

METHODOLOGICAL ARTICLE

The role of the nurse in the prevention and management of diabetes-related foot disease in the home care setting: a scoping review protocol

Magdalena Annersten Gershater^{1*}, Jan Apelqvist^{2,3}, Martina Vall⁴, Natalia Santos^{5,6}, Marco Meloni^{7,8}, Klaus Kirketerp-Møller⁹, Vladimira Fejfarova¹⁰, José Luis Lázaro Martínez^{11,12} and Georgina Gethin¹³

¹Department of Care Science, Faculty of Health and Society, Malmö University, Malmö, Sweden; ²Department of Endocrinology, Skåne University Hospital, Malmö, Sweden; ³Division of Clinical Sciences, Lund University, Sweden; ⁴Malmö University Library, Malmö University, Malmö, Sweden; ⁵Hospital De Viseu, ULS Viseu Dão Lafões, Viseu, Portugal; ⁶Faculty of Medicine, University of Coimbra, Coimbra, Portugal; ⁷Department of Systems Medicine, University of Rome Tor Vergata, Rome, Italy; ⁸Division of Endocrinology and Diabetology, Department of Medical Sciences, University Hospital Fondazione Policlinico Tor Vergata, Rome, Italy; ⁹Copenhagen Wound Healing Center, Bispebjerg University Hospital, Copenhagen, Denmark; ¹⁰Diabetes Centre, Institute for Clinical and Experimental Medicine, Prague, Czech Republic; ¹¹Diabetic Foot Unit, Universidad Complutense de Madrid, Madrid, Spain; ¹²Institute for Health Research, Hospital Clínico San Carlos, Madrid, Spain; ¹³School of Nursing and Midwifery, University of Galway, Galway, Ireland

Abstract

Objective: The objective of this scoping review is to review and map the role of the nurse in the prevention and management of diabetes-related foot disease in the home care setting, as presented in the literature.

Introduction: Patients with diabetes mellitus at risk for or having a foot ulcer have substantial needs for nursing interventions. Nurses are responsible for the planning and evaluation of the care provided in accordance with the nursing process and they perform many of these nursing activities in collaboration with other health care professionals. As part of a well-functioning process, teamwork is crucial for high quality care. Nurses play a central role in that team. The protracted time to healing for diabetic foot ulcers necessitates lengthy relationships between the patient and nurses. Nurses perform regular dressing changes, help with medication, injections and other needs for assisted self-care in homecare settings. Nurses can also foresee and manage risk factors for ulceration on the feet, such as footwear, factors that can cause trauma to the feet, preventing fall injuries. No compilation of studies regarding nursing activities performed in home care settings for patients with diabetic foot disease has been made, although there have been studies from home care settings.

Inclusion criteria: Registered nurses working with people with diabetes-related foot disease in home care.

Methods: A search will be conducted through three databases, Cinahl, LILACS and PubMed, using various keyword combinations focused on 'the diabetic foot' and 'home care'. The search will be carried out in 2026 and updated before publication. No limitations will be applied to language and a 20-year limit on publication date will be enforced.

Keywords: *diabetic foot; home care; nursing; prevention; treatment; diabetes-related foot disease*

Received: 10 April 2026; Accepted: 4 September 2026; Published: 26 October 2026

Foot ulcers are a complication of diabetes that have a huge impact on patients and health care organizations. The life-time incidence of foot ulcers has been estimated at 19–34%. Treatments are usually multifactorial and take place at specialist clinics in close collaboration with primary care and home care organizations, especially if the patients are older and have significant comorbidities.^{1,2} Diabetic foot disease is a leading cause of

diabetes-related hospital admissions in high-income countries. The median initial admission rate for any diagnosis of total diabetic foot disease conditions has been estimated at 16.3 per 1,000 person-years with diabetes.³ A key component for their prevention is daily foot inspections,¹ which can be difficult to perform with increasing age and comorbidities. Those patients become dependent on family members and/or home care organizations.

Family members caring for a person with diabetic foot ulcers often experience emotional stress, financial difficulties, practical constraints, and a lack of systemic support from health care organizations.^{4,5} Home care is distinct from hospital and other primary care settings and is organized differently in various parts of the world. Home care is the provision of regular health care interventions given to people who are not able to visit primary care clinics or hospitals.⁶ In this study, the term ‘home care’ denotes the care provided at assisted living facilities or nursing homes if the patient has given up their home to permanently move into these facilities.

Patients with diabetes and at risk for or currently have a foot ulcer often have substantial needs for nursing interventions.^{7,8} Nurses play a critical role in the planning and evaluation of the care provided to these patients and work alongside doctors, podiatrists, GPs, etc. They perform many of the nursing activities in collaboration with nurse assistants who have a comparatively lower education level and/or the patient’s next of kin. They are also responsible for educating home care staff, family members and patients about the self-care activities that are required for the best possible outcome of the diabetes-related foot disease.⁷

Examples of nursing activities include, but are not limited to, administering medicine and injections, taking p-glucose measurements, checking for medication side effects (especially as reduced kidney function is common), assessing fluid balance and nutrition, monitoring the effects of reduced mobility due to offloading at home, managing local wound, supporting patients to cope with existential loneliness, providing palliative care and educating the patient and their family. Nurses also conduct debridement (within their scope of practice), encourage compliance with off-loading, as well as recognize signs of vascular abnormalities and infection complications.⁶

To our knowledge, there is a gap in literature focusing on care interventions taking place in the patients’ home, in spite of this being the primary setting for patients’ daily lives. Given the central and extensive role of nurses in caring for patients in a home care setting, it is important to determine the type of interventions they deliver, and the outcomes assessed as presented in the literature.

Definitions

Diabetes-related foot disease

Diabetes-related foot disease is any disease of the foot in a person with current or previously diagnosed diabetes mellitus that includes one or more of the following: peripheral neuropathy, peripheral artery disease, infection, ulcer(s), neuro-osteoarthopathy, gangrene, or amputation.⁹

Home

The primary place of residence of the individual, including a private residence (e.g. house or apartment) as well as assisted living facilities and nursing homes.

Nursing interventions

Examples include, but are not limited to, patient and family education, wound management, nutritional care, administering medicines, diabetes management, coordination of care.

Nurse

In the EU, a nurse (specifically a nurse responsible for general care) is a regulated professional who has completed at least 3 years of university-level training, and is authorized to plan and manage patient care independently or with doctors. They are responsible for preventive, curative, and rehabilitative care.¹⁰

Home care

Professional care provided at the homes of adult people with formally assessed needs, which include rehabilitative, supportive and technical nursing care; domestic aid and personal care; as well as respite care provided to informal caregivers. Home care involves caring for persons with complex needs (for instance 24 h support) and those who only need help occasionally with relatively simple tasks, for example, domestic aid for frail elderly people and adults with disabilities.⁶

Rationale

There have been some published studies focusing on the nursing interventions for patients with diabetes and foot ulcers. However, to our knowledge, no mapping of data regarding nursing activities performed in home care settings has been conducted. Therefore, this review will provide an up-to-date comprehensive overview of the types and formats of interventions provided in the homes of patients with diabetes-related foot disease and the outcomes assessed.

Review question(s)

1. What interventions, and in what formats, do nurses deliver to patients with diabetes-related foot disease in their own home?
2. When nursing interventions have been investigated, what outcomes have been assessed?

Inclusion criteria

Participants

Population: Registered general nurses

Concept

Nursing interventions for patients with diabetes mellitus and/or diabetes-related foot disease.

Context

The home of a patient with diabetes-related foot disease. The patient may live in their own house or apartment, and the care provided can be either long-term or short-term care.¹¹

Types of sources

This scoping review will consider studies with both experimental and quasi-experimental designs including randomized controlled trials, non-randomized controlled trials, before-and-after studies and interrupted time-series studies. In addition, analytical observational studies including prospective and retrospective cohort studies, case-control studies, analytical cross-sectional studies, descriptive observational study designs including case series, individual case reports and descriptive cross-sectional studies will also be considered for inclusion.

Qualitative studies that focus on qualitative data including, but are not limited to, designs such as phenomenology, grounded theory, ethnography, qualitative description, action research will also be eligible for inclusion.

In addition, systematic reviews that meet the inclusion criteria will also be considered.

Methods

The scoping review will be conducted in accordance with established methodological frameworks for scoping reviews, as outlined in the JBI Manual for Evidence Synthesis¹² (chapter 10.1.3). Recognized sources, including Arksey and O'Malley,¹³ Levac et al.,¹⁴ Peters et al.,¹⁵ and the PRISMA-ScR reporting standards¹⁶ have informed the development of this protocol and will continue to guide the preparation of the final report.

Search strategy

The search strategy will aim to locate published studies. A three-step search strategy will be used in this review. First, an initial limited search of PubMed and CINAHL (EBSCO) will be undertaken to identify relevant articles. Keywords found in titles and abstracts of

relevant articles, and the index terms used to describe the articles will be used to develop a full search strategy for PubMed, CINAHL, LILACS (Latin American and Caribbean Health Science Literature) and Google Scholar (see Appendix 1). The search strategy, including all identified keywords and index terms, will be adapted for each included database and information source. The reference list of included sources of evidence will be screened for additional studies.

Studies published in any language will be considered. There will be a 20-year limit in publication date. This limit was set taking into account the international guidelines of diabetic foot and the evolving nature of organizations of care during the last decades. In order to be included in the

review, articles must describe nursing care provided to a person with diabetes-related foot disease in a home care setting.

The databases to be searched include PubMed via NLM, CINAHL via EBSCO and LILACS.

Study/source of evidence selection

Following the search, all identified citations will be collated and uploaded into Covidence (Covidence.org) and deduplicated. Titles and abstracts will then be screened by two or more reviewers working independently for assessment against the inclusion criteria for the review. Potentially relevant sources will be retrieved in full. The full text of selected citations will be assessed in detail against the inclusion criteria by two or more reviewers working independently. The reasons for exclusion of sources of evidence at full text that do not meet the inclusion criteria will be recorded and reported in the final review. Any disagreements that arise between the reviewers at each stage of the selection process will be resolved through discussion with an additional reviewer.

The results of the search and the study inclusion process will be reported in full in the final scoping review and presented in a PRISMA flow diagram (<https://www.prisma-statement.org/scoping>).¹⁶

Data extraction

Data will be extracted from papers included in the scoping review by two or more reviewers using Covidence (Covidence.org). The data extracted will include specific details about the participants, concept, context, study methods and key findings relevant to the review question/s.

A draft extraction form is provided (see Appendix 2). The draft data extraction tool will be modified and revised as necessary during the process of extracting data from each included evidence source. Modifications will be detailed in the scoping review. Any disagreements that arise between the reviewers will be resolved through discussion, or with an additional reviewer/s. If appropriate, the authors of the papers will be contacted to request missing or additional data, where required.

Data analysis and presentation

A narrative summary will accompany the tabulated and/or charted results and will describe how the results relate to the review's objectives.

Acknowledgements

This work is part of the EWMA Diabetic Foot Committee, which supports research in diabetic foot management.

Declarations

None of the authors are currently working in home care settings.

Conflicts of interest and funding

There is no conflict of interest in this project. The authors have not received any funding or benefits from industry or elsewhere to conduct this study. EWMA Diabetic Foot Committee receives unrestricted educational grants from Aurealis Therapeutics, Bonaliva, DEBx Medical, Nanordica Medical, Smith & Nephew, and Solventum.

References

1. van Netten JJ, Raspovic A, Lavery LA, et al. Prevention of foot ulcers in persons with diabetes at risk of ulceration: a systematic review and meta-analysis. *Diabetes Metab Res Rev* 2024; 40(3): e3652. doi: 10.1002/dmrr.3652
2. Schaper NC, van Netten JJ, Apelqvist J, Bus SA, Fitridge R, Game F, et al. Practical guidelines on the prevention and management of diabetes-related foot disease (IWGDF 2023 update). *Diabetes Metab Res Rev* 2024; 40(3): e3657. doi: 10.1002/dmrr.3657
3. Lazzarini PA, Cramb SM, Golledge J, et al. Global trends in the incidence of hospital admissions for diabetes-related foot disease and amputations: a review of national rates in the 21st century. *Diabetologia* 2023; 66: 267–87. doi: 10.1007/s00125-022-05845-9
4. Hjelmgård CMH, Berthelsen C, Kristensen MØ, Hansen CA. Diabetes-related foot ulcers: the role of informal caregivers' experiences and needs regarding involvement in multidisciplinary team treatment. A qualitative study. *Int Wound J* 2026; 23(4): e70891. doi: 10.1111/iwj.70891
5. Toğluk Yiğitoğlu E, Kaygu Ö, Saltoğlu N, Balkan İİ. Burden of caregivers of diabetic foot ulcers: a single-centre, descriptive cor-relational study in Türkiye. *BMJ Open* 2025; 15(6): e092676. doi: 10.1136/bmjopen-2024-092676
6. Probst S, Seppänen S, Gethin G, et al. EWMA Document: Home care-wound care. *J Wound Care* 2014; 23 (5 Suppl.): S1–44. doi: 10.12968/jowc.2014.23.Sup5a.S1
7. Annersten Gershater M, Pilhammar E, Alm Roijer C. Prevention of foot ulcers in patients with diabetes in home nursing. Registered Nurses work. A qualitative interview study. *Eur Diab Nurs*. 2013; 10: 52–7. doi: 10.1002/edn.227
8. Annersten Gershater M, Zdravkovic S, Elgzyri T. Changes in daily nursing needs and self-care capability of people with diabetes after in-hospital treatment for foot complications: A descriptive study. *Nurs Open* 2024; 11(5): e2186. doi: 10.1002/nop.2.2186
9. van Netten JJ, Bus SA, Apelqvist J, et al. Definitions and criteria for diabetes-related foot disease (IWGDF 2023 update). *Diabetes Metab Res Rev* 2024; 40(3): e3654. doi: 10.1002/dmrr.3654
10. European Parliament. European Union Directive. Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013 amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System. Strasbourg 2013.
11. Genet N, Boerma WG, Kringos DS, Bouman A, Francke AL, Fagerström C, et al. Home care in Europe: a systematic literature review. *BMC Health Serv Res* 2011; 11:207. doi: 10.1186/1472-6963-11-207
12. Peters MDJ, Godfrey C, McInerney P, Munn Z, Tricco AC, Khalil H. Scoping reviews. In: Aromataris E, Lockwood C, Porritt K, Pilla B, Jordan Z, editors. *JBIM manual for evidence synthesis*. JBI; 2024. Available from: <https://synthesismanual.jbi.global> [cited 10 April 2026].
13. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. *Int J Soc Res Methodol* 2005; 8(1): 19–32. doi: 10.1080/1364557032000119616
14. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. *Implement Sci* 2010; 5: 69. doi: 10.1186/1748-5908-5-69
15. Peters MDJ, Marnie C, Tricco AC, Pollock D, Munn Z, Alexander L, et al. Updated methodological guidance for the conduct of scoping reviews. *JBIM Evid Synth* 2020; 18(10): 2119–26. doi: 10.11124/JBIES-20-00167
16. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann Intern Med* 2018; 169(7): 467–73. doi: 10.7326/M18-0850

*Magdalena Annersten Gershater

Department of Care Science
Faculty of Health and Society
Malmö University
Malmö, Sweden
Email: magdalena.gershater@mau.se

Appendices

Appendix 1: Search strategy

Table 1. Electronic search strategy and identified records in November, 2025

	Databases and search strategy	Records
	PubMed via NLM	
#1	"Diabetic Foot"[Mesh] OR foot ulcer[tiab] OR diabetic foot[tiab]	
#2	"Nurses"[Mesh] OR nurse[tiab] OR nurses[tiab]	
#3	#1 AND #2	480
#4	"Residential Facilities"[Mesh] OR nursing home*[tiab] OR "assisted living facility*"[tiab] OR "home* for the elder*"[tiab] OR "Home Care Services"[Mesh] OR "home care service*"[tiab] OR home care[tiab]	
#5	#1 AND #4	136
#6	#3 OR #5	584

Appendix 2: Data extraction table

Table 2. Data extraction table

Article	Details
Source/citation	
Year of publication	
Country of participants	Include also if this was a rural or urban setting or both.
Study	Type of study e.g. observational, pre-test post-test. State the objective of the study as reported by the authors
Home setting	Identify what type of home care setting was included in the study. If more than one setting, then include the details of all of them.
Participants	Age; gender; ethnicity; details of comorbidities and medication; level of mobility; reference to levels of activities of daily living.
Home circumstance	Is the individual living alone, how many persons in the household
Diabetes-related foot disease	Any history of the extent of foot disease including, but not limited to, history of ulceration; peripheral arterial disease; charcot neuroarthropathy; amputation; infection.
Inclusion/exclusion criteria	Provide details of any assessment prior to the intervention, any inclusion or exclusion criteria for the intervention and how patients were selected for screening and assessment.
Interventions	List all interventions as reported in the article. Include details of the intervention, duration of intervention, frequency of intervention.
Formats for intervention	In what format was the intervention delivered? For example, education as an intervention may be delivered via oral information, paper based as a leaflet, audio and/or visual information via an app on the phone or as a DVD.
Assessed interventions	What interventions were assessed, how were they assessed, at what time point were they assessed and by whom?
Results	What outcomes are reported and at what time point? What are the results of each outcome?
Comments	Please include any additional comments about the article.