Geliş Tarihi (Received): 31.07.2025 Kabul Tarihi (Accepted): 13.04.2026

Derleme/Review

Evidence-Based Nursing Practices in Wound Care and Recommendations in the Bulgarian Context

Yara Bakımında Kanıta Dayalı Hemşirelik Uygulamaları ve Bulgaristan Bağlamında Öneriler

Diana PASKALEVA [1]

Esra UĞUR [2]

[1] Assistant Professor, Medical University of Plovdiv, Faculty of Public Health, Department of Nursing Care, Plovdiv/ Bulgaria

[2]Professor, Acıbadem Mehmet Ali Aydınlar University, faculty of Health Sciences, Department of Nursing, İstanbul/ Türkiye

Yazışmadan sorumlu yazar: Esra Uğur; eugur1@gmail.com

Alıntı (Cite): Paskaleva D. & Uğur E. Evidence-Based Nursing Practices in Wound Care and Recommendations in the Bulgarian Context. YBH dergisi. 2026; 7(1): 167-175

Abstract:
The need for effective and high-quality wound care management is attracting the attention of more and more healthcare professionals worldwide. Nurses play a key role in preventing injuries, which are among the indicators of quality nursing care, and treating unpreventable wounds with evidence-based practices. Practices vary depending on the type and characteristics of the wound. Healthcare professionals conduct high-level research in this area, and professional organizations publish evidence-based wound management guidelines. It is crucial for nurses to increase their knowledge and competence in wound care, and for healthcare organizations to incorporate wound care guidelines into their clinical protocols. This article is presented as a literature review to examine evidence-based studies on wound care and to offer recommendations for nursing education and practice in Bulgaria.

Key Words: Wound care; evidence-based nursing; nursing care.

Özet:
Yara bakım süreçlerinin etkin ve kaliteli şekilde yönetimine ilişkin gereksinim tüm dünyada her geçen gün daha fazla sağlık profesyonelinin dikkatini çekmektedir. Hemşirelik bakım kalitesinin göstergeleri arasında da yer alan yaralanmaların önlenmesi ve önüne geçilemeyen yaraların kanıta dayalı uygulamalarla tedavisinde hemşireler kilit konumundadır. Yaranın çeşidi ve özelliklerine göre yapılacak uygulamalar farklılık göstermekte olup sağlık profesyonelleri bu alanda kanıt düzeyi yüksek araştırmalar yürütmekte ve profesyonel kuruluşlar yaranın yönetimine ilişkin kanıta dayalı rehberler yayınlamaktadır. Hemşirelerin yara konusunda bilgi ve yetkinliklerini artırması ve sağlık bakım kuruluşlarının yara bakım rehberlerini klinik protokollerinin bir parçası haline getirmesi önem taşımaktadır. Bu makale, yara bakımına ilişkin kanıta dayalı çalışmaların incelenmesi ve Bulgaristandaki hemşirelik eğitim ve uygulamalarına yönelik öneriler sunulması amacıyla bir literatür çalışması olarak sunulmaktadır.

Anahtar Kelimeler: Yara bakımı; kanıta dayalı hemşirelik; hemşirelik bakımı.

Introduction

Quality wound care has become increasingly necessary in healthcare institutions, as wound complications prolong recovery time and increase economic burdens due to extended hospitalization and associated medical costs. Studies on wound complication prevention, including infections and sepsis risks, highlight the importance of early assessment and treatment with quality care. However, a gap exists between standardized guidelines and real-world practices, emphasizing the need for theoretical knowledge, practical skills, and critical thinking. [1]

Wound management is a dynamic and evolving field requiring continuous advancements in clinical practice, technology, and education to maximize outcomes for patients. [2,3] The integration of evidence-based protocols enhances patient outcomes, reduces infection rates, and improves healing times. Nurses play a pivotal role in wound care, not only in direct patient management but also in educating patients and caregivers on prevention and treatment strategies. [4,5]

With increasing rates of chronic wounds due to aging populations and conditions such as diabetes and vascular diseases, the demand for highly trained nursing professionals in wound care is greater than ever. In this literature search, we aimed to clarify the latest evidence-based methods that nurses can apply to wound care. By examining best practices, classification systems, and innovative treatments, we seek to bridge the gap between theoretical knowledge and clinical application. Understanding wound pathophysiology, risk factors, and patient-centered interventions is essential for improving nursing care standards and ensuring optimal recovery outcomes.

Although evidence-based wound care guidelines are widely implemented in many countries, variations in nursing education, clinical protocols, and resource availability can influence wound management practices. In Bulgaria, limited literature exists regarding the implementation of evidence-based wound care practices especially in nursing education and clinical settings. [6,7] Therefore, this review aims not only to summarize current evidence-based wound care approaches but also to discuss their relevance and potential application within the Bulgarian healthcare context.

Wound Classification and Assessment

Wound care must be individualized, as each wound differs in cause and characteristics. [1] According to Oliveira et al. [8] a wound is a tissue lesion typically caused by trauma (mechanical, physical, or chemical). The International Classification for Nursing Practice (ICNP) describe the wound as Impaired Structural Body Part: Lesion of the tissue usually associated with physical or mechanical damage; sloughing and tunnelling of tissue; serous, sanguineous or purulent drainage; skin erythema; oedema; blistered, macerated and abnormal skin, elevated skin temperature, wound odour, soreness and pain, and categorizes wounds as either surgical or traumatic (Burn Wound, Closed Wound, Fissure, Maceration, Malignant Wound, Open Wound, Skin Wound, Surgical Wound, Traumatic Wound, Ulcer). [9]

Surgical wounds result from incisions made with surgical tools and are expected to be free of infection. Pre-surgical protocols include MRSA screening, bacterial decolonization, antiseptic preparation (chlorhexidine 2-4%), prophylactic antibiotic administration, and

incision site disinfection. These measures aim to minimize infection risks, and dressing changes should be minimized in the first 48 hours post-surgery unless necessary. [10]

Traumatic wounds require a thorough assessment of components such as granulation tissue, exudate, necrosis, and potential for healing. The surrounding skin must also be evaluated, as temperature and humidity control improve tissue perfusion and recovery time. Proper classification and early assessment play a crucial role in determining the most suitable treatment strategy, reducing complications, and improving healing. [1]

Among chronic wounds, pressure injuries represent one of the most common and preventable complications by nurses in clinical practice. Therefore, understanding their classification and staging is essential for effective wound assessment and management. The systematic classification of pressure injuries affects the treatment process and prognosis. The pressure injury classification system which is fundamental in clinical decision-making and based on the depth of tissue loss is established by the European Pressure Ulcer Advisory Panel (EPUAP) and NPUAP: [11,12]

Stage I: Redness that does not blanch with pressure. There is usually permanent erythema on bony prominences that does not blanch when pressed with a finger. The area where the redness is present is warmer / cooler, edematous, hard / softer than other areas. This is the warning phase.

Stage 2: Partial Thickness Skin Loss. There is partial thickness skin damage in the dermis. Skin integrity is disrupted there is a pink or red open wound without exudate. There is no necrotic tissue. It can also be seen as a bullae or vesicles filled by serous.

Stage 3: Full Thickness Skin Loss. There is skin loss affecting the dermis, epidermis, and subcutaneous tissue. However, bone, tendon, muscles, fascia, and cartilage are not affected.

Stage 4: Full Thickness Skin and Tissue Loss. There is tunneled, deep, full-thickness skin and tissue loss with bone, tendons, and muscles clearly visible. Eschar and exudate might be visible in the wound.

Unstageable pressure injury: Full-thickness skin and tissue loss in which the base of the ulcer is covered by slough or eschar, preventing accurate assessment of the wound depth.

Deep tissue pressure injury: Persistent non-blanchable deep red, maroon, or purple discoloration indicating damage to underlying soft tissue.

Evidence-Based Wound Cleaning and Treatment

Effective wound cleaning facilitates tissue visualization, removes excess exudate, microorganisms, debris, and necrotic tissue, and maintains an optimal healing environment. [13] Cleaning solutions should not cause hypersensitivity reactions, should reduce microbial load, and should be non-toxic to human tissue. Studies indicate that antiseptic solutions like povidone-iodine and chlorhexidine can be cytotoxic and impede cellular healing. Instead, normal saline is recommended for non-infected wounds. [14,15] Additionally, antibiotic overuse in non-infected wounds should be avoided to prevent bacterial resistance. [16] Aseptic wound care techniques should be strictly followed to minimize contamination risks [17].

Pressure Distribution/Relocation

Regular position changes should be maintained in patients with a developing wound, except in cases where position changes are contraindicated. [12,16] The patient should not be placed directly on the wound when positioning, and the wound area should be assessed for healing or worsening with each position change. The frequency of position changes should be determined by considering skin and tissue tolerance, the patient's general medical condition, medical goals, and the patient's comfort and pain. [12] In addition to position changes, a support surface appropriate to the patient's needs should be provided to distribute pressure, reduce shear force, and provide temperature and humidity control. [12,16]

Exudate Management

Exudate plays a key role in wound healing by providing nutrients, growth factors, and immune support, but excessive exudate can macerate surrounding tissue, promote bacterial growth, and delay healing. [18] Nurses can manage exudate using hydrofiber dressings (e.g., Aquacel) to absorb excess fluid or hydrogels to maintain moisture balance. [19]

Monitoring exudate characteristics—such as color, consistency, and odor—is essential in detecting infection or other complications early. Personalized wound care plans should consider exudate levels and adjust dressing types accordingly to maintain a balance that facilitates healing. [20]

Debridement

Initial debridement is necessary to remove significant necrotic tissue, excessive bacterial load, and the cellular burden of devitalized and senescent cells to prepare the wound bed for healing. Debridement should be performed until the wound bed is free of devitalized tissue and covered with granulation tissue. [12] In cases where there is significant necrotic tissue, performing the initial debridement in the operating room allows for a more definitive procedure. If there is a dry eschar without purulent or fluctuant tissue and minimal erythema, the eschar can be left in place. When urgent debridement is not needed, additional products that provide autolytic or enzymatic debridement over time can be used. [21]

Infection Control Strategies

Wound infections require targeted interventions based on the severity of bacterial presence. Superficial infections exhibit signs such as non-healing wounds, excessive exudate, red and bleeding granulation tissue, and unpleasant odor, which can often be treated with topical antiseptics. Deep tissue infections, characterized by increased wound size, temperature, bone exposure, and new wound formations, require systemic antibiotics alongside topical treatments. [22]

Biofilm, a bacterial colony protected by a polysaccharide barrier, complicates infection treatment. Prontosan is a recommended solution that disrupts biofilm colonies, hydrates tissue and facilitates autolytic debridement.[23] Topical antimicrobial agents should be used in combination with systemic antibiotic therapy in wounds presenting with signs of spreading or systemic infection. [24]

Pressure ulcers require a combination of dressing techniques and preventive measures. Absorbent dressings like hydrofiber control exudate, while foam dressings reduce pressure on affected areas. Patient education on correct positioning and pressure relief is crucial. [1,19] Although national wound care guidelines and sufficient clinical studies are lacking, clinical experience indicates that silver dressings, calcium alginate, and polyurethane dressings are commonly used in the treatment of pressure ulcers in Bulgaria.

Dressings

Wound dressings should be selected based on the type of wound to be treated. Considerations include the wound's size, depth, shape, and location, the presence and volume of exudate, the presence of tunnels and tissue damage, the type of tissue in the wound bed, the surrounding skin condition, and pain. [12] The types of dressings that may be used according to wound characteristics are summarized in Table 1. [20,25]

Table 1. Dressing used in wound care

Wound dressing type	Advantages	Disadvantages	**Ideal use**
Alginate dressings	Absorbent, required less frequent changes	Expensive	Infected wounds
Foam dressings	Absorbent, provides padding	Expensive	Infected wounds, surrounding sensitive skin, stage 1 wounds, and for prevention
Gauze	Inexpensive, microdebridement	Frequent changes	Large complex wounds with exudate or biofilm
Honey dressings	Mild antibiotic	Poor effectiveness	Mild stage 2 wounds
Hydrocolloid dressings	Absorbent	Expensive	Minimally exuding Stages 1 and 2 wounds
Hydrogel dressings	Moisturizing	Quick removal	Dry or dehydrated wounds, non-infected granular wounds
Silver dressings	Antibiotic	Inhibits epithelialization	Infected wounds, removed when infection healed
Transparent film dressings	Provide a barrier to body fluids, requires less frequent changes	Non-porous, may tear the skin upon removal	Stages 1 and 2 non-exudating wounds

In addition to conventional wound dressings, advanced treatment modalities such as Negative Pressure Wound Therapy (NPWT), also known as Vacuum-Assisted Closure (VAC), and Hyperbaric Oxygen Therapy (HBOT) are increasingly used in chronic wound management. NPWT promotes wound healing by removing excess exudate, reducing edema, improving blood flow, and stimulating granulation tissue formation. Hyperbaric oxygen therapy enhances tissue oxygenation, stimulates angiogenesis, and supports bacterial control, particularly in ischemic or diabetic wounds. These therapies are generally used in complex or non-healing wounds under specialized clinical supervision. [22, 26]

Reccommendations in the Bulgarian Context Explanation was added in introduction

A literature review of nursing education in wound care reveals key challenges, including knowledge gaps, reliance on outdated practices, and insufficient training at undergraduate and postgraduate levels. Addressing these gaps requires a structured, evidence-based education approach. [27] In Bulgaria, wound care education and practice must align with international evidence-based strategies. Limited research on Bulgarian wound care practices highlights the necessity of integrating modern training programs such as simulation and updated clinical guidelines into nursing curricula. Enhanced collaboration between academic institutions and healthcare facilities can strengthen nursing competence and ensure high-quality, evidence-based care in wound management. [28]

Conclusion

Effective wound management requires an integrated, evidence-based approach supported by clinical experience. Optimizing wound healing involves selecting appropriate treatments, preventing complications, and continuously educating healthcare professionals on innovative therapeutic strategies. Technological and therapeutic advancements, combined with patient-centered care, enhance treatment quality and reduce complications.

Continuous education and the implementation of updated protocols are crucial to improving wound care standards. Excellence in wound treatment depends not only on evidence-based practices but also on multidisciplinary collaboration and ongoing training. Future research should focus on developing new therapeutic methods and improving existing protocols to ensure patient safety and superior clinical outcomes.

Conflict of Interest

There is no conflict of interest between authors of this article.

Funding

During this study, no financial or moral support was received from any pharmaceutical company that has a direct connection with the research topic or from a company that provides or produces medical devices and materials that could negatively affect the evaluation process of this study.

Author contributions

Conceptualization: DP, Literature Review: DP and EU, Writing - Original Draft: DP and EU,Final Review and Editing: DP and EU

References

1.Lee YN, Chang SO. How experienced wound care nurses conceptualize what to do in pressure injury management. BMC Nursing. 2023; 22(1): 189. DOİ: https://doi.org/10.1186/s12912-023-01364-z

2.EWMA Document. Home care-wound care: Overview, challenges and perspectives. J Wound Care 2014; 23:1–41.

3.Powers JG, Higham C, Broussard K, Phillips TJ. Wound healing and treating wounds: Chronic wound care and management. J Am Acad Dermatol. 2016; 74: 607–25.

4.Dutton M, Chiarella M, Curtis, K. The role of the wound care nurse: An integrative review. British Journal of Community Nursing. 2014; 19:39–47. DOI: https://doi.org/10.12968/bjcn.2014.19.Sup3.S39

5.Kielo E, Suhonen R, Salminen L, Stolt M. Competence areas for registered nurses and podiatrists in chronic wound care, and their role in wound care practice. J. Clin. Nurs. 2019; 28(21-22): 4021-4034. DOİ: https://doi.org/10.1111/jocn.14991

6.Bogoev S. Chronic wounds as a socioeconomic burden. KNOWLEDGE – International Journal. 2021; 49(4): 885–888. Retrieved from https://ojs.ikm.mk/index.php/kij/article/view/4573

7. Gyurova-Kancheva V, Kirkova-Bogdanova A, Taneva D, Bozov H, Kyuldzheva Y. Hyperbaric oxygen therapy of diabetic foot ulcers: A pilot study. Folia Med (Plovdiv) 2026;68(1):e166916. DOI: https://doi.org/10.3897/folmed.68.e166916

8. Oliveira et al. Qualidade de vida de pessoas com feridas crônicas. Acta Paulista de Enfermagem. 2019; 32: 194-201.

9. International Council of Nurses. International Classification for Nursing Practice (ICNP). 2019. Access: https://www.icn.ch/icnp-browser Date:23.03.2026.

10. Direção-Geral da Saúde. Norma de Prevenção da Infeção do Local Cirúrgico. Lisboa: Ministério da Saúde. 2013. http://www.dgs.pt/directrizes-da-dgs/normas-e-circularesnormativas/norman0242013-de-23122013-pdf.aspx.

11.Kottner J, et al. Pressure ulcer/injury classification today: An international perspective. Journal of Tissue Viability. 2020; 29(3): 197-203.

12.Panel, E.-E.P.U.A., Prevention and Treatment of Pressure Ulcers/Injuries: Quick Reference Guide. 2019. http://www.internationalguideline.com/static/pdfs/Quick_Reference_Guide-10Mar2019.pdf

13.Parreira, A., & Marques, R. Feridas, Manual de boas práticas (1a edição). Edições Técnicas, Lda. 2017.

14.Zhang M, Jin J, Liu Y, Ben C, Li H, Cheng D et al. Analysis of povidone iodine, chlorhexidine acetate and polyhexamethylene biguanide as wound disinfectants: in vitro cytotoxicity and antibacterial activity. BMJ Nutrition, Prevention & Health. 2023; 6(1): 21–27. DOI: https://doi.org/10.1136/bmjnph-2022-000431

15. Brown A. Diagnosing and managing wound infection. *JCN* 2022;36(4):35-40.

16.Ho CS, Wong CTH. Aung TT, Lakshminarayanan R, Mehta JS, Rauz S et al. Antimicrobial resistance: A concise update. The Lancet Microbe. 2025; 6(1): 100947. https://doi.org/10.1016/j.lanmic.2024.07.010.

17. International Wound Infection Institute (IWII) Therapeutic wound and skin cleansing: Clinical evidence and recommendations. Wounds International. 2025.
18.World Union of Wound Healing Societies. Exudate management: recent updates and practical guidelines. Wounds International. 2019. https://www.linkforwoundhealing.info/en-gb/scientific-content/2019/exudate-management-recent-updates-and-practical-guidelines

19.Alberts A, Tudorache DI, Niculescu, AG, & Grumezescu AM. Advancements in Wound Dressing Materials: Highlighting Recent Progress in Hydrogels, Foams, and Antimicrobial Dressings. Gels. 2025; 11(2): 123. https://doi.org/10.3390/gels11020123

20. Wounds UK Best Practice Statement. Effective exudate management. London: Wounds UK, 2013. Available to download from: www.wounds-uk.com

21.Boyko TV, Longaker MT, Yang GP. Review of the Current Management of Pressure Ulcers. Adv Wound Care (New Rochelle). 2018; 7(2): 57-67. DOI: https://doi.org/10.1089/wound.2016.0697

22.Sibbald RG, Elliot JA, Persaud-Jaimangal R, Goodman L, Armstrong DG, Harley C et al. Wound Bed Preparation 2021. Advances in Skin & Wound Care. 2021; 34(4):183-195 DOI: https://doi.org/10.1097/01.ASW.0000733724.87630.d6

23.Santos E, Queirós, Cardoso D, Cunha M & Apóstolo J. A eficácia das soluções de limpeza para o tratamento de feridas: uma revisão sistemática. Revista de Enfermagem Referência. 2016; 4(9): 133-143. DOI: https://doi.org/10.12707/RIV16011

24.International Wound Infection Institute (IWII) Wound Infection in Clinical Practice. Wounds International. 2022. Access: https://woundsinternational.com/wp-content/uploads/2023/02/9b549b9d8a74b2c69a7773aa13157376.pdf
25.Uğur E, Uslu Y. Basınç Yaralanması. Yıldız CE, Karpuzoğlu E, Uğur M. editors. Kalp Damar Cerrahisinde Yara Bakım Ortak Görüş. TKDC Yayınları. İstanbul: Bayçınar Tıbbi Yayıncılık ve Reklam Hiz. Tic. Ltd. Şti. 2021.

26.Burhan A, Ali Khusein N, & Sebayang SM. Effectiveness of negative pressure wound therapy on chronic wound healing: A systematic review and meta-analysis. Belitung Nursing Journal. 2022; 8(6): 470-480. DOI: https://doi.org/10.33546/bnj.2220

27.Welsh L. Wound care evidence, knowledge and education amongst nurses: A semi-systematic literature review. Int Wound J. 2018 Feb;15(1):53-61. DOI: https://doi.org/10.1111/iwj.12822.
28. Popova T, Dimitrova N, Georgieva-Gurbeva S & Jordanova D. Formation of professional competence of nurse students in chronic wound care. Information for nursing staff. 2024; 56(4): 3-11.