Residência RP Pediátrica
Publicação Oficial da Sociedade Brasileira de Pediatria

Submitted on: 11/04/2021
Approved on: 05/01/2022

REVIEW ARTICLE

A protocol for pediatric telehealth physiotherapy assessment

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Keywords:
Telemedicine, Videoconferencing, Telerehabilitation, Pediatrics COVID-19.

Abstract

The COVID-19 pandemic started in 2020 and due to the high level of contagion social distancing measures were adopted in order to reduce the proliferation of the virus. In this context, the telehealth approach gained notoriety. This modality can be classified into Telemedicine, Teleconsultation, Telerehabilitation, Telemonitoring and Teleconsulting. The aim of this study was to develop a protocol for physical therapy assessment in telehealth for pediatric patients. The protocol developed was divided into 3 stages: pre-service, service and finalization. Through the steps of the product created, it is possible to follow a strategy for physical and functional assessment, minimizing failures and facilitating successful remote service. Despite the barriers to the implementation of telehealth, such as the performance of some stages of the physical examination, technological, geographical and organizational limitations, this modality has been of great value, and considering future perspectives, it has great potential to remain a permanent choice of care.

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Residência Pediátrica; 2022: Ahead of Print. DOI: 10.25060/residpediatr-2022.v12n4-763

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INTRODUCTION

In early 2020, the world was swept by the COVID-19 pandemic, a systemic disease caused by the SARS-CoV-2 virus. Due to the disease's high level of contagion, social distancing measures were implemented to curb the dissemination of the virus. In this context, telehealth was seen as a means not to interrupt the delivery of care to persons in need[1,2].

According to the World Health Organization (WHO), the main objective of telehealth is to make health services available to individuals living in geographically remote locations or during public emergencies[3]. In telehealth, healthcare workers resort to use Information and Communication Technologies (ICT) to interact with patients and collect information to diagnose, treat and prevent diseases. Telehealth services can be rendered synchronously (real-time care) or asynchronously (sending guidance and advice to patients). The means used to communicate with patients include videoconferencing software, e-mail, telephone, and text messages[1].

Regulations for telehealth in physiotherapy were enacted in Brazil during the pandemic. The Federal Council of Physiotherapy and Occupational Therapy (COFFITO) described the categories into which telehealth was divided. They are Teleconsultation, in which patient consultations are conducted and recorded by the healthcare worker in charge; Telemonitoring, which is the remote monitoring of patients previously treated in face-to-face visits or in need of reassessment; Teleconsulting, which is meant to convey knowledge to specific audiences via training sessions, preferably through evidence-based practices, in which strategies and guidelines are discussed based on articles and protocols published by public health authorities; Telemedicine, which covers all aspect above, although focused on medical specialties; and Telerehabilitation, which is the delivery of rehabilitation through ICT, specifically in areas of Physical Therapy and Occupational Therapy[4].

There still are many barriers to the implementation of telehealth, including matters related to bureaucracy, technology, geography, and organizational factors. Healthcare worker training and patient acceptance are also relevant elements in this discussion. Moreover, findings from scientific literature and data about the effectiveness of telehealth in pediatric populations are still scarce[1]. This article presents a protocol for pediatric physical therapy assessment using telehealth.

METHODS

The protocol was produced based on an integrative literature review, which included articles published in the last five years about telehealth in pediatrics.

Articles discussing the practice of telehealth in pediatrics (no diseases excluded) and depicting its application, benefits, advantages, disadvantages, and main implementation challenges were included. Information from the WHO and COFFITO were also considered. Articles with individuals older than 18 years, studies performed within a hospital environment, duplicates, and articles not available in full were excluded.

The articles were selected in four steps: identification, selection, eligibility, and inclusion. The first step comprised a search in databases based on keywords, followed by an analysis of the titles of the articles and exclusion of duplicates. In eligibility analysis, the abstracts of the chosen articles were read. Included articles had to meet the inclusion criteria and were read in full.

RESULTS

A protocol was developed based on the selected articles. The protocol was divided into three parts: pre-care preparation, described in Table 1, subdivided into items used in the interview with caregivers and other preparatory steps involving patient and physiotherapist; care, described in Table 2, goes through the procedures performed during consultation, including physical examination, which may be adjusted according to the case; and conclusion, described in Table 3, which wraps up the physiotherapy assessment via telehealt

DISCUSSION

Telehealth has advantages, disadvantages and specificities such as the platforms used, data protection laws, changes in legislation, insurance coverage, and costs. One of its great advantages is the simplification of logistical issues, since some families have to travel long distances in search of care.

Although the initial investment in new technology may be costly, telehealth can be a cost-effective alternative to face-to-face care, considering patient travel time and effort. Another important factor is that many times parents become more involved in the care of children, which ends up increasing their knowledge of the disease and required techniques, thus improving health literacy and self-monitoring. Another advantage is that telehealth can reduce the waiting time to see specialists[5-9].

Collecting patient data asynchronously takes less time and makes the process easier on physiotherapists and patients[10]. Treatment can be organized in a way that also takes into account the family's routine and other parental and caregiver responsibilities[5].

It is important to emphasize that pediatric teleconsultations require special attention to patient evaluation and administration of therapy. One must be dynamic, creative, and include games that increase patient involvement, since it may be difficult to keep them interested in performing the requested tasks. It is advisable to smile, be attentive, and look directly into the camera. During the virtual consultation, the child may cry and/or become uncooperative, so it is important to keep calm, talk to the caregiver and, if possible, collect information and have tests performed prior to physical examination[11].

The protocol can be applied to children of various ages, and it allows, through structured implementation, the acquisition of different information, including how the child

Table 1. Pre-care preparation.

Preliminary interview with parents/guardians/caregivers
• Personal data (name, date of birth, sex, address, phone number)
- Medical diagnosis
- Obtain consent to use personal data (according to the Brazilian General Law of Data Protection)
• Reason for seeking our service (For example, "Is this your first contact with physiotherapy?" "Were you referred to our service?");
• Assess expectations from therapy (understand what the patient expects from the therapy and explain what can and cannot be done);
• Parent and/or guardian availability/daily routine and child's daily routine (frequency of care that best fits the family context and patient needs);
• Contact information and address for emergency situations (in cases of consultation outside the usual location, inform the physiotherapist of the location);
• Audiovisual resources and stable internet connection (cell phone, computer, tablet);
• Platform of care (define the ideal platform for care and have a second option if the first does not work);
• Basic instructions about how to use of the chosen platform;
Preparations performed by the patient
• Well-lit environment, without noise and with good space delimitation;
• Ask that the materials to be used in therapy are readily available (e.g.: toys);
• Hygiene (if the child uses diapers, make sure they are clean before the assessment begins);
• Time of last meal at least 30 minutes before the beginning of the session;
• If there are other children in the same household, keep them busy with something else;
Preparations performed by the patient
• Test device and internet connection;
• Preferably connect to the platform five minutes before the start of the session.
• If available, ask your parent/guardian to set aside instruments such as a thermometer and oximeter for the session.
Preparations performed by the physiotherapist
• Send a reminder/confirmation of the appointment to the patient (12 to 24 hours before the session);
• Well-lit environment with neutral background and no noise;
• Prepare pad for notetaking;
• Test device and internet connection;
• Wear appropriate attire;
• Preferably log on to the platform five minutes before the start of the session.
• Optional: keep a dummy close to demonstrate procedures

Table 2. Care.

Preparations performed by the physiotherapist
● Position yourself in front of the camera;
● Tell the patient whenever you need to move out of the field of view or grab something;
● Speak loudly and slowly;
● Preferably use headphones (contributes to session confidentiality);
● Introduce yourself to everyone on the call and ask if there is anyone else in the room;
● Communicate your registration number with the Board of Physiotherapy and advise how to proceed in case of loss of connection;

is inserted in his/her home, a fact that can be favorable to patients and their families[5,12].

The main barrier is the performance of physical examination. When performed remotely, physical examination starts with the observation of the child. However, some situations require face-to-face interactions[13] to facilitate diagnosis[14]. For this reason, some physiotherapists prefer to alternate between face-to-face visits and video monitoring[15].

The ideal time for teleconsultations ranges from 22 to 36 minutes[13] and the frequency of consultations is established according to the needs of each patient.

Although the most common platforms for teleconsultations today are Skype™ and Whatsapp™, it is important to note that these were only allowed by the emergence of the COVID-19 pandemic. However, patients and parents must be advised of the security and data protection limitations of these

Table 2.1. Assessment.

Physical Examination
Ask the patient to stay in front of the camera;
• Collect patient information (personal history, history of current/previous illness, chief complaint, socioeconomic/environmental conditions, supplementary tests, medications). This procedure can be performed synchronously or asynchronously through a questionnaire sent in advance.
• Inspection
- Skin color (ruddy, cyanosis, jaundice)
- Skin (bruising, erythema, scarring, edema)
- Limb length alteration
Vital signs:
- Temperature, Heart Rate (HR), Peripheral oxygen saturation (SpO_2), Capillary Filling Time (CFT)
• Neurological Status:
- Awake, drowsy, sleeping;
- Activity (active, hypoactive, inactive);
- Reactivity (reactive, hyporeactive, nonreactive);
• Observe the child's communication (speech, expression, comprehension)
• Observe motor landmarks (if needed, request a video of the child performing certain activities)
• Motor Examination:
- Range of Motion
> Shoulder and elbow: ask the caregiver to place toys at different heights for the child to reach;
> Wrist: ask the child place hands in prayer position;
> Hip: ask the child to lie down in dorsal decubitus and perform external and internal rotation and abduction;
> Knee: Ask the child to flex and extend the knee;
> Ankle: ask the child to perform dorsiflexion, plantiflexion, inversion, and eversion
• Balance:
Ask the child to stand and perform the following positions:
- Feet together
- Semi tandem
- Tandem
- On one foot (hop on one foot)
• Postural assessment:
- Ask the caregiver to photograph the child in different planes (anterior, posterior, right lateral and left lateral) and in cases of younger children, analyze them with video.
• Gait:
- Ask the child to walk away and towards you for a distance of at least 3 m and identify possible changes in video;
• Motor Function:
- Ask the caregiver to hand a toy to the child and observe how he or she holds the object, whether he or she brings it to the midline or to the mouth and whether he or she can pass it from one hand to the other;
- Observe for signs of tremor, dystonia, or incoordination;
• Muscle strength: see whether the child remains in a seated or standing position against gravity or if he/she rolls;
• Assistive devices: if any is used, ask the patient to use the device and observe if the device is adequate;
• Respiratory assessment:
- How does the child breathe? Does the child use devices to breathe?
- Respiratory rate
- Chest type
- Signs of respiratory distress
- Does the child cough? What about secretions?

Table 3. Conclusion of care session.

Closure
• Additional procedures may be requested after the assessment;
• Develop a treatment schedule if necessary;
• Set some time aside to advise and answer questions of the caregiver/patient;
• Schedule a return session if needed;
• Say goodbye to the parents and child in a more interactive way (such as a virtual high-five);
• It is preferable that the patient disconnects first, since the physiotherapist may be seen as rude if he/she disconnects before the patient;
• *Parent/patient feedback: After a few sessions, ask the parent for feedback on remote care (Example: What advantages and barriers have you seen with telehealth? What improvements can be made?)*

platforms. The software programs allowed for use by the US government are Epic Haiku/Canto, Avizia, Cisco Jabber, PolyCom, Vidyoconnect, Microsoft Teams, and Zoom Healthcare[15].

Consent to use patient personal information is always required. In Brazil, the Personal Data Protection Law (No. 13,709, August 14, 2018) provides for the processing of personal data in digital media and the legal certainty required through the standardization of practices to promote the protection of personal data of every Brazilian citizen[16].

Some patients need special services such as sign or verbal language translation, but the lack of resources is still a hindrance[17]. Digital literacy and internet access are also limiting factors for families[15], while connection stability adds up to the obstacles faced in rural areas[7].

CONCLUSION

The protocol described in this article organizes the delivery of care and physical examination, provides advice to caregivers, and helps the development of a treatment schedule and plan, when needed. Telehealth has a great future and may remain as a permanent mode of care.

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