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REVIEW

The Role of Communication in Managing Chronic Lower Limb Wounds

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Abstract: Chronic wounds of the lower limbs present a significant global healthcare challenge, requiring interdisciplinary management and patient adherence to treatment protocols. Effective communication plays a pivotal role in ensuring optimal outcomes, fostering patient engagement, and promoting interdisciplinary collaboration. This review article explores the role of communication in managing chronic wounds of the lower limbs, highlighting its impact on patient education, adherence, early detection, emotional support, and healthcare coordination. It synthesizes the most updated literature on the subject, identifying best practices and potential areas for improvement. The review also examines technological advancements in communication, such as telemedicine and mobile health applications, that facilitate wound care management. Additionally, challenges and potential solutions related to communication barriers are discussed. This comprehensive analysis provides insights into communication strategies that can be implemented globally to enhance wound care outcomes. Further, it explores the role of culture, socioeconomic factors, and health literacy in shaping effective communication strategies. Finally, ethical and policy implications are addressed, offering a holistic understanding of the broader impact of communication on chronic wound management. Effective communication is not only essential in clinical settings but also within public health frameworks, influencing health literacy campaigns, wound prevention strategies, and patient advocacy efforts. The integration of culturally competent communication practices, consideration of social determinants of health, and the use of artificial intelligence in patient-provider interactions further shape the effectiveness of communication in chronic wound care. This review provides a foundation for future research on how evolving communication methodologies can further enhance patient outcomes and reduce disparities in wound care management worldwide.

Keywords: chronic wounds, communication, lower limbs, wound management, interdisciplinary care, patient adherence, healthcare technology, sociology

Introduction

Chronic wounds of the lower limbs, including venous leg ulcers, arterial ulcers, diabetic foot ulcers, and pressure injuries, represent a substantial burden on healthcare systems worldwide. These wounds affect millions of individuals, leading to significant morbidity, reduced quality of life, and increasing healthcare costs.[1–3] The growing prevalence of diabetes, obesity, and vascular diseases—major risk factors for chronic wounds—has further exacerbated this issue, particularly in aging populations.[4] Despite advances in wound care technologies, the management of chronic wounds remains a challenge, often requiring months or even years for complete healing. Complications such as infection, gangrene, and lower limb amputation pose significant risks, resulting in prolonged hospitalizations, increased patient suffering, and loss of productivity.[1,5] The impact is especially pronounced in vulnerable populations, including the elderly and those with limited access to healthcare services.[6]

While effective wound care depends on medical interventions such as debridement, advanced dressings, and infection control, communication plays a fundamental role in determining patient outcomes. Communication is a critical component in healthcare that influences clinical decision-making, treatment adherence, and patient engagement.[7] In chronic wound management, effective communication ensures that patients understand their treatment protocols, recognize early signs of complications, and follow medical advice accurately.[8] Research has consistently shown that poor communication

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is a leading cause of treatment non-compliance, which can lead to prolonged wound healing, preventable infections, and unnecessary hospitalizations.[9] Furthermore, communication is vital in fostering trust between patients and healthcare providers. Many individuals with chronic wounds experience frustration, anxiety, and psychological distress due to the persistent nature of their condition. Empathetic and patient-centered communication can help alleviate these concerns, improving morale and increasing adherence to treatment regimens.[6]

Beyond patient-provider interactions, communication also plays a crucial role in healthcare coordination. The management of chronic wounds often involves an interdisciplinary team that includes physicians, nurses, podiatrists, physical therapists, and dietitians.[10] Without effective communication among these professionals, delays in treatment, duplicated efforts, and inconsistent medical advice can occur, ultimately compromising patient outcomes.[11] The implementation of structured communication frameworks, such as the SBAR (Situation, Background, Assessment, Recommendation) model, has been shown to enhance interdisciplinary collaboration and reduce errors in wound care settings. Additionally, public health campaigns and patient education initiatives rely on clear communication to raise awareness about wound prevention strategies and self-care practices.[12]

Despite its importance, communication in chronic wound management faces several challenges. One of the most significant barriers is health literacy. Many patients struggle with complex medical terminology, making it difficult for them to comprehend wound care instructions and medication guidelines.[13] Limited health literacy has been directly linked to poor treatment adherence, increasing the likelihood of complications and prolonged healing times.[14,15] Additionally, cultural and language differences can further complicate effective communication. In diverse healthcare settings, patients may hold traditional healing beliefs that conflict with modern medical practices, leading to resistance or misunderstanding of recommended treatments.[16] The use of medical interpreters, culturally tailored educational materials, and multilingual resources is essential in overcoming these barriers.[17,18]

Psychological and emotional factors also play a crucial role in communication effectiveness. Patients with chronic wounds often experience depression, anxiety, and social isolation, which can hinder their ability to engage with healthcare providers.[19] Addressing these emotional challenges through compassionate communication strategies, such as active listening and motivational interviewing, has been shown to improve treatment adherence and overall well-being.[9] Additionally, the rapid advancement of digital health technologies is reshaping communication in wound care. Telemedicine, mobile health (mHealth) applications, and artificial intelligence-driven chatbots are emerging as innovative tools to enhance patient-provider interactions. Remote wound monitoring allows for real-time assessments, reducing the need for frequent hospital visits and enabling early intervention in case of complications.[20] AI-driven chatbots provide instant guidance on wound care practices, helping patients manage their conditions more effectively while alleviating the burden on healthcare professionals.[21]

In low-resource environments, the management of chronic wounds of the lower limbs presents even greater challenges due to limited healthcare infrastructure, shortage of trained personnel, and restricted access to medical technologies. In such settings, effective communication becomes not only a clinical necessity but a critical determinant of care continuity and patient survival. Communication strategies must often compensate for the absence of specialized wound care services by empowering patients and caregivers with clear, culturally adapted education on wound management, hygiene, and warning signs of complications. Moreover, public health policies play a pivotal role in addressing systemic disparities by promoting community-based care models, task-shifting to trained lay workers, and the use of mobile communication tools to extend the reach of healthcare services. Policies that support inclusive health literacy programs, the translation of medical materials into local languages, and the subsidization of basic digital health technologies can significantly enhance the effectiveness of wound care in under-resourced settings. Thus, bridging the communication gap through policy-driven interventions is essential to achieving equity in wound care outcomes globally.[5–7,10–12,15]

However, the integration of technology in communication also presents challenges. The digital divide remains a significant concern, as older adults, rural populations, and socioeconomically disadvantaged groups may have limited access to telehealth services and mobile applications.[21] Ensuring that these technologies are accessible and user-friendly is essential in maximizing their benefits. Furthermore, ethical considerations surrounding patient privacy, data security, and informed consent must be carefully addressed as digital health solutions become more prevalent.[20,21]

Given the complexities of chronic wound care and the pivotal role of communication in optimizing treatment outcomes, it is essential to examine how communication strategies can be improved to enhance patient adherence, interdisciplinary collaboration, and healthcare efficiency. This review explores the impact of communication in chronic wound management, highlighting key barriers and innovative solutions. By synthesizing current research, this study provides insights for healthcare providers, policymakers, and researchers on how effective communication can improve patient outcomes and reduce healthcare disparities. Furthermore, it evaluates the role of technological advancements in bridging communication gaps and shaping the future of wound care management. Understanding these factors is crucial in developing evidence-based strategies that enhance communication effectiveness and ultimately contribute to better patient care and health outcomes.

Materials and Methods

Data Sources

This review follows a systematic approach to analyzing literature on communication in chronic wound management. Studies from peer-reviewed journals, clinical guidelines, and meta-analyses were examined to understand the impact of communication strategies on wound care outcomes. The research focused on the most updated literature with an emphasis on patient-centered communication, interdisciplinary coordination, and technological advancements. Data sources included Scopus, Pub-Med, and WOS, tailored to the objectives of a narrative review. As an additional source Google Scholar was included.

Search Strategy

Boolean operators AND was employed to refine the search. The keywords used in the search were: "communication in wound care", "patient adherence in chronic wound*" "telemedicine" AND "wound management"; "interdisciplinary communication in healthcare"; "chronic wounds" AND "communication"; "chronic wounds" AND "health communication". The symbol * reperesents any number of characters, even zero. The specific expression was applied to the title, abstract, and keyword fields. The articles included in the search were published without time limits. The search was conducted from 1st December 2024 to 3rd April 2025.

Screening and Selection

Articles were then screened based on the inclusion and exclusion criteria summarized in Table 1. To qualify for inclusion, sources had to be published in peer-reviewed journals or academic books, written in English, and specifically address the relationship between communication and the management of chronic wounds of the lower limbs. No temporal restrictions were applied, allowing for the integration of both foundational and recent insights. Conversely, records were excluded if they were published in non-peer-reviewed venues (eg, conference proceedings, newsletters), written in languages other than English, or focused on unrelated topics such as general wound care without a specific emphasis on communication. Following the initial title and abstract screening, full texts were reviewed to confirm relevance and alignment with the research objectives. This iterative process ensured that the final selection represented a balanced and

Table 1 Inclusion–Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Articles published in peer-reviewed journals, Books, etc.	Articles published in other sources (eg, conferences)
Articles published without time limits	None
Articles focusing on the relation between Chronic Wounds of Lower Limbs and the communication	Other topics
English language	Other languages

thematically coherent body of evidence, suitable for a narrative synthesis aimed at highlighting communication strategies, challenges, and innovations in chronic wound care.

Results

After articles screening and selection procedure showed in Figure 1, our findings are represented by 42 articles and the general characteristics of the included studies are summarized in Table 2.

Temporal Extension of the Included Studies

Among the set of articles included in the present review, the earliest publication dates to 2001. After a five-year gap, one study was published in 2006, followed by another in 2010. A modest increase occurred in 2012 with three studies published. From 2014 to 2016, publication activity remained relatively stable, with one to two studies per year. A slight resurgence appeared in 2018 and 2019, the latter marking a small peak with four publications. Between 2020 and 2022,

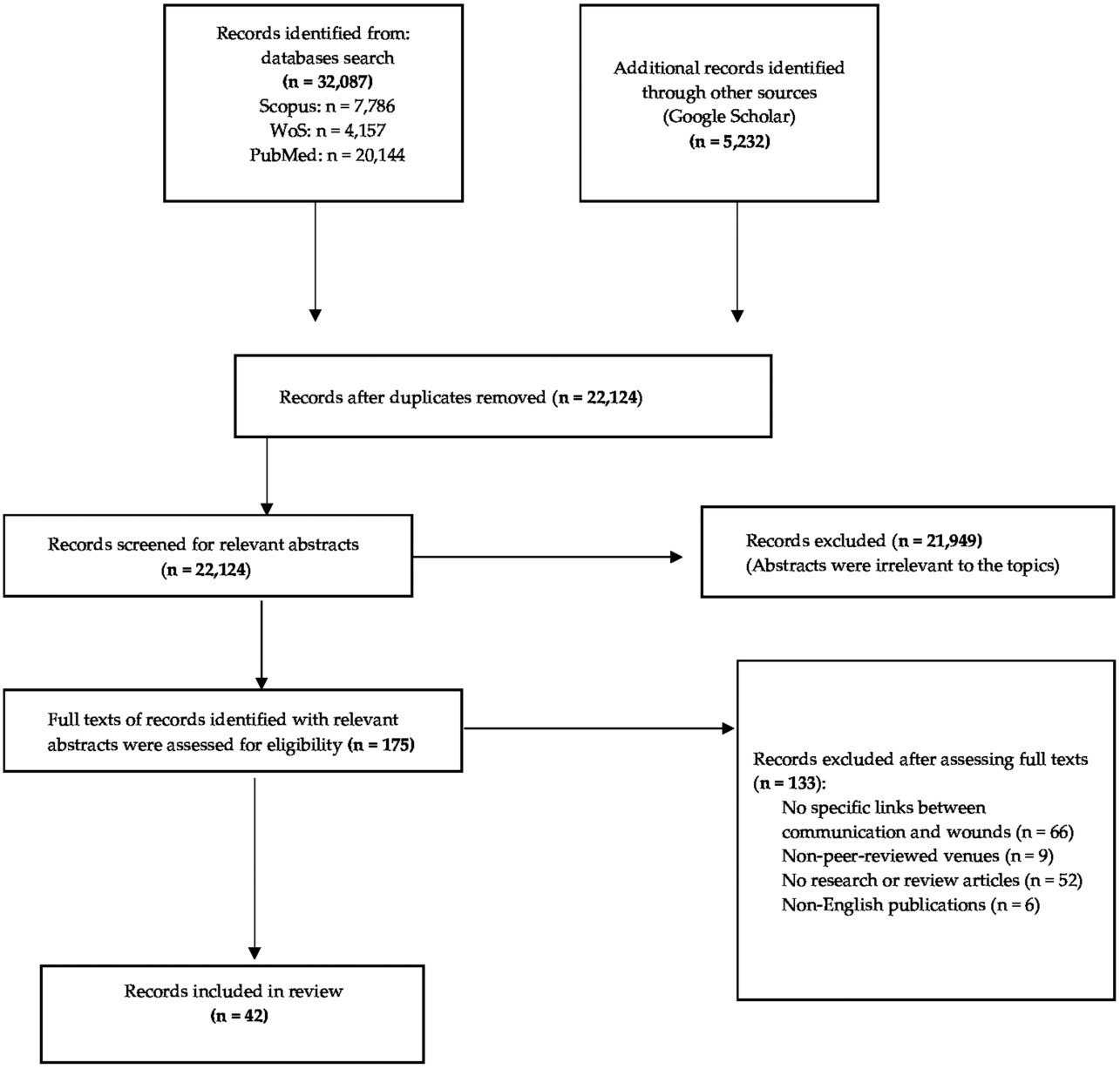

Figure 1 Flow diagram of included articles.

Table 2 Characteristics of Included Articles

Authors	Article Title	Country	Publication Year	Article Type	Aim of the Study
Beitz[22]	Overcoming barriers to quality wound care: a systems perspective	United States	2001	Review	To analyze contemporary salient barriers to quality chronic wound care from individual, group, and societal level systems perspectives.
Katz et al[23]	Use of pictorial aids in medication instructions: A review of the literature	United States	2006	Review	To review the effects of pictorial aids in medication instructions on patients' recall, comprehension, and adherence, and to assess the effectiveness of combining pictorial, textual, and oral communication.
Cordova et al[24]	Addressing diversity and moving toward equity in hospital care.	United States	2010	Review	To provide perspectives on the current state of diversity in hospitals, highlight examples from pediatric settings, and explore future directions, emphasizing the role of healthcare leaders in fostering diversity and equity through strategic planning and resource allocation.
Woo[25]	Exploring the Effects of Pain and Stress on Wound Healing	United States	2012	Review	To review the relationships among pain, stress, and wound healing.
Woo[26]	Chronic wound-associated pain, psychological stress, and wound healing	United States	2012	Review	To review the relationships among pain, stress, and wound healing.
Chittoria[27]	Telemedicine for wound management	India	2012	Review	To examine the challenges in chronic wound care and highlight the role of telemedicine—particularly digital imaging and remote communication—in improving wound management, streamlining specialist referrals, and addressing systemic burdens on healthcare providers and patients.
Nunan et al[28]	Clinical challenges of chronic wounds: searching for an optimal animal model to recapitulate their complexity	United Kingdom	2014	Article	To evaluate current animal models of chronic wounds, highlight their limitations in replicating clinical features, and discuss how these models can be optimized to better investigate chronic wound pathology and develop effective therapies.
Green et al[29]	The impact of chronic venous leg ulcers: a systematic review	United Kingdom	2014	Review	To review the literature on factors affecting the quality of life in patients with chronic venous leg ulcers, highlighting physical, psychological, social, and care-related impacts.
Margolis et al[30]	Health literacy and diabetic foot ulcer healing	United States	2015	Article	To investigate the relationship between patients' health literacy and their decision-making in diabetic foot ulcer management, including study participation and wound prognosis.

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Table 2 (Continued).

Authors	Article Title	Country	Publication Year	Article Type	Aim of the Study
Aldaz et al[31]	Hands-Free Image Capture, Data Tagging and Transfer Using Google Glass: A Pilot Study for Improved Wound Care Management	United States	2015	Article	To develop and evaluate the SnapCap System, a hands-free digital photography tool for chronic wound documentation using Google Glass, and to compare its usability and performance to existing smartphone-based solutions like Epic Haiku in a clinical pilot study.
Ha et al[32]	The effectiveness of the teach-back method on adherence and self-management in health education for people with chronic disease: a systematic review	Australia	2016	Review	To examine the evidence on using the teach-back method in health education programs for improving adherence and self-management of people with chronic disease.
Bugeja et al[33]	Barriers and enablers to patient recruitment for randomised controlled trials on treatment of chronic wounds: A systematic review	Australia	2018	Review	To review the barriers to patient recruitment in randomized controlled trials on chronic wound treatments, and to propose strategies—such as better integration of research and clinical practice—to improve recruitment quality and reporting.
Kirkland-Kyhn et al[34]	Teaching Wound Care to Family Caregivers	United States	2018	Article	To support nurses in educating family caregivers by providing clear, practical guidance and resources—such as articles and instructional videos—for managing wound care and other complex home health tasks.
Durrant et al[35]	Health literacy in pressure injury: Findings from a mixed-methods study of community-based patients and carers	United Kingdom	2019	Article	To explore the health literacy of community-based patients with pressure injuries and their carers, and to critically assess the quality and effectiveness of available patient education resources in supporting understanding and engagement.
Kuhnke et al[5]	Health professionals' perspectives on delivering patient-focused wound management: a qualitative study	United States	2019	Article	To explore health professionals' perspectives on the barriers to and solutions for delivering patient-focused, evidence-based wound care, with an emphasis on education, teamwork, and systemic support for improved wound management outcomes.
Bitner et al[36]	Standardized care protocol and modifications to electronic medical records to facilitate venous ulcer healing	United States	2019	Article	To describe the creation of an electronic medical record (EMR) protocol to track venous ulcer size, to standardize dressings, to address related health issues, and to improve education of the patient.
Kuusisto et al[37]	Contents of Informational and Management Continuity of Care	Finland	2019	Review	To provide an overview of the dimensions and descriptions of informational and management continuity of care.
Gethin et al[38]	Evidence for person-centred care in chronic wound care: A systematic review and recommendations for practice	Australia	2020	Review	To review the evidence on the application of person-centered care in chronic wound management and to provide recommendations for clinical practice and future research.

Squitieri et al[39]	Patient-reported experience measures are essential to improving quality of care for chronic wounds: An international qualitative study	United States	2020	Article	To explore patient experiences and healthcare processes that influence quality of care among individuals with chronic wounds, in order to inform the development of patient-reported experience measures (PREMs) that can enhance patient-centred care and guide quality improvement efforts.
Zoppo et al[40]	AI technology for remote clinical assessment and monitoring	Italy	2020	Article	To test the reliability and precision of the AI medical device and its ability to aid health professionals in clinically evaluating wounds as efficiently remotely as at the bedside.
Callender et al[41]	Patient-Centered Education in Wound Management: Improving Outcomes and Adherence	United States	2021	Article	To highlight the role of patient-centered education and behavioral theories in supporting self-management of chronic wounds, and to propose strategies—such as motivational interviewing—to improve patient adherence and healing outcomes.
Klein et al[42]	Social participation of people with chronic wounds: A systematic review	Germany	2021	Review	To analyse social participation in patients with chronic wounds and to compare results across different wound types.
Gerchow et al[43]	Language barriers between nurses and patients: A scoping review	United States	2021	Review	To explore how research has examined the nursing workforce's experiences and strategies in managing language barriers in healthcare settings, and to identify gaps for future investigation.
Hunter et al[44]	Interprofessional Communication—A call for more education to Ensure Cultural Competency in the Context of Traditional, complementary, and Integrative Medicine.	Australia	2021	Review	To emphasise the importance of respectful, culturally competent interprofessional communication that supports patient care; to critique the political marginalisation of traditional, complementary, and integrative medicine (TCIM); and to advocate for educational initiatives that foster inclusive collaboration between conventional and TCIM practitioners.
Lucas et al[45]	Wound Size Imaging: Ready for Smart Assessment and Monitoring	France	2021	Article	STo introduce and evaluate emerging imaging devices and image processing technologies for wound size assessment and monitoring, highlighting the potential of multimodal imaging and machine learning to enhance wound care through improved accuracy, usability, and integration with clinical workflows.
Huang et al[46]	Efficacy of Telemedicine for Patients with Chronic Wounds: A Meta-Analysis of Randomized Controlled Trials	China	2021	Article	To assess the efficacy of telemedicine in improving wound healing outcomes and reducing adverse events in patients with chronic wounds through a systematic review and meta-analysis of randomized controlled trials.
Yin et al[47]	Role of Artificial Intelligence Applications in Real-Life Clinical Practice: Systematic Review	Singapore	2021	Review	To systematically review AI applications that have been implemented in real-life clinical practice.

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Table 2 (Continued).

Authors	Article Title	Country	Publication Year	Article Type	Aim of the Study
Hegde[48]	Overcoming Health Literacy Barriers by Developing Standardized Surgical Discharge Instructions	United States	2022	Article	To evaluate and improve the readability, completeness, and language accessibility of arteriovenous fistula/graft discharge instruction templates using quality improvement methods, and to assess their impact on usage and inappropriate bouncebacks post-implementation.
Selvakumar et al[49]	Relationship between Treatment Burden, Health Literacy, and Medication Adherence in Older Adults Coping with Multiple Chronic Conditions	Malaysia	2023	Article	To investigate the impact of treatment burden and health literacy on medication adherence among older adults with multiple chronic conditions, and to examine the moderating effects of demographic and clinical factors.
Rayate et al[50]	Current scenario of traditional medicines in management of diabetic foot ulcers: A review	India	2023	Review	To review and analyze existing literature on the use of topical traditional medicines in the management of diabetic foot ulcers (DFU), and to explore the potential of integrating traditional and modern therapies to improve healing outcomes, reduce costs, and enhance patient acceptance.
Dabas et al[51]	Application of Artificial Intelligence Methodologies to Chronic Wound Care and Management: A Scoping Review	Israel	2023	Review	To provide a comprehensive overview of artificial intelligence (AI) methodologies and assess their potential applications in the diagnosis and management of hard-to-heal wounds, in response to increasing care demands driven by aging populations and chronic diseases.
Khawaja et al[52]	Your robot therapist is not your therapist: understanding the role of AI-powered mental health chatbots.	United States	2023	Review	To explore the various ways in which TM can occur particularly through inaccurate marketing of these chatbots, forming a digital therapeutic alliance with them, receiving harmful advice due to bias in the design and algorithm, and the chatbots inability to foster autonomy with patients.
Janke et al[53]	How does a chronic wound change a patient's social life? A European survey on social support and social participation.	Germany	2023	Article	To investigate quantitatively social support of patients with chronic wounds, its association with health-related quality of life as well as qualitatively changes in social participation of these patients
Huang et al[54]	Effects of home-based chronic wound care training for patients and caregivers: A systematic review.	China	2023	Review	To review and synthesise the evidence of the interventions of patients' and informal caregivers' engagement in managing chronic wounds at home.
Lee et al[55]	Remote assessment and monitoring with advanced wound therapy to optimise clinical outcomes, access and resources	United States	2024	Article	To evaluate the effectiveness of a shared care model using a remote digital wound care platform combined with continuous topical oxygen therapy (cTOT) in improving access, engagement, and healing outcomes for rural patients with hard-to-heal diabetic wounds.

Kivity et al[56]	Optimising wound monitoring: Can digital tools improve healing outcomes and clinic efficiency	Israel	2024	Article	To compare the effects of a digital wound tracking application versus traditional manual nursing assessments on wound healing time and nursing resource use, and to evaluate its impact in patients with comorbid conditions.
Galmarini et al[57]	The effectiveness of visual-based interventions on health literacy in health care: a systematic review and meta-analysis	Switzerland	2024	Review	To determine the effectiveness of visual-based interventions—especially videos—in improving health literacy and comprehension of health-related materials in adult clinical populations through a systematic review and meta-analysis.
Bai et al[58]	Digital Health Interventions for Chronic Wound Management: A Systematic Review and Meta-Analysis.	China	2024	Review	To evaluate the effectiveness of digital health interventions (DHIs) on wound healing outcomes in adults with chronic wounds, and to examine differences in outcomes across various types of DHIs.
Pinto et al[12]	Using 'Situation-Background-Assessment-Recommendation' Method in Palliative Care to Enhance Handover Quality and Nursing Practice: A Mix Method Study	Italy	2025	Article	To evaluate the impact of using 'Situation-Background-Assessment-Recommendation' method ('SBAR') in a palliative care setting.
Probst et al[59]	Healing beyond the surface: Empathy's role in chronic wound care a qualitative study	Australia	2025	Article	To investigate health professionals' perceptions of the impact of empathy on healing outcomes, patient satisfaction and delivery of wound care.
Osmancevic et al[60]	The effectiveness of cultural competence interventions in nursing: A systematic review and meta-analysis	Austria	2025	Review	To assess the effectiveness of cultural competence interventions on nurses' cultural competence levels and on patient-related outcomes through a systematic review and meta-analysis.
Howell et al[61]	Ethnicity, Skin Tones, and Cultural Considerations in Wound Care: Challenges and Solutions	United States	2025	Article	To emphasize the need for regulations that address ethnic and cultural diversity in wound care, highlighting the importance of cultural competence training, inclusive education, and the equitable application of technological innovations across diverse skin tones to improve care quality and outcomes.

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the trend showed fluctuation: three studies in 2020, a notable rise to seven in 2021, and a drop to just one in 2022. The year 2023 witnessed another peak with six studies published. This level of output remained high in 2024 and 2025, with four studies in each year. Figure 2 presents the full distribution of publication years across the included studies.

Journal Distribution of the Included Studies

The 42 articles included in this review were published across a broad spectrum of scientific journals, highlighting the interdisciplinary nature of the research. The most frequent outlet was the *Journal of Wound Care*, which accounted for five publications. This was followed by the *International Wound Journal*, with a total of five articles published across separate entries. Other notable journals included *Advances in Wound Care* with three articles, and both the *Journal of Clinical Nursing* and the *Journal of Medical Internet Research*, which contributed two publications each. Additional journals contributed one article each, spanning fields such as digital health, surgery, nursing, pharmacy, plastic surgery, health services, and patient education. This diversity of sources underscores the wide-ranging interest and relevance of the topic across disciplines including wound care, nursing, health technology, and clinical medicine. Figure 3 illustrates the distribution of included studies by journal.

Research Areas of the Included Studies

Among the 42 studies analyzed, the most represented research area was Dermatology, with 15 articles, followed by Nursing with 13 articles, and Surgery with 8 articles. These three fields clearly dominate the research focus. The remaining research areas each contributed between 1 and 2 articles, as illustrated in Figure 4.

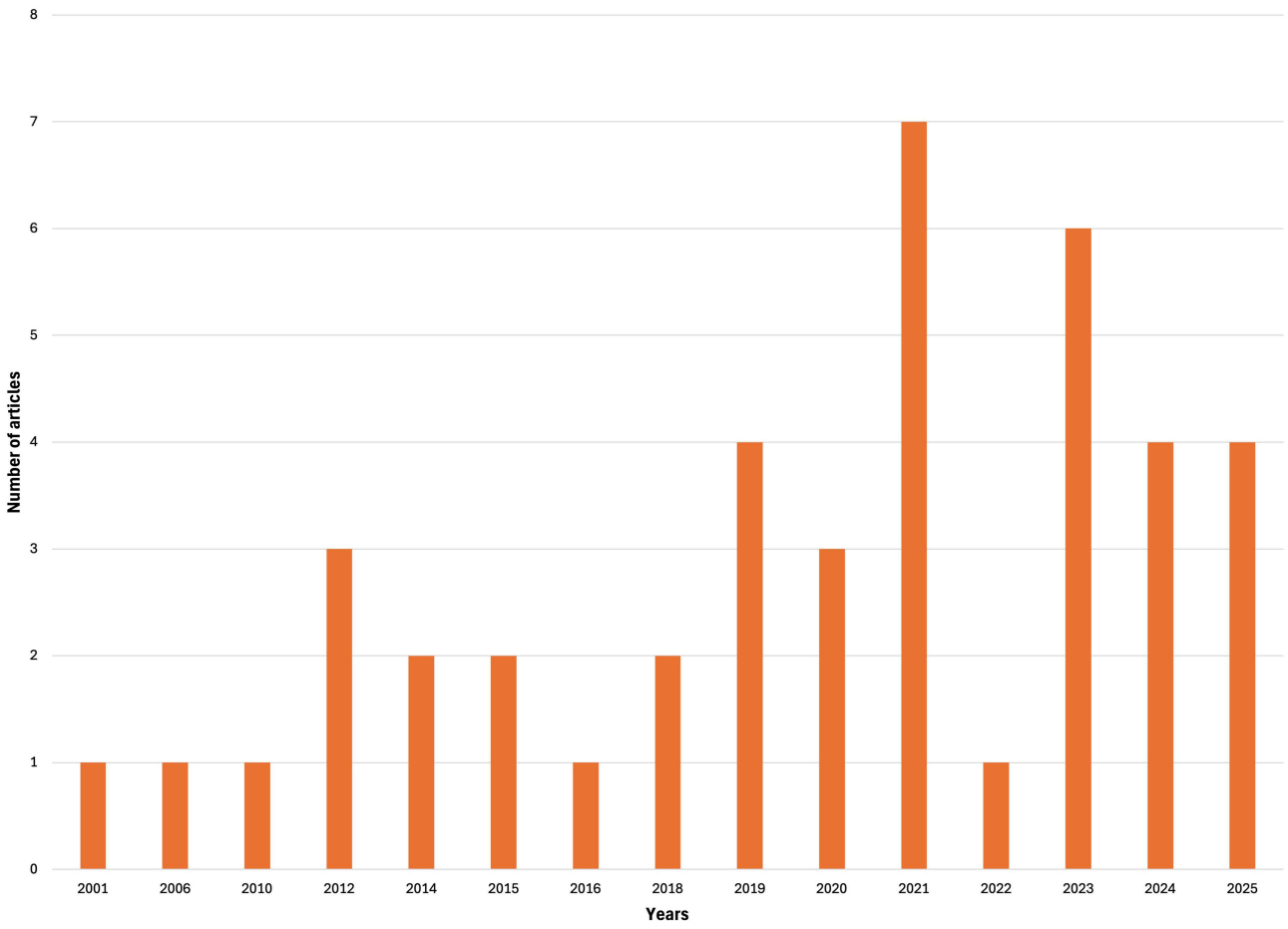

Figure 2 Publication year of the included studies.

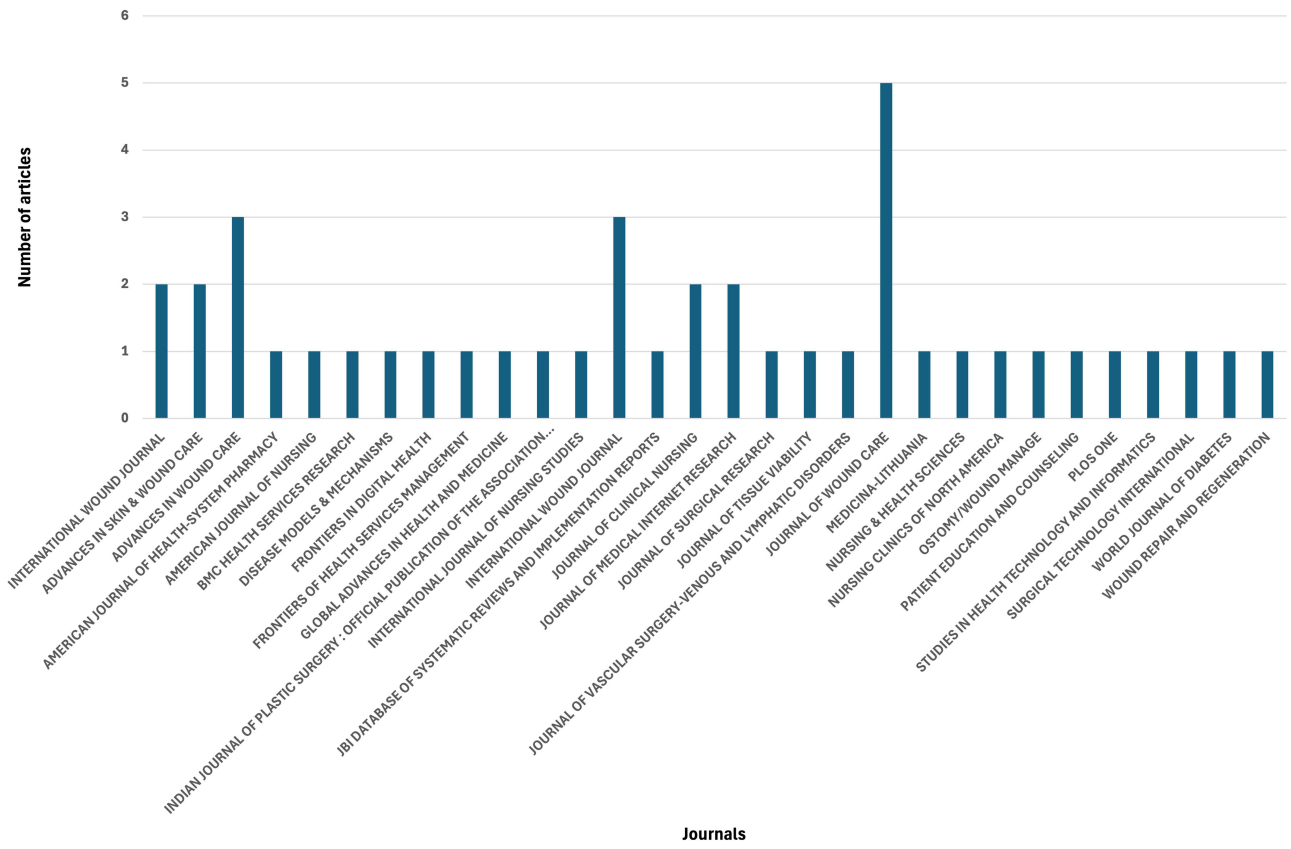

Figure 3 Journal distribution of the included studies.

Geospatial Distribution of the Included Studies

A geospatial analysis of the included papers showed that most studies were conducted in the United States (17 articles) and Australia (5 articles), followed by the United Kingdom (3 articles) and China (3 articles). Further contributions came from countries such as Germany, India, Israel, and Italy, each with 2 articles. The remaining countries contributed with 1 article each, as illustrated in Figure 5.

The Importance of Effective Communication in Wound Care

Effective communication is a cornerstone of chronic wound management, influencing various aspects of patient care, treatment adherence, and overall healing outcomes. Chronic wounds, such as venous leg ulcers, diabetic foot ulcers, arterial ulcers, and pressure injuries, require continuous and coordinated care involving multiple healthcare professionals. Without structured and patient-centered communication, adherence to treatment plans can be compromised, leading to delayed healing, increased risk of infection, and higher rates of hospital readmission.[25,28]

Communication as a Tool for Enhancing Patient Adherence

One of the most significant challenges in chronic wound management is ensuring that patients adhere to prescribed treatments, including wound dressing changes, medication regimens, and lifestyle modifications.[29] Effective communication is crucial in this regard, as it allows healthcare providers to educate patients about their condition, clarify treatment instructions, and emphasize the importance of adherence. Studies indicate that patient education, when delivered in a structured, engaging, and culturally sensitive manner, improves adherence to wound care protocols and accelerates healing. Additionally, patients who receive clear verbal and written instructions are more likely to comply with medical advice, reducing the risk of complications and hospital visits.[41] Healthcare professionals must consider patient literacy levels when communicating wound care instructions. Research shows that individuals with limited health

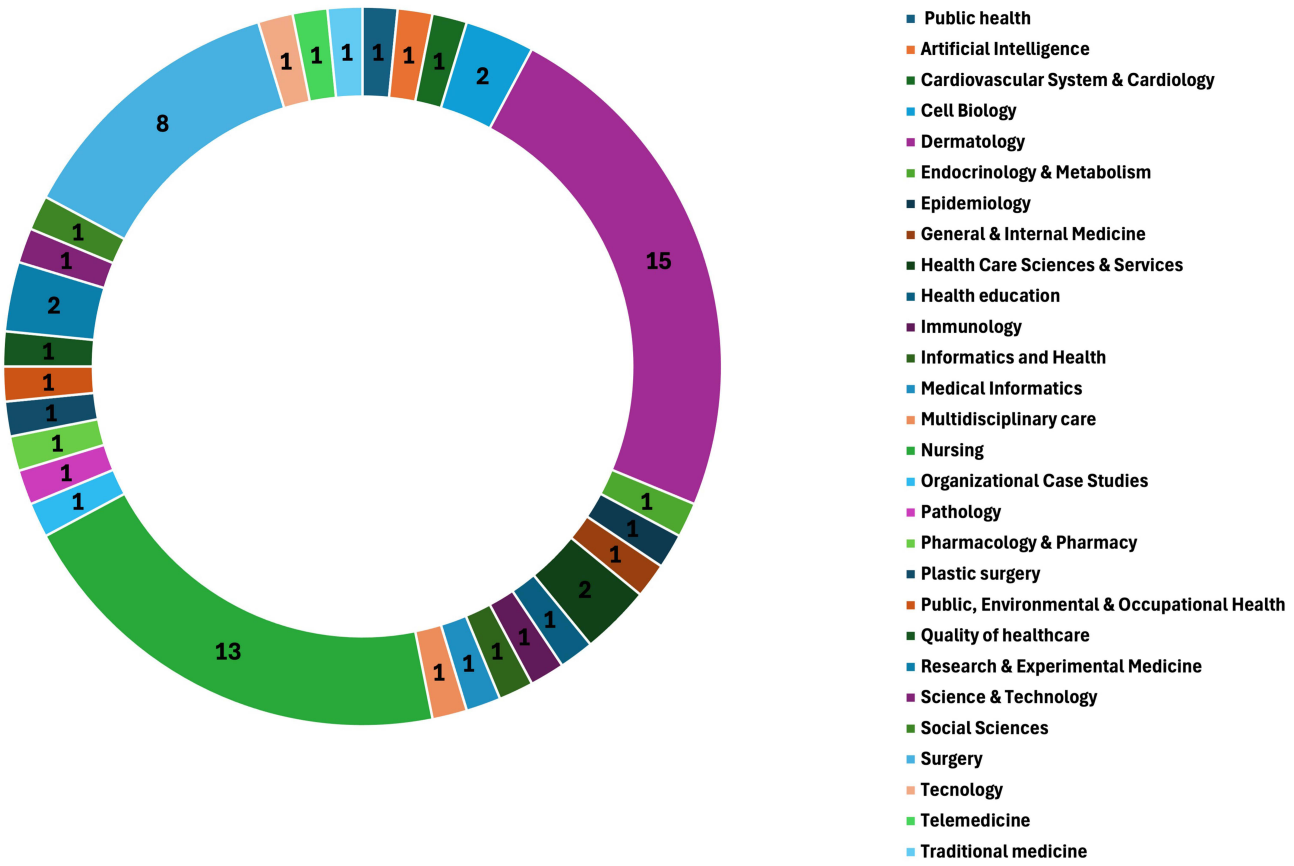

Figure 4 Research areas of the included studies.

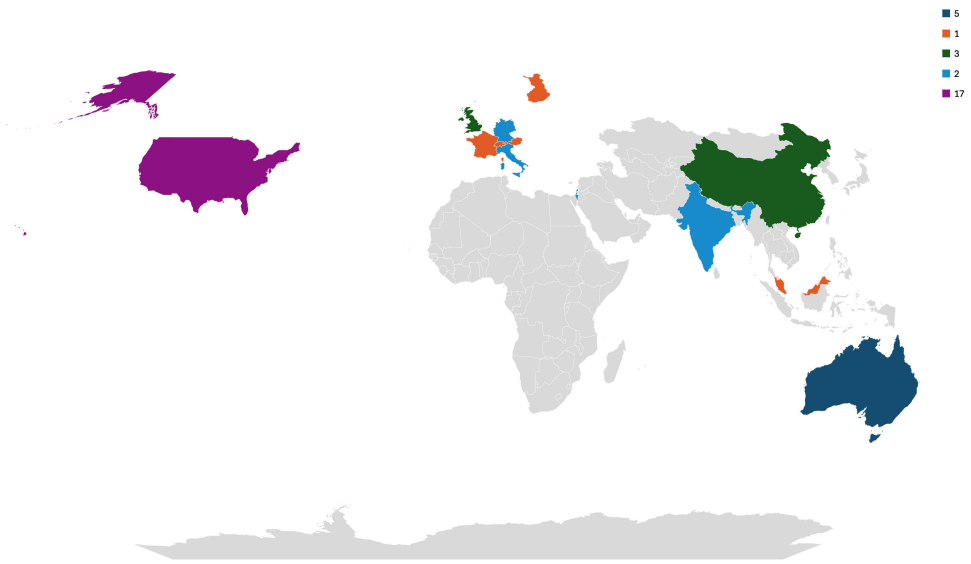

Figure 5 Geospatial distribution of papers included.

literacy struggle to understand medical terminology and complex treatment guidelines, leading to improper wound care practices.[35] Simple language, visual aids, and interactive communication techniques—such as teach-back methods, where patients repeat instructions in their own words—enhance comprehension and promote adherence.[32]

The Role of Emotional Support in Wound Management

Chronic wounds often cause significant emotional distress for patients, leading to frustration, anxiety, and depression.[26] The persistent nature of these wounds, coupled with social stigma and limited mobility, can contribute to feelings of helplessness and decreased motivation to adhere to treatment plans. In such cases, empathetic communication from healthcare providers plays a critical role in improving patient morale and engagement in self-care. Studies highlight that patient-provider interactions characterized by compassion, active listening, and psychological support contribute to better health outcomes.[6] Motivational interviewing (MI) techniques, which involve open-ended questions, reflective listening, and collaborative goal-setting, have been particularly effective in chronic wound management. These strategies empower patients, fostering a sense of control over their condition and encouraging proactive participation in their care.[59]

Communication Barriers in Chronic Wound Management

Although communication is a cornerstone of effective chronic wound management, numerous barriers continue to impede its successful implementation in clinical practice. These obstacles may arise from both patient-related and systemic factors, ultimately compromising the quality of care and contributing to suboptimal clinical outcomes.[5,22] One of the most significant challenges is low health literacy, which affects a patient's ability to comprehend medical information, follow treatment instructions, and make informed decisions regarding their care. Individuals with limited health literacy may struggle to understand wound etiology, recognize signs of infection, or adhere to complex dressing protocols, thereby increasing the risk of delayed healing or wound deterioration. Compounding this issue are language differences between patients and healthcare providers, which can lead to misinterpretation of medical instructions or an inability to communicate symptoms effectively. These language barriers are particularly pronounced in multicultural settings, where access to professional medical interpreters may be limited or inconsistent.[30,33]

Cultural beliefs and values also play a critical role in shaping patient perceptions of illness and treatment. In some cultures, wounds may be viewed as a sign of spiritual imbalance, or traditional remedies may be favored over biomedical interventions. When healthcare providers fail to acknowledge or respectfully address these beliefs, it can result in reduced patient engagement, mistrust, and non-adherence to prescribed treatment regimens.[38]

Furthermore, disparities in access to digital communication tools—such as telemedicine platforms, patient portals, or mHealth applications—can exacerbate communication challenges, particularly among older adults, individuals with limited technological literacy, or those living in resource-constrained settings. The digital divide restricts opportunities for timely follow-up, remote monitoring, and educational outreach, thereby limiting continuity of care and coordinated wound management.[55]

Addressing these barriers requires a multifaceted approach that includes the use of plain language in patient education, culturally tailored communication strategies, access to professional interpreters, and initiatives to bridge the digital divide. By recognizing and mitigating these challenges, healthcare providers can enhance communication effectiveness, promote patient engagement, and improve outcomes in chronic wound care.[42]

Health Literacy Challenges

Health literacy plays a foundational role in the effective management of chronic wounds, yet it remains a pervasive challenge across diverse patient populations. Defined as the ability to access, understand, and utilize health information to make appropriate healthcare decisions, health literacy is particularly critical for conditions requiring complex self-management, such as chronic wounds. Evidence suggests that a substantial proportion of patients with chronic wounds exhibit limited health literacy, impairing their ability to comprehend clinical instructions, implement wound care protocols correctly, and recognize the early signs of complications.[13,14] This limitation often leads to adverse outcomes, including delayed wound healing, increased risk of infection, and more frequent hospital admissions.[48]

Patients with low health literacy may misinterpret prescription labels, inadequately apply or change dressings, or be unable to distinguish between normal wound healing and pathological changes such as increased exudate, odor, or tissue necrosis. Inadequate understanding can also result in non-adherence to follow-up appointments, misuse of prescribed medications, and a lack of engagement in preventive strategies, further complicating wound care and recovery. These

challenges are compounded by comorbidities often present in individuals with chronic wounds, such as diabetes mellitus or peripheral vascular disease, which themselves require nuanced management and patient education.[49]

Addressing health literacy barriers necessitates a deliberate, multifaceted approach that emphasizes clarity, repetition, and patient empowerment. Healthcare providers must tailor their communication methods to accommodate individual patient needs, taking into account language proficiency, cognitive ability, and cultural context. The use of plain language, free of medical jargon, is essential for ensuring comprehension. Demonstration-based learning—where caregivers and patients are shown how to clean, dress, and monitor their wounds—followed by return demonstrations, helps to confirm understanding and build patient confidence.[34]

Culturally and linguistically appropriate educational materials also play a critical role in enhancing patient comprehension. These resources should reflect the values, beliefs, and language preferences of the target population, thereby fostering trust and increasing receptiveness to medical advice. Moreover, healthcare systems should avoid relying solely on written materials, particularly for patients with limited literacy skills, and instead utilize visual aids, pictorial instructions, and verbal reinforcement.[23]

Digital health innovations offer additional opportunities to bridge literacy gaps and support patient self-management. Instructional videos, interactive mobile applications, and user-friendly patient portals can provide real-time wound care guidance in formats that are more accessible than traditional text-based resources. These tools can incorporate audio narration, step-by-step visual instructions, and built-in reminders to promote adherence and reinforce learning. When integrated into clinical workflows, such technologies not only extend education beyond the clinical encounter but also allow for remote monitoring and individualized feedback. Overcoming health literacy challenges in chronic wound management requires a proactive, patient-centered approach that combines simplified communication, hands-on education, culturally competent materials, and digital support tools. By prioritizing strategies that enhance understanding and self-efficacy, healthcare professionals can significantly improve adherence to wound care regimens, reduce complication rates, and ultimately promote better health outcomes for patients with limited health literacy.[56]

Cultural and Language Barriers

Cultural beliefs and language differences represent significant barriers to effective communication and adherence in chronic wound management. In increasingly multicultural healthcare settings, patients may hold traditional or culturally rooted perceptions of health, illness, and healing that diverge from biomedical models. These beliefs can influence their acceptance of wound care interventions, adherence to clinical recommendations, and interactions with healthcare providers. For instance, some patients may favor traditional remedies, such as herbal poultices or spiritual healing rituals, over evidence-based treatments such as antimicrobial dressings or debridement procedures. Others may avoid disclosing or exposing wounds due to cultural taboos associated with body image, modesty, or stigma, which can delay diagnosis and exacerbate wound complications.[50]

Language barriers further compound these challenges by impeding clear, accurate communication between patients and healthcare professionals. When patients are unable to fully comprehend medical explanations, treatment plans, or self-care instructions, the risk of misinterpretation, medication errors, and treatment non-adherence increases. Empirical evidence has demonstrated that limited language concordance between providers and patients is associated with lower patient satisfaction, reduced trust in the healthcare system, and poorer clinical outcomes.[43]

Addressing these barriers requires a multifaceted, culturally competent approach. The use of professionally trained medical interpreters—rather than relying on family members or ad hoc translation—ensures accurate communication and preserves patient confidentiality. In parallel, the provision of multilingual educational materials tailored to the patient's literacy level and cultural background facilitates understanding and reinforces key messages. Visual aids and pictorial instructions may be particularly beneficial for patients with limited proficiency in the dominant language.[57]

Cultural competence among healthcare providers is equally critical. This involves not only recognizing and respecting cultural diversity but also actively integrating cultural considerations into clinical decision-making and communication.[60,61] Providers must strive to develop cultural humility—an ongoing process of self-reflection and learning—when engaging with patients from different backgrounds. For example, a culturally competent provider might explore a patient's use of traditional

remedies, seek to understand the rationale behind these practices, and then collaboratively negotiate a care plan that respects cultural values while ensuring safety and efficacy.[44]

Organizational strategies can further enhance culturally and linguistically inclusive care. These may include staff training programs on cultural sensitivity, the recruitment of bilingual healthcare workers, and the implementation of institutional policies that promote equitable care delivery for linguistically diverse populations. Involving community leaders and cultural mediators in health promotion activities can also build trust and foster acceptance of modern wound care practices within traditionally underserved communities.[24]

Cultural and language barriers present critical challenges in the communication and management of chronic wounds. Overcoming these obstacles necessitates a proactive commitment to cultural competence, linguistic accessibility, and patient-centered engagement. By fostering mutual understanding and respect, healthcare providers can improve adherence, reduce disparities, and enhance the quality of wound care across diverse patient populations.[39]

Technological Innovations in Wound Care Communication

The rapid evolution of digital health technologies has significantly transformed communication paradigms in chronic wound management, enabling more efficient, timely, and patient-centered care. Innovations such as telemedicine, mHealth applications, artificial intelligence (AI)-driven chatbots, and remote wound monitoring platforms are reshaping how healthcare providers engage with patients, collaborate with interdisciplinary teams, and manage complex wound care regimens.[45]

Telemedicine has emerged as a critical tool in improving access to wound care, particularly for patients in rural or underserved areas. Through virtual consultations, wound care specialists can assess the wound's status, provide treatment recommendations, and adjust care plans without requiring the patient to travel to a clinical facility. This modality not only reduces geographical and logistical barriers but also facilitates more frequent monitoring, enabling earlier detection of complications and timely interventions. The use of high-resolution imaging and secure video conferencing allows for detailed wound assessments, while electronic documentation supports continuity of care across providers.[27]

mHealth applications further enhance communication by offering interactive platforms that support wound documentation, symptom tracking, and real-time feedback. Many of these applications allow patients to upload photographs of their wounds, complete self-assessment checklists, and receive automated reminders for dressing changes and medication schedules. For healthcare providers, these apps offer a valuable channel for continuous patient engagement, adherence monitoring, and remote triage. By encouraging active patient participation and supporting shared decision-making, mHealth tools contribute to greater treatment adherence and improved outcomes.[31,46,58]

Artificial intelligence technologies are also playing a transformative role in wound care communication. AI-driven chatbots can provide patients with instant responses to common wound care questions, triage advice, and behavioral nudges to promote adherence. Moreover, machine learning algorithms can analyze wound images to assess healing progress, detect signs of infection, and predict outcomes based on historical data. These tools not only enhance diagnostic accuracy but also streamline clinical workflows by prioritizing cases that require urgent attention, thereby improving the efficiency of care delivery.[51]

Remote wound monitoring systems, which integrate wearable sensors and image-based analytics, are another innovation contributing to more dynamic communication in wound care. These systems enable continuous surveillance of wound parameters such as moisture levels, temperature, and exudate composition, which are critical indicators of healing status. Data collected through these technologies can be transmitted to care teams in real time, allowing for proactive management and reducing the need for frequent in-person visits.[40] While these technological advancements offer substantial benefits, their successful implementation requires careful consideration of patient-specific factors, including digital literacy, access to smart devices, and data privacy concerns. Ensuring that digital tools are user-friendly, accessible, and secure is essential to maximizing their impact on communication and care outcomes. The integration of telemedicine, mHealth applications, AI-based tools, and remote monitoring systems has revolutionized communication in chronic wound care. These innovations facilitate more responsive, personalized, and coordinated care, thereby improving clinical outcomes and enhancing the overall patient experience.[40]

Telemedicine and Remote Monitoring

Telemedicine has emerged as a valuable tool in chronic wound management, allowing patients to receive virtual consultations, wound assessments, and real-time treatment guidance without the need for frequent hospital visits. Remote wound monitoring technologies, such as smartphone-based imaging and wearable sensors, enable healthcare providers to track wound healing progress and detect early signs of complications.[20]

A systematic review found that telemedicine interventions significantly improved patient adherence to wound care regimens while reducing travel-related burdens and healthcare costs. Additionally, telehealth platforms facilitate interdisciplinary communication, ensuring that wound care specialists, primary care physicians, and home care nurses collaborate effectively in managing complex cases.[58]

AI-driven chatbots and virtual assistants are increasingly emerging as integral components of chronic wound care communication. These technologies offer a scalable, accessible means of enhancing patient engagement and streamlining provider workflows. AI-powered chatbots are designed to deliver immediate responses to a wide range of patient queries, including wound care instructions, medication reminders, and symptom assessments. By offering 24/7 availability, they empower patients to manage their conditions more proactively and independently, especially outside regular clinical hours. Beyond patient-facing functionalities, AI chatbots also support healthcare professionals by automating the management of routine administrative tasks and preliminary triage. For example, chatbots can collect patient-reported data regarding wound symptoms, pain levels, or dressing adherence, and flag potential concerns for clinician follow-up. This automation enables providers to allocate more time and resources to patients with complex or urgent needs, thus improving overall efficiency and care prioritization. Furthermore, as natural language processing capabilities continue to advance, these systems are becoming more adept at personalizing communication, adapting to patient literacy levels, and recognizing nuanced health concerns.[52]

In wound care settings, AI-enhanced chatbots can be integrated into broader digital health ecosystems, linking with electronic health records (EHRs), wound imaging platforms, and teleconsultation services. This integration allows for a comprehensive, data-driven approach to wound monitoring and decision-making. Some advanced AI tools are capable of analyzing wound images uploaded by patients to assess healing progress or detect early signs of infection, thereby reducing delays in clinical response and improving outcomes.[36]

Despite these promising applications, several challenges remain regarding the accessibility, equity, and ethical deployment of AI-based communication tools in wound care. The digital divide continues to pose a significant barrier, particularly among elderly individuals, rural populations, and those with lower socioeconomic status. Limited internet connectivity, inadequate access to smart devices, and low levels of digital literacy restrict the reach and effectiveness of these technologies in vulnerable groups.[20] Moreover, concerns regarding data security, patient privacy, and the transparency of AI decision-making processes must be addressed to foster trust and regulatory compliance.[51]

To bridge these gaps, targeted strategies are needed. These include implementing digital literacy programs tailored to patients with chronic conditions, subsidizing access to digital devices and internet services, and designing AI interfaces that are user-friendly and culturally sensitive. Additionally, involving end-users—patients and clinicians alike—in the development and evaluation of AI tools can ensure that these systems are practical, intuitive, and responsive to real-world needs.[47]

In conclusion, AI-powered chatbots represent a transformative advancement in wound care communication, offering enhanced patient support, operational efficiency, and data-informed clinical decision-making. However, their widespread adoption requires deliberate efforts to ensure technological inclusivity, ethical design, and equitable access, particularly for populations at risk of being digitally marginalized.[51]

Interdisciplinary Communication and Healthcare Coordination

Effective communication is fundamental not only for enhancing patient-provider interactions but also for facilitating interdisciplinary collaboration—an essential component in the management of chronic wounds. These wounds, including diabetic foot ulcers, pressure injuries, and venous leg ulcers, often present with multifactorial etiologies and require prolonged, coordinated care. As such, their management involves a diverse team of healthcare professionals, including

physicians, nurses, wound care specialists, podiatrists, dietitians, and physical therapists. Each discipline brings unique expertise to the therapeutic process, but without a cohesive communication strategy, the complexity of interdisciplinary coordination can lead to fragmented care. Poor communication among team members has been associated with delays in treatment initiation, inconsistent messaging to patients, duplication of clinical efforts, and ultimately, suboptimal outcomes.[25,28]

To mitigate these risks, structured communication frameworks have been developed and adopted across healthcare settings. One widely endorsed model is the SBAR framework, which standardizes the way clinical information is communicated. SBAR promotes clarity, conciseness, and logical sequencing, thereby reducing miscommunication during interprofessional handovers or consultations. Its use in wound care settings has been associated with improved interdisciplinary coordination, reduced clinical errors, and enhanced patient safety. The implementation of SBAR ensures that all healthcare professionals, regardless of discipline, operate with a shared understanding of the patient's condition and care priorities.[12]

In addition to structured verbal communication, standardized documentation tools and integrated EHRs play a crucial role in promoting continuity of care. EHRs enable real-time access to clinical notes, laboratory results, wound assessments, and care plans, allowing all team members to remain informed and aligned. Digital communication platforms embedded within EHR systems also facilitate timely consultations and asynchronous updates, particularly valuable in settings where care is delivered across multiple facilities or providers.[37]

Empirical evidence supports the efficacy of enhanced interdisciplinary communication. demonstrating that regular interdisciplinary case conferences, collaborative decision-making, and consistent information-sharing were associated with improved wound healing outcomes and decreased rates of hospital readmission. These findings underscore the value of proactive team engagement in formulating and adapting individualized treatment plans.[41]

Furthermore, incorporating patient-centered communication strategies within the interdisciplinary model amplifies its effectiveness. Actively involving patients and their caregivers in discussions about wound care goals, progress, and challenges fosters a collaborative atmosphere and encourages adherence. Family engagement and the inclusion of social support systems have been shown to enhance psychological well-being, reduce caregiver burden, and support better self-management practices.[53]

The complexity of chronic wound management necessitates an interdisciplinary approach grounded in structured, transparent, and consistent communication. Frameworks such as SBAR, coupled with the effective use of EHRs and routine interdisciplinary engagement, create a cohesive care environment that promotes timely interventions, reduces errors, and optimizes clinical outcomes. Integrating these communication strategies with patient- and family-centered care principles further reinforces treatment adherence and fosters holistic recovery.[54]

Discussion

The Role of Interdisciplinary Communication

Interdisciplinary communication plays a critical role in the management of chronic wounds, as these conditions require a coordinated approach among multiple healthcare providers. Chronic wounds, such as diabetic foot ulcers, venous leg ulcers, and pressure injuries, present complex challenges that necessitate the expertise of various specialists, including physicians, nurses, wound care specialists, physical therapists, and dietitians. Effective collaboration among these professionals ensures that patients receive comprehensive care addressing both the wound itself and the underlying factors contributing to delayed healing.[1]

A well-integrated healthcare team can optimize patient outcomes by ensuring that each aspect of wound management is addressed. Physicians may focus on medical interventions, such as prescribing antibiotics or performing debridement procedures, while wound care nurses play a pivotal role in ensuring proper wound dressing techniques and monitoring signs of infection. Simultaneously, dietitians contribute by assessing the patient's nutritional status and recommending dietary modifications that promote wound healing, and physical therapists work to maintain mobility and prevent complications associated with immobility, such as pressure ulcers. However, when communication among these professionals is ineffective or fragmented, critical aspects of care may be overlooked. For instance, if a wound care nurse

identifies signs of worsening infection but fails to communicate this information effectively to the treating physician, necessary interventions may be delayed, potentially leading to serious complications such as osteomyelitis or systemic infections. This highlights the necessity of implementing structured communication frameworks that facilitate clear, timely, and effective information exchange.[39,62,63]

Despite the clear benefits of interdisciplinary collaboration, several barriers hinder effective communication in chronic wound care management. Traditional hierarchical structures in healthcare settings can sometimes create an environment where nurses or allied health professionals hesitate to voice concerns to physicians, fearing that their input may not be valued. Time constraints also pose significant challenges, as healthcare providers often manage high patient volumes and struggle to find the necessary time to engage in comprehensive discussions regarding wound care. Additionally, the absence of standardized communication protocols can result in fragmented care, particularly when important clinical details are communicated informally or inconsistently documented. Another challenge arises from the use of specialized medical terminology, which can create misunderstandings between professionals from different disciplines.[24,49]

To address these challenges, structured communication tools have been developed and implemented in healthcare settings. One widely recognized framework is the SBAR model, which provides a standardized method for conveying critical patient information. The SBAR model ensures that healthcare providers communicate in a clear, concise, and systematic manner, reducing the likelihood of miscommunication. Studies have demonstrated that SBAR improves interdisciplinary collaboration by streamlining the exchange of critical patient information, ultimately leading to a reduction in medical errors and enhanced patient outcomes.[12] In addition to SBAR, the integration of EHRs has revolutionized interdisciplinary communication by providing a centralized platform where all healthcare professionals involved in a patient's care can document and access vital information. EHRs facilitate real-time updates regarding wound progression, treatment modifications, and laboratory results, ensuring that all team members are informed and aligned in their approach to care.[36]

The advancement of digital health technologies has further expanded opportunities for improving communication in chronic wound management. Telemedicine and remote monitoring have become increasingly valuable in interdisciplinary collaboration, allowing wound care specialists to assess wounds and provide recommendations without requiring in-person consultations. The use of digital wound imaging and artificial intelligence-driven wound assessment tools has also enhanced clinical decision-making by providing objective measurements of wound healing progression. By integrating structured communication frameworks and leveraging technological advancements, healthcare teams can improve coordination, minimize errors, and ultimately optimize the management of chronic wounds.[51,64]

Patient-Centered Communication Strategies

While interdisciplinary communication is essential for healthcare providers, patient-centered communication plays an equally crucial role in chronic wound management. Effective communication with patients enhances adherence to treatment regimens, increases patient satisfaction, and fosters trust in the healthcare system. Chronic wounds often require long-term management, and patient engagement is a key determinant of successful outcomes. Patients who understand their condition and treatment plan are more likely to follow wound care instructions, recognize early signs of complications, and seek timely medical attention when necessary.[65]

Patients with chronic wounds frequently experience emotional distress, frustration, and anxiety, particularly if they have been dealing with non-healing wounds for an extended period. Poor communication between healthcare providers and patients can exacerbate these challenges, leading to misunderstandings, non-adherence to wound care protocols, and diminished trust in the treatment process. To address these issues, healthcare professionals must adopt clear, empathetic, and culturally sensitive communication strategies that empower patients to take an active role in their wound care.[62,66]

Cultural sensitivity is a crucial component of patient-centered communication, as patients come from diverse backgrounds with varying health beliefs, literacy levels, and language proficiencies. Some individuals may have deeply ingrained cultural beliefs regarding wound healing, including the use of traditional remedies or misconceptions about modern medical treatments. Others may experience language barriers that hinder their ability to understand wound care instructions. To overcome these challenges, healthcare providers must ensure that communication is adapted to meet the

needs of each patient. This may involve utilizing trained medical interpreters rather than relying on family members for translation, as well as providing culturally appropriate educational materials tailored to the patient's background. Demonstrating respect for cultural beliefs while providing evidence-based recommendations can foster greater trust and adherence to treatment.[67–69]

Personalized patient education is one of the most effective strategies for improving adherence to wound care regimens. Healthcare professionals should prioritize the use of simple, non-technical language when explaining wound care instructions to patients, ensuring that key concepts are clearly understood. Visual aids, including diagrams, videos, and hands-on demonstrations, can further enhance comprehension by providing tangible references for proper wound care techniques. Providing written instructions or digital resources that patients can refer to at home reinforces learning and helps prevent misunderstandings. Research has shown that patients who receive visual and written wound care instructions demonstrate higher adherence rates compared to those who receive only verbal instructions.[6,56,57]

MI is another valuable technique for promoting patient engagement and adherence in chronic wound management. MI is a patient-centered communication method designed to help individuals resolve ambivalence and strengthen their intrinsic motivation to adopt healthier behaviors. In the context of wound care, MI can be particularly beneficial in addressing common barriers to adherence, such as fear of pain during wound dressing changes, feelings of hopelessness regarding the healing process, or a lack of understanding of the importance of proper wound management. The approach involves building rapport with the patient, identifying specific concerns or barriers, encouraging the patient to articulate their motivations for improving self-care, and collaboratively developing an action plan. By fostering a sense of autonomy and self-efficacy, MI empowers patients to take ownership of their wound care and make informed decisions that contribute to better health outcomes.[70–72]

For many patients, family members and caregivers play an essential role in wound care management. It is therefore crucial for healthcare providers to extend patient-centered communication strategies to include caregivers, ensuring that they are well-equipped to assist with wound care. Providing caregivers with hands-on training for wound dressing changes, educating them on warning signs that indicate complications, and offering access to support groups or educational resources can enhance their ability to provide effective care. Open communication with caregivers also allows healthcare providers to address any concerns or challenges they may face in assisting the patient.[68,73]

By adopting patient-centered communication strategies that prioritize clarity, cultural sensitivity, personalized education, and motivational interviewing, healthcare providers can improve adherence to wound care regimens and foster a collaborative approach to chronic wound management. Engaging both patients and caregivers in the communication process helps create a supportive environment that promotes healing and enhances overall well-being.[6,74]

Critical Insight

The findings of this review align with a growing body of evidence emphasizing communication as a cornerstone in the holistic management of chronic wounds, particularly of the lower limbs. Recent developments in digital health—such as AI-driven wound assessment, mHealth applications, and integrated telemedicine platforms—underscore a paradigm shift toward more proactive, patient-centered, and technology-enabled care. These innovations support the observed trends in the literature, demonstrating that effective communication enhances patient adherence, mitigates emotional distress, and strengthens interdisciplinary coordination. Simultaneously, persistent barriers such as health literacy deficits, cultural discordance, and the digital divide highlight the importance of equity-driven strategies. Emerging global health policies increasingly advocate for inclusive communication frameworks, digital inclusion, and culturally competent education as essential components of wound care protocols. By synthesizing these dimensions, this review not only reflects current academic discourse but also provides a roadmap for future research and practice aimed at integrating communication innovations into scalable, sustainable, and equitable wound care solutions.

Limitations

Despite the comprehensive nature of this narrative review, several limitations must be acknowledged. First, the review employed a narrative synthesis rather than a systematic methodology, which may introduce selection bias in the inclusion of studies. Although a structured search strategy was adopted, the lack of formal quality assessment tools for included studies limits the ability to rigorously evaluate the methodological robustness and risk of bias across sources. Second, the

review spans a wide thematic range—from patient-centered communication and emotional support to digital health technologies and interdisciplinary coordination. While this breadth offers a holistic understanding, it also limits the depth of analysis in any one subdomain. Specific communication strategies or technologies, such as MI or AI-powered wound assessment tools, might have benefited from more detailed critical appraisal. Third, the heterogeneity of study designs in the included literature poses challenges in drawing generalizable conclusions. The narrative format does not support meta-analytic aggregation or statistical comparison, which would otherwise strengthen the evidence base for specific interventions. Fourth, the inclusion of articles without time limitations increases the comprehensiveness but also the risk of integrating outdated evidence or practices that may no longer be relevant due to evolving healthcare technologies and policies. Fifth, the language and cultural context of the reviewed literature was not consistently evaluated. Most included studies appear to reflect Western healthcare systems, which may limit the transferability of findings to low- and middle-income countries or culturally diverse healthcare settings. Lastly, while the review discusses emerging technologies such as telemedicine and artificial intelligence, the rapid pace of digital innovation means that current literature may already be superseded by newer developments not yet captured in academic databases. Future research would benefit from adopting systematic review protocols, assessing the quality of evidence more rigorously, and focusing on comparative evaluations of communication interventions across different settings and patient populations.

Conclusion

The results obtained from the literature analysis show interesting relations between the communication and chronic wounds of lower limbs and Figure 6 shows the overview at a glance of the main findings. Effective communication, both among healthcare

Figure 6 Overview at a glance on the main findings.

providers and between providers and patients, is integral to the successful management of chronic wounds. Interdisciplinary collaboration ensures that all aspects of wound care are addressed, minimizing the risk of miscommunication and optimizing patient outcomes. At the same time, patient-centered communication strategies empower individuals to take an active role in their care, improving adherence and overall satisfaction. In summary, this review underscores the pivotal role that communication plays in the effective management of chronic wounds of the lower limbs. Through a synthesis of recent literature, it highlights how patient-centered communication enhances adherence, emotional well-being, and clinical outcomes, while interdisciplinary communication improves coordination, reduces errors, and streamlines care delivery. It also explores the emerging potential of digital technologies—such as telemedicine, mHealth applications, and AI tools—to overcome traditional communication barriers and facilitate timely interventions. Furthermore, the review identifies persistent challenges, including health literacy deficits, cultural and language mismatches, and the digital divide, all of which significantly impact communication effectiveness. Addressing these issues is essential to advancing more equitable and efficient wound care practices. To advance communication in chronic wound management, several practical and actionable improvements should be prioritized. First, healthcare providers must adopt structured communication frameworks (eg, SBAR) across all interdisciplinary interactions to standardize information flow and reduce miscommunication. Second, patient education materials should be revised to ensure they are clear, visual, and available in multiple languages to accommodate varying levels of health literacy and cultural backgrounds. Third, training programs in cultural competence and MI should be incorporated into professional development curricula to foster empathetic, inclusive patient interactions. Fourth, digital tools like telehealth platforms and AI-based chatbots should be designed with user-friendly interfaces and supported by patient training initiatives to reduce technological barriers. Finally, institutions must invest in systematic feedback mechanisms, such as patient satisfaction surveys and communication audits, to continuously evaluate and refine communication strategies. These targeted efforts can significantly improve the delivery of wound care, enhance patient engagement, and reduce health disparities. By implementing structured communication frameworks, leveraging digital technologies, and prioritizing culturally sensitive and personalized education, healthcare professionals can enhance the quality of chronic wound management. Future research should continue exploring innovative communication tools and their impact on wound care outcomes, ensuring that best practices are continually refined to meet the evolving needs of patients and healthcare teams. Additionally, global perspectives, policy implications, and ethical considerations must be integrated into communication strategies to ensure equitable access to wound care across diverse populations.

Data Sharing Statement

All data generated or analyzed during this study are included in this published article.

Author Contributions

All authors (D.C. and R.S.) made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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References

1. Serra R, Butrico L, Ruggiero M, et al. Epidemiology, diagnosis and treatment of chronic leg ulcers. A systematic review. *Acta Phlebologica*. 2015;16 (1):9–18.
2. Sen CK. Human wound and its burden: updated 2020 compendium of estimates. *Adv Wound Care*. 2021;10(5):281–292. doi:10.1089/wound.2021.0026

3. Guest JF, Fuller GW, Vowden P, Vowden KR. Cohort study evaluating pressure ulcer management in clinical practice in the UK following initial presentation in the community: costs and outcomes. *BMJ Open*. 2018;8(7):e021769. doi:10.1136/bmjopen-2018-021769
4. Falanga V, Isseroff RR, Soulika AM, et al. Chronic wounds. *Nat Rev Dis Primers*. 2022;8(1):50. doi:10.1038/s41572-022-00377-3
5. Kuhnke JL, Keast D, Rosenthal S, Evans RJ. Health professionals' perspectives on delivering patient-focused wound management: a qualitative study. *J Wound Care*. 2019;28(Sup7):S4–S13. doi:10.12968/jowc.2019.28.Sup7.S4
6. Lindholm C, Searle R. Wound management for the 21st century: combining effectiveness and efficiency. *Int Wound J*. 2016;13(Suppl 2):5–15. doi:10.1111/iwj.12623
7. Probst S, Ryan H, Tehan P. The power of empathy: enhancing healing outcomes in chronic wound care. *J Tissue Viability* 2025;34(3):100911.
8. van Netten JJ, Price PE, Lavery LA, et al. Prevention of foot ulcers in the at-risk patient with diabetes: a systematic review. *Diabetes Metab Res Rev*. 2016;32(Suppl 1):84–98. doi:10.1002/dmrr.2701
9. Gorecki C, Brown JM, Nelson EA, et al. Impact of pressure ulcers on quality of life in older patients: a systematic review. *J Am Geriatr Soc*. 2009;57(7):1175–1183. doi:10.1111/j.1532-5415.2009.02307.x
10. Gottrup F, Apelqvist J, Price P, European Wound Management Association Patient Outcome Group. Outcomes in controlled and comparative studies on non-healing wounds: recommendations to improve the quality of evidence in wound management. *J Wound Care*. 2010;19(6):237–268. doi:10.12968/jowc.2010.19.6.48471
11. Phillips CJ, Humphreys I, Fletcher J, Harding K, Chamberlain G, Macey S. Estimating the costs associated with the management of patients with chronic wounds using linked routine data. *Int Wound J*. 2016;13(6):1193–1197. doi:10.1111/iwj.12443
12. Pinto F, Roberto P, Ferrario L, et al. Using 'situation-background-assessment-recommendation' method in palliative care to enhance handover quality and nursing practice: a mix method study. *J Clin Nurs*. 2025;34(1):117–127. doi:10.1111/jocn.17537
13. Pađen L, Gschwind G, Vettorazzi R, Probst S. Facilitators and barriers for nurses when educating people with chronic wounds - A qualitative interview study. *J Tissue Viability*. 2024;33(2):174–178. doi:10.1016/j.jtv.2024.04.002
14. Bouguettaya A, Gethin G, Probst S, Sixsmith J, Team V, Weller C. How health literacy relates to venous leg ulcer healing: a scoping review. *PLoS One*. 2023;18(1):e0279368. doi:10.1371/journal.pone.0279368
15. Weller CD, Team V, Probst S, et al. Health literacy in people with venous leg ulcers: a protocol for scoping review. *BMJ Open*. 2021;11(5):e044604. doi:10.1136/bmjopen-2020-044604
16. Aydinli A, Deniz Doğan S. Traditional and complementary treatment use in wound care: a descriptive study in Turkey. *J Tissue Viability*. 2024;33(4):864–870. doi:10.1016/j.jtv.2024.07.017
17. Krampe F, Fabry G, Langer T. Overcoming language barriers, enhancing collaboration with interpreters - an interprofessional learning intervention (Interpret2Improve). *BMC Med Educ*. 2022;22(1):170. doi:10.1186/s12909-022-03213-0
18. Kwan M, Jeemi Z, Norman R, Dantas JAR. Professional interpreter services and the impact on hospital care outcomes: an integrative review of literature. *Int J Environ Res Public Health*. 2023;20(6):5165. doi:10.3390/ijerph20065165
19. Yan R, Strandlund K, Ci H, Huang Y, Zhang Y, Zhang Y. Analysis of factors influencing anxiety and depression among hospitalized patients with chronic wounds. *Adv Skin Wound Care*. 2021;34(12):638–644. doi:10.1097/01.ASW.0000797948.13759.ba
20. Chen L, Cheng L, Gao W, Chen D, Wang C, Ran X. Telemedicine in chronic wound management: systematic review and meta-analysis. *JMIR mHealth uhealth*. 2020;8(6):e15574. doi:10.2196/15574
21. Encarnação R, Manuel T, Palheira H, Neves-Amado J, Alves P. Artificial intelligence in wound care education: protocol for a scoping review. *Nurs Rep*. 2024;14(1):627–640. doi:10.3390/nursrep14010048
22. Beitz JM. Overcoming barriers to quality wound care: a systems perspective. *Ostomy Wound Manage*. 2001;47(3):56–64.
23. Katz MG, Kripalani S, Weiss BD. Use of pictorial aids in medication instructions: a review of the literature. *Am J Health Syst Pharm*. 2006;63(23):2391–2397. doi:10.2146/ajhp060162
24. Cordova RD, Beaudin CL, Iwanabe KE. Addressing diversity and moving toward equity in hospital care. *Front Health Serv Manage*. 2010;26(3):19–34. doi:10.1097/01974520-201001000-00003
25. Woo K. Wound related pain: anxiety, stress, and healing. *Wounds*. 2012;24(10):287–288.
26. Woo KY. Chronic wound-associated pain, psychological stress, and wound healing. *Surg Technol Int*. 2012;22:57–65.
27. Chittoria RK. Telemedicine for wound management. *Indian J Plast Surg*. 2012;45(2):412–417. doi:10.4103/0970-0358.101330
28. Nunan R, Harding KG, Martin P. Clinical challenges of chronic wounds: searching for an optimal animal model to recapitulate their complexity. *Dis Model Mech*. 2014;7(11):1205–1213. doi:10.1242/dmm.016782
29. Green J, Jester R, McKinley R, Pooler A. The impact of chronic venous leg ulcers: a systematic review. *J Wound Care*. 2014;23(12):601–612. doi:10.12968/jowc.2014.23.12.601
30. Margolis DJ, Hampton M, Hoffstad O, Malay DS, Thom S. Health literacy and diabetic foot ulcer healing. *Wound Repair Regen*. 2015;23(3):299–301. doi:10.1111/wrr.12311
31. Aldaz G, Shluzas LA, Pickham D, et al. Hands-free image capture, data tagging and transfer using Google Glass: a pilot study for improved wound care management. *PLoS One*. 2015;10(4):e0121179. doi:10.1371/journal.pone.0121179
32. Ha Dinh TT, Bonner A, Clark R, Ramsbotham J, Hines S. The effectiveness of the teach-back method on adherence and self-management in health education for people with chronic disease: a systematic review. *JBI Database System Rev Implement Rep*. 2016;14(1):210–247. doi:10.11124/jbisrir-2016-2296
33. Bugeja L, Low JK, McGinnes RA, Team V, Sinha S, Weller C. Barriers and enablers to patient recruitment for randomised controlled trials on treatment of chronic wounds: a systematic review. *Int Wound J*. 2018;15(6):880–892. doi:10.1111/iwj.12940
34. Kirkland-Kyhn H, Generao SA, Teleten O, Young HM. Teaching wound care to family caregivers. *Am J Nurs*. 2018;118(3):63–67.
35. Durrant LA, Taylor J, Thompson H, Usher K, Jackson D. Health literacy in pressure injury: findings from a mixed-methods study of community-based patients and carers. *Nurs Health Sci*. 2019;21(1):37–43. doi:10.1111/nhs.12429
36. Bitner J, Sachdev U, Hager ES, Dillavou ED. Standardized care protocol and modifications to electronic medical records to facilitate venous ulcer healing. *J Vasc Surg Venous Lymphat Disord*. 2019;7(4):570–576. doi:10.1016/j.jvsv.2018.11.009
37. Kuusisto A, Asikainen P, Saranto K. Contents of informational and management continuity of care. *Stud Health Technol Inform*. 2019;264:669–673. doi:10.3233/SHTI190307

38. Gethin G, Probst S, Stryja J, Christiansen N, Price P. Evidence for person-centred care in chronic wound care: a systematic review and recommendations for practice. *J Wound Care*. 2020;29(Sup9b):S1–S22. doi:10.12968/jowc.2020.29.Sup9b.S1
39. Squitieri L, Tsangaris E, Klassen AF, et al. Patient-reported experience measures are essential to improving quality of care for chronic wounds: an international qualitative study. *Int Wound J*. 2020;17(4):1052–1061. doi:10.1111/iwj.13374
40. Zoppo G, Marrone F, Pittarello M, et al. AI technology for remote clinical assessment and monitoring. *J Wound Care*. 2020;29(12):692–706. doi:10.12968/jowc.2020.29.12.692
41. Callender LF, Johnson AL, Pignataro RM. Patient-centered education in wound management: improving outcomes and adherence. *Adv Skin Wound Care*. 2021;34(8):403–410. doi:10.1097/01.ASW.0000753256.29578.6c
42. Klein TM, Andrees V, Kirsten N, Protz K, Augustin M, Blome C. Social participation of people with chronic wounds: a systematic review. *Int Wound J*. 2021;18(3):287–311. doi:10.1111/iwj.13533
43. Gerchow L, Burka LR, Miner S, Squires A. Language barriers between nurses and patients: a scoping review. *Patient Educ Couns*. 2021;104 (3):534–553. doi:10.1016/j.pec.2020.09.017
44. Hunter J, Majd I, M K, Harnett JE. Interprofessional communication-A call for more education to ensure cultural competency in the context of traditional, complementary, and integrative medicine. *Glob Adv Health Med*. 2021;10:21649561211014107. doi:10.1177/21649561211014107
45. Lucas Y, Niri R, Treuillet S, Douzi H, Castaneda B. Wound size imaging: ready for smart assessment and monitoring. *Adv Wound Care*. 2021;10 (11):641–661. doi:10.1089/wound.2018.0937
46. Huang Z, Wu S, Yu T, Hu A. Efficacy of telemedicine for patients with chronic wounds: a meta-analysis of randomized controlled trials. *Adv Wound Care*. 2021;10(2):103–112. doi:10.1089/wound.2020.1169
47. Yin J, Ngiam KY, Teo HH. Role of artificial intelligence applications in real-life clinical practice: systematic review. *J Med Internet Res*. 2021;23 (4):e25759. doi:10.2196/25759
48. Hegde SR, Nagaraj MB, Gonzalez-Guardiola GJ, Malekpour F, Shih M. Overcoming health literacy barriers by developing standardized surgical discharge instructions. *J Surg Res*. 2022;278:386–394. doi:10.1016/j.jss.2022.04.040
49. Selvakumar D, Sivanandy P, Ingle PV, Theivasigamani K. Relationship between treatment burden, health literacy, and medication adherence in older adults coping with multiple chronic conditions. *Medicina*. 2023;59(8):1401. doi:10.3390/medicina59081401
50. Rayate AS, Nagoba BS, Mumbre SS, Mavani HB, Gavkare AM, Deshpande AS. Current scenario of traditional medicines in management of diabetic foot ulcers: a review. *World J Diabetes*. 2023;14(1):1–16. doi:10.4239/wjd.v14.i1.1
51. Dabas M, Schwartz D, Beeckman D, Gefen A. Application of artificial intelligence methodologies to chronic wound care and management: a scoping review. *Adv Wound Care*. 2023;12(4):205–240. doi:10.1089/wound.2021.0144
52. Khawaja Z, Bélisle-Pipon JC. Your robot therapist is not your therapist: understanding the role of AI-powered mental health chatbots. *Front Digit Health*. 2023;5:1278186. doi:10.3389/fdgth.2023.1278186
53. Janke TM, Kozon V, Barysch M, et al. How does a chronic wound change a patient's social life? A European survey on social support and social participation. *Int Wound J*. 2023;20(10):4138–4150. doi:10.1111/iwj.14309
54. Huang Y, Hu J, Xie T, et al. Effects of home-based chronic wound care training for patients and caregivers: a systematic review. *Int Wound J*. 2023;20(9):3802–3820. doi:10.1111/iwj.14219
55. Lee A, Woodmansey E, Klopfenstein B, O'Leary JL, Cole W. Remote assessment and monitoring with advanced wound therapy to optimise clinical outcomes, access and resources. *J Wound Care*. 2024;33(2):90–101. doi:10.12968/jowc.2024.33.2.90
56. Kivity S, Rajuan E, Arbeli S, et al. Optimising wound monitoring: can digital tools improve healing outcomes and clinic efficiency. *J Clin Nurs*. 2024;33(10):4014–4023. doi:10.1111/jocn.17084
57. Galmarini E, Marciano L, Schulz PJ. The effectiveness of visual-based interventions on health literacy in health care: a systematic review and meta-analysis. *BMC Health Serv Res*. 2024;24(1):718. doi:10.1186/s12913-024-11138-1
58. Bai X, Zhang H, Jiao Y, Yuan C, Ma Y, Han L. Digital health interventions for chronic wound management: a systematic review and meta-analysis. *J Med Internet Res*. 2024;26:e47904. doi:10.2196/47904
59. Probst S, Bergin SM, Tehan P. Healing beyond the surface: empathy's role in chronic wound care a qualitative study. *J Tissue Viability*. 2025;34 (3):100910.
60. Osmancevic S, Steiner LM, Großschädl F, Lohrmann C, Schoberer D. The effectiveness of cultural competence interventions in nursing: a systematic review and meta-analysis. *Int J Nurs Stud*. 2025;167:105079. doi:10.1016/j.ijnurstu.2025.105079
61. Howell M, Sengul T, Kirkland-Kyhn H. Ethnicity, skin tones, and cultural considerations in wound care: challenges and solutions. *Nurs Clin North Am*. 2025;60(1):165–174. doi:10.1016/j.cnur.2024.07.017
62. Lindsay E, Renyi R, Wilkie P, et al. Patient-centred care: a call to action for wound management. *J Wound Care*. 2017;26(11):662–677. doi:10.12968/jowc.2017.26.11.662
63. Atkin L, Bućko Z, Montero EC, et al. Implementing TIMERS: the race against hard-to-heal wounds. *J Wound Care*. 2019;28(Sup3a):S1–S50. doi:10.12968/jowc.2019.28.Sup3a.S1
64. Wang K, Ghafurian M, Chumachenko D, et al. Application of artificial intelligence in active assisted living for aging population in real-world setting with commercial devices - A scoping review. *Comput Biol Med*. 2024;173:108340. doi:10.1016/j.compbiomed.2024.108340
65. Kirkland-Kyhn H, Generao SA, Teleten O, Young HM. Teaching wound care to family caregivers: an overview of methods to use to promote wound healing. *Home Healthc Now*. 2022;40(1):8–13. doi:10.1097/NHH.0000000000001047
66. Beeckman D, Cooper M, Greenstein E, et al. The role community-based healthcare providers play in managing hard-to-heal wounds. *Int Wound J*. 2024;21(1):e14402. doi:10.1111/iwj.14402
67. Tucker CM, Arthur TM, Roncoroni J, Wall W, Sanchez J. Patient-centered, culturally sensitive health care. *Am J Lifestyle Med*. 2015;9(1):63–77. doi:10.1177/1559827613498065
68. Kwame A, Petrucka PM. A literature-based study of patient-centered care and communication in nurse-patient interactions: barriers, facilitators, and the way forward. *BMC Nurs*. 2021;20(1):158. doi:10.1186/s12912-021-00684-2
69. Perry C, Atkinson RA, Griffiths J, et al. Barriers and facilitators to use of compression therapy by people with venous leg ulcers: a qualitative exploration. *J Adv Nurs*. 2023;79(7):2568–2584. doi:10.1111/jan.15608
70. Binning J, Woodburn J, Bus SA, Barn R. Motivational interviewing to improve adherence behaviours for the prevention of diabetic foot ulceration. *Diabetes Metab Res Rev*. 2019;35(2):e3105. doi:10.1002/dmrr.3105

71. Jongebloed-Westra M, Bode C, Bente BE, et al. Attitudes and experiences towards the application of motivational interviewing by podiatrists working with people with diabetes at high-risk of developing foot ulcers: a mixed-methods study. *J Foot Ankle Res*. 2022;15(1):62. doi:10.1186/s13047-022-00567-y
72. Costa IG. Engaging older persons in self-management of illness. In: *Supporting Older Persons on Their Aging Journey: An Emancipatory Approach to Nursing Care*. 2024:203.
73. Swartzell KL, Fulton JS, von Gaudecker JR. Pushing through: how older adult caregivers manage wound care. *West J Nurs Res*. 2023;45(8):706–714. doi:10.1177/01939459231180894
74. Vareta D, Oliveira C, Ventura F. Person-centered workplace culture: insights from an inpatient department for older adults with chronic illnesses. *Front Med*. 2025;12:1532419. doi:10.3389/fmed.2025.1532419