

Views and experiences of dermatologists in Turkey about teledermatology during the COVID-19 pandemic

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Abstract

Background: Teledermatology is an alternative medical science that allows evaluation of patient's clinical information over a distance without requiring face-to-face examination. Due to COVID-19, social distancing has become important these days, and teledermatology can help physicians and patients in overcoming the barriers of accessing health care.

Aim: In this study, we aim to evaluate how dermatologists in our country have viewed and experienced teledermatology during the pandemic through surveys.

Patients/Methods: The study was carried out by using an online survey for evaluating the teledermatology experiences of dermatologists in Turkey and how they have viewed teledermatology during the 2-month pandemic period and the 2-month pre-pandemic period.

Results: The number of patients evaluated with teledermatology methods was found to be significantly higher in the pandemic period when compared with the pre-pandemic period. The rates of using video calls with mobile phone and online video calls were found to be significantly higher in the pandemic period when compared with the pre-pandemic period.

Conclusion: Our study results show that the teledermatology method had a higher rate of usage compared to before the pandemic.

KEYWORDS

coronavirus, COVID-19, pandemic, teledermatology, telemedicine

1 | INTRODUCTION

Telemedicine is an alternative medical science that allows the evaluation of clinical information and digital or video camera recorded images of patients at a distance by electronic transfer, without traditional face-to-face patient examination. The use of telemedicine in dermatology is called "teledermatology."^{1,2} Teledermatology techniques can be applied in three different ways including synchronous (real-time teledermatology), asynchronous (store-and-forward technique), and hybrid (which has the features of the other two methods). In synchronous teledermatology, a live video conference is conducted between the patient and the dermatologist. The most important disadvantage

of the live video conference method is that it requires expensive technical equipment. Asynchronous teledermatology provides opportunity for higher resolution dermatological images compared to synchronous methods such as live video; however, the fact that there is no face-to-face communication with the patient is a disadvantage. Mixed or hybrid teledermatology methods combine live video conferences and store-and-forward clinical images.^{3,4}

COVID-19 was first identified in Wuhan (China) in December 2019 as a disease caused by novel coronavirus (SARSCoV-2); on March 11, 2020, it was declared an outbreak that had spread worldwide.⁵ Like many other countries, our country was also affected by the pandemic and a large number of protective measures were

taken.⁶ The COVID-19 pandemic required the development of new assessment strategies. Pandemic hospitals were formed, and none-emergency admissions to hospitals were restricted. As a result of this situation, there had been a decrease in the number of patients who were evaluated in the dermatology outpatient clinic.⁷⁻⁹

During the pandemic, dermatologists should aim to protect their patients while also caring for their own safety. Since social distancing is important during the period of the COVID-19 pandemic, teledermatology can help physicians and patients in overcoming the barriers of accessing health care.¹⁰ In this study, using a web-based questionnaire, we aimed to evaluate the thoughts and experiences of dermatologists regarding teledermatology during the pandemic period in our country.

2 | MATERIAL METHOD

The present study has an observational cross-sectional design. The study was conducted with dermatologists in Turkey by using an online survey. Google form was used in the design of the web-based survey. In the survey, the participants were asked questions such as gender, age, academic career, unit they worked in, area they worked in, level of knowledge about teledermatology, how they used teledermatology methods (video call by mobile phone, "online" video call on the internet, sending photograph messages through mobile phone, and sending photograph messages through e-mail or WhatsApp) within the pre-pandemic 2 months and the 2 months during the pandemic, the number of patients evaluated with teledermatology method, how satisfied the participants and patients were (compared to the dermatologists) with teledermatology methods, whether they earned money with this method, and whether they wanted teledermatology to be established officially. The questions and the options of the related survey were reviewed by two dermatologists. Possible misunderstandings, grammatical errors, etc were corrected as much as possible.

2.1 | Data analyses

Qualitative data were given as number and percentage, and quantitative data were summarized as mean \pm SD. McNemar and chi-squared tests were used to compare dependent categorical variables. Comparisons of the categories of qualitative variables before and during the pandemic were realized by the chi-squared test. Comparisons of quantitative variables before and during the pandemic were made with the Wilcoxon test. A value of $P < .05$ was accepted as statistically significant. All data analyses were carried out by employing IBMSPSS Statistics (Statistical Package for Social Sciences) for Windows 26.0 software.

3 | RESULTS

Twenty-nine (27.1%) of the 107 participants in the study were male, while 78 (72.9%) were female. The average age was found to be

41.8 \pm 11.3. Table 1 shows the academic degrees of the participants, the institutions they were working in, and the areas they were living in. The question "What is your level of knowledge about teledermatology" was answered as "high" by 13 (12.1%) participants, as "moderate" by 62 (57.9%) participants, as "low" by 22 (20.6%) participants, and as "none" by 10 (9.3%) participants.

The rates of using video call with mobile phone and online video call methods were found to be statistically significantly higher in the pandemic period when compared with the prepandemic period ($P = .031$, $P = .004$, respectively). The percentage of dermatologists using photograph messages through mobile phone for evaluating patients was found to be statistically significantly lower in pandemic period when compared with the prepandemic period ($P = .007$) (Table 2).

Table 3 shows the number of patients evaluated with teledermatology methods in the prepandemic and pandemic period. The total number of patients evaluated with photograph messages through mobile phone and WhatsApp application was found to be statistically significantly high in the pandemic period compared with the prepandemic period ($P = .001$, $P < .001$, respectively).

While the rate of earning money by using the teledermatology method was found as 2.8% in the prepandemic period, it was 11.2% in the pandemic period; the difference was statistically significant ($P = .035$).

TABLE 1 Sociodemographic characteristics of the participants

	n (%)
Sex	
Male	29 (27.1)
Female	78 (72.9)
Academic degree	
Research assistant	17 (15.9)
Specialist	61 (57)
Assistant professor	6 (5.6)
Associate professor	13 (12.1)
Professor	10 (9.3)
Institution	
Public Hospital	17 (15.9)
Training and Research Hospital	26 (24.3)
Private hospital	15 (14)
Private outpatient clinic	13 (12.1)
University Hospital	36 (33.6)
Living region	
Mediterranean	10 (9.3)
Eastern Anatolia	27 (25.2)
Aegean	8 (7.5)
Southeastern Anatolia	5 (4.7)
Central Anatolia	21 (19.6)
Black Sea	7 (6.5)
Marmara	29 (27.1)

TABLE 2 Comparison of the use of teledermatology methods before and during the pandemic period

	Before the pandemic n (%)	Pandemic period n (%)	*P values
Using video calls with mobile phone			
Yes	30 (28)	42 (39.3)	.031
No	77 (72)	65 (60.7)	
Use of online video calls			
Yes	13 (12.1)	26 (24.3)	.004
No	94 (87.9)	81 (75.7)	
Use of picture messaging with mobile phone			
Yes	62 (57.9)	51 (47.7)	.007
No	45 (42.1)	56 (52.3)	
Use of sending pictures via e-mail			
Yes	29 (27.1)	26 (24.3)	.629
No	78 (72.9)	81 (75.7)	
WhatsApp usage			
Yes	101 (94.4)	100 (93.5)	1.000
No	6 (5.6)	7 (6.5)	

Statistically significant *P* values (*P* < .05) are indicated in bold font.

*McNemar test.

Table 4 shows the preferences of dermatologists regarding the teledermatology methods in the pandemic period. The phone call method had a preference rate of 46.7%, the online call method was 54.2%, sending photograph messages through mobile phone was 34.6%, sending photographs with e-mail was 26.2%, and WhatsApp application had a preference rate of 55.1%. 75.7% of the patients stated that teledermatology methods were necessary during the pandemic period. The rate of participants who wanted teledermatology to be established officially was found as 64.5%.

4 | DISCUSSION

To the best of our knowledge, the present study is the first one in literature in which the opinions and experiences of dermatologists about teledermatology are evaluated. In our study, when pandemic and pre-pandemic periods were compared in terms of the rates of using teledermatology methods, this rate was found to be significantly higher in the pandemic period. We believe that this difference may be due to the restriction of face-to-face patient examinations except for in emergency complaints, or individuals' refraining from examination in the hospital environment. 57.9% of the dermatologists who participated in our survey stated that they had moderate level of knowledge about teledermatology. In the literature, a study conducted in 2014 evaluated the teledermatology use of dermatologists in Turkey through surveys, and it was found that 50% of the participants had "low" level of knowledge about teledermatology.² This rate was found as 20.6% in our study. This result shows that the dermatologists' level of knowledge about teledermatology increased in the last 6 years.

In our study, the rate of using teledermatology methods like video call with mobile phone and online video call was statistically significantly higher in the pandemic period compared to the prepandemic period. In addition, teledermatology satisfaction rates of dermatologists and patients, and dermatologists' rates of earning money with this method were found to be statistically significantly higher when compared with the prepandemic period. Most of the participants (75.7%) stated that teledermatology was necessary during the pandemic period. These results suggest that teledermatology is a good choice as a patient assessment tool during the pandemic period.

In a survey conducted in Australia with dermatologists, it was found that the participants thought teledermatology was suitable for use mainly for exchanging views between colleagues and for patient follow-up and that it could not replace the first consultation.¹¹

TABLE 3 Comparison of the number of patients evaluated by teledermatology methods before and during the pandemic period

	Before the pandemic mean ± SD	Pandemic period mean ± SD	*P values
Video call by mobile phone	14.0 ± 17.3	13.3 ± 16.7	.445
Online video call	10.5 ± 22.5	17.9 ± 37.3	.172
Sending picture messages via mobile phone	17.7 ± 19.1	26.9 ± 26.3	.001
Sending images via e-mail	6.5 ± 9.6	11.8 ± 26.7	.169
WhatsApp	20.4 ± 21.5	28.5 ± 27.2	<.001

Statistically significant *P* values (*P* < .05) are indicated in bold font.

*Wilcoxon test.

TABLE 4 Teledermatology methods preferred by dermatologists during the pandemic period

	n (%)
Video call by mobile phone	
Yes	50 (46.7)
No	57 (53.3)
Online video call	
Yes	58 (54.2)
No	49 (45.8)
Sending picture messages via mobile phone	
Yes	37 (34.6)
No	70 (65.4)
Sending images via e-mail	
Yes	28 (26.2)
No	79 (73.8)
WhatsApp	
Yes	59 (55.1)
No	48 (44.9)

In our study, the total number of patients evaluated by sending photograph messages with mobile phone and the WhatsApp application was statistically significantly high when compared with the pre-pandemic period. In contrast, the percentage of dermatologists using photograph messaging through mobile for evaluating patients was lower in the pandemic period than the pre-pandemic period; this may be because methods like WhatsApp are easier to utilize and were used at a higher rate during the pandemic period. In a study which evaluated the role of smart phone technology use in dermatology practice, it was found that smart phone technology played an effective role in dermatology practice.¹² WhatsApp is especially one of the most popular applications worldwide, and it allows users to communicate with texts/voice messages, photographs, and videos. Dermatology is one of the few areas of medicine in which visual examination is very important for diagnosis. Ease of use, portability, speed, cost effectiveness, and simplicity make WhatsApp a good assisting telemedicine tool.^{13,14} In our study, the rate of preferring the WhatsApp application during the pandemic period was found as 55.1%.

In new studies published during the COVID-19 pandemic period, it is understood that the rates of admission to polyclinics decreased significantly and patients preferred to stay at home due to the restriction measures taken and the anxiety about catching the disease.⁷⁻⁹ In a questionnaire study they conducted, Türkmen et al⁸ compared hair diseases before and during the pandemic and reported that the rate of seeking a doctor during the pandemic was significantly lower than before the pandemic. The authors reported that teledermatology could be used as an alternative, especially during the pandemic period. In our study, the rate of dermatologists who wanted teledermatology methods to be established officially was found as 64.4%. Based on the increase in the need for methods which are alternatives for face-to-face patient evaluation, we think that this rate will increase more in the future when the course of the pandemic continues.

In conclusion, the present study has shown that teledermatology methods had a higher use during the pandemic period, and this suggests that teledermatology will become more important as a patient assessment tool as we are still in the course of the pandemic period. One of the limitations of the study was that the questionnaire used in the study did not contain questions regarding which patient group and disease was evaluated by teledermatology methods. In addition, patient satisfaction was evaluated by asking dermatologists, not by asking patients directly. However, we believe that the present study in which we evaluated the views and experiences of dermatologists about teledermatology will contribute to literature.

CONFLICT OF INTEREST

The authors have no conflicts of interest to disclose.

ETHICAL APPROVAL

Ethical approval was obtained for the research protocol of this study by applying to the local noninterventional ethics board (#2020/779).

DATA AVAILABILITY STATEMENT

Research data are not shared.

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