A Systematic Review of Telemedicine in Burn Care over the Last Decade

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Introduction

Technology has revolutionized medical care, allowing healthcare providers and patients to interact at a distance and access greater expertise at lower cost. Burns, which relies heavily on visual assessment and multi-disciplinary teams, may benefit from telemedicine (TM). However, uptake and further barriers to development are unclear.

Objective

To assess the use of telemedicine in burn care in the last decade through a systematic review.

Method

A PubMed search for (tele* AND burns) found 830 publications between 2010 and 2022. Paired abstract screening yielded 89 original research articles. Full-text review yielded 48, with 18 further excluded for non-English publication, no full text access, or study design. The remainder were assigned to at least 1 of 4 themes: cost-effectiveness (8), accuracy of diagnosis and triage (9), qualitative data (7), and practical challenges to implementation (8).

Result

The cost-effectiveness of TM in burn care derived from accurate triage. 5 studies involved down-triage decisions for >50% patients, avoiding unnecessary transfers. Follow-ups were effective and satisfactory. TM-supported diagnosis was more accurate for TBSA (total body surface area) compared to depth, including in dark skin and >10% TBSA, though limited in non-expert groups.

Only 4 of 9 papers included case-control assessments of accuracy. Triage decisions made via TM were generally upheld. Qualitative opinions regarding TM are mixed. The benefits of reduced costs, access to expertise, and structured clerking providing education presented with concerns around redefined responsibilities, technological inadequacy, and difficulty providing moral support. Technological difficulties presented the most significant challenge in implementing TM. Of 8 papers, 4 highlighted device or software inaccessibility creating delays or limiting image quality, while 2 noted unreliable internet connectivity. Other challenges included training required, financial reimbursement, and limited local resources.

Conclusion

TM shows promise in facilitating accurate, efficient, and satisfactory burns care. Further investigation into its quantitative impact and practical integration into effective care pathways is recommended.

Key Words
Telemedicine, burns, systematic review

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