RESEARCH ARTICLE

Tele-Dermatology during crisis, comparison of patients' perspective between tele and onsite clinics

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Abstract

Objective: To assess patients' satisfaction with tele-dermatology versus face-to-face visits, and to identify their attitude toward the new modality.

Method: The cross-sectional study was conducted from January to December 2021 at the Department of Dermatology, Aga Khan University Hospital, Karachi, and comprised patients of either gender. Those who opted to personally visit the outpatient department were placed in group A, while those opting for tele-dermatology were placed in group B. A self-designed questionnaire was used to evaluate the experiences in both the groups. Scoring was done using a Likert scale. The responses were recorded as dichotomised, and a cut-off score of 14 was identified as an expression of satisfaction. Data was analysed using SPSS 20.

Results: Of the 202 patients, 100(49.5%) were in group A; 65(65%) females and 35(35%) males, with 44(44%) aged 20-30 years. There were 102(50.5%) patients in group B, with 71(69.6%) females and 31(30.4%) males, and 42(41.2%) aged 20-30 years ($p>0.05$). Satisfaction was expressed by 94(46.2%) patients in group B compared to 108(53.8%) in group A. More females 48(57.1%) were satisfied than males 36(42.8%) in group A, while more males 50(69.4%) expressed satisfaction in group B females 22(30.5%).

Conclusion: Tele-dermatology was found to be a valuable method to deliver healthcare which could be adopted in future practices.

Keywords: Tele-dermatology, Onsite visits, Pandemic, Patients' satisfaction. (JPMA 75: 04; 2025)

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Introduction

Recent advances in technology have opened the gateway for different services in the field of medicine[1]. In recent years, one of the most important developments in technology is telemedicine. The surge of telemedicine increased in the last decades for many reasons. It is a lifesaver strategy which also saves the commute time of patients, especially during emergencies, and helps to manage the patients while sitting in the safe environment of their homes[2]. Telemedicine had been used in various medical specialties and medical conditions[3]. Dermatology is a very specialised field where tele-dermatology (TD) can work very effectively. During a time of crisis, like the recent coronavirus disease-2019 (COVID-19) pandemic, TD turned out to be a much-needed service for dermatology patients[4]. Different identified challenges limit its adoption, including the perception of patients about the effectiveness of TD, their hesitation, and discomfort while talking to healthcare providers through a screen. TD had been used effectively in different emergencies during such phases, and it can be used for individuals who live in epidemic-affected areas. Practical applications of the concept of teleclinics have been witnessed when the Ebola virus spread in Africa and also during the outbreak of the severe acute respiratory syndrome (SARS) virus in Taiwan.[5]

Very few studies have focussed on patient satisfaction with TD applications[6,7]. The current study was planned to fill the gap by assessing patient satisfaction with TD compared to face-to-face (F2F) visits, and identifying their attitude towards TD.

Patients and Methods

The cross-sectional study was conducted from January to December 2021 at the Department of Dermatology, Aga Khan University Hospital, Karachi. After approval from the institutional ethics review committee, the sample size was calculated using EpiInfo version 3.018, with patient satisfaction with TD 64.6%,[5] level of significance 5%, confidence interval (CI) 95%, and bound on error of estimation 0.065.

The sample was raised using prospective sampling technique. Those included were patients of either gender. Those who opted to personally visit the outpatient department (OPD) were placed in group A, while those opting for TD were placed in group B. Follow-up patients who did not want to participate, patients with incomplete information, TD patients who could not comprehend the study questionnaire owing to language barrier, and patients age <12 years were excluded, and so were those who dropped out during the study period.

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TD consultations were synchronous interactions that included live video calls using Zoom, which allowed the physicians to communicate with the patient in real time.

As no standard scale to evaluate the satisfaction and experience of patients with TD could be found in literature, a published validated questionnaire about patient satisfaction was modified to serve the purpose.[9] Reliability analysis was done using Cronbach's alpha (0.76), indicating strong internal consistency. Questions related to perception and satisfaction were scored on a Likert scale, and the responses were recorded as dichotomised. A cut-off score of 14 was identified as an expression of satisfaction.

Questionnaires and consent forms were sent to TD patients through online Google Forms, and the same forms were collected from F2F patients in the form of hard copies.

Data was analysed using SPSS 20. Data was expressed as mean±standard deviation, or frequencies and percentages, as appropriate. Chi-square test was used to evaluate intergroup differences with respect to responses. P<0.05 was considered significant.

Results

A total of 202 samples were collected, out of which 102(50.5%) were TD patients and 100(49.5%) were F2F patients. Satisfaction was observed by 72(45.2%) TD patients, while F2F satisfaction rate was observed in 84(53.8%). In F2F group there were 65(65%) females and 35(35%) males, while 44(44%) were of the age group 20-30 years. There were 102(50.5%) patients in TD group, with 71(69.6%) females and 31(30.4%) males, and 42(41.2%) aged 20-30 years (p>0.05). Age, gender and level of education were not significantly associated with patient satisfaction. 25(29.7%) of F2F patients and 28(38.8%) TD patients spent more than 25 minutes with their physician. A significant association found between the satisfaction rate of groups in terms of time they spent with the consultant (p>0.05). (Table 1).

From the questionnaire, it was observed that 97(97%) F2F patients were more satisfied with their health care provider, who understand their condition, and significant differences were found between the groups (p=0.02). 86(86%) of F2F patients found the mode of encounter easy and practical, while 82(80.4%) TD patients agree with this statement (p=0.28). As compare to F2F patients, 26(25.5%) of TD patients were disagree that doctor was able to examine them properly while 98(98%) of F2F and 76(74.5%) TD patients agreed with this statement(P<0.001). The 97(97%) F2F patients were more satisfied with their appointment than 84 (82.4%) of TD, while 18(17.6%) of TD were not stratified (p=0.001). 82(80.4%) TD and 92(92%) F2F patients were agreed that they would like to return for the same visit type and statistical differences were also observed (p=0.01).93(92%) F2F and 80(78.4%) TD patients were agreed to recommend the same type of visits to others (p=0.007). Most patients 76(74.5%) of TD were agreed that it was a convenient mode to save money. (Table-2)

The mean commute time for F2F visits was 232.4±20 minutes while there was no commute time in TD visits. The mean time spent on taking care of different aspects of is shown in Figure-1.

Table-1: Descriptive characteristics of the subjects and satisfaction rate (n=202).

Variables	Total n=202	F2F n=100	TD n=102	*p*-value	Satisfied (F2F) n=84	Satisfied (TD) n=72	*p*-value
Age (years)							
20-30	86(42.6)	44(44)	42(41.2)		27(32.1)	25(29.7)	
31-40	53(26.2)	26(26)	27(26.5)	0.27	23(27.3)	20(27.7)	0.42
41-50	18(8.9)	12(12)	6(5.9)		11(13.0)	15(20.8)	
>60	45(22.3)	18(18)	27(26.5)		23(27.3)	12(16.6)	
Gender							
Male	66(32.7)	35(35)	31(30.4)	0.48	16(19.0)	50(69.4)	0.46
Female	136(67.3)	65(65)	71(69.6)		68(80.95)	22(30.5)	
Education							
Primary	24(11.9)	17(17)	7(6.9)		12(14.2)	11(15.2)	
High school	44(21.8)	29(29)	15(14.7)	0.003	24(28.5)	13(18)	
Graduation	84(41.6)	36(36)	48(47.1)		26(30.9)	28(38.8)	0.96
Post-graduation	50(24.8)	18(18)	32(31.4)		22(26.1)	20(27.7)	
Time spent with the doctor (Minutes)							
≤ 10	84(41.6)	42(42)	42(42)		18(21.4)	20(27.7)	
11-15	36(17.9)	13(36.1)	23(63.9)	0.001	19(22.6)	12(16.6)	0.05
16-25	32(15.9)	12(37.5)	20(62.5)		20(23.8)	12(16.6)	
>25	50(24.8)	18(36)	32(64)		25(29.7)	28(38.8)	

F2F: Face-to-face, TD: Tele-dermatology.

Table-2: Intergroup comparison of patient satisfaction

Questions	Total responses	F2F n=100	TD n=102	*p*-value
I was able to share sensitive and/or personal information with my doctor.				
Agree	184(91.1)	95(95)	89(87.3)	0.053
Disagree	18(8.9)	5(5)	13(12.7)	
I believe that the encounter was conducted in a confidential manner				
Agree	193(95.5)	96(96)	97(95.1)	0.75
Disagree	9(4.5)	4(4)	5(4.9)	
I received adequate attention from a doctor during my visit				
Agree	174(86.1)	94(94)	80(78.4)	0.001
Disagree	28(13.9)	6(6)	22(21.6)	
The doctor was able to examine me properly				
Agree	174(86.1)	98(98)	76(74.5)	<0.001
Disagree	28(13.9)	2(2)	26(25.5)	
I obtained better access to health care services through my visits				
Agree	176(87.1)	95(95)	81(79.4)	
Disagree	26(12.9)	5(5)	21(20.6)	0.001
I found this type of visit very easy and practical				
Agree	168(83.2)	86(86)	82(80.4)	0.28
Disagree	34(16.8)	14(14)	20(19.6)	
The current visit type is an effective strategy for the safety of patients and staff during a crisis				
Agree	181(89.6)	78(78)	96(94.0)	0.001
Disagree	21(10.4)	22(22)	6(6)	
This type of visit is convenient and saved my money				
Agree	140(69.3)	64(64)	76(74.5)	0.10
Disagree	62(30.7)	36(36)	26(25.5)	
I was overall satisfied with my appointment today				
Agree	181(89.6)	97(97)	84(82.4)	0.001
Disagree	21(10.4)	3(3.0)	18(17.6)	
Next time I would like to return for the same visit type				
Agree	174(86.1)	92(92)	82(80.4)	0.01
Disagree	28(13.9)	8(8.0)	20(19.6)	
I would like to recommend a similar visit type to others				
Agree	172(85.1)	92(92)	80(78.4)	
Disagree	30(14.9)	8(8)	22(21.6)	0.007

F2F: Face-to-face, TD: Tele-dermatology.

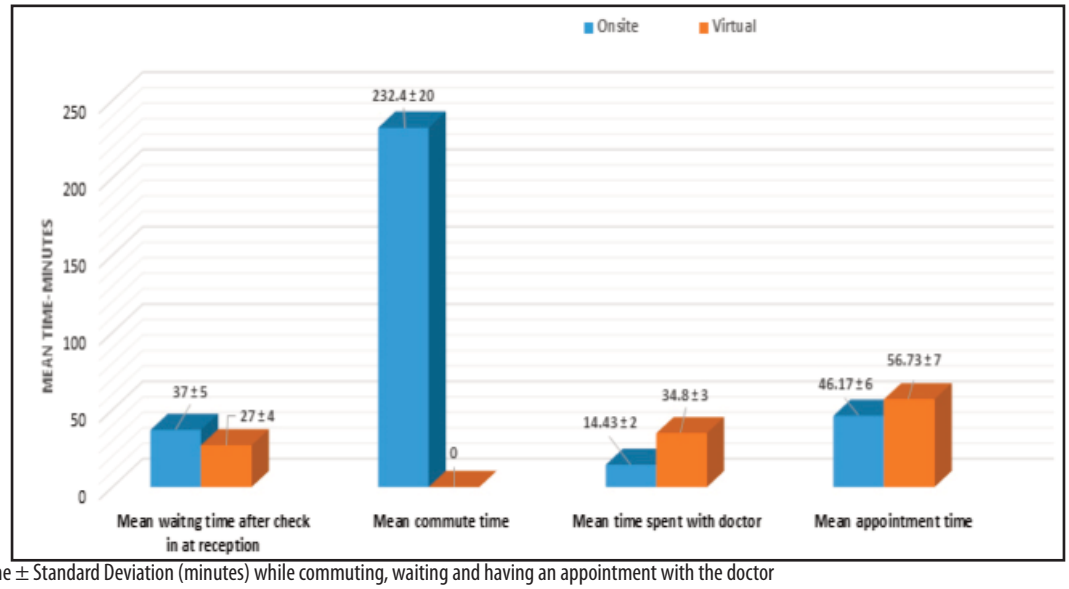

Figure-1: Mean time ± Standard Deviation (minutes) while commuting, waiting and having an appointment with the doctor

Discussion

The current study showed that more F2F patients were satisfied with their mode of visit than TD patients. Mostly younger age group and graduate females used TD services. It was also found that elderly people (≥60 years) were more satisfied with F2F visits as they were not able to use the new technology and were comfortable with the traditional clinical model. Interestingly, females were more satisfied with F2F visits, while males showed more satisfaction with TD sessions. The study also found that highly educated participants were more comfortable with TD, while the rest preferred F2F visits. It was interesting that TD patients found their visits safer for themselves and for their health providers during the pandemic. In an earlier study, 369(61.9%) patients stated that telehealth service was just as good or better than the traditional visits, and a majority of these respondents were females who had a higher level of education. However, most participants who used telehealth services were somewhat older with chronic health issues.[10] Another study reported similar results, and 78% of patients were highly satisfied with teleclinic services. The mean patient satisfaction score for TD was comparable to F2F visits ($p<0.4$)[11].

Responses to the current study questionnaire suggested that F2F patients were more satisfied as their visits were completed within time and significant differences were found between the groups. This was perhaps because of the lack of awareness about technology. An earlier study also discussed the reasons behind such responses among the public.[10] One study reported that 67.6% of teleclinic visits were completed within the specified time compared to 73.7% of F2F visits ($p>0.05$).[7] It was reported that 91.4% of participants wanted to return for a tele-consultation, while 100% of F2F patients showed interest in continuing with such visits.[7] The current study reported similar findings, with 92% of F2F and 80.2% of TD patients wanting to continue with their respective types of consultation.

In the current study, both groups agreed that their healthcare provider could understand their condition and they were comfortable with the mode of visit. Another study reported that 97.1% of TD patients and 97.4% of F2F patients agreed to recommend similar visit types to others.[7] The most prevalent benefit of TD was that it reduced the chance of spreading infection. One study highlighted that 73.6% of patients preferred TD because it provided them with the attention they needed while allowing them to retain social distance. In the current study, 96% of TD respondents believed that TD mode was capable of decreasing commute time and the risk of transmission of infection to patients during a crisis. Another significant advantage of TD is the availability of dermatology services in remote rural regions.[12,13]

Interestingly, in the current study, the majority of participants from both groups felt that their mode of visit was easy and practical, and they would recommend similar visit types to others. This was in line with earlier findings.[11] However, contrasting results have also been reported.[12] The current results showed that a few of the TD patients were less satisfied because physicians were unable to examine them properly and they received inadequate attention during consultants. Similar barriers that decreased the satisfaction rate of patients with TD have been reported earlier.[10] It has been observed in several studies that 42% to 76% of patients preferred TD clinics to avoid the waiting time.[13,14] In the current study,74.5% of TD patients expressed satisfaction as the consultation was convenient and they could avoid wasting time and resources. [15]

The current study has limitations as the subjects belonged to a single private-sector hospital, and, as such, had higher levels of digital literacy than the general population. Also, the study did not explore the nature of complaints the patients were having consultations for. Cosmetic complaints would make visits longer and a possible lack of satisfaction by the patients may occur in such cases.

Large-scale research on patient and dermatologist satisfaction with TD use are recommended. Developing a TD infrastructure that protects patient privacy while ensuring accurate diagnosis is required.

Conclusion

F2F interactions were generally preferred over TD visits. A direct and customised connection with healthcare providers was one of the many benefits that made F2F more effective for the patients. In addition, TD was identified as an effective treatment strategy with many advantages.

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SM: Concept and design.
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SA: Data analysis and interpretation.
ZF: Data collection.
SN: Proof reading.