

Short Communication

Video visits and access to care in pediatric rehabilitation therapies in the time of a pandemic

Jill Nulle^a and Virginia Simson Nelson^{b,*}

^aUniversity of Michigan Medical School, Ann Arbor, MI, USA

^bDepartment of Physical Medicine and Rehabilitation, University of Michigan Medical School, Ann Arbor, MI, USA

Abstract. Telemedicine has emerged as a vital tool for continuing to provide therapy to children with disabilities throughout the course of the COVID-19 pandemic. While video visits have certain advantages, such as the ability to see the children in their home, they also have potential drawbacks, as some exam maneuvers and objective measurement tools cannot be performed virtually. The increased utilization of telemedicine also raises questions about access to care. Video visits can remove the transportation and time barriers that some families face. However, they raise new barriers, such as a requirement for home internet access and insurance coverage, that may negatively impact access to care for certain patients. Moving forward, a combination of clinic and video visits in pediatric rehabilitation may be the best way to harness the advantages of both modalities while minimizing their disadvantages. Our article discusses issues relating to rehabilitation therapy delivered via virtual visits, but further study is needed to examine whether video visits achieve similar outcomes to clinic visits.

Keywords: Teletherapy, video visits, disabilities, pediatrics, access to care, pandemic, COVID-19

1. Introduction

With the introduction of stay-at-home orders across the country in response to the coronavirus pandemic, there has been a large paradigm shift in the delivery of routine medical care. Health systems have been required to rapidly adapt to the sudden, unprecedented need for increased telehealth capabilities to continue to provide clinical care [1]. This shift has impacted care for many patient populations, particularly children with disabilities, who often require regular therapy and physician visits. Previous research into the efficacy of telemedicine compared to routine, in-person therapy is lacking in this population. In a systematic review, Zhou and Parmanto found eleven case and cohort studies discussing the use of telehealth to provide therapy

to children and adults with disabilities in remote and underserved areas [2]. They found no randomized control trials, or studies that directly compared telehealth to in-person evaluation and treatment. Their analysis was limited by small sample sizes, with 7 of the studies having sample sizes ≤ 10 .

As the effects of the COVID-19 pandemic on routine medical care begin to be understood, further research into the clinical utility of telehealth is needed. In this article, we will discuss the benefits and challenges of using video visits as a modality of delivering physical and occupational therapy to children with disabilities, as well as the effects this has on the equitable access to care for this patient population.

2. Advantages and disadvantages of video visits

Video visits present different challenges and potential benefits from in-person clinic visits. One of the most apparent benefits of this modality of therapy is that it

*Corresponding author: Virginia Simson Nelson, 2205 Commonwealth Blvd, Ann Arbor, MI 48105, USA. Tel.: +1 734 232 1261; E-mail: vsnelson@med.umich.edu.

34 can increase access to rehabilitation care, especially
35 for those living in rural areas, or for those who have
36 difficulties with transportation. For those with signifi-
37 cant time burdens, whether due to busy parental work
38 schedules, numerous other medical appointments, or
39 other reasons, video visits present an attractive option
40 because they do not require added travel time or time
41 spent in a waiting room. Similarly, for children who are
42 less mobile or require extensive adaptive equipment,
43 the added time and effort to travel to a clinic visit may
44 be removed when they participate in therapy at home.
45 However, for some families, telehealth may present
46 new technological barriers to care. This will be further
47 discussed later in the paper.

48 When video visits are a feasible option, therapy in
49 the home environment can come with significant ad-
50 vantages. The benefits of home-based therapies are best
51 studied in early intervention services for children from
52 birth to three years. Home-based services are a foun-
53 dational component of early intervention because “the
54 child’s natural environment is often described as the
55 most developmentally appropriate learning environment
56 for children with developmental delays” [3]. The ther-
57 apist is able to see the child in their home environ-
58 ment where they are most comfortable. Some children
59 may be more willing to cooperate in a familiar setting
60 with only family present. Observing the child in a more
61 comfortable setting aids the therapist in personalizing
62 the therapeutic regimen. The therapist can see what the
63 family has access to, can more specifically tailor treat-
64 ments to their environment, and help the family problem
65 solve ways to perform particular exercises or movement
66 patterns at home. Home-based intervention services are
67 not well studied in older children; however, it can be
68 surmised that the same benefits would be applicable.
69 Although video visits are not the same as in-home ther-
70 apy, they present some similar advantages. Behl et al.
71 found teletherapy to be noninferior to in-person early
72 intervention services for infants and toddlers who were
73 deaf or hard of hearing [4].

74 Video visits require greater parental engagement than
75 in-person therapy sessions. The parent may be called
76 upon to assist in performing hands-on maneuvers that
77 the therapist is unable to perform. This may lead to
78 better parental understanding of the goals and methods
79 of therapy; however, relying on the parents for hands-on
80 therapy also presents certain challenges.

81 Talking parents through specific motoric directions
82 may be relatively straightforward for return visits with
83 families who are very familiar with their child’s con-
84 dition. New patients along with parents who have not

85 been previously engaged in therapy, or those who do
86 not have a high health literacy may find this a signif-
87 icant challenge of virtual therapy that may affect the
88 outcomes for these children.

89 Furthermore, while there are many aspects of hands-
90 on therapy that can be accomplished by a therapist ver-
91 bally guiding the family through the exercises, there
92 may be a ceiling of what can be accomplished without
93 the therapist being able to physically assess the child’s
94 current state. While an experienced therapist may be
95 able to think outside the box and find ways to accom-
96 plish a number of therapy goals via video visits, there
97 are certain aspects of therapy that are simply not pos-
98 sible virtually. Although a significant amount of infor-
99 mation can be gained by observing the patient, certain
100 aspects of the physical exam are impossible to evalu-
101 ate virtually. For example, active range of motion can
102 be readily visualized. However, it is very difficult, if
103 not impossible, to gain an understanding of a patient’s
104 passive range of motion or strength because the clin-
105 ician cannot evaluate how accurately the parents are
106 assessing this ability.

107 The ability to assess these features can be impor-
108 tant when measuring patient outcomes. At this time,
109 commonly used standardized assessment tools that ob-
110 jectively quantify responses to therapy are based on
111 in-person visits. Their utility of assessment for video
112 visits has yet to be determined. Some tests, such as grip
113 strength or sensory testing, may not be applicable to
114 virtual care, as they require hands-on assessment by the
115 clinician. Without these tools, it is unclear how this cur-
116 rent transition to virtual therapy will affect ultimate out-
117 comes. Further study, including adaptation of these ob-
118 jective measures, is required to understand the efficacy
119 of video visits in therapy.

120 3. Ethics and access to care

121 Particularly during this time of social distancing,
122 telemedicine provides a very useful tool in broadly in-
123 creasing access to therapy in a setting which would oth-
124 erwise be impossible. As we begin to look forward to
125 the time when in-person clinics might become feasible
126 again, it is important to consider the ways in which
127 telemedicine affects equitable access to care.

128 Equitable access to care is an important concept to
129 consider from a clinical bioethics perspective, falling
130 under the concept of justice, defined as the fair distri-
131 bution of benefits, risks, and costs [5]. As it pertains to
132 clinical care, justice encompasses the principle that ac-

133 cess to care is not restricted to specific groups, and that
134 there are not undue barriers that particular groups face.
135 Not only is this important to fulfill the concept of fair-
136 ness, equitable access to care is important to consider
137 because unequal access may cause some patients to
138 have worsened outcomes not due to the medical severity
139 of their condition, but rather due to the social, financial,
140 or other barriers they face.

141 As mentioned previously, video visits do eliminate
142 certain barriers to care that occur with in-person clinic
143 visits. Video visits are also associated with lower costs,
144 particularly lower travel costs for families [6].

145 However, video visits may also present unique certain
146 barriers to care. Video visits require that families have
147 a secure home internet connection, and a smartphone,
148 computer, or tablet. For the majority of patients, internet
149 connectivity and device ownership are not impediments.
150 However, these factors are issues for a considerable mi-
151 nority of patients. As of 2019, 81% of US adults owned
152 a smartphone [7] and approximately 73% of them had
153 home internet access [8]. Those who do not have home
154 internet access were more likely to be minorities, older
155 adults, rural residents, and those with lower levels of
156 education and/or income. For these groups, who are
157 often disadvantaged in the medical system, video visits
158 may not be accessible.

159 When moving healthcare digitally, another factor to
160 weigh is the patient or parent's technological savviness.
161 The technological components of the visit may present
162 a significant barrier for parents who are less comfortable
163 with technology. Video visits may be more successful if
164 there are two caregivers present: one to manage the de-
165 vice, and the other to handle the child who is dependent
166 on their help for therapy, whether due to age or ability.
167 For households that do not have two caregivers present,
168 the video visit may be less successful.

169 Finally, the major factor that determines access to
170 video visits and affects nearly all patients is insurance
171 coverage. As of March 2020, Medicare began temporar-
172 ily covering virtual visits, and some private insurances
173 and state Medicaid systems have since followed suit [9].
174 Others have not. For insurance policies that have begun
175 to cover telehealth, it is unclear whether coverage will
176 continue once the immediate threat of the pandemic
177 has diminished. If video visits are to become a part of
178 routine rehabilitation care, then they need to be covered
179 by insurance so they do not become limited to those
180 who can afford to pay out of pocket.

181 Although insufficient insurance coverage and tech-
182 nological barriers may restrict access to care with video
183 visits, these visits reduce other financial and logistical

184 barriers. When it is possible for regular clinic visits to
185 resume, video visits may serve as useful adjuncts to
186 increase overall access to care.

187 4. Conclusion

188 While the coronavirus pandemic continues to be a
189 threat, conducting therapy through video visits is cer-
190 tainly superior to no therapy. In this time of social iso-
191 lation, continued contact with the therapist can be a
192 meaningful way to help families of children with dis-
193 abilities remain connected. Other advantages of video
194 visits include: increasing access to care, working with
195 the child in their home environment, and allowing fam-
196 ilies to be more directly engaged in therapy. Disadvan-
197 tages of video visits include the reliance on parents to
198 perform critical parts of therapy, and the inability of the
199 therapist to perform hands-on assessments. At this time,
200 it is unclear how video visits compare directly to clinic
201 visits. Objective assessment tools need to be developed
202 to help us understand outcomes.

203 In this increasingly digital age, video visits are most
204 likely here to stay. They may not ever replace in-person
205 visits, but combination of these two modalities may
206 provide the best of both worlds: periodic hands-on as-
207 sessments during clinic visits, and observation of the
208 child in their home environment. Further incorpora-
209 tion of video visits into mainstream practice may lead
210 to increased accessibility of rehabilitation medicine so
211 long as there is sufficient insurance coverage. However,
212 further study is needed to determine the role of video
213 visits in routine care.

214 Acknowledgments

215 The authors would like to thank Chris Lucido, DPT,
216 Betsy Howell, MSPT, and Denise Justice, OTRL, for
217 their valuable insights into their experiences converting
218 their practices to teletherapy.

219 Conflict of interest

220 The authors have no conflict of interest to report.

221 References

- 222 [1] Patel PD, Cobb J, Wright D, et al. Rapid Development of
223 Telehealth Capabilities within Pediatric Patient Portal Infras-
224 tructure for COVID-19 Care: Barriers, Solutions, Results. J

- 225 Am Med Inform Assoc. 2020 Jul 1; 27(7): 1116-1120. doi:
226 10.1093/jamia/ocaa065.
- 227 [2] Zhou L, Parmanto B. Reaching People With Disabilities in
228 Underserved Areas Through Digital Interventions: Systematic
229 Review. *J Med Internet Res*. 2019 Oct 25; 21(10): e12981. doi:
230 10.2196/12981.
- 231 [3] Hoffman TK. An exploration of service delivery in early inter-
232 vention over the last two decades. *International Journal of Early*
233 *Childhood Special Education*. 2016 Dec 6; 8(2): 107-12.
- 234 [4] Behl DD, Blaiser K, Cook G et al. A multisite study evaluating
235 the benefits of early intervention via telepractice. *Infants &*
236 *Young Children*. 2017 Apr 1; 30(2): 147-61.
- 237 [5] Beauchamp TL, Childress JF. *Principles of biomedical ethics*.
238 Oxford, (NY): Oxford University Press, USA; 2001.
- 239 [6] Clark RR, Fischer AJ, Lehman EL, Bloomfield BS. Develop-
240 ing and implementing a telehealth enhanced interdisciplinary
241 pediatric feeding disorders clinic: A program description and
242 evaluation. *Journal of Developmental and Physical Disabilities*.
243 2019 Apr 15; 31(2): 171-88.
- [7] Demographics of Mobile Device Ownership and Adoption in
244 the United States [Internet]. Pew Research Center: Internet, Sci-
245 ence & Tech. Pew Research Center; 2019 [cited 2020May12].
246 Available from: [https://www.pewresearch.org/internet/fact-](https://www.pewresearch.org/internet/fact-sheet/mobile/)
247 [sheet/mobile/](https://www.pewresearch.org/internet/fact-sheet/mobile/).
- [8] Demographics of Internet and Home Broadband Usage in the
249 United States [Internet]. Pew Research Center: Internet, Sci-
250 ence & Tech. Pew Research Center; 2019 [cited 2020May12].
251 Available from: [https://www.pewresearch.org/internet/fact-](https://www.pewresearch.org/internet/fact-sheet/internet-broadband/)
252 [sheet/internet-broadband/](https://www.pewresearch.org/internet/fact-sheet/internet-broadband/).
- [9] Mehrotra A, Ray K, Brockmeyer DM, Barnett ML, Bender
254 JA. Rapidly Converting to “Virtual Practices”: Outpatient Care
255 in the Era of Covid-19. *NEJM Catalyst Innovations in Care*
256 *Delivery*. 2020 Apr 1; 1(2).
257