a liaison to the school to tailor a telepractice program specific to the needs of the building. The implementation team, along with the implementation manager, developed a program for continuous quality monitoring as part of a plan to sustain a telepractice program.

Author's Note

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