

Implementation of Telehealth Consultations in Orthopaedic Surgery, Nutrition and Psychology; A Pilot Study

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Abstract

Introduction: The main goal of this study was to evaluate the implementation of telehealth consultations in orthopaedic surgery, nutrition and clinical psychology.

Methods: From February 2021 to October 2021, fifty-one patients in Gomishan City, located in North of Iran, had telemedicine consultation in the form of remote video communication performed by the family doctor and specialists in the presence of patients. To evaluate patient and doctor satisfaction, the questions of the American Medical Association recommended questionnaire were used. Data were collected and reported using SPSS-24 software.

Results: 97% of the patients communicated with a physician for the first time through a telemedicine service. 98% of the patients were satisfied with the remote consultations. 99% of patients felt comfortable during the consultation period. The advantages of remote visits from the patients' point of view included saving money, saving the travel time, no need to work absence, no need to leave children alone, having easy access to a physician and consulting with a physician whose specialty was not available in the patient's geographic area. The physicians and the family doctor were satisfied with the teleconsultation visits, too.

Conclusion: According to our study, the telemedicine consultation is a practical and acceptable method for the patients who live in underservice areas. During Covid-19 pandemic, the necessity of telemedicine services has been more clear. Knowledge transfer could be easily performed during teleconsultation, too. Technical challenges included the interruption of video and voice calls during the visit and the desirable quality of the communication.

Introduction

Telemedicine has opened a new and broad era of health care services utilizing information and telecommunication technologies in medicine. Developing countries encounter many problems to provide the people with health care services, including lack of financial resources, physician shortage and transportation issues. Telemedicine would be an appropriate solution that increases patients' access to the health care services. Additionally, in pandemics like Covid-19, the risk of disease transmission would be reduced. Saving money and time are the other advantages of using telehealth care services.

The main goal of this study was to evaluate the implementation of telehealth consultations in orthopaedic surgery, nutrition and clinical psychology.

Patients and Implementation Method

From February 2021 to October 2021, fifty-one patients in Gomishan City, located in North of Iran, underwent telemedicine consultation in the form of remote video communication performed by the family doctor and specialists in the presence of patients.

Ninety percent of the patients were from Turkmen ancestry whose mother language was Turkmen, not Persian. These patients were registered to the family doctor of our team working at the local health care center who was also Turkmen. The clinical psychologist was Turkmen. However, the Non-Turkmen orthopaedic surgeon and nutritionist specialist of the team were not familiar with the Turkmen language. Fortunately, the lady Turkmen family doctor performed the language interpretation for these two specialists.

As the standard patient referral pattern, when the patient's condition was outside the family doctor's area of expertise, she would suggest the patient having a telemedicine consultation with the specialists of our team. The consulting specialists performed the telemedicine visits from the center of the province.

The video consultation was performed by means of the BigBlueButton open source software that was deployed on a virtual secure server at the University Data Centre. It has the capability of sharing cameras and desktops so that doctors could share notes and medical images on their computers while exchanging ideas verbally.

During the telemedicine consultation, all the details of clinical assessment including patient history, physical examination tests, imaging results, lab findings and treatment options were discussed between the family doctor and the specialists. Medical knowledge transfer in every consultation was conducted at the time of these discussions.

Video communication was recorded and kept confidential for future research and educational purposes. Before recording, a written informed consent was signed by the patients and if they had any considerations for recording, the communication was not recorded at all. Health care centres are connected to the University network via the national high-speed network and hence a stable data stream was achievable. General requirements elicitation and current infrastructure evaluation was done by means of a checklist that asked specifically about the quality of communication, hardware devices, software used, required training, privacy issues and general satisfaction.

To evaluate patient and doctor satisfaction, the questions of the American Medical Association recommended questionnaire were used. Data were collected and reported using the R software.

Results

- Fifty-one patients were recruited with mean (SD) age of 42.18 (12.39) years, of which 27% were male and 73% were female.
- The majority of study patients (97%) communicated with a physician for the first time through a telemedicine service. Almost all of the study participants were satisfied with the remote consultations (98%), felt comfortable during the consultation period (99%) and believed that the specialists could evaluate their clinical problems properly and suggest the solution accordingly (99%).
- The advantages of remote visits from the patients' point of view included saving money (50.0%), saving the travel distance (51.9%) and time (50.0%), consulting with a physician whose specialty was not available in the patient's geographic area (42.3%), having easy access to a physician (30.8%), no need to work absence (19.2%) and no need to leave children alone (7.7%).
- Not having a travel to see a physician and saving money were the two main advantages of the telemedicine, according to the patients' opinions.
- 93% of the patients would have not seen a doctor, or had to travel a long distance to see another doctor which would cost them time and money, if telemedicine was not available to them.
- In all cases, the specialists and the family doctor were satisfied with the teleconsultation visits, too.

Patient Experience Survey	Proportion	95% Confidence Interval		P-Value
		Lower	Upper	
This is the first time I have seen the clinician via a telehealth appointment	.98077	.9422	1.000	< 0.001
If telehealth were not available for my problem today, I would have...				
Driven to see the clinician	.51923	.3788	.6597	< 0.001
Visited a private urgent care or convenient care location	.26923	.1445	.3939	< 0.001
Used a third-party telemedicine platform	.05769	.0000	.1232	0.083
Not gone to see any clinician	.32692	.1951	.4588	< 0.001
The biggest benefit of telehealth for today's appointment is...				
Saving time on transportation	.50000	.3594	.6406	< 0.001
Saving money on transportation	.50000	.3594	.6406	< 0.001
Not having to take significant time off of work	.19231	.0815	.3031	0.001
Not having to arrange child care in order to see my doctor	.07692	.0020	.1518	0.044
Making it easier to see my doctor	.30769	.1779	.4374	< 0.001
Increasing access to specialized care not in my local area	.42308	.2842	.5620	< 0.001
Other	.03846	.0000	.0925	0.159

Conclusions

According to our study, the telemedicine consultation is a practical and acceptable method for the patients who live in underservice areas. During Covid-19 pandemic, the necessity of telemedicine services has been more clear. Knowledge transfer could be easily performed during teleconsultation, too. Technical challenges included the interruption of video and voice calls during the visit and the desirable quality of the communication.