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Understanding the Efficacy of Telehealth in Pediatric Occupational Therapy

By

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An undergraduate honors thesis submitted in partial fulfillment of the

requirements for the degree of

Bachelor of Science

in

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Abstract

In response to the COVID-19 pandemic, the American Occupational Therapy Association (AOTA) expanded telehealth, an electronic health care service, to virtually treat patients. Many occupational therapy and public health scholars are researching the effectiveness of telehealth for all age groups or for adults only (Barlow, 2009; Dahl-Popolizio, 2020; Hoffmann, 2008; Jacobs, 2012; Renda, 2018). The purpose of this study is to understand the efficacy of telehealth as a pediatric occupational therapy modality and expose variables effecting treatment quality.

I created a survey in Qualtrics, a web-based software. The target population was pediatric occupational therapists (OTs) licensed in Oregon. Qualitative and quantitative questions addressed respondent qualifications, telehealth and pediatric occupational therapy experience, telehealth hardware and software knowledge, patient demographic, and telehealth efficacy. I received help distributing the survey from The Occupational Therapy Association of Oregon (OTAO) and The Occupational Therapy Licensing Board (OTLB). Responses were collected from March 3rd to May 5th, 2022. Survey results were organized and analyzed through Qualtrics.

The data suggests that telehealth is a relatively effective treatment modality in assisting pediatric patients with reaching their therapeutic goals. Greater success rates are reported amongst specific age groups (birth - 2 years and 11-18 years old) and diagnoses (abnormalities in physiological development, movement disorder, noncongenital insults to the brain, and down syndrome).

Variables suggested to improve treatment quality include parental involvement, provision of supplies to patients, higher quality technological equipment for OTs and patients, and more telehealth administration instruction for OTs.

Introduction

In response to the COVID-19 pandemic, the American Occupational Therapy Association (AOTA) expanded telehealth, an electronic, health care service, to virtually treat patients. With the current expansion, the effectiveness of telehealth is being explored amongst different occupational therapy services and patient demographics (Barlow, 2009; Dahl-Popolizio, 2020; Hoffmann, 2008; Jacobs, 2012; Renda, 2018). While this is an exciting development, current research greatly focuses on telehealth's implementation for all ages or for adults only and lacks analyzing the effectiveness in specific age groups (Barlow, 2009; Dahl-Popolizio, 2020; Hoffmann, 2008; Jacobs, 2012; Renda, 2018). This study aims to help fill this gap by focusing on pediatric occupational therapy.

Background

Occupational Therapy

Occupational therapy helps people complete wanted and needed tasks through therapeutic, everyday activities (About Occupational Therapy; Christiansen, 2014). Occupational therapists (OTs) work in a variety of settings, some of which include schools, in-patient and out-patient clinics, home health services, and hospitals (About Occupational Therapy; Bach, 1995; Bican, 2021; Hinojosa, 1988; Ravetz, 1996). OTs use daily activities to work on performance areas such as fine motor skills, sensory processing skills, upper extremity function, visual motor function, and completion of one's daily tasks (Houtrow, 2019).

Family-centered care in pediatric occupational therapy involves parent-therapist collaboration, planning, and evaluation of interventions (Hanna, 2002). Through this process, pediatric OTs seek to understand how patients interact across social, psychological, cultural, and physical

environments and how they and their families live with different conditions (Bendixen, 2011). Frequent health conditions treated are "...autism spectrum disorder, cerebral palsy, intellectual disability, spina bifida, and acquired conditions such as traumatic brain injury or juvenile idiopathic arthritis" (Houtrow, 2019, pp. 2-3). During collaborations, developing positive relationships with patients and their families is critical to successful patient outcomes (D'Arrigo, 2020; D'Arrigo; Hanna, 2002; Lee, 2015).

Telehealth

Telehealth is an "...evaluative, consultative, preventative, and therapeutic [modality] delivered through information and communication technology" that allows OTs and other healthcare workers to treat patients virtually (Proffitt, 2021, p.3). In 2005, the American Occupational Therapy Association (AOTA) first published telehealth guidelines under the term *telerehabilitation* (Proffitt, 2021, p.2). Guideline updates have been occurring since 2010, establishing the term "telehealth" in 2013 (Proffitt, 2021). By 2014, telehealth was introduced in schools, hospitals, inpatient and outpatient settings, nursing homes, and burn units (Dahl-Popolizio, 2020). With this modality, OTs use electronic devices such as computers, cell phones, and tablets to instruct patients, and frequently their families, through therapeutic activities (Dahl-Popolizio, 2020).

Despite these developments, telehealth use has—until recently—remained limited. This is due to data vulnerability and regulations that vary by state (Bican, 2021; Doraiswamy, 2020; Gajarawala, 2021). Telehealth providers are responsible for protecting patient confidentiality and system security. If third parties acquire exclusive information, the Physician-Patient Privilege is invoked and therefore the confidentiality of the physician-patient relationship is not upheld in

court (Clark, 2010). As telehealth guidelines vary by state, there is a lack of consistent security protocols that make the Physician-Patient Privilege harder to defend (Garg, 2011).

Legal regulations have created telehealth rule variations across states effecting insurance coverage, cost of service and reimbursement, and licensing (Solimini, 2021). Medicare, commercial insurance plans, and several Medicaid programs do not cover the cost of telehealth (Gajarawala, 2021). In 2018, the Bipartisan Budget Act was passed increasing Medicare's telehealth coverage, but state to state policies limit others, like Medicaid, from making similar advancements (Gajarawala, 2021; Lee, 2020). Additionally, lack of multistate licensure requires OTs to have a telehealth license for each state they practice in (Gajarawala, 2021). Legal contracts such as the Interstate Medical Licensure Compact are made to resist this by allowing health care workers in formally joined states to administer telehealth services across state lines (Lee, 2020).

In response to the COVID-19 pandemic, the AOTA expanded telehealth services to allow occupational therapists to treat patients virtually. After a national emergency was declared on March 13, 2020, states across America announced a shutdown of services and community lockdowns, leaving millions of people isolated and confined (Khubchandani, 2021). To support this transition, protective health record laws such as the Health Insurance Portability and Accountability Act, the Health Information Technology for Economic and Clinical Health, and Children's Online Protection Act now expand to telehealth (Gajarawala, 2021). All changes made coincide with AOTA code of Ethics and Ethical Standards of Practice as well as the Occupational Therapy Practice Act and its regulations (*Telehealth State Statutes Regulations Regulatory Board*, 2021).

Literature Review

With the recent expansion of telehealth in occupational therapy, public health and occupational therapy scholars are exploring its effectiveness. Scholars are greatly focusing on telehealth's implementation during the COVID-19 pandemic in several health care settings beyond occupational therapy such as clinical care, rehabilitation services, and medical education (Bican, 2021; Dahl-Popolizio, 2020; Doraiswamy, 2020; Gajarawala, 2021; Lin, 2018; Proffitt, 2021).

Within occupational therapy specifically, many scholars are researching the effectiveness of telehealth for all age groups or for adults only (Barlow, 2009; Dahl-Popolizio, 2020; Hoffmann, 2008; Jacobs, 2012; Renda, 2018).

In past research, the effectiveness of telehealth in occupational therapy has been analyzed exclusively as a service delivery model and in comparison to in-person sessions (Barlow, 2009; Dahl-Popolizio, 2020; Hoffmann, 2008; Jacobs, 2012; Renda, 2018). Occupational therapy interventions used to study telehealth efficacy include wheelchair seating and positioning, home modification, and conducting home visits (Barlow, 2009; Hoffmann, 2008; Renda, 2018).

Additionally, scholars have looked at patient and clinician satisfaction and whether therapeutic goals are met (Barlow, 2009; Dahl-Popolizio, 2020; Hoffmann, 2008; Jacobs, 2012; Renda, 2018). While these studies suggest that telehealth is an effective treatment modality, they do not focus specifically on pediatric patients and their providers.

Literature reviews and research studies on pediatric occupational therapy greatly focus on parental engagement in in-person settings such as home health care, hospitals, and clinics (D'Arrigo, 2020, D'Arrigo; Hanna, 2002; Lee, 2015; Hinojosa, 1988). Research has been done specifically on parent-therapist collaboration, its importance, and strategies to improve it (D'Arrigo, 2020; D'Arrigo; Hanna, 2002; Lee, 2015). All areas of research suggest the

importance of legal guardians in their child's journey to reach their therapeutic goals (D'Arrigo, 2020; D'Arrigo; Hanna, 2002; Lee, 2015). None of the research on pediatric occupational therapy evaluates the efficacy of telehealth specifically.

While these findings point to the collaborative process of the parent-therapist relationship and the usefulness of telehealth, they do not address telehealth's effectiveness specifically within the pediatric community. The purpose of this study is to understand the efficacy of telehealth as a pediatric occupational therapy modality from an occupational therapist's view and to identify variables effecting treatment quality.

Methods

I created a survey in Qualtrics, a web-based software. The target population was pediatric occupational therapists licensed in Oregon. Qualitative and quantitative questions addressed respondent qualifications, telehealth and pediatric occupational therapy experience, telehealth hardware and software knowledge, patient demographic, and telehealth efficacy. The complete survey can be viewed in the Appendix.

I received help distributing the survey from The Occupational Therapy Association of Oregon (OTAO) and The Occupational Therapy Licensing Board (OTLB). I provided the survey link to the OTAO for them to distribute it to its members. The OTLB provided me with a contact list for Oregon licensed occupational therapists. I emailed the survey to 1,460 OTs and sent a follow up email two weeks after. Responses were collected from March 3rd to May 5th, 2022.

I analyzed and organized survey results through Qualtrics. To identify relationships within the quantitative data, I used Qualtrics' Crosstab feature in the Data Analysis section (Image 1). I did this for respondent demographic, telehealth efficacy, and variables effecting treatment quality.

Because Crosstab did not support this analysis style for patient geography, age, and diagnosis, I created graphs and data tables of this information alone. I analyzed qualitative data by coding – the process of organizing great amounts of information into smaller segments (Bailey, 2007). I did this for responses from question 20 “How does parental involvement affect the productivity of a telehealth session as compared to an in-person session? Please explain your response,” question 21 “What would make telehealth easier for patients to use?” and question 22 “What would make your experience with telehealth better?”

Results

Refer to the Appendix for images, data tables and graphs.

Responder Demographics

There are a total of 142 survey responses, 122 of those being from pediatric OTs who have experience administering telehealth. The response rate per question differs due to numerous respondents not completing the entire survey.

The respondent population works in several settings, the most being in schools (42 OTs) followed by outpatient clinics (35 OTs), non-listed settings such as early intervention (19 OTs), hospitals (11 OTs), home health services (10 OTs), and in-patient clinics (5 OTs) (Data Table 1 and 2). Most respondents have 1-5 years (36 OTs) or more than 10 years of pediatric occupational therapy experience (58 OTs) (Data Table 1). In administering telehealth, the majority reported over one year of experience (62 OTs) (Data Table 1).

Patient Demographics

Patients referred to in survey responses are from suburban (41 children), rural (37 children), and urban areas (34 children) (Graph 1 and Data Table 3). Age ranges vary with the most being 2-7

years old (51 children) followed by 7-11 years old (50 children), 11-18 years old (27 children), and birth-2 years old (19) (Graph 2 and Data Table 4). The most frequent diagnoses being treated in this sample are behavioral, sensory, and intellectual impairments (61 children), autism spectrum disorder (58 children), and delayed milestones (55 children) (Graph 3 and Data Table 5).

The Efficacy of Telehealth

The data suggests that telehealth is a relatively effective treatment modality based off responses to question 17 – “Is telehealth helping your patients reach their therapeutic goals?” For this question, the respondents have four answer options: *never*, *sometimes*, *frequently*, and *all the time*. Answers to this question are cross analyzed with responses to question 12 “What age range are your patients that use telehealth? Please check all that apply” and question 14 “What diagnosis groups are you treating over telehealth? Please check all that apply” to identify possible relationships in the data.

Age Results

From birth-2 years and 11-18 years old, most respondents said telehealth *frequently* helps their patients reach their therapeutic goals (Data Table 7). From 2-7 years and 7-11 years old, most respondents said telehealth *sometimes* helps their patients reach their therapeutic goals (Data Table 7)

Diagnosis Results

Most respondents for the following diagnoses report telehealth *frequently* helping their patients reach their therapeutic goals: abnormalities in physiological development, movement disorder, noncongenital insults to the brain, and down syndrome (Data Table 8). For the remaining listed diagnoses, most respondents report telehealth *sometimes* helping their patients reach their

therapeutic goals: autism spectrum disorder, behavioral, sensory, and intellectual impairments, cardiac impairments, cerebral palsy, congenital abnormalities, delayed milestones, feeding difficulties, and musculoskeletal impairment (Data Table 8).

Variables Influencing Telehealth Efficacy

Subtheme 1: Parental Involvement

In response to question 20 “How does parental involvement effect the productivity of a telehealth session as compared to an in-person session? Please explain your response,” most respondents report that the efficacy of telehealth greatly relies on and increases with parental involvement.

“Parental involvement is absolutely necessary to most successful pediatric telehealth sessions. Typically parents are following through with the coaching I provide to run sessions. Without parent’s involvement in the majority of my sessions, telehealth would be ineffective.” (Pediatric OT, outpatient clinic, 1-5 years therapist experience, 5-12 months telehealth experience)

“The students that had the most success were those that had the most parental involvement, so that the parent could continue to work on goals throughout the week. When parents have a better understanding of what their child is working on they are more likely to generalize strategies in other areas.” (Pediatric OT, school, more than 10 years therapist experience, 5-12 months telehealth experience)

“The majority of treatment falls to parents with telehealth so if families [sic] are not truly [sic] bought in with therapy and have time for the treatments tele health [sic] will not work. Especially with younger children.” (Pediatric OT, hospital, more than 10 years therapist experience, 0-5 months telehealth experience)

“It is critical to have a parent or e-helper attending the student in each session.” (Pediatric OT, school, 5-10 years therapist experience, more than a year telehealth experience)

While the extent of parental involvement depends on the case, OTs rely on parents to be their hands during the session. Some necessary tasks include assisting in emotional regulation, physical redirection, technology problems, providing supplies, and setting up activities.

“Parental involvement is key for young kids or those with cognitive difficulty. If a parent is able to gather supplies and print out worksheets in advance the session will go more

smoothly. Parents are also integral in assisting with emotional regulation and physical redirection.” (Pediatric OT, outpatient clinic, 1-5 years therapist experience, 0-5 months telehealth experience)

“Telehealth requires 100% parental involvement including parent coaching participation, parents must modify their home environment, parents must manage the child in a confined space, parents must adequately use technology.” (Pediatric OT, early intervention and ECSE, 1-5 years therapist experience, more than a year telehealth experience)

“I rely on parents to participate in telehealth sessions especially to manage behaviors and attention.” (Pediatric OT, outpatient clinic, more than 10 years therapist experience, more than a year telehealth experience)

Data Table 9 shows that for all age groups most OTs can only *sometimes* effectively assess patient abilities during telehealth sessions. For this reason, parents help monitor child’s performance and ensure tasks are complete.

“Parental involvement increases productivity in my experience because they ensure students are completing tasks when asked and can verify things I cannot see such as what the student is writing/doing off screen.” (Pediatric OT, school, less than 1 year therapy experience, 0-5 months telehealth experience)

“Parents are needed to assist the student and keep them on task/redirect. It increases the burden on the parent (or instructional assistant in the case of schools). Without in-person adult support kids will absolutely wander away, etc.” (Pediatric OT, outpatient clinic and school, 1-5 years therapist experience, 5-12 months telehealth experience)

Subtheme 2: Technology

In response to question 21 “What would make telehealth easier for patients to use?” and question 22 “What would make your experience with telehealth better?,” many respondents express a need for higher quality technological equipment for OTs and patients to reduce technical problems during sessions. Frequent complications involve device audio, internet connection, and online programs.

“Many of my clients are rural with low grade internet (including myself if I work from home), it can make telehealth difficult when your connection is poor and freezes.” (Pediatric OT, outpatient clinic, 1-5 years therapist experience, more than a year telehealth experience)

“consistent [sic] ability to maintain internet connection and fluid use of programs.”
(Pediatric OT, outpatient clinic, more than 10 years therapist experience, more than a year telehealth experience)

“In rural areas connection can be poor and equipment availability is less. Better equipment availability and support for parents who are frequently not tech savvy.”
(Pediatric OT, outpatient clinic and school, 1-5 years therapist experience, more than a year telehealth experience)

“Sometimes there are technical difficulties like the screen freezes, the audio won't work or the wheel turns and the session is delayed. It has seemed like a connectivity issue.”
(Pediatric OT, school, community, and home-based settings, more than 10 years therapist experience, more than a year telehealth experience)

Some devices, such as iPhones, are reported to not be as suited for telehealth because the small screen makes it hard for the therapist to see the whole child. This makes some activities such as tablework more difficult. To help increase visualization, OTs express the need for more cameras.

“One of my challenges with telehealth is that it is hard to see the "whole child"... usually seeing their face, not their hands/rest of the body or vice versa. I rely on the facilitator to move the screen/camera up and down throughout the session. I feel that I probably miss some important info, that is the reason that I find it challenging to assess a child via telehealth... Having each child use dual cameras, a document camera targeting the hands and another one for the face/body could be useful, but would be harder for the families to manage, and more costly.” (Pediatric OT, school, more than 10 years therapist experience, 5-12 months telehealth experience)

“Better camera sets ups, some families use iPhones and phones, which makes of [sic] difficult to look for writing grasps [sic], and I work on a lot of writing via telehealth.”
(Pediatric OT, outpatient clinic, 1-5 years therapist experience, more than a year telehealth experience)

“Having cameras that would allow a picture of a room - so that therapy and feedback on therapy was not restricted to the small portion of area that can be viewed by the camera on the computer.” (Pediatric OT, outpatient clinic and home health services, more than 10 years therapist experience, more than a year telehealth experience)

“Providing patients with external cameras so the OT can actually see what they are doing.” (Pediatric OT, school, less than a year therapist experience, 0-5 months telehealth experience)

Depending on technology experience, troubleshooting technical problems can be challenging for patients and their family. One OT suggests creating a training program for legal guardians to increase their comfort level with hardware and software used in telehealth.

“Parents would benefit with training using equipment and trouble shooting problems. Schools tried providing tablets and wifi [sic], but band width is a problem in rural areas and parents had problems using the tablets. Students and parents were frustrated with computers dropping service. They will only re-login so many times.” (Pediatric OT, outpatient clinic and school, 1-5 years therapist experience, more than a year telehealth experience)

Subtheme 3: Telehealth Instruction for OTs

Due to the COVID-19 pandemic, many OTs began administering telehealth with little to no prior experience. Respondents report needing more in-depth training on required hardware and software, completing standardized assessments over zoom, how to communicate with families, and how to use telehealth specifically in their practice.

“For me, it was forced on us due to the pandemic and there was a steep learning curve. I am getting used to using Telehealth when families are not able to meet in person. I guess if I had some examples of sessions before having to do them would have helped.” (Pediatric OT, school, more than 10 years therapist experience, 5-12 months telehealth experience)

“Continuing education courses specifically addressing telehealth issues.” (Pediatric OT, school, 5-10 years therapist experience, more than a year telehealth experience)

“I need more training in teletherapy and what resources are available to me and my patients.” (Pediatric OT, outpatient clinic, less than 1 year therapist experience, 0-5 months telehealth experience)

“Class on how to do standardized assessments over a video call.” (Pediatric OT, community services, more than 10 years therapist experience, more than a year telehealth experience)

“One on one training with equipment and technology specific to my practice and current level of competence.” (Pediatric OT, early intervention and ECSE, 1-5 years therapist experience, more than a year telehealth experience)

Subtheme 4: Therapeutic Supplies

For question 17 “Do your patients have access to all needed therapeutic equipment during telehealth sessions?” the majority responded with *sometimes* (Graph 4 and Table 10). Depending on the case, families need help gathering supplies such as paper, pencils, playdoh, and scissors. This is suggested to be due to supplies being too expensive or parents’ lacking motivation to gather necessary items.

“If there was an easy way to provide families with the same or similar equipment as used in in-person clinic sessions, therapy via telehealth would be much easier. Often times, equipment is too expensive or the family is not willing to put in the work that it takes to find the funding for various equipment. This equipment could include sensory tools, feeding supplies, or even school type equipment needed to make participation in school simulated activities easier.” (Pediatric OT, outpatient clinic, 1-5 years therapist experience, 5-12 months telehealth experience)

“Depending on the client and what they have access to it has been nice to offer a few small supplies if needed (playdoh, scissor, etc.).” (Pediatric OT, outpatient clinic, 1-5 years therapist experience, more than a year telehealth experience)

“If there was a way to mail supplies to parents or if we had been able to coordinate supply pickup it would have placed less of a financial burden on families. It may not be practical, but receiving a customized subscription box each week or each month might make activities more engaging for kids.” (Pediatric OT, outpatient clinic, 1-5 years therapist experience, 0-5 months telehealth experience)

“Having the same materials available for the client that I have when demonstrating skills (same scissors, pop-beads, etc.).” (Pediatric OT, outpatient clinic and school, 1-5 years therapist experience, 5-12 months telehealth experience)

Discussion

Rapidly implementing telehealth during the COVID-19 pandemic was critical to continue providing therapeutic services to vulnerable populations such as pediatrics (Ben-Pazi, 2020). The purpose of this study is to understand the efficacy of telehealth in pediatric occupational therapy and identify variables effecting treatment quality.

From this research, it is suggested that telehealth is a relatively effective treatment modality in assisting pediatric patients with reaching their therapeutic goals. Greater success rates in telehealth are reported amongst specific age groups (birth- 2 years and 11-18 years old) and diagnoses (abnormalities in physiological development, movement disorder, noncongenital insults to the brain, and down syndrome) (Data Table 7 and 8). Variables suggested to improve treatment quality include parental involvement, provision of supplies to patients, higher quality technological equipment for OTs and patients, and more telehealth administration instruction for OTs.

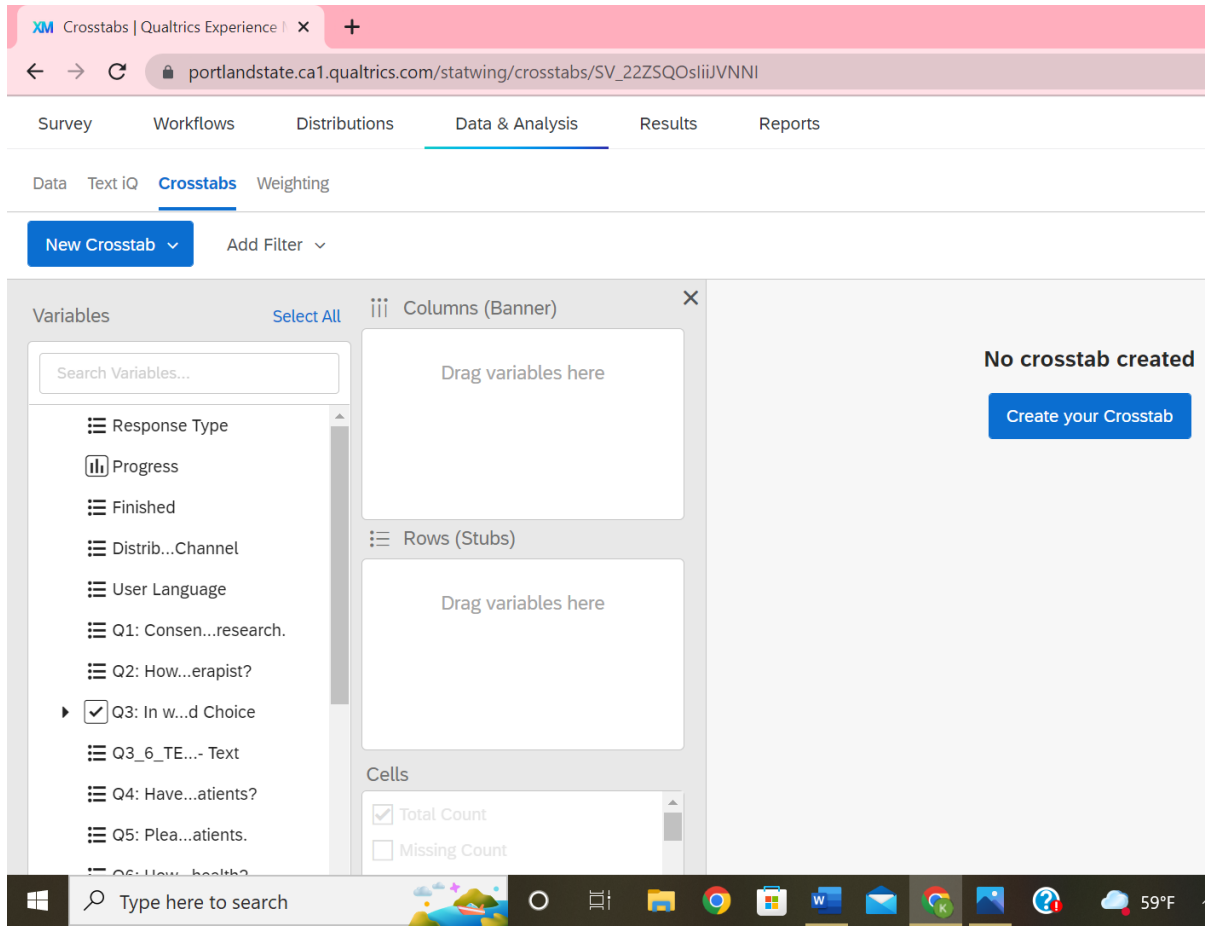
Limitations and Future Research

Several limitations should be noted within this study. First, the data from this research only includes the views of pediatric occupational therapists licensed in Oregon from March 3rd - May 5th, 2022. It is also important to state that not every pediatric OT had the opportunity to take the survey due to numerous emails not being listed on the contact list provided by the OTLB. Second, due to the study's design (survey), response and non-response bias should be considered when evaluating the results. Future research should focus on understanding the efficacy of telehealth in pediatric occupational therapy from a parent's perspective.

Appendix

Methods

Image 1: Crosstabs in the Data Analysis Section of Qualtrics



Respondent demographic

Data Table 1: Work Setting vs Pediatric OT and Telehealth Experience

		Q3: In which setting(s) do you work? Please check all that apply. – Selected Choice						
		Total	Hospital	Inpatient clinic	outpatient clinic	School	Home health services	Other:
Q1: How long have you been a practicing, pediatric occupational therapist?	Total Count	122.0	11.0	5.0	35.0	42.0	10.0	19.0
	I am not a pediatric occupational therapist	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Less than 1 year	16.0	1.0	2.0	6.0	2.0	3.0	2.0
	1-5 years	36.0	3.0	1.0	13.0	14.0	1.0	4.0
	5-10 years	12.0	0.0	1.0	1.0	6.0	1.0	3.0
	More than 10 years	58.0	7.0	1.0	15.0	20.0	5.0	10.0
Q4: How long have you been treating via telehealth?	Total Count	108.0	10.0	4.0	33.0	36.0	9.0	16.0
	0-5 months	17.0	3.0	1.0	6.0	4.0	1.0	2.0
	5-12 months	29.0	2.0	2.0	6.0	12.0	3.0	4.0
	More than a year	62.0	5.0	1.0	21.0	20.0	5.0	10.0

Data Table 2: “Other” Responses for Q3: In which setting(s) do you work? Please check all that apply

Other: - Text

Self employed

Snf

Early intervention

Community and home-based settings

Retired

Research

Telehealth

NICU/NICU follow up

Skilled nursing

early intervention

Early Intervention

Community

Ei/ ecse

Early Intervention and ECSE

Early Intervention/Early Childhood program (public schools affiliated)

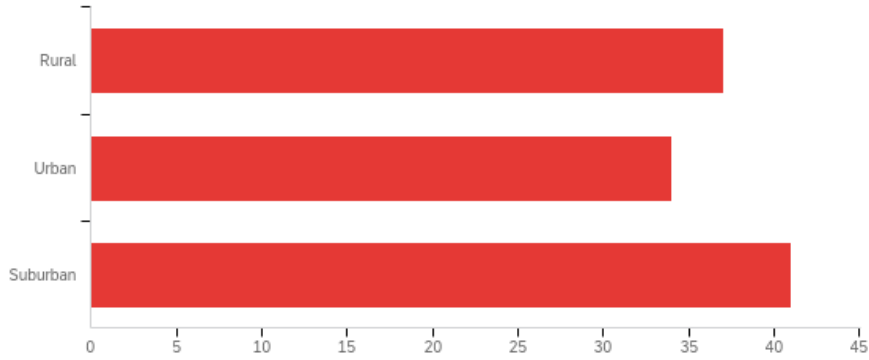
Home

SNF

Early intervention and Early Childhood Services

Patient Demographic

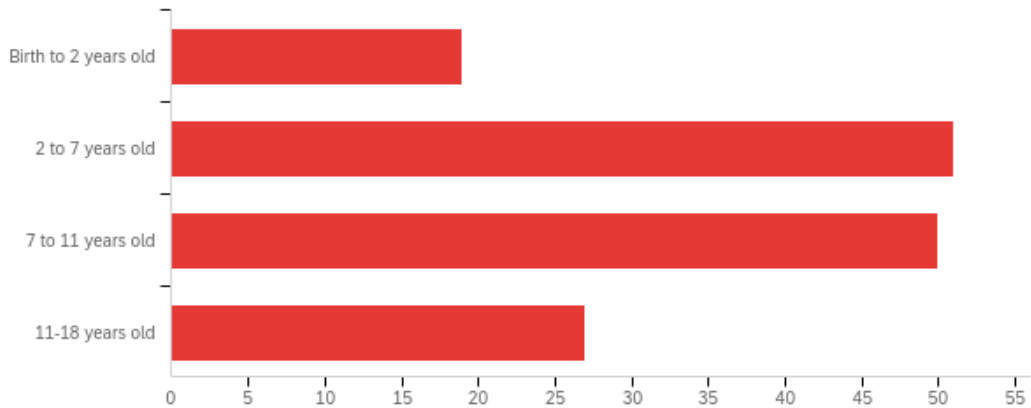
Graph 1: Patient Geography



Data Table 3: Patient Geography

#	Answer	%	Count
4	Rural	33.04%	37
5	Urban	30.36%	34
6	Suburban	36.61%	41
	Total	100%	112

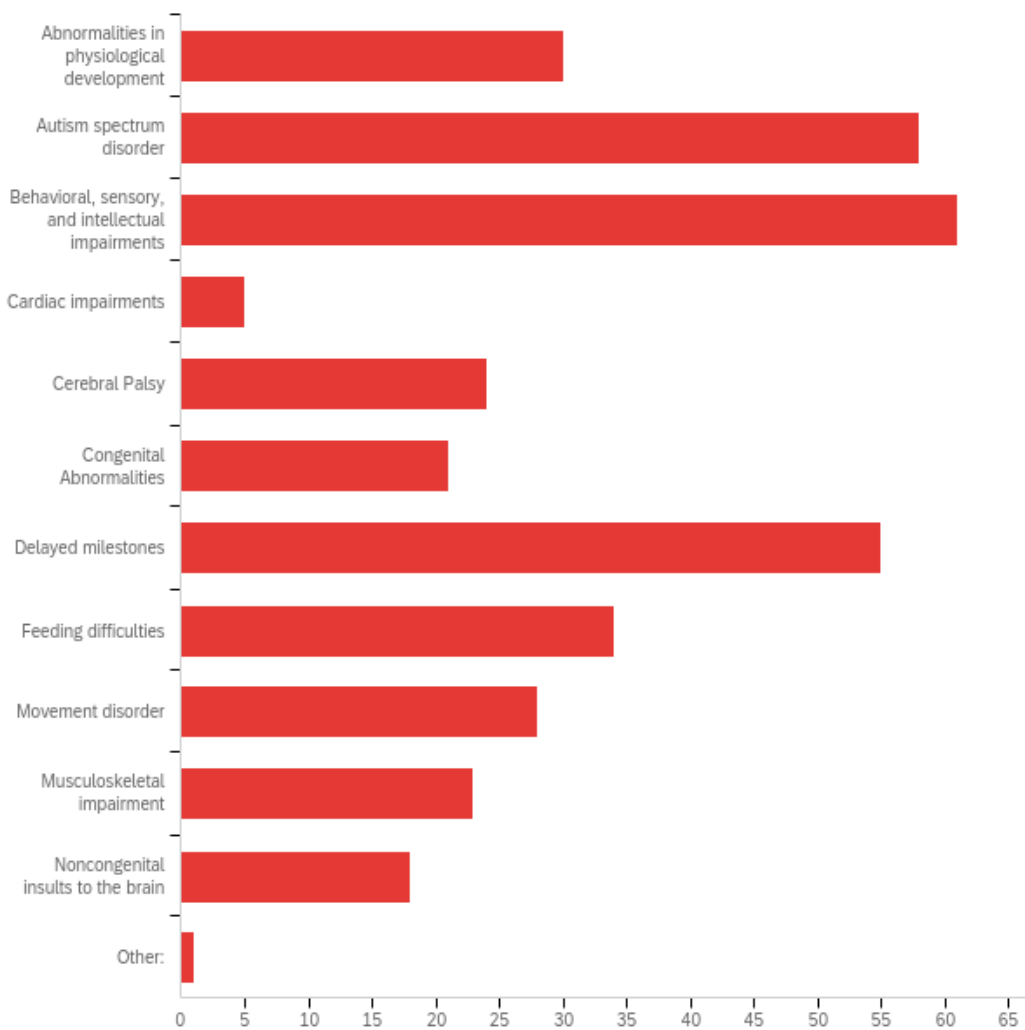
Graph 2: Patient Age



Data Table 4: Patient Age

#	Answer	%	Count
1	Birth to 2 years old	12.93%	19
2	2 to 7 years old	34.69%	51
3	7 to 11 years old	34.01%	50
4	11-18 years old	18.37%	27
	Total	100%	147

Graph 3: Patient Diagnosis



Data Table 5: Patient Diagnosis

#	Answer	%	Count
1	Abnormalities in physiological development	8.38%	30
2	Autism spectrum disorder	16.20%	58
3	Behavioral, sensory, and intellectual impairments	17.04%	61
4	Cardiac impairments	1.40%	5
5	Cerebral Palsy	6.70%	24
6	Congenital Abnormalities	5.87%	21
7	Delayed milestones	15.36%	55
8	Feeding difficulties	9.50%	34
9	Movement disorder	7.82%	28
10	Musculoskeletal impairment	6.42%	23
11	Noncongenital insults to the brain	5.03%	18
12	Other:	0.28%	1
	Total	100%	358

Data Table 6: “Other” Responses for Patient Diagnosis

Other: - Text

Down Syndrome

The Efficacy of Telehealth

Data Table 7: Patient Age vs Therapeutic Goals

		Q10: What age range are your patients that use telehealth? Please check all that apply.				
		Total	Birth to 2 years old	2 to 7 years old	7 to 11 years old	11-18 years old
Q17: Is telehealth helping your patients reach their therapeutic goals?	Total Count	147.0	19.0	51.0	50.0	27.0
	Never	2.0	0.0	0.0	1.0	1.0
	Sometimes	68.0	9.0	26.0	23.0	10.0
	Frequently	64.0	10.0	20.0	22.0	12.0
	All the time	13.0	0.0	5.0	4.0	4.0

Data Table 8: Diagnosis vs Therapeutic Goals

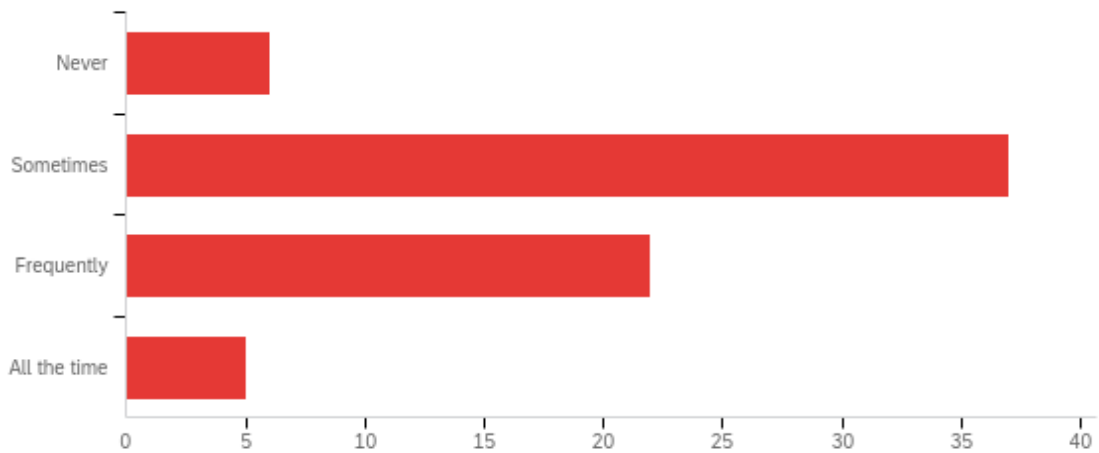
		Q17: Is telehealth helping your patients reach their therapeutic goals?				
		Total	Never	Sometimes	Frequently	All the time
Q12: What diagnosis groups are you treating over telehealth? Please check all that apply. - Selected Choice	Total Count	70.0	1.0	33.0	31.0	5.0
	Abnormalities in physiological development	30.0	0.0	12.0	14.0	4.0
	Autism spectrum disorder	58.0	1.0	29.0	24.0	4.0
	Behavioral, sensory, and intellectual impairments	61.0	1.0	31.0	24.0	5.0
	Cardiac impairments	5.0	0.0	3.0	2.0	0.0
	Cerebral Palsy	24.0	0.0	13.0	9.0	2.0
	Congenital Abnormalities	21.0	0.0	9.0	8.0	4.0
	Delayed milestones	55.0	1.0	25.0	24.0	5.0
	Feeding difficulties	34.0	0.0	17.0	15.0	2.0
	Movement disorder	28.0	0.0	12.0	13.0	3.0
	Musculoskeletal impairment	23.0	0.0	11.0	9.0	3.0
	Noncongenital insults to the brain	18.0	0.0	7.0	9.0	2.0
	Other: down syndrome	1.0	0.0	0.0	1.0	0.0

Variables Influencing Telehealth Efficacy

Data Table 9: Patient Age vs Assessing Abilities During Telehealth

		Q10: What age range are your patients that use telehealth? Please check all that apply.				
		Total	Birth to 2 years old	2 to 7 years old	7 to 11 years old	11-18 years old
Q15: Can you effectively assess patient abilities during telehealth sessions?	Total Count	147.0	19.0	51.0	50.0	27.0
	Never	0.0	0.0	0.0	0.0	0.0
	Sometimes	78.0	12.0	27.0	27.0	12.0
	Frequently	58.0	7.0	20.0	20.0	11.0
	All the time	11.0	0.0	4.0	3.0	4.0

Graph 4: Frequency of Patients' Access to Supplies



Data Table 10: Frequency of Patients' Access to Supplies

#	Answer	%	Count
1	Never	8.57%	6
2	Sometimes	52.86%	37
4	Frequently	31.43%	22
5	All the time	7.14%	5
	Total	100%	70

Survey

Understanding the Efficacy of Telehealth in Pediatric Occupational Therapy

Start of Block: Block 2

Hello, my name is Katheren and I am an honors student researcher at Portland State University with a hope to attend an occupational therapy program next year. I am conducting a study on the efficacy of telehealth as a pediatric occupational therapy service and would like to know your experiences using telehealth during occupational therapy sessions. Your responses are anonymous and will help understand the challenges and/or benefits of telehealth as a treatment option. Thank you for your participation in this quick, 20-minute survey.

Page Break

Q1: Consent to Participate in Research

Project Title: Understanding the Efficacy of Telehealth in Pediatric Occupational Therapy

Population: Pediatric Occupational Therapists, Online Survey

Researcher: Katheren Bettermann, Senior Honor's Student

Portland State University

Researcher Contact: 

You are being asked to take part in a research study. The box below shows the main facts you need to know about this research for you to think about when making a decision about if you want to join in. Carefully look over the information in this form and ask questions about anything you do not understand before you make your decision.

Key Information for You to Consider

- **Voluntary Consent.** You are being asked to volunteer for a research study. It is up to you whether you choose to involve yourself or not. There is no penalty if you choose not to join in or decide to stop.
- **Purpose.** The reason for doing this research is to understand the efficiency of telehealth as a pediatric occupational therapy service and expose variables affecting treatment quality. In doing so, this research may act as a reference in the decision to expand or remove telehealth insurance coverage post the COVID-19 pandemic.
- **Duration.** It is expected that your part will last 20 minutes.
- **Procedures and Activities.** You will be asked to answer qualitative and quantitative questions regarding telehealth and pediatric occupational therapy experience, relevant hardware and software knowledge, patient demographics, and telehealth efficiency.
- **Risks.** A possible discomfort of taking part in this study includes expressing opinion regarding if telehealth should be an insurance covered service.
- **Benefits.** No direct benefit but researchers hope to learn challenges and/or benefits of telehealth as a pediatric occupational therapy service and variables effecting treatment quality.
- **Options.** Participation is voluntary and the only alternative is to not participate.

What happens to the information collected?

Information collected from you for this research will be published in a senior thesis through Portland State University. Survey responses will be displayed in anonymous format.

How will I and my information be protected?

We will take measures to protect your privacy by collecting, storing, and analyzing survey responses through Qualtrics. Data will be backed up and secured on the researcher’s computer. Despite taking steps to protect your privacy, we can never fully guarantee that your privacy will be protected.

To protect all of your personal information, all identifiable information will be excluded from publication. Despite these precautions, we can never fully guarantee that all your study information will not be revealed.

What if I want to stop being in this research?

You do not have to take part in this study, but if you do, you may stop at any time. You have the right to choose not to join in any study activity or completely stop your participation at any point without penalty or loss of benefits you would otherwise get. Your decision whether or not to take part in research will not affect your relationship with the researchers or Portland State University.

Will it cost me money to take part in this research?

There is no cost to taking part in this research, beyond your time.

Will I be paid for taking part in this research?

You will not be compensated for participation.

Who can answer my questions about this research?

If you have questions or concerns, contact the research team at:

Katheren Bettermann (student researcher)

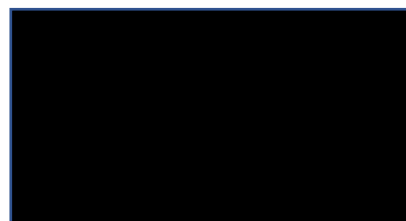


Rebecca Summer (faculty advisor)



Who can I speak to about my rights as a research participant?

The Portland State University Institutional Review Board (“IRB”) is overseeing this research. The IRB is a group of people who review research studies to make sure the rights and welfare of the people who take part in research are protected. The Office of Research Integrity is the office at Portland State University that supports the IRB. If you have questions about your rights, or wish to speak with someone other than the research team, you may contact:
Office of Research Integrity



Consent Statement

I have had the chance to read and think about the information in this form. I have asked any questions I have, and I can make a decision about my participation. I understand that I can ask additional questions anytime while I take part in the research.

- I agree to take part in this study
- I do not agree to take part in this study

End of Block: Block 2

Start of Block: Survey

Display This Question:

If Consent to Participate in Research Project Title: Understanding the Efficacy of Telehealth... = I agree to take part in this study

Q2 How long have you been a practicing, pediatric occupational therapist?

- I am not a pediatric occupational therapist
 - Less than 1 year
 - 1-5 years
 - 5-10 years
 - More than 10 years
-

Display This Question:

If Consent to Participate in Research Project Title: Understanding the Efficacy of Telehealth... = I agree to take part in this study

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q3 In which setting(s) do you work? Please check all that apply.

Hospital

Inpatient clinic

outpatient clinic

School

Home health services

Other: _____

Display This Question:

If Consent to Participate in Research Project Title: Understanding the Efficacy of Telehealth... = I agree to take part in this study

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q4 Have you in the past or present used telehealth to treat patients?

Yes

No

Display This Question:

If Have you in the past or present used telehealth to treat patients? = No

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q5 Please indicate the reason(s) you have not or do not use telehealth to treat patients.

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q6 How long have you been treating via telehealth?

- 0-5 months
- 5-12 months
- More than a year

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q7 How often per week do you treat via telehealth?

- 0-2 sessions per week
- 3-6 sessions per week
- 7-15 sessions per week
- All of my sessions are telehealth

Page Break

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q8 How comfortable are you with equipment (hardware and software) required to offer telehealth?

- Not comfortable at all
 - Sort of comfortable
 - Very comfortable
-

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q9 How often do you experience hardware/software challenges during a telehealth session?

- Never
 - Sometimes
 - Often
-

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q10 How often do families experience hardware/software challenges during a telehealth session?

- Never
 - Sometimes
 - Often
-

Page Break

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q11 Describe your patients' geography that use telehealth. Please check all that apply.

- Rural
- Urban
- Suburban

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q12 What age range are your patients that use telehealth? Please check all that apply.

- Birth to 2 years old
 - 2 to 7 years old
 - 7 to 11 years old
 - 11-18 years old
-

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q13 How would you describe the financial income of your telehealth patients? Please check all that apply.

- Upper class
 - Upper middle class
 - Lower middle class
 - Working class
 - Poor
-

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q14 What diagnosis groups are you treating over telehealth? Please check all that apply.

- Abnormalities in physiological development
- Autism spectrum disorder
- Behavioral, sensory, and intellectual impairments
- Cardiac impairments
- Cerebral Palsy
- Congenital Abnormalities
- Delayed milestones
- Feeding difficulties
- Movement disorder
- Musculoskeletal impairment
- Noncongenital insults to the brain
- Other: _____

Page Break

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q15 How does telehealth home program compliance compare to that of in-person treatment?

- Worse than in-person
 - Same as in-person
 - Better than in-person
-

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q16 Can you effectively assess patient abilities during telehealth sessions?

- Never
 - Sometimes
 - Frequently
 - All the time
-

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q17 Do your patients have access to all needed therapeutic equipment during telehealth sessions?

- Never
 - Sometimes
 - Frequently
 - All the time
-

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q18 Is telehealth helping your patients reach their therapeutic goals?

- Never
 - Sometimes
 - Frequently
 - All the time
-

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q19 Should telehealth be offered as an insurance covered benefit for pediatric occupational therapy?

- Yes
- No
- Indifferent

Page Break

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q20 How does parental involvement affect the productivity of a telehealth session as compared to an in-person session? Please explain your response.

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

Q21 What would make telehealth easier for patients to use?

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q22 What would make your experience with telehealth better? (Survey is almost done!)

Page Break

Display This Question:

If Have you in the past or present used telehealth to treat patients? = Yes

And How long have you been a practicing, pediatric occupational therapist? != I am not a pediatric occupational therapist

Q23 Is there anything you would like to add regarding your views on telehealth for pediatric occupational therapy?

End of Block: Survey

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