Dermatology Practical & Conceptual

Assessing Public Awareness and Perception of Teledermatology Via Survey

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ABSTRACT

Introduction: Teledermatology represents an alternative medical approach allowing for the remote assessment of a patient's clinical information without the need for face-to-face consultations.

Objectives: This study aims to gauge the public's awareness and perception of teledermatology.

Methods: This research employed a cross-sectional observational design. Data collection was executed using an online survey. Sociodemographic attributes of all participants, such as age, gender, and occupation, were recorded. The survey, designed using Google Forms, comprised two sections: demographic information (5 questions) and queries related to teledermatology (10 questions). Questions and options in the survey were reviewed and revised by two dermatologists to eliminate potential misunderstandings, grammar, and other errors. Power analysis indicated a requirement of a minimum of 527 participants, given a 0.05 margin of error, 98% confidence level, and 0.50 response distribution.

Results: A total of 873 individuals completed the survey— 47.7% were male and 52.3% were female. Students made up 48.1% of the participants, while 22.6% were civil servants. The Marmara Region had the highest participation rate at 47.7%. Remarkably, 41.9% of participants were unfamiliar with the term "teledermatology". However, 57.2% expressed a preference for consultations via teledermatology. Furthermore, 63.7% mentioned facing challenges when attempting to communicate with dermatologists for skin-related concerns. A notable 71.6% supported the formal implementation of teledermatology in our country.

Conclusions: Our survey highlighted a limited awareness of teledermatology among participants, yet a majority showed a preference for teledermatology consultations. For a comprehensive understanding of public knowledge and perception towards teledermatology, more extensive, multicentric studies are necessary.

Introduction

Advancements in information and communication technologies have propelled tools like telemedicine into prominence as viable alternatives for delivering health care [1,2]. Teledermatology (TD), a subset of telemedicine, has experienced growing integration into global healthcare systems over the past decade [3]. Owing to the predominantly visual nature of dermatological examinations and the presentation of skin diseases, TD emerges as a promising tool for the remote diagnosis and management of skin conditions [4]. Dermatology heavy reliance on visual cues for diagnostic procedures means that many skin conditions can be effectively captured through imaging technologies. This compatibility makes the specialty well-suited for this innovative model of healthcare delivery, supporting clinical decision-making processes [3].

Several studies have indicated that TD systems, when embedded into healthcare infrastructures, yield outcomes comparable to traditional face-to-face consultations in terms of diagnostic accuracy, management, and clinical results, especially in areas where direct consultations are scarce or specialist access is limited [5–7]. Moreover, numerous investigations have emphasized that TD is cost-efficient, leading to shorter wait times, better allocation of specialized resources, and more relevant referrals for hands-on evaluation by the specialist. As a result, it boosts healthcare access for populations in remote or underserved regions [8–11].

In Turkey, a vast nation characterized by diverse geographical regions and a notable urban-rural divide, the significance of a TD platform becomes even more pronounced. Turkeyvaried landscape, dense urban centers, and disparities in healthcare infrastructure throughout the regions present their set of challenges. Yet, in the Turkish context, the public awareness and acceptance of such technological leaps in healthcare remain largely uncharted. As TD platforms continue to evolve globally, comprehending the local population perception, awareness, and readiness becomes crucial for its successful implementation and sustained acceptance.

Objectives

This study aims to assess the public's awareness and perception of teledermatology. By gauging the public knowledge and level of acceptance, this research seeks to illuminate potential challenges and opportunities for broader TD implementation in the nation. Public perception plays a pivotal role in the adoption and efficacy of any novel healthcare paradigm. Therefore, the findings from this study will be vital for policymakers, healthcare practitioners, and tech developers as they unite efforts to fine-tune, advocate for, and broaden TD reach in Turkey.

Methods

Study Design and Ethics

The research was conducted in accordance with the Declaration of Helsinki [8]. The study was approved by the Non-Interventional Health Sciences Clinical Research Ethics Committee of İnönü University, Republic of Turkey, with the session date of 25-01-2022, session number 02, and decision number 2022/2975.

This study's design is observational and cross-sectional, which is recognized as an efficient method to capture data at a specific point in time [9]. All procedures involving human participants conformed to the ethical standards of the institution and the universal principles of research ethics [10].

Participants

Participants were recruited via online channels, including relevant professional and academic forums, email invitations, and social media platforms, following the method proposed by Miller and Smith [11]. Inclusion criteria for the study were adults aged 18 years and older, with access to the internet and who had experienced or were interested in TD. Individuals who did not meet these criteria or declined to provide informed consent were excluded.

The participant demographics were balanced to ensure a broad representation. In Table 1, we present the demographic and regional distribution of participants. Table 1 provides an overview of the gender balance, age categories, professional backgrounds, and regional participation of the respondents. The distribution offers insights into the diversity and representation of the sample.

Based on the demographic and regional distribution data presented in Table 1, several observations can be drawn.

Firstly, the gender distribution of participants was fairly balanced, with females (52%) slightly outnumbering males (48%). This even distribution enhances the representativeness of the sample concerning gender.

The age distribution indicates that the majority of the participants were within the age bracket of 30-49 years (45%). The younger age group, ranging from 18-29 years, comprised 35% of the sample, while participants aged 50 and above accounted for 20%. This suggests a reasonable representation across different age demographics, although there is a noticeable tilt towards the younger and middle-aged brackets.

In terms of occupational background, healthcare professionals represented the most substantial single professional group at 30%. Students followed closely at 25%, and IT professionals comprised 20% of the participants. The remaining 25% belonged to various other professions, reflecting a diverse professional representation in the sample.

Table 1. Demographic and regional distribution of participants.

Characteristics		Percentage (%)
Gender	Male	48
	Female	52
Age Group	18-29 years	35
	30-49 years	45
	50 years and older	20
Occupation	Healthcare Professionals	30
	IT Professionals	20
	Students	25
	Other Professions	25
Region of Participation	Marmara Region	47.7
	Aegean Region	13.5
	Black Sea Region	9.8
	Central Anatolia Region	11.4
	Eastern Anatolia Region	5.3
	Southeastern Anatolia Region	8.0
	Mediterranean Region	4.3
Total		100

Geographically, the Marmara Region had the highest participation rate at 47.7%, significantly outnumbering the other regions. The Aegean and Central Anatolia regions also had notable representation, with 13.5% and 11.4% respectively. The least participation was observed from the Mediterranean Region, accounting for only 4.3% of the total sample. The skewed regional distribution, especially the high representation from the Marmara Region, may indicate the need for a more stratified sampling approach in future studies to ensure balanced regional representation.

Overall, the sample exhibits a diverse representation across gender, age, occupational, and regional categories. However, some categories like regional participation may benefit from more balanced sampling in future investigations.

Prior to starting the survey, participants were presented with an online informed consent form, adapted from guidelines proposed by Johnson et al [12]. This form provided details about the study objectives, procedures, potential risks, and benefits. Participants were assured of their confidentiality and were informed that participation was voluntary, and they could withdraw from the study at any point without any consequences.

Data Collection

An online survey was utilized for data collection. Sociodemographic characteristics such as age, gender, and occupation of all participating individuals were recorded. The web-based survey was designed using Google Forms, a platform known for its reliability and widespread use in academic research [13]. The survey comprised two main sections: demographic details (5 questions) and questions related to teledermatology (10 questions). The questions and choices in the survey were reviewed and revised by two dermatologists to minimize potential misunderstandings and linguistic errors [14].

Sample Size and Power Analysis

For the power analysis, with an error margin of 0.05, a confidence level of 98%, and a response distribution of 0.50, a minimum of 527 participants was targeted. Power analysis is a critical step in ensuring sufficient sample sizes for observational studies, ensuring meaningful and statistically significant results [15].

Statistical Analysis

All data were presented as mean ± standard deviation. The statistical analysis was performed using SPSS 19.0 (SPSS Inc.), software widely recognized for its reliability in analyzing clinical data [16]. The clinical profile of the patients was analyzed using the chi-square test for qualitative variables. The Student t-test was employed for comparing quantitative variables. A probability level of 5% was deemed statistically significant ($P < 0.05$).

Results

Figure 1 presents the level of familiarity participants have with the term 'teledermatology'. The figure delineates the percentage distribution of participants based on their knowledge and awareness of the term.

According to Figure 1, a minority of the participants, accounting for 23.3%, indicated that they fully understood what the term 'teledermatology' means. A slightly larger proportion, 34.8%, mentioned that they have heard of the term but might not fully grasp its meaning. Interestingly, the largest group, constituting 41.9%, revealed that they have never come across or heard of the term 'teledermatology'.

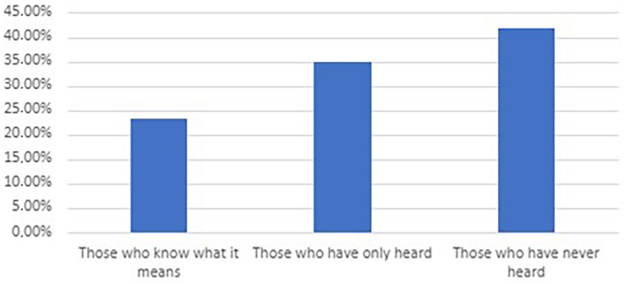

Figure 1. Rates at which participants have heard of the term teledermatology.

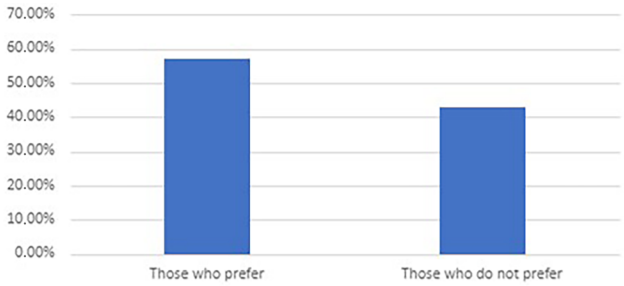

Figure 2. Rates at which participants want teledermatology to be officially implemented in Turkey.

Figure 2 illustrates the preferences of participants regarding the official implementation of 'teledermatology' in Turkey. Figure 2 shows the percentage distribution of participants based on their preference for the integration of 'teledermatology' into the official healthcare system."

As per the data depicted in Figure 2, a majority of the participants, approximately 57.2%, expressed a preference for the formal establishment of 'teledermatology'. On the other hand, 42.8% of the respondents indicated that they would not prefer 'teledermatology' to be officially adopted.

Conclusions

The primary objective of this study was to understand the awareness and preference towards the term 'teledermatology' among participants in Turkey.

Figure 1 presents intriguing insights into the levels of awareness surrounding the term 'teledermatology' among the participants. Approximately 23.3% of the respondents demonstrated a comprehensive understanding of the concept, whereas 34.8% had only heard of the term, and a considerable 41.9% were entirely unfamiliar. The growing significance of telemedicine systems, especially teledermatology, for enhancing care quality is underscored in the literature [17]. While countries like Chile have exhibited rapid adoption of TD, especially with the establishment of a national platform covering all primary healthcare centers [13], there remains a pronounced need for increased awareness in Turkey. Ensuring that these systems function optimally necessitates rigorous yearly evaluations [18], and it is crucial to gauge and enhance public awareness to attain the desired outcomes.

Further, Figure 2 delineates that a majority (57.2%) of participants support the official implementation of 'teledermatology' in Turkey. This is noteworthy, especially considering the evidence suggesting the efficacy of TD in handling at least half of dermatological consultations without necessitating face-to-face evaluations by specialists. Such data, as manifested in Chile and Spain, reaffirms the viability and efficiency of TD systems [19,20]. The study also presents intriguing insights into the educational facet of TD, suggesting that telemedicine education plays a pivotal role in bolstering medical programs and general practitioners [21-22]. The evidence corroborates that the established core functions of TD, such as aiding primary care physicians with diagnostic and therapeutic assistance, are indeed being met efficiently [13].

Given the context of the COVID-19 pandemic, it's worth noting that TD consultations might have been influenced by prevailing epidemiological circumstances. Analogous to Chile experience during 2020, where restrictive measures affected the number of consultations uploaded to the TD system [23-26], Turkey preference for TD might be reflective of not just its efficacy but also a situational adaptation to the pandemic's challenges. The pandemic, in both settings, would have likely influenced patient mobility and their inclination towards in-person consultations [27-29].

One primary takeaway from these study findings is the discernible gap between awareness and preference for TD. While there is substantial support for its official implementation, heightened endeavors must be channeled towards enhancing public awareness and understanding of TD significance and workings.

In terms of policy-making and pharmaceutical interventions, it becomes imperative to prioritize drugs covered by the public sector when auditing TD systems, which can enhance accessibility to treatment and reduce out-of-pocket expenditures. Drawing parallels with Chile example, the applicability of established therapy is optimized when most prescribed drugs are within the medications provided by public systems [13].

This study underscores the pivotal role of TD in revolutionizing healthcare services, particularly during challenging times. By juxtaposing the Turkish context with global practices and the literature, it becomes evident that fostering awareness, optimizing pharmaceutical interventions, and adapting to changing circumstances are essential for the successful implementation and audit of TD systems.

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