BEST PRACTICES FOR OCCUPATIONAL THERAPY PRACTITIONERS IN PEDIATRIC TELEHEALTH: PRACTITIONER AND FAMILY PERSPECTIVES

A Thesis submitted to the faculty at Stanbridge University in partial fulfillment of the requirements for the degree of Master of Science in Occupational Therapy

by

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Certification of Approval

I certify that I have read *Best Practices for Occupational Therapy Practitioners in Pediatric Telehealth: Practitioner and Family Perspectives* by Mari Hazel Aguila, Sarina Cass, Dina Marvizi, and Elizabeth Stone, and in my opinion this work meets the criteria for approving a thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Occupational Therapy at Stanbridge University.

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Abstract

Telehealth is a unique platform with a distinct opportunity to reach children and their families within the field of occupational therapy. The current research names many benefits of telehealth. For example, practitioners can lessen the patient care gap by overcoming barriers to care for more children and families who face limitations due to transportation, time concerns, and availability of specialty services in rural or remote areas that might not otherwise have access. However, occupational therapy practitioners (OTPs) and parent/caregiver perspectives on best telehealth practices are under-researched. Our study aimed to explore how communication styles of OTPs, parent involvement, coaching, and environmental factors affect the successful outcomes of pediatric telehealth services. We analyzed the data using Likert-scale and open-ended survey questions provided by caregivers and OTPs. We used Dedoose software to analyze qualitative data and a statistician to measure the quantitative results. Common themes surfaced throughout both surveys and independently among groups. Parent/caregiver involvement and coaching were preferred for more productive sessions. Advanced preparation on behalf of both caregiver and occupational therapist practitioners was shown to be beneficial, including prior communication and preparing materials before a session. Client-centered sessions reported successful client engagement. Lastly, environments free from distractions and noise were essential to both OTPs and caregivers/parents. These results inform practitioners and caregivers of actions, processes, and methods that can be implemented for successful telehealth sessions. The results suggest the importance of caregiver coaching and involvement, clear communication from both parties, prior session preparation, visual aids, and

environmental modifications as crucial components for effective and positive telehealth intervention outcomes.

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Best Practices for Occupational Therapy Practitioners in Pediatric Telehealth: Practitioner and Family Perspectives

In 2020, due to COVID-19 measures, occupational therapy practitioners (OTPs) and other healthcare providers began conducting more intervention sessions through telehealth (Bestsennyy et al., 2021). Telehealth is a video conferencing tool used throughout the healthcare field used to distribute health related services (*What is Telemedicine?*, n.d.). The term is also used interchangeably with telemedicine, telemonitoring, telepractice, telenursing, or telecare. Telehealth is delivered through various platforms, including Zoom, Doxy, Google Meet, Skype, Microsoft Teams, and FaceTime (Dahl-Popolizio et al., 2020). The American Occupational Therapy Association (AOTA) first published guidelines around the use of telehealth in occupational therapy (OT) in 2004. In 2019, the American Occupational Therapy Foundation (AOTF) created a committee to explore the evidence, trends, and expansion of telehealth across the field of OT (Proffitt et al., 2021). The significance of putting guidelines in place was timely. From 2020 until 2022, in-person interactions were limited due to federal, state, and local measures and OTPs were able to provide a continuation of services via telehealth. Legislation passed as part of the Coronavirus Aid, Relief, and Economic Security Act, widely known as the CARES Act, that allowed for equal billing for telehealth sessions as in-person sessions for speech, occupational, and physical therapists, as telehealth had proven to be an effective method for service delivery (Grundstein et al., 2021). While it is unclear how long this policy will be in place, a new bill called the Expanded Telehealth Access Act (2021) would permanently enable OTPs to provide services to Medicare beneficiaries via telehealth. As of November 2021, the Expanded Telehealth Access Act had attracted 57 co-sponsors in the House and 4 in the

Senate (AOTA, 2021). OTPs are hopeful that this recognition will help to continue coverage through telehealth services, as OTPs have used telehealth across many practice settings including early intervention, schools, pediatric private practice, hospitals, burn units, productive aging, workplace ergonomics, mental health, and inpatient and outpatient settings (Cason & Jacobs, 2014).

As the new telehealth landscape emerges as a convenient and effective platform, research on telehealth best practices in service delivery is essential. The “Occupational Therapy Research Agenda” identifies the need for intervention studies as a major goal to expand evidence-based practices throughout the profession (AOTA, 2018). This specifically aims to evaluate the efficacy of occupational therapy interventions and create novel, theory-based interventions that will promote participation in meaningful occupations. Because telehealth services are typically delivered in the home, there is a unique opportunity to gain insight into the potential environmental barriers and supports that influence child development and participation in occupations. In this space, the child's skills can be modified or maintained where they will often apply them. This is a new opportunity for OTPs to view and work with the children and caregivers in their home environments. Telehealth has the potential to support and actualize the theory of generalization, which emphasizes the transfer of a learned skill from where it is taught to a more natural setting, so that skill can be maintained and applied in various settings (Mandich et al., 2020). While there are many intervention strategies within the pediatric population, there is a need for a closer examination of specific strategies that OTPs should use to effectively reach clients when using telehealth.

Telehealth and Pediatric Population

OTPs recognize the distinctive opportunity of telehealth to reach children and their families through this platform. In the telehealth environment, OTPs can observe performance patterns and skills while considering the personal factors of the home environment to carry out the occupation of play (AOTA, 2020). Pediatric occupational therapy services can reach many individuals needing specialty care from infancy through adolescence.. Through the use of active listening and therapeutic communication, OTPs working closely with the child and their family can assess the areas of daily occupations that need more time and attention.

Play is widely considered the benchmark of childhood occupation. By observationally engaging with children in play OTPs can discover, explore and create activities essential to life's development and occupations (Tanta & Kuhaneck, 2020). Mary Reilly was instrumental in bringing play into the academic discourse and clinical application of OT in the late 1960s (Tanta & Kuhaneck, 2020). She described play as part of a continuum and a child's primary occupation. Reilly believed that play was the main mechanism and context for developing sensory integration, physical and motor abilities, cognitive and language skills, and building interpersonal relationships. In the observation and analysis of play, OTPs can render valuable information about a child's abilities and limitations. Through telehealth, OTPs strive to build rapport and meaningful therapist/client relationships that allow for therapeutic intervention within the home environment. OTPs can engage in meaningful play activities to facilitate all of the developmental benefits play provide s for children. Additionally, structuring play with parents and their children builds upon family-centered practices and benefits the child's overall development (Gallagher & O'Neil, 2022).

Implementing Best Practices

A growing body of literature focuses on clinical, technological, or economic approaches to understanding the quality, outcomes, cost, and organizational impacts of telehealth. Telehealth training, such as certification courses from The National School of Applied Telehealth, often includes content to meet program and operational goals like telecommunications or telemonitoring equipment and technology challenges related to telehealth delivery. However, gaps in research remain for occupational therapists about changes that could occur between the in-person setting versus the virtual setting. This includes provider-patient interpersonal relations, as research focusing on communication patterns and therapeutic relationships in telehealth is limited (Henry et al., 2017). Research from Dahl-Popolizio et al. (2020) found that many practitioners transitioned to telehealth without advanced training or preparation. This created a gap in training for OT students and practitioners leading to a hesitancy to use telehealth platforms due to a lack of exposure (Traube et al., 2021). Practitioners have also communicated the need for further evaluation of user experiences and the technological processes to assist in identifying best practices (Wosik et al., 2020). As the telehealth field continues to grow, OTPs must be aware of the current best practices that will influence interventions and outcomes while implementing evidence-based practices. By surveying and asking open-ended questions to OTPs and parents, we deduced effective communication and intervention strategies as experienced by OTPs and families. To have a deeper understanding of parent/caregiver and practitioner satisfaction or dissatisfaction concerning OT telehealth practices, we evaluated the instruction and delivery of pediatric telehealth. Based on our findings, we believe that there is a need to train OTPs on telehealth best practices, create universal workflow practices within telehealth settings,

and understand client and caregiver perspectives. Often there is a hesitation to use these platforms due to a lack of exposure, knowledge, and confidence (Alkureishi et al., 2021). As the telehealth field continues to grow, OTPs must be aware of and explore the current best practices that will influence interventions and outcomes while implementing evidence-based practices, which this study aims to build upon.

Literature Review

As the reach of communications technology has expanded throughout the world, so has the use of telehealth within the field of occupational therapy (Bestsennyy et al., 2021). We found many studies addressing various health conditions across various healthcare disciplines and uncovered several common themes. Increasing the accessibility of occupational therapy services, improving parent participation, and delving deeper into verbal and non-verbal communication strategies are a few of the common threads we uncovered. Additionally, we discovered through the literature that modifications to the child's environment and cultural considerations can allow for better outcomes. Telehealth can provide a unique window into the child's home environment and help children achieve their intervention outcomes.

Increasing Accessibility

Several studies have addressed that telehealth is an accepted service model by both OTPs and parents because of the ability to overcome geographical obstacles by reaching patients in remote or rural areas who might not otherwise have access to these specialized services (Little, Pope, et al., 2018). By providing treatments via telehealth, practitioners can reduce the patient care gap by accessing more children and families due to transportation and time concerns on both sides. In one study, the growing number of children diagnosed with autism spectrum disorder (ASD) created a subsequent number of

children being referred to OT services (Owens et al., 1998). This higher demand for services proves difficult for children in rural or underserved areas to seek therapy. Additionally, the convenience of telehealth allows families to consolidate and schedule appointments more efficiently, rather than having to make repeated trips over great distances for each specialist visit. Providing OT services via telehealth may change the trajectory of children and their families living in these underserved communities by making services easily accessible to all.

Additionally, telehealth can ease accessibility concerns for children recovering from more serious conditions. Telehealth interventions with recent survivors of acute lymphoblastic leukemia, the most common childhood cancer, have helped to alleviate symptoms throughout remission and increase childhood quality of life (Lambert et al., 2021). A decrease in bone mass, poor muscle strength, and a higher rate of vertebral fractures are common with this population. Exercise rehabilitation has helped reduce the amount of musculoskeletal adverse effects in long-term survivors. The patient participation of this population is strong through telehealth services due to accessibility and convenience factors. Telehealth as a service delivery method is believed to increase adherence rates to program schedules, showing greater participant improvements. Families reported more coordinated, comprehensive, and efficient care because medical needs were identified early in the assessment via telehealth (Owens et al., 1998).

Telehealth allows for greater flexibility with scheduling, as telehealth platforms can more easily accommodate parent and child schedules during normally difficult times for one-on-one intervention such as sleep or feeding times. Feeding disorders are one of the child behavior problems reported to have increased during the COVID-19 pandemic (Peterson et al., 2021). Due to the stay-at-home orders, clients with feeding disorders had

reduced access to therapy services since interventions were typically provided in person. Telehealth is now utilized by more facilities because it is a service-delivery option that is easier to schedule during feeding times than in-person services. Additionally, sleep problems in children are among one of the most common concerns of caregivers in clinical practice settings (Witmans et al., 2008). Due to the limited accessibility of specialized services in remote communities, some clients who would benefit from pediatric sleep interventions are at a greater risk for unmet treatment needs. By overcoming barriers in diagnosing and treating sleep disorders in children, telehealth can improve access and increase support for families.

Therapeutic Communication for OTPs

It is important that providers feel well equipped, trained, and confident in utilizing telehealth as a service model within their scope of practice. According to Hilty et al. (2013) and Jenkins-Guarnieri et al. (2015), telehealth delivery can provide similar outcomes as in-person services when it comes to diagnostic validity, reliability, acceptability, and perceptions of the therapeutic alliance of mental health care. However, other studies have reported added barriers to building trust in patient-practitioner relationships when communicating solely via telehealth (Weaver et al., 2020). Since clinicians are typically not physically present with the client/child when conducting telehealth sessions, clinicians need to be able to modify using a different form of communication, such as verbal requests and comments (Campbell et al., 2021). The concern of this platform is that it could lower the quality-of-care people generally receive from in-person appointments because trust is more challenging to build in a virtual setting (Weaver et al., 2020). An intimate connection may be missing in telehealth such as handholding, a hug, or non-verbal cues like body language. Taking time for relational

content and thoughtful pauses may help to build relationships in addition to asking about pets, hobbies, or other personal topics important to the child. This is especially important for children receiving care as communication is multidimensional. Since the subtleties of in-person communication are missing in telehealth, finding ways to connect with children to build rapport is an important way to forge positive relationships.

Teaching therapeutic communication to healthcare workers is vital. Through active listening, attentiveness, compassion, and therapeutic use of self, in which therapists draw upon their own experiences and feelings in the therapeutic process, OTPs can help make the telehealth session more personable (Jaffe et al., 2020). To create a therapeutic alliance that enables OTPs to provide the best care, parents/caregivers, their children, and the OTP must work together to build trust and rapport. Trust is the positive, non-judgmental attitude of being respectful and aware of the family's culture and values. A collaborative approach welcomes open-ended communication and active listening to strengthen the relationships. Parents should always be encouraged to ask questions and offer their input. Verbal confirmation of OTP observations asks the parent/caregiver and/or child about their interpretation of that observation. This confirmation adds the reassurance of a more accurate understanding of the client and the intervention, assuring health literacy for caregivers and clients (Goldstein & Glueck, 2016). This level of confirmation from both sides is a form of closed-loop communication and allows for more concrete assessments and prevents assumptions, bias, or judgments.

Non-verbal Communication

Non-verbal communication is an important skill for establishing rapport and trust when working with pediatric clients (Goldstein & Glueck, 2016). Interactive approaches to communication are suggested along with having an expressive affect, enthusiastic

voice, and active hand gestures for keeping pediatric patients engaged and ensuring that they understand their clinician's intent. Additionally, eye contact, visual cues, and empathetic gestures are considered important to non-verbal communication.

As technology evolves, so do the mechanisms that can gather human data. Non-verbal communication can be tracked using a coaching method called EQclinic (Liu et al., 2016). Developed to increase healthcare worker performance during telehealth and in-person interactions, the online teaching course gathers verbal and nonverbal communication, offering productive feedback to improve practitioner/patient relationships. Algorithms can detect head movements (nodding, head shaking, and head tilting), facial expressions (smiling and frowning), body movements (body leaning, hand gestures, and overall body movements), voice properties (volume, pitch and tone), and speech patterns (turn-taking and speaking ratio changes). Using software systems like EQclinic teaches healthcare workers about the tremendous benefit subtle cues make in building trust and rapport in their relationships. If clinicians can have a stronger awareness of their telepresence through this type of feedback, it will improve the way they communicate with their clients and patients.

Other Factors to Improve Communication

Telehealth can bring clear messaging into the home from healthcare workers, increasing the amount of interdisciplinary collaboration from other healthcare providers (Weaver et al., 2020). Along with a multidisciplinary approach, telehealth can include additional caregivers like grandparents and other relatives. OTPs should be prepared to handle logistical considerations separate from the time when the child is present on screen in order to optimize the child’s time and engage with the child fully. Providing a one-on-one debriefing session after appointments could answer additional questions and

offer therapeutic communication that may be lacking in large group telehealth sessions. Pre-interactional communication added to the level of perceived professionalism and "telepresence" of the OTP (Henry et al., 2017). This was achieved by having the OTP understand family culture and attitudes, along with giving families a deeper perspective on the treatment plan. A health coordinator can help assist the clinician by providing cultural and ecological contexts about the patients and the community, especially if the community is ethnically, racially, or culturally different from the clinician's community (Goldstein & Glueck, 2016). Having a support person or health coordinator available to resolve any technical issues, or set up a trial call prior to the telehealth session, could be an immense benefit to ensure interventions run smoothly (Alkureishi et al, 2021). Additionally, dropped calls, unstable internet access, and a lack of adequate space or lighting have negatively affected sessions. By educating OTPs on these potential barriers ahead of time, we can help the OTPs have greater success through telehealth interventions.

Parent Participation and Unique Advantages

Telehealth as a service delivery method in OT requires more parent participation, increasing parents' awareness, education, and interaction between caregiver and child. The opportunity to observe clients and caregivers in their homes gives clinicians a more accurate observation of the child's natural behavior, potential distractions, and typical meal environment (Peterson et al., 2021). Telehealth has the potential to support and actualize the theory of generalization; wherein the transfer of a learned skill is more likely to become a part of a child's routine when taught in their natural setting (Mandich et al., 2020). OTPs often coach caregivers in order to facilitate generalization. For example, Peterson et al. (2015) showed that telehealth services were utilized to

successfully coach caregivers to use positive reinforcement. Teleconsultation was used in teaching a caregiver to implement a behavioral-feeding intervention that increased the number of different, novel foods that a child with avoidant/restrictive food intake disorder consumed (Bloomfield et al., 2019). Clearly viewing children on their schedule, in their natural environment, gives telehealth an advantage over in-person sessions.

A study on autism reflected an increase in caregiver competence (Little, Pope, et al., 2018). Occupation-based coaching delivered through Zoom video conferencing improved child-caregiver interactions and learning opportunities for the child in their everyday routine and contexts. Parents were able to ask reflective questions in their natural environment, which deepened their understanding of their current knowledge and empowered parents to curate their own solutions. With the completion of the intervention, the Parenting Sense of Competence scale indicated parents had a significant increase in parenting efficacy. Researchers also observed an increase in children's activity participation throughout the study (Little, Pope, et al., 2018).

Parents' higher engagement in play activities with their child during sessions increased the amount of variety in skill development activities (Barr et al., 2017). When working with young children in this environment parent participation is essential. There is evidence that infants and toddlers have trouble translating information from 2D to 3D, from the screen to reality, and they are unlikely to learn from screens when they are younger than 3 years of age (Lerner & Barr, 2014). Interaction with an adult is an essential component of learning, as the adult can bring the content to life by building language and cognitive skills such as attention, memory, and thinking. With telehealth, parents and guardians become more involved in the therapy sessions and may be asked to take on the role of co-therapists (Campbell et al., 2021). Teaching parents intervention

strategies is a key component of a telehealth model for caregivers working with their children. This can be observed as they manipulate therapy materials and keep children engaged in therapy activities. While parent and caregiver involvement contributes to an increased level of child participation in the sessions and overall outcomes, parents also need to take on a leading role. Parents report enjoying how telehealth can bring clear messaging into the home from healthcare workers; however, families still need to trust their own abilities and intuition to carry out the plans set by their healthcare team (Weaver et al., 2020). Coaching and mentoring families through telehealth has the potential to create more intimate and comprehensive sessions by engaging both caregivers and children, creating a sense of community. Telehealth can raise children's results in goal attainment and parent satisfaction with the intervention goals (Gallagher & O'Neil, 2022).

Gaps in the Research and Recommendations for Further Study

Many studies have looked at the perspectives of parents' and/or caregivers' satisfaction levels with telehealth as a method of service delivery. However, taking child satisfaction and OTPs perspectives into consideration when using telehealth is an important part of intervention outcomes, client-centered care, and a more holistic approach. With the understanding that qualifying a child's perspective might have its limitations and challenges, further research should be conducted as to how best to explore the child's experiences of OTP presence via telehealth. While many parents report positive outcomes from telehealth (Ray et al., 2017), it is important to examine if there are positive or negative intervention outcomes due to parent satisfaction, stress due to potential added responsibilities of participation, and accessibility concerns with this service delivery method. Comparison studies appraising the pros and cons of telehealth

by comparing in-person versus telehealth interventions will help OTPs develop more effective communication skills specific to telehealth. A study conducted using telehealth in hospice care compared in-person versus telehealth interventions (Weaver et al., 2020). With the increased usage of telehealth services, additional studies should examine any developmental or psychological effects that might occur using telehealth services on the pediatric population. These studies should be conducted with specific aims of implementing and providing telehealth-specific interventions that are age and developmentally appropriate. Visibility of clients is essential to intervention and treatment. Examining if OTPs can effectively assess the proper performance of an exercise or treatment through the medium of telehealth should be addressed.

Research regarding telehealth effects on the whole child (e.g., physical, behavioral, emotional, cognitive, and social) will help to influence interventions and outcomes by implementing evidence-based practices. Telehealth efficiency could be further improved by informing families of the session objectives, structure, and any added parental or caregiver responsibilities with this change of delivery service. Additional research and workshops for OTPs, with a focus on the benefits of educational training, would help those who are new to telehealth. Inclusion of therapeutic communication, good technology practices, implementation of child perspectives and preferences, parent coaching strategies, and avoidance of malpractice would be essential topics to include. Providing educational resources for OTPs regarding best practices of telehealth would be useful to ensure that an equal standard of care is rendered in this setting as it would be in the in-person clinical setting. Factors such as familiarity and accessibility to technology, the use of communication skills across telehealth, and the role of parental participation should be addressed.

Hypothesis

Our study aimed to explore the effectiveness of the telehealth service delivery method and improve the experience for clients, parents/caregivers, and providers. Surveying OTPs and parents/caregivers of children who receive OT services, we then analyzed the data and used themes that emerged for a pamphlet on the best practices in pediatric OT through telehealth. We predicted specific behaviors, attitudes, and themes toward telehealth intervention would be preferred as the most effective methods for delivery in the pediatric setting. We then grouped these attitudes and behaviors into themes, such as communication styles, preferred techniques for rapport building, and specific environmental modifications for optimal service delivery.

Theoretical Frameworks

Top-Down Approach

Pediatric OT considers the role of family/caregivers in the child's life. When pediatric evaluations and interventions are conducted through telehealth, the top-down approach to OT becomes more relevant. A top-down approach focuses on the child's environment and their family structure including cultural expectations, values, and other family dynamics such as socioeconomic factors (Cahill, 2020). Family-centered practice is established for children between the OTP, the family, and the child. With a focus on open and honest communication, the OTP partners with the family to determine the best course of treatment. The OTP honors the families' input and considers their routines and environment when implementing their intervention. Communication with the parent is an essential component of family-centered practice. Family-centered practice recognizes parents and caregivers as family leaders, intervention team members, and key players in the direction of therapeutic intervention (Rosenbaum et al., 1998). It also emphasizes

attention to parents' ongoing capacity to support their children. Parents and caregivers are the constant in children's lives and therefore the main reinforcement of the strategies and methods learned from OTP interventions.

The Coaching Model

The coaching model is a family-centered approach that encourages active participation from the child's parent/caregiver (Myers & Cason, 2020). The role of caregivers as co-therapists has brought about coaching strategies that focus on adult learning that benefits the child. Studies have found that pediatric telehealth services require added parent/caregiver responsibilities and participation; knowing how to best support caregivers through telehealth services is essential for both intervention outcomes and overall satisfaction (Bestsennyy, 2021). While the coaching model is not always practiced by or provided to caregivers, it does bring about greater collaboration between OTPs and caregivers. The coaching model provides ongoing support and asks that parents analyze, problem solve, and reflect on the outcome strategies alongside the OTP.

The coaching process involves initiation, observation, action, reflection, evaluation, continuation, and resolution (Myers & Cason, 2020). The coaching process starts with initiation, wherein the OTP or the child's family identifies a need. The OTP will collaborate with the child's family to develop a plan to coach and achieve positive outcomes for the child. The next step is observation, which includes the OTP observing an existing challenge that the parent/caregiver is facing regarding the child, observing the parent/caregiver as they practice a new skill, or having the parent/caregiver observe the OTP modeling a technique, strategy, or skill. Observation involves the parent/caregiver actively identifying ways to support the child's learning as they perform the activity. The OTP and parent/caregiver additionally observe the environment to identify aspects that

may influence the situation. The action plan involves activities during times when the OTP and caregiver are not in contact. With reflection, the OTP helps the caregiver analyze the child's practices and behaviors through questioning, reflective listening, reflective feedback, and joint problem-solving. The OTP will then evaluate the effectiveness of the coaching process with the caregiver. A continuation plan will be developed once the results of the coaching session are summarized. The last step is resolution, wherein the OTP and caregiver agree that outcomes have been achieved. With the help of the coaching model, caregivers will feel more comfortable and confident when supporting the child throughout telehealth sessions.

The Use of the Coaching Model in Telehealth

There are several methods and coaching strategies used in telehealth. Coaching increases parents'/caregivers' self-efficacy, giving families a greater sense of trust in their own abilities to carry out the intervention plan outside of sessions. Parents and caregivers develop skills to use with their children's intervention. This can greatly affect child outcomes as the parents are a constant presence in the child's life. During telehealth sessions, the OTP can provide feedback to the parents/caregivers and discuss their concerns (Myers & Cason, 2020). The OTP and caregiver can collaborate to identify strategies for promoting the progress of the child's skills (Little, Wallisch, et al., 2018). This study focused on a 12-week intervention provided to families of children with ASD investigated the acceptability and cost-effectiveness of a coaching intervention delivered via telehealth. The findings of their study suggested that families perceived the intervention as highly acceptable, highly effective, and cost-effective. Another study explored the remote delivery of early intervention programs for children with ASD and compared this with face-to-face delivery (Ashburner et al., 2016). The parents reported

that the remote intervention provided them with opportunities for practicing various coaching skills and techniques that were involved in resource development. The remote sessions allowed OTPs to have more time to discuss resources with the families. This also allowed the families to gain skills and learn strategies that they could independently apply outside of their sessions.

Hybrid and parent-only sessions have also been successful in telehealth. Hybrid sessions are conducted partially through telehealth and partially in-person. Group sessions through telehealth with multiple families engaging in the same session can build a sense of community. Collaboration with families experiencing similar challenges can build a social element that telehealth can lack. In one study using the Teach-Model-Coach-Review method to teach enhanced milieu teaching to children, 40% were in-person and 60% were tele-practice sessions (Quinn et al., 2021). While some coaching strategies are taught to parents and caregivers at the same time as the child's intervention, one study offered coaching to parents and caregivers individually without any direct intervention with the child. For some child diagnosis' direct intervention with the parents alone may prove to be just as effective since parents are the primary enforcer of intervention strategies. In one study parents provided a 2- to 3-minute video of the targeted behavior strategy with their child who had ASD (Ura et al., 2021). During the weekly session, the parent received feedback on the video, additional instructional role play, and re-teaching of intervention techniques. These studies support the use of the parent coaching model as an effective tool for pediatric telehealth interventions.

Methodology

Design

A mixed-methods design was used with quantitative and qualitative questions in two surveys, one directed at OTPs and the other at caregivers of children receiving pediatric telehealth. OTPs were asked 13 Likert scale and 14 short-response questions; similarly, caregivers were asked 7 Likert scale and 15 short-response via Google Forms (see Appendix A). These questions were created to help us target our specific aims of exploring the effectiveness of the telehealth service delivery method while taking into consideration our analysis of current literature on pediatric telehealth. Questions aimed to examine best practices in pediatric OT telehealth looking at communication, environmental, and technology preferences between caregivers and OTPs. To form a comparison between the answers of caregivers and OTPs, questions were written similarly and independently of one another as some of them could only be applicable to a particular group. For instance, both groups were asked about their abilities to communicate with the therapist or client and how nonverbal communication plays a role during a session. On the other hand, asking if the OTP utilizes a coaching model or a frame of reference in their telehealth sessions would not be applicable to caregivers. Likewise, asking caregivers if they received any training prior to their child's telehealth OT would not be applicable to the OTPs. We decided to conduct an online survey in order to reach the greatest number of participants. This form of data collection was less invasive and time-consuming for caregivers and OTPs to participate with minimal inconvenience to their schedules and the ability to withdraw participation at any time.

In order to research our study's aims within the hypothesis section, the target population that we surveyed included caregivers of children ages 3-18 years old receiving

OT services via telehealth currently, or within the past two years, with a minimum of five sessions. Similarly, OTPs were surveyed who were currently providing telehealth sessions to children ages 3-18 years old or had provided a minimum of 8 sessions within the past two years. As an incentive for participation, we provided a copy of our educational pamphlet to participating clinics via email upon the closing of our research study, so that they may be informed on the best practices. The pamphlet included action items OTPs can take to improve their pediatric telehealth sessions based on our study's findings and literature review (see Appendix C). As an incentive for OTP and parent/caregiver participation, we offered entry into a raffle for one parent/caregiver and one OTP to each win a $50 Amazon gift card via email upon completion of the survey.

Our inclusion criteria along with an incentive, study dates, and link to our consent form were then provided in our two flyers (see Appendix B), which targeted either OTPs or parent/caregivers, that were then used for recruitment. We utilized four Facebook groups to acquire OTP perspectives. Researchers searched Facebook for groups that were created for OTPs treating children and allowed research recruitment within their group's rules. Personal connections, and local pediatric clinics within Los Angeles, CA; Orange County, CA; and Ventura, CA to target both populations were also utilized for recruitment. Although 17 clinics were contacted via email and phone calls, four clinics responded with signed site agreement forms, agreeing to post both flyers in their facilities. Once the electronic signatures of our consent form were obtained from a participant, they were then provided the link to participate in our survey.

Data Analysis

After closing the surveys, we then identified themes between the two groups, including 10 responses from OTPs and three from parents/caregivers, for our best

practices in the telehealth educational pamphlet. The Stanbridge statistician assisted us as we provided him with our deidentified responses. He calculated the percentage of responses in both OTPs' and caregivers' responses as well as provided us with a visual representation of findings. All questions within the quantitative portion of the survey were answered however, in the qualitative responses seven questions from OTPs were answered "N/A" as well as two questions by parents/caregivers. Due to the "N/A" responses, we did not use these responses in our data analysis. We utilized the Dedoose qualitative analysis tool to identify themes within the open-ended questions. We began qualitative analysis by individually coding themes before coding the data in teams of two in order to achieve inter-rater reliability. Dedoose qualitative analysis tool allowed us to translate participant responses into numerical values to form a statistical analysis. Once all computations and themes between the Likert-scale and open-ended questions were identified, we compiled the information and curated our educational pamphlet with clinical recommendations.

In order to keep all survey answers and data analysis both secure and confidential, all data collected was saved in a password-secured Google account in which only the four researchers and our thesis advisor had access; this form of data storage was used throughout the study to ensure procedures and processes were consistent thus minimizing the potential for errors (Finlayson & Denend, 2017). This password-secured account helped to ensure that no data was unintentionally destroyed and nobody outside the research team had access to the password protected, stored data.

Ethical and Legal Considerations

Our study aimed to optimize the telehealth service delivery model by understanding telehealth's best practices. Communication styles (verbal and nonverbal),

the therapeutic use of self, environmental modifications, and optimal rapport building, were the themes OTPs and parents/caregivers were asked to reflect upon. Justice was upheld by placing the risk exclusively on OTPs and caregivers that are enrolled, not on the more vulnerable pediatric populations. Additionally, we placed both the burden of risk and potential benefits upon OTPs and caregivers to ensure justice for our participants (Workman et al., 2017). All study participants were provided an informed consent form via Google Forms. The informed consent form included information regarding the research aims and roles of the participants, details of the purpose and benefits of the study, definitions, and explanations of confidentiality, as well as informed participants that participation in the study was voluntary. We did not use any personally identifiable information markers in our study. Finally, we ensured that data was properly protected to ensure the integrity of data and privacy of participants by using a password-protected Google account, which only the researchers had access to.

Institutional Review Board ([IRB] MSOT011-511) approval was obtained in order to ensure all steps were taken to protect the rights and wellbeing of all participants and that there was minimal risk in working within these populations. For example, only researchers involved in this study's investigation had access to the data gathered in the surveys to respect the privacy of the participants' answers and was accessed through a password-protected Google Drive to maintain the privacy and security of all respondents. We provided the IRB with all tools and data instruments as well as consent documents and recruitment materials. Obtaining IRB approval also ensured that no unnecessary methods were taken and the risks to participants did not exceed the research benefits gained, upholding the principle of beneficence. Proper preparations were taken, subjects

may end their participation at their own free will, and we were prepared to terminate the study if excessive harm was bestowed upon subjects.

We hoped to maximize our potential benefits for both our participants and the dissemination of our educational pamphlet; however, an anticipated potential conflict of interest that may arise in our study is that caregivers may have a response bias. It is a possibility that the caregiver would not want to speak badly about their child's occupational therapist and then rate their satisfaction levels higher as well as limit their overall feedback. A mixed-methods survey was chosen by researchers so that caregivers and OTPs would be able to complete the survey with the least amount of burden and inconvenience on the participants, in turn gathering the most data by minimizing the non-response rate (Forsyth & Kviz, 2017). Our data gathering method – an online survey – respected participants as autonomous agents. Participants had the ability to decide whether or not they wished to answer a question and could skip any question they chose (Hammer, 2017). We diligently formulated our survey questions to ensure none contained any assumptions or biases that may sway a participant toward a particular answer (Forsyth & Kviz, 2017). Electronic survey research does have disadvantages including the need for computer knowledge, lower response rates, and reduced abilities to clarify questions or concerns participants have while answering the survey. However, we decided an electronic survey would be the optimal form of data collection for the purpose of this study as it allowed participants to answer at their convenience, optimize anonymity, as well as reduce researcher bias and costs.

Results

Quantitative Results: Parent/Caregiver Responses

For measuring quantitative data, our Likert scale survey to parents/caregivers had three (n=3) responses. The children referenced in the surveys had three separate diagnoses: ASD, sensory processing disorder, and motor skills delay and were ages 9, 5, and 9 years old. The children from the survey responses had been working with the OTP from 1-5 years, although responses were not specific to how long they were working with the children on telehealth. Responses on the success of telehealth were mostly favorable with 33% strongly agreeing and 67% agreeing with being able to communicate with their child's OTP with ease during a telehealth session (see Figure 1). All parents/caregivers agreed that they are able to carry out the interventions directed by the OTP with ease during a telehealth session (see Figure 2). Parents/caregivers believe that the OTP is able to help with any technical issues they may experience prior to or during a telehealth session, with 33% strongly agreeing and 67% agreeing (see Figure 3). All parents/caregivers strongly agree on feeling a sense of trust in the OTP to listen to their concerns for the child (see Figure 4). Measuring child enjoyment in the tele-therapy sessions was mixed with 33.3% strongly agreeing that their child generally enjoys sessions, 33.3% agreeing, and 33.3% answered with a neutral response (see Figure 5). Similarly, we found that the parents/caregivers were split on their feelings of how well the OTP can connect with their child through telehealth sessions, with 33.3% for each of the strongly agree, agree, and neutral responses (see Figure 6). Lastly, parents/caregivers

generally feel that the OTP portrays a feeling of caring and concern for their child, with 67% strongly agreeing and 33% agreeing (see Figure 7).

Figure 1

Number of Participants Who Are Able to Communicate With Their Child's Occupational Therapy Practitioner With Ease During a Telehealth Session

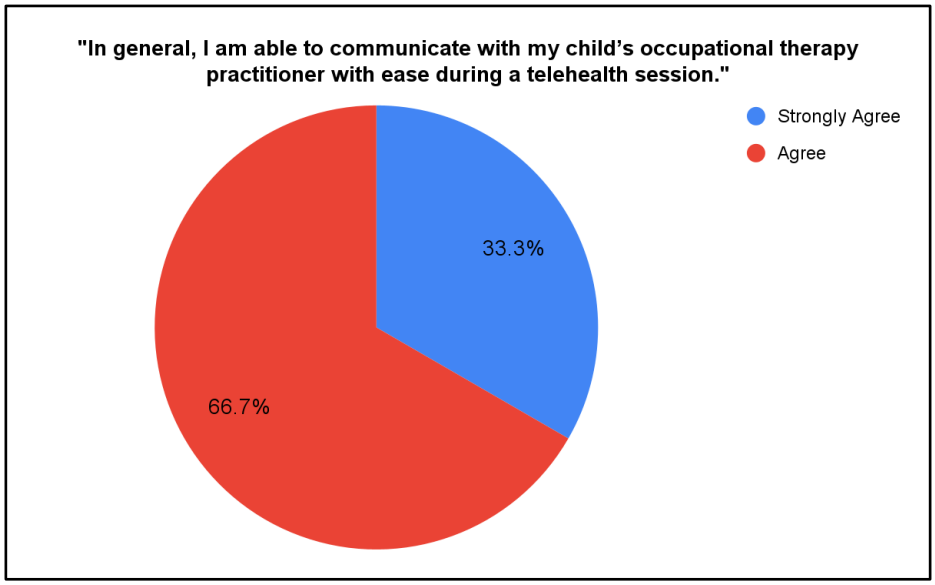


Figure 2

Number of Participants Who Are Able to Carry Out the Interventions Directed by the Occupational Therapy Practitioner With Ease During a Telehealth Session

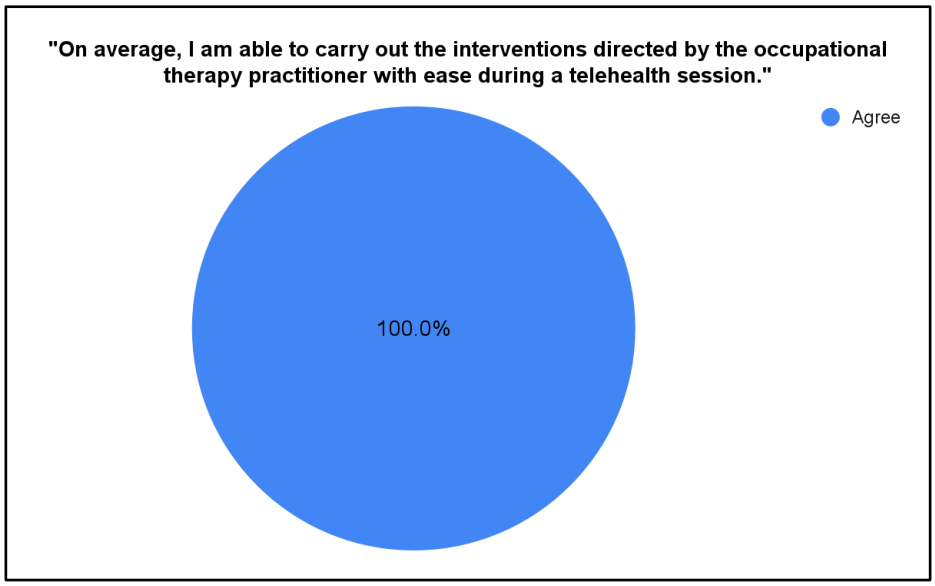


Figure 3

Number of Participants Who Said That the Occupational Therapy Practitioner Is Able to Help With Any Technical Issues They May Experience Prior to or During a Telehealth Session

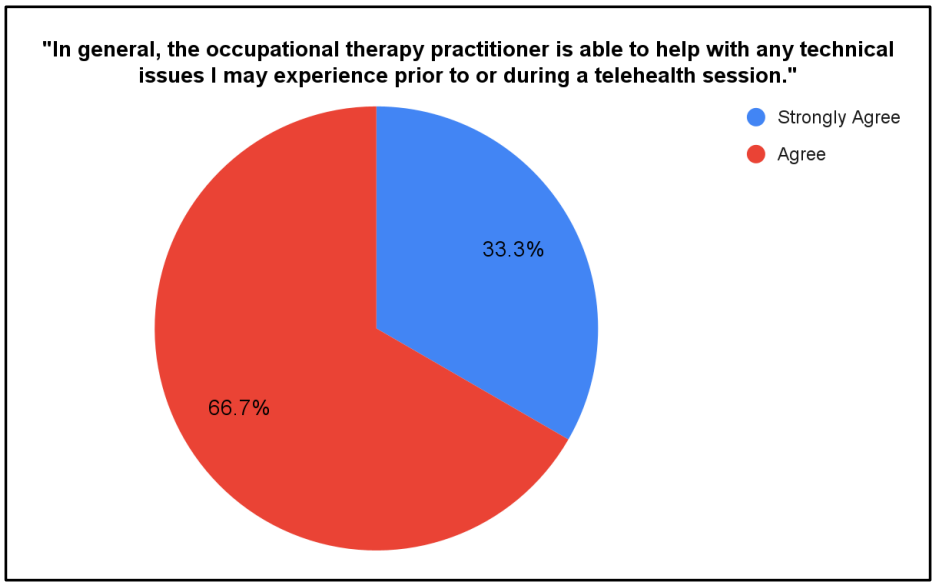


Figure 4

Number of Participants Who Feel a Sense of Trust in the Occupational Therapy Practitioner to Listen to Their Concerns for Their Child

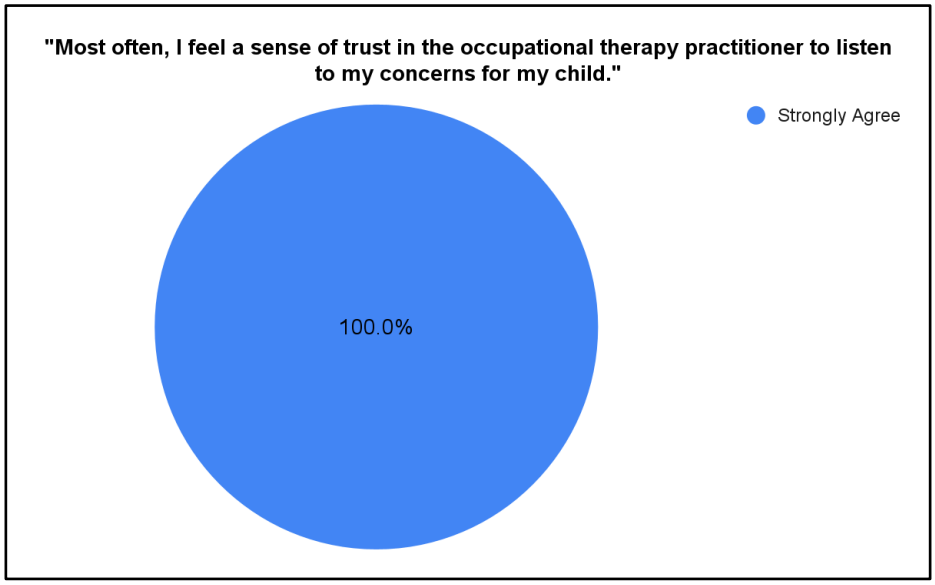


Figure 5

Number of Participants Who Said That Their Child Enjoys Telehealth Therapy Sessions

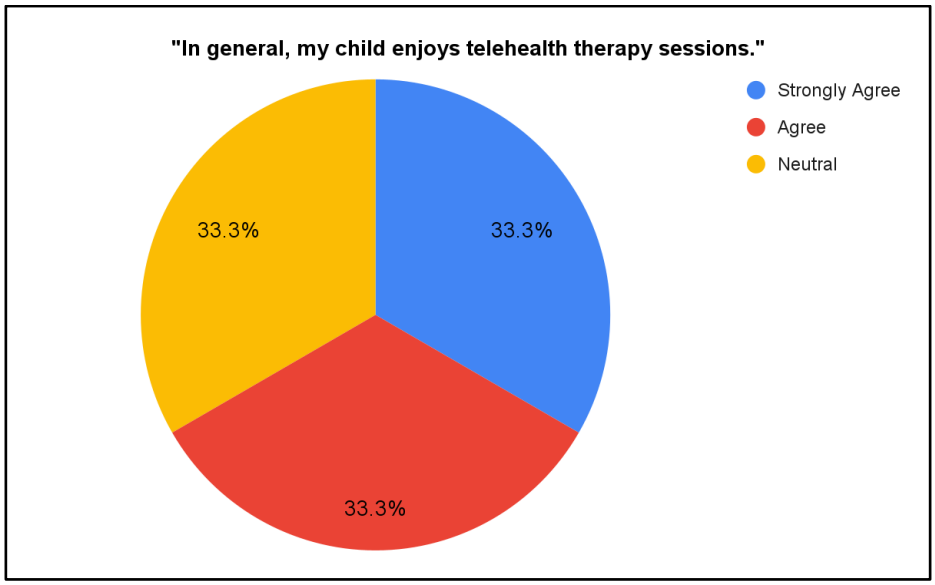


Figure 6

Number of Participants Who Said That the Occupational Therapy Practitioner Can Connect Well With Their Child Through Telehealth Sessions

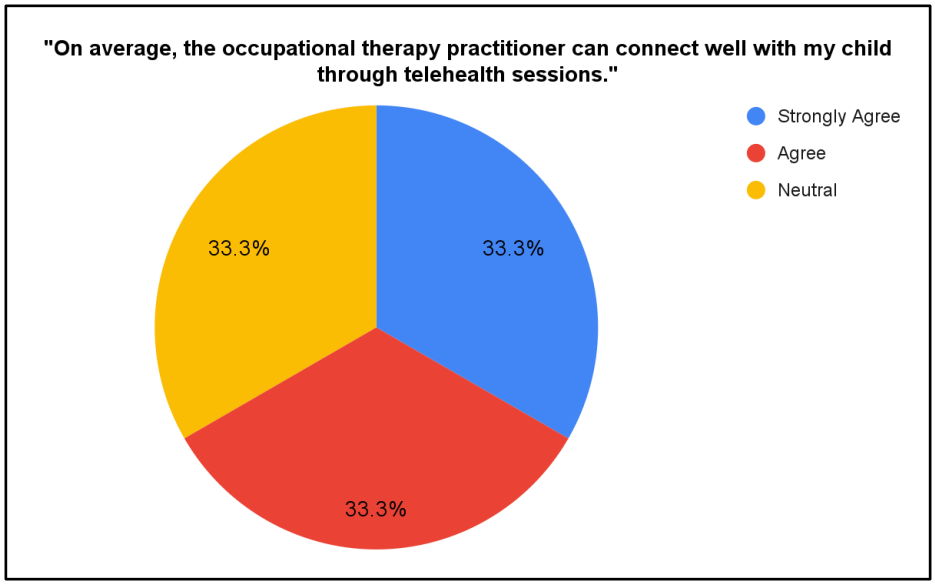
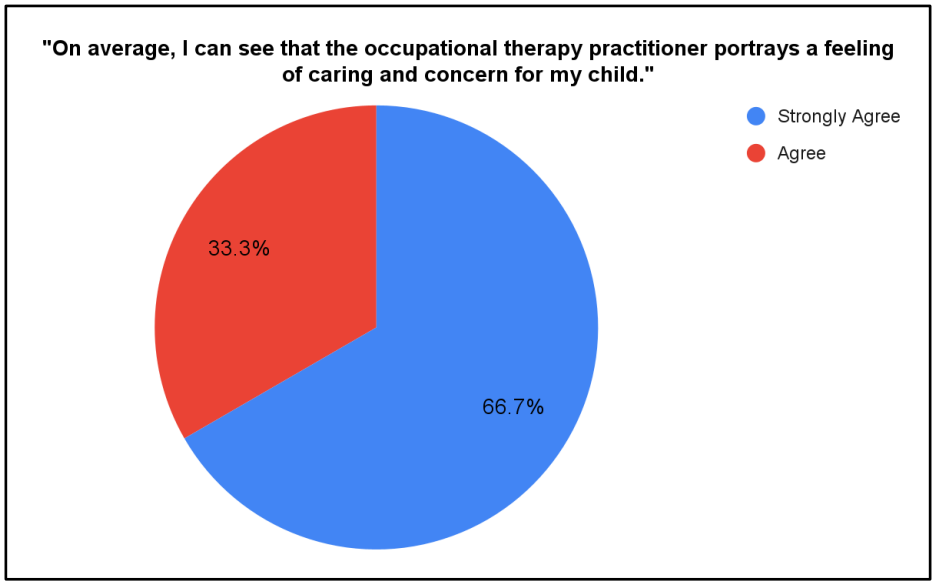


Figure 7

Number of Participants Who Can See That the Occupational Therapy Practitioner Portrays a Feeling of Caring and Concern for Their Child



Quantitative Results: OTP Responses

Our Likert scale survey sent to OTPs had ten (n=10) responses. OTPs reported they were utilizing telehealth to provide pediatric occupational therapy services from 0.5-2 years. Children's conditions being treated ranged from ASD, ASD and attention-deficit/hyperactivity disorder (ADHD) combined, ASD and anxiety, motor skills delays, and unspecified. Among the 10 OTPs, 60% disagree and 20% are neutral that it is just as easy to communicate with their pediatric clients during their telehealth sessions as in in-person sessions (see Figure 8). Only 50% of OTPs agree that they have a high level of competency in providing pediatric services via telehealth, 30% were neutral, and 20% disagree (see Figure 9). According to survey results, environmental considerations are an important part of the telehealth experience. For example, 40% of OTPs disagree, 20% strongly disagree that the environment the telehealth session is in is not often disruptive

to the session (see Figure 10). Environmental factors can cause disruption to the session when the client is distracted by family members or any element in the environment, excessive background noise, insufficient privacy, etc. Many OTPs disagree that they were able to maximize the duration of their interventions without having to repeat instructions to caregivers, with 10% strongly disagreeing and 50% disagreeing (see Figure 11).

When asked about internet connection and technology problems, 30% of OTPs agree that these areas were not a problem, while 30% disagree that they were not a problem, and 30% were neutral (see Figure 12). Among the 10 OTPs, 70% agree and 10% strongly agree that it would be helpful to have a third party who can set up and troubleshoot internet/technical issues (see Figure 13). As for being satisfied with the relationships that they have with their pediatric clients and families through telehealth, 60% of OTPs revealed that they agree and 20% of OTPs strongly agree (see Figure 14). However, when a similar question was asked, only 50% agreed and 10% strongly agreed with being satisfied with using telehealth to provide OT services to their pediatric clients (see Figure 15).

Communication between OTPs and families was positively reported. We have found that 60% agree and 20% strongly agree that they communicate with caregivers outside of sessions to address any concerns to improve following sessions (see Figure 16). Similarly, 60% agreed and 30% strongly agreed that caregivers communicate with them outside of sessions via email/text (see Figure 17). OTPs relayed that parents/caregivers receive continual coaching throughout the intervention schedule/treatment schedule, with 40% strongly agreeing and 40% agreeing (see Figure

18). OTPs reported being aware of the nonverbal feedback (i.e., tone, facial expressions, body language) that caregivers provide and take that into consideration for future sessions, with 80% agreeing and 20% strongly agreeing (see Figure 19). The response to this statement was important, as OTPs are able to observe and take notice of many subtle cues from caregivers through this platform. Lastly, we have found that caregiver feedback on sessions with OTPs were taken into consideration, 50% strongly agreeing and 40% agreeing (see Figure 20).

Figure 8

Number of Participants Who Said That It Is Just as Easy to Communicate With Their Pediatric Clients During Their Telehealth Sessions as in In-Person Sessions

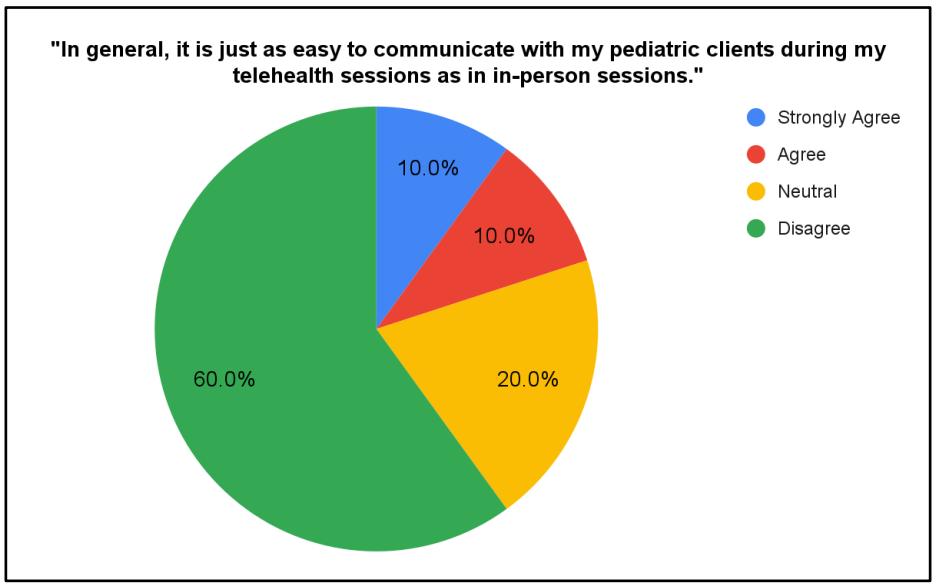


Figure 9

Number of Participants Who Said That They Have a High Level of Competency in Providing Pediatric Services via Telehealth

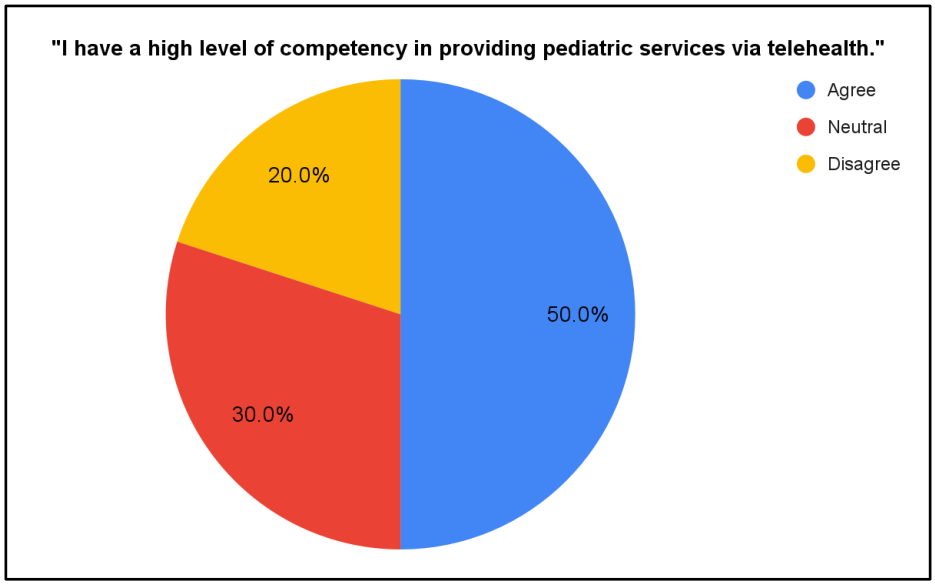


Figure 10

Number of Participants Who Said That the Environment the Telehealth Session Is in Is Not Often Disruptive to the Session

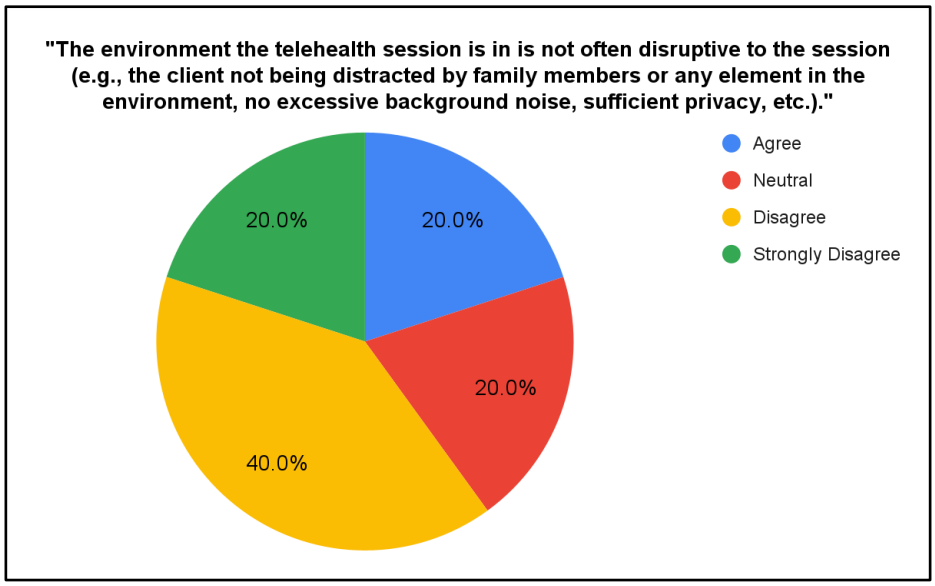


Figure 11

Number of Participants Who Are Able to Maximize the Duration of Their Interventions Without Having to Repeat Instructions to Caregivers

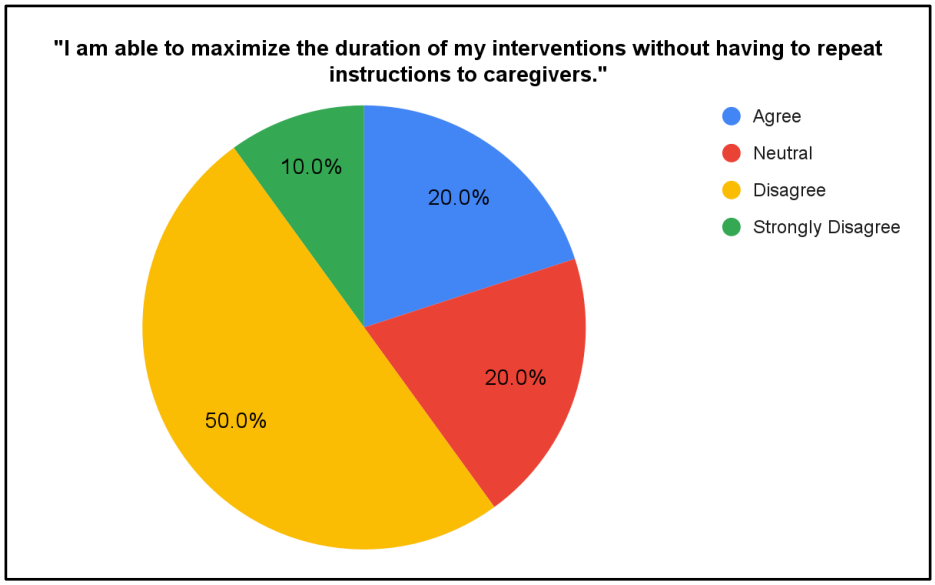


Figure 12

Number of Participants Who Said That Internet Connection and Technology Problems Are Not a Problem

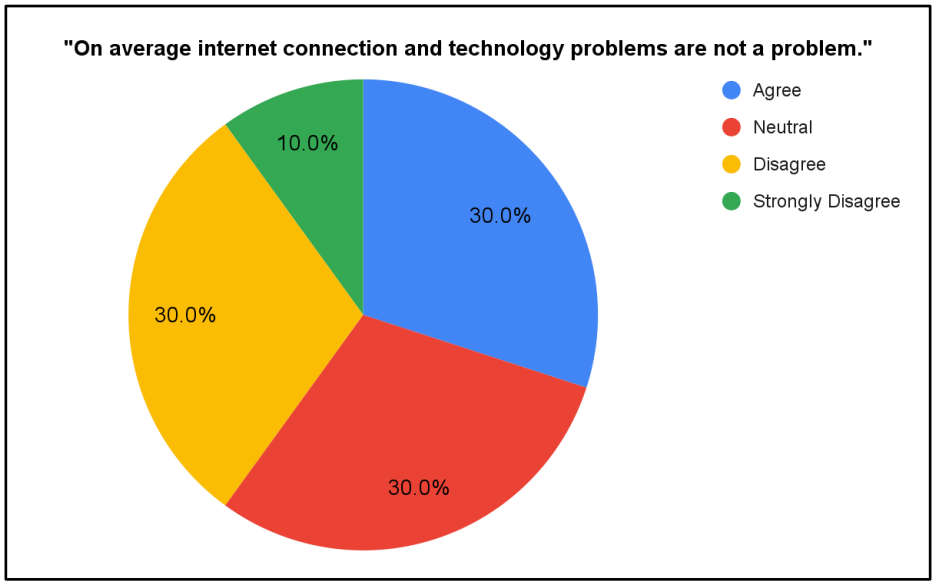


Figure 13

Number of Participants Who Said That It Would Be Helpful to Have a Third Party Who Can Set up and Troubleshoot Internet/Technical Issues

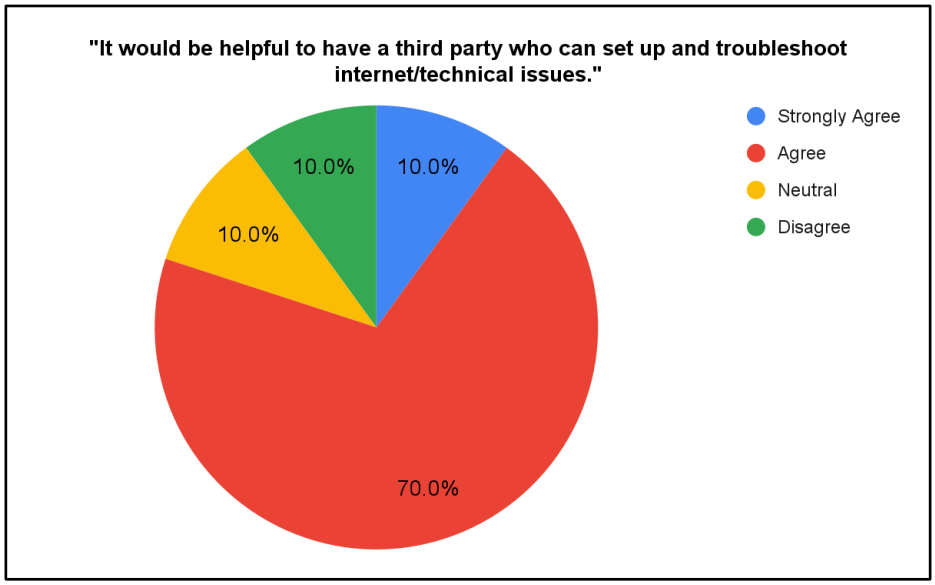


Figure 14

Number of Participants Who Are Satisfied With the Relationships That They Have With Their Pediatric Clients and Families Receiving Services via Telehealth

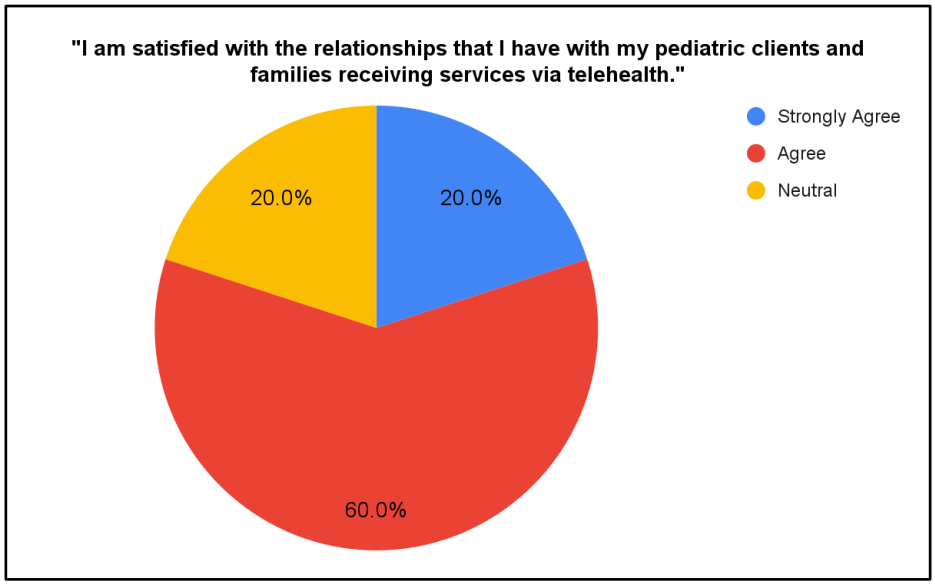


Figure 15

Number of Participants Who Are Satisfied With Using Telehealth to Provide Occupational Therapy Services to Their Pediatric Clients

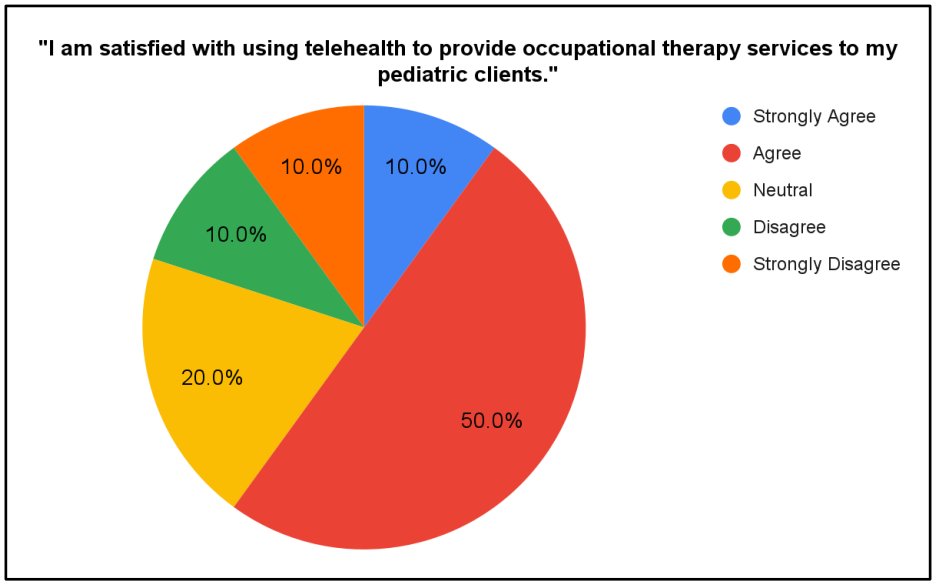


Figure 16

Number of Participants Who Communicate With Caregivers Outside of Sessions to Address Any Concerns to Improve Following Sessions

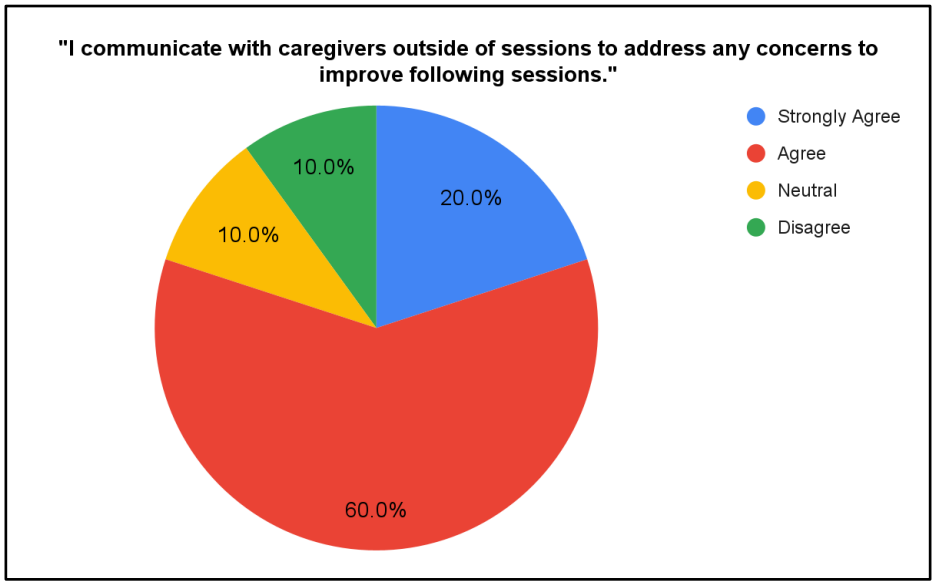


Figure 17

Number of Participants Who Said That Caregivers Communicate With Them Outside of Sessions via Email/Text

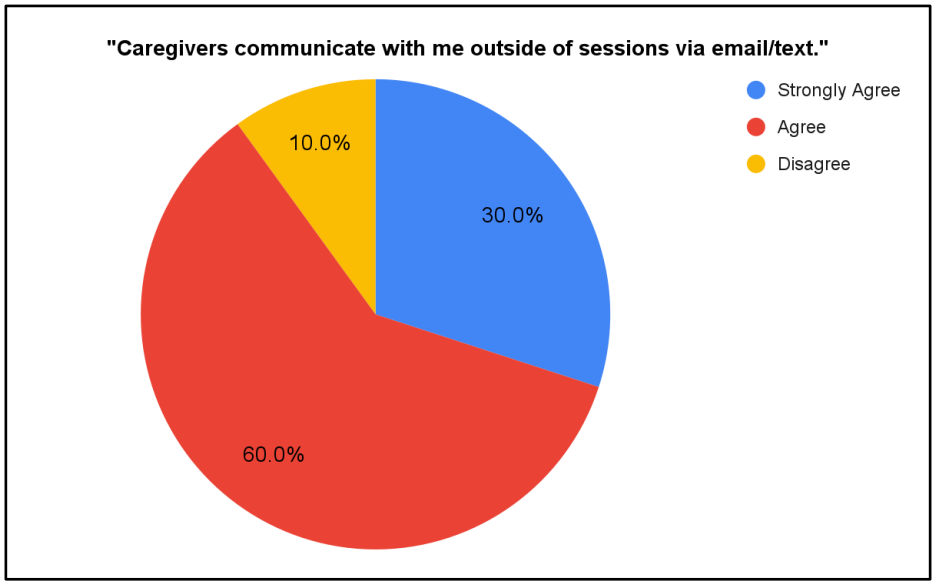


Figure 18

Number of Participants Who Provide Caregivers Continual Coaching Throughout the Intervention Schedule/Treatment Schedule

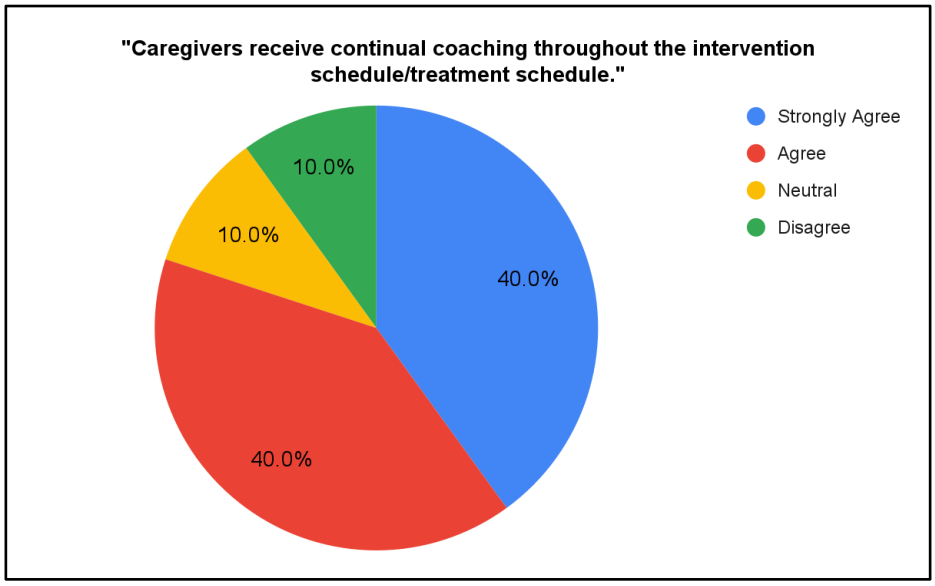


Figure 19

Number of Participants Who Are Aware of the Nonverbal Feedback That Caregivers Provide and Take That Into Consideration for Future Sessions

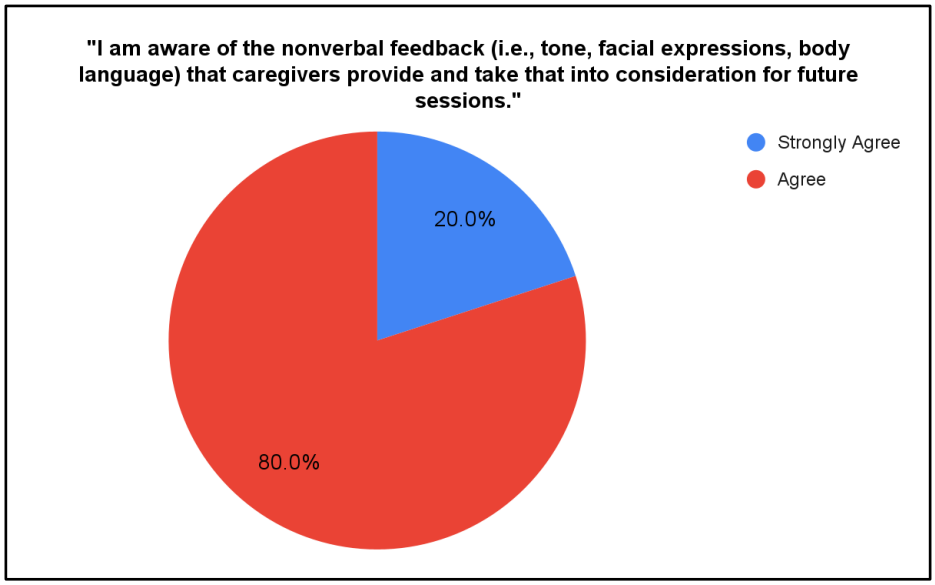
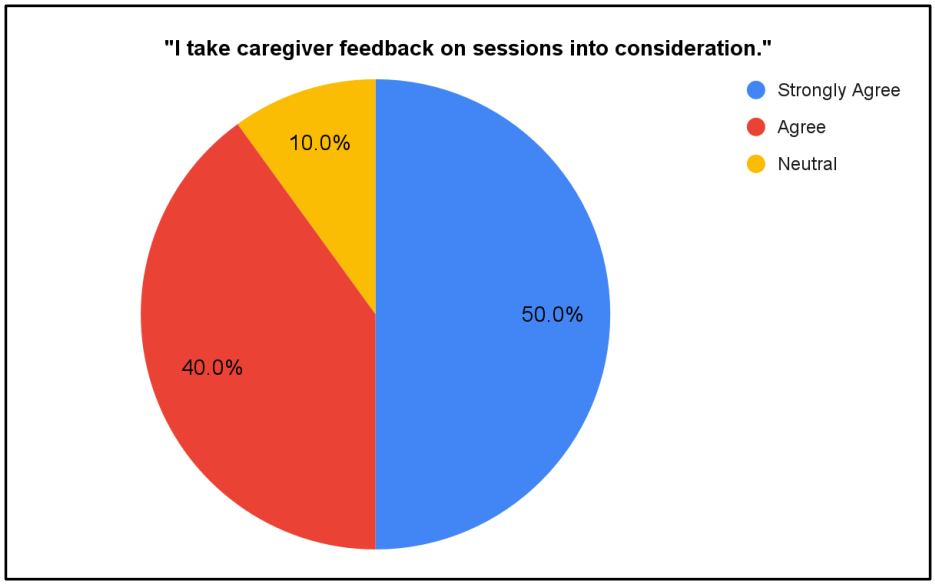


Figure 20

Number of Participants Who Take Caregiver Feedback on Sessions Into Consideration



Qualitative Results: Parent/Caregiver Themes

Despite a limited number of parent/caregiver responses, the responses to the survey short answers were insightful into the best practices of pediatric telehealth within the scope of occupational therapy. The themes we found and coded for included ease of accessibility, ease of communication, parent participation/parent coaching, environmental concerns, demonstration/modeling, positive reinforcement, and play-based activities.

As one parent/caregiver noted, telehealth was, "beneficial during COVID and when my daughter refused to go in person," this response supports the theme of ease of accessibility. When asked about the most significant benefit to receiving sessions via telehealth, another parent/caregiver said, "when our child is sick, and he cannot attend physically." Ease of communication was reported when asked about the elements that make a session most worthwhile to them; one parent/caregiver responded, "communication between providers."

Another parent/caregiver mentioned that the OTP was available every day through email communication if necessary. Parent participation or parent coaching was reflected in the survey results for the child with sensory processing disorder. Environmental concerns did arise when talking about noises around the home such as a garbage truck or fire truck. Having a quiet distraction free environment is an important component of successful sessions according to several parents/caregivers. Additionally, one parent/caregiver mentioned the benefits of demonstration for more successful outcomes. Using the behavioral framework technique of positive reinforcement, one parent/caregiver remarked on the OTP offering praise by clapping when the child

performed the correct action to improve her motor skills. Verbal and non-verbal cues, such as a thumbs up, as reported by a parent/caregiver, would help to increase child participation and attention. Lastly, play-based activities were mentioned for the child with sensory processing disorder when the parents/caregiver reflected that the OTP, "has us do fun activities that we can do at home, and they worked."

Qualitative Results: OTP Themes

Our survey had 10 responses with short answers from OTPs regarding their experiences conducting occupational therapy through telehealth. Through qualitative data analysis, the common themes that were identified in their responses include frames of reference referred to, utilization of parent coaching, environmental concerns affecting telehealth sessions, child engagement throughout telehealth sessions, effective communication strategies, and ineffective methods of communication.

Participant Responses

Various frames of reference were reported, including motor, developmental, person-environment-occupation, behavioral, and sensory integration. Many participants reported utilizing more than one frame of reference in their practice. Sensory integration techniques are highly utilized, with 70% of OTPs indicating that they refer to this frame of reference in their practice with pediatrics (see Figure 21).

Among the 10 OTPs, six implemented parent coaching for families and seven reported that parent/caregiver involvement contributed to successful outcomes with their pediatric clients (see Figures 22 and 23, respectively). Environmental concerns emerged as a concern by some OTPs, conveying inappropriate settings telehealth was conducted

in, the interference of noise, siblings, and television as barriers to more effective sessions (see Figure 24). Child engagement throughout the telehealth sessions was a mixed result, with 60% of OTPs reporting full engagement and 40% described fluctuating engagement or attention (see Figure 25). Strategies for good communication between families and OTPs revealed many techniques for the best practices in telehealth. Prior parent/caregiver communication from OTPs was reported to be an essential component to successful outcomes from 90% of OTPs. Preparation of materials ahead of time and written instructions were both reported by 70% of OTPs to create more positive experiences for children and their families. A visual schedule was another strategy reported by 80% of OTPs to create more favorable results. Simple cueing and a visual timer both helped 60% of OTPs achieve better outcomes. Additionally, 60% of OTPs interviewed mentioned that demonstrations also helped to promote the best outcomes (see Figure 26).

All OTPs reported that a lack of parent/caregiver involvement can affect the child's session engagement. Complex or unclear instructions and lack of communication with parents/caregivers were also a concern for OTPs (see Figure 27). 20% of OTPs also commented on having alternative plans for children and their families. For example, if the child was not engaged with plan A, the OTP provided a plan B to be implemented in addition to incorporating child-preferred activities to improve child's engagement (see Figures 28 and 29).

Figure 21

Frames of Reference Used by Occupational Therapy Practitioners

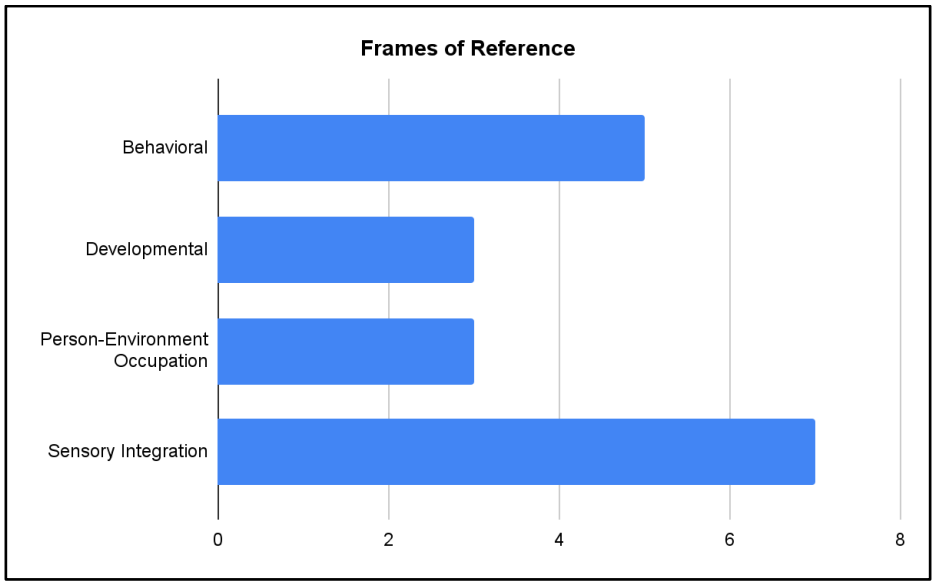


Figure 22

Parent Coaching Utilization

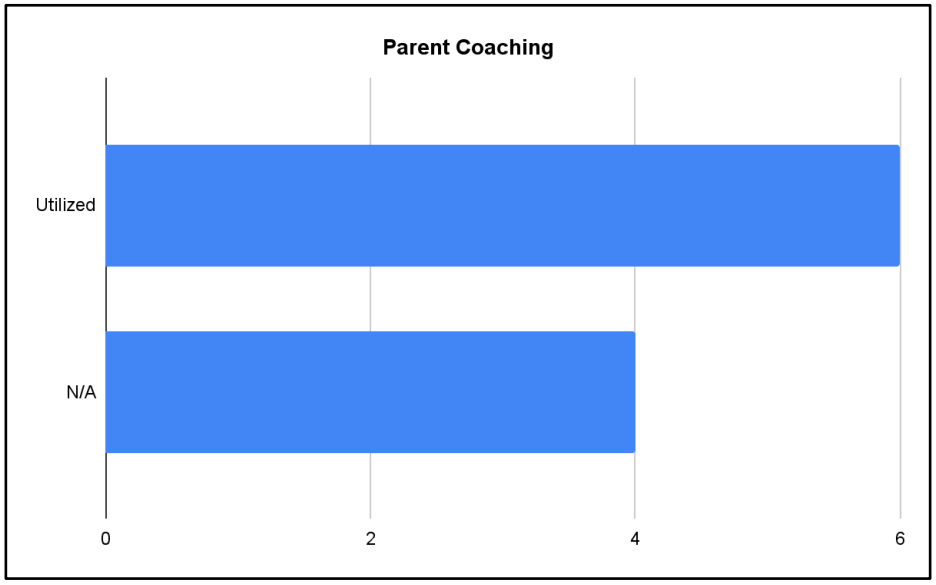


Figure 23

Caregiver Involvement During Telehealth Session

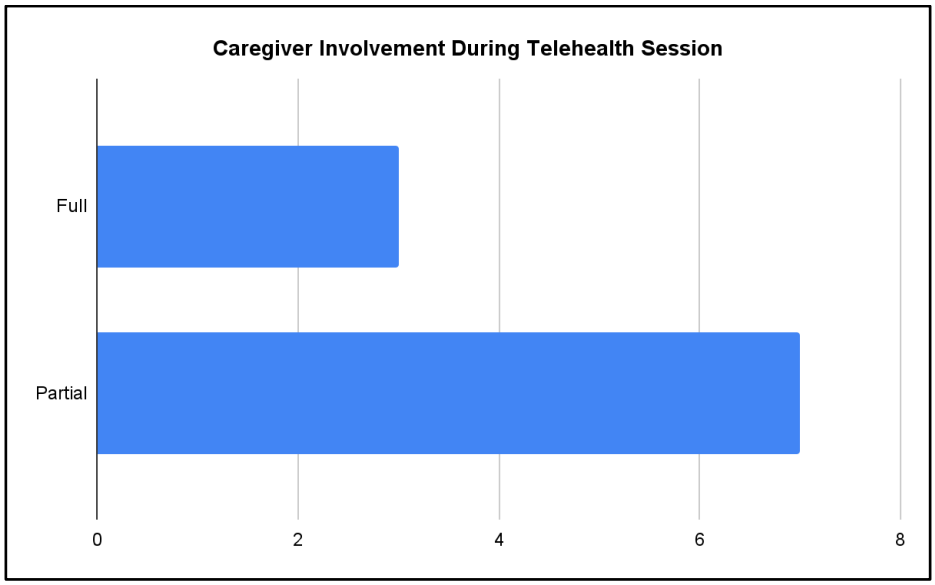


Figure 24

Environmental Concerns

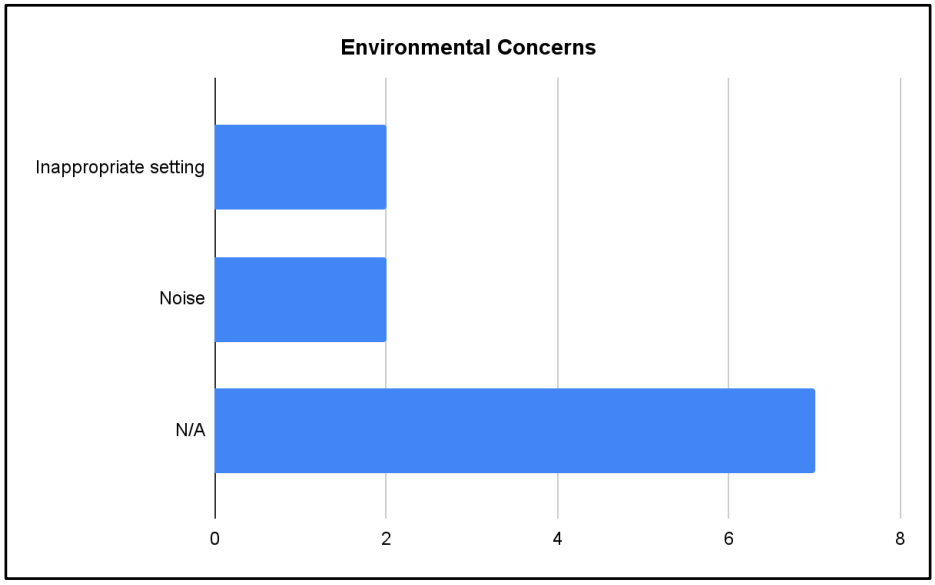


Figure 25

Child Engagement Throughout the Telehealth Session

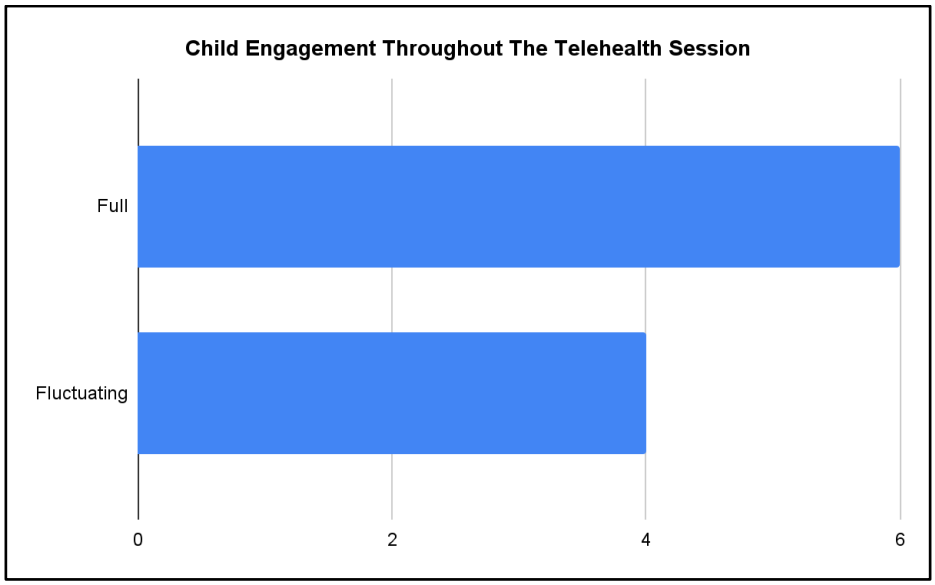


Figure 26

Strategies for Communication

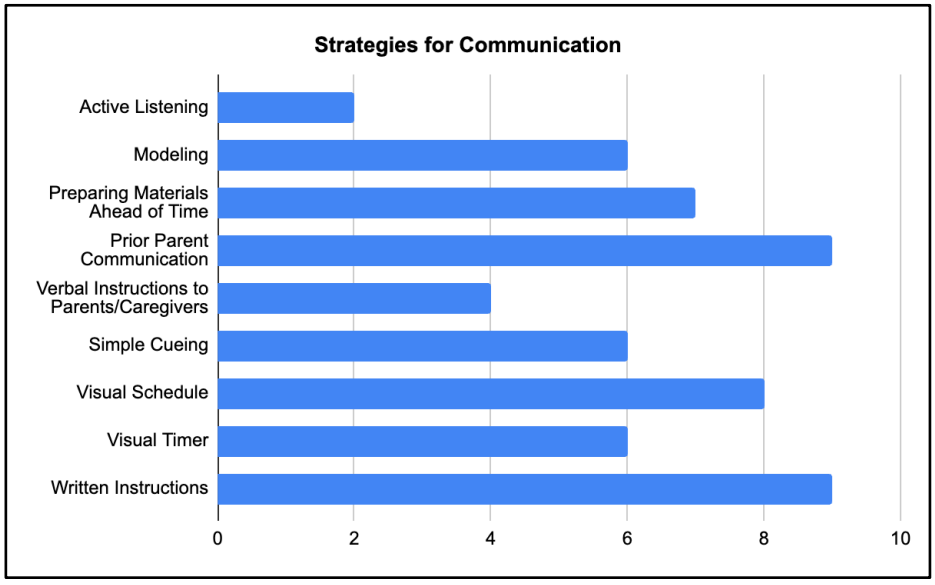


Figure 27

Ineffective Communication Strategies

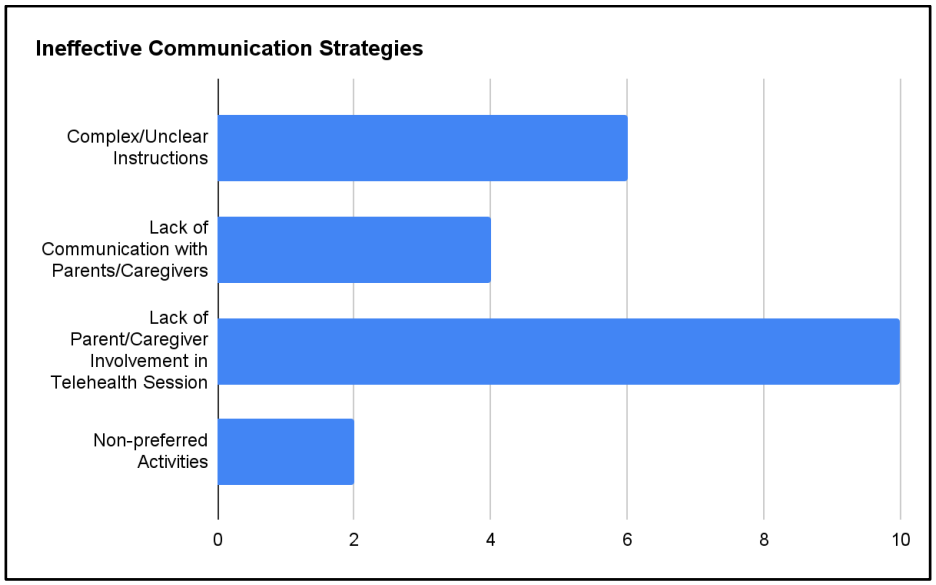


Figure 28

Advanced Preparation

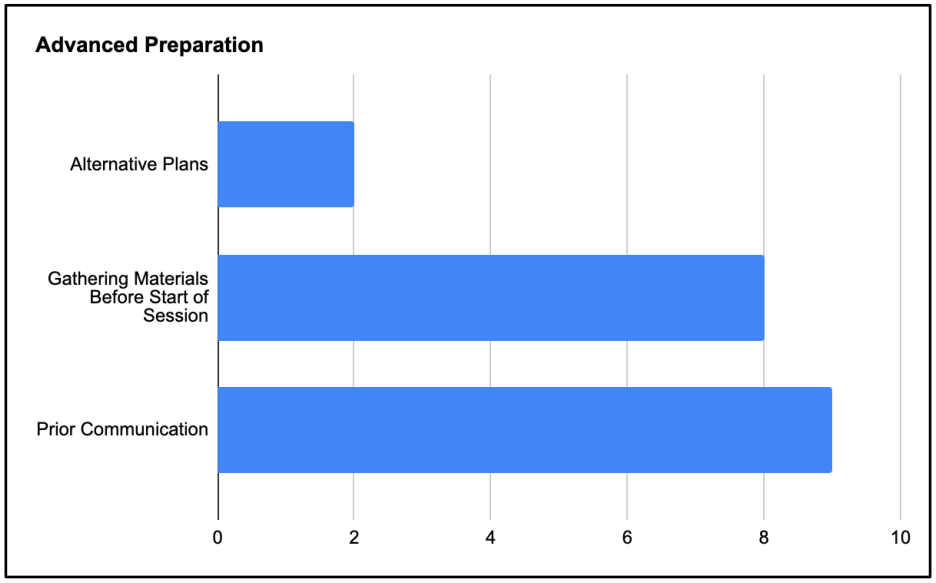
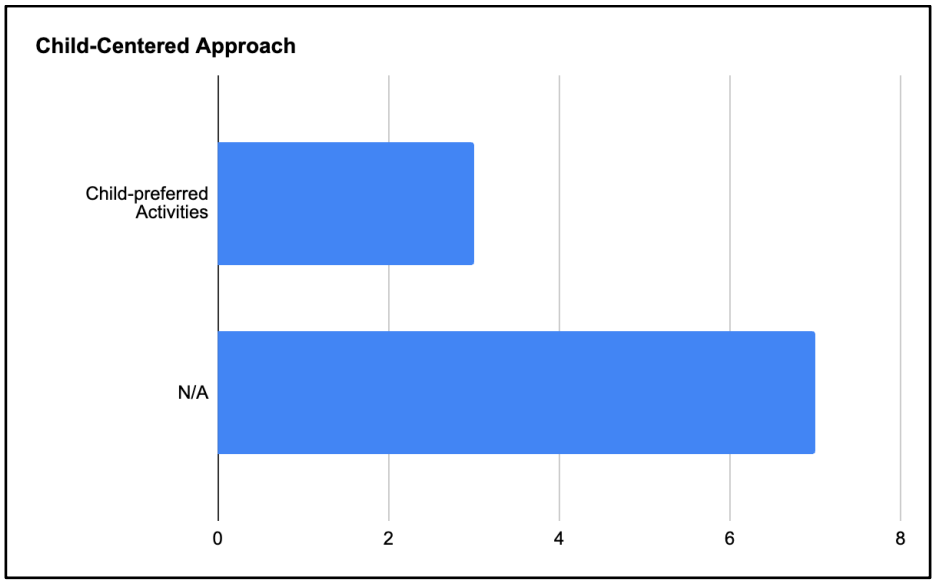


Figure 29

Child-Centered Approach



Discussion

Common Themes

We found common themes emerging from both OTP and parent/caregiver surveys. The crossover between both survey groups highlights the importance of several themes: parent/caregiver involvement, parent/caregiver coaching such as demonstrations and cueing, and advance preparation. Advanced preparation included prior communication between the OTPs and parents/caregivers and preparing visual and/or written materials in advance for the pediatric client and their families-an essential component for successful sessions. In addition, OTPs and parents/caregivers reported a fluctuation in child engagement throughout occupational therapy telehealth, with child-centered play-based sessions reported to be more productive. Lastly, creating the best environment within the home, free from distractions and noise, was essential to OTPs and caregivers/parents.

OTPs and parents/caregivers felt an ease of communication across this platform. Parents/caregivers, additionally, thought that the OTP conveyed a sense of caring and trust, which is vital for building rapport with children and families. However, the feeling of connection between the OTP and the child through telehealth was mixed. Only 50% of OTPs reported competency in using telehealth as a platform for service delivery. However, technology concerns were a common concern; having a specific person, other than the OTP, to address technical issues could help sessions run smoothly.

Occupational Therapy Implications

The AOTA and the AOTF outline the occupational therapy research agenda into five categories: assessment/measurement, intervention research, basic research, translational research, and health services research (AOTA & AOTF, 2011). The sixth category, research training, addresses the need to implement the five mentioned research goals and priorities. Our survey addressed the research category of assessment/measurement through examining the effectiveness and the best practices of telehealth in pediatric occupational therapy. Since 2020, telehealth has changed the way people engage and participate in therapeutic interventions. Our study further broke down what elements of telehealth were successful. The themes we uncovered, parent/caregiver involvement (Campbell et al., 2021), parent/caregiver coaching such as demonstrations and cueing (Myers & Cason, 2020), and advance preparation (Henry et al., 2017), were similar to themes we discovered in our literature review.

Intervention research aims to define the optimal dose, frequency, duration, location, and any other active components that help to make sessions effective (AOTA & AOTF, 2011). By asking OTPs and parents/caregivers Likert scale questions and short answers, their perspectives contribute to the intervention research regarding telehealth.

From our findings, we can provide suggestions to OTPs to help them guide parents/caregivers. By giving simple guidelines regarding a distraction-free environment, technology tips, parent/caregiver participation, and good communication, we can help support all those utilizing telehealth. Our study addressed the components of the AOTA and the AOTF health service research. We identified how interventions can best be supported by evidence based practice and procedural guidelines with the intention to provide guidelines for OTPs. From our findings and the literature, we have created a pamphlet on the best telehealth practices in occupational therapy for the pediatric population. We hope that this will inform OTPs new to telehealth in ways that they can be better prepared to be more successful in delivering intervention through this platform.

Limitations

Our research team was thorough in our research; however, there are several limitations that must be noted within this study. By gathering quantitative and qualitative data, we analyzed critical information from OTPs and parents/caregivers on their perspectives on using telehealth. Although removal of all biases is impractical, the research team worked diligently to ensure minimal amounts of research bias could have affected the study as we made certain questions rooted in evidence-based research in our literature review and had each member of the research team agree upon questions before adding them to our survey. A response bias may have arisen if a parent/caregiver had a negative experience with an OTP, or conversely an OTP with a client, and not necessarily within the context of the telehealth platform as a whole. Similarly, if the parent/caregiver did not want to speak poorly of the occupational therapist's abilities to successfully conduct sessions through telehealth, there may be a discrepancy between their experience and what appeared within the survey responses. Secondly, as we used Facebook groups

to gather OTP participants as well as local clinics and personal connections, researchers were unable to verify if all respondents met our inclusion criteria while they remained anonymous. Thirdly, our study was only disseminated and interpreted using English. This limited the potential number of participants and also the range of diverse perspectives and experiences we were able to collect. Merely 3 out of our 10 OTP responses have been practicing for over 2 years thus limiting their overall clinical experience that may have been a contributing factor to their viewpoint of the telehealth platform. Next, we concluded the survey with a limited sample size due to time constraints on data collection from delay of IRB approval. Participation recruitment of caregivers proved to be exceptionally difficult due to limited access to Facebook groups of this population as groups only admitted members that have a child with special needs and did not welcome researcher recruitment. A limited amount of time for data collection reduced the number of respondents, in turn limiting the representativeness of our data and possible statistical analysis we were able to compute. As participants were not required to answer all questions within the survey, several responses included unanswered questions, further limiting the results of our study. Finally, our survey was only provided in digital form, excluding those without access to a computer or smartphone with internet access. We acknowledge this exclusion will not provide full representation of those who receive or have previously received pediatric occupational therapy telehealth services.

Conclusion

Best Practices

Our study aimed to optimize the effectiveness of telehealth service delivery models to improve pediatric, parent/caregiver, and OTP experience and outcomes. As the telehealth service model grows, OTPs must be aware of and explore current evidence-

based best practices that will influence interventions and outcomes. Our survey results confirmed the perspectives of telehealth highlighted in the current literature and support our original hypothesis, which predicted that behaviors, attitudes, and themes would emerge as the most effective methods for delivery in a pediatric telehealth setting. Themes identified throughout our surveys and research provide strong recommendations that would improve communication, parent/caregiver involvement, and child engagement. In addition, we found that telehealth's potential to reach more people at convenient times and locations in their natural settings was positively reported by both OTPs and parents/caregivers.

Suggestions for Further Research

Further research into the perspectives of caregivers could help inform OTPs on the ways to interact and implement sessions, examining habits and practices that might be age-dependent. For example, when working with young children, using blocks for teaching math or puppets during story time could help bridge any in-person and telehealth gaps as there is evidence that young children have a harder time translating information from 2D to 3D (Lerner & Barr, 2014). Using tactile, proprioceptive, and visual cues during sessions brings the occupation of learning to life and supports a child-centered, play-based approach. Telehealth activity groups for adolescents struggling with social, emotional, or cognitive issues, may find telehealth to be a meaningful alternative to in-person therapy. Telehealth groups could also be instrumental in helping pediatric clients and their families forge new friendships within their communities. Additionally, telehealth is a new platform to both experienced OTPs and those new to the field. Over time, the field of occupational therapy should examine other aspects of the benefits and cautions of telehealth. The use of screen time, ergonomics while using telehealth,

environmental considerations, as well as augmented reality through technology will eventually be areas to further explore.

Telehealth's Vision in OT

OTPs should continue to use clear therapeutic communication within telehealth to assure client and parent/caregiver confirmation of intervention and information. Relational communication in the way of asking about hobbies and/or pets, for example, will further strengthen rapport building and trust between OTPs, families, and children while also applying a client-centered approach (Weaver et al., 2020). OTP preparation through email communication, instructions to parents, and educational resources provided before the session help to increase the success of interventions. Providing parents with demonstrations, cueing, and coaching can ensure that the progress made within the telehealth session continues outside of therapy times. Our study supports that child-centered, play-based approaches are crucial to greater participation and outcomes.

The AOTA's 2025 Vision states that "Occupational therapy maximizes health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participation in everyday living" (AOTA, n.d.). With technology changing the landscape of how and where occupational therapists deliver interventions, we must continue to look at evidence-based practices to drive improvement. Occupational therapy through telehealth can expand to better facilitate interdisciplinary collaborations with other healthcare disciplines. Telehealth can be more inclusive of the client's families because of the ease of accessibility to multiple caregivers and parents. Additionally, telehealth can inspire community health advocacy by connecting healthcare workers who share similar professional goals. With telehealth's ability to reach a diverse population, we can span the globe and offer services to the once

underserved. Telehealth has the potential to shift global health policies and practices with occupational therapy at the helm.

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Appendix A

Survey Questions

Questions for the Occupational Therapy Practitioners

- ***Likert scale questions:*** *(1 - Strongly disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, 5 - Strongly agree)*
  - In general, it is just as easy to communicate with my pediatric clients during telehealth sessions as in in-person sessions.
  - I take caregiver feedback on sessions into consideration.
  - I am aware of the nonverbal feedback (i.e., tone, facial expressions, body language) that caregivers provide and take that into consideration for future sessions.
  - I communicate with caregivers outside of sessions to address any concerns to improve following sessions.
  - Caregivers communicate with me outside of sessions via email/text.
  - Caregivers receive continual coaching throughout the intervention schedule/treatment schedule.
  - I have a high level of competency in providing pediatric services via telehealth.
  - I am satisfied with using telehealth to provide occupational therapy services to my pediatric clients.
  - I am satisfied with the relationships that I have with my pediatric clients and families receiving services via telehealth.
  - I am able to maximize the duration of my interventions without having to repeat instructions to caregivers.
  - On average internet connection and technology problems are not a problem.
  - It would be helpful to have a third party who can set up and troubleshoot internet/technical issues.
  - The environment the telehealth session is in is not often disruptive to the session (e.g., the client not being distracted by family members or any element in the environment, no excessive background noise, sufficient privacy, etc.).
- ***Open-ended questions:***
  - How long have you been an occupational therapy practitioner?
  - How long have you been utilizing telehealth to provide pediatric occupational therapy services?
  - What percentage of your current caseload receives your services via telehealth?
  - What are the age ranges of the pediatric clients you see using telehealth services?

- What are the main diagnoses you work with using telehealth services?
- Is there a specific telehealth session that you remember going well? How about ones that were difficult? What made those sessions go well or difficult?
- How much parental supervision is given during a session (i.e., the parent is not present, the parent is in and out, or the parent sits with the child during sessions)?
- What frames of reference, if any, do you refer to when conducting telehealth sessions with your pediatric client?
- What communication strategies have been effective in working with your pediatric clients during your telehealth sessions?
- What communication strategies have been effective in working with families during your telehealth sessions?
- What communication strategies have NOT been effective in working with your pediatric clients during your telehealth sessions?
- What communication strategies have NOT been effective in working with families during your telehealth sessions?
- What percentage are you able to see the child fully throughout the session and make accurate real-time observations?
- What kind of training/coaching, if any, did you provide to the caregivers prior to the first telehealth session with their child?

Questions for the Family

- ***Likert scale questions:*** *1 - Strongly disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, 5 - Strongly agree*
  - In general, I am able to communicate with my child's occupational therapy practitioner with ease during a telehealth session.
  - On average, I am able to carry out the interventions directed by the occupational therapy practitioner with ease during a telehealth session.
  - In general, the occupational therapy practitioner is able to help with any technical issues I may experience prior to or during a telehealth session.
  - Most often, I feel a sense of trust in the occupational therapy practitioner to listen to my concerns for my child.
  - In general, my child enjoys telehealth therapy sessions.
  - On average, the occupational therapy practitioner can connect well with my child through telehealth sessions.
  - On average, I can see that the occupational therapy practitioner portrays a feeling of caring and concern for my child.
- ***Open-ended questions:***
  - What is the age of your child?

- What condition, behavior, or diagnosis is the occupational therapy practitioner addressing?
- How long has the occupational therapy practitioner been working with your child/family?
- During the sessions, what percentage of the time are you interacting with your child?
- What kind of training/coaching did you receive prior to the first pediatric telehealth session with your child?
- How often do you receive continual coaching throughout the intervention schedule/treatment schedule?
- How often do you, as a caregiver, reach out to communicate via email/text with the occupational therapy practitioner outside of sessions? How often does the occupational therapy practitioner reach out to communicate through email/text with the family outside of sessions?
- What elements of a session make it feel most worthwhile to you?
- What environmental concerns or changes in your home do you feel might make the session more effective (i.e., space, light, time of day, sound, etc.)?
- What other forms of communication would help you communicate with your child's occupational therapist to better understand your child's needs?
- What other methods or ways of communication would assist you in your own implementation of intervention practices at home? (Include the use of non-verbal cues such as gestures, smiling, nodding, and/or demonstrations)
- Please provide some examples of how you felt heard or listened to during a session. If you did not, what could the occupational therapy practitioner have done differently?
- Please provide us with information about how telehealth has or has not benefited your child and any advice you may have for caregivers seeking telehealth services.
- What is the biggest challenge with receiving telehealth services?
- What is the biggest benefit of receiving telehealth services?

Appendix B

Flyers

Stanbridge University

Master of Science in Occupational Therapy

Master's Thesis Research Study seeking:

Occupational therapy practitioners
who have worked in telehealth

Purpose: You are invited to participate in a research study. We are investigating pediatric OT telehealth methods of delivery so we as OTs (YOU!) **can better serve our clients and their caregivers!**
You will be asked to participate in an anonymous online survey.

Participant commitment: approximately 20-25 minutes.

Qualifications to participate: Occupational therapy practitioners using telehealth, serving children ages 3-18 , with a minimum of 8 sessions within the past two years.

Study Duration: 9/5/22-10/22/22

After submission of the survey one participant, chosen at random, will be given a **$50 Amazon gift card.**

Scan the QR code or follow the link here to participate:
https://forms.gle/QoMbbVpTJkefpQkF8

Please contact the research team with questions:
Principal Investigator: Dr. Shain Davis | sdavis@stanbridge.edu
Research team: Sarina Cass | pedstelehealth.stanbridgemsot11@gmail.com

Stanbridge University

Master of Science in Occupational Therapy

Master's Thesis Research Study seeking:

Parents and caregivers who have children who have or are receiving telehealth occupational therapy services.

Purpose: You are invited to participate in a research study related to pediatric occupational therapy telehealth services. We are investigating pediatric telehealth methods of delivery specific to occupational therapy so we as occupational therapists can **better serve your children and their families (YOU!)**

Qualifications to participate:
Your child must be aged 3-18 and have received or be receiving occupational therapy services via telehealth within the past 2 years with a minimum of 5 sessions.

Study Duration: 9/5/22-10/22/22

Participant commitment: The survey will last approximately 20-25 minutes.

After submission of the survey one participant, chosen at random, will be given a **$50 Amazon gift card.**

Scan the QR code or follow the link here to participate:
https://forms.gle/cfDRZ9DGbNYuPiaU8

Please contact the research team with questions:
Principal Investigator: Dr. Shain Davis | sdavis@stanbridge.edu
Research team: Sarina Cass | pedstelehealth.stanbridgemsot11@gmail.com

Appendix C

Educational Pamphlet

The Latest Research in Telehealth

Telehealth in the 21st Century

Occupational therapy practitioners (OTP)s use telehealth across many practice settings within pediatrics including early intervention, schools, in-patient hospitals, mental health, and inpatient and private practice outpatient settings (Cason, 2014). In 2020, due to COVID-19 measures, OTPs began conducting many more intervention sessions through telehealth (Bestsennyy et al., 2021). Due to the prevalence of telehealth, many scientific studies have emerged.

Common Themes in Best Practices

Studies have reported on the myriad of benefits of telehealth such as **increased accessibility** to rural and underserved populations (Little et al., 2018), an increase in parent and **caregiver participation** (Campbell et al., 2021), and strengthened **communication** across a **multidisciplinary team** (Weaver et al., 2020). Telehealth can provide a unique window into the child's home environment (Peterson et al., 2021) and promote the theory of **generalization** (Mandich et al., 2020). Learning skills in one's own environment helps children more effectively carry out their treatment plans and achieve their intervention outcomes.

Thank you

For questions or comments please email us at:
pedstelehealth.stanbridgemsot11@gmail.com
Mari Hazel Aguila, Sarina Cass,
Dina Marvizi, Elizabeth Stone

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Stanbridge University
Masters of Occupational Therapy student research project presents:

The Best Practices in Pediatric Telehealth for Occupational Therapy

Surveying Parents/Caregivers & Occupational Therapy Practitioners

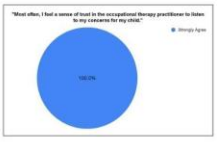
Pediatric Telehealth in Occupational Therapy

Surveys of Parent/Caregivers

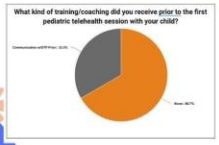
Our study findings suggest that parents/caregivers appreciate/value the following when receiving telehealth sessions for their child:

- OTP implementation of parent coaching.
- Clear session goals and schedule provided by OTP.
- Having session materials at hand prior to session start.
- Setting up the space for success: free of noise, distractions, and other technological devices.
- Play-based activities of preferred-child activities.

Example of parent/caregiver Likert scaled question:



Example of parent/caregiver open-ended question:

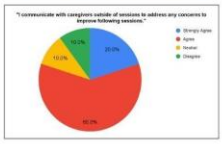


Surveys of Occupational Therapists

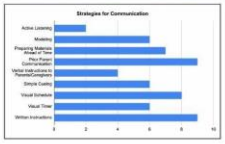
Our study findings suggest that therapists identify the following contributors to a successful telehealth session:

- Full parental involvement in the session.
- Strategies for good communication include communication with parent/caregiver prior to the session, having alternative interventions, visual schedules and visual timers, simple cueing, and modeling of behavior with activities.
- Parent/caregiver reiteration of cues and prompts to verify understanding.
- The use of child preferred activities
- Technological and platform competency.

Example of OTP Likert scaled question:



Themes from OTP open-ended questions:



Occupational Therapy's Role in Improving Telehealth & Teletherapy For Pediatric Clients

The literature shows that successful telehealth sessions include::

- More inclusive of the client's family & helps to expand into better interdisciplinary collaboration (Weaver et al., 2020).
- Informing families of the session objectives, structure, and any added parental or caregiver responsibilities improve telehealth efficiency (Lambert et al., 2021).
- Early assessment is possible through telehealth leading to more coordinated, comprehensive, and efficient care (Owens et al., 1998).
- Taking time for relational content and thoughtful pauses to help build relationships. Ask about pets, hobbies, or other personal topics important to the child (Weaver et al., 2020).
- Ask for verbal confirmation from the parent/caregiver and/or child about any observation to promote health literacy, allow for concrete assessments and prevent assumptions, bias, or judgments (Goldstein & Glueck, 2016).
- Prior communication from OTPs to parents/caregivers added to the level of OTP perceived professionalism and "telepresence" (Henry et al., 2016).

Appendix D

Institutional Review Board Approval Letter

Dear Dr. Shain Davis and Students,

The Stanbridge University Institutional Review Board has completed the review of your application entitled "Best Practices for Occupational Therapy Practitioners in Pediatric Telehealth: Practitioner and Family Perspectives." Your application (MSOT011-511) is approved and categorized as Expedited.

IRB Application Number	MSOT011-511
Date	09/08/2022
Level of Review	**Expedited**
Application Approved	X
Conditional Approval	
Disapproved	
Comments	The requested Minor changes have been reviewed and confirmed as completed by the IRB. (09/08/2022)
Signature of IRB Chair	

Please note that any anticipated changes to this approved protocol requires submission of an IRB Modification application with IRB approval confirmed prior to their implementation.

Sincerely,
Julie Grace, M.S., M.A.
IRB Chair