

Research Article

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Evaluating the Role of ChatGPT in Dermatology: A Study on Healthcare Workers' Perceptions and Expectations

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ABSTRACT

Introduction: Artificial intelligence (AI), particularly ChatGPT, is rapidly transforming dermatology by enhancing clinical practices, patient communication, and knowledge management. However, the perceptions and expectations of healthcare professionals regarding its integration remain underexplored.

Objective: The main objective was to evaluate the different ways in which medical professionals use ChatGPT, to ascertain its advantages and disadvantages for dermatology.

Materials and Methods: This analytical cross-sectional study was conducted in northern Morocco between December 2023 April 2024. A questionnaire was administered to 79 healthcare professionals, including professors, specialists, and residents. The survey assessed their knowledge of ChatGPT, its potential applications, and perceived barriers to its adoption.

Results: Among the participants, 64.6% reported familiarity with ChatGPT, but only 32.2% had incorporated it into their practice. Key applications included report writing (25.5%), diagnostic assistance (19.9%), and research support (25.5%). Major concerns included data reliability (59.9%), accessibility (41.1%), and medico-legal implications (48.9%). Despite these challenges, 76.7% of the respondents anticipated a positive impact of ChatGPT on their practice.

Conclusion: ChatGPT and artificial intelligence are transforming dermatology by enhancing communication and supporting clinical decision-making. By overcoming its challenges, AI can improve clinical outcomes and patient experience in an inclusive, patient-centered manner.

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Introduction

In the healthcare industry, artificial intelligence (AI), is developing quickly and has the potential to improve patient relations and clinical procedures [1]. One of the newer AI technologies that has drawn more attention in dermatology is ChatGPT, a language model created by OpenAI [1]. There is no denying its capacity to support medical personnel, enhance patient care, and boost the effectiveness of medical practices. However, despite its tremendous potential, not enough research has been done on the expectations and views of healthcare professionals, especially dermatologists [1,2].

Through an analysis of healthcare professionals' expectations and views, this study seeks to assess ChatGPT's function in

dermatology [3]. This study offers important insights into the prospects and difficulties of incorporating ChatGPT into this particular area by investigating their perceptions of the effects of AI on clinical practice, patient communication, and medical knowledge management [3]. The study also looks at possible obstacles to its uptake and future advancement in dermatology, taking into account elements like technological acceptability, data security, and dependability [3].

With the help of this analysis, the study hopes to advance a more comprehensive framework for comprehending how artificial intelligence is used in medical procedures while providing a knowledgeable viewpoint on the expectations of medical professionals on the advancement of these technologies in dermatology [3,4].

Objective

The main objective is to evaluate the different ways that medical professionals use ChatGPT in order to ascertain its advantages and disadvantages for dermatology.

Materials and Methods

This study is based on an analytical cross-sectional survey that was carried out in the northern part of Morocco during a five-month period, between December 2023, April 2024. All medical professions were represented, including professors, specialists, and residents in dermatology. Our multidisciplinary study team, which included a dermatologist and a community medicine specialist, created and administered the survey questionnaire. French was used to create the survey instrument. To guarantee clarity, consistency, and usefulness in assessing healthcare professionals' opinions of ChatGPT, this survey was evaluated with 79 healthcare professionals from a variety of demographic backgrounds. There were three sections to the survey. Healthcare practitioners responded to questions about demographics in the first section. Their understanding of ChatGPT's nature and its application in healthcare was examined in the second section of the survey. The third and last section evaluated the opinions of medical professionals on possible obstacles to the application of AI chatbots in healthcare environments. Respondents had to choose one or more options to indicate their replies to the survey's multiple-choice questions. This study did not employ a Likert scale. Respondents were given multiple response options to choose all relevant answers for questions about perceived obstacles to applying AI in medical practice and perceived usefulness of ChatGPT in medical practice. The poll was designed with open-ended questions.

Results

Participating in this study were 79 healthcare professionals, who offered insightful information about their expectations, views, and experiences with ChatGPT's application in medical practice. 87% of the sample consisted of female individuals. The age distribution was biased in favour of younger professionals, with those between the ages of 25 and 34 making up the largest group (39.5%), followed by those between the ages of 18 and 24 (31.6%) (Figure 1). Regarding their occupation, over two-thirds (63.5%) of the participants were specialists, 35% were residents, and 1.5% were field educators (Figure 2).

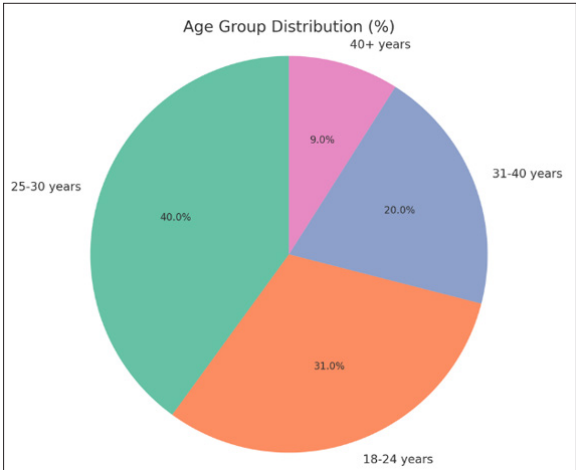


Figure 1: Age Distribution Across Respondent Groups

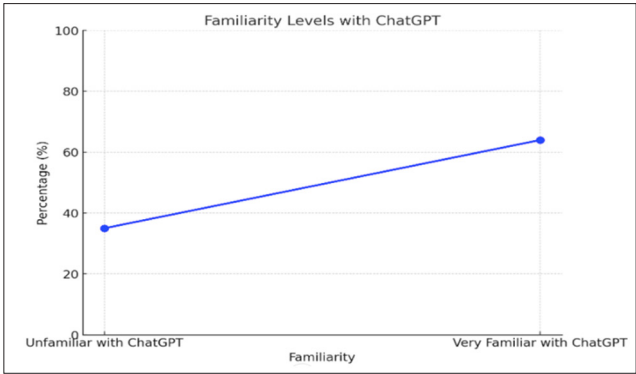


Figure 2: Familiarity levels with ChatGPT

Regarding ChatGPT knowledge, 35.4% of participants said they had little to no experience with the instrument, whereas 64.6% said they were extremely familiar with it (Figure 3). There is significant interest in the potential uses of ChatGPT, as seen by the encouraging 74.1% of respondents who had not yet used it to say they intended to utilize it in their practice in the future.

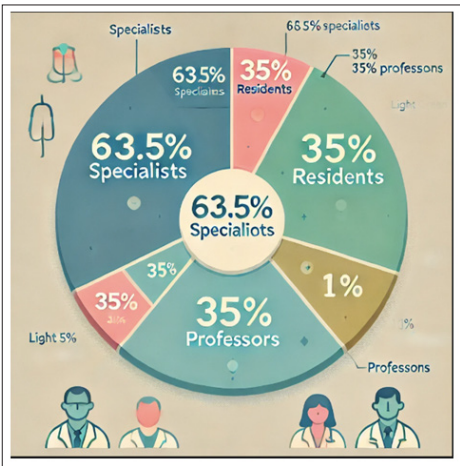


Figure 3: Distribution of Participants by Professional Level

Just 32.2% of medical professionals reported having already included ChatGPT into their practice, whereas the remaining 68.8% had not (Figure 4). This discrepancy emphasizes how recently AI techniques like ChatGPT have been used in clinical settings.

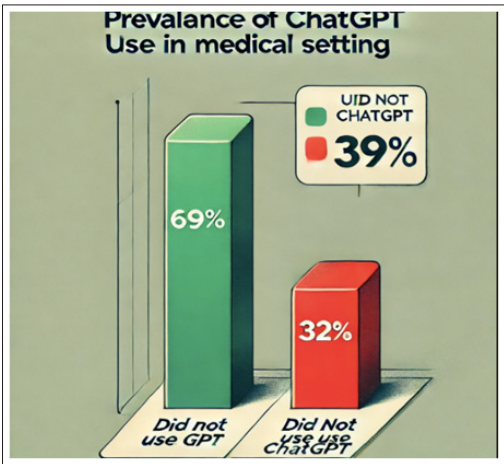


Figure 4: Distribution of Participants by Professional Level

Participants were questioned on ChatGPT's possible advantages in a range of medical duties in order to gauge its perceived usefulness. According to the comments, ChatGPT could be especially helpful in assisting with positive diagnosis by offering definitions and recommendations for treatments (19.9%). Additionally, it was deemed useful for creating medical reports (25.5%), writing medical letters or certifications (16.6%), and assisting with medical research (25.5%). These findings demonstrate the wide spectrum of possible uses of AI in healthcare, ranging from simpler administrative duties to more intricate clinical duties.

A significant percentage of healthcare professionals (76.7%) expected ChatGPT to have a good impact on their work in the future, compared to 25.3% who were worried about a negative impact and 7.6% who expected no change at all. Despite some reservations, these projections highlight the growing confidence regarding AI's ability to improve healthcare delivery. Participants expressed significant concerns despite the excitement. The lack of trustworthiness and ambiguity around the sources of data used by AI chatbots were the main concerns (59.9%). The potential for AI algorithms to produce harmful or inaccurate medical advice was another significant worry (38.2%). These issues highlight how crucial it is to guarantee that ChatGPT and other AI tools deliver accurate and trustworthy information, especially in the delicate field of patient care.

Another major concern for many participants was access to AI models, as 41.1% reported having trouble integrating these tools into their workplace. This obstacle implies that even though medical professionals see AI's potential benefits, infrastructure and accessibility issues still prevent wider use.

Additionally, almost half of the participants (48.9%) expressed concern about the medical-legal ramifications of using AI in patient care. The necessity to create precise rules and regulations on the use of AI in healthcare decision-making and its potential legal repercussions is probably the root of this worry.

Lastly, 68.8% of experts voiced worries regarding ChatGPT's incorporation into standard medical practice, despite the fact that many saw its promise. This reluctance can be due to worries about preserving the human element in patient care as well as uncertainties about how AI can be smoothly integrated into current clinical workflows.

Overall, the study paints a complex picture: although 76.7% of healthcare professionals are generally optimistic about ChatGPT's potential for use in medical practice, serious issues with credibility (59.9%), accessibility (41.1%), and medical-legal implications (48.9%) need to be resolved for integration to be successful.

Discussion

Tele dermatology's adoption transformed routine clinical practice, especially during the COVID-19 pandemic [5,6]. ChatGPT stands out as a flexible tool with a wide range of uses in the field of AI applications in dermatology [7]. ChatGPT uses natural language understanding to improve communication and decision-making in dermatological practice, in contrast to traditional AI systems that are primarily concerned with image analysis or predictive modelling [6,7].

Some studies on ChatGPT (OpenAI) applied to various cutaneous diseases have shown that this tool may be reliable [8]. However, regarding cutaneous neoplasms, ChatGPT's ability to provide an

accurate diagnosis is limited [9]. This is because skin cancer does not always adhere to textbook descriptors, and physical exam descriptors are often subjective [10].

A precise diagnosis is impossible due to a significant lack of information [10], hence ChatGPT (OpenAI) should be utilized to aid in the diagnosis [11]. Expanding ChatGPT (OpenAI) databases is undoubtedly required as a result of these studies in order to improve the accuracy of the differential diagnosis between benign and malignant cutaneous lesions. However, AI can only assist in the therapeutic diagnostic pathway of skin lesions, which cannot ignore the advice of a specialist dermatologist [11,12].

Conversely, ChatGPT (OpenAI) is a helpful AI technology that supports dermatologists' work by creating educational content for various patient education levels [13]. Even though ChatGPT (OpenAI) can help make dermatological information more accessible, occasionally the responses are imprecise or lacking, particularly when it comes to the therapy, and do not offer recommendations that are suitable for each individual patient [14]. Thus, ChatGPT (OpenAI) cannot take the place of a dermatological appointment, but it may be a useful initial tool for patients [13,14].

We believe that even though ChatGPT (OpenAI) has the potential to revolutionize dermatological practice, there are a number of obstacles and restrictions to consider [15]. Since ChatGPT (OpenAI) depends on access to private patient data in order to provide tailored suggestions and insights, data privacy and security are a significant problem [16]. Maintaining patient confidentiality and confidence requires strict adherence to privacy laws and protection against data breaches [15,16].

Furthermore, ChatGPT's responses may unintentionally be impacted by the inherent biases in training data [16], which could result in differences in the quality of care and diagnostic precision [17]. It is essential to address algorithmic transparency and bias mitigation techniques in order to promote inclusion and equity in AI-powered dermatology [18]. There is great potential for improving patient-centered treatment and streamlining healthcare delivery through the collaboration of ChatGPT (OpenAI) and dermatology [17,18]. In order to enable more complex and contextually relevant interactions, future research efforts might concentrate on improving ChatGPT's natural language understanding skills through ongoing learning and feedback mechanisms [19].

Additionally, to create standards of practice, validate AI algorithms, and guarantee ethical deployment in clinical settings, cooperation between AI developers, dermatologists, and regulatory agencies is crucial [20]. We can fully utilize ChatGPT and other AI technologies to transform dermatological treatment and enhance patient outcomes by encouraging interdisciplinary cooperation and creativity [20,21].

Some studies have highlighted ChatGPT's potential in dermatology, emphasizing its innovative applications and transformative possibilities [22]. However, our study provides a grounded perspective by reflecting the actual opinions of healthcare professionals [23]. While both acknowledge ChatGPT's revolutionary potential, our findings emphasize the need to address critical challenges such as accessibility (41.1%), trustworthiness (59.9%), and medical-legal implications (48.9%) for successful integration [24]. This comparison underscores the gap between

theoretical advancements and real-world applications in the medical field, stressing the importance of bridging these divides to fully realize ChatGPT's promise in dermatological practice [25].

With an emphasis on ChatGPT 3's practical advantages, constraints, and difficulties—such as accessibility, credibility, and ethical or medico-legal concerns—this study set out to investigate healthcare professionals' views, expectations, and worries about its incorporation into dermatological practice. However, the goal of Miłosz Lewandowski's summary study was to evaluate ChatGPT-4's ability to enhance clinical decision-making and dermatology knowledge by evaluating its performance on the Specialty Certificate Examination [26,27]. Analysing ChatGPT's accuracy, language-based performance disparities, and limits in managing dermatological knowledge and decision-making tasks was the goal of the study [26,27]. Miłosz Lewandowski's study also assessed how well ChatGPT-3.5 and ChatGPT-4 supported clinical decision-making and dermatology knowledge. Regularly outperforming ChatGPT-3.5, ChatGPT-4 surpassed the 60% pass rate. Additionally, ChatGPT-4 showed improved accuracy when asked clinical picture-based questions. It came to the conclusion that whereas ChatGPT-4 demonstrates encouraging advances in dermatology knowledge, AI should support clinical practice physicians' decision-making rather than take the place of it [28, 29].

Conclusion

ChatGPT (OpenAI) is at the vanguard of innovation as artificial intelligence continues to develop and influence every aspect of medicine. Its conversational and knowledge-sharing capabilities provide both patients and physicians with invaluable help. By accepting this revolutionary technology and tackling its problems, we may build a future in which artificial intelligence enhances human knowledge rather than replaces it. In the end, this collaboration may improve clinical results and the patient experience by fostering a more patient entered, effective, and inclusive approach to dermatological care.

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