

Therapeutic Adherence and Podiatric Care Related to the Development of Diabetic Foot in Patients Enrolled in the Chronic Disease Care Program, Perla Maria Norori Health Center, León, III Quarter, 2023

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ABSTRACT

According to the World Health Organization, chronic diseases such as diabetes mellitus are long-term conditions that tend to progress slowly like diabetic foot. These diseases occupy the first places in terms of impact, representing a priority problem for Public Health. The objective of the study was to analyze therapeutic adherence and podiatric care related to the development of diabetic foot in patients enrolled in the chronic disease care program, Perla María Norori Health Center, León, III quarter, 2023. This is an epidemiological study, Analytical nested cases and controls, consists of a universe of 183 participants. The information collection process was carried out through an online survey. Wagner's classification was used for identification and classification of cases, the statistical analysis was carried out using the SPSS version 24 statistical package. The average age was 48 years, with 54% of male participants, the majority lived in urban areas (79%), 40% had only completed primary school and 53% were single. Regarding therapeutic adherence, it was found that 39 patients with diabetic foot were unaware of Diabetes Mellitus (P-value 0.000, OR 7.239; 95% CI: 3.641–14.393); 53 patients did not comply with therapeutic adherence (P-value 0.000, OR 38.278; 95% CI: 15.623–93.783). In podiatric care, it is highlighted that: 47 participants had inadequate drying of their feet (sudden drying), (P-value 0.000, OR 17.121; 95% CI: 7.964–36.809), and 58 participants had inadequate nail cutting (oval cut), (P-value 0.000, OR 56.753; 95% CI: 16,589–194,160).

Keywords: Diabetes Mellitus, Diabetic Foot, Sociodemographic Data, Therapeutic Adherence, Podiatric Care.

INTRODUCTION

According to the World Health Organization (WHO), chronic diseases

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such as diabetes mellitus are long-term conditions that tend to progress slowly, such is the case of diabetic foot disease. These diseases occupy the first places in terms of impact and represent a priority problem for Public Health [1].

In developed countries such as Europe, diabetic foot ulcers have a significant prevalence, with it estimated that one third of the costs of diabetes are related to the diabetic foot. Diabetic foot syndrome is one of the main causes of morbidity and disability in patients with DM, although rapid recognition and addressing of its risk factors can prevent or delay the appearance of ulcers, amputations and other complications [2].

In Latin America-Colombia, the diabetic foot is a complex condition since, in its evolution, it can demand first-level care at the beginning, third-level care when more serious complications appear, and frequently hospitalization for complex diagnostic and treatment procedures. Knowledge of the frequency of this condition among patients admitted to hospitals in Latin America allows for a diagnosis of the situation, decision making and programming of health policies based on concrete information [3].

At the Central American level in Costa Rica, both the incidence and mortality due to diabetic foot disease stand out with a significant increase for the period under study. Diabetic foot is one of the complications with the greatest impact as a result of this disease, and due to the implication that generates in both the personal and social spheres. Determining that as age increases the number of cases that occur, depending on sex, there is a ratio of 3 women to one man with diabetic foot [4].

Diabetic foot is a common pathology in Nicaragua, which corresponds to a late complication of diabetes, easily preventable through the implementation of low-cost measures. It is also the main cause of morbidity and increased costs of health resources allocated to this pathology.

Nicaragua reveals that the main risk factors associated with amputation in people with type 2 diabetes mellitus in Managua are: lesions with blister, abscesses and ulcer, trauma, inadequate footwear, paronychia and heel ulcers due to friction. On the other hand, it showed that, at the Oscar Danilo Rosales Arguello School Hospital (HEODRA), the female sex predominated, with the right foot being the most affected [5].

This research will give rise to the line of research: Public

Health. Sub Area: Chronic diseases and SDG number 3, guarantee a healthy life and promote the well-being of all at all ages SDG 11. Sustainable Communities and Societies [6].

Enciso Á, et al in 2016, carried out a study on Risk factors associated with diabetic foot where they propose the strong association that was established between the presence of onychomycosis and the possibility of triggering lesions compatible with diabetic foot: OR 2.8 (95% CI). 1.1-7.2) (p 0.02), onychomycosis was present in 59% of the cases and in 41% of the controls, fungal lesions of the foot are a gateway for infections that can lead to gangrene [7].

In 2019, Rodríguez O. et al carried out a study titled Therapeutic Adherence and Podiatric Care associated with diabetic foot, in the municipality of El Viejo, department of Chinandega, it was observed that adherence is a protective factor against the development of diabetic foot demonstrated with an OR 0.579. Podiatric care influences the development of diabetic foot, with the use of synthetic socks with seams being more relevant, presenting an OR 3.367 [8].

In 2019, Rodríguez adherent to the treatment, while 56.7% were not adherent to the treatment, of the total of patients adherent to the treatment, 14.7% presented diabetic foot versus 46.1% in the patients who were not adherent to the treatment. (P=<0.005) [9].

González V. et al. In 2022, they carried out a study on therapeutic adherence and podiatric care related to the development of diabetic foot, it was found that adherence was not associated with the development of diabetic foot (X² 0.538, OR: 1.336, 95% confidence interval: 0.530 - 3.371). The results indicated that the main risk factor for developing diabetic foot is the lack of foot examination, while the use of socks and high-risk material in cleaning was identified as a protective factor [10].

Diabetes mellitus is a chronic pathology, caused by metabolic disorders of multiple etiologies and characterized by hyperglycemia caused by defects in insulin secretion. In the world, it is estimated that there are 463 million adults between 20 and 79 years old who have diabetes, a significant percentage of them undiagnosed, and the prevalence is expected to continue increasing in the coming years [11].

Diabetic foot is among the most serious and costly complications of diabetes mellitus. When diabetic foot care is not correct, the risk of developing ulcers, infections and

other complications could increase. Although guidelines and recommendations have been established for the proper management of the diabetic foot, many patients are unable to adequately comply with these therapeutic practices.

Therefore, the following research question is posed:

What is the relationship between therapeutic adherence, podiatric care and the development of diabetic foot in people enrolled in the care program for patients with chronic diseases, Perla María Norori Health Center, León, III quarter, 2023.

MATERIALS AND METHODS

Type of study: Analysis of nested cases and controls, cross-section, two comparison groups of one case and two controls were established, Wagner's classification was used to identify the cases.

Study area: The present study was carried out at the Perla María Norori Health Center, city of León – Department of León – Nicaragua.

Analysis unit: People enrolled in the program to care for patients with chronic diseases at the Perla María Norori health center, city of León, department of León – Nicaragua who belong to sectors 1 and 5.

Study population: 183 participants with a diagnosis of Diabetes Mellitus enrolled in the Care program for Patients with Chronic diseases belonging to the sectorization of the health unit. Of these, 61 were represented by patients diagnosed as cases and 122 were diabetic patients without evidence of diabetic foot.

Source of information: Primary: It was obtained directly from the study participants through the survey of patients diagnosed with diabetic foot according to results (cases) and patients with negative results of diabetic foot development (controls), through the application of the information collection instrument.

Data collection methods: Authorization to carry out the study at the study health center was requested from the management of SILAIS-León. After its authorization, authorization was requested from the director of the health center, Perla María Norori, to access the confidential information of each patient, through a physical letter where the purpose of the study was explained.

The information was collected through a digital form,

programmed in the Google Forms platform, to be applied through inherent telephones. In the event that a participant did not have the electronic device, one was provided to them to develop the filling out of the instrument.

At the time of carrying out the survey, informed consent was given to each participant, the terms and conditions that their participation entailed were explained, clarifying doubts and concerns; which they accept verbally and in writing, voluntarily granting their informed consent to begin the application of the data collection instrument.

Data collection technique and instruments

Information collection was carried out by applying a form with closed questions and multiple-choice, dichotomous answers, a Likert scale and validated tests that contained: items divided into sections of sociodemographic data, therapeutic adherence; and podiatric care.

The validated tests used the Battle Test to measure the participant's knowledge of the disease, the Morisky Green Levine Test, which was useful to measure the level of therapeutic adherence, and the Tablet Count Test, which helped identify participants who were not adherent to the therapeutic regimen.

Instrument field test

A pilot test was carried out on people enrolled in the care program for patients with chronic diseases at the Raúl Vargas – Nagarote health center, who met the same characteristics of the study population, but who did not belong to it, with the objective of validate the data collection instrument without contaminating the sample.

The instrument was applied to 10% of the total study population in order to correct those questions that had inconsistency or were difficult to understand for the respondents.

Information processing and analysis

The information collected was processed in the statistical program SPSS version 24 and Microsoft Word. The analysis of the information was carried out through analytical statistics, 2x2 contingency tables were used to demonstrate the association of the variables, through the Chi Square statistical test (X^2), when X^2

<0.05 there is an association between the variables, when $X^2 >0.05$ the variables are independent of each other. The Odds

Ratio test, odds ratio or OR, was used to calculate the risk that a variable takes.

An OR < 1 indicates a protective factor, while an OR > 1 indicates a risk factor and an OR = 1 is a non-associated factor. The analysis was carried out with a 95% confidence interval, which is why we will work with natural limits to determine statistical significance. If the path of said natural limits contains the unit, there is no statistical significance.

The information on the results will be presented through tables to facilitate their understanding.

RESULTS

The population was characterized by having a minimum age of 21 years and a maximum age of 79 years, with a prominent mode at 48 years and a calculated average of 56 years. In relation to gender distribution, it is found that 54% of The participants are male (98), the most predominant origin was urban with 79% (144), with a distribution of the academic level of 40% for primary school (73), while 53% of the sample was identifies as single (97) (Table 1).

Table 1. Sociodemographic data.

<i>Indicator</i>	<i>Frequency</i>	<i>Percentage</i>
Age		
<i>Minimum: 21 years</i>	<i>Maximum: 79 years</i>	<i>Average: 56 years</i>
		<i>Fashion: 48 years</i>
Sex		
Male	98	54%
Female	85	46%
Origin		
Urban	144	79%
Rural	39	21%
Academic level		
Primary	73	40%
Secondary	54	30%
University	25	13%
Illiterate	31	17%
Civil status		
Single	97	53%
Married	86	47%
Total	183	100%

Regarding the Wagner classification for the diagnosis of diabetic foot, it was observed that 49% of the participants did not present lesions (90 participants). However,

the percentage of patients with grade 2 diabetic foot is worrying, which represents 23% of the total population (42 participants) (Figure 1).

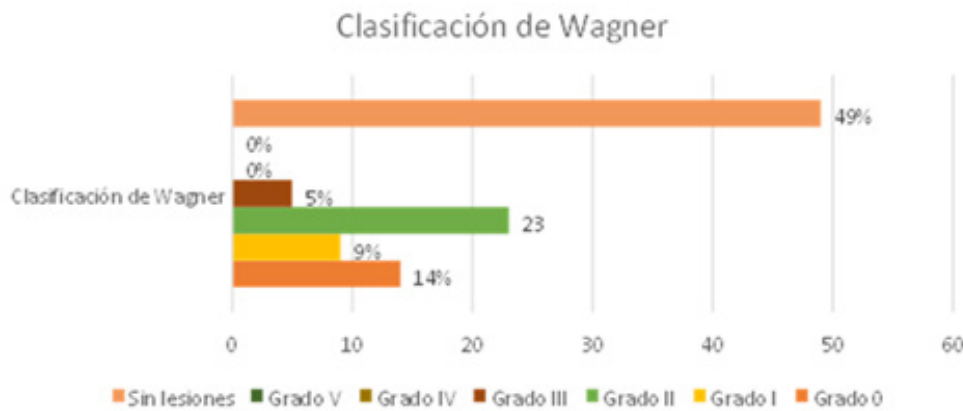


Figure 1. Wagner classification for the diagnosis of diabetic foot.

An inappropriate use of nail cutting instruments, particularly pliers, pointed scissors, manicure pliers and razors, is observed in 83%. It is relevant to highlight that 50% of the subjects indicate that it is a family member who responsible

for trimming their nails; additionally, 54% of the participants indicate a preference for using closed footwear in their daily activities (Figure 2).

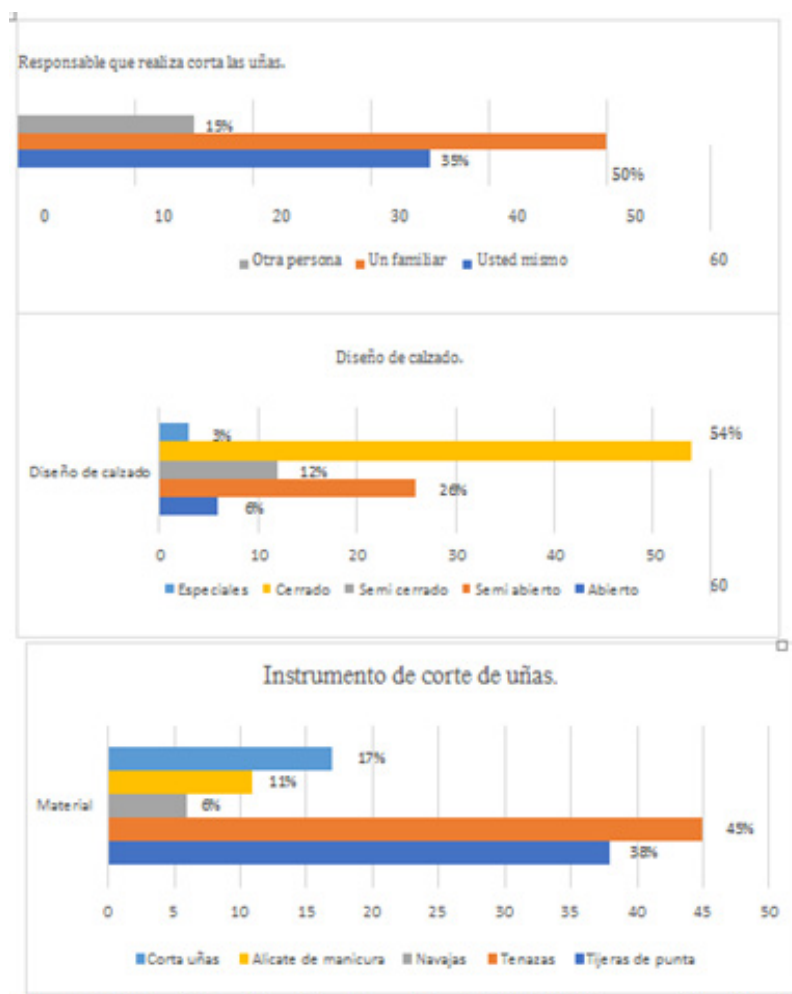


Figure 2. Podiatric care in people enrolled in the Care of Patients with Chronic Diseases program, Perla María Norori health center, León–Nicaragua.

Regarding therapeutic adherence related to the development of diabetic foot, it was found that 39 patients with diabetic foot lack knowledge about Diabetes Mellitus, which is reflected in a P value of 0.000 and an OR of 7.239 (range of 95% confidence: 3,641 – 14,393); 53 patients were classified

as non-compliant, with a P value of 0.000 and an OR of 38.278 (95% confidence interval: 15.623 – 93.783); Finally, 58 patients were considered non-adherent, with a P value of 0.000 and an OR of 162.103 (95% confidence interval: 44.392 – 591.9355) (Table 2).

Table 2. Therapeutic adherence related to the development of diabetic foot

Indicator	Diabetic foot		Total	X ² (P)	OR	IC 95%
	Yeah	No				
Battle Test.						
<i>Doesn't know</i>	39	24	63	0.000	7.239	(3.641-14.393)
<i>Known</i>	22	98	120			
Morisky Green – Levine test.						
<i>Non-adherent</i>	53	18	71	0.000	38.278	(15.623-93.783)
<i>Adherent</i>	8	104	112			
Tablet Count Test.						
<i>No adherente</i>	58	13	71	0.000	162.103	(44.392-591.9355)
<i>Adherente</i>	3	109	112			
Total	61	122	183			

Regarding podiatric care, it was found that, in relation to the frequency of foot inspection, it was identified that 46 participants carried out an inadequate inspection, supported by a P value of 0.000 and an OR of 5.841 (confidence interval of 95%: 2,924 -11,671). It was identified that 47 participants carry out inadequate drying of their feet (abrupt drying), which is reflected in a P value of 0.000 and an OR of 17.121 (95% confidence interval: 7.964 - 36.809), compared to the type of nail cut, it was identified that 58 participants had an inadequate nail cut (oval cut), evidencing oval cuts, with a P value of 0.000 and an OR of 56.753 (95% confidence interval: 16.589 – 194.160).

Regarding footwear design, it was detected that 47 participants use an inappropriate footwear design (closed

or semi-closed shoes), with a P value of 0.000 and an OR of 9.442 (95% confidence interval: 4,594 – 19,404). Regarding the type of footwear, it has been observed that 45 participants have inappropriate footwear (tight and semi-tight shoes), which translates into a P value of 0.000 and an OR of 17.371 (95% confidence interval: 8.069–37,399).

Regarding water consumption, 19 participants present a deficit in fluid intake, with a P value of 0.070 and an OR of 0.551 (95% confidence interval: 0.288–1.054), regarding the characteristics considered when purchasing socks, it was observed that 47 participants purchased socks that were inappropriate for their feet, the most notable being those with elastics and seams, with a P value of 0.352 and an OR of 0.698 (95% confidence interval: 0.327–1.492) (Table 3).

Table 3. Podiatric care related to the development of diabetic foot.

<i>Indicators</i>	<i>Diabetic foot</i>		<i>Total</i>	<i>X²(P)</i>	<i>OR</i>	<i>IC 95%</i>
	<i>Yeah</i>	<i>No</i>				
<i>Foot inspection frequency</i>						
<i>Inappropriate</i>	46	42	88	0.000	5.841	(2.924–11.671)
<i>Appropriate</i>	15	80	95			
<i>How to carry out drying</i>						
<i>Inappropriate</i>	50	64	114	0.000	4.119	(1.959–8.661)
<i>Appropriate</i>	11	58	69			
<i>Nail cutting type</i>						
<i>Inappropriate</i>	58	31	89	0.000	56.753	(16.589–194.160)
<i>Appropriate</i>	3	91	94			
<i>Footwear design</i>						
<i>Inappropriate</i>	47	32	79	0.000	9.442	(4.594–19.404)
<i>Appropriate</i>	14	90	104			
<i>Type of footwear</i>						
<i>Inappropriate</i>	45	17	62	0.000	17.371	(8.069 –37.399)
<i>Appropriate</i>	16	105	121			
<i>Glasses of water I consume per day</i>						
<i>Consumption deficit</i>	19	55	74	0.070	0.551	(0.288–1.054)
<i>Increased consumption</i>	42	67	109			
<i>Features considered when purchasing socks</i>						
<i>Not convenient</i>	47	101	148	0.352	0.698	(0.327–1.492)
<i>Convenient</i>	14	21	35			
<i>Total</i>	61	122	183			

DISCUSSION

The study involved 183 patients with Diabetes Mellitus from the Perla María Norori health center, with an average age of 48 years. A ratio of 1 sick patient for every 2 exposed patients was observed, predominantly male and from urban environments, with primary education as the maximum level of schooling.

These characteristics identify this population as prone to developing the diabetic foot phenomenon. According to (Martínez Fermín), people with greater vulnerability to these factors tend to face social limitations, such as lack of basic education and insufficient support from family or peers,

which results in a knowledge deficit in this matter [12].

When measuring the causal relationship between the Battle test and the development of diabetic foot, an association of variables was found, in particular, it was found that the lack of substantial knowledge about Diabetes Mellitus represents a factor that increases the risk of suffering from diabetic foot up to 7.2 times more likely than those who have knowledge, counting these values with statistical significance.

The results support what was stated by: (Salinas Ruth) who highlights that the lack of knowledge about Diabetes Mellitus can lead to the development of diabetic foot because people may not understand the importance of adequate control of

blood glucose and, as a result, they may have poor disease control. This, in turn, increases the risk of diabetes-related complications, such as diabetic foot, due to inadequate disease management and lack of attention to preventive care necessary. That is why in Europe, according to (C. M. Almudena), the high numbers of people with diabetic foot present a significant prevalence, representing one third of the costs of diabetes [13].

Regarding the causal relationship between therapeutic adherence (Morisky Green Levine Test) and the development of diabetic foot, an association was found between the variables; therefore, lack of therapeutic adherence is a risk factor that increases up to 38.2 times the risk of developing diabetic foot in those who are adherent, presenting statistical significance.

The results confirm what was stated by: (Rodríguez Miguel) who expresses that, when patients do not adequately follow their treatment plan, chronic hyperglycemia (blood sugar levels that are too high) can damage blood vessels and peripheral nerves, which increases the risk of diabetic neuropathy, a condition that can lead to the development of foot ulcers. In the same way, the high levels of affectation in Latin America according to Gabriela V. Carro, Rubén Saurral in their evolution can demand first level care at the beginning, third level care when more serious complications appear [14].

When analyzing the causal relationship between therapeutic adherence (Tablet Count Test) and the development of diabetic foot, an association was found between the variables; lack of adherence, therefore, stands as a factor that can increase the risk of developing complications such as diabetic foot up to 162 times in people who do not adhere to medications compared to people who have correct adherence. In Central America, mainly in Costa Rica, according to Consuelo Cubero, the incidence and mortality highlight an increase in diabetic foot, contrasting in the same way the importance of adherence to treatment plus sex (Women) have a greater predominance.

The results confirm what was stated by: (Chavarría Ricardo and Castro Terry) who affirm that adequate compliance with medications prescribed for the control of diabetes, such as oral hypoglycemic agents or insulin, is essential to maintain blood glucose levels. Under control, poor compliance can result in poor glucose control and increase the risk of developing chronic complications, such as ulcers or diabetic

foot. In Nicaragua, the effects on secondary care levels not only affect the female sex, according to E. Benedith Quintanilla K. L. The most committed member in the process is also the law, highlighting the importance of compliance with therapeutic adherence in diabetes [15].

When analyzing the causal relationship between the frequency of foot inspection and the development of diabetic foot, an association was found between the variables, with the inadequate frequency of foot inspection being a factor that increases up to 5.4 times the risk of developing diabetic foot than people who have an adequate frequency of inspection of their feet, these values being statistically significant.

These results support what was found by: (University of Navarra Clinic) who states that diabetes can damage the nerves and blood vessels in the feet, which can reduce the ability to feel pain or changes in temperature and pressure, when inspecting regularly, early problems such as cuts, ulcers, calluses, blisters, or skin changes can be detected before they become serious complications [16].

When analyzing the causal relationship between the way of drying feet and the development of diabetic foot, an association was found between the variables, with inadequate foot drying such as rough drying being a factor that increases the risk of developing diabetic foot up to 17.1 times. Compared to people who dry their feet properly, the values have statistical significance.

The results support what was described by: (Navascués C and García C.) who report that correct drying of the feet prevents the accumulation of moisture, which is of critical importance in preventing infections and reducing the probability of complications. Associated, it is important to highlight that an inadequate drying technique can contribute to the development of diabetic foot, since excessive moisture in the feet can increase the risk of infections and complications in people with diabetes [17].

When analyzing the comparison between the type of nail cutting and the development of diabetic foot, it was found that there is an association of variables, thus cutting round nails and not cutting them is a risk factor that increases up to 56.7 times the probability of developing diabetic foot.

The results confirm what was stated by: (Pérez de Albéniz Gómez) who states that the length of the nails has a substantial relevance, since both excess and insufficiency in

their length can lead to the propensity for skin lesions and the establishment of infections. In this sense, the orientation towards a nail cut with curvature meets the possibility of developing injuries while its optimal length, equal to the level of the digital pad, contributes to the conservation of foot health [18].

Regarding the causal relationship between footwear design and the development of diabetic foot, an association was found between the variables, with inadequate footwear design such as closed or semi-closed shoes being a factor that increases the risk of developing diabetic foot up to 9.4 times. Diabetic compared to people who use open or semi-open design shoes, the values found have statistical significance.

The results confirm what was stated by: (Salgado Y.) who states that the footwear must fit the foot correctly, there must be enough space in the toe so that the toes can move comfortably without restrictions, but not so much space that the foot slipping inside the shoe, a proper fit helps prevent excessive friction and injuries caused by rubbing [19].

When analyzing the causal relationship between the type of footwear and the development of diabetic foot, a correlation has been identified between these two variables, consequently, the use of inappropriate footwear, such as tight and semi-tight shoes, becomes a factor of significant risk for the development of diabetic foot, increasing the probability by 17.3 times compared to people who use standard and wide footwear, the results obtained have demonstrated statistical significance.

The results support what was described by: (Salgado Y.) who states that footwear has a primary function, safeguarding foot integrity and preventing injuries derived from interaction with various surfaces, impacts, thermal fluctuations, and other contingencies. Likewise, the shoes must fit well, they must not be narrow or small, which requires the fingers to be curled, but they must not be loose or large, which tend to come off when walking [19].

When analyzing the relationship between the glasses of water consumed per day and the development of diabetic foot, it was found that there is no association between the variables, with the deficit in water consumption being a protective factor that reduces the probability of developing foot by up to 0.55 times. Diabetic compared to people who have adequate water consumption, the results do not have

statistical significance.

The results reject what was proposed by: (Del Castillo Rosa A.) which establishes that insufficient fluid intake, with a consumption of less than six glasses a day, introduces an additional risk factor into the diabetic foot equation, highlighting the need to consider both the practice of local hydration and systemic hydration habits to safeguard foot health in those affected by diabetes or at risk of developing said disease [20].

When evaluating the relationship between the characteristics when purchasing socks (with seam and elastic) and the development of diabetic foot, it was found that there is no association of variables, thus finding that looking for characteristics of inconvenient socks is a protective factor that decreases 0.69 times the probability of developing diabetic foot compared to people who look for warm, soft and cushioned socks, finding that there are no statistically significant results.

This contradicts what was stated by (Del Castillo Rosa A.), who highlights that the padded fabrics of this type of sock protect the foot from rubbing with the shoe and cushion blows, thus preventing injuries. Diabetes usually causes blood vessels narrow and poor blood circulation causes heat to be lost; fabrics that help keep feet warm and also improve circulation [21].

CONCLUSIONS

The study was carried out with a population of 183 participants, of which 61 were cases and 122 controls, the age mode was 48 years, and a predominance of the male sex was observed, showing 54%, the majority of Participants came from urban environments, showing 79% of the total population, the largest number of participants had a limited educational level, showing 40% of participants who completed only primary education, in addition, the majority of participants were single, evidenced by 53 % of the total population.

Therapeutic adherence related to the development of diabetic foot

The lack of substantial knowledge about Diabetes Mellitus represents a factor that increases the risk of suffering from diabetic foot up to 7.2 times, with these values being statistically significant.

Regarding the causal relationship between the Morisky Green Levine Test and the development of diabetic foot, a perfect association was found between the variables

Podiatric care that reduces the risk of developing diabetic foot

When analyzing the relationship between the glasses of water consumed per day and the development of diabetic foot, it was found that there is no association between the variables, with the deficit in water consumption being a protective factor that reduces the probability of developing diabetic foot up to 0.551 times. These values being significantly statistical.

Podiatry care that increases the risk of developing diabetic foot

Inadequate foot washing frequency is a factor that increases up to 10.2 times the risk of developing diabetic foot than people who wash their feet frequently; the results are statistically significant.

The inadequate frequency of foot inspection is a factor that increases up to 5.4 times the risk of developing diabetic foot compared to people who have an adequate frequency of inspection, these values being statistically significant.

Inadequate drying of feet, such as rough drying, is a factor that increases the risk of developing diabetic foot up to 17.1 times than people who dry correctly, these values being statistically significant.

The inadequate design of footwear, such as closed or semi-closed shoes, is a factor that increases the risk of developing diabetic foot up to 9.4 times that of people who use an adequate design of footwear. The values found have statistical significance.

CONFLICT OF INTEREST

Authors declare that they have no conflict of interest.

REFERENCES

1. Ávila Sansores GM, Gómez-Aguilar P, Yam-Sosa AV, Vega-Argote G, Franco-Corona BE. (2013). Un enfoque cualitativo a las barreras de adherencia terapéutica en enfermos crónicos de Guanajuato. México: Campus Universitario Puente del Común. Available in: http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S165759972013000300006.
2. Almudena CM, López SR, Martínez MB, de la Fuente

JLM, Martínez JLL, Zúñiga CG. (2020). Evaluación de la adherencia terapéutica del paciente con pie diabético. Editorial. Revista española de podología. Available in: <https://produccioncientifica.ucm.es/documentos/5ea610672999527bdfc6a996?lang=en>.

3. Carro GV, Saurral R, Sagüez FS, Witman El. (2018). Pie diabético en pacientes internados en hospitales de Latinoamérica. Medicina (Buenos Aires). 78(4):243-251. Available in: http://www.scielo.org.ar/scielo.php?pid=S0025-76802018000400003&script=sci_abstract.
4. Cubero CA, Valenciano LPR. (2017). Comportamiento de diabetes mellitus en Costa Rica. Editorial Repositorio Universidad de Costa Rica. Available in: https://www.scielo.org.mx/scielo.php?pid=S200774592017000300211&script=sci_arttext.
5. Quintanilla B, Lissette K, Solís P, Mercedes M. (2015). Evaluación de antibióticos prescritos a pacientes con pie diabéticos ingresados en clínica amocsa, león. Marzo-agosto. León: Editorial Repositorio UNAN-León. Available in: <http://riul.unanleon.edu.ni:8080/jspui/bitstream/123456789/6651/1/239236.pdf>.
6. García F, et al. (2023). Identificaciones, líneas de investigación científica, incorporando las contribuciones a ODS (agenda 2030), el enfoque de género y emprendimiento. Editorial repositorio unan león. Publicado 2023 león página 4.
7. Enciso ÁDR. (2016). Factores de riesgo asociados al pie diabético. Rev virtual Soc Parag Med Int. 3(2):58-70. Available in: http://scielo.iics.una.py/scielo.php?script=sci_arttext&pid=S2312-38932016000200003.
8. Martínez A, Téllez OLR. (2019). Adherencia terapéutica y cuidados podológicos asociados al pie diabético en pacientes con Diabetes tipo 2, Centro de Salud José Rubí-El Viejo, III trimestre 2018. León: Editorial Repositorio UNAN-León. Available in: <http://riul.unanleon.edu.ni:8080/jspui/bitstream/123456789/7250/1/241514.pdf>.
9. Rodríguez X, et al. (2019). Adherencia al tratamiento y pie diabético en pacientes de endocrinología del hospital nacional sergio e. Bernales en enero del 2019. Lima-

- Perú: Editorial Repositorio Universidad Privada San Juan Bautista. Available in: <https://repositorio.upsjb.edu.pe/bitstream/handle/20.500.14308/2024/T-TPMC-XIOMARA%20ISABEL%20RODRIGUEZ%20CALLALLI.pdf?sequence=1&isAllowed=y>.
10. González V, et al. (2020). Hernández Camila. Adherencia terapéutica y cuidados podológicos relacionado al desarrollo de pie diabético en inscritos al programa de crónicos Centro de Salud Mantica Berio, León, III trimestre. León-Nicaragua: Editorial Repositorio UNAN-León. Available in: <http://riul.unanleon.edu.ni:8080/jspui/bitstream/123456789/9414/1/250265.pdf>.
 11. De la Fuente A, et al. (2020). y colaboradores. Abordaje ambulatorio de amputaciones menores abiertas en una unidad de pie diabético. Available in: https://heridasycicatrizacion.es/images/site/2020/03_SEPTIEMBRE_2020/2_Revisi%C3%B3n_SEHER_10.3.pdf.
 12. Martínez F, et al. (2012). Diagnóstico, clasificación y tratamiento de las infecciones en el pie diabético. Ciudad de México: Editorial Mediagraphip. Available in: <https://www.medigraphic.com/pdfs/cirgen/cg2012/cg123i.pdf>.
 13. Salinas Ruth, et al. (2016). Adherencia terapéutica a la insulino terapia en Hospitales de segundo nivel de la región metropolitana de salud. San Salvador: Editorial Repositorio Universidad Evangélica del Salvador. Available in: <file:///C:/Users/HP%20Corei5/Downloads/5725.pdf>.
 14. Rodríguez Miguel, et al. (2008). Revisión de test de medición del cumplimiento terapéutico utilizados en la práctica clínica. Cáceres: Editorial ELSEVIER. Available in: <https://www.elsevier.es/es-revista-atencion-primaria27articulo-revision-tests-medicion-del-cumplimiento-13125407>.
 15. Chavarría R. et al. (2017). Adherencia terapéutica de la hipertensión arterial y diabetes mellitus en pacientes que acuden al programa de crónicos de la unidad de salud "Las Marías" del municipio de Telica, departamento de León en el período de marzo a mayo, 2017. León: Editorial Repositorio UNAN-León. Available in: <http://riul.unanleon.edu.ni:8080/jspui/bitstream/123456789/6868/1/240281.pdf>.
 16. Clínica Universidad de Navarra. (2022). Higiene y cuidado de los pies del paciente diabético. Pamplona: Editorial Biblioteca virtual Clínica Universidad de Navarra. Available in: <https://www.cun.es/enfermedadestratamientos/cuidados-casa/cuidado-pies-diabetico>.
 17. Navascués C, García C, et al. (2023). Técnicas de tratamiento de la enfermería para los pies en pacientes con diabetes. RSI - Revista Sanitaria de Investigación. Available in: <https://revistasanitariadeinvestigacion.com/tecnicas-de-tratamiento-de-la-enfermeriaparalos-piesen-pacientes-con-diabetes/>.
 18. Pérez M, et al. (2015). La importancia del cuidado del pie diabético. Zona Hospitalaria. Available in: <https://zonahospitalaria.com/la-importancia-del-cuidadodel-pie-diabetico/>.
 19. Salgado Y, et al. (2014). Cuidados del pie en personas con diabetes. Tercera edición. LEXIC. p. 9-14.
 20. Del Castillo Rosa A, et al. (2014). Guía de práctica clínica en el pie diabético. Sevilla: Editorial MedPub Journals. Available in: <https://www.archivosdemedicina.com/medicinade-familia/gua-de-prctica-clnica-en-el-piediabetico.pdf>.
 21. Veintimilla Paguay E, et al. (2022). Calcetines y zapatos adecuados en un paciente con diabetes mellitus. Ocronos - Editorial Científico-Técnica. Available in: <https://revistamedica.com/calzadoadecuado-diabetismellitus/amp/>.