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## COVID-19 and Telehealth Use Among Occupational Therapy, Physical Therapy, and Speech-language Pathology Practitioners in the United States

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# COVID-19 and Telehealth Use Among Occupational Therapy, Physical Therapy, and Speech-language Pathology Practitioners in the United States

## Abstract

**Purpose:** To explore occupational, physical, and speech-language pathology therapists' perceived effectiveness of telehealth and how the COVID-19 pandemic has affected their professional roles. **Method:** Participants were recruited for the study through a research flyer distributed via postal mail, emails, social media, and national association websites. An anonymous electronic 19-item survey was developed for this study by the researchers based on a review of the literature and clinical experience. **Results.** In total, 186 survey responses were obtained, with 152 meeting the inclusion criteria. The average age of participants was 38.6 years with an average work duration of 12.7 years  $\pm$  12.5 in their current profession. Participants reported an average of 32.2  $\pm$  17.4 patients on their case load per week, of which 58% were face-to-face, 50.85% were seen via video, and 3.2% via phone. Results from the Likert scale questions revealed that almost 60% of the participants reported they viewed telehealth as a relevant service delivery method and 48.7% reported it is effective in delivering therapy. However, only 17.8% of participants agreed that telehealth is as effective as in-person therapy. Approximately 77% of participants did not have experience with using telehealth before the pandemic and 42.1% felt they did not receive adequate training for the use of telehealth during the pandemic. Benefits of using telehealth reported by participants include increased access to care (38.8%), reduced travel time (53.3%), schedule flexibility (49.3%), and improved continuity of care (26.3%). **Conclusions.** The findings of this study reveal that the switch to telehealth services provided multiple benefits for therapist and client. Many therapists also held multiple roles such as spouse and parent during the pandemic, making it important to understand how to deal with professional disruption while continuing to deliver therapy services with minimal interruption in client-centered care.

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Caesarinne Sprianu, OTD, OTR/L, has worked in the acute care and outpatient pediatrics and hand therapy settings for the past five years. She obtained her occupational therapy education from Loma Linda University with previous research including life coach perspectives of at-risk youth needs and presented at a national conference.

Dragana Krpalek, PhD, OTR/L, works with doctorate and PhD students, serving as an advisor as they shape their research projects, with her other teaching area involving instruction in functional neuroscience and trends in neuroscience. Clinical and research interests are in lifestyle medicine, and she coordinates research courses for the program.

Julie Kugel OTD, OTR/L, DipACLM, has worked in settings including acute care, in-patient rehab, out-patient hand therapy, out-patient pediatrics, and school-based practice before returning to school for her clinical doctorate at Loma Linda University. Dr. Kugel is Associate Professor and the Program Director of the Doctor of Occupational Therapy.

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### ABSTRACT

**Purpose:** To explore occupational, physical, and speech-language pathology therapists' perceived effectiveness of telehealth and how the COVID-19 pandemic has affected their professional roles. **Method:** Participants were recruited for the study through a research flyer distributed via postal mail, emails, social media, and national association websites. An anonymous electronic 19-item survey was developed for this study by the researchers based on a review of the literature and clinical experience. **Results.** In total, 186 survey responses were obtained, with 152 meeting the inclusion criteria. The average age of participants was 38.6 years with an average work duration of 12.7 years  $\pm$  12.5 in their current profession. Participants reported an average of 32.2  $\pm$  17.4 patients on their case load per week, of which 58% were face-to-face, 50.85% were seen via video, and 3.2% via phone. Results from the Likert scale questions revealed that almost 60% of the participants reported they viewed telehealth as a relevant service delivery method and 48.7% reported it is effective in delivering therapy. However, only 17.8% of participants agreed that telehealth is as effective as in-person therapy. Approximately 77% of participants did not have experience with using telehealth before the pandemic and 42.1% felt they did not receive adequate training for the use of telehealth during the pandemic. Benefits of using telehealth reported by participants include increased access to care (38.8%), reduced travel time (53.3%), schedule flexibility (49.3%), and improved continuity of care (26.3%). **Conclusions.** The findings of this study reveal that the switch to telehealth services provided multiple benefits for therapist and client. Many therapists also held multiple roles such as spouse and parent during the pandemic, making it important to understand how to deal with professional disruption while continuing to deliver therapy services with minimal interruption in client-centered care.

**Keywords:** telehealth, COVID-19, occupational therapy, physical therapy, speech-language pathology  
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## INTRODUCTION

The coronavirus disease (COVID-19) was officially announced as a pandemic on March 11, 2020, by the World Health Organization.<sup>1</sup> The Center for Disease Control and Prevention reported that as of June 24, 2021, COVID-19 claimed the lives of 603,504 individuals.<sup>2</sup> The highest weekly number of deaths was 25,866 recorded the week of January 9, 2021.<sup>2</sup> The pandemic necessitated public health leaders to enforce guidelines to reduce contact between individuals as much as possible.<sup>3</sup> Social distancing six feet or greater, wearing masks, stay-at-home mandates, and quarantine guidelines brought society to a halt in an effort to slow the spread of the virus.<sup>4</sup> With the impact of the COVID-19 pandemic taking its toll on an unprecedented scale, the healthcare system at large felt the burden. Outpatient visits and non-urgent procedures were reduced or canceled.<sup>5</sup> Within the orthopedic field, residents had to learn information for their rotation via online platforms and surgery options were diminished, slowing their progression through their program.<sup>6,7</sup> Primary care clinicians had to manage an influx of patients with a plethora of symptoms after their acute battle with COVID-19 in the hospital or in the community.<sup>8</sup> Physicians in cancer centers had to decide which patient visits could be postponed, maintained in-person, or which could be switched to telehealth.<sup>9,10</sup> The impact of the COVID-19 pandemic on the allied health professions were also felt. Allied health professionals across the country had to quickly navigate telehealth in order to provide skilled therapy services for a variety of clients.<sup>11</sup>

Telehealth can be described as “the application of evaluative, consultative preventative, and therapeutic services delivered through information and communication technology (ICT).”<sup>12</sup> ICTs include, but are not limited to, computers, cellular phones, and the internet.<sup>13</sup> Telehealth uses ICTs to increase access to healthcare professionals, especially for those who are in underserved rural areas.<sup>14</sup> ICTs were created with the goal to connect people around the globe, and these technologies were maximized to advance telehealth during the COVID-19 pandemic.<sup>15</sup> Moreover, the use of telehealth to deliver allied health services during COVID-19 was further promoted through changes to health policies.<sup>16,17</sup> Changes included expanding reimbursement for the use of telehealth services, the approval and use of audio-only/non-video check-ins without first having an in-person appointment, and including other health professionals for reimbursement of services such as occupational, speech, and physical therapy practitioners.<sup>14</sup>

The benefits of telehealth for allied health professionals are numerous and include increased access to clients across the lifespan, ability to address a wide range of patient diagnoses, increased patient engagement and therapy outcomes, and improved health and well-being.<sup>12,15</sup> Telehealth services for therapy has been shown to be equally effective as in-person sessions to address wheelchair positioning, treat depression among stroke patients, and improve participation in activities of daily living.<sup>18</sup> The use of telehealth during the COVID-19 pandemic enabled the delivery of crucial therapy services to clients who would otherwise demonstrate a decline in function without continued care.<sup>19</sup> Implementing telehealth during a time where social distancing regulations were required resulted in decreased visits to clinics and hospitals, decreased hospital readmission rates, facilitation of early discharge from hospitals, and protection of high-risk patients and the elderly in nursing homes from potential exposure to the COVID-19 virus.<sup>17</sup> However, there are barriers that limit telehealth use such as liability, licensure, lack of training, privacy and cybersecurity and technology access.<sup>17,20,21</sup> Technology accessibility is a particular barrier for the elderly population as almost one third of Medicare beneficiaries lack access to digital devices.<sup>22</sup>

Telehealth use is emerging in the field of occupational therapy (OT) and benefits include facilitating occupational performance, improving participation in activities of daily living, and promoting health, wellness, quality of life, and occupational justice.<sup>12,23</sup> Further benefits include reduced caregiver and participant burden, flexibility in scheduling therapy sessions, and a focus on a client-based approach.<sup>24</sup> Other allied health professions including speech and language pathology (SLP) and physical therapy (PT) have also seen an increase in telehealth.<sup>15</sup> A systematic review of the use of telehealth among SLPs indicated that telehealth was used by SLPs for patients of all ages, reaching a vast number of clients in need across the lifespan.<sup>25</sup> The American Physical Therapy Association has developed a suborganization dedicated to research and advancing technology with telehealth as one of its focus areas. A study by Lee and Billings explored the use of telehealth services in a skilled nursing facility and revealed that the clients who received telehealth services scored at least as high as those receiving in-person care on the Short Physical Performance Battery and the Six-Minute Walk Test.<sup>26</sup>

While literature is beginning to reveal the effect of COVID-19 on the healthcare field, little has been published on the effectiveness of telehealth among allied health professions during this period of time. Therefore, the purpose of this study was to explore the perceived effectiveness of telehealth among OTs, PTs, and SLPs during the COVID-19 pandemic.

## MATERIALS AND METHODS

### Research Design

This study employed an anonymous cross-sectional survey design using a web-based application. Ethical review and approval of the study was granted by Loma Linda University Institutional Review Board.

### Participants

Participants were recruited for the study through a research flyer distributed via postal mail, emails, social media, and national association websites. Over 4,000 e-mails were sent through Loma Linda University Health, Office of Advancement to Loma Linda University OT, PT, and SLP alumni. Emails with flyers were sent to five therapy franchises, 632 clinics, 78 of which had multiple locations (two or more), and 627 OT, PT, and SLP academic programs around the country, and the flyer was mailed to 20 outpatient sites. Eligible participants were licensed and practicing OT, PT, and SLP practitioners in the United States. To be included, practitioners had to be employed full-time or part-time and use telehealth eight or more hours per week. Therapists willing to participate in the anonymous online survey indicated their consent by clicking on the survey link.

### Instruments

An anonymous survey was developed for this study by the researchers based on a review of the literature and clinical experience. The survey took five minutes on average to complete, which was prepared through Qualtrics. The finalized survey consisted of 19 questions: 12 closed-ended questions, two open ended questions, and five Likert Scales, with space allotted for additional comments as indicated in the specific questions (Table 1).

### Data Analysis

Data were analyzed using SPSS Statistics Software version 27.0 (SPSS Inc, Chicago, IL, USA). Frequency and percentages were used to describe categorical variables, and mean and standard deviation were used for continuous variables. Relationships between variables were examined using Chi-Square test and Spearman Correlation Coefficients. All analyses were performed at an alpha level of .05. For open-ended questions, the researchers independently coded and categorized the responses into descriptive themes.<sup>27</sup>

**Table 1.** Sample Survey Questions and Sample Responses

Sample Questions	Sample Responses
1. "Based on your experience with telehealth, please select any benefits that apply: <i>Increased access, Reduced travel time, Improved continuity of care, Schedule flexibility, or Other: Please describe:</i> "	"Getting to know the parents more with concerns and wants for their child"
2. "I received adequate training in using telehealth as part of the transition after the pandemic outbreak: <i>Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree</i> "	"Neither agree nor disagree"
3. "What is your current practice area?"	"Acute Care, Inpatient Rehab, Home Health"
4. "Based on your experience with telehealth, please select any limitations that apply"	"Significantly increased workload, increased difficulty scheduling, increased difficulty providing services to certain populations (especially those with more severe diagnoses and/or attention problems)"

### RESULTS

In total, 186 survey responses were obtained, with 152 meeting the inclusion criteria. The average age of participants was 38.6 years  $\pm$  12.2 with an average work duration of 12.7 years  $\pm$  12.5 in their current profession. Participants reported an average of 32.2 patients  $\pm$  17.4 on their case load per week, of which 58.0% were face-to-face, 50.8% were seen via video, and 3.2% via phone. In some cases, the caseloads of each type of interaction were overlapping. Table 2 illustrates demographic information.

**Table 2.** Frequency of Characteristics and Benefits/Limitations of Participants (N=152)

Characteristics	Frequency (%)
<b>Gender</b>	
Female	122 (80.3)
Male	27 (17.8)
Non-binary	1 (0.7)
Not listed	1 (0.7)
<b>Current Profession</b>	
Occupational Therapy	64 (42.1)
Physical Therapy	50 (32.9)
Speech Therapy	37 (24.3)
<b>Qualifications</b>	
Occupational Therapist	62 (40.8)
Occupational Therapy Assistant	2 (1.3)
Physical Therapist	44 (28.9)
Physical Therapy Assistant	6 (3.9)
Speech-language Pathologist	37 (24.3)
<b>Highest Level of Education</b>	
Associates	3 (2.0)
Bachelors	18 (11.8)
Masters	43 (28.3)
Doctorate	87 (57.2)
<b>Ethnicity</b>	
Asian	21 (13.8)
Black or African American	3 (2.0)
Caucasian	110 (72.4)
Hispanic or Latino	14 (9.2)
Pacific Islander	2 (1.3)
Other	1 (0.7)
<b>Marital Status</b>	
Dating	17 (11.2)
Engaged	2 (1.3)
Married	98 (64.5)
Not providing	1 (0.7)
Separated, widowed, or divorced	9 (5.9)
Single (never married)	24 (15.8)
<b># of Dependents</b>	
0	86 (56.6)
1	22 (14.5)
2	26 (17.1)
3	14 (9.2)
4+	3 (2.0)
<b>Benefits of Telehealth</b>	
Increased access	59 (38.8)
Reduced travel time	81 (53.3)
Improved continuity of care	40 (26.3)
Schedule flexibility	75 (49.9)
Other	24 (15.8)
None	10 (6.6)
<b>Limitations of Telehealth</b>	
Reduced reimbursement	16 (10.5)
Lack of training	43 (28.3)
Personal technology challenges	62 (40.8)
Patient technology challenges	106 (69.7)
Limited assistance from support staff	40 (26.3)
Other	50 (32.9)
None	7 (4.6)

Results from the Likert scale questions revealed that almost 60.0% of the participants reported they viewed telehealth as a relevant service delivery method and 48.7% reported it is effective in delivering therapy. However, only 17.8% of participants agreed that telehealth is as effective as in-person therapy. Approximately 77.0% of participants did not have experience with using telehealth before the pandemic and 42.1% felt they did not receive adequate training for the use of telehealth during the pandemic (Table 3). Adding to these findings, open-ended responses revealed that telehealth could be relevant and as effective as in-person therapy depending on multiple factors, including if parents/caregivers were involved. One participant explained: "I believe that telehealth has forced parents to be more involved with their children's care versus dropping them off for an in-person appointment and leaving. Parents can see how to elicit targets, specific cuing strategies, and it allows me to speak with them about their child's progress without talking about strengths and areas of growth in front of the child." Further benefits included carryover of therapist instructions in the home, improved therapist understanding of home environment, reduced distractions in the home environment, and allowing flexibility with parent and infant sleep schedules around therapy sessions. Participants also highlighted no need for sanitary precautions or mask wearing, allowing medically fragile or immunocompromised patients to participate in therapy sessions. One participant stated: "Telehealth allows access to families in rural settings or with illnesses or fear of illnesses within their home."

**Table 3.** Frequency (%) of Therapist responses on Use, Training, and Effectiveness of Telehealth

	<b>Strongly Disagree or Disagree</b>	<b>Neither Agree or Disagree</b>	<b>Strongly Agree or Agree</b>
Regularly used telehealth before pandemic	117 (77.0)	6 (3.9)	5 (3.3)
Received adequate training during transition after pandemic	64 (42.1)	34 (22.4)	30 (19.7)
Believe that telehealth is an effective service delivery model	24 (15.8)	30 (19.7)	74 (48.7)
Believe using telehealth is as effective as in-person therapy	62 (40.8)	23 (15.1)	27 (17.8)
Believe telehealth is a relevant service delivery model	7 (4.6)	25 (16.4)	91 (59.9)

Almost 70.0% of participants reported patient technology challenges as a limitation of using telehealth services (Table 2). Other limitations included lack of training (28.3%), reduced reimbursement (10.5%), limited assistance from support staff (26.3%), and personal technology challenges (40.8%). Open-ended responses revealed further barriers including caregivers having a copay for telehealth services, limited access to equipment such as a printer and high-speed internet, disengagement from the therapy sessions which resulted when the caregiver or parent would walk away from the screen leaving the child alone with the computer, and not following through with therapist instruction. Further, a common barrier to telehealth was the parent or caregiver would also be working at home, juggling multiple responsibilities and not able to be actively involved during the session. Because the sessions were conducted via video, patients who were distracted by the screen demonstrated decreased attention and follow through, making it difficult for the therapist to redirect the patient. For adult patients, therapists saw telehealth as a drawback because they were unable to adjust durable medical equipment such as walkers or wheelchairs and patients with visual impairments were unable to engage with the screen. A participant shared: "Motivation in the home can be difficult. It is also difficult at times to coach parents through facilitation, cuing, and manipulation techniques especially when dysregulated themselves, which has been more prevalent with parents overall as they deal with having their kids at home."

The chi-squared showed that there was a significant association between patients having challenges using technology and therapists from SLP ( $p = 0.006$ ) and PT professions ( $p = 0.007$ ). While participants did report a barrier to telehealth was their use of technology, results did not reveal significant associations between the profession of therapist and challenges experienced with technology ( $p = 0.192$ ). There was also no significant association between the lack of therapist training on telehealth and participant's profession ( $p = 0.194$ ) (Table 4). One profession did not struggle more with technology than another due to lack of telehealth training. There were no significant associations between number of years practiced and therapist technology challenges ( $p = 0.790$ ). Furthermore, delivery of telehealth services was not impacted by years of practice or specific therapy profession (Table 4).



**Table 4.** The significance and association between profession, years of practice, and effect of telehealth therapy sessions

<b>Limitations</b>	<b>p-value</b>
Patient technology challenges vs profession	<b>0.014</b>
Occupational Therapy	0.456
Speech Language Pathology Therapy	<b>0.006</b>
Physical Therapy	<b>0.007</b>
Therapist technology challenges vs profession	0.192
Lack of therapist telehealth training vs profession	0.194
Therapist technology challenges vs years in practice	0.790
<b>Benefits</b>	<b>p-value</b>
Home setting	
Increased access	<b>0.000</b>
Reduced travel time	<b>0.000</b>
Improved continuity of care	<b>0.000</b>
Work setting	
Increased access	<b>0.000</b>
Reduced travel time	<b>0.000</b>
Improved continuity of care	<b>0.000</b>
Mixed locations	
Increased access	<b>0.000</b>
Reduced travel time	<b>0.000</b>
Improved continuity of care	<b>0.000</b>

## DISCUSSION

This study describes participants' perceptions about how their professional lives were affected by the novel COVID-19 pandemic and the transition to telehealth services during this time. In line with a study done by Middleton, Simpson, Bettger, and Bowden, findings of this study indicate that telehealth was a relevant service delivery method during the pandemic which enabled therapists to offer skilled therapy services in a safe manner by reducing physical contact and the chance of spreading the COVID-19 virus<sup>19</sup>. About 17.8% of participants from the current study reported that they thought telehealth was as effective as in-person therapy. This percentage is less compared to a study done by Malliaras where about 42.0% of clinicians regarded telehealth as effective as in-person sessions.<sup>28</sup> One reason could be that the Malliaras study surveyed multiple health professionals other than therapists such as podiatrists and chiropractors, and a primary focus was musculoskeletal diseases, whereas this study surveyed only allied health therapists, the majority of which worked in pediatric settings. Telehealth services minimized the interruption to therapy sessions during the initial transition to social distancing guidelines. Overall, participants reported that the use of telehealth allowed for improved caregiver carryover and participation in therapy for medically fragile patients. These findings are consistent with a previous study on the use of telehealth services in school settings revealing similar benefits of caregiver involvement during therapy sessions and continued therapy services for those with disabilities who decided to stay home to socially distance.<sup>29</sup>

At least 50.0% of the participants' caseload was via telehealth. The work setting in which telehealth was conducted varied, but all settings demonstrated a significance of effectiveness. Conducting telehealth therapy from home, at work, or in mixed locations yielded significant benefits such as reduced travel time, improved continuity of care, increased access for patients, and flexibility with practitioners' schedules. Previous research on the use of telehealth during the COVID-19 pandemic supported a mixed location schedule as the preferred method of therapists to deliver telehealth<sup>30</sup>. In addition, the present study demonstrated that telehealth is a flexible service delivery method as it can be used in various settings (outpatient, inpatient, or community) with populations across the lifespan.

Though changes were made during the COVID-19 pandemic to include OT, PT, and SLP services in extended insurance coverage, participants in this study identified reimbursement of therapy services and continued copays for patients as limitations for using telehealth.<sup>31</sup> Furthermore, this study revealed that patient technology challenges and personal technology challenges were most frequently encountered as limitations to telehealth services. This is consistent with previous findings showing that technology use was a barrier when utilizing telehealth for therapy sessions, making it difficult to educate caregivers and deliver therapy to pediatric clients.<sup>32</sup>

Close to half of the participants in this study had at least one dependent and held multiple roles with the majority being married. These findings provide some context to the personal lives of therapists during the transition to telehealth. Coupled with this, almost



80% of the participants had no telehealth experience prior to the pandemic. In Malliaras' study, almost two thirds had no telehealth experience prior to the pandemic.<sup>28</sup> Further, over 40% of participants in the current study felt that they did not receive adequate training in the use of telehealth in preparation for the transition. This rate is higher than Malliaras' finding that only 21% of the 827 clinicians in their international survey study did not feel they had sufficient training for telehealth during the pandemic.<sup>28</sup> Our higher rate could be due to the various populations that therapists worked in at the time of the pandemic such as neuro, acute care, and SNF, whereas the Malliaras study focused solely on therapists working with those who have musculoskeletal conditions. Thus, therapists may require increased telehealth training to meet the demand of the pandemic effects on access to therapy services across multiple settings and for future telehealth practice.

Benefits and barriers of telehealth of this study varied among the therapy professions. Depending on the profession and setting, patients benefited from telehealth therapy despite struggling with technology use at home. While PT and SLP showed technology barriers, OT on the other hand did not show significant technology barriers during therapy sessions. This could be due to the flexibility that OT has to offer in terms of where therapy could be effectively held, either at home or in the office, or even flexible scheduling allowing for the therapist to have the telehealth sessions in a variety of settings.<sup>33</sup> Overall, despite reported barriers with telehealth usage, participants felt that telehealth was benefitting their therapy sessions.

### LIMITATIONS AND BENEFITS

A limitation of this paper includes the response categories provided on the survey. Questions inherently guide a participant's answer into preset categories, making it difficult for the participant to give a truly personal response. The relatively small number of participants in the study and lack of equal representation of the professions limit the generalizability of the results. Future research may also explore the personal effects of the pandemic and switch to telehealth alongside the professional impact on practitioners.

### CONCLUSION

The findings of this paper reveal that the switch to telehealth services provided multiple benefits for the therapist and the client, including reduced travel time, flexibility with scheduling sessions, and continued care for those who were medically fragile and staying at home during the pandemic. Therapists felt that telehealth was effective in multiple settings for delivering skilled therapy but less than one-fifth of participants felt telehealth to be as effective as their in-person therapy sessions. Many of the therapists who went through the transition of using telehealth during the pandemic also held multiple roles such as spouse and parent, adding to the challenges that the therapists faced in engaging in all of their roles. Understanding how professional disruptions occur during a pandemic will help to better equip healthcare therapy practitioners to continue to deliver vital therapy services with minimal interruption in client-centered care. Telehealth services are an avenue that can and should be taken; it is incumbent upon all healthcare practitioners to advocate for Telehealth legislatively as it can help us to meet the needs of underserved populations and those without access to in-person services after the pandemic is over.

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