A Literature Review on Explainable Artificial Intelligence (XAI) and Chronic Wound Management

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Introduction

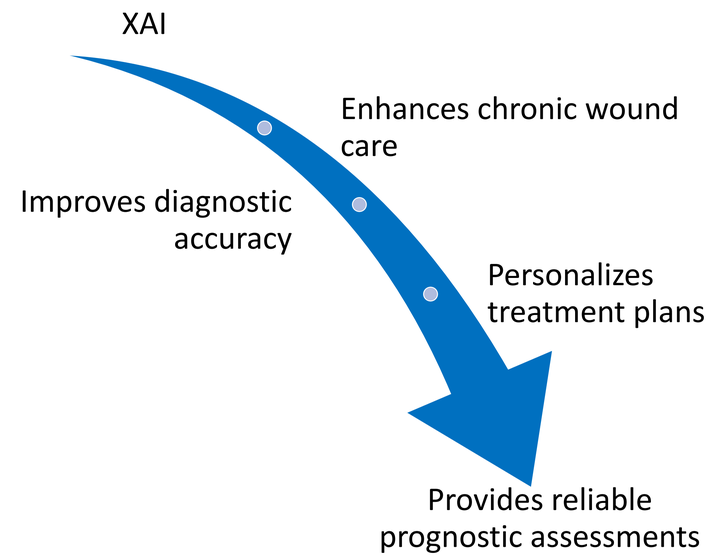
- Chronic wounds affect 7 million Americans annually and an estimated 1 to 2% of the population worldwide.
- Pressure injuries affect 2.5 million individuals globally, 15 to 20% of patients with diabetes develop diabetic foot ulcers, while venous leg ulcers account for 60% of chronic wound complications.
- Explainable Artificial Intelligence (XAI) emerges as an innovative approach in healthcare, proposing machine learning algorithms that elucidate their reasoning, thus enhancing clinician trust

Purpose

- This literature review aims to *integrate findings on XAI's role in chronic wound management*, focusing on its contribution to ***improving diagnostics, treatment, and prognostic accuracy in healing***.

Methodology & Results

Timeframe	• October to December 2023
Databases	• PubMed, Cochrane, Google Scholar, MEDLINE
Keywords	• Chronic Wounds, Explainable Artificial Intelligence, Pressure Injuries, Diabetic Foot Ulcers, Venous Leg Ulcers
Articles	• Retrieval yielded 60 articles • Articles that did not address chronic wound nor XAI were excluded • 6 articles were included in the review.



Discussion

- Applying XAI principles in chronic wound management ignites a ***potential leap forward*** in the quality of patient care.
- Through XAI, the ***rationale behind machine learning predictions*** and ***decisions can be made transparent***, ***increasing the accuracy of early detection*** and ***enabling the creation of personalized treatment plans***.
- Future research should be dedicated to the ***clinical validation*** of AI models developed under the XAI framework, ensuring they meet ***ethical standards*** for patient care and creating ***user-friendly interfaces***.

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