

# Case Report: Satisfaction of Patients Following Online Managing and Hands-on Rehabilitation During the COVID-19 Pandemic in Pediatric Center

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## ABSTRACT

**Introduction:** This study aimed to investigate the satisfaction rate of patients referred to Bahrami Hospital, Tehran City, Iran, by telerehabilitation and hands-on provision during the COVID-19 pandemic.

**Case Presentation:** Six pediatric patients with torticollis' disorders, Erb's palsy, and muscle weakness were referred to Bahrami Hospital. All those subjects were assessed and advised with different exercises and interventions, and then the rest session followed with the online managing with videos or WhatsApp consultation. Then satisfaction rate of the patients was evaluated based on a Likert-type scale.

**Results:** The patients revealed low satisfaction for alone telerehabilitation. However, all patients preferred to combine teleconsultation and hands-on rehabilitation. Of course, they were all satisfied with telerehabilitation.

**Conclusion:** It seems that most patients are afraid of the inability to perform accurate exercises and prefer to come on face-to-face rehabilitation, sometimes used in addition to telerehabilitation and teleconsultation.

**Keywords:** Telerehabilitation, Pediatric rehabilitation, COVID-19 infection, Satisfaction

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## 1. Introduction

**V**irtual consultations can support the management of patients with long-term conditions, such as musculoskeletal disease. The physiotherapist's direct telephone and advice service was found to be safe and led to the same outcomes as face-to-face appointments for patients with musculoskeletal disorders. There is other virtual managing or consultations in practice, such as video conferencing software or telerehabilitation [1, 2]. Telerehabilitation for some diseases like knee arthritis and pediatric rehabilitation revealed feasible and acceptable results [3]. The novel severe acute respiratory syndrome COVID-19 pandemic leads to many changes in medicine, including the transition from hands-on managing to online managing of patients. Consequently, telehealth and telerehabilitation have become usual in non-emergency units. There are different advantages for telehealth and telerehabilitation, such as increasing access to health care in rural populations or during pandemic diseases as COVID-19 infection [4, 5].

One of the rehabilitation centers is a pediatric center. Despite the pandemic, some disorders, such as congenital muscular torticollis and Erb's palsy, need early intervention for successful treatment [6]. Manual stretching is the most common form of treatment for congenital muscular torticollis. Good stabilization and correct hand positions are necessary for the success of the stretch. However, every child/parent pair will have other preferences of stretching methods or positions [7]. For patients with Erb's palsy, strengthening the affected muscle, increased arm awareness, prevention of secondary complications, and electrical stimulation are suggested [8, 9]. In this situation, referral to physiotherapy with the COVID-19 pandemic is very difficult and challenging for pediatric patients and their families. The COVID-19 pandemic resulted in a lessening of the aforementioned barriers to clinical implementation, as well as presented an urgent need to provide safe and effective rehabilitation services to patients during a vulnerable time [10-12]. While the pandemic has had many adverse effects on the health and well-being of people worldwide, it has resulted in an unprecedented rise in the use of telerehabilitation (out of necessity) for providing safe access to care during a public health crisis. Despite advocacy from researchers and professional organizations, pediatric telerehabilitation has not been widely implemented in clinical settings. Thus, there is a gap in the literature regarding the feasibility and acceptability of widespread, clinical pediatric telerehabilitation services [13]. So we decided to examine the pediatric patients that were referred to Bahrami

Hospital in Tehran by hands-on training and education of exercises and then following of patients with online consultation. The main aim of this study was the assessment of satisfaction of patients from online managing of patients in Bahrami Hospital.

## 2. Case Presentation

Six patients (3 cases with torticollis, 1 case with general muscle weakness, and 2 cases with Erb's palsy) were assigned for mixed hand-on rehabilitation and virtual managing in Bahrami Hospital during the COVID-19 pandemic. As you know and mentioned previously, effective stretch, home advice, and exercise therapy should achieve a normal range of motion and improve patients with torticollis. In patients with Erb's palsy, using electrical stimulation, exercise therapy, and home advice to prevent muscle atrophy was recommended [14, 15]. Encouraging parents to do specific exercises with their children 2-3 times a day is suggested. Despite the comfort of their own home for doing exercise, most parents think that they cannot do exercises correctly or frequently as recommended by the physiotherapist.

Therefore, after primary assessment and education of exercise during treatment and ensuring they can continue exercising at home, we asked patients to follow their therapy via virtual consultation.

All patients preferred to see their rehabilitation professional in person in part due to knowing how to correct doing exercise. In this paper, we are interested in understanding patients' satisfaction in online managing besides hand-on treatment. So the main aim was to explore people's satisfaction with exercise therapy delivered by physiotherapists via smartphone in the pediatric center. Follow-up consultations did after a period of face-to-face rehabilitation for patients referred to Bahrami Hospital. We asked 3 questions and scored them on a 5-point Likert-type scale. The choices were 1=strongly disagree, 2=disagree, 3=undecided, 4=agree, and 5=strongly agree [16].

These three questions were asked from the patients, and then the results were collected.

1. Please rate your satisfaction with online services?
2. How do you rate about improving by only online services?
3. Is adding the online services sometimes good?

### 3. Results

Table 1 presents the demographic characteristics of six patients, including kind of pathology, age, and gender. Also, Table 2 presents the results of different answers of six patients based on the Likert scale satisfaction questionnaire.

### 4. Discussion

Although telerehabilitation provides a new opportunity for the children's home life and more activity in a familiar environment, our results in six patients revealed high satisfaction with a combination of virtual managing and hands-on rehabilitation. Despite various advantages of telerehabilitation such as time-saving, patient-centric, and family-centric rehabilitation care with far distancing and reducing potential exposure in pandemic infection disease such as COVID-19 exposure, the best recommendation is probably the combination of virtual and hands-on rehabilitation in a pediatric rehabilitation center.

The six patients were delighted with the online consultation or videos submitted, and they found it helpful

to exercise therapy, but they were willing to come to the center at least once a week in person because they feared that exercise therapy or manipulation of children would be inappropriate or cause harm to pediatric. It seems that if telerehabilitation is executed efficiently and effectively, the patients or caregivers continue to demand it, and most of the previous barriers to virtual visits will be diminished.

There are currently no established or recognized global standards for delivering physiotherapy care digitally. However, the overall emerging evidence appears to indicate that digital technologies provide new opportunities for the physical therapy profession to provide high-quality and acceptable care to users of their service in ways that can have benefits for all [17]. To implement telemedicine, various approaches can be used, such as general communication tools like email, chat/messaging, and video conferencing, and or physiotherapy specific platforms, such as online exercise prescription tools. Finally, we believe that further study of pediatric telerehabilitation is necessary, and even when the problems with the COVID-19 have ended, it can help and facilitate pediatric rehabilitation.

Table 1. Demographic characteristics of the patients

Patient	Disorder	Age	Gender	Before Treatment
1	Torticollis	8 months	Girl	3 months
2	Torticollis	8 months	Girl	2 months
3	Torticollis		Girl	2 weeks
4	Erbs' palsy	16 months	Boy	1 year
5	Erbs' palsy	14 months	Boy	2 months
6	General weakness	8 years	Girl	3 weeks

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Table 2. Results of 3 questions based on Likert-type scale

Patient	Question 1	Question 2	Question 3
1	5	2	5
2	5	2	5
3	5	2	5
4	5	2	5
5	5	2	5
6	5	2	5

5; Strongly agree, 2; Disagree (based on Likert scale).

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## 5. Conclusion

Despite the positive effects of telerehabilitation in pediatric centers, their parents prefer to receive some session hands-on treatment.

## Ethical Considerations

### Compliance with ethical guidelines

All ethical principles are considered in this article.

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### Conflict of interest

The author declared no conflict of interest.

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