Literature review

Benefits of social support for people with diabetes mellitus in the prevention of diabetic foot disease

ABSTRACT

Introduction Diabetic foot ulcers (DFUs) are some of the most prevalent and debilitating complications among people with diabetes. A stronger support network is therefore required. Moreover, social support is positively associated with coping strategies for the disease and acts as a preventive factor for diabetic foot disease.

Objective To identify the benefits of social support participation in preventing DFUs.

Method This is an integrative review study carried out through searches in the following databases: PubMed, Embase, Scopus, Web of Science, Cochrane Library, LILACS, and SciElo. The controlled descriptors used were "Diabetic foot, Social support, and Prevention," and in the international databases "Diabetic foot, Foot ulcer, Social support, and Prevention," combined with the Boolean operators "AND" and "OR."

Results It was found that social support in the prevention of diabetic foot enables better glycemic control, improvement in health-related quality of life, greater chances of preventing foot ulcers, and increased healing rates of DFUs.

Conclusion The role of social support in preventing diabetic foot ulcers has proven to be an effective way to help to modify factors that affect the development of diabetic foot disease and DFUs.

Keywords diabetic foot, social support, diabetes mellitus.

For referencing de Oliveira, DC et al. Benefits of social support for people with diabetes mellitus in the prevention of diabetic foot disease. WCET™ Journal 2026;46(3):18-23.

DOI https://doi.org/10.33235/wcet.46.3.18-23

INTRODUCTION

Diabetic foot ulcers (DFUs) are among the most prevalent and debilitating complications affecting people with diabetes mellitus (DM). They result from a combination of factors, including infection, ulceration and destruction of deep tissues, commonly associated with peripheral neuropathy, peripheral arterial disease (PAD), trauma and plantar callus formation in the lower limbs.[1]

Globally, DFUs represent one of the most prevalent and devastating complications of DM, affecting an estimated 9.1 to 26.1 million people annually worldwide. The global prevalence of DFUs is approximately 6.4%, while lifetime risk estimates indicate that 19% to 34% of individuals with DM may develop a foot ulcer, particularly in developing countries, where nearly one in four patients will experience this complication during their lifetime.[2,3]

Despite being largely preventable, up to 85% of DFUs may progress to lower-limb amputation. Furthermore, DFUs are associated with increased mortality, reduced quality of life, prolonged hospitalisations, and substantial healthcare expenditures. In Brazil, the burden of DFUs is especially significant within the Unified Health System, which provides universal and free healthcare access and accounts for approximately 77% of outpatient visits and 65.7% of hospital admissions nationwide, highlighting the considerable clinical, social, and economic impact of diabetic foot complications on the public healthcare system.[2-4]

It is also noteworthy that amputations resulting from DFUs are associated with an increased risk of mortality. A study

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conducted in Spain identified that people with DFUs had a 60% reduction in five-year survival.[5] Research conducted in the United States demonstrated a five-year mortality rate of 30.5% after amputations related to DFUs.[6] In Brazil, especially among the elderly, a relative risk of 80% death after amputation was observed.[7] This scenario highlights the relevance of effective preventive strategies, considering that the prevention of DFUs.

In this context, DFU prevention is based on five key pillars:

1. Identify the at-risk foot;
2. Regularly inspect and examine the at-risk foot;
3. Educate the patient, family, and healthcare professionals;
4. Ensure the routine use of appropriate footwear; and
5. Treat risk factors for ulceration.[4]

The development of preventive strategies requires coordinated actions from healthcare teams, including structured care plans aimed at reducing DFU-related complications. The prevention of diabetic foot disease is inherently complex and depends on the active involvement of healthcare professionals and patients' families. Furthermore, successful prevention and management of DFUs strongly depend on the patient's willingness to adhere to diabetes treatment, self-care practices, and the medical, nursing, and podiatric recommendations provided throughout care.[8,9]

Among the five pillars for DFU prevention mentioned above, the third focuses on the education of patients, family members, and friends who act directly as a social support as well as health professionals. This approach is fundamental, as social support involves individuals willing to offer assistance and resources through different types of interpersonal relationships, strengthening adherence to care, the development of preventive practices, and the early detection of risk signs, early detection of risk factors for DFU as well as including the initial presentation and the importance of preventing further recurrent incidences of DFU. [10,11]

It is important to highlight that low levels of social support are associated with a higher prevalence of psychological distress, including symptoms of anxiety and depression, which can negatively influence preventive behaviours. Evidence indicates that insufficient social support compromises emotional well-being, self-care engagement, and adherence to preventive foot care practices, thereby increasing vulnerability among individuals with feet at risk. Furthermore, a meta-analysis demonstrated that individuals reporting low social support had approximately twice the risk of developing depression compared with those who perceived strong social support.[12-14]

It is, therefore, noted that effective DFU prevention extends beyond clinical interventions and depends on patients' daily self-care behaviours, which are strongly influenced by family involvement and social context. Social support refers to interpersonal relationships that provide emotional, informational and practical assistance, strengthening adherence to preventive care and facilitating early identification of DFU-related risks. Therefore, it is essential to synthesise current evidence on how social support influences preventive behaviours and outcomes related to the prevention of DFUs.

Thus, this review aims to identify the benefits of social support in the prevention of DFUs.

METHODS

This is an integrative literature review that followed the steps recommended by Mendes, Silveira and Galvão.[15] To guide the study, a non-clinical research question was formulated using the PCC acronym, which refers to Population, Patient, or Problem (social support/community); the Concept under investigation (benefits of social support presence); and the Context (prevention of diabetic foot disease and DFU's). Therefore, the guiding question of this study, based on the PCC strategy, is: "What are the benefits of social support presence in the prevention of diabetic foot disease?"

The search was conducted through the National Library of Medicine (PubMed), Embase, Scopus, Web of Science, Cochrane Library, Latin American and Caribbean Literature in Health Sciences (LILACS), and Scientific Electronic Library Online (SciElo). Access to research sources was provided through the Federated Academic Community of the University of São Paulo, Brazil.

Controlled descriptors were used in combination with the Boolean operators "AND" and "OR" as listed in the Health Sciences Descriptors (DeCS) (diabetic foot, social support, and prevention) and Medical Subject Headings (MeSH) (diabetic foot, foot ulcer, social support, and prevention). The search expressions are outlined in Table 1.

Table 1. Search expressions generated in the investigated information resource to conduct the literature review

Database	Search Expressions
PubMed	1. ("diabetic foot"[MeSH Terms] OR Diabetic foot[Text Word] OR "foot ulcer"[MeSH Terms] OR Foot ulcer[Text Word]) AND ("social support"[MeSH Terms] OR social support[Text Word]) 2. ("diabetic foot"[MeSH Terms] OR Diabetic foot[Text Word] OR "foot ulcer"[MeSH Terms] OR Foot ulcer[Text Word]) AND ("social support"[MeSH Terms] OR social support[Text Word]) AND (prevention and control"[Subheading] OR prevention[Text Word])
Embase, Web of science, Cochrane Library e Scopus	1. ("diabetic foot" OR "foot ulcer") AND "social support" 2. ("diabetic foot" OR "foot ulcer") AND "social support"AND Prevention
LILACS e SciElo	1. "Pé diabético" AND "Apoio social" 2. ("diabetic foot" OR "foot ulcer") AND "social support"AND Prevention

Inclusion criteria included studies available electronically in full, without restriction on year of publication or language, that addressed the research question. Articles that did not meet the objectives or lacked relevant information on the topic, duplicate articles in the databases, gray literature, preprints, abstracts, review studies, editorials, letters and clinical protocols were excluded.

When applying the search strategies in the databases, the studies were transferred to a designated folder on the computer in Research Information Systems (RIS) file format. Then, the files were imported into Rayyan, a free online tool that assists in the screening of studies for review. After removing duplicates, the titles and abstracts were analysed to check the theme and type of study for each scientific document by two researchers independently. A third reviewer resolved any disagreements. The researchers were post graduate students in nursing with a high level of knowledge of the subject.

Next, the eligible studies were read in full. The study findings were extracted based on a critical analysis of the articles, with the help of a specific data extraction instrument adapted from the integrative review framework proposed by URSI,[16] containing the title, authors, year of publication, country of the research, sample and main results.

At this stage, a standard table was created containing the article title, authors, year of publication, objective and main result in the results section and described narratively for a better understanding of the findings.

ETHICAL CONSIDERATIONS

As this study was an integrative literature review based exclusively on publicly available scientific articles retrieved from electronic databases, formal ethical approval was not required. All ethical and legal principles related to scientific integrity were respected throughout the review process, including the proper citation, referencing and faithful presentation of the original authors' findings.

RESULTS

The search resulted in 317 studies. Duplicates across journals were then excluded. Thus, a pre-selection of the articles was carried out by verifying the theme and type of studies through the reading of titles and abstracts by two reviewers. As a result, 152 articles were excluded after reading the titles and abstracts. Next, the eligibility of the studies was checked by reading the full text (n=28), after which, articles that did not meet the inclusion criteria (n=19) and those unavailable for reading (n=2) were excluded (Figure 1).

In the final analysis, seven studies involving a total of 1157 individuals with DM, with or without a history of DFU, were included, focusing on evaluating the benefits of social support in preventing diabetic foot disease. All studies were published in English (n=7) in different journals across various years: 2022 (n=2), 2021 (n=1), 2020 (n=3), and 2012 (n=1). The sample size ranged from 30 to 329 people. The locations of the studies were China (n=2), Indonesia (n=2), Greece (n=2), and Brazil (n=1) (Table 2).

The studies analysed did not report any negative effects from the involvement of social support in the prevention of DFU. The most relevant benefits highlighted in this review regarding the role of social support in DFU prevention were improved glycemic control, strengthening of self-care behaviours and enhanced health-related quality of life (Table 3).

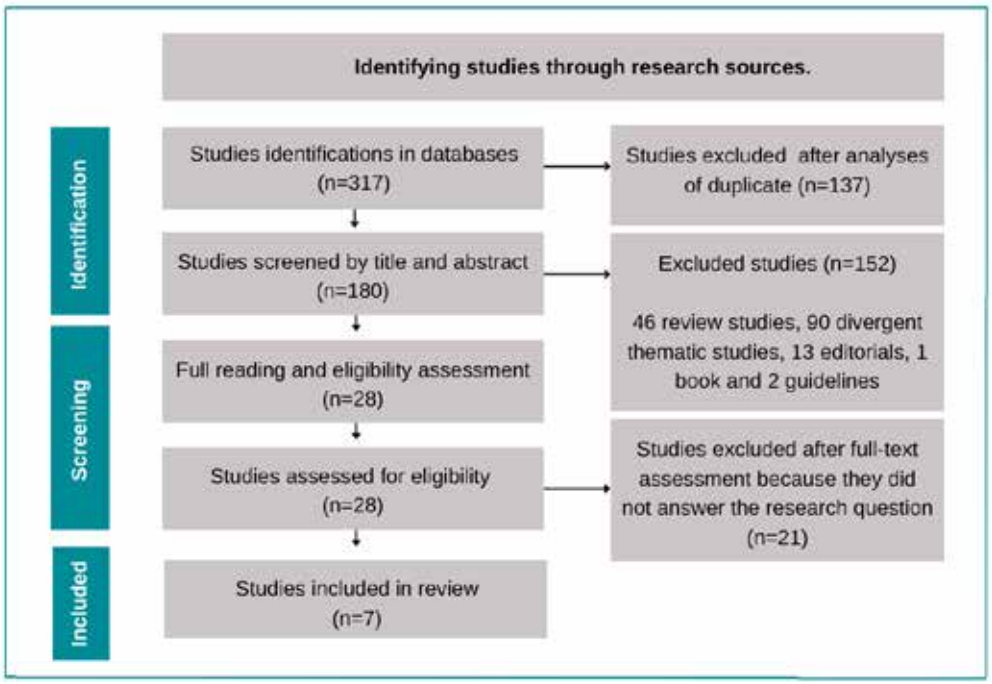

Figure 1. Illustrative flowchart of the selection process of studies included in the review sample

Table 2. Description of the articles included in the study

Article	Authors/year	Objective	Study type/level of evidence	Sample size/ location
A1	Luo et al, 2023[17]	To examine the relationships between social support, decision regret, self-stigma and quality of life in patients with diabetic foot ulcers.	Cross-sectional (multicenter) / Level II	229/China
A2	Appil et al, 2022[18]	To evaluate the effectiveness of family empowerment through educational interventions on HbA1c levels and the healing progress of diabetic foot ulcers. The Family Empowerment Scale (FES) was used to assess participation and social empowerment in treatment management.	Experimental/ Level II	33/Indonesia
A3	Yan et al, 2021[13]	To investigate the health-related quality of life (HRQoL) of hospitalised patients with chronic wounds and the causal relationships between social support, mental stress (anxiety and depression) and their HRQoL. The Multidimensional Scale of Perceived Social Support (MSPSS) was used to measure social support.	Transversal/Level II	216/China
A4	Polikandrioti et al, 2020[14]	To explore the impact of anxiety and perceived social support on depression in patients with foot ulcers, as well as the characteristics of patients associated with depression. In this study, the Multidimensional Scale of Perceived Social Support (MSPSS) was employed to evaluate the social support provided to individuals with diabetes.	Transversal/Level II	180/Greece
A5	Laopoulou et al, 2020[19]	To explore the levels of perceived social support and associated factors among patients with diabetic foot ulcers (DFU). The Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess social support.	Transversal/Level II	140/Greece
A6	Pakaya et al, 2020[20]	To organise the intent of the diabetic foot ulcer prevention model based on the perspectives of social support and personal agency.	Transversal/Level II	329/Indonesia
A7	Figueira et al, 2012[21]	To evaluate perceived social support and its relationship with sociodemographic, clinical and metabolic control variables in people with diabetes mellitus and foot ulcers, undergoing outpatient treatment. The Social Support Network Inventory (SNSI) was used.	Sectional/Level II	30/Brazil

DISCUSSION

The present study identified a positive relationship between the presence and participation of social support in the prevention of DFU. Moreover, this connection contributed primarily to the maintenance of glycemic control, strengthening self-care, the effectiveness of health education initiatives, and improving mental health and health-related quality of life, which are fundamental pillars for preventing diabetic foot complications.

Thus, social support has a positive impact on the management of people with DM, by facilitating adherence to treatment, improving eating habits, and regular follow-up with healthcare professionals. Reviewed studies reported that individuals with diabetes who receive social support tend to be more committed to their care, such as undergoing routine checkups and monitoring glycated hemoglobin more frequently. These

Table 3. Main benefits of social support for the prevention and management of DFU

Benefits of social support for the prevention of DFU	Articles
Improved glycemic control	A2, A5, A7
Improved health-related quality of life	A1, A3
Decreased occurrence of diabetic foot disease	A7
Increased intention for diabetic foot disease prevention	A6
Higher number of HbA1c tests	A5
Adherence to proposed diet and medication regimens	A5
Decreased level of depression	A4

findings reinforce the idea that social support helps transform information into positive behaviour, especially when combined with structured educational strategies.[1, 17-19]

This occurs because social support modifies the relationship between health literacy scores and glycemic control; in other words, educated social support promotes greater adherence to health education and, consequently, better management of diabetes and control of its complications.[20,21] This is an important finding, considering that the literature highlights glycemic control as one of the main preventive measures for DFU, since poor glycemic control leads to macrovascular and microvascular complications, such as peripheral vascular disease and PAD, retinopathy, nephropathy and neuropathy.[19]

Nevertheless, limitations regarding social support persist, particularly in relation to preventive foot care among individuals at risk of developing DFU. A recent study conducted in Poland,[22] which assessed social support among individuals with DM, found that the highest mean score was obtained in the smoking-related subscale, while the lowest scores were observed in the foot care subscale. These findings suggest that social support, when not directed by specific educational actions, may not be sufficient to ensure the adoption of preventive behaviours related to DFU.

Although the literature reinforces the relevance of social support in the prevention of DFU, many families present with smaller household structures, multiple responsibilities, and extended working hours, which limit their availability to provide such support. In this context, it is essential that healthcare professionals carry out family and social mapping to identify the members most available to assume this role and empower them to contribute effectively to the prevention of diabetic foot complications.

Family members of individuals with DM must understand that social support improves self-management and the patient's ability to detect early signs and symptoms of risk for DFU. It also enhances their confidence in implementing preventive strategies. Social support also plays an important role in the identification and management of foot-related symptoms, such as sensory loss, skin dryness, and the presence of calluses.[17]

In this way, social support favors not only the identification of these signs, but also the individual's confidence in implementing preventive strategies. Furthermore, the early identification of these risk factors may encourage individuals to seek timely medical advice and appropriate diabetic foot care.[23-24] A study conducted in Texas, with a three-month follow-up, demonstrated the contribution of family support in the preventive management of DFU. During the study, some participants reported receiving positive support from family members, particularly spouses and children, who assisted with regular foot inspections. This collaboration proved to be especially relevant in situations where individuals had physical limitations that hindered independent self-care.[25]

In addition to physical aspects, studies have shown that social support influences the mental health of people with DM. Lower levels of depression have been observed in individuals with diabetes, as coping with the challenges of diagnosis acceptance and daily lifestyle changes affects not only patients but also their families.[13,14] Thus, social support helps prevent depression and anxiety and improves the mental health of people with diabetes, which in turn correlates with better health-related quality of life.

Corroborating these findings, a multicenter study conducted in China identified positive correlations between quality of life and social support among people with diabetes.[17] Social support, understood as the various interpersonal relationships that exert both subjective and objective influence on patients, including material and emotional/spiritual support, plays an important role in health promotion. Evidence suggests that this support reduces patients' stress responses and significantly improves their social and psychological conditions, improving their quality of life, thereby positively influencing diabetes management and the prevention of DFU complications.[17,21]

Therefore, social support is a significant factor influencing foot care and treatment. From this perspective, it is essential to create environments that foster self-care, develop skills to sustain this practice, and empower both individuals with diabetes and their social support networks.

As health educators and promoters, healthcare professionals should encourage and strengthen the link between social support, people with diabetes, and the healthcare system. In doing so, treatment will be reinforced, ensuring continuity of care and success in patient follow-up.

Thus, the findings of this review reinforce that social support is a determining factor in the care and prevention of diabetic foot complications, especially by strengthening health education processes. This corresponds to the third pillar of the theoretical model presented in the introduction. Health education emerges as the integrating axis that articulates the other pillars: glycemic control, self-care, mental health, health-related quality of life, and family support, allowing knowledge to be effectively incorporated into sustainable preventive behaviours.

STUDY LIMITATION

The main limitation of this study is the small number of articles addressing the role of social support in the prevention of diabetic foot. Therefore, further research on social support is recommended to expand knowledge on the relationship between treatment, social support and diabetes/diabetic foot.

CONCLUSION

The findings of this review indicate that social support plays a central role in the prevention of diabetic foot ulcers by integrating the five pillars that underpin this care: glycemic control, self-care, health education, mental health and health-related quality of life, and family and social support.

Among these pillars, health education stands out as a key element, as it enables the transformation of knowledge into sustainable preventive practices. It enhances the effects of social support on treatment adherence, improved eating habits, metabolic control and reduction of depressive symptoms. This has a direct impact on the quality of life of people with diabetes.

The convergence of these findings with evidence from studies on chronic lower limb conditions in general suggests that the mechanisms by which social support influences care transcend the specificity of diabetic foot ulcers. This reinforces the importance of integrated and person-centred approaches.

Given the growing development and applications of scientific research in the field of DFU patient care, it is expected that new protocols will be developed to develop health literacy among perceived social support networks for patients with diabetes. This will enhance the continuum of health care.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

FUNDING

The authors received no funding for this study.

REFERENCES

1. Alves D, Cruz G. Terapia laser de baixa intensidade no reparo tecidual e cicatrização do pé diabético. repositório anima educação com br. Anima Educacao; 2022. https://repositorio.animaeducacao.com.br/handle/ANIMA/26827
2. Toscano CM, Sugita TH, Rosa MQM, Pedrosa HC, Rosa RDS, Bahia LR. Annual direct medical costs of diabetic foot disease in brazil: a cost of illness study. Int J Environ Res Public Health. 2018;15(1):89. doi:10.3390/ijerph15010089
3. Zubair M. Prevalence and interrelationships of foot ulcer, risk-factors and antibiotic resistance in foot ulcers in diabetic populations: A systematic review and meta-analysis. World J Diabetes. 2020;11(3):78–89. doi:10.4239/wjd.v11.i3.78
4. IWGDF Guidelines. Prevention guideline (2023 update). IWGDF; 2023. https://iwgdfguidelines.org/prevention-guideline-2023.
5. Rubio JA, Jiménez S, Lázaro-Martínez JL. Mortality in patients with diabetic foot ulcers: causes, risk factors, and their association with evolution and severity of ulcer. J Clin Med. 2020;9(9):3009. doi:10.3390/jcm9093009
6. Armstrong DG, Swerdlow MA, Armstrong AA, et al. Five-year mortality and direct costs of care for people with diabetic foot complications are comparable to cancer. J Foot Ankle Res. 2020;13(1):16. doi:10.1186/s13047-020-00383-2
7. Silva RN, Albuquerque RFA, Magalhães PKA, et al. Perfil epidemiológico das internações e óbitos por amputações de membros de pessoas com Diabetes Mellitus em Alagoas – Brasil. RSD, 10(1): e546101019208. doi: 10.33448/rsd-v10i10.19208
8. Ferreira RC. Pé diabético. Parte 1: Úlceras e Infecções. Rev Bras Ortop. 2020;55(4):389–396. doi: 10.1055/s-0039-3402462.
9. Teixeira ML, Santos LL, Soares AC, et al. A percepção do enfermeiro da atenção primária acerca dos cuidados com os pés de indivíduos com Diabetes Mellitus. Res Soc Dev. 2021;10(6):e14810615415. doi: 10.33448/rsd-v10i6.15415
10. Sousa-Munoz RL, Sá AD. Apoio social, funcionalidade familiar e controle glicêmico de pacientes diabéticos tipo 2. Rev de Medicina. 2020;99(5):432–441. doi: 10.11606/issn.1679-9836.v99i5p432-441
11. Ren H, Wang D, Ding Y, et al. Does social support moderate wound pain and health-related quality of life in patients with chronic wounds? a multicenter descriptive cross-sectional study. J Wound Ostomy Continence Nurs. 2021;48(4):300–305. doi:10.1097/WON.0000000000000767
12. Azmiardi A, Murti B, Febrinasari RP, Tamtomo DG. Low social support and risk for depression in people with type 2 diabetes mellitus: a systematic review and meta-analysis. J Prev Med Public Health. 2022;55(1):37–48. doi: 10.3961/jpmph.21.490
13. 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
14. Polikandrioti M, Vasilopoulos G, Koutelekos I, et al. Depression in diabetic foot ulcer: Associated factors and the impact of perceived social support and anxiety on depression. Int Wound J. 2020;17(4):900–909. doi:10.1111/iwj.13348
15. Mendes KD, Silveira RC, Galvão CM. Use of the bibliographic reference manager in the selection of primary studies in integrative reviews. Texto Contexto Enferm. 2019;28 (2): 1–13. doi: 10.1590/1980-265X-TCE-2017-0204
16. Ursi ES, Galvão CM. Prevenção de lesões de pele no perioperatório: revisão integrativa da literatura. Rev Latino-am Enfermagem. 2006;14(1):124–131.
17. Luo R, Ji Y, Liu Y, Sun H, Tang S, Li X. Relationships among social support, coping style, self-stigma, and quality of life in patients with diabetic foot ulcer: A multicentre, cross-sectional study. Int Wound J. 2023;20(3):716–724. doi:10.1111/iwj.13914
18. Appil R, Sjattar EL, Yusuf S, Kadir K. Effect of family empowerment on HbA1c levels and healing of diabetic foot ulcers. Int J Low Extrem Wounds. 2022;21(2):154–160. doi:10.1177/1534734620930120
19. Laopoulou F, Kelesi M, Fasoi G, Vasilopoulos G, Polikandrioti M. Perceived social support in individuals with diabetic foot ulcers: a cross-sectional survey. J Wound Ostomy Continence Nurs. 2020;47(1):65–71. doi:10.1097/WON.0000000000000614
20. Pakaya N, Kus N, Notobroto HB, Triyoga RS. Intention of diabetic foot ulcer prevention model based on social support and personal agency perspectives. IJPHRD. 2020;11(3):2198–2203. doi: 10.37506/ijphrd.v11i3.2584
21. Figueira ALG, Villas Boas LCG, Freitas MCF, Foss MC, Pace AE. Perception of social support by individuals with diabetes mellitus and foot ulcers. Acta Paul Enferm. 2012;25(1):20-6. doi: 10.1590/S0103-21002012000800004
22. Kobos E, Serafin O, Kostrzewa-Zabłocka E, Stefanowicz-Bielska A. Social support and disease acceptance in patients with diabetic foot syndrome and their relationship with the metabolic control of the disease. J Clin Med. 2025;14(10):3412. doi:10.3390/jcm14103412
23. Armstrong DG, Boulton AJM, Bus SA. Diabetic foot ulcers and their recurrence. N Engl J Med. 2017;376(24):2367–2375. doi:10.1056/NEJMra1615439
24. Armstrong DG, Tan TW, Boulton AJM, Bus SA. Diabetic foot ulcers: a review. JAMA. 2023;330(1):62–75. doi:10.1001/jama.2023.10578
25. Ju HH, Ottosen M, Alford J, Jularbal J, Johnson C. Enhancing foot care education and support strategies in adults with type 2 diabetes. J Am Assoc Nurse Pract. 2024;36(6):334-341. doi:10.1097/JXX.0000000000000998