

**TITLE:** A Paradigm Shift in the Delivery of Physical Therapy Services for Children With Disabilities in the Time of the COVID-19 Pandemic

**RUNNING HEAD:** PT for Children With Disabilities During COVID-19

**TOC CATEGORY:** Fast Track

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With the COVID pandemic, the delivery of rehabilitation services has been greatly affected across lifespan, especially towards children with disabilities. The significant physical and mental health stressors of prolonged home confinement coupled with discontinuation of rehabilitation services can lead to several long-term concerns among children with disabilities. In light of the current events, our approach towards rehabilitation needs to be re-evaluated and revamped. The point of view highlights the potential ways in which we could continue to provide physical therapy services for children with disabilities. Use of family-centered and home-based models of care can be considered to reach out to children with disabilities using telerehabilitation and digital physical therapy by adopting a modified framework of care. The implications of the point of view may help aid clinician's world-over to continue providing rehabilitation services to children with disabilities.

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The novel 2019 coronavirus disease (COVID-19) pandemic has brought about several changes to the healthcare systems and the delivery of healthcare services. The impact has been most profound among professions where close and sustained contact is essential, of which physical therapy is one among them.<sup>1</sup> Although the role of physical therapy has been recommended in providing both acute and long term care for those with COVID-19,<sup>2,3</sup> recommendations in other domains a physical therapist caters to has been compromised. One such physical therapy service that has been greatly affected are those offered for children with disabilities.

The COVID-19 pandemic overall has had a significant impact on children all over. With playgrounds being sealed and schools becoming virtual, children have been restricted to their homes. The prolonged confinement at home has resulted in a substantial increase in screen time and decrease in physical activity among both children and adolescents.<sup>4</sup> The resultant reduction in physical activity and prolonged sedentary behavior forms a vicious cycle which can negatively influence a child's physical health (ie, lesser activity, prolonged screen time, irregular diet and sleep habits) and mental health (ie, boredom, frustration, lack of personal interaction with friends, classmates and teachers).<sup>4,5</sup>

Changes in the lifestyle patterns coupled with the psychological stress of home confinement could cause further detrimental effects among children with disabilities. Children with disabilities especially those with intellectual disabilities, may find it hard to comprehend the current situation which could cause a resultant increase in their anxiety and agitation.<sup>6</sup> The disruption of rehabilitation services due to safety concerns, transport limitations and economic constraints have placed added stress on children with disabilities and their families. Therefore, during this time of restricted access to rehabilitation services, there

arises a need to provide alternate delivery methods for continuation of physical therapy services to children with disabilities.<sup>7</sup>

Ensuring the continuum of care during the pandemic poses several challenges to the physical therapist since most physical therapy interventions for children with disabilities require close contact and physical handling of the child. Moreover, the limited access to personal protective equipment for rehabilitation professionals make face-to-face delivery of services unsafe for both, the client and therapist. Furthermore, for children with disabilities, their lack of understanding of the current scenario, limited access to appropriate age-relevant information and their increased risk for infections and complications from COVID-19, further add to the challenge for delivering safe physical therapy services to them. Therefore, the approach towards assessment and intervention may need to be transformed by adopting alternate modes of delivery of services for children with disabilities.

Family-centered services have long been propagated for pediatric care especially among children with cerebral palsy.<sup>8</sup> Evidence supports the family-centered service model for pediatric rehabilitation with both parents and health care professionals being satisfied with this approach.<sup>9</sup> A study by Bertamino et al highlighted the role a family can play in continuing therapy to acquire skills and maintain available function, even when regular services were discontinued during the COVID-19 pandemic.<sup>7</sup>

In addition, a home-based model of delivery of care could be explored. Home-based models of care work best when there is regular coaching, follow-up and feedback from the physical therapist.<sup>10</sup> The program requires a goal setting that can follow the family-centered service approach, in which the service providers and family members work as a team to evaluate the therapeutic needs and design individualized assessment and training programs for

children with disabilities.<sup>9</sup> Provision of basic equipment, where economically viable, can be suggested to families. Nevertheless, where financial constraints exist, this can easily be substituted by indigenously developed low-cost equipment to address the same practice needs.

Interventions in the form of a home program have always been a part of pediatric rehabilitation services.<sup>10</sup> Home programs have traditionally been used by physical therapists to involve family members to continue providing interventions between treatment sessions. Home programs and goal-directed training have shown to be effective in improving motor performance, self-care and functional abilities among children with cerebral palsy.<sup>11</sup> Considering the influence of the pandemic in slowing the delivery of on-site rehabilitation services, home programs could be considered in the current scenario.<sup>12</sup>

Although home programs have been a regular method of care for pediatric rehabilitation, adherence to these methods has not been evaluated extensively. One study found that the parents of children with sensory processing disorders had better adherence to home programs when they used an app-based system of individually tailored exercises.<sup>13</sup> App-based services are an innovative approach to reach the greater masses. This is crucial as we begin to think towards a global and digital approach towards rehabilitation care.

Use of digital services for Pediatric healthcare delivery during COVID-19 pandemic although highlighted, lacks emphasis on its implications towards providing continued rehabilitation services for children with disabilities.<sup>14</sup> The role of information and communication systems towards continued monitoring and therapeutic intervention by caregivers, under the guidance of healthcare professionals, have long been propagated.<sup>15</sup> The use of telerehabilitation or digital- physical therapy services can play a major role in the

maintenance of function, prevention of worsening disability and follow up of the patients under consideration.<sup>16,17</sup> The physical therapy care can be provided and monitored through video-based platforms on a one to one basis or with smaller groups of participants using mobile phones (smartphones) and applications like Zoom, Skype, WhatsApp, among others. These platforms can be used as a medium for regular physical therapy assessment and interventions for children with disabilities. Regular demonstrations by the physical therapist, correction of parents' handling techniques during intervention sessions and guidance towards correct methods of evaluating the child's progress, can be provided through video calls, recorded videos, relevant pictures and written information – communicated in a language best understood by the parent in the appropriate cultural context.

Additionally, virtual group therapy sessions may facilitate interactions between the children and their families, and thereby help address both the physical and mental/emotional stressors in the child's immediate environment. These sessions could facilitate interaction of the child with their peers and may even motivate them to perform some basic activities or exercises together. In addition to group therapy sessions, online peer support groups may be of great importance – for the caregivers and children with disabilities – to help their overall wellbeing.

Delivery of care through these means may require the parent to have access to information and communications systems like a smartphone or laptop along with access to internet services. For individuals who do not have a smartphone, encouraging a neighbor to provide the patient access to their device for limited periods may be a worthwhile pursuit. Alternatively, regular phone calls for follow ups and use of postal services to deliver handouts of information could be considered. In places where access to healthcare is

limited, especially in low- and middle- income countries,<sup>18</sup> utilization of existing community-based healthcare delivery services is crucial to the continuum of rehabilitation services. Enabling the community health workers to reach out to these families and record their progress by capturing videos and sharing them with the physical therapist at frequent intervals of time provide a strategy for regular assessments and follow up for these children. The physical therapist could then train the caregivers and the community health workers in methods of basic evaluation and treatment strategies for children with disabilities. For this method to be feasible and implementable at the community level, assessment methods need to be simple, time-effective and easy to perform with commonly available materials in the house or neighborhood. This calls for a paradigm shift from the current thought process, wherein specific validated tools for assessment are preferred over clinical and functional measures. The use of these validated tools in the current context could have limited access and restricted usage due to the physical proximity and multiple handling requirements. This brings to light the need for simpler and more functional methods of assessment which could be easily learnt by the caregivers or community health workers. The use of functional methods of evaluation which requires the child to demonstrate an activity or movement, to be recorded and later interpreted by the physical therapist, is the need of the hour. These measurements could be taken on repeated intervals of time to ensure a proper follow up of care. This change in thought process in the delivery and assessment of rehabilitation care has been suggested in the modified framework of care summarized in the Figure.

As the concerns with continuing rehabilitation services for children with disabilities may be seen all over the world, it is necessary to culturally adapt these methods of assessment and interventions to the child's environment, to ensure the continuity in delivery of care.<sup>5</sup> Although the adoption of telerehabilitation and digital physical therapy has been slow over

the years,<sup>17,19</sup> the COVID-19 pandemic, provides us with an opportunity to fast-track the use of these mediums and facilitate family-centered and home-based physical therapy services for children with disabilities. The use of functional assessments and training methods may need to gain priority over the established evidence-based methods to optimize services during the current scenario. As there is a significant lack of literature and evidence for these rehabilitation methods for children with disabilities, the pandemic provides us with a unique opportunity to generate evidence for the same.

To conclude, in light of current events, our approach towards physical therapy assessment and rehabilitation of children with disabilities needs to be re-evaluated and revamped by shifting our focus towards home-based and family-centered care. These approaches can help bridge the gap prevalent in the delivery of physical therapy services for children with disabilities in times of COVID-19.

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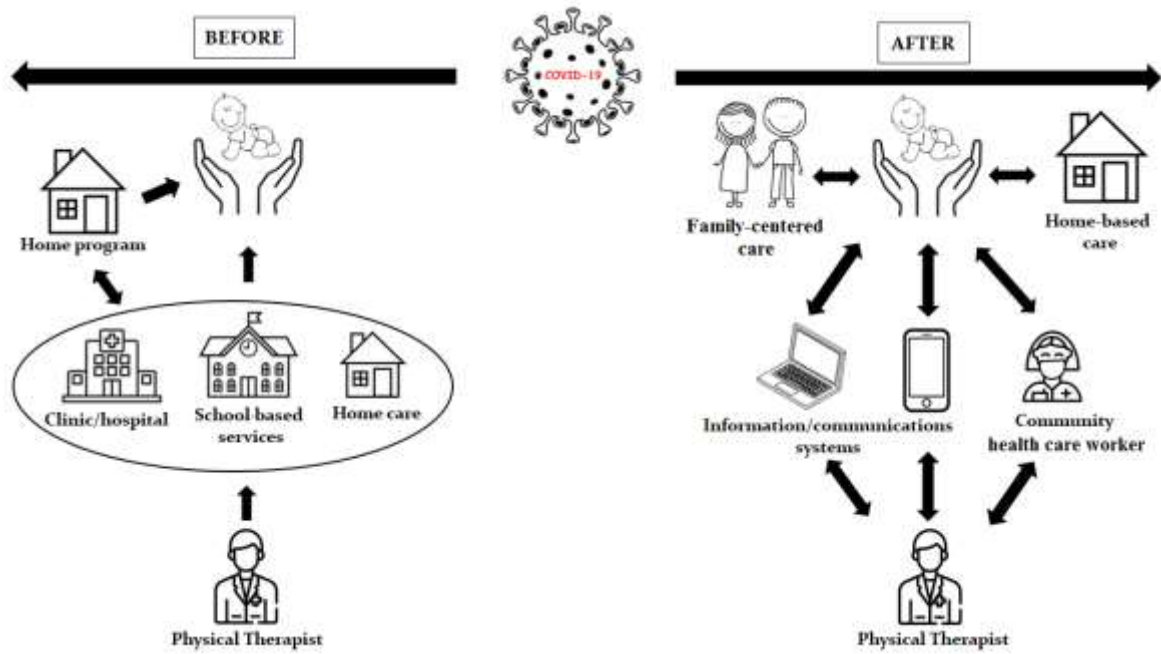
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Figure Captions:

**Figure.** Framework of care for children with disabilities.



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