

# Article • Telehealth Vision Therapy: Reflections After One Year of Implementation

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## ABSTRACT

The COVID-19 pandemic forced a rapid transition to telehealth vision therapy in order to ensure the continuation of care for patients at the Arizona College of Optometry. This editorial features the authors' reflections and opinions regarding the modality.

**Keywords:** telehealth, telemedicine, vision therapy

## Introduction

In March 2020, the Pediatrics and Binocular Vision department of the Midwestern University Arizona College of Optometry (AZCOPT) rolled out a telehealth vision therapy initiative in response to the COVID-19 pandemic.<sup>1</sup> The goal was to continue to provide care for patients who had already initiated their vision therapy regimen, with a secondary goal of continuing to provide this modality for patients post-pandemic.

Multiple challenges with implementing telehealth vision therapy have been previously discussed, particularly at the outset of the pandemic. These ranged from determining which materials and activities would work best in a virtual setting to the difficulty of relying more heavily on parental involvement in order to ensure quality vision

therapy sessions.<sup>2</sup> Solutions to these issues ranged from developing an RDS vergence training app to preparing pre-planned kits for patients.<sup>1,3-5</sup>

While telehealth's efficacy has been shown in multiple studies for other types of patient encounters, it has not been thoroughly investigated in vision therapy.<sup>6-9</sup> Previous studies have shown that in-office vision therapy is the gold standard when compared to home-based computer therapy and placebo control (CITT, CITT-ART).<sup>10,11</sup> However, it could be argued that telehealth vision therapy provides an experience more akin to in-office sessions, as the patient is interacting with a vision therapist rather than using a computer-driven response with visual demands.

Over the course of the pandemic, our clinic was purely virtual from March 2020 through May 2020. Patients who were currently undergoing vision therapy or who had already undergone a visual efficiency examination were offered our telehealth vision therapy services. A total of 10 patients elected to use this service, with the remaining either not responding to the request or choosing to wait for in-office therapy again. A detailed discussion of activities used and programming can be seen in our previous article.<sup>1</sup> Patients were allowed to return to our clinics beginning in June 2020. The total number of patients increased to 28, with only 4 patients (14.3%) electing to continue using the telehealth service. This drop in the telehealth vision therapy number seems to indicate a strong preference for patients and caretakers to undergo therapy in an in-office setting versus over the computer. This could be due to a number of factors, including the psychological impact of home confinement,<sup>12</sup> or to an increase in digital eye strain caused by an increase in computer work.<sup>13</sup> As vision therapy frequently causes patients visual discomfort in the earlier phases, it is possible that the added impact of these two factors may have made the telehealth service undesirable for long-term use. However, it is important to note that new

patients elected to receive telehealth services even when in-office services were available and offered (discussed later in this paper).

Our overall goal for this paper is to provide the reader with our reflections and lessons learned after nearly 18 months of providing telehealth vision therapy to patients. While no statistical analyses of patient encounters were performed to determine the overall efficacy of our efforts, we feel that our shared experiences highlight specific trends involving ensuring successful sessions, selecting activities, and selecting patients who would be most likely to have a positive experience with this new modality of care.

### Reflections and Opinions of the Authors

The implementation process was overall smooth with few issues, despite the sudden change in clinical care forced by the pandemic. This is in large part due to the support that we received from Midwestern University's IT department in providing installation instructions for patients and providers. Most issues involved audio settings that were resolved within the first few minutes of an encounter. There were noted encounters where the camera did not work from our end; however, the camera always worked on the patient's end. This allowed us to continue with the session. No sessions had to be canceled or rescheduled due to technological issues throughout the pandemic.

Overall, we were surprisingly pleased with the results of telehealth vision therapy. Patient performance far exceeded expectations, with all but a handful of patients noting either improvement or complete resolution of their symptoms. A breakdown of patient ages and diagnosis categories can be seen in Table 1. Patients were exceedingly grateful for the opportunity to continue vision therapy during the statewide lockdown, as were patients who would have traveled long distances to be evaluated who otherwise wouldn't have been able to participate easily in vision therapy at our clinic. The most surprising request came from two sets of parents who wanted to use telehealth vision therapy for their child while they were on vacation in order to prevent disruptions in the therapy progress. We observed our students becoming more comfortable with providing telehealth vision therapy, and a discussion on providing vision therapy in this way has been incorporated into the binocular vision curriculum in the college.

There were three issues with our experiences. The first involved providing equipment to the patient and ensuring that the equipment made it back to our clinic once therapy was completed. Similar to Green et al,<sup>2</sup> our solution was to pre-program for multiple weeks out and provide our patients with a kit that could be picked up through a drive-by service. Paper activities could be emailed out to patients and/or their guardians prior to a session, but this was only beneficial if the household had access to a printer. Patients were required to return all equipment when they presented in person for re-evaluations. The equipment would be subsequently sterilized for future use. However, there were multiple instances of patients forgetting to bring equipment back, and many items were never returned. To ensure that material costs are not lost, practitioners may consider charging a deposit for equipment that is refunded upon return. In addition, the pre-programmed kits for patients did not include a large arsenal of lens and prism flippers due to concerns of equipment not being returned. Therefore, the number of vergence and accommodative activities that could be performed for patients was significantly reduced.

One solution to the above issue would be to use an online program or computer program that could continue to provide the patient with vergence activities using red/blue or polarized glasses. This was a solution employed by Bonilla-Warford and Knighton via Remote Web Vision Therapy ([www.webvisiontherapy.com](http://www.webvisiontherapy.com)).<sup>14</sup> Patients would perform assigned tasks on the program while on the telehealth vision therapy call, allowing the practitioner to coach the patient through the task. A similar solution could be to have the patient purchase the Home Therapy Solutions (HTS) computer program, which allows the doctor both to set activity parameters and to monitor progress remotely. The Binovi Pro software is another option for practitioners looking to provide enhanced remote therapy. This application comes pre-loaded with not only a large number of therapy activities, but also with video demonstrations and written instructions. Additional features include being able to provide a plan of activities for patients at home, as well as progress reports for visual skills being trained. The downside for these solutions is that computer- and web-based programs often come at an additional cost to the practitioner, which is likely passed on to the patient. The financial hardships experienced by many during the pandemic may result in patients not being

able to afford these programs; therefore, this must be considered by practitioners before prescribing.

A second issue that we experienced involved selecting patients who were most likely to have success with telehealth vision therapy. This ties into our previous discussion of being precluded by equipment in providing the highest quality care. Our telehealth patients' diagnoses included vergence, oculomotor, accommodative, strabismic, amblyopic, traumatic/acquired brain injury, and perceptual disorders. Based on our experience, we found vergence and accommodation therapy to be the most challenging. The primary reason for this was due to the aforementioned difficulty in providing activities through pre-programmed kits and concern about receiving material back at the conclusion of the therapy program.

The final issue involved compliance and patient motivation. As mentioned before, only a small number of patients experienced no improvement in their symptoms. When reflecting on these patients, we observed that they had either canceled vision therapy prior to its conclusion or had exhibited poor behavior during sessions. This included high rates of no-shows for telehealth sessions, poor attitude during the session (for example, asking when the session would be finished or attempting to hide their eyes from the camera), and an apparent lack of parental involvement during the sessions apart from ensuring that the patient was on the call.

Our reflection on these three issues led to developing criteria to determine whether a patient should be offered telehealth vision therapy as a modality option for our clinic:

1. Patients are unable to attend weekly in-office vision therapy sessions due to significant scheduling conflicts or financial strain from long-distance travel
2. Patients must have exhibited excellent levels of maturity and attention during the visual efficiency examination
3. Patients and parents both must have high levels of motivation after acknowledging the challenge of providing care through a telehealth setting
4. Patients must not have severe accommodative or vergence deficits

## Conclusion

We feel that it is reasonable to believe that telehealth video vision therapy is a modality that will continue in our field. This modality will likely be requested for

patients who would otherwise be forced to travel long distances or manage around busy schedules. Our combined experiences lead to the belief that patients who undergo telehealth video vision therapy are just as likely to experience a resolution of symptoms as those who undergo in-office vision therapy. However, this cannot be confirmed until statistical analysis of our findings is performed. It is important to ensure that patients understand the additional commitment and self-reliance needed to maximize gains and that practitioners pre-program multiple weeks to ensure that activities and equipment can reach patients prior to the session. Future research should be performed comparing the success rate and duration of telehealth vision therapy to in-office vision therapy in order to determine its overall efficacy for patient care.

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