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Research Article

Analysis of the sociodemographic, clinical and therapeutic profile of patients at risk of diabetic foot in primary care in Jaboatão dos Guararapes, Pernambuco

Análise do perfil sociodemográfico, clínico e terapêutico de pacientes em risco de pé diabético na atenção primária de Jaboatão dos Guararapes, Pernambuco

Análisis del perfil sociodemográfico, clínico y terapéutico de pacientes en riesgo de pie diabético en atención primaria en Jaboatão dos Guararapes, Pernambuco

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Abstract

Introduction: Diabetic foot is a frequent complication of diabetes mellitus, associated with high morbidity, increased risk of amputations, and impaired quality of life, making prevention essential in primary health care. **Objective:** To describe the sociodemographic, clinical, and therapeutic profile of patients at risk of developing diabetic foot. **Methods:** An exploratory, descriptive, and quantitative study conducted with 76 patients diagnosed with diabetes mellitus and followed in five primary health care units located in the urban area of Jaboatão dos Guararapes (PE), Brazil. Data were collected through a structured questionnaire and physical examination, including foot inspection and application of the monofilament test to assess sensory function. Data were organized into frequency tables and analyzed on the basis of the scientific literature. **Results:** There was a predominance of female participants (77.6%), aged between 61 and 70 years (46.1%), with low education level (55.3%). Among the most prevalent risk factors were hypertension (71.1%) and obesity (36.8%). Although 97.4% of participants were undergoing pharmacological treatment, preventive practices were insufficient, such as regular foot inspection (51.3%) and the use of appropriate footwear (27.6%). Cutaneous changes, such as skin dryness (80.3%), and sensory changes (57.9%) were frequent. Only 36.8% of patients were enrolled in the HIPERDIA program. **Conclusions:** The findings highlight the need to strengthen educational actions focused on self-care, as well as to expand access to and adherence to programs such as HIPERDIA, aiming to prevent diabetic foot complications and improve the quality of life of a vulnerable population.

Keywords: Diabetes mellitus; Diabetic foot; Self-care; Health education.

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Resumo

Introdução: O pé diabético é uma complicação frequente do diabetes *mellitus*, associada a elevada morbidade, risco de amputações e prejuízo à qualidade de vida, sendo a prevenção fundamental na Atenção Primária à Saúde. **Objetivo:** Descrever o perfil sociodemográfico, clínico e terapêutico de pacientes com risco de desenvolver pé diabético. **Métodos:** Estudo exploratório, descritivo e quantitativo, realizado com 76 pacientes diagnosticados com diabetes *mellitus*, acompanhados em cinco Unidades Básicas de Saúde da zona urbana de Jaboatão dos Guararapes (PE). A coleta de dados ocorreu por meio de questionário estruturado e exame físico, incluindo inspeção dos pés e aplicação do teste do monofilamento para avaliação da sensibilidade. Os dados foram organizados em tabelas de frequência e analisados à luz da literatura científica. **Resultados:** Observou-se predomínio do sexo feminino (77,6%), com idade entre 61 e 70 anos (46,1%) e baixa escolaridade (55,3%). Entre os principais fatores de risco, destacaram-se hipertensão arterial (71,1%) e obesidade (36,8%). Apesar de 97,4% dos participantes estarem em tratamento farmacológico, práticas preventivas mostraram-se insuficientes, como a inspeção regular dos pés (51,3%) e o uso de calçados adequados (27,6%). Foram frequentes alterações cutâneas, como ressecamento (80,3%), e alterações sensoriais (57,9%). Apenas 36,8% dos pacientes participavam do programa HIPERDIA. **Conclusões:** Os resultados evidenciam a necessidade de fortalecimento das ações educativas voltadas ao autocuidado, bem como da ampliação do acesso e da adesão a programas como o HIPERDIA, visando à prevenção de complicações do pé diabético e à melhoria da qualidade de vida de uma população em situação de vulnerabilidade.

Palavras-chave: Diabetes *mellitus*; Pé diabético; Autocuidado; Educação em saúde.

Resumen

Introducción: El pie diabético es una complicación frecuente de la diabetes *mellitus*, asociada a elevada morbilidad, mayor riesgo de amputaciones y deterioro de la calidad de vida, por lo que la prevención es fundamental en la Atención Primaria de la Salud. **Objetivo:** Describir el perfil sociodemográfico, clínico y terapéutico de pacientes con riesgo de desarrollar pie diabético. **Métodos:** Estudio exploratorio, descriptivo y cuantitativo, realizado con 76 pacientes diagnosticados con diabetes *mellitus*, acompañados en cinco Unidades Básicas de Salud ubicadas en la zona urbana de Jaboatão dos Guararapes (PE), Brasil. La recolección de datos se llevó a cabo mediante un cuestionario estructurado y examen físico, que incluyó la inspección de los pies y la aplicación de la prueba del monofilamento para la evaluación de la sensibilidad. Los datos se organizaron en tablas de frecuencia y se analizaron a la luz de la literatura científica. **Resultados:** Se observó un predominio del sexo femenino (77,6%), con edades entre 61 y 70 años (46,1%) y bajo nivel educativo (55,3%). Entre los principales factores de riesgo se destacaron la hipertensión arterial (71,1%) y la obesidad (36,8%). A pesar de que el 97,4% de los participantes se encontraban en tratamiento farmacológico, las prácticas preventivas fueron insuficientes, como la inspección regular de los pies (51,3%) y el uso de calzado adecuado (27,6%). Fueron frecuentes las alteraciones cutáneas, como la sequedad de la piel (80,3%), y las alteraciones sensoriales (57,9%). Solo el 36,8% de los pacientes participaban en el programa HIPERDIA. **Conclusiones:** Los resultados evidencian la necesidad de fortalecer las acciones educativas orientadas al autocuidado, así como de ampliar el acceso y la adhesión a programas como el HIPERDIA, con el objetivo de prevenir complicaciones del pie diabético y mejorar la calidad de vida de una población en situación de vulnerabilidad.

Palabras clave: Diabetes *mellitus*; Pie diabético; Cuidados personales; Educación en salud.

INTRODUCTION

Diabetes mellitus (DM) is a chronic metabolic disease characterized by hyperglycemia resulting from insulin deficiency or resistance to its action. It is associated with progressive and degenerative metabolic disorders of renal, cardiac, and cerebral functions, among others, compromising the quality of life and survival of individuals. The morbidity and mortality related to DM are high, constituting a significant public health problem due to the high treatment costs and the complexity in managing its complications.[1]

According to the National Health Survey (PNS 2019), approximately 10.2% of Brazilian adults have been diagnosed with diabetes, and the Surveillance of Risk Factors or Protection for Chronic Diseases by Telephone Survey (Vigitel) 2023 shows that the prevalence of type 2 diabetes increases significantly with age, affecting between 22 and 25% of individuals aged 60 years or older.[2,3] Type 2 DM accounts for about 95% of cases and is strongly related to insulin resistance, being also the subtype most associated with the development of foot complications.[4]

Among the possible complications, diabetic foot stands out as one of the most serious manifestations of DM, being mainly associated with peripheral neuropathy—autonomic, motor, and sensory—and peripheral arterial disease.[5] These conditions favor the appearance of skin lesions, ulcers, and infections that, when not treated properly, compromise quality of life and frequently culminate in amputations.

It is estimated that the prevalence of foot ulcers varies between 4 and 10% among people with diabetes, with about 85% of non-traumatic amputations being preceded by these lesions.[6] Furthermore, factors such as foot deformities and a previous history of ulcers or amputations significantly increase the risk of new complications. Approximately 25–44% of cases are related to isolated neuropathy, 10% to ischemia, and 45–60% to the association between both, with infection frequently present in the more advanced stages.[7]

Primary health care plays a fundamental role in preventing complications of DM, especially through foot care, early identification of changes in sensitivity, temperature, deformities, and skin lesions.[2,8] Educational and preventive strategies, including control of risk factors and encouragement of self-care, can reduce disease-related amputations by up to 50%.[9] However, such practices are still frequently neglected, highlighting the need for a more effective and integrated approach at this level of care.[10]

Given this scenario and the clinical and epidemiological relevance of diabetic foot, this study is justified. It aims to analyze the sociodemographic, clinical, and therapeutic profile of people at risk for developing diabetic foot, contributing to the improvement of prevention strategies, clinical management, and health promotion in the context of primary care.[2,3,11,12]

METHODS

This was an exploratory and descriptive study with a quantitative approach. The research was conducted in the five basic health units (BHUs) in the urban area of the municipality of Jaboatão dos Guararapes, located in the metropolitan region of Recife. The study population consisted of 93 people with DM treated at the five BHUs and registered in the HIPERDIA Program of the Municipal Health Department. Inclusion criteria included: individuals aged 18 years or older with a medical diagnosis of type 2 DM and belonging to the areas covered by the BHU. Exclusion criteria included: individuals with cognitive or speech deficits and patients who did not agree to the informed consent form.

For the sample size calculation, a sampling error of 5% and a 95% confidence interval were considered. After the calculation, a sample of 76 patients was determined.

For the data collection procedure, a questionnaire organized into three parts was used: sociodemographic, clinical, and therapeutic data involving diabetic individuals. Data collection was carried out through interviews, using a structured data collection instrument (a form), followed by a physical examination, using inspection as a propaedeutic method to observe the presence of calluses, hyperemia, and autonomic and motor neuropathy. The Wagner scale was used for the classification of skin lesions. To observe the presence and degree of sensory neuropathy, the monofilament test was applied, which is a test with high sensitivity and specificity in screening for sensory neuropathy, allowing for the early detection of sensory deficits in the feet, enabling preventive interventions to avoid ulcers and amputations.[13-15]

Regarding the data and its analysis, they were entered into an Excel spreadsheet, arranged in tables for the frequency distribution of the variables, and discussed in light of the relevant literature.

Upon being invited to participate in the research, participants were informed about the study's objective, confidentiality, anonymity, and the right to withdraw at any time, which were guaranteed through the signing of an informed consent form, provided at the time of the interview. The criteria used complied with Resolutions 466/2012 and 510/2016 of the National Health Council (CNS), which govern research involving human beings. The research began after submission and approval by the Research Ethics Committee (CEP/CONEP), under Certificate of Presentation for Ethical Appreciation (CAAE) No. 56032222.7.0000.8727, as per the Lattes Platform.

RESULTS

The study results were organized into five tables addressing different aspects of patients at risk for diabetic foot and with diabetic foot in the municipality of Jaboatão dos Guararapes (PE), in 2023 (Tables 1 to 5).

The analysis of sociodemographic data (Table 1) shows a predominance of women among the evaluated patients, with a higher concentration of individuals in the 61 to 70 age group. Most participants were married, had incomplete elementary education, and were retired. Regarding income, more than half of the respondents received up to one minimum wage.

Regarding risk factors and clinical data (Table 2), arterial hypertension was the most prevalent factor, followed by hypercholesterolemia, overweight, and obesity. In addition, 63.1% of the patients had been diagnosed with DM for more than five years. The use of drug therapy was common, with almost all participants receiving treatment, and oral antidiabetic drugs being the most frequently used modality.

Knowledge about DM and diabetic foot was assessed as presented in Table 3. Most patients reported knowing about the disease and its complications. However, 47.4% reported difficulties in engaging in physical activity, while 28.9% mentioned problems with adherence to the diet. Participation in the HIPERDIA program was low and with little regular adherence, although most recognized its importance. This data suggests that, although the importance of regular follow-up is recognized, there are significant barriers to adherence, possibly related to difficulties in access or incompatible schedules.

Habits concerning foot care (Table 4) demonstrate insufficient self-care practices. More than half of the participants did not examine their feet or perform adequate washing within a seven-day period. The use of inappropriate footwear was reported by one-third of the patients, in addition to not cutting their toenails regularly.

Finally, foot inspection (Table 5) revealed the presence of calluses and dry skin in most patients. In addition, changes in coloration, such as hypochromia, and weak peripheral pulses were observed, suggesting vascular changes. The assessment of superficial sensitivity revealed significant sensory changes in regions such as the metatarsus and calcaneus.

The detailed quantitative information in the tables allows for a more comprehensive analysis of the patients' profile, their risk factors, and self-care practices, elements that will be explored in the next section to reflect on possible advances and challenges in clinical management.

Table 1. Analysis of sociodemographic data.

	n	%
Sex		
Male	17	22.4
Female	59	77.6
Age group (years)		
20–30	1	1.3
31–40	4	5.3
41–50	3	3.9
51–60	19	25.0
61–70	35	46.1
71–80	10	13.2
≥81	4	5.3
Marital status		
Single	17	22.4
Married	32	42.1
Widowed	22	28.9
Divorced	3	3.9
Other	2	2.6
Children		
None	6	7.9
One	10	13.2
Two	17	22.4
Three	5	6.6
Four or more	38	50.0
Education		
No formal education	5	6.6
Completed elementary school	6	7.9
Incomplete elementary school	42	55.3
Completed high school	14	18.4
Incomplete high school	4	5.3
Completed undergraduate degree	2	2.6
Incomplete undergraduate degree	3	3.9
Profession		
Administrator	3	3.9
Unemployed	12	15.8
Logistics technician	5	6.6
Retired	31	40.8
Day worker	5	6.6
Homemaker	15	19.7
Salesperson	3	3.9
Driver	2	2.6
Household income (minimum wage)		
Less than one	46	60.5
One to two	21	27.6
Two to three	6	7.9
Three or more	3	3.9

Source: prepared by authors.

Table 2. Risk factors and clinical data.

	n	%
Risk factors		
Difficulty walking	4	5.3
Smoking	14	18.4
Alcoholism	10	13.2
Hypertension	54	71.1
Hypercholesterolemia	34	44.7
Overweight	32	42.1
Obesity	28	36.8
Time since diagnosis (years)		
Last year	6	7.9
Between one and five	15	19.7
Between five and ten	26	34.2
Between ten and twenty	22	28.9
Greater than twenty	7	9.2
Medication treatment for DM		
Yes	74	97.4
No	2	2.6
Medications used for DM		
Oral antidiabetics	51	67.1
Insulin	9	11.8
Oral antidiabetics and insulin	16	21.1

Source: prepared by authors.
DM: diabetes mellitus.

Table 3. Knowledge about diabetes mellitus and diabetic foot.

	n	%
Do you know what DM is?		
Yes	49	64.5
No	27	35.5
Do you know what DM can cause in the body?		
Yes	54	71.1
No	22	28.9
Difficulties in treating DM		
Physical activity	36	47.4
Diet	22	28.9
Medications	12	15.8
Not difficult	6	7.9
Participation in HIPERDIA meetings		
Relevant	53	69.7
Irrelevant	17	22.4
No opinion	6	7.9

Source: prepared by authors.
DM: diabetes mellitus.

Table 4. Habits related to foot care.

	n	%
On how many of the last seven days did you examine your feet?		
None	39	51.3
Only one	7	9.2
Two to three	8	10.5
Four to five	4	5.3
Six to seven	18	23.7
On how many of the last seven days did you carefully wash your feet?		
None	44	57.9
Only one	4	5.3
Two to three	7	9.2
Four to five	2	2.6
Six to seven	19	25.0
On how many of the last seven days did you moisturize your feet?		
None	51	67.1
Only one	3	3.9
Two to three	6	7.9
Four to five	4	5.3
Six to seven	12	15.8
On how many of the last seven days did you massage your feet?		
None	62	81.6
Only one	8	10.5
Two to three	5	6.6
Four to five	1	1.3
Six to seven	0	0.0
On how many of the last seven days did you do any home treatment on your feet?		
None	69	90.8
Only one	4	5.3
Two to three	3	3.9
Four to five	0	0.0
Six to seven	0	0.0
On how many of the last seven days did you examine the inside of your shoes before putting them on?		
None	8	10.5
Only one	2	2.6
Two to three	6	7.9
Four to five	0	0.0
Six to seven	60	78.9
On how many of the last seven days did you dry in between your toes after washing them?		
None	28	36.8
Only one	3	3.9
Two to three	4	5.3
Four to five	5	6.6
Six to seven	36	47.4

Continue...

Table 4. Continuation.

	n	%
Do you usually wear shoes that can hurt your feet (open. tight. without ventilation)?		
Yes	22	28.9
No	54	71.1
How do you usually cut your toenails?		
Rounded	44	57.9
Straight	32	42.1
What instrument do you usually use to cut your toenails?		
Nail clippers	12	15.8
Scissors with pointed tip	32	42.1
Scissors without pointed tip	14	18.4
Toenail pliers	18	23.7

Source: prepared by authors.

Table 5. Physical examination of the feet.

	n	%
Inspection of the feet		
Callus	45	59.2
Dryness	61	80.3
Hypopigmentation	22	28.9
Active ulcerative lesions	8	10.5
Scars	10	13.2
Pulse palpation		
No changes	58	76.3
Weak pulse	18	23.7
Superficial sensitivity (cotton)		
No changes	35	46.1
Metatarsal 1	29	38.2
Metatarsal 2	0	0.0
Metatarsal 3	19	25.0
Metatarsal 4	0	0.0
Hallux	16	21.1
Calcaneus	18	23.7
Superficial sensitivity (pen)		
No changes	32	42.1
Metatarsal 1	18	23.7
Metatarsal 2	0	0.0
Metatarsal 3	24	31.6
Metatarsal 4	0	0.0
Hallux	22	28.9
Calcaneus	21	27.6

Source: prepared by authors.

DISCUSSION

Regarding the variable sex, the literature showed convergence regarding the predominance of the female population (77.6%), reaffirming the results found in this research. Although both sexes are susceptible to diabetic foot, women tend to show greater concern with self-care, which can influence both the prevention and early diagnosis of complications. Women's greater use of health services means they are 2.2 times more likely to be diagnosed with diabetes compared to men. Based on this information, the International Diabetes Federation estimates that by 2025 the number of women affected by the disease will be 10% higher than the number of men.[11,12,16]

The predominant age group, with the highest concentration between 61 and 70 years old (46.1%) and 51 and 60 years old (25%), highlights the impact of aging on the emergence of chronic complications. Studies consistently emphasize that advancing age is directly related to vascular and neuropathic changes, which are determining factors in the appearance of foot lesions.[17] Furthermore, the functional and cognitive limitations associated with aging can compromise self-care, increasing susceptibility to ulcerations and amputations, as reiterated by various studies in the field.[18]

Marital status, with 42.1% of individuals married, stands out as a relevant factor, since social support, often more present among married individuals, favors adherence to diabetic foot prevention practices. Conversely, the absence of social support, common among single, divorced, and widowed individuals, constitutes a vulnerability factor. Low schooling (55.3%) has been widely associated with difficulties in understanding health instructions, hindering adherence to preventive practices and the early identification of complications. Additionally, the predominance of retirees (43.7%) and housewives (21.1%), coupled with low family income (60.5%), reinforces the impact of socioeconomic conditions on the management of diabetes and its complications, with evidence that financial limitations compromise access to essential resources, such as appropriate footwear, moisturizing creams, and specialized medical care. [17,19,20]

The clinical risk factors identified in the studied population reflect characteristics widely recognized in the literature on complications of DM and the risk of diabetic foot. The high prevalence of hypertension (71.1%), hypercholesterolemia (44.7%), overweight (42.1%), and obesity (36.8%) reinforces the association between these conditions and the worsening of vascular and neuropathic complications, the main precursors of foot lesions.[19,21]

Although less prevalent, smoking (18.4%) and alcoholism (13.2%) are relevant risk factors that aggravate vascular and neuropathic changes, while difficulty in locomotion (5.3%) compromises self-care, making it difficult to prevent injuries. The time since diagnosis, predominantly between five and ten years (34.2%) and ten and twenty years (28.9%), confirms the direct relationship between longer disease duration and the risk of chronic complications, such as neuropathy and vascular insufficiency.[19,21]

Regarding treatment, 97.4% of patients used pharmacological therapies, with a predominance of oral antidiabetics (67.1%). This distribution reflects the need for intensified management in advanced stages of the disease. The literature states that inadequate glycemic control over time is strongly associated with the development of diabetic foot, highlighting the importance of personalized therapeutic approaches.[16]

These results reinforce the need for integrated strategies that include health education, control of comorbidities, and promotion of healthy habits. Public policies aimed at access to comprehensive and

multidisciplinary healthcare are fundamental to improving outcomes in this population, reducing the incidence and complications of diabetic foot.[16,20]

The data analyzed regarding knowledge and management of DM and diabetic foot highlight gaps and challenges that compromise the prevention and adequate control of the disease, reflecting patterns widely described in the literature. Most patients (64.5%) reported knowing what DM is, while 71.1% declared knowledge about the associated complications. However, the still significant lack of knowledge (35.5% and 28.9%, respectively) demonstrates the need for more effective educational interventions. Studies affirm that lack of knowledge directly impacts adherence to treatment and the adoption of preventive measures, increasing the risk of complications, such as diabetic foot.[12,20,21]

The difficulties reported in the management of DM reinforce the complexity of disease control. Physical activity was cited as the biggest challenge by 47.4% of patients, while 28.9% pointed to difficulties with diet and 15.8% with medication use. These findings reflect barriers frequently described in the literature, such as lack of time, insufficient social support, and financial difficulties in acquiring adequate food and medication. Only 7.9% stated that they did not face difficulties, which demonstrates the relevance of strategies that integrate emotional support, accessible nutritional guidance, and programs to encourage physical activity to improve therapeutic outcomes.[10,16,20,22]

The low participation in the HIPERDIA program, with only 36.8% of patients attending the meetings, is a worrying indicator. The program's main objective is the systematic monitoring of patients with diabetes and hypertension, and it is recognized as a fundamental tool for preventing complications and strengthening self-care. Even so, 69.7% of patients recognized the program's relevance, suggesting that access barriers, such as difficulty with transportation, incompatible schedules, or lack of awareness about the program's benefits, may be limiting participation.[9,16,21,22]

The assessment of foot care among patients revealed insufficient practices and neglect of essential actions for preventing serious complications, such as ulcers and infections, associated with diabetic foot. Most patients (51.3%) did not perform regular foot inspections during the last week, and only 3.9% adopted this practice daily. This data is alarming, given that regular foot examination is widely recognized as a fundamental preventive measure, allowing for the early identification of changes such as cracks, infections, or pressure sores, which can progress to serious conditions, especially in individuals with neuropathy or vascular insufficiency.[11,22]

Hygiene practices also showed low adherence. Careful foot washing was absent in 57.9% of patients in the last week, while moisturizing was neglected by 67.1%. Furthermore, drying the interdigital spaces, recommended to prevent fungal infections, was performed daily by only 11.8% of patients. These behaviors reflect a critical deficit in awareness of the impact of self-care on the prevention of diabetic foot, pointing to the need for greater educational guidance and reinforcement of preventive strategies.[8,21]

The inappropriate choice of footwear, reported by 27.6% of patients, adds another important risk factor. Tight or poorly ventilated shoes are frequently associated with pressure sores and ulceration, representing a considerable risk for individuals with reduced sensitivity in their feet. Although 46.1% of patients report examining their shoes before wearing them daily, the effectiveness of this practice alone is limited when combined with the neglect of other essential care.[22]

Nail care was inadequate for 44.7% of the participants, and among those who regularly cut their nails, 51.9% use inappropriate instruments, such as pointed scissors, increasing the risk of accidental cuts and infections. This practice, often underestimated, reinforces the need for more detailed guidance and supervision by trained healthcare professionals.[16,21,22]

Finally, the practice of home treatments and foot massages, which can contribute to circulation and the detection of abnormalities, was absent in most patients (90.8 and 81.6%, respectively). These data highlight that self-care as a whole is undervalued or poorly understood among the population studied.[22]

These results reflect a scenario of widespread lack of knowledge about the importance of foot care, highlighting the urgency of educational interventions and continuous support. Programs such as HIPERDIA play a central role in this transformation, as they provide a learning environment and multidisciplinary follow-up that can correct inadequate practices and encourage lasting behavioral changes. However, the low adherence to the program, already identified in the studied population, suggests the need for actions that improve access and participation, including awareness campaigns and greater involvement of the family health team.[11,22,23]

Reversing this situation requires integrated efforts, including health education, greater accessibility to follow-up services, and the encouragement of personalized self-care practices. Only through these strategies will it be possible to reduce the complications associated with diabetes and promote a better quality of life for this population.[22]

The analysis of data regarding the inspection, palpation, and sensory evaluation of the feet reveals a worrying scenario of vascular, neurological, and cutaneous alterations in diabetic patients, indicating a high risk for the development of serious complications, such as ulcers and amputations.

During the inspection, the presence of calluses in 59.2% of patients and dry skin in 80.3% illustrates the impact of inadequate foot health management. These findings are frequent in diabetic populations and represent predisposing conditions for the formation of lesions, especially when associated with peripheral neuropathy, which compromises the perception of trauma and micro-injuries. In addition, changes in skin color, such as hypochromia, were observed in 28.9% of patients, suggesting signs of vascular and metabolic compromise, which are often underestimated.[22,24]

Assessment of peripheral pulses revealed that 23.7% of patients presented with weak pulses, suggesting vascular insufficiency of varying degrees. This finding is consistent with the literature, which identifies arterial insufficiency as a determining factor in the progression of lesions and difficulty in healing. This impairment is a marker of poorer prognosis and reinforces the need for regular screenings for early identification of those patients at higher risk of ischemic events.[18,19,25]

The data related to superficial sensitivity highlight the neurological impairment present in a large part of the evaluated population. Using cotton, sensory alterations were more prevalent in the 1st metatarsal (38.2%), the calcaneus (23.7%), and the hallux (21.1%), regions highly susceptible to trauma and ulceration. Similar results were found using the pen, with sensory alterations concentrated in the 3rd metatarsal (31.6%), the hallux (28.9%), and the calcaneus (27.6%). These patterns are characteristic of diabetic neuropathy and reinforce its relevance as a risk factor for plantar ulcers and infections, especially when combined with other alterations, such as calluses and inappropriate footwear.[18,22,26,27]

The presence of active ulcerative lesions in 10.5% of patients and scars in 13.2% reflects the cumulative impact of neuropathic and vascular changes. This data not only indicates a high risk of ulcer recurrence but also suggests failures in preventive follow-up and proper management of initial lesions.[19,20,28]

These findings reinforce the need for targeted and continuous preventive strategies, such as regular clinical assessments, associated with multidisciplinary follow-up, to identify vascular and neurological changes early and implement interventions before the onset of serious lesions.[26,29] These measures have

been widely recognized as effective in reducing the risk of complications, improving patients' quality of life, and decreasing the socioeconomic impact associated with diabetic foot.[26,29]

Thus, this study presents scientific relevance by comprehensively and methodologically investigating the sociodemographic, clinical, and therapeutic factors associated with diabetic foot in patients with type 2 DM, using validated instruments such as the Wagner Scale and the monofilament test, which reinforces the consistency of the results. Its main merit lies in the practical applicability of the findings in the context of primary health care, especially within the Brazilian Unified Health System (SUS). However, limitations such as the cross-sectional design, the sample restricted to a single municipality, and the use of self-reported data reduce the generalizability and may introduce bias. Nevertheless, the present study contributes significantly by revealing gaps in self-care and adherence to preventive measures, offering important insights for improving educational strategies and public policies aimed at preventing diabetic foot.

CONCLUSION

The results of this study highlight critical aspects of the sociodemographic, clinical, and behavioral profile of patients with DM at risk of developing complications related to diabetic foot. The predominance of factors such as low educational attainment, limited socioeconomic conditions, and the presence of multiple risk factors, such as hypertension and obesity, reinforces the complex interaction between social determinants and inadequate disease control.

The data corroborate previous studies that point to the association between diabetic neuropathy and vascular changes, increasing the risk of ulcerations and amputations. The high prevalence of sensory and vascular impairments identified in this study underscores the importance of regular clinical evaluations, already well-established in the literature, as an essential measure for the prevention and early management of complications.

Additionally, low adherence to follow-up programs, such as HIPERDIA, and the lack of self-care practices, such as daily foot inspection and the use of appropriate footwear, reflect recurring barriers reported in studies on diabetes management, especially in vulnerable populations. These findings reinforce the need for educational strategies and health policies aimed at empowering patients for self-care, an approach that has demonstrated a significant impact on reducing serious complications, according to the existing literature.

By identifying gaps and reinforcing widely discussed patterns in medical science, this study contributes to building a more accurate picture of the impact of diabetes at the local level. The detailed analysis of these patients' profiles not only reflects the importance of contextualized investigations but also highlights the need for personalized interventions, aligned with scientific evidence and the specific realities of the communities.

Thus, the findings presented reiterate the relevance of this topic as a public health priority and reinforce the urgency of expanding access to educational programs, preventive practices, and multidisciplinary care, aspects already established in the medical literature as essential for improving the prognosis and quality of life of patients with DM at risk of diabetic foot.

CONFLICT OF INTERESTS

Nothing to declare.

AUTHORS' CONTRIBUTIONS

MERG: Project administration, Formal analysis, Conceptualization, Data curation, Writing – original draft, Writing – review & editing, Investigation, Methodology, Resources, Software, Validation, Visualization. LRSC: Project administration, Formal analysis, Conceptualization, Data curation, Writing – first draft, Writing – review and editing, Investigation, Methodology, Resources, Software, Validation, Visualization. CMB: Formal analysis, Data curation, Investigation. LSC: Formal analysis, Data curation, Investigation. RCF: Data curation, Investigation. RAAP: Data curation, Investigation. OGO: Conceptualization, Writing – review and editing, Methodology, Supervision, Validation. TRAS: Conceptualization, Writing – review and editing, Methodology, Supervision, Validation.

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