


# Implementation of telehealth during COVID-19: Implications for providing behavioral health services to pediatric patients

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## Abstract

The coronavirus pandemic and in-person contact restrictions necessitated rapid implementation of telehealth, specifically videoconferencing, to provide essential care to patients. This study surveyed 25 pediatric behavioral health providers at a single center during their first month of utilizing telehealth during coronavirus disease 2019 (COVID-19). Twenty-one participants completed a pre-questionnaire distributed prior to telehealth service delivery, and 23 providers completed a post-questionnaire approximately three weeks later. Results indicate the majority of behavioral health providers had no experience providing telehealth services prior to COVID-19. The majority of participating behavioral health providers utilized telehealth to provide pediatric patient care within the first month of access to telehealth. Participants' confidence in their ability to provide telehealth services significantly increased within the first month of implementation, regardless of previous training in telehealth. This study identified differences between anticipated and actual barriers to treatment, with technological issues identified as the largest actual barrier to service delivery. Participants indicated a preference for in-person service delivery, which they reported allows for better rapport-building, behavioral observations, reduced technological barriers, and fewer distractions. However, most participants reported they intend to continue utilizing telehealth for certain types of behavioral health services (e.g., diagnostic interviews and outpatient therapy) after the pandemic has subsided.

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telehealth, academic medical centers, program implementation, coronavirus, COVID-19

For some individuals, the negative psychological impact of living with the coronavirus pandemic may be substantial and long-lasting (Brooks et al., 2020). Research indicates prevalence rates of psychological distress in adults living within the United States have increased during coronavirus disease 2019 (COVID-19), with the most drastic increases reported in young adults (aged 18–29 years), those from low socioeconomic backgrounds (annual income < US\$35,000), and Hispanic adults (McGinty et al., 2020). Children and adolescents risk significant difficulty adjusting to new daily routines, altered educational and recreational experiences, and recommendations for social distancing and personal protective equipment (PPE) (Prime et al., 2020). In some instances, they may experience more traumatic effects including fear of getting ill, loneliness from self-isolation/quarantine following exposure to COVID-19, illness or death of a loved one, loss of school-based supports, parental loss of job, altered family financial security, and uncertainty about the future (McGinty et al., 2020).

Behavioral health services provided by psychologists, neuropsychologists, and psychiatrists are essential healthcare services for pediatric patients with mental health needs. This is especially true during public health emergencies such as the COVID-19 pandemic as psychological and behavioral factors influence how a patient and their family copes, both positively and negatively, in response to heightened stress and anxiety (Kar et al., 2019). Following the 2009–2010 Hemagglutinin Type 1 and Neuraminidase Type 1 (H1N1) pandemic crisis, interventions that addressed uncertainty, enhanced positive coping strategies, increased adaptive behaviors, and aided in management of the disease itself were found to promote positive mental and behavioral health (Pfefferbaum et al., 2012). Our current pandemic crisis continues to impact mental and behavioral health, and access to behavioral health services for individuals who are struggling to cope during COVID-19 is imperative (McGinty et al., 2020).

As COVID-19 increasingly strains health systems worldwide, the World Health Organization (WHO) provided guidelines for organizations working to balance the demands of directly responding to COVID-19 while still maintaining essential care for patients (World Health Organization, 2020). Within these guidelines, WHO recommends utilizing digital health technology platforms to deliver health services during COVID-19. Telehealth, or the use of two-way communication technology for health care, allows providers to maintain essential patient care while slowing the spread of COVID-19 caused by person-to-person contact (Smith et al., 2020; World Health Organization, 2020; Zhou et al., 2020).

Utilizing telehealth in clinical practice is supported by previous research that documents its benefits for both patients and clinicians including positive mental health and medical outcomes, increased access to care, reduced expenses, and professional development (Egede et al., 2018; Gagnon et al., 2006; Moffatt and Eley, 2010; Pande et al., 2015; Rafiq and Merrell, 2005; Wade et al., 2010). Although previous research in telehealth is encouraging, barriers that influence use of telehealth are diverse (Brooks et al., 2013; Carter, 2014; Goldstein and Glueck, 2016; Jameson et al., 2011; Smith et al., 2020; Wagnild et al., 2006). To facilitate use of telehealth during COVID-19, temporary policy changes to the Health Insurance Portability and Accountability Act (HIPAA) have made it easier for patients to receive care through telehealth services across the United States (U.S. Department of Health and Human Services, 2020). These changes allow providers to conduct telehealth services with patients who are located at their homes, practice remote care across state

lines, deliver care to both established and new patients, and bill for telehealth services as though they were provided in-person. COVID-19 has highlighted the need for telehealth solutions to allow patients access to mental and behavioral health care where limited or no access existed before (Syed et al., 2013; Zhou et al., 2020). However, whether broad use of telehealth services can continue after this public health emergency remains uncertain.

Transitioning to telehealth could potentially be most difficult for providers who have not previously used telehealth platforms or who lack training and confidence in their abilities to provide telehealth services. The uptake and sustainability of telehealth is, in part, dependent upon clinician acceptance and support for successful implementation (Owen 2020; Wade et al., 2014). Another key factor is organizational readiness for implementing telehealth which includes providing staff with appropriate training and continuing professional education in using telehealth for patient care (Jennett et al., 2003). Robust literature reviews have added to our knowledge regarding appropriate training, clinician skills, acceptance, and experience that support telehealth success (Brewster et al., 2014; Edirippulige and Armfield, 2017; Henry et al., 2017). While previous research has established steps to determine organizational and clinician readiness for implementing telehealth pre-COVID-19, it does not examine rapid implementation of telehealth in the face of a pandemic. The COVID-19 pandemic offered the opportunity for many providers to gain experience in use of telehealth platforms and provision of mental health services via telehealth. To date, there is no research in the literature examining behavioral health providers' experiences implementing telehealth during COVID-19. During rapid implementation of telehealth to provide services during a pandemic, it is unclear how factors like previous training may influence readiness and confidence to use telehealth, how to best increase provider confidence, and how well providers' anticipated barriers align with actual barriers following use of telehealth. In order for behavioral health providers to successfully transition to using telehealth, we need a better understanding of how to best prepare new telehealth providers to confidently utilize telehealth, reduce anxiety related to anticipated barriers, and increase problem-solving for experienced barriers.

## **Context and purpose of the study**

Due to contact restrictions required by the first author's organization, that limited providers' ability to engage in "business as usual," telehealth was implemented to allow mental health professionals to provide essential care to new and established patients. This study sought to explore changes in 25 providers' confidence using telehealth to provide behavioral health services at an academic medical center. The research team assessed anticipated barriers to implementation and actual barriers for providers who used telehealth to provide pediatric patient care during COVID-19.

## **Study aims**

Aims of this study included (1) assessing providers' readiness to implement telehealth for outpatient pediatric services, (2) describing changes in confidence using telehealth within the first 4 weeks of implementation, (3) evaluating the impact of prior training and experience on changes in confidence, and (4) determining anticipated and actual barriers to the implementation of telehealth during a public health emergency.

## Methods

### *Pediatric setting*

The site for this study works exclusively with pediatric populations and provides outpatient psychological and psychiatric evaluations and treatment, as well as neuropsychological assessments. The children's hospital catchment area includes 17 counties and approximately 1.2 million children. From the behavioral health department's patient population, 54% are of European descent, 20% are African American, 18% are Hispanic/Latino, 2% are Asian, and 6% other. Physicians or care providers located at the hospital or in the local community generally referred patients receiving behavioral health services.

### *Population*

Staff and trainees from a behavioral health department at the children's hospital were invited to participate. Inclusionary criteria for participants were to be a part of this department and have a clinical role working with patients. Nonclinical staff or those not working with patients were excluded. All staff and trainees agreed to participate in this study.

The (removed for blinded review) Institutional Review Board approved this study (IRB00236865), which was conducted in accordance with institutional and federal guidelines involving human subjects research.

### *Measures*

An anonymous department-wide questionnaire was distributed pre- and post-implementation of telehealth services at this institution via Qualtrics. Distribution of these questionnaires took place during the first month that the entire department was provided access to the organization's telehealth platform. This allowed for analysis of one department's success in rapidly implementing telehealth before the children's hospital unrolled telehealth access to other departments. A pre-questionnaire was sent to providers to complete immediately before implementing telehealth services. Post-questionnaires were distributed approximately 3 weeks following implementation of telehealth services. A timeline of 4 weeks allowed providers to utilize telehealth services for patient care to determine frequency of use, accessibility for patients, and barriers/concerns. This information was gathered to determine suitability of telehealth for outpatient therapy services prior to granting other disciplines at the hospital access to the telehealth platform. Both pre- and post-questionnaire included questions about professional experience, prior telehealth training, and telehealth barriers.

*Experience with telehealth pre-questionnaire.* Participants completed a 15-item pre-questionnaire assessing prior experience and confidence using a telehealth platform to provide services ("What is your confidence level for providing psychological services via telehealth?"). Familiarity with, and confidence using, telehealth were measured via Likert scales with a lowest rating of 0 (No Confidence) and highest rating of 10 (High Confidence). The pre-questionnaire included respondent demographics, number of telehealth sessions led, previous telehealth training, anticipated use of telehealth to provide services, and an opportunity to express anticipated barriers to providing telehealth services.

*Experience with telehealth post-questionnaire.* Participants completed a 31-item post-questionnaire assessing telehealth experiences 3 weeks after completion of the pre-questionnaire. The post-questionnaire assessed the number of telehealth sessions participants led or supervised, type of

telehealth services provided, methods of troubleshooting, confidence level in using telehealth to provide services, and providers' intentions to continue using telehealth after COVID-19. The questionnaire prompted participants to provide open-ended responses assessing challenges, barriers or difficulties implementing telehealth services, effectiveness of telehealth for patient care, continued use of telehealth, and preference of service modality (i.e., in-person vs telehealth) (see Table 1 for participants' experience with telehealth during COVID-19).

## Procedures

All telehealth were implemented via a preexisting hospital-created telehealth platform and telehealth services were provided synchronously to patients from each provider's private office. All behavioral health providers who were eligible to use telehealth during COVID-19 were invited to complete the pre- and post-questionnaire. Twenty-five participants received an email with a link to the pre-questionnaire prior to implementing telehealth services. Providers were prompted to respond to the pre-questionnaire within 2 days. The same 25 participants received a second email with a link to the post-questionnaire 3 weeks after starting telehealth services. Participants were allotted 7 days to complete the post-questionnaire.

## Data analysis

Descriptive statistics were used to characterize the study sample. Due to the small sample size, authors examined distributions for pretest and posttest telehealth confidence ratings to determine if

**Table 1.** Telehealth experiences after rapid implementation due to COVID-19 (N = 23).

Variable	n	%	Min	Max	M	SD
<i>How many telehealth sessions did you complete in the last 3 weeks?</i>						
Direct care			0	61	23.9	17.3
Supervised trainees			0	40	7.4	8.7
<i>Category of telehealth for service delivery</i>						
Outpatient therapy	12	52.2				
Diagnostic interview	10	43.4				
Diagnostic evaluation	4	17.4				
Inpatient/C-L	4	17.4				
Providing assessment feedback	4	17.4				
Medication management	2	8.7				
<i>Do you prefer to provide services via telehealth or in-person?</i>						
Telehealth	0	0				
In-person	19	82.6				
Depends on patient	2	8.7				
No response	2	8.7				
<i>Will you continue to utilize telehealth for patient care when the COVID-19 crisis is over?</i>						
Yes	18	78.3				
No	5	21.7				

Note: Categories are not mutually exclusive, and multiple codes are possible per participant; therefore, percentages total more than 100%.

parametric or nonparametric statistical procedures should be utilized. Pretest and posttest confidence ratings were significantly non-normal. Therefore, we utilized the Wilcoxon signed-rank test ( $T$ ) to compare pretest and posttest confidence scores for the entire sample and the Mann–Whitney test ( $U$ ) to compare participants with and without prior training in telehealth.

Responses to open-ended questions were grouped into themes and quantified to better understand common provider experiences, concerns, and facilitating factors during implementation of telehealth services. Investigators utilized a grounded theory approach to code and summarize responses (Charmaz, 2014). The constant comparative method was used to identify themes and categories from participant-identified barriers. Responses were downloaded from Qualtrics, entered into an Excel file, and reviewed by three authors who identified themes from participant responses. Participant responses could generate multiple themes per response. Authors met to discuss content responses and reached consensus coding for each response.

## Results

Participants were three psychiatrists, 14 licensed psychologists, and eight advanced-level psychology trainees (e.g., postdoctoral psychology fellows or psychology interns). Participants were 76% women ( $n = 19$ ), with a mean age of 36.1 years ( $SD = 7.7$ ) ranging from 25 to 62 years old. Eight providers (32%) were trainees, four (16%) endorsed being licensed under 5 years, eight (32%) had been licensed for 5–10 years, and five (20%) had been licensed for over 10 years.

### *Prior training or experience in telehealth*

Twenty-one participants (84% of the sample) completed the pre-questionnaire. Participants indicated varying levels of previous training related to provision of telehealth. 12 participants (48% of the sample) reported no previous training in telehealth. The hospital that employed study participants provided voluntary training in telehealth during telehealth implementation, and participants were able to consult a telehealth “super user” identified within the department, as needed. For the subgroup of participants who had completed prior training in telehealth ( $n = 13$ ), the majority received training via webinars or continuing education seminars ( $n = 7$  of 13; 54%), didactic training ( $n = 3$ ; 23%), or informal training ( $n = 2$ ; 15%). One participant reported formal certification in telehealth. Additionally, 17 participants (68%) had previous experience using videoconferencing platforms for any reason. 18 participants (72%) had never completed a telehealth session, while five (20%) had completed five or less sessions. One participant endorsed completing between 5 and 10 sessions of telehealth and one reported completing over 20 sessions. Only one participant reported using telehealth on a regular basis at this institution. The hospital had limited permission to use telehealth prior to COVID-19.

### *Confidence in using telehealth*

For participants who provided pretest and posttest ratings of confidence ( $n = 19$  of 25; 76%), we examined differences in confidence with using telehealth over time and were interested in whether pretest and posttest confidence in using telehealth differed between groups regarding their experience with prior telehealth training. Pretest confidence ratings,  $D(19) = .23$ ,  $p = .008$ , and posttest confidence ratings,  $D(19) = .25$ ,  $p = .004$ , were significantly non-normal. Therefore, we utilized the Wilcoxon signed-rank test ( $T$ ) to compare pretest and posttest confidence scores for the entire

sample ( $n = 19$ ) and the Mann–Whitney test ( $U$ ) to compare participants with ( $n = 13$ ) and without ( $n = 9$ ) prior training in telehealth.

All participants reported increased confidence in using telehealth from pretest ( $Mdn = 6.0$ ; interquartile range (IQR) = 3.0) to posttest ( $Mdn = 8.0$ ; IQR = 1.0),  $T = 120$ ,  $z = 2.72$ ,  $r = .44$ , 95% CI [−.05, .93]. Participants with prior training reported significantly higher confidence in using telehealth at pretest ( $Mdn = 6.0$ ; IQR = 2.0) versus those with no prior training ( $Mdn = 2.5$ ; IQR = 6.5),  $U = 84.5$ ,  $z = 2.39$ ,  $r = .52$ , 95% CI [.07, .97]. Posttest confidence scores, however, did not differ between participants with prior training ( $Mdn = 8.0$ ; IQR = 1.5) and those with no prior training ( $Mdn = 8.0$ ; IQR = 3.25),  $U = 64.5$ ,  $z = 0.42$ ,  $r = .09$ , 95% CI (−.36, .54).

### Anticipated barriers to telehealth

Twelve of the 21 participants (57%) who completed the pre-questionnaire provided responses to open-ended questions assessing anticipated barriers to providing telehealth services. Participant responses yielded seven categories of perceived barriers: (1) *Telehealth platform limitations, such as connectivity and privacy* (“I am concerned the wireless connection will impact telehealth connection;” “concerned with privacy/confidentiality in patient environment”); (2) *Patient access* (e.g., “concerned with patient access;” “concerned with patient access to therapy materials”); (3) *Patient safety* (e.g., “concerns for safety;” “concerns for suicidality”); (4) *Ability to provide valid services* (e.g., “For diagnostic interviews I am not sure I will be able to see the patients’ behavior for young kids;” “concern implementing manualized treatments”); (5) *Engagement, rapport, or patient satisfaction* (e.g., “concerned patients will not be able to connect on a therapeutic level;” “concern with patient engagement”); (6) *Experience, comfort, and confidence with telehealth* (“I do not really know how to use telehealth;” “concern with comfort explaining telehealth and setting contingencies”); and (g) *Billing and productivity requirements* (e.g., “concerns with billing;” “not having as many encounters because patients decline telehealth”) (see Table 2 for frequency of response codes).

**Table 2.** Anticipated and actual barriers to services.

	Anticipated barriers pretest		Actual barriers posttest	
	$(n = 12)^a$		$(n = 23)$	
	<i>n</i>	%	<i>n</i>	%
Platform limitations	9	75.0	22	95.7
Patient engagement	8	66.7	12	52.2
Providing valid services	4	33.3	7	30.4
Experience/confidence	3	25.0	6	26.1
Patient access	3	25.0	12	52.2
Patient safety	2	16.7	2	8.7
Billing and productivity	2	16.7	6	26.1
No identified concerns/barriers <sup>b</sup>	9	42.9	0	0

Note: <sup>a</sup>= 12 of 21 respondents responded to the open-ended question regarding barriers.

<sup>b</sup>= Nine of 21 respondents did not identify concerns or barriers during the pretest. Categories are not mutually exclusive, and multiple codes are possible per participant; therefore, percentages total more than 100%.

## Actual barriers to telehealth

Twenty-three of the 25 participants (92%) who completed the post-questionnaire responded to closed-ended questions developed from response codes in Table 2 to describe barriers experienced while providing telehealth (see Table 2). Participants identified *Telehealth platform limitations including connectivity and privacy* most commonly after implementing telehealth services. Respondents described concerns related to stability of the telehealth platform and experiencing video and audio lag or disconnection. *Patient access to telehealth* and *Engagement, rapport, or patient satisfaction* were the next most common barriers. Participants expressed access concerns including patients not having equipment to engage in telehealth (e.g., camera phone or webcam) or adequate internet service at their home. *Engagement, rapport, or patient satisfaction* concerns were described as patients reporting discomfort completing therapy over telehealth, reduced rapport, and looking forward to return to in-person sessions. Difficulty in *Ability to provide valid services* was also reported by multiple participants, who described telehealth as having poor validity for conducting psychological/neuropsychological assessments. Participants could elaborate on their responses and list other barriers not previously identified from pre-questionnaire responses. Only one respondent provided a novel barrier post-implementation, stating concerns regarding learning a new system quickly and worrying they were forgetting details or making mistakes.

## Discussion

### Review of main findings

Although approximately half of study participants had received some form of previous training in telehealth services, the majority ( $n = 18$  of 25; 72%) had no prior experience actually providing telehealth services. These findings support previous research findings that despite known benefits of telehealth (Egede et al., 2018; Gagnon et al., 2006; Moffatt and Eley, 2010; Pande et al., 2015), it has yet to be widely implemented (Brooks et al., 2013; Goldstein and Glueck, 2016; Jameson et al., 2011; Smith et al., 2020; Wagnild et al., 2006). Previous research has proposed that clinician willingness to adopt telehealth is a primary factor precluding clinicians from routinely using telehealth (Smith et al., 2020). Many participants ( $n = 12$  of 21; 57%) reported they anticipated barriers to providing care via telehealth, with most concerns relating to issues with technology and pediatric patient engagement in telehealth services. Although provider's willingness to use telehealth likely impacts use of telehealth under typical circumstances, the necessity of digital health technology platforms to deliver health services during COVID-19 was likely a key factor influencing provider use. When given access to the telehealth platform from the organization in response to COVID-19, the majority of participants successfully used telehealth to provide behavioral health services to pediatric patients within their first month of access. As such, outcomes suggest that necessity influenced participants' use of telehealth, although use due to necessity may not indicate a change in providers' willingness to adopt telehealth.

Provider's reported confidence utilizing telehealth services for patient care significantly increased within the first month of implementation, regardless of previous training. This finding indicates that with use and time providers gain confidence in telehealth. The majority of providers ( $n = 19$  of 23; 82.6%) reported they sought consultation with a colleague for troubleshooting issues, indicating that having a trained "super user" is helpful for consultation as needed during early implementation stages. In addition, for occasions when connectivity issues and the telehealth platform affected a provider's ability to complete a session, utilizing other means to complete visits (e.g., telephone) proved effective.



After utilizing telehealth, approximately 96% of providers reported issues with technology as the most common barrier to treatment. These findings are consistent with proposed and documented barriers that providers face related to telehealth technology and infrastructure (Smith et al., 2020; Wagnild et al., 2006). However, technological issues indicated by participants in the present study extend beyond organizational support for telehealth. Technology affected patients' access to telehealth services if patients did not have access at home to technology necessary for participation (e.g., smart phone or computer, internet access, and email access). As such, participants' rated patient access to care and pediatric patient engagement as the second most common barrier to telehealth services. As previously discussed, patient families who did not have access to a smart phone or computer, high-speed internet, or email were not able to engage in telehealth services. This supports the importance of considering socioeconomic barriers that may limit patients' ability to access telehealth platforms. During scheduling, patients who were unable to participate in telehealth due to lack of internet access, computer equipment, or technical support were scheduled for in-person services with consideration of organization-wide contact restriction guidelines. Participants who reported issues with patient engagement indicated telehealth limited their ability to build rapport with some pediatric patients, as they were not able to use toys or other strategies that are effective techniques in-person. When considering implementing telehealth, clinicians or institutions should also consider concerns that did not affect participants in the current study, including organizational prohibitions from engaging in telehealth or lack of personal protective equipment needed to conduct in-person sessions.

Although the majority of providers in the current study ( $n = 19$  of 23; 83%) reported they prefer providing services in-person to telehealth, a large portion of the sample ( $n = 18$  of 23; 78%) reported they intend to continue using telehealth for pediatric patient care after this public health emergency. Reasons for continued use provided by participants included increased access to care for families who otherwise would not receive services due to available providers, travel, time, or cost limitations. Participants also reported technology issues, having continued access to the telehealth platform, and the type of service they were providing (e.g., outpatient therapy, diagnostic interviews, group therapy, and psychological/neuropsychological assessment) were deciding factors for continued use of telehealth. In addition, many providers indicated when using telehealth, they preferred to do so for follow-up visits with patients as opposed to initial appointments with new patients. Reasons for preferring in-person sessions included increased rapport, better behavioral observations, reduced technological barriers, and fewer distractions.

Following the first month of access to the telehealth platform, the vast majority of behavioral health providers at the hospital successfully utilized telehealth to provide pediatric patient care. Telehealth was most often used for outpatient therapy sessions and diagnostic interviews, which are services that may be easier to provide via telehealth than psychological/neuropsychological evaluations that require administration of standardized psychological assessments. Research examining reliability and validity for providing neuropsychological evaluations via telehealth has demonstrated mixed results (Brearly et al., 2017), although previous studies have primarily focused on adults, underscoring questions regarding the suitability of this service when working with youth.

### *Limitations*

While the sample size is small, it reflects a high response rate encompassing nearly all providers in a behavioral health department at a single academic medical center. Participants included a mixture of advanced-level psychology trainees, psychiatrists, and psychologists. As such, results reflect a range

of experience levels and services offered, but may not generalize to providers from other professions or settings that have less well-established telehealth resources. This study took place within an academic medical center with the capacity to implement telehealth rapidly as the platform already existed. Providers who do not have access to telehealth equipment and similar digital infrastructure will assuredly experience additional barriers when implementing telehealth services. For example, at our center, we had an established telehealth platform that was HIPAA compliant. As such, providers were able to provide telehealth services without utilizing less-secure online platforms (e.g., Zoom). Support staff responsible for scheduling obtained patient consent for telehealth services, only for patients located within the state, which eliminated interstate practice barriers.

Another limitation of the present study is it includes data collected from one department at a single practice in the United States. Barriers to implementation of telehealth are diverse and vary by both organizational characteristics (e.g., training, remuneration, and digital infrastructure) and sociodemographic characteristics of patients. While results are specific to this sample, this is the first study to examine implementation of telehealth for pediatric behavioral health services during COVID-19. Barriers to telehealth identified in this study may not be exhaustive, but can serve as a guide for providers or institutions who are considering implementing telehealth services. Additionally, this study shows support for implementation of telehealth, regardless of previous training or experience in telehealth, which may provide assurance to those who are reticent to use telehealth due to lack of perceived readiness.

### *Directions for future research*

Additional research is needed to determine which factors facilitate or impede successful implementation of telehealth services throughout the duration of a global pandemic. Although previous research supports potential benefits of telehealth, it may not be appropriate for all patients depending on where they are in the course of treatment, their symptom presentation, and/or type of service provided (e.g., new patients, clinical severity of symptoms, and psychology or neuropsychology evaluations). Further research may identify which type of pediatric behavioral health services are most appropriate for telehealth or if a hybrid model (e.g., using both telehealth and in-person services) is necessary. Establishing a decision-making model to outline which pediatric patients are best served via telehealth versus in-person delivery of services during times of crisis is essential to guiding providers in how they can best provide essential behavioral health services to patients in circumstances when continuing business as usual is not possible.

While this study examines barriers perceived by providers, it does not address organizational barriers, specific facilitators of telehealth services, or patients' perspective of telehealth services. Future research should assess specific barriers to implementation of telehealth from an organizational perspective (e.g., system-wide policies and procedures, technology, infrastructure, and remuneration for services) and strategies that are most effective in quickly establishing telehealth services during the pandemic and beyond. Perhaps more importantly, future research should assess patient identified barriers to determine patients' perspectives of in-person versus telehealth services, satisfaction with telehealth services, ability to access services, and continuity of care during the pandemic.

### *Implications for practice*

Overall findings from this study support that within a relatively short period of time, providers using telehealth, specifically videoconferencing, demonstrated significant increases in their

confidence using telehealth to provide behavioral health services to pediatric patients. This increase in confidence was not impacted by prior training, suggesting hands-on experience quickly builds clinicians' confidence even for those who begin with limited previous training. While rapid implementation may be needed in some situations, preparation can assist with minimizing problems. Organizations should consider creating safety protocols for telehealth, obtaining adequate equipment, establishing backup plans for loss of connectivity, or identifying technical supports for troubleshooting or an experienced colleague who can serve as a consultant during implementation. Steps such as these may further reduce provider apprehension toward telehealth and lead to a smoother implementation of services. In addition to steps the organization takes for preparation, providers should also prepare families through open and comprehensive discussions about telehealth. Considerations may include the family's preference or ability to attend in-person versus telehealth sessions, if there are environmental barriers such as not having Wi-Fi or a web camera, what safety precautions may be required if being seen in-person during a pandemic, and limitations of services over telehealth (e.g., cannot conduct physical exam, difficulty administering standardized testing, limited behavioral observations, and connectivity concerns). While discussion of telehealth with families should improve rapport, providers may also consider engaging patients through establishing care with in-person visits and transitioning to telehealth after building rapport. In cases of emergency and rapid transition to telehealth, clinicians using telehealth may need to use novel strategies to build rapport, such as screen sharing, having the patient draw or use at-home materials, text chat functions, or asking youth to discuss art, music, or other items in their room.

## **Conclusion**

Despite anticipated and identified barriers to use of telehealth, the majority of providers intend to continue using telehealth to provide behavioral health services to pediatric patients after COVID-19 has subsided. These findings support continuation of current policy changes that allow clinicians to use telehealth to provide mental and behavioral health care for patients who may otherwise have limited or no access to mental health services. Although prior to COVID-19 clinicians may have been less able and/or willing to adopt telehealth services and health payment systems may not have reimbursed telehealth in some contexts, the current pandemic has highlighted the importance of telehealth services to allow patients access to mental and behavioral healthcare services during a period of unprecedented stress, anxiety, and uncertainty. Overall, results provide insight into providers' perspectives of telehealth use when necessitated by external factors. However, little remains known about organizational and patient perspectives in use of telehealth to provide behavioral health services during COVID-19.

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