What does the research say about telerehabilitation?

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Our field (along with most other fields) has found itself in an extraordinary situation during the pandemic as we’ve tried our best to support families while unable to see them in person. This has posed challenges, but also offered new possibilities for our intervention practices. Many clinicians have turned to telerehabilitation (or telepractice), a relatively new way of delivering intervention. While telerehabilitation has a somewhat limited research base, Chantal Camden and her colleagues at Sherbrooke University and Sherbrooke University Hospital in Quebec, Canada recently published a systematic review of existing telerehabilitation studies regarding children with disabilities (Camden, 2020; Camden, Pratte, Fallon, Couture, Berbari, & Tousignant, 2019). Last month I attended an online summit regarding eHealth services for therapists working in pediatric rehabilitation, during which Camden shared the results of her review. Below I share some of these findings, along with Camden’s insights about how to best serve families and children using this relatively new intervention delivery model.

Clarifying terminology related to telerehabilitation

There are several terms used to describe intervention delivered using technologies (Camden et al., 2019):

- **Telehealth** – this term describes the practice of using technology to support therapist-client interactions or interactions among professionals
- **Telemedicine** – this term is usually used to refer to doctors treating patients remotely
- **Telerehabilitation** – this is the most common term used to describe the provision of rehabilitation services remotely by rehabilitation professionals
- **Telepractice** – this term is often used in the field of speech language pathology to describe the assessment, intervention, or consultation services we provide using telecommunication technology (American Speech-Language-Hearing Association (ASHA), n.d.). Elaborating further, ASHA (n.d.) states that telepractice services delivered by speech-language pathologists are included in the broader term telerehabilitation, and that they adopted the term telepractice (rather than teledmedicine or telehealth) to avoid the misperception that these services are only used in health care settings.

Speech-Language & Audiology Canada explains that telepractice may involve “live” or “store-and-forward” services:

“Live or real time service may include but is not limited to telephone, or videoconferencing. Store and forward involves the recording, storing, and subsequent transmission of audio and/or visual images for later examination (e.g., e-mail, fax, audiotape or videotape recordings).”

(Speech-Language & Audiology Canada, 2015)
In their systematic review, Camden et al., (2019) included studies of telerehabilitation delivered by a variety of rehabilitation professionals, including physiotherapists, psychologists, occupational therapists, speech language pathologists, social workers, dieticians, and other (unspecified) licensed health care professionals. While we use the term telepractice at the Hanen Centre, the term telerehabilitation is used in this article to reflect the terminology used by Camden et al. (2019) and the studies they examined.

**Pediatric telerehabilitation: A systematic review**

Camden et al. (2019) engaged in a systematic review of pediatric telerehabilitation studies because previous telerehabilitation reviews have looked at specific populations (e.g. stroke or multiple sclerosis), and most studies have focused on adult populations. Due to the many similarities in best practices used with pediatric populations across rehabilitation disciplines, as well as the interdisciplinary nature of working with children with disabilities, Camden et al. (2019) chose to include all relevant telerehabilitation intervention studies in their review. They included 23 randomized control trials, and the majority were published after 2016. The goal of the review was to “describe the characteristics and effectiveness of pediatric telerehabilitation interventions offered to children 0-12 years old or to their families” (Camden et al., 2019., p. 2).

The randomized control trials included in the review served diverse populations and measured a variety of outcomes, including:

**Children’s outcomes:**
- behaviour
- symptom severity level
- communication skills
- functional abilities (in day-to-day activities)
- motor skills
- vision

**Parents’ outcomes:**
- skills
- stress level
- parent-child interactions

Fourteen of the studies targeted children with neurodevelopmental disabilities or acquired injuries, and the most common diagnoses reported were autism, traumatic or acquired brain injury, or unilateral cerebral palsy. The remaining studies targeted children with emotional dysfunction or chronic medical conditions.

The interventions provided via telerehabilitation varied from only providing information (e.g. providing written material to read or videos to watch) to interactions with the therapist that involved coaching, and some programs provided real-time treatment for children while others involved a program to be implemented by the parents. Approximately half of the programs targeted only the parents, while the other half also included the children. Fewer than half of the studies reported the provision of training to the therapists prior to the start of the intervention. A variety of technologies were used to deliver the telerehabilitation, including videoconferencing, telephone, emails, web platforms or online forums. Most interventions incorporated at least two types of technologies.

**Results**

Some of the main findings of the review include:

- Most studies (60%) reported a significant improvement over the control group or over time for more than half of the outcomes they examined
• Overall, 56.1% of the outcomes studied improved following telerehabilitation
• Only 5 studies reported no significant improvement on outcomes
• There was a high level of parent satisfaction with the telerehabilitation programs – most studies reported “high” or “very high” levels of satisfaction
• Studies that compared telerehabilitation with face-to-face intervention did not report inferior outcomes
• Results regarding the specific technologies that were related to higher effectiveness were inconclusive, but interventions that did not use videoconferencing reported 70% outcome improvement, while studies that used videoconferencing reported 50% outcome improvement
• Features of interventions delivered via telerehabilitation that resulted in greater improvements in outcomes included the following characteristics:
  o They incorporated coaching (versus only information sharing)
  o They were provided at least once per week
  o They were delivered for at least 8 weeks
  o Clinicians were provided with training prior to the start of the program
  o They targeted the parent (versus targeting the child directly)
  o They targeted a behavioural outcome (e.g. communication, anxiety, parental skills) versus a physical outcome

A roadmap for telerehabilitation

Adopting telerehabilitation practices can seem overwhelming at first. This could be why allied health professionals have been slow to embrace the use of telepractice (Hines, Lincoln, Ramsden, Martinovich, & Fairweather, 2015). In fact, when Hines et al. (2015) interviewed 15 speech language pathologists about their perspectives regarding telepractice, they found that the SLPs had mixed feelings initially. However, once they transitioned to telepractice they viewed it positively and regarded it as a legitimate mode of service delivery that shared the same underlying principles as face-to-face therapy. The results of the above systematic review support this perspective, as studies that compared telerehabilitation with face-to-face intervention did not report inferior outcomes (Camden et al., 2019). The authors conclude that “telerehabilitation might be as effective as face-to-face interventions, across disciplines, for a variety of clinical outcomes” (Camden et al., 2019, p. 1).

While there is more work to be done in terms of research in this area, the results from this systematic review provide the beginnings of a roadmap which can guide us towards the features of telerehabilitation that result in better outcomes. Many of the features of effective telerehabilitation identified in the review are similar to best practices when delivering in-person services to families, such as:

• working with and through the parents;
• using coaching as opposed to only providing information; and
• providing intervention in regular doses across a sufficient length of time to see behaviour change.

These key principles are incorporated into both in-person and telepractice Hanen programs.

The verdict may still be out regarding which technologies to use when providing telerehabilitation. During the eHealth summit, Camden (2020) explained that while one would assume videoconferencing would be the gold standard when it comes to technologies as it allows for live interaction with the family, their results did not support this. Based on their findings, emails, phone calls, and other technologies can successfully deliver telerehabilitation. Camden suggested that it’s not the platform you choose that makes the intervention effective – you need a fit between the platform, the goals, and the family’s needs.

Camden posed several questions professionals can ask themselves to prepare for using telerehabilitation with families of children with disabilities:

• how you can use technology to observe everyday activities and child behaviours?
• are you familiar with and ready to use the technology?
• what information does the family need?
• what are the family’s unique needs and contexts?
• does the family have access to a computer or other necessary technology?
• have you considered any legal aspects (e.g. confidentiality)?

(Camden, 2020)

She also emphasized the need to develop personal relationships with families by engaging with them, getting to know them, and personalizing intervention by considering their goals and objectives, just as we would do when delivering face-to-face intervention.

Summarizing, Camden suggested that the question now isn’t whether telerehabilitation is effective for children with disabilities, because we know that the answer is “yes”! Rather, the question that remains and needs further exploration is “for whom, for what objectives, and under what circumstances is telerehabilitation effective?” (Camden, 2020). Using the results from the above review as a roadmap, we can incorporate features of existing effective telerehabilitation studies in our work with young children and their families as we embrace the potential use of technologies in our clinical practice.

**Making Hanen Happen via Telepractice**

We have recently launched four Hanen Programs that can be offered via telepractice:

- **It Takes Two to Talk®** - The Hanen Program® for Parents of Children with Language Delays
- **Target Word™** - The Hanen Program® for Parents of Children who are Late Talkers
- **More Than Words®** - The Hanen Program® for Parents of Children with Autism Spectrum Disorder or Social Communication Difficulties
- **TalkAbility™** - The Hanen Program® for Parents of Verbal Children on the Autism Spectrum

These programs have been carefully created and piloted to mimic the experience provided in the in-person programs. If your Hanen membership is current, you are eligible to obtain a telepractice license to offer the Hanen Programs for which you are certified. The license provides you with access to the Telepractice Manual, downloadable session slides which have been modified for telepractice, and downloadable fillable forms for you and the parents.

You can learn more about Hanen telepractice programs at [www.hanen.org/telepractice](http://www.hanen.org/telepractice). We also have several articles with further information about telepractice:

- **Switching to Telepractice: How to Ensure a Smooth Transition**
- **Hanen’s biggest project ever: A report from the front lines**
- **The Case for Telepractice: Should Hanen programs be offered to families online?**

You may also be interested in watching the recording of our Online Member Meeting: “Let’s Talk: Hanen Programs Offered via Telepractice”. We hope these resources help you make the leap to telepractice, so you can support more families using this flexible, exciting new way of delivering parent-implemented intervention!
References


About The Hanen Centre

Founded in 1975, The Hanen Centre is a Canadian not-for-profit charitable organization with a global reach. Its mission is to provide parents, caregivers, early childhood educators and speech-language pathologists with the knowledge and training they need to help young children develop the best possible language, social and literacy skills. This includes children who have or are at risk for language delays, those with developmental challenges such as autism, and those who are developing typically.

For more information, please visit www.hanen.org.

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