

Patient Satisfaction and Barriers to Successful Completion of Video Telemedicine Follow-Up in Orthopaedic Postoperative Care.

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Each author of this article has encountered all 04 criterions of authorship:

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ABSTRACT

Objective: The study aimed to identify patient satisfaction and barriers to successful completion of video telemedicine follow-up in orthopaedic postoperative care at Tertiary Care Hospital.

Methodology: Patients of any age who received telemedicine follow-up postoperatively at the Department of Orthopedic & Spine Center, Ghurki Trust Teaching Hospital, Lahore, from the period (1st September to 30th September 2022). The opportunity to respond over the phone, get a link through email, or deny participation was provided to caretakers when they were reached by phone. We determined the degree of satisfaction using the Telemedicine Satisfaction Questionnaire (TSQ) created by Yip et al. All the data were entered and analyzed using Excel and SPSS software Version 28.

Results: Among 98 patients, 20 followed up through teleclinic, 15 came in OPD for follow-up, and 63 failed visits were observed. In our study, more than half of cases, 13(85%), were male, and fewer than 7(35%). The average age of the patients was (M=33.30, SD=13.98), ranging from 6 to 70 years. 65% of cases belonged to rural areas, and 35% were from urban areas. The primary language of half of the patients was Urdu (50%), then (40%) had the primary language of Punjabi, 1 case only understood the language of Pushto, and 1 case with Siraki because of their primary language. The results concluded that 17(85%) patients were satisfied after telemedicine visits, while only 2(15%) were dissatisfied. The results reveal that only primary language was the significant predictor affecting Patient Satisfaction as $p < .05$. Fifteen cases did not send their discharge cards to WhatsApp because of some internet issues. Nine patients did not respond to our call. So, these were the hurdles observed in our study for successful telemedicine follow-up completion.

Conclusion: Our study provides further evidence that telemedicine could have a favorable impact. Due to its ease, carers supported this service. In this study, several characteristics were shown to be associated with patient satisfaction and telehealth. Understanding these variables might aid implementers in matching treatments as solutions to particular issues.

Keywords: Patient Quality, Patient Satisfaction, Quality, Telehealth, Telecommunications, Telemedicine.

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INTRODUCTION

Remote clinical treatment may now be delivered thanks to the breakthrough technology known as

telemedicine. The delivery of a healthcare service to a patient by a practitioner who is located in another area is referred to as telemedicine or telehealth. It

usually involves a video link.¹ While telemedicine has been used more often by healthcare professionals over the past ten years, The COVID-19 coronavirus disease pandemic has expanded the use of telemedicine inside orthopaedic offices. Relaxation of telemedicine rules and the demand for social seclusion have spurred this acceptance. Many patient-doctor contacts now occur remotely due to the pandemic's unanticipated changes to the healthcare landscape and challenges to clinical care delivery.^{2,3}

Using telecommunications technology to diagnose and treat patients remotely. When a patient and a health care professional are not physically present to one another, telemedicine is used to treat the patient remotely. Telehealth delivers medically relevant information and services using electronic communication and information technology. It allows for long-distance Patient and doctor interaction, treatment, guidance, remembrance, and follow-up monitoring following emergency and elective surgery. Numerous people were encouraged by the potential for access to become more democratic when telehealth technology moved to mobile device platforms, such as cell phones. It seems that access to health care could almost be in your pocket with the widespread use of mobile phones by all demographics, but as with other sorts of access, it quickly became apparent that not all access is created equal. Beyond hospitals, residents in rural locations may travel half a day from rehabilitation facilities, orthopaedic and spine surgery centers, and other specialist health care services. Telehealth may link remote patients with doctors who can track their surgical recovery, prevent postoperative infections, and check their status through video-based sessions.^{4,5,6}

The use of telemedicine has several advantages. Increased access to treatment, lower total costs, and high patient satisfaction ratings can all be achieved with remote consultations.⁷ The difficulty of completing physical exams is one of telemedicine's drawbacks. Even though face-to-face interactions are frequently required when auscultation or palpation is required, orthopaedic follow-up patient wound condition, incisional site evaluation, and suture condition are crucial. Rural towns continue to confront substantial obstacles to using telehealth's benefits despite the numerous chances it offers to link people with the medical treatment they need. Poor internet connectivity and the inability of certain patients to install applications from the Google Play Store intended for video follow-up are now the major

barriers to telehealth in remote locations. Rural residents frequently lack access to broadband internet that can accommodate video calls, that's why sometimes healthcare providers face interruption during video call follow-up.⁸

Teleconsultations during the pandemic offer an appropriate technique of performing exams for some patients with the high doctor and patient satisfaction, according to surgical specialties like orthopaedics.⁹ Wongworawat et al. hypothesized that patients' desire for telemedicine in orthopaedic surgery would be driven by availability and convenience. Still, that uptake would depend on physician approval and health-system collaborations.¹⁰⁻¹⁴

Video telemedicine is used effectively in healthcare, especially after surgery, with its application being rather popular at the current stage. However, several barriers can contribute to the inability to complete video telemedicine follow-up appointments to their full potential. Understanding patient satisfaction is central to assessing the success of telemedicine, and thus, leisure time should be taken to explore possible obstacles to this satisfaction. For example, Shee et al. reported in a recent study that shows that knowing the challenges that hinder the achievement of efficient video telemedicine visits is essential since it affects the results of the patient.¹⁵ Similarly, Khoong et al.¹⁶ highlighted the importance of addressing barriers such as data/Internet access, which can be a significant challenge for patients, particularly those in urban safety-net settings. Also, Gordan et al.¹⁷ highlighted that the notion of success or failure of video visits has to factor in such attributes as quality, clinic outcomes, and patient satisfaction. In order to allow patients to achieve the highest level of satisfaction as well as complete video telemedicine follow-up appointments in orthopedic postoperative care, these barriers must be navigated and solutions that are suited to the specific needs of the patient population must be established.

Although Clinical video telehealth (CVT) may improve patients' access to healthcare, physician-patient communication over CVT may be more difficult because of the technology.¹⁸ Communication in CVT visits may be less patient-centered than communication in face-to-face encounters.¹⁹ Communication is important because better communication is associated with improved patient satisfaction, improved treatment adherence, and improved health outcomes. Understanding the patient's perspective on communication in CVT is an important step to understanding the difference

between communication in CVT visits and in-person visits.²⁰

The future of postoperative care should concentrate on delivering the best possible patient care, emphasizing patient and provider satisfaction, and preserving the best possible access to treatment. All orthopaedics professionals should thus continue to make use of telemedicine's advantages.

The purpose of the study is to assess satisfaction with telemedicine and to ascertain how orthopaedic doctors employ telemedicine in response to social isolation initiatives mandated by the COVID-19 pandemic.

METHODOLOGY

A prospective cohort study was conducted at the Department of Orthopaedic & Spine Center, Ghurki Trust Teaching Hospital, Lahore. Patients who were admitted to the Orthopaedic department from the period (Sep 01 to Sep 30, 2022) were included in the study. The ethical committee of Ghurki Trust Teaching Hospital approved. Patients of both genders of any age group who were outside Lahore and received the surgical treatment, either elective or traumatic surgical procedure. A sample of 20 patients was obtained through a convenient sampling technique. The medical history of patients, including age, gender, and geographic locations, urban/rural, was analyzed. Physician satisfaction was measured using questionnaires that the doctors responded to after each patient consultation as one of the secondary outcome measures. Using the Telemedicine Satisfaction Questionnaire (TSQ) generated by Yip et al.¹⁴, we assessed the satisfaction level. Barriers were assessed as age, gender, location and language parameters. All the data were entered and analyzed using Excel and SPSS software Version 28.

RESULTS

A total of 98 patients included with different diagnoses underwent different surgical interventions. Among 98 patients, 20 followed up through teleclinic, 15 came in OPD for follow-up, and 63 failed visits were observed. So, the Patient satisfaction analysis was done on 20 patients who met our criteria. In our study, more than half of cases, 13(85%), were male, and fewer than 7(35%). The average age of the patients was (M=33.30, SD=13.98), ranging from 6 to 70 years. 65% of cases belonged to rural areas, and 35% were from urban areas. The primary language of half of the patients was Urdu (50%),

then (40%) had the primary language of Punjabi, 1 case only understood the language of Pushto, and 1 case with Siraki because of their primary language. Patient satisfaction was assessed by asking them different questions, and the results concluded that 17(85%) patients were satisfied after telemedicine visits, while only 2(15%) were dissatisfied.

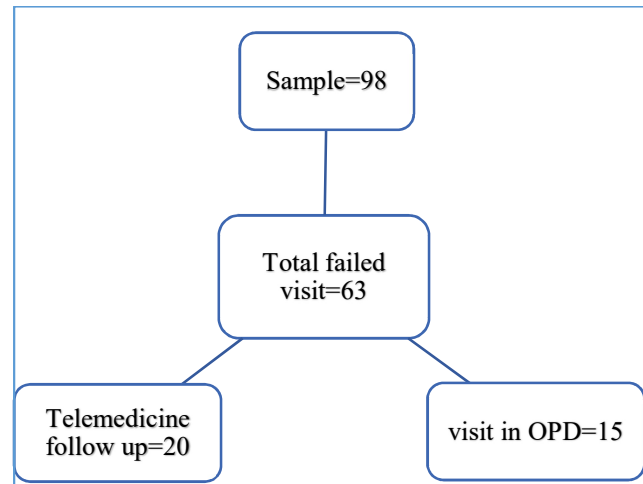


Figure 1: Flow chart of patients included in our study.

Table 1: Demographic characteristics of patients

Parameters	n(%)	Mean±SD
Gender		
Male	13(65.0)	
Female	7(13.0)	
Age		33.30±13.88 (6-70) years
Location		
Urban	7(35.0)	
Rural	13(65.0)	
Primary Language		
Punjabi	8(40.0)	
Urdu	10(50.0)	
Pushto	1(5.0)	
Siraki	1(5.0)	
Patients Satisfaction		
Yes	17(85.0)	
No	3(15.0)	

Stratification of different demographic profiles and patient satisfaction variables was performed, and the results reveal that only primary language was the significant predictor affecting Patient Satisfaction as $p < .05$. We identified the patients' barriers to making a strategy, so we noticed six patients who contacted

us through the label attached on discharge card. Fifteen cases did not send their discharge cards to WhatsApp because of some internet issues. Four patients gave their relative contact numbers. Two patients gave their outstation relative number to contact. We observed eight patients who did not have an Android phone; due to this reason, they did not contact us for an online check-up. We found two patients whose online timings did not match our available surgeon. Nine patients did not respond to our call. So, these were the hurdles observed in our study for successful telemedicine follow-up completion.

Table 2: Association between Demographic Factors & Satisfaction

	Patient Satisfaction		p-value
	Yes	No	
Gender			.168
Male	10(76.9%)	3(23.1%)	
Female	7(100)	-	
Age	32.88±14.57	35.67±10.97	.758
Location			.168
Urban	7(100)	-	
Rural	10(76.9%)	3(23.1%)	
Primary Language			.041*
Punjabi	6(75%)	2(25%)	
Urdu	10(100%)	-	
Pushto	1 (100%)	-	
Siraki	-	1(100%)	

*statistically significant at a 5% level of significance

DISCUSSION

This study investigated barriers to completing telemedicine follow-up in postoperative orthopaedic care in GTTH hospital. Barriers for certain Patients accompany the expanded adoption of telemedicine. When compared to conventional clinical consultations, our data analysis revealed that telemedicine had several substantial disadvantages. Despite their medical condition, the majority of patients¹⁷ (85%) 20 were satisfied with telemedicine. However, the difference was not statistically significant. In addition to overall Satisfaction, we analyzed the association of patients' Satisfaction with demographic profile, and findings reveal that a significant indicator of primary language was assessed.

Muschol et al.¹¹ performed a similar study on Video Consultations for Orthopedic and Trauma

Surgery Patients. The results show that, in practically all areas examined, telemedicine did not significantly differ from conventional clinical consultations in any way. Even though the difference was not statistically significant, patients were even marginally happier with telemedicine than they were with traditional treatment.

In certain circumstances, access to digital technology is only available to elderly individuals, economically disadvantaged social outcasts, those without internet connection (such as those living in rural regions), or persons who identify as racial or ethnic minorities. The following factors need to be taken into account by policymakers to avoid potential drawbacks and exclusion of various patient groups: Infrastructure for nationwide internet access, availability of digital tools and software, deployment of health workers to assist patients during video consultations, access to telemedicine training, and the introduction of initiatives to promote digital health literacy are all important factors.¹²

The ability for patients to communicate with their doctors outside of the hospital setting and in a comfortable setting may be advantageous. The benefit of being able to consult a doctor from the comfort of home without having to travel or endure lengthy waiting times could have a positive impact on the patient's well-being. The atmosphere, which is the sentiment that patients experience during medical consultations, is perceived by patients to be more pleasant at home than at the hospital.

The study was carried out by Omari et al.¹³ and the results show a substantial association between satisfaction and the desire for more telemedicine visits. It's interesting to note that 31.1% of patients would have gone elsewhere for care if telemedicine hadn't been an option. Compared to our research, where the satisfaction rating was 85%, 76.5% of patients reported being highly satisfied with the treatment they received during their telemedicine appointment.

Hurley et al.²¹ conducted the study, and the findings indicate that The total telemedicine satisfaction rate was 70.3% ± 20.9%. Telemedicine is now used by 75% of practitioners for new patients, 86.6% for routine follow-up patients, and 80.8% for postoperative patients (p = 0.01).

Researchers conducted another study and the results indicate that Included were forty-one studies in all. The clinical results of telemedicine were evaluated in fifteen trials with a conventional cohort that was matched. Four of these fifteen studies concluded that telemedicine was better, two

indicated noninferiority, and nine showed no statistically significant difference. High levels of patient satisfaction were found in eleven studies that documented patient-reported outcomes. When telemedicine was compared to regular treatment, nine studies found lower costs. The six remaining studies didn't align well with any of these subheadings due to their disparate goals and methods.²²⁻²⁴

The study's limitations—are a small sample size, convenient sampling, and a single study center, where obstacles can have a more significant influence and where people have different experiences. As a result, our findings can only be broadly applied to those who have traits in common with the research participants.

The study implies that Patient Satisfaction is essential to healthcare delivery, and telemedicine is no different. Especially in remote or disadvantaged locations, patients who are happy with their telemedicine experience are more likely to use it again in the future, which can improve health outcomes and enhance access to treatment. From the standpoint of the healthcare provider, identifying and removing the obstacles to completing telemedicine follow-up can raise the standard of treatment overall and perhaps cut costs. Telemedicine can save time and costs by removing the need for patients to travel to appointments, increasing healthcare delivery effectiveness. Healthcare professionals must ensure that patients receive the same degree of care and attention as they would at an in-person consultation while also considering the limits of telemedicine. To protect patient information, providers must also ensure that their technology is safe, dependable, and compliant with privacy laws.

Future research should examine enrolment in a future time frame or enrolment into continued/long-term use of telemedicine in a diverse safety-net patient population to ascertain the generalizability of the study findings, in addition to testing strategies that could enhance enrolment and limit barriers emerging from this study (cost, Internet connectivity, and digital literacy). As with previous limitations, it may also be worthwhile to scrutinize whether certain patient, organizational, or environmental characteristics are only present or more extensive in the safety-net or lower SES patients.²⁵ This could be helpful in informing whether existing approaches to patient-centered telemedicine are also sufficient to address access to telemedicine to special populations of patients.

CONCLUSION

Overall, telemedicine consultations for orthopedic patients are well received, with high confidence in making the right diagnosis and ease in arranging surgery. When arriving for a follow-up appointment as opposed to a new injury, patients feel more comfortable using telemedicine. Instead of phone consultations, video telemedicine should be used wherever practical. The language barrier was found to be the main obstacle, so healthcare providers should ensure that interpretation services are readily available and that patients are informed of these services in advance. Providers should also make an effort to communicate clearly and avoid using medical jargon or complex language

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