

Promoting Sufficient Self-Management for Diabetic Foot Ulcers: Literature Review

Noredia Asia

Lakeview College of Nursing

Dr. Ariel Wright

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A literature review thoroughly examines all known and unknown information on a topic covered by a body of scholarly work, including how the current study fits into the body of knowledge (Maggio et al., 2019). Literature reviews aid in the delivery of high-quality education and research. A literature review can assist any researcher seeking to broaden nursing practice by providing context, identifying innovation, and connecting evidence-based practice variables within the same conceptual framework (Maggio et al., 2019). Quantitative studies apply a method in which researchers collect and identify consistently and legibly measured variables utilizing numerical data (Houser, 2020). Furthermore, good research necessitates in-depth investigation, definable variables, and research questions, strengthening the current methodologically weak medical education studies (Maggio et al., 2019). This literature review examines empirical studies investigating the validity and inefficacy of diabetic foot ulcer treatment and self-management. Nurses are healthcare professionals that serve as educators in actively teaching prevention methods and involving diabetic clients to recognize early detection signs of diabetic holistic deterioration and its complications. Consequently, nurses are responsible for supplying appropriate foot care methods before and during difficulties, teaching patients proper wound care techniques, and promoting restorative diet interventions.

Prioritization of Diabetes-Related Footcare Amongst Primary Care Healthcare Professionals

This article aims to assess primary healthcare professionals' priority for managing diabetic foot disease over the progressive course of the condition compared to other factors of

diabetic care (Mullan et al., 2020). The authors recognized that the predominant cause of diabetic-related amputations and hospitalizations comes from diabetic foot disease. With that knowledge, Mullan et al. (2020) designed a cross-sectional quantitative study to bring awareness to the inadequacy in prioritization of preventative foot care actions. Clinicians would be encouraged to be increasingly attentive to diabetes-related foot care and "motivate healthcare policy decision-makers, funders, and practice managers to join forces to promote prioritization of foot care to people with diabetes within primary care" (Mullan et al., 2020, p. 4655). The healthcare system and the economy support the need to ensure preventative foot care actions are a priority; however, this article highlights how well preventive foot care actions are made a priority compared to other diabetic-related nursing and medical interventions.

Key Points

Mullan et al. (2020) outline the goals for managing diabetic foot disease in correlation to other nursing and medical interventions necessary during a diabetes consultation as the disease advances. The researchers conducted a cross-sectional study utilizing convenience sampling of general practitioners and credentialed diabetes educators as participants. To become a credentialed diabetes educator, "an individual needs to be a registered medical practitioner, nurse, midwife, pharmacist, podiatrist, physiotherapist, accredited dietitian or exercise physiologist" (Mullan et al., 2020, p. 4656). In Australia, just over 80% of registered nurses have credentialed diabetes educator certifications (Mullan et al., 2020). An online survey hosted on Qualtrics collected the data, which implied consent from participants and notified them that the study was voluntary and anonymous. The survey also gathered demographic information to enable the sample group to be described and ensure the eligibility of the participants.

Researchers sent the invitation through a diabetes healthcare professional organization's email subscriber lists to approximately 6,897 email addresses (Mullan et al., 2020). The survey presented multiple clinical scenarios that asked participants "to identify and rank their top three priorities of care, by placing the number 1 next to their highest priority, the number 2 next to their second highest priority and the number 3 next to their third highest priority" (Mullan et al., 2020, p. 4656). Mullan et al. (2020) directed the following scenarios:

(S1) consulting with a person at initial diagnosis of type 2 diabetes, (S2) consulting with a person with a 20-year history of diabetes, (S3) consulting with a person with diabetes who reported "tingling" in their feet, (S4) consulting with a person with diabetes who wrote a "small cut" on their foot, and (S5) on conducting a full foot assessment on a person with diabetes, evidence of peripheral neuropathy, absent pedal pulses and an ulcer 1cm in diameter is found. (p. 4656)

With ninety-four eligible participants completing the study, the results found that: 86% of the participants listed lifestyle education as a priority for S1 and decreased across the remaining four scenarios; 23% of the participants listed emotional and psychological health assessments as a priority for S1 and dropped across the remaining four; 61% of participants listed HbA1c review as a priority for S1, which increased to 78% in S2 and decreased in the remaining three scenarios (Mullan et al., 2020, Table 2). The data expressed that before reported foot complications, as in S1 and S2, only 17 participants indicated foot assessments as a priority. With a minimum predetermined statistically significant level of $p < .050$, the study found a statistically significant increase in the primacy of foot assessments, private podiatry referrals, and specialist tertiary diabetic foot clinic referrals in consultation with a person reporting "tingling in feet," compared

to consulting with a person with a 20-year history of diabetes with p-values of $p < .001$ and $p = .026$, respectively (Mullan et al., 2020). Consulting with a person personifying diabetes-related foot complications, such as S3 and S4, the priority of a full foot assessment increased to up to 78% of participants (Mullan et al., 2020, Table 2). When consulting with a person with significant diabetes-related foot complications, as in S5, 49% of the participants chose a podiatrist recommendation as one of their top three, and 39% indicated podiatry care as their number one priority. The study uncovered a statistically significant increase in the importance of referrals to a podiatrist and specialist tertiary diabetic foot clinics from S4-S5 with a p-value of $p < .001$ for them both (Mullan et al., 2020). The authors concluded that in the presence of a foot complication, as opposed to prior complications, diabetes-related foot care, such as foot evaluations and recommendations to podiatry, becomes a priority of care (Mullan et al., 2020). The emphasis on glycemic control, lifestyle intervention, and self-management assessments overwhelm preventative foot care actions that should ignite rapid responses among primary care healthcare providers early in the diabetic progression.

Assumptions

Mullen et al. (2020) clarify that diabetes-related foot care amongst primary healthcare professionals is less of a priority than other factors for diabetes care. Prioritization shortcomings warrant risks of acute diabetes-related foot issues (Mullan et al., 2020). The authors do not aim to undermine the importance of other diabetes health preservation factors. However, there is an identifiable essential education that healthcare professionals must further equip as an element of foot ulcer prevention concerning diabetic health maintenance. As seen in the study, the profound focus on glycemic control conceals preventative footcare actions and serves as a possible

barricade to footcare provision. Therefore, "even amongst healthcare professionals with extensive experience in diabetes care, delivery of best practice diabetes-related foot care in primary care is inconsistent" (Mullan et al., 2020, p. 4661). Mullen et al. (2020) emphasize the need to support sufficient preventative foot care delivery and solutions by advocating the priority of foot care in diabetes and confronting the barriers.

Deficit/Conclusion

Mullen et al. (2020) provide sufficient data and rationale for the demand for proper strategies to prioritize the foot care of diabetic patients that nursing students and professional healthcare individuals should adopt in their primary care and practices. Nurses and healthcare professionals must encourage adequate self-management of diabetic foot ulcers by considering foot assessments and education as priority diabetic care to reduce the occurrence of diabetic foot disease and potentially traumatizing consequences. Healthcare professionals that fail to embrace the researcher's judgment will potentially subject diabetic patients to a prolonged and exponential increase in the risk of foot ulcers, further damage to blood vessels and necrosis leading to amputations, and an overall decreased quality of living for these patients.

Knowledge, Practice and Attitude Towards Foot Ulcers and Foot Care Among Adults

Living with Diabetes in Tobago: A Qualitative Study

The purpose of this article is to utilize a qualitative exploratory methodology to evaluate the knowledge, attitude, and behavior of persons with diabetes regarding foot ulcers and foot care in Tobago. With the worldwide prevalence of diabetes rising significantly by 62% over the last ten years, Adeyemi et al. (2021) showcase how diabetic complications are preventable with

sufficient patient knowledge and practice regarding diabetic foot ulcers (DFU) and foot care.

Major emerging themes from the article include

- foot ulcer problems,
- participants' understanding of diabetic foot ulcers,
- knowledge of foot care, and
- practice and mindset of foot care.

The report advised healthcare professionals to “improve health education, information, and communication on DFU and foot care centered and tailored to the understanding of people living with diabetes” (Adeyemi et al., 2021, p. 1). This article hopes to reduce diabetic foot ulcer complications and decrease the mortality arising from the burdens of this non-communicable disease: diabetes.

Key Points

Adeyemi et al. (2021) aimed to fill the gap within empirical studies on diabetics' knowledge of foot ulcer care and foot care practices by exploring the knowledge, training, and attitudes of diabetic adults in Tobago through a qualitative exploratory, descriptive design. The researchers set the study in a lifestyle clinic and diabetes foot clinic with twenty recruited adults with diabetes registered at these clinics using a purposive sampling method (Adeyemi et al., 2021). Adeyemi et al. (2021) collected data through telephone interviews with a semi-structured interview guide with notes and audio recordings. Researchers implemented telephone interviews during the COVID-19 pandemic, but it also "allows relational communication between the researcher and the respondents without physical contact" (Adeyemi et al., 2021, p. 2). The

interview consisted of five parts: the first part gathered the socio-demographic information of the participants; the second part questioned participants on past and current foot ulcer problems; the third and fourth parts guided questions on knowledge of foot ulcers and foot care, respectively; and the fifth part questioned participants on the perspectives and management regarding foot care and prevention of foot ulcers (Adeyemi et al., 2021).

Of the twenty participants interviewed, five reported past foot ulcer problems, five reported current foot ulcer problems, and three reported toe amputations resulting from foot ulcers. Participants with current and past foot ulcer problems discussed multiple causative reasons for their foot ulcer, including cuts, bumps, cracks on the foot poor blood circulation resulting in gangrene (Adeyemi et al., 2021). Fifteen participants reported having no information or knowledge of diabetic foot ulcers, and fifteen participants also reported no understanding of the relationship between diabetes and diabetic foot ulcers (Adeyemi et al., 2021). Most of the participants knew their dietary needs and the use of medication to manage their diabetes. Fifteen participants discussed using lukewarm or tepid water during bathing and foot cleansing, and twelve participants reported using moisturizing cream should be used after bathing; in contrast, others mentioned antifungal creams or oils (Adeyemi et al., 2021). Fourteen participants reported not wearing socks, and another fourteen believed cutting the toenails should be completed weekly (Adeyemi et al., 2021). Sixteen participants reported receiving foot care lessons from their doctors (Adeyemi et al., 2021). The data was significant, with a p-value of 0.0439 (Adeyemi et al., 2021). The authors concluded that "general knowledge of DFU among the participants was inadequate" (Adeyemi et al., 2021, p. 15). However, the participants shared some comprehension surrounding foot care. To improve diabetic foot care management, an

increase in targeted information and education concerning foot practices and prevention is necessary.

Assumptions

Adeyemi et al. (2021) profess that diabetic patients have a knowledge deficit concerning foot care practices and ulcer prevention. Adeyemi et al. (2021) do not undermine the foundation of diabetic patients as the majority of the studies participants demonstrated some knowledge such as “regular foot cleaning, and inspection, preventing irritation after washing, use of appropriate footwear, and not walking barefooted” (p. 15). Based on the research findings, healthcare professionals must formulate effective interventions and plans to aid in preventing and managing diabetic foot ulcers. The article correlated inadequate foot care method preferences to the adequacy of care-taking commitment among participants with their feet (Adeyemi et al., 2021).

Deficit/Conclusion

Adeyemi et al. (2021) discuss relevant topics with sufficient data in support of clinicians acknowledging and disrupting the uneducated narrative of diabetic patients regarding foot care and ulcers. The authors recommend that nurses and healthcare professionals advocate and attend government or hospital-sponsored training sessions on delivering health education discussions with individual with diabetes. The training should be “geared at providing nurses and other health caregivers with adequate knowledge and competencies in delivering theory and practical-based health education on foot care” (Adeyemi et al., 2021, p. 15). Adeyemi et al. (2021) believe that nurses should endeavor to thoroughly inspect the feet of diabetic clients for possible foot ulcers

at every clinic visit. Nurses that do not succeed in educating themselves on proper teachings to give patients can risk a professional knowledge deficit within nursing care and put diabetic patients at risk for obtaining further complications.

Perceptions of Diet Quality, Advice, and Dietary Interventions in Individuals with Diabetes-Related Foot Ulceration: A Qualitative Research Study

Dietary consumption is a crucial ingredient in healing diabetic foot ulcers (DFU). What constitutes a permissible dietary intervention and how people with diabetic foot ulcers view their diet are still unknown (Donnelly et al., 2022). The objectives of this qualitative study were first to investigate how people with DFU perceive their diets, past dietary recommendations, and dietary interventions and then to identify appropriate nutritional interventions in people with DFU to promote substantial wound healing. Reoccurring key attributes developing from this study included relationships with food, perceptions of food, dieting and dieticians, and self-management. Donnelly et al. (2022) encourage clinicians to prioritize dietary misconceptions and re-educate diabetic foot ulcer patients on the importance of appropriate dietary intake to facilitate wound healing.

Key Points

Donnelly et al. (2022) make efforts to optimize dietary interventions in healthcare professionals' practice and education conversations between diabetic patients. The author's goals were to explore ideas surrounding quality diet and dietary advice through a qualitative research study. The methodology used to explore their perspectives was a reflexive thematic approach of semi-structured interviews. Nineteen participants were recruited from a high-risk clinical foot

service by a targeted sampling strategy to capture a range of gender, ages, body mass index, living situations, education level, and diabetes type (Donnelly et al., 2022). Researchers designed Recorded interviews to take twenty minutes with questions developed "following a literature review of research exploring dietary interventions for individuals with ulceration, and peer-reviewed with the research team" (Donnelly et al., 2022, p. 3). The questions were a combination of open-ended questions and participants' previous experiences with dietitians. 65% of the participants reported a negative complex relationship with food, emphasizing portion control struggles, self-control difficulties, burdensome feelings towards cooking, expensive fresh food and vegetables, and gender-based cooking ability differences (Donnelly et al., 2022). 79% of the participants discussed struggling perceptions of nutrition, diet, and dietitians. Participants discussed advised scrutinized foods, frequently including fruit and dairy, dietary information sourcing from the internet, and a need for action when acknowledging making better food changes. More negative experiences were familiar with participants viewing dietitians as "authoritative figures who would discipline them for making poor choices" (Donnelly et al., 2022, p. 7). Regarding dietary intake and wound healing, none of the participants could recall nurses or other healthcare professionals advising them on nutrition improving wound health. It was an expressed surprise to most participants. 82% of the participants affirmed that they individually discovered their wound journeys, separate from the eyes of healthcare professionals (Donnelly et al., 2022). Participants discussed their mistrust of clinicians outside the high-risk foot clinics and being ignored rather than supported by professionals. The study concluded to have minimal significance, with a p-value of 0.634 (Donnelly et al., 2022). Donnelly et al. (2022) concluded that diabetic foot ulcer patients would benefit from assistance with

strengthening their food agency and dietary patterns. Further empirical studies should address personalized, gender-specific dietetic support that considers the individual's barriers.

Assumptions

Donnelly et al. (2022) assume that dietary attitude changes will positively impact suffering diabetic foot ulcer patients' relationship with food and diet quality and subsequently improve wound healing results. Participants displayed acceptance towards a dietary intervention to heal their wound; however, there was an "underlying skepticism towards healthcare professionals, with many expressing a lack of trust in the broader medical profession" (Donnelly et al., 2022, p. 10). People with diabetic foot ulcers need trust and support from trained clinicians to receive better personalized dietary interventions, as opposed to medical professionals who prefer amputations. Future education programs should consider building a positive rapport with diabetic foot ulcer clients before intervention implementation (Donnelly et al., 2022). Healthcare professionals' educator responsibility also includes practical support that will aid diabetic patients' confidence in decision-making around food and give them a rewarding sense of freedom.

Deficit/Conclusion

This study revealed evaluations of current dietary intake, past nutritional adjustments, and the acceptability of prospective dietary interventions in patients with DFU. Donnelly et al. (2022) urge nurses and medical professionals to transition medical nutrition therapy interventions into personalized nutritional supplementation to complement the dietary support of diabetic foot ulcer patients. Increased engagement and trust from health professionals would benefit and serve

diabetic patients more when following dietary foot care management. Nurses and other healthcare professionals that fail to adopt different dietary-related relationships with diabetic foot ulcer patients will result in patients doubting dietary and other important factors related to diabetic foot ulcer management and prevention. Uncontrolled doubt could increase the morbidity of diabetic foot ulcer patients exponentially, increase amputation and potential surgical complications, and deplete the unstable freedom and courage diabetic patients constantly struggle with surrounding food.

Conclusion

This literature review focuses on empirical studies investigating the efficacy and ineffectiveness of self-care and treatment for diabetic foot ulcers. Nurses are healthcare professionals that serve as educators in actively teaching prevention strategies and involving diabetic clients to spot early detection indications of diabetes holistic deterioration and its repercussions. As a result, nurses teach patients how to properly care for wounds, provide suitable foot care practices before and during challenges, and support restorative dietary interventions. Proper diabetic foot ulcer management gives patients a sense of freedom and confidence in foot self-management and enhances their daily living holistically. Nurses gain more interpersonal skills with diabetic patients to obtain trust effortlessly and evolve professionally by conducting nurse-led care and sharpening their assessments. Evidence-based practices need research on diabetic foot ulcer prevention to keep the healthcare workers practicing and implementing skills studied to be most effective, ultimately giving sufficient care to more diabetic foot ulcer patients. Studies regarding the barriers to diabetic foot ulcer prevention propose a shift from stratified healthcare towards personalized medicine to provide the correct treatment to every different patient (Van Netten et al., 2020). Some benefits of

personalized medicine include giving patients access to consultations with radiologists, surgeons, psychologists, and other interdisciplinary professionals that can help improve the lives of people suffering from diabetic foot ulcers.

References

- Adeyemi, T. M., Olatunji, T. L., Adetunji, A. E., & Rehal, S. (2021). Knowledge, practice and attitude towards foot ulcers and foot care among adults living with diabetes in Tobago: A qualitative study. *International Journal of Environmental Research and Public Health*, 18(15), 8021. <https://doi.org/10.3390/ijerph18158021>
- Donnelly, H. R., Collins, C. E., Haslam, R., White, D., & Tehan, P. E. (2022). Perceptions of diet quality, advice, and dietary interventions in individuals with diabetes-related foot ulceration: A qualitative research study. *Nutrients*, 14(12), 2457. <https://doi.org/10.3390/nu14122457>
- Houser, J. (2020). *Nursing research: Reading, using, and creating evidence* (5th ed.). Jones & Bartlett Learning.
- Maggio, L. A., Sewell, J. L., & Artino, A. R., Jr. (2019). The literature review: A foundation for high-quality medical education research. *Journal of Graduate Medical Education*, 8(3), 297–303. <https://doi.org/10.4300/JGME-D-16-00175.1>
- Mullan, L., Wynter, K., Driscoll, A., & Rasmussen, B. (2020). Prioritization of diabetes-related footcare amongst primary care healthcare professionals. *Journal of Clinical Nursing*, 29(23–24), 4653–4673. <https://doi.org/10.1111/jocn.15506>
- Van Netten, J. J., Woodburn, J., & Bus, S. A. (2020). The future for diabetic foot ulcer prevention: A paradigm shift from stratified healthcare towards personalized medicine. *Diabetes/Metabolism Research and Reviews*, 36(S1). <https://doi.org/10.1002/dmrr.3234>

