

ORIGINAL ARTICLE

Patient Satisfaction and Difficulties Encountered with Telemedicine During COVID-19 PandemicMuhammad Ashraf¹, Faryal Shoaib², Hashaam Ghafoor³, Alishba Ashraf Khan⁴**ABSTRACT**

Objective: To assess patient satisfaction with telemedicine services. To find out the difficulties encountered by patients with telemedicine. To assess whether telemedicine services can be continued in future.

Study Design: Cross sectional survey.

Place and Duration of Study: The study was conducted at Shifa International Hospital, Islamabad from July 1, 2020, to September 30, 2020.

Materials and Methods: It was a cross-sectional survey in which two hundred patients were interviewed at the end of tele-consultation according to a proforma after taking informed consent and using non-probability consecutive sampling technique. Data was analyzed using SPSS version 22.

Results: Among 200 patients, 61.5% were males and 38.5% were females and the mean age was 43.45 ± 11.964 years. 73.5% patients used telemedicine for the first time and 52.0% patients used this service for consultation regarding fever and COVID-19 suspected symptoms. Among these patients, only 6.5% could not clearly hear the voice of doctor during consultation, 6.5% could not clearly see the picture of doctor on screen. 56.5% patients agreed and 42.0% strongly agreed that telemedicine saves their time, expenditure and prevents the discomfort of travelling to hospital. Most patients (60.5%) were satisfied with the telemedicine services offered. Majority of patients (81.0%) reported that they will recommend telemedicine to others and will use it even after the COVID-19 pandemic.

Conclusion: Study concluded that overall satisfaction level of patients with telemedicine was high. Audio visual connection problems were found in a small percentage of patients. Participants were willing to use this service even after the COVID-19 pandemic and they would recommend others to use telemedicine.

Key Words: COVID-19, Patient Satisfaction, Pandemic, Telemedicine.

Introduction

In response to difficult time of COVID-19, health care systems need paradigm shift, otherwise technology was still advanced few years back, but nobody went for telemedicine especially in country like Pakistan.¹ Telemedicine has been described by World Health Organization (WHO) as “the delivery of healthcare services by all healthcare professionals utilizing technology for exchange of valid information regarding diagnosis, treatment, and prevention of disease and injuries.”²

The trend of telemedicine is exponentially increasing

worldwide.³ The COVID-19 pandemic made telehealth services a significant tool for providing the health care.⁴ The use of telehealth services was limited worldwide until March 2020.⁵ Telehealth, which includes asynchronous e-visits and synchronous audio-only or video visits, has been used by over 9 million Medicare beneficiaries between 17 March and 13 June, 2020.⁶

In Pakistan, current surge in telemedicine took place due to fear of contracting the COVID-19 and to maintain the social distancing. During last several months, social distancing has caused this technology to become even more significant as a support system and in increasing utilization of the telemedicine.⁷ Moreover, telemedicine centers were made and practiced in the government and private sector in Pakistan at a vast level for the first time with good experience in offering support to the health care personnel and medical advice to the patients utilizing technology.^{8, 9} During current pandemic telemedicine may be helpful for protection of health care workers, triage of suspected COVID-19 patients before arrival in hospital and for patients with

^{1,2}Department of Medicine,
Shifa International Hospital, Islamabad

³Department of Anaesthesia
Hamad Medical Corporation Doha, Qatar

⁴MBBS Student
Rawalpindi Medical University, Rawalpindi

Correspondence:
Dr. Muhammad Ashraf
Consultant Medical Specialist
Shifa International Hospital, Islamabad
E-mail: drmashraf2@gmail.com

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chronic medical illnesses who cannot come to hospital.

The patient satisfaction is a growing concern in all aspects of healthcare.¹⁰ As with traditional modalities of health care delivery, telemedicine also relies on reports of patient satisfaction because the patients are the only source of information about how they are treated and the therapy met their expectations, if the patients are not satisfied, the service is rendered obsolete.¹¹ As the telemedicine services are being provided to patients in private hospitals in these days, it is important to improve the services according to patient's satisfaction. The objectives of the study are to know the patient satisfaction, to find the difficulties encountered by patients with a view to improve these services and to assess whether telemedicine services can be continued in future.

Materials and Methods

It was a descriptive cross-sectional study in which 200 patients were included and non-probability consecutive sampling technique was used. The study was conducted at Shifa International Hospital, Islamabad. The duration of study was three months (from July 1, 2020, to September 30, 2020). All patients who fulfilled the inclusion criteria and availing telemedicine services in internal medicine clinics were enrolled. The patients were interviewed at the end of tele-consultation to answer the questions according to the proforma after taking informed consent. The study was approved by Institutional Review Board and Ethics Committee.

Data was analyzed using SPSS version 22. Basic descriptive statistical analysis was done including frequencies, means, standard deviation and proportions. Chi's square test was also applied on categorical variables. *P*-value of less than 0.05 was considered significant.

Results

Among 200 patients, 66 (33.0%) were up to 40 years old and 134 (67.0%) were more than 40 years. The mean age of the patients was 43.45 ± 11.964 years.

Among these patients, 123 (61.5%) were male and 77 (38.5%) were females.

Out of 200 patients, more than half 104 (52.0%) used tele-consultation for fever or suspected COVID-19 symptoms while 96 (48.0%) patients used it for other medical problems.

Out of 200 patients, 147 (73.5%) used telemedicine for the first time, 45 (22.5%) used 1-3 times and only 8 (4.0%) patients used it >3 times (Figure 1).

Table I shows the details of the questions asked

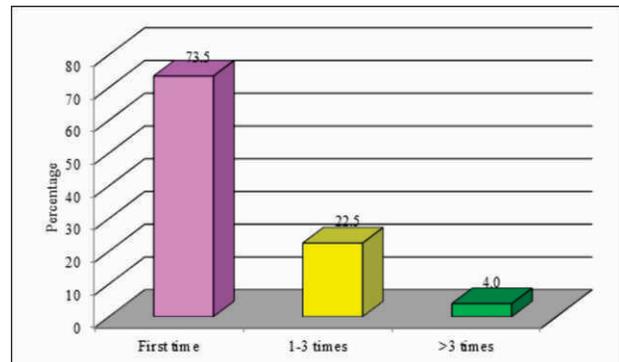


Fig. 1: Frequency Distribution of Patients According to Number of Telemedicine Visits

mainly to schedule an appointment, audio visual quality and overall satisfaction and response of patients according to proforma. Overall, 193 (96.5%) out of 200 patients were satisfied with telemedicine services.

Table I: Frequency Distribution of Patients according to Satisfaction and Difficulties Encountered with Telemedicine

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	N	%	N	%	N	%	N	%	N	%
It was easy to schedule the appointments	-	-	-	-	-	-	71	35.5	129	64.5
There was no problem to pay consultation fee	11	5.5	29	14.5	10	5.0	58	29.0	92	46.0
I can clearly hear the voice of doctor during consultation	13	6.5	37	18.5	-	-	67	33.5	83	41.5
I can clearly see the picture of doctor on screen	13	6.5	8	4.0	29	14.5	65	32.5	85	42.5
It was simple to use the system	11	5.5	9	4.5	9	4.5	80	40.0	91	45.5

I have no fear to face camera	9	4.5	-	-	6	3.0	92	46.0	93	46.5
Waiting time of tele-consultation less as compared to face-to-face consultation	12	6.0	16	8.0	20	10.0	65	32.5	87	43.5
Telemedicine saves my time, expenditure, and discomfort of travelling to hospital	3	1.5	-	-	-	-	113	56.5	84	42.0
Telemedicine staff was cooperative	5	2.5	-	-	12	6.0	55	27.5	128	64.0

Among 200 patients, 162 (81.0%) reported that they will recommend telemedicine to others and will use it even after the COVID-19 pandemic is over. Table II shows significant association ($p=0.000$) between age and overall patients' satisfaction with telemedicine while insignificant association ($p=0.082$) between age and use of telemedicine by patients even after the COVID-19 pandemic is over.

Table II: Association Between Age and Satisfaction

	Age		Total	P-value
	<40 yrs	>40 yrs		
Overall, I am satisfied with Telemedicine				
Disagree	1 (0.5%)	6 (3.0%)	7 (3.5%)	0.000
Agree	37 (18.5%)	35 (17.5%)	72 (36.0%)	
Strongly agree	28 (14.0%)	93 (46.5%)	121 (60.5%)	
Total	66 (33.0%)	134 (67.0%)	200 (100.0%)	
I shall use Telemedicine even after the COVID-19 Pandemic is over				
Yes	58 (29.0%)	104 (52.0%)	162 (81.0%)	0.082
No	8 (4.0%)	30 (15.0%)	38 (19.0%)	
Total	66 (33.0%)	134 (67.0%)	200 (100.0%)	

Table III indicates significant association ($p=0.035$) between gender and overall patients' satisfaction with telemedicine and significant association ($p=0.005$) between gender and use of telemedicine

by patients even after the COVID-19 pandemic is over.

Table III: Association Between Gender and Satisfaction

	Gender		Total	P-value
	Male	Female		
Overall, I am satisfied with Telemedicine				
Disagree	3 (1.5%)	4 (2.0%)	7 (3.5%)	0.035
Agree	37 (18.5%)	35 (17.5%)	72 (36.0%)	
Strongly agree	83 (41.5%)	38 (19.0%)	121 (60.5%)	
Total	123 (61.5%)	77 (38.5%)	200 (100.0%)	
I shall use Telemedicine even after the COVID-19 Pandemic is over				
Yes	92 (46.0%)	70 (35.0%)	162 (81.0%)	0.005
No	31 (15.5%)	7 (3.5%)	38 (19.0%)	
Total	123 (61.5%)	77 (38.5%)	200 (100.0%)	

Discussion

During COVID-19 pandemic, a rapid increase in the telemedicine trend is being observed not only among developed countries but also among developing countries including Pakistan. Most of the patients in our study (67.0%) were more than 40 years old and 33.0% patients were upto 40 years of age while the mean age of the patients was 43.45 ± 11.964 years. The findings of a recent study carried out by Richards AE and coworkers (2021) indicated that mean age of the patients was 63.1 ± 14.6 years.¹⁷ Another study conducted by Orrange S and associates (2021) also confirmed that most of the respondents were elderly as the mean age of the patients was 55.8 ± 16.0 years.¹³

In our study male patients were in majority (61.5%) while remaining proportion (38.5%) was of females. The findings of our study are comparable with a study performed by Ahsan MF and collaborators (2020) who also asserted that majority (75.6%) of the patients were male and only 24.4% were female.¹² However, a study undertaken by Ramaswamy A and teammates (2020) exhibited different results that most of the patients (61.3%) were females and 38.7% were male patients.¹⁸

As the trend of telemedicine is increasing during

COVID-19 pandemic, study disclosed that more than half (52.0%) of the patients used this service for fever or suspected Covid-19 while 48.0% patients used this service for other medical problems. This indicates that although telemedicine was used mainly by suspected COVID -19 patients, a significant percentage of patients with other chronic illnesses have also utilized telemedicine services. This may also be due to limited access to outpatient clinics and face to face consultations during peak of this pandemic. The results of this study are different to the results of study done by Magadmi MM and fellows (2020) who highlighted that only 18.1% patients used telemedicine for COVID-19 and majority (81.9%) used this service for other medical problems.² The findings of our study further indicated that majority (73.5%) of patients used telemedicine service for the first time and 26.5% patients used this service more than one time. Almost similar results were reported in a study by Adams L and comrades (2021) who showed that 71.9% patients had their first experience with telemedicine while 28.1% patients used telemedicine for more than one time.¹⁹ So our study indicates that telemedicine services were new to these patients and those using this service for the second or third time were more likely to follow up again.

Our study revealed that a significant majority of patients was satisfied with appointments and paying consultation fee online. Among these patients, 75.0% reported that they can clearly hear the voice of doctor during consultation and 75.0% also said they can clearly see the picture of doctor on screen while audio visual communication was not satisfactory for just 25% of patients.

So, the main difficulties encountered were technical in the form of poor audio-visual signals perhaps due to internet connection problems. The difficulties with audio visual connections during telemedicine consultations may be more than that reported in our study especially in rural areas of the country where mobile phone signals and internet quality is not well established. Our study, however, did not differentiate between patients from rural and urban areas. Similar results were reported in a study performed by Orrange S and associates (2021) who elucidated that 88.2% patients were satisfied with

sound and 65.5% with video quality.¹³ The findings of another study carried out by Hentati F and companions showed better results than our study and that only 17.8% patients faced technical difficulties.²⁰ The study done in India by Acharya RV and Rai JJ indicated that problems encountered were 47% in technical issues.¹⁵

Study further highlighted that majority of patients confirmed that they can use the system easily and have no fear to face camera. Among the patients, 76.0 % reported that waiting time of tele-consultation is less as compared to face-to-face consultations. The results of this study are comparatively different from a study undertaken by Magadmi MM and fellows (2020) who stated that 70.0% patients were unsatisfied with waiting time of tele-consultations.² In our study majority (98.5%) of telemedicine users believed that telemedicine saves their time, expenditure, and discomfort of travelling to the hospital. This indicates that telemedicine can be useful especially for remote and rural areas of country which have poor health facilities and difficult road access to the cities. In our study 91.5% patients affirmed that telemedicine staff was cooperative. Similarly, Haxhihamza K and colleagues also reported in their study that majority of the patients (89.3%) were satisfied with telemedicine staff.⁴

When the overall satisfaction level among patients regarding telemedicine was evaluated, study showed very encouraging results that significant majority (96.5%) was satisfied with telemedicine during COVID-19 pandemic. The findings of our study are much better than the study conducted by Alharbi KG and colleagues (2021) who reported that overall patients' satisfaction level with telemedicine was 68.1%.²¹ The results of our study are also consistent with the study done by Khalid T et al which showed that 99.4% patients were overall satisfied with telemedicine.²²

The results of our study showed significant association ($p < 0.05$) between age and overall satisfaction level of patients with telemedicine. Patients more than 40 years of age were more satisfied. The study carried by Magadmi MM and fellows also showed significant association between age and overall satisfaction level of patients with telemedicine.² However, our study showed insignificant association ($p > 0.05$) between age and

use of telemedicine after COVID-19 pandemic. Patients' satisfaction plays a vital role and boosts the utilization of health care services. Majority (83.5%) of the patients said that they will recommend telemedicine to others due to its usefulness. These findings are like a study done by Parker K and Chia M who stated that more than 90.0% patients confirmed to recommend others to use telemedicine.²³ The study further highlighted that 81.0% patients wished to use telemedicine even after the COVID-19 pandemic. Almost similar results were reported in a study done by Sathiyaraj A and colleagues who stated that 80.0% patients wanted to use telemedicine in future.⁶ Similar results were observed in studies by Lopez C et al and Aashima et al, in which patients showed strong preference for continued usage of telemedicine even after the pandemic.^{14,16} This indicates that telemedicine services can be utilized in future by the patients even after the pandemic and telemedicine can be incorporated in regular health services.

Conclusion

Study concluded that overall patients were satisfied with telemedicine during COVID-19 pandemic. Audio visual connection problems were the main difficulties encountered by a small percentage of patients. Majority of patients were willing to use telemedicine after the pandemic and were desirous to recommend others to use telemedicine. The study has limitations that it did not include the opinion of provider and consultants. The benefits of telemedicine during COVID-19 period are enormous; hence, further studies are needed on large scale to assess the patient satisfaction and difficulties encountered with telemedicine to get further benefits from this service and incorporate telemedicine in regular health care.

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CONFLICT OF INTEREST

Authors declared no conflicts of Interest.

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DATA SHARING STATEMENT

The data that support the findings of this study are available from the corresponding author upon request.

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