

## Short Review on Using Telemedicine by Orthopaedic Transplant Patient

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### Abstract

**Background:** Due to a lack of routine follow-ups, inpatient, and outpatient-based therapies, the current COVID-19 pandemic has an impact on the morbidities of orthopaedic patients. Telemedicine has recently been a viable option for delivering healthcare to patients and disseminating vital information on orthopaedic self-care and medications that may be used without a trip to the hospital. Telemedicine is sure to have some restrictions as well, though, because no physical examination is conducted. The purpose of this study is to evaluate how well proactive telemedicine keeps track of orthopaedic patients and how satisfied those patients are with telemedicine as a different means of therapy delivery. The follow-up patients who visited the orthopaedic outpatient department in February 2020 were included in this one-month cross-sectional study. The patients were referred to in order. On a daily basis, in the sequence of their registration. Patients who gave their consent received telemedicine-based consultations, while those who required physical examinations were contacted for outpatient visits after submitting the necessary documentation. For various diagnosis-based groups, the response rates and the number of patients requiring in-person visits were counted. Patients were asked to respond to a questionnaire about telemedicine, including questions about how satisfied they were with it overall, how effective it was, and how simple it was to follow the telemedicine-based treatment. Telemedicine had an 88.67% response rate. 71.43% of patients who used telemedicine were treated without the need for in-person visits to the outpatient department. The most frequent justifications for recommending physical outpatient visits were the need for a physical examination and ineffective patient-doctor communication. 92% of people were satisfied with telemedicine overall, and 7.2% were not satisfied. of patients found it challenging to comprehend or implement telemedicine-based advice.

**Keywords:** Orthopaedics; Patient care; Patient satisfaction; Telemedicine

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### Introduction

The current COVID-19 pandemic has caused disruptions in the world's health care systems. The epidemic will have long-term effects and has rendered some of the most sophisticated healthcare systems inoperable. The high rate of infection and spread of the SARS-Cov-2 virus has forced the postponement of elective surgical procedures and outpatient treatments [1]. A lengthier wait time for these procedures, however, increases the patients' risk of morbidity. Furthermore, a sudden return to these services could result in a sudden overload of the already

strained healthcare system in the near future. Healthcare systems will now likely have to operate with a calculated risk of disease transmission as WHO anticipates that the COVID-19 risk may last indefinitely. In our nation, overcrowded outpatient departments (OPDs) are common and present a significant obstacle to the regularization of OPD services. The majority of patients using the outpatient services are follow-up patients, meaning they have already undergone a clinical evaluation or examination [2]. Alternative approaches to keeping track of these patients can assist keep a physical distance between them to stop the spread of disease while reducing the overcrowding

in OPDs. A viable alternative that has already been used to give medical treatment to isolated and rural locations without access to transportation is telemedicine. For patients who are fragile and those with socioeconomic restrictions for whom physical follow-up is inconvenient. The WHO defines telemedicine as the provision of health services remotely by health care professionals using information and communication technologies for the exchange of reliable information for the diagnosis, treatment, and prevention of illness and injury, research and evaluation, and for the ongoing education of health care providers, all with the goal of improving the health of individuals and their communities [3]. Different forms of communication, such as phone conversations, video conferencing, text messages, and online chat services, can help with telemedicine. These methods are frequently supported by the internet-based transmission of record-based information. But telemedicine has only been utilised heavily in our nation, and its efficacy in There has never been a study done on maintaining the follow-up of orthopaedic patients in India. The guidelines for using telemedicine have just been made available by the Medical Council of India (MCI). Patient satisfaction is equally crucial as determining if patients can adapt to the shift from in-person consultations to telemedicine-based consultations. The purpose of this study is to evaluate how well proactive telemedicine keeps track of orthopaedic patients and how satisfied those patients are with telemedicine as a different means of therapy delivery [4].

## Materials and Methods

In a tertiary care facility, this cross-sectional observational study was carried out after receiving approval from the institutional review board. Since the announcement of a statewide lockdown owing to the ongoing COVID-19 epidemic, the orthopaedic department of this institute has offered telemedicine-based services. Between 10:00 a.m. and 2:00 p.m., at least twenty follow-up patients were phoned every day (excluding on holidays). From April 1 through April 31, 2020, all follow-up patients who visited orthopaedic OPDs in February 2020 were called for telemedicine consultation in the order of their registration numbers. Patients who refused to consent to telemedicine included those who thought the timing of the call or the call itself was inappropriate, those who couldn't be reached, and those without informed permission. People who did not have internet connectivity or who planned to visit the hospital were not allowed to receive the telemedicine prescription. During the specified time, all telemedicine consultations were offered without charge and in accordance with national standards. Weeks following their telemedicine session, all follow-up patients were urged to complete a survey that was based on a questionnaire. Patients received telemedicine consultations in the language of their choice, as well as a feedback survey questionnaire. When necessary, additional telemedicine consultations were given to the patients during the questionnaire-based survey.

The patient and doctor would speak on the phone during a telemedicine consultation, and documents and photographic-videography data would be transferred via email and WhatsApp. This real-time interaction would only be for non-emergency situations, and would only be between the patient and the doctor. When the patients were children, the consultations were

given to the parents or guardians. Prior to the telemedicine appointment, we obtained audio consent from every patient (and their guardians or parents for patients who were minors). Senior orthopaedic residents and faculty members who had at least a year of post-graduate experience in orthopaedic practise served as the telemedicine providers. Inquiries about the patient's presenting symptoms and medical history were made, and the data were then supplemented with the prior research.

## Results

Clinical data, examinations, and treatments that were stored in our hospital's electronic records our institute has been providing electronic prescription services, and the hospital server has been used to store outpatient management data. When necessary, further records were requested via internet-based services. Based on this, the patients' problems were individually addressed through pharmaceutical therapy, online rehabilitation using pictures or videos, and health education [5]. The patient received a photo of the telemedicine prescription via email. After identifying the specific instances where a need for physical engagement was felt, the patients were encouraged to visit our hospital's OPD or any other orthopaedic clinic that was nearby for further assessment and management. We made an effort to keep telephone talks with each patient to a maximum of 10 minutes. Postoperative follow-ups and non-operated follow-ups were the two categories of follow-up that were recorded based on their prior management [6].

## Discussion

Based on the primary symptoms for which treatment was sought, the diagnoses were broadly categorised under the following umbrella terms: back pain and radicular symptoms, cervical disorders, large joint degenerative disorders, treated fracture and dislocation, in-inflammatory arthroplasties, instability, soft tissue injuries, non-traumatic soft tissue disorders, osteonecrosis, chronic infection, musculoskeletal tumours, deformities, and others. The reasons for a patient's physical presence in the OPD were divided into four categories: a) insufficient records or those that were difficult to interpret, such as physically damaged reports, unclear pictures of records, and incomplete records; b) the need for a physical examination that was required for additional treatment advice; failed communication between the patient and the doctor [7].

Telemedicine is becoming a more practical means of communication between doctors and patients during the present epidemic for both the clinical assessment and the therapy. Telemedicine has just lately been approved by the MCI as a substitute method for providing medical advice. Access to telecommunication services that can facilitate the exchange of information between the patient and the doctor is a fundamental necessity for the viability of telemedicine. For freshly presenting patients, the constraints of telemedicine linked to the lack of a physical examination and the review of data are certainly reasonable; however, the same may not necessarily be true for follow-up patients. Simple knowledge of the patient's general state and the progression of their symptoms can direct future treatment.

## Conclusion

Disorders can also be controlled with only a few follow-up physical visits. The high overall response rate (88.67%) indicates that patients are interested in telemedicine. The patients with deformities, chronic infections, major joint degenerative disorders, and inflammatory arthropathies had the highest rate

of patients needing physical visits. To track the progression and repair, a physical evaluation is required for the deformity assessment. It is preferable to widen follow-up intervals as an efficient approach for the comfort of both patients and physicians. Patients with chronic infections frequently have open wounds that need frequent dressing changes and may soon need surgery. Such patients should be provided with choices for local wound care and instructed on the warning symptoms of acute.

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