

Comparing the Quality of Patient Guidance on Dermatologic Care Generated by ChatGPT vs Reddit

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PRACTICE POINTS

- ChatGPT and Reddit are free, convenient, and accessible online resources that patients may use for guidance on dermatologic care.
- Dermatologists should be aware of the potential risks associated with obtaining medical guidance from ChatGPT and Reddit and caution patients on them.
- An increasing presence of dermatologists on online public forums can increase the dissemination of reliable health care information.

Online resources that are convenient and affordable play a crucial role in mitigating health inequality and improving patient access to health care information. In this study, we aimed to assess and compare the quality of patient guidance on dermatologic care generated by ChatGPT vs Reddit. Dermatologists should be aware of the potential risks associated with patients obtaining medical advice from online sources and be prepared to caution and educate patients on how to use them effectively.

To the Editor:

Online resources that are convenient and affordable play a crucial role in mitigating health inequality and improving patient access to health care information; however, the benefits are limited by the quality of information available, as medical misinformation can lead to patients engaging in harmful practices, making dangerous decisions, and even avoiding safe and effective treatments. In this study, we aimed to assess and compare the quality of patient guidance on dermatologic care generated by ChatGPT vs Reddit based on accuracy, appropriateness, and safety. It is essential to assess the quality and reliability of online health information to support patients in making informed decisions about their health.

The emergence and advancement of artificial intelligence and large language models such as ChatGPT present a new method for patients to access health care advice. ChatGPT can engage in conversation by accessing information from existing publicly available data on the internet, including books and websites, up to the year 2023 and providing humanlike responses with context.¹ ChatGPT's access to a breadth of online evidence-based literature ensures the dissemination of quality information that is quick and without inherent bias, offering the potential to more closely align with health care professionals. ChatGPT's use in dermatology by patients has shown efficacy, with a 98.87% approval rate by dermatologists scoring its ability to recommend appropriate medication for common dermatologic conditions.² However, ChatGPT has limitations when providing health care advice and has been observed to misunderstand health care standards, lack personalization, and offer incorrect references; currently, the latest publicly available version (ChatGPT 3.5) also is unable to analyze clinical images.^{3,4}

Reddit is an online social media forum that allows users to post questions and photographs to which anyone can reply and offer advice. Patients may find comfort in online communities where they can connect with others facing similar challenges related to their diagnosis. Within these communities, the responses often share users' own lived experiences and offer support based on what has and has not worked for them. Prior research found that users intentionally seeking health information via Reddit are likely to implement the advice they receive even without verification of its credibility, suggesting a trust and receptibility to ideas offered on the platform.⁵ Furthermore, a study analyzing the dermatologic content of 17 dermatology-related subreddits that had 1000 or more subscribers found that 70.6% of posts fell under the category of "seeking

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The eTable is available in the Appendix online at <http://www.mdedge.com/cutis>.

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health/cosmetic advice.”⁶ Reddit users thus are vulnerable to receiving advice based on personal bias and exposing their health information to the public.

We hypothesized that ChatGPT would provide users with guidance that was more closely aligned with typical dermatologists’ advice due to its thorough analysis and compilation of diverse sources and recommendations available on the internet. We expected Reddit to yield recommendations of lesser quality and a diminished safety score, primarily due to the absence of credibility-vetting mechanisms and the influence of personal biases within the advice shared.

User-submitted posts to large dermatologic community Reddit forums representing a few of the most common skin conditions (r/eczema, r/acne, r/Folliculitis, r/SebDerm, r/Hidradenitis, r/keratosis, and r/Psoriasis) were retrospectively reviewed from January 2024 to March 2024. The most popular posts that did not include photographs were included in our study. Posts with photographs were excluded, as clinical images were not able to be uploaded to the publicly available ChatGPT 3.5. We collected real user questions about common skin conditions from Reddit forums and then asked ChatGPT to answer those same questions. We compared ChatGPT’s responses to the most upvoted Reddit comments to see how they matched up (eTable).

Each ChatGPT response and the top-rated Reddit comment were independently evaluated by a board-certified dermatologist (S.A.) and a dermatology resident (A.H.K.). The quality of the ChatGPT and Reddit responses were determined by scoring the accuracy, appropriateness, safety consideration, and specificity on a 5-point Likert scale (1=low, 5=high). The 2 evaluators’ mean scores for each of the 4 categories were calculated based on adequate interrater reliability, which was tested using Cohen’s κ coefficient. Related-samples sign tests were used to compare ChatGPT and Reddit responses for each of the 4 categories. Analysis was completed using SPSS statistics software version 29.0 (IBM). The

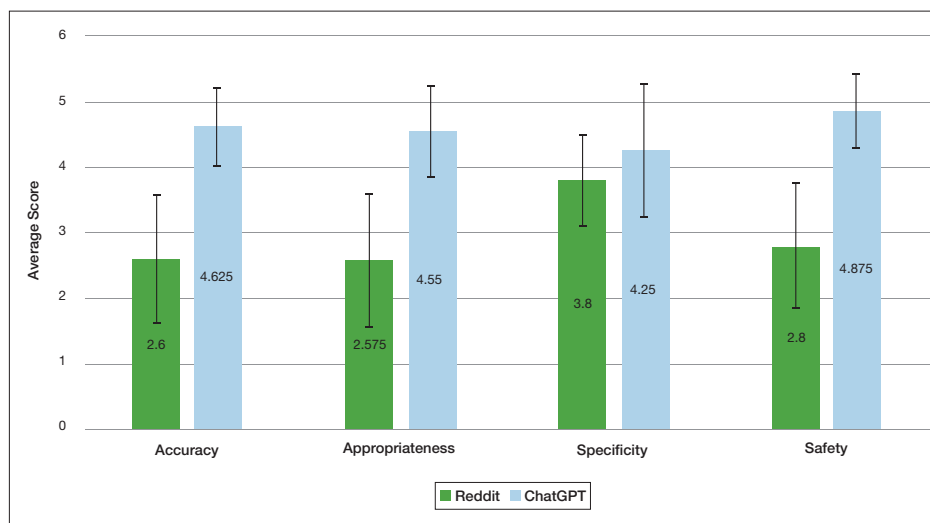
evaluators also were asked to provide qualitative feedback on the strengths and weaknesses of each response.

Our retrospective review yielded 20 total questions: 5 (25%) on atopic dermatitis, 4 (20%) on acne, 4 (20%) on hidradenitis suppurativa, 4 (20%) on psoriasis, 1 (5%) on folliculitis, 1 (5%) on keratosis pilaris, and 1 (5%) on seborrheic dermatitis. The number of posts was limited to 20 due to the extensive time required for grading each response. These 20 questions were selected from a larger pool of eligible posts based on factors such as clarity and relevance to common skin conditions. With regard to the types of questions that were asked, 6 (30%) were related to general management of a diagnosis, 5 (25%) were on treatment recommendations for symptom relief, 3 (15%) were on optimal utilization of current treatment regimens, 2 (10%) were on prescription side effects, 2 (10%) were on diagnosis presentation, 1 (5%) was on potential triggers of the diagnosis, and 1 (5%) was on natural treatment recommendations.

Mean (SD) evaluator scores for accuracy were significantly higher among ChatGPT responses compared with Reddit (4.63 [0.60] vs 2.60 [0.98]) ($P < .001$). ChatGPT responses also were significantly higher for appropriateness compared with Reddit (4.55 [0.71] vs 2.58 [1.02]) ($P < .001$) and safety consideration (4.88 [0.56] vs 2.80 [0.97]) ($P < .001$). There was no significant difference in mean specificity scores between ChatGPT and Reddit (4.25 [1.02] vs 3.80 [0.70]) ($P = .096$) (Figure).

For the Reddit responses, the weighted Cohen’s κ coefficient between the 2 evaluators was 0.200 (95% CI, $-.089$ to $.489$) for accuracy, 0.255 (95% CI, $.014$ – $.497$) for appropriateness, 0.385 (95% CI, $.176$ – $.594$) for safety consideration, and $-.024$ (95% CI, $-.177$ to $.129$) for specificity. For the ChatGPT responses, the weighted Cohen’s κ coefficient between the 2 evaluators was 0.426 (95% CI, $.122$ – $.730$) for accuracy, 0.571 (95% CI, $.294$ – $.849$) for appropriateness, 0.655 (95% CI, $.632$ – $.678$) for safety consideration, and 0.313 (95% CI, $.043$ – $.584$) for specificity.

FIGURE. Average ratings from 2 evaluators of Reddit and ChatGPT responses to 20 dermatology-related questions for accuracy, appropriateness, specificity, and safety.



The strengths and weaknesses of the responses also were qualitatively analyzed. One commonly observed strength was ChatGPT's frequent and appropriate recommendation for users to consult a dermatologist. In the case of atopic dermatitis—one of the more frequently asked-about conditions—ChatGPT consistently emphasized evidence-based strategies such as gentle skin care and moisturization, reflecting alignment with clinical guidelines. Additionally, a common weakness of both ChatGPT and Reddit responses generally was the lack of personalized guidance and comprehensive discussion of the risks and benefits of specific treatments. It also was noted that neither platform consistently explored differential diagnoses—for example, distinguishing atopic dermatitis from conditions such as allergic contact dermatitis—limiting the diagnostic depth of the responses.

ChatGPT and Reddit can provide patients with quick and accessible health information for various dermatologic concerns. The results of our study demonstrated a significantly higher level of accuracy, appropriateness, and safety of responses generated by ChatGPT compared with human-generated responses on Reddit ($P < .001$). Both platforms offered similarly specific responses to user inquiries, demonstrating ChatGPT's ability to comprehend user questions and draw from publicly available texts and Reddit users' contributing insights based on their own first-hand experiences.

Reddit's dermatologic forums often feature personal anecdotes and unique treatments described by individual users. Although specific to particular dermatologic concerns, such advice lacks an evidence-based standard of care. With the noted inherent trust of patients seeking guidance within Reddit communities, patients may follow unhelpful or potentially dangerous medical advice.⁵ A study examining 300 user-submitted posts on popular Reddit dermatology forums during the COVID-19 pandemic found that the mean scores for top-rated comments' potential to be misleading or dangerous was 2.33 out of 5 on a Likert scale (95% CI, 2.18–2.48).⁷ Dermatologists should be aware of the potential risks associated with dermatologic advice offered on Reddit and should caution patients against relying solely on this information without consulting a qualified dermatologist first.

Reddit's open-forum design provides licensed dermatologists with the opportunity to disseminate evidence-based information regarding dermatologic conditions. Currently, there is a subreddit (r/AskDocs) that allows users to post medical questions that can be answered by moderator-verified physicians. Participation from dermatologists in online communities such as this can improve the quality of dermatologic information shared online, combat misinformation, and promote safe skin care practices.

ChatGPT offers more accurate, appropriate, and safe information compared to Reddit responses, but its answers lack personalization. In a clinical setting, a

personalized treatment plan from a physician can be tailored with a comprehensive discussion of the risks and benefits. Further, clinical settings allow for diagnosis and confirmation via biopsy and meticulous history taking to ensure that the diagnosis and treatment plan are accurate. While ChatGPT may be an option for seeking basic advice on dermatologic conditions, a licensed dermatologist should always be consulted for proper medical advice. Services such as telehealth may be another option to for patients with limited access to care.

Since ChatGPT 3.5 does not support the ability to upload images, our study acknowledges a limitation regarding the inclusion of Reddit posts containing photographs. Images can improve the response quality from both Reddit users and ChatGPT. While the updated ChatGPT 4o is capable of processing images, it requires a monthly subscription fee. The free version was chosen for use in this study, as this may reflect the most likely version that patients of low socioeconomic status would utilize to access dermatologic care; however, there is potential for growth and improvement of ChatGPT's capability in providing medical advice.

This study compared the strengths and limitations of ChatGPT's and Reddit's responses to common dermatologic inquiries. ChatGPT and Reddit both show potential to be helpful sources of dermatologic health information; however, their current versions have many limitations and require caution and careful examination by patients of the guidance provided. Clinicians should be aware of these limitations when advising patients and emphasize the importance of consulting a licensed dermatologist for personalized, evidence-based care. For the best medical advice, it is always advisable to consult with a licensed dermatologist.

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APPENDIX

eTABLE. Comparison of Reddit and ChatGPT Responses to a User-Submitted Post		
User-submitted Reddit post	Top-rated Reddit response	ChatGPT response
"I get terrible eczema on my upper lip and I constantly moisturize it, but no creams or face wash seem to help. Is there anything else I can do or use to help this? It's so dry I can barely move my mouth. Please help :("	"What I used to do is wash it if it's weeping gently. And then wait for it to dry completely, damp skin in my experience doesn't help with absorption. Then put a lot of petroleum jelly on the area and on a tissue. Put the tissue on the area. I did this overnight. The tissue prevented me from rubbing it off and kept it in place also if any rubs off there's so much of it because of the double layering that it should be fine. Should [be] much more supple the next day. But with healing skin you will get larger pieces of dead skin coming off so cut them off do not pull them as you're much more likely to pull new skin as well. Hope this helps"	<p>"I'm really sorry you're going through this, eczema on the face can be so frustrating, especially around the lip area. It sounds like you're already moisturizing, which is great, but there are a few other things you can try that might help with the dryness and irritation.</p> <p>1. Gentle Cleansing: Make sure you're using a super gentle cleanser—something fragrance-free and without harsh chemicals that could irritate the skin further. Look for cleansers specifically for sensitive skin.</p> <p>2. Avoid Triggers: Sometimes, eczema can be triggered by things like certain foods, weather (especially cold or dry air), or even stress. Try to notice if any specific triggers make your eczema flare up and avoid them.</p> <p>3. Occlusive Moisturizers: After moisturizing, try adding a thick layer of something like petrolatum. These types of products create a barrier that locks in moisture and can help your skin heal. If you're worried about it being too heavy or sticky, you could try using a small amount at night while you sleep.</p> <p>4. Prescription Options: If over-the-counter products aren't cutting it, it might be worth visiting a dermatologist. They can prescribe topical steroids (for flare-ups) or a non-steroidal treatment like tacrolimus or pimecrolimus, which work well for eczema without the side effects of steroids.</p> <p>5. Humidifier: Dry indoor air (especially in winter) can make eczema worse. A humidifier can add moisture to the air in your room and keep your skin from drying out too much while you sleep.</p> <p>6. Avoid Scratching: As tempting as it might be, try not to scratch or pick at the area, even though it's hard. It can make eczema worse and can lead to scarring.</p> <p>7. Hydration: Drink plenty of water to keep your body hydrated, as dry skin can sometimes be a sign of dehydration.</p> <p>If things don't improve after trying these, definitely consider seeking professional advice, especially since it's around such a sensitive area. A dermatologist can give you the best guidance tailored to your skin.</p> <p>I hope one of these helps ease your discomfort!"</p>