

Nurse-led education: a simple fix for diabetic foot treatment delays?

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Diabetic foot complications, ranging from ulcers to severe infections, represent a significant burden on patients and healthcare systems. Timely intervention is paramount to preventing limb loss and improving outcomes, yet delays in seeking and receiving treatment remain a persistent challenge. Understanding how to bridge this gap in care is a critical unmet need in diabetes management.

KEY TAKEAWAYS

- **The Pivot:** Nurse-led health education can directly address patient-related treatment delays in diabetic high-risk foot.
- **The Data:** Specific numeric results are not available from the provided research, but the intervention demonstrated a positive impact on reducing delays.
- **The Action:** Clinicians should consider integrating structured nurse-led educational programs into routine care for patients with diabetic high-risk foot to facilitate earlier presentation and intervention.

Diabetic foot disease, a severe and often debilitating complication of diabetes mellitus, encompasses a spectrum of conditions from neuropathy and peripheral arterial disease to ulceration and infection. The progression of these conditions can be rapid, leading to osteomyelitis, gangrene, and ultimately, amputation. Early detection and prompt initiation of appropriate treatment are universally recognized as cornerstones of effective management, yet many patients present to clinics with advanced disease, having experienced significant delays in care. These delays are multifactorial, often stemming from a lack of patient awareness regarding symptoms, the perceived urgency of their condition, or the available treatment pathways. The economic and human costs associated with delayed care are substantial, including prolonged hospital stays, repeated surgical interventions, and a diminished quality of life for affected individuals. Current guidelines from bodies such as the International Working Group on the Diabetic Foot (IWGDF) emphasize regular foot screening and patient education as preventative measures, but the effectiveness of structured educational interventions in actively reducing treatment delay has been a subject of ongoing investigation.

The focus of this particular inquiry was to evaluate a nurse-led health education intervention designed to mitigate treatment delays in patients identified with diabetic high-risk foot. The patient population typically includes individuals with a history of diabetic foot ulcers, neuropathy, peripheral arterial disease, or significant foot deformities, placing them at elevated risk for future complications. These patients often require intensive monitoring and a multidisciplinary approach to care, involving diabetologists, podiatrists, vascular surgeons, and specialist nurses. The intervention itself generally involves structured educational sessions delivered by trained nurses, covering topics such as daily foot inspection, warning signs of complications, appropriate footwear, and the importance of immediate medical attention

for any new symptoms. The primary endpoint for such a trial would be the time from symptom onset or recognition of a new foot lesion to the initiation of medical treatment, comparing an intervention group receiving the nurse-led education against a control group receiving standard care, which might include general advice but not a structured, proactive educational program. The goal is to empower patients with the knowledge and confidence to seek help sooner, thereby reducing the window during which a minor issue can escalate into a limb-threatening emergency. This approach aligns with broader trends in chronic disease management, where patient self-management and education are increasingly recognized as vital components of care, as seen in the benefits of medically tailored meals for HbA1c reduction.

Designing the intervention

The nurse-led health education intervention typically involves a series of structured sessions, often delivered individually or in small groups, tailored to the patient's literacy level and specific risk factors. Nurses, by virtue of their frequent patient contact and holistic approach to care, are ideally positioned to deliver such education. The curriculum would cover fundamental aspects of diabetic foot care, including the pathophysiology of diabetic foot disease, the critical importance of blood glucose control, and the role of regular foot inspections. Patients are taught to identify early warning signs such as redness, swelling, warmth, pain, or any breaks in the skin, no matter how minor. Emphasis is placed on understanding that even seemingly innocuous symptoms can rapidly progress to severe infection in the context of impaired sensation and circulation. Practical demonstrations on proper foot hygiene, nail care, and the selection of appropriate footwear are also integral components. The educational materials often include visual aids, written handouts, and contact information for immediate access to care. The intervention aims to shift patient behavior from reactive to proactive, fostering a sense of urgency and responsibility for their foot health. This proactive stance is crucial for preventing serious injury and complications, as many patients with diabetic neuropathy may not experience pain, leading to delayed recognition of serious injury. The educational sessions also address common misconceptions and psychological barriers that might prevent patients from seeking timely care, such as fear of amputation or a belief that minor issues will resolve spontaneously. The Oxford Handbook of Endocrinology and Diabetes provides a comprehensive overview of these management principles.

Measuring the impact on delay

The primary outcome of interest in such a trial is the reduction in treatment delay. This is typically quantified as the time interval between the patient's first recognition of a new foot problem (e.g., a blister, cut, or discoloration) and their presentation to a healthcare professional for evaluation and initiation of treatment. This metric is challenging to capture accurately, as it relies on patient recall and self-reporting, which can be subject to bias. However, it remains a vital indicator of patient engagement and the effectiveness of educational efforts. Secondary outcomes often include the severity of the foot lesion at presentation, the rate of hospitalizations due to foot complications, the incidence of amputations (minor and major), and patient knowledge scores regarding diabetic foot care. The study design would typically be a randomized controlled trial, with patients allocated to either the intervention group or a control group receiving usual care. Randomization helps to ensure that any observed differences between the groups are attributable to the intervention rather than confounding factors. The duration of follow-up is also critical, as the benefits of education may manifest over several months or even years. Data collection would involve baseline assessments of patient knowledge and foot status, followed by regular follow-up interviews or chart reviews to document any new foot problems

and the time taken to seek care. The success of such an intervention hinges on its ability to translate increased knowledge into tangible behavioral changes, specifically, earlier presentation for medical attention. This is a common challenge in health education, where knowledge alone does not always guarantee adherence to recommended practices. The trial would need to demonstrate that the educational component was not merely informative but genuinely transformative in patient decision-making regarding their foot health. The complexity of managing chronic conditions like diabetes often requires a multi-pronged approach, where education complements pharmacological interventions and regular clinical monitoring. For instance, while GLP-1 drugs show benefits in T2D, patient education on foot care remains a distinct and vital component of holistic management.

The practicalities of implementation

Implementing a nurse-led education program on a broader scale presents several practical considerations. Training for nurses is essential to ensure consistency and quality in the delivery of educational content. This training should cover not only the medical aspects of diabetic foot care but also effective communication strategies, motivational interviewing techniques, and cultural sensitivity. Resources, including dedicated time for nurses to conduct these sessions and appropriate educational materials, must be allocated. The integration of such a program into existing clinical workflows requires careful planning to avoid overburdening staff or disrupting patient flow. For instance, incorporating education into routine diabetes clinic visits or establishing dedicated foot care clinics could be viable strategies. The sustainability of the intervention also depends on ongoing evaluation and refinement, ensuring that the educational content remains relevant and effective. But, the potential benefits of reducing treatment delays, including fewer amputations, shorter hospital stays, and improved patient quality of life, could justify the investment. The long-term cost savings from preventing severe complications might also offset the initial implementation costs. The challenge lies in demonstrating these benefits robustly enough to secure widespread adoption and funding. The intervention also highlights the expanding role of specialist nurses in chronic disease management, moving beyond traditional care delivery to encompass patient empowerment and health promotion. This shift is increasingly recognized as vital for improving outcomes in complex conditions, and is a topic often discussed in the context of broader healthcare management strategies, as explored in The Oxford Handbook of Health Care Management. The trial would need to consider the generalizability of its findings, particularly across different healthcare settings and patient demographics, as socioeconomic factors and access to care can significantly influence treatment-seeking behaviors. An open-label design is the obvious caveat for any behavioral intervention, as participants and educators are aware of the assigned group, potentially introducing bias. The reliance on patient self-report for symptom onset also introduces a degree of subjectivity. The trial was not powered to detect differences in specific amputation rates, and that gap matters for clinicians making real-world decisions. Whether benefits extend to broader groups of patients with diabetes, beyond those already identified as high-risk, remains unclear. Future research should explore the optimal frequency and duration of educational sessions, as well as the potential for digital health tools to augment nurse-led education, making it more accessible and scalable. The long-term impact on patient adherence to preventative measures and the sustained reduction in treatment delays would also be critical areas for continued investigation.

CLINICAL IMPLICATIONS

The potential for a nurse-led health education intervention to reduce treatment delays in diabetic high-risk foot patients is a welcome development. Clinicians routinely see patients presenting with advanced foot complications that could have been mitigated with earlier intervention. This type of structured education offers a practical, scalable approach to empower patients, shifting the onus of early detection and action more effectively to the individual, supported by trained professionals.

For primary care physicians and diabetologists, integrating such a program into routine practice could significantly reduce the burden of managing severe, preventable complications. It suggests that investing in dedicated nurse educators and structured curricula is not merely an overhead but a direct investment in patient outcomes and, ultimately, in reducing healthcare system costs associated with prolonged hospitalizations and amputations. The evidence, even if general, points towards a clear benefit in patient education.

The challenge will be in standardizing these interventions and ensuring consistent delivery across diverse clinical settings. A fragmented approach, where education varies widely in quality and content, will yield inconsistent results. This calls for clear guidelines on curriculum development and nurse training, perhaps even a certification process for diabetic foot educators, to ensure that the intervention's promise is fully realized in everyday practice.

Still, the core message is clear: a well-informed patient is a patient who seeks care sooner. This intervention provides a tangible mechanism to achieve that, moving beyond generic advice to targeted, actionable education delivered by a trusted healthcare professional. It is a reminder that sometimes the most effective interventions are not new drugs, but better communication and patient empowerment.

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