To the Editor: Teledermatology is of increasing importance given its prevalence and appeal during the COVID-19 pandemic. It represents a common method for generalists to obtain the expertise of a dermatologist for the assessment of a skin lesion, bypassing the standard referral pathway. Digital images can be forwarded to dermatologists for subsequent review (“store-and-forward”), or patients and referrers can participate in real-time videoconferencing. Despite its growing popularity, there is limited evidence supporting the utility of teledermatology in the accurate diagnosis and triage of skin lesions.  

A 2018 Cochrane study on teledermatology offers a comprehensive review of evidence regarding its accuracy for the diagnosis and referrals of skin cancers. This review extracted data and assessed the quality of 22 teledermatology studies: 16 regarding the diagnostic accuracy and 6 regarding the accuracy of referrals. The findings suggested that the diagnoses of <7% malignant lesions were missed by teledermatology assessment using photographic images. The overall sensitivity was 94.9% (95% CI: 90.1%-97.4%), and the overall specificity was variable (84.3% [95% CI: 48.5%-96.8%]). Similar findings were observed for dermoscopic images and dermoscopic/photographic combinations. Teledermatology detection of invasive melanoma or atypical intraepidermal melanocytic variants demonstrated a highly variable sensitivity and specificity.

Regarding the referral accuracy, teleconsults and face-to-face assessment showed greater agreement for concerning lesions (>90% sensitivity) than for less concerning lesions (specificity 57%-100%). Remote assessment was more likely to recommend further action (eg, excision, referral, and further follow-up). Overall, heterogeneity and limited comparative data prohibited the drawing of definitive conclusions regarding the accuracy of diagnosis, ability to triage, and appropriateness of referrals to a dermatologist from teledermatology. Poor reporting among the included studies precluded the assessment of the methodologic quality. The applicability of results was limited by specialist acquisition of teledermatology images instead of general practitioners and participant recruitment from specialty clinics, which does not reflect the current clinical practice.

Additional studies are clearly needed to establish the efficacy of teledermatology. As the most common cancer in the United States and worldwide, skin cancer represents a significant disease burden. In the United States, nonmelanoma skin cancer affects 3 million annually, whereas melanoma has been projected to affect >100,000 in 2021. Early skin cancer detection enables definitive management, yet clinicians must weigh the need to detect cases in early, curable stages against the potential for unnecessary referrals and excisions.

With the recent growth in telemedicine reimbursement from the Centers for Medicare and Medicaid Services along with the expansion of artificial intelligence-based platforms such as smartphone applications, teledermatology is likely to be more frequently used for patient care. Studies published subsequent to this Cochrane review support the findings suggesting only modest accuracy of teledermatology for skin cancer diagnosis. In a retrospective cohort study of >30,000 patients, telediagnosis for malignant or benign lesions demonstrated 70% concordance with the histopathologic diagnosis versus 81% agreement between histopathologic and in-person dermatologist diagnoses. Furthermore, teledermatology precludes full-body skin examination and may miss skin cancers. The COVID-19 pandemic provides impetus for further evaluation of teledermatology to inform best practices and to ensure the timely and appropriate referral of skin cancers to specialists for the optimization of patient outcomes.

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Conflicts of interest

Dr Dellavalle is a Joint Coordinating Editor for Cochrane Skin, a dermatology Section Editor for UpToDate, a Social Media Editor for the Journal of the American Academy of Dermatology, and a Podcast Editor for the Journal of Investigative Dermatology; receives editorial stipends (Journal of the American Academy of Dermatology, Journal of Investigative Dermatology), royalties (UpToDate), and expense reimbursement from Cochrane Skin; and is a Coordinating Editor Representative on the Cochrane Council; serves as Editor in Chief of JMIR Dermatology. Dr Sivesind receives fellowship funding from the Pfizer Global Medical Grant (58858477) Dermatology Fellowship 2020 (PI: Dr Dellavalle) and serves on the Medical Advisory Board of Antedotum Inc; serves as a Section Editor for JMIR Dermatology. Authors Szeto and Matin have no conflicts of interest to declare.

REFERENCES


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