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Incidence of Diabetic foot Amputation in jalalabad city 2025

https://orcid.org/0009-0000-5317-6809

Dr. Muhammad Tariq Noor[1], Noman Mashwani[2], Abdurahman Salih[3],Waheed Ullah Ameen[4], Khoshal Bilalzai[5]

[1]Dean of Pharmacy faculty and medical lecturer at Rokhan University, mtariq.noor123@gmail.com,
[2]MD student, nomanmashwani10@gmail.com,
[3]MD Student, abdurahmansalih39@gmail.com
[4]MD, Student, ameen.dargai.161@gmail.com,
[5]B-Pharm Student, Khoshal.bilalzai@gmail.com

Corresponding Author: Dr. Muhammad Tariq Noor, mtariq.noor123@gmail.com,

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Abstract

Background:

Diabetic foot is a serious complication of diabetes mellitus and a leading cause of lower-limb amputation. This study aimed to determine the incidence of diabetic foot amputation and describe the demographic and clinical characteristics of diabetic patients in Jalalabad City, Afghanistan.

Methods:

A descriptive cross-sectional study was conducted among 87 diabetic patients with diabetic foot complications in Jalalabad City during 2025. Data were collected using a structured questionnaire and analyzed using Microsoft Excel. Descriptive statistics (frequencies and percentages) were used to summarize the findings.

Results: Most participants were male (73.56%), aged 50 years or older (78.16%), lived in rural areas (73.56%), had no formal education (67.82%), and had Type 2 diabetes (97.70%). Foot ulcers (95.40%), infection (85.06%), gangrene (80.46%), and toe amputation (89.66%) were highly prevalent. Overall, 64.37% had undergone foot or leg amputation, with most amputations occurring in 2025 (77.01%). Delayed hospital visits (89.66%), limited foot care education (51.72%), poor awareness of HbA1c (67.82%), and a high prevalence of hypertension (94.25%) and kidney disease (85.06%) were also observed.

Conclusion:

Diabetic foot amputation was common among diabetic patients in Jalalabad City and was associated with delayed healthcare seeking, inadequate foot care knowledge, poor diabetes awareness, and multiple comorbidities. Strengthening diabetes education, promoting regular foot care, and improving access to early diagnosis and treatment may help reduce diabetes-related amputations.

Keywords: Diabetic foot, Amputation, Diabetes mellitus, Foot ulcer, Gangrene.

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Introduction:

Diabetes mellitus (DM) is one of the most common chronic non-communicable diseases and has become a major global public health challenge. According to the International Diabetes Federation (IDF), the number of people living with diabetes continues to increase worldwide, leading to significant morbidity, mortality, and healthcare costs. Poorly controlled diabetes can result in several long-term complications, including diabetic neuropathy, peripheral vascular disease, kidney disease, retinopathy, and diabetic foot ulcers. Diabetic foot is one of the most serious complications of diabetes mellitus and is a leading cause of lower-extremity amputation. It develops due to a combination of peripheral neuropathy, poor blood circulation, infection, and delayed wound healing. If not diagnosed and treated early, diabetic foot ulcers may progress to severe infection, gangrene, and ultimately require toe, foot, or leg amputation. These complications greatly reduce patients' quality of life, increase disability, and place a substantial economic burden on families and healthcare systems.

The risk of diabetic foot amputation is influenced by several factors, including poor glycemic control, prolonged duration of diabetes, inadequate foot care practices, delayed healthcare seeking, smoking, hypertension, and other comorbid conditions. Regular foot examination, patient education, appropriate footwear, and early medical intervention have been shown to significantly reduce the risk of ulceration and amputation. In Afghanistan, the burden of diabetes is increasing; however, limited research has been conducted on diabetic foot complications and lower-limb amputations. Local data are essential for understanding the magnitude of the problem and for developing effective prevention and management strategies. Therefore, this study aimed to determine the incidence of diabetic foot amputation and describe the socio-demographic, clinical, and behavioral characteristics of diabetic patients in Jalalabad City, Afghanistan. The findings of this study may help healthcare providers and policymakers strengthen diabetic foot care services and implement preventive measures to reduce avoidable amputations.

Literature Review:

According to Lemaster, J. W., Reiber, G. E., Smith, D. G., Heagerty, P. J., & Wallace, C. (2003) This study found that doing more weight-bearing activities did not increase the chance of foot ulcers coming back in people with diabetes. The results show that physical activity may be safe for some patients even if they have reduced feeling in their feet. However, patients still need proper guidance to avoid possible foot problems. More studies are needed to understand which types of activities are safer and more helpful for people with diabetes. The study highlights the importance of balancing exercise and foot care in diabetic patients.

As stated by Gharibzadeh, S., Lee, J., Highton, P., Greenlaw, N., Gillies, C., Zaccardi, F., ... & Gregg, E. (2025). The study found that some people with diabetes developed diabetic foot ulcers during the follow-up period. The risk was higher among older patients, males, smokers, and people with higher blood pressure and blood sugar levels. These factors may help identify patients who need more attention and regular foot care. Early

ROKHAN Medical Science Journal
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According to van Velze, V. Y., Burger, H. L., van der Steenhoven, T. J., Al-Ers, H., Goncalves, L. N., Eefting, D., ... & Van Der Bogt, K. E. (2025). This research focused on using machine learning models to predict the healing of diabetic foot ulcers. The researchers handled important data issues like missing values and unbalanced data before developing the models. Seven different machine learning models were compared. The SVM model showed the best performance, followed by Random Forest and XGBoost. The results suggest that machine learning can support doctors in making better decisions for diabetic foot ulcer treatment.

According to Riise, H. K., Igland, J., Graue, M., Haugstvedt, A., Østbye, T., Søfteland, E., ... & Iversen, M. M. (2024). The findings from the HUNT surveys showed that the number of people experiencing diabetic foot ulcers during their lifetime decreased between 1995 and 2019. The results suggest that improvements in diabetes care may have helped reduce the occurrence of diabetic foot ulcers.

As stated by Kaka, A. S., Landsteiner, A., Ensrud, K. E., Logan, B., Sowerby, C., Ullman, K., ... & Sultan, S. (2023) This review found four models that can help predict diabetic foot ulcers and amputation risk in people with diabetes. The PODUS 2020 model gave the best prediction results. It may help doctors find patients who have a higher risk of foot problems. More studies are needed to know how often patients should be checked and what actions should be taken after risk prediction.

Based on Hamilton, E. J., Davis, W. A., Siru, R., Baba, M., Norman, P. E., & Davis, T. M. (2021). The results showed that hospital admissions due to new diabetic foot ulcers increased among people with type 2 diabetes over time. Younger patients showed a greater increase in these cases. The risk was higher in people with nerve problems in the feet, poor blood flow, and uncontrolled blood sugar levels. These findings highlight the importance of better diabetes management and early prevention of foot complications.

According to Ndosi, M., Wright-Hughes, A., Brown, S., Backhouse, M., Lipsky, B. A., Bhogal, M., ... & Nelson, E. A. (2018). People with infected diabetic foot ulcers often have poor outcomes after one year. Poor blood flow, longer ulcer duration, and having multiple ulcers were linked with higher risk of complications. Early diagnosis and proper management may help improve patient outcomes.

Accordant to Lo, Z. J., Surendra, N. K., Saxena, A., & Car, J. (2021). Diabetic foot ulcers are a serious health problem in Southeast Asia. Poor control of diabetes increases the number of wounds and treatment costs. Many patients need repeated hospital visits. Poor blood circulation increases the risk of amputation and death. Early treatment and better diabetes control can help prevent serious complications.

As stated by Van Battum, P., Schaper, N., Prompers, L., Apelqvist, J., Jude, E., Piaggesi, A., ... & Huijberts, M. (2011). Minor amputation happens often in people with diabetic foot ulcers. Deep wounds, infection, poor blood flow, and being male were linked with a higher chance of amputation. The rate of amputation was different between European centres. Early visit to foot clinics may help reduce the number of amputations.

Based on Beulens, J. W., Yauw, J. S., Elders, P. J., Feenstra, T., Herings, R., Slieker, R. C., ... & van der Heijden, A. A. (2021). The review found 34 different models used to predict foot ulcers and amputation risk. Some models did not perform well, but three models showed better results. These models may help healthcare workers identify patients who need more care and follow-up.

According to Prompers, L., Schaper, N., Apelqvist, J., Edmonds, M., Jude, E., Mauricio, D., ... & Huijberts, M. (2008).The findings showed that healing factors are different in patients with and without peripheral arterial disease (PAD). Diabetic foot ulcers with PAD and without PAD may need to be considered as different conditions. Infection had a negative effect on healing in patients with PAD. More research is needed to understand this relationship.

According to Huang, J., Yang, J., Qi, H., Xu, M., Xu, X., & Zhu, Y. (2024). The review found that many current models for predicting amputation risk in diabetic foot patients have some problems that may affect their accuracy. These models need further improvement to provide more reliable predictions. Future research should focus on developing better models using stronger and more careful methods.

Based on Chappell, F. M., Crawford, F., Horne, M., Leese, G. P., Martin, A., Weller, D., ... & Riley, R. D. (2021). This tool is simple and uses common patient information to predict the risk of foot ulcers. It can help

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identify patients who need more care to prevent foot problems. The tool has shown good results in community settings. More studies are needed to test it in hospitals and clinics.

According to Ibrahim, I., Nuermaimaiti, Y., Maimaituxun, G., Luo, X., Maimaituxun, M., Akbar, A., ... & Wu, Y. (2024) study fine that High NET levels in blood may show a higher risk of amputation in people with diabetic foot ulcers. This test may help doctors find high-risk patients earlier. More research is needed to understand this connection.

According to Dai, X., Xu, F., Lu, W., Zhang, G., Li, Y., Hu, X., ... & Wu, Q. (2025) study MDRB infections in diabetic foot ulcers are linked with some patient risk factors. Current models are not accurate enough to predict these infections. Better models are needed to identify high-risk patients. Early detection can help doctors choose the right treatment. More research is needed to reduce complications from diabetic foot infections.

Based on Zhou, Z., Jia, Y., Yan, H., Xu, J., Wang, S., & Wen, J. (2025) The prediction models for diabetic foot ulcer recurrence showed good results. However, these models had some problems that may affect their accuracy. New models should be developed using larger groups of patients. More testing in different hospitals is needed to make these models more reliable. Better prediction tools can help doctors identify patients at higher risk. Early care may help reduce the chance of ulcers coming back.

According to Hamad[l], D. A., Baiee[l], H. A., Salman[l], A. M., Abd Al, A. M., Hassan[l], A. Y. O., adnan Obeid[l], B., & Mehsien[l], Z. A. A. (2021). Diabetic foot problems and ulcers were common among diabetic patients in this area. Many patients had poor knowledge about proper foot care. Better education and awareness programs are needed to help prevent foot complications. Regular foot care can reduce the risk of ulcers. Patients should learn how to check and protect their feet. Early care can help avoid serious problems and amputations.

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Methods:

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Study Design.
A descriptive cross-sectional study was conducted to determine the incidence of diabetic foot amputation among diabetic patients in Jalalabad City, Afghanistan, during 2025.
Study Setting.
The study was carried out in the outpatient departments (OPDs) and selected hospitals in Jalalabad City, where diabetic patients receiving treatment or follow-up care were approached for participation.
Study Population and Sample Size.
The study included 87 diabetic patients with diabetic foot complications who attended the selected hospitals and OPDs during the study period. Participants were selected using a convenience sampling technique based on their availability and willingness to participate.
Data Collection
Data were collected using a structured questionnaire developed by the researchers. Face-to-face interviews were conducted with eligible patients after obtaining informed consent. The questionnaire collected information on socio-demographic characteristics, diabetes history, foot care practices, diabetic foot complications, comorbidities, and amputation status.
Data Analysis
The collected data were entered into Microsoft Excel for cleaning and coding. Data analysis was performed using Microsoft Excel, where descriptive statistics, including frequencies and percentages, were calculated. The results were presented in tables and charts to summarize the characteristics of the study participants and the incidence of diabetic foot amputation.
Ethical Considerations
Participation in the study was voluntary, and informed consent was obtained from all participants before data collection. The confidentiality and privacy of participants' information were maintained throughout the study, and the data were used solely for research purposes.

Objectives:

1. To describe the socio-demographic characteristics of diabetic patients with diabetic foot complications.
2. To assess the clinical characteristics of diabetes, including type, duration, treatment, and glycemic monitoring.
3. To evaluate patients' knowledge and practices regarding diabetic foot care.
4. To determine the prevalence of diabetic foot complications, including foot ulcers, infection, gangrene, and amputation.
5. To identify the prevalence of associated comorbidities, including hypertension, kidney disease, heart disease, smoking, and poor circulation.
6. To assess healthcare-seeking behavior and barriers to accessing hospital services among diabetic patients.

Results:

A total of 87 diabetic patients participated in the study. Most participants were male (73.56**%)**, aged 50 years and above (78.16%)**,** and lived in rural areas (73.56%)**.** The majority had no formal education (67.82%)**,** were laborers (65.52%)**,** had low monthly income (71.26%)**,** and were married (98.85%)**.** Regarding clinical characteristics, 97.70% had Type 2 diabetes, and 47.13% had been living with diabetes for 7–14 years. Most participants reported regular diabetes monitoring (73.56%) and regular medication use (85.06%)**,** while 75.86% were receiving insulin therapy. Although 78.16% stated that their diabetes was controlled by a physician, only 32.18% knew their HbA1c results.
Foot care practices were suboptimal. Only 48.28% had received foot care education, and 41.38% reported examining their feet daily. However**,** 91.95% washed and dried their feet regularly, while 50.57% reported

ROKHAN Medical Science Journal
Vole: - (1) - Issue (1)
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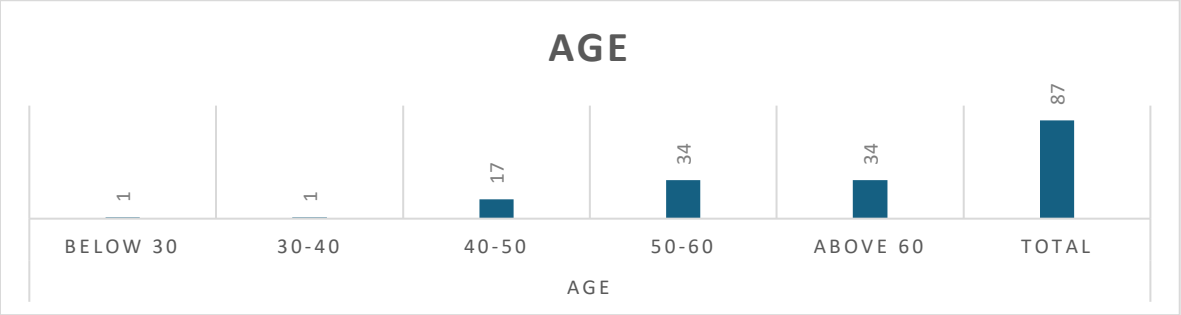
sometimes walking barefoot. Approximately 67.82% used protective footwear. Diabetic foot complications were highly prevalent. A history of foot ulcer was reported by 95.40% of participants, infection by 85.06%, and gangrene by 80.46%. Furthermore, 89.66% had undergone toe amputation, while 64.37% had experienced foot or leg amputation. Most amputations (77.01%) occurred during 2025.

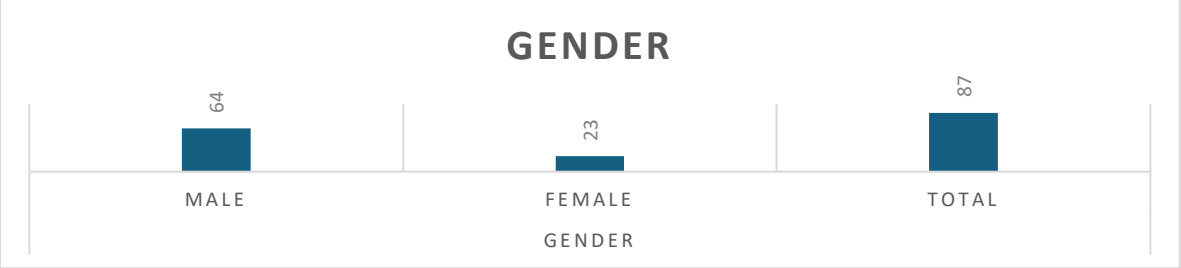
Comorbid conditions were also common. Hypertension was present in 94.25%, kidney disease in 85.06%, and heart disease in 34.48% of participants. In addition, 58.62% were smokers, 89.66% experienced foot numbness, 94.25% reported a burning sensation in the feet, and 85.06% had poor circulation. Delayed hospital visits were reported by 89.66%, while 86.21% experienced difficulty accessing hospital services, highlighting major barriers to timely diabetic foot management.

Table No 1:



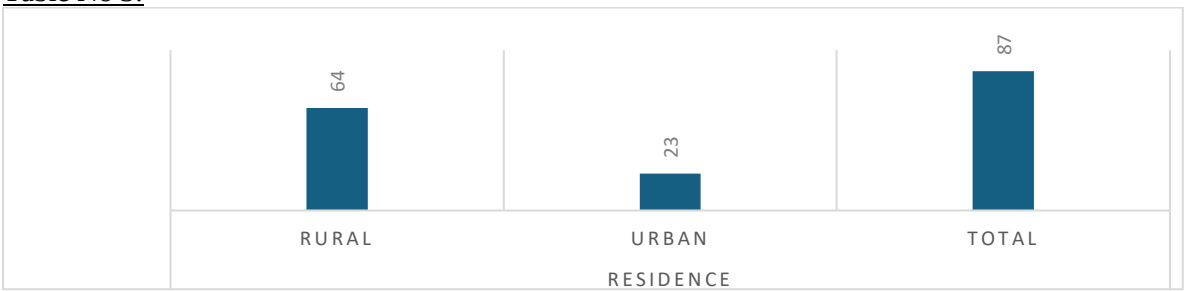
The age distribution indicates that the study population was predominantly older adults, with 50–60 and above 60 years groups each comprising 39.08% (n=34), while younger participants (<40 years) were minimally represented (2.3%, n=2). This suggests a sample heavily concentrated among individuals aged 50 years and above.

Table NO 2:



The gender distribution shows a predominance of male participants (73.56%, n=64) compared with females (26.44%, n=23), indicating a male-dominated study population.

Table No 3:



The residence distribution indicates that most participants were from rural areas (73.56%, n=64), while urban residents accounted for 26.44% (n=23), showing a predominantly rural study population.

ROKHAN Medical Science Journal
Vole: - (1) - Issue (1)
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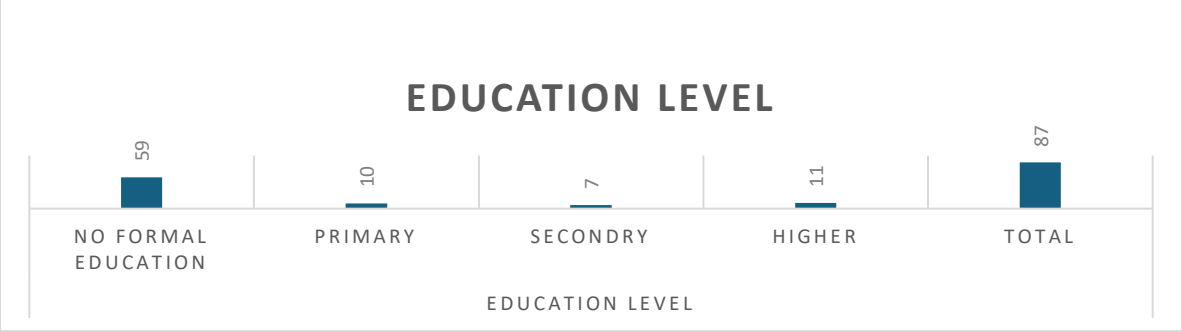
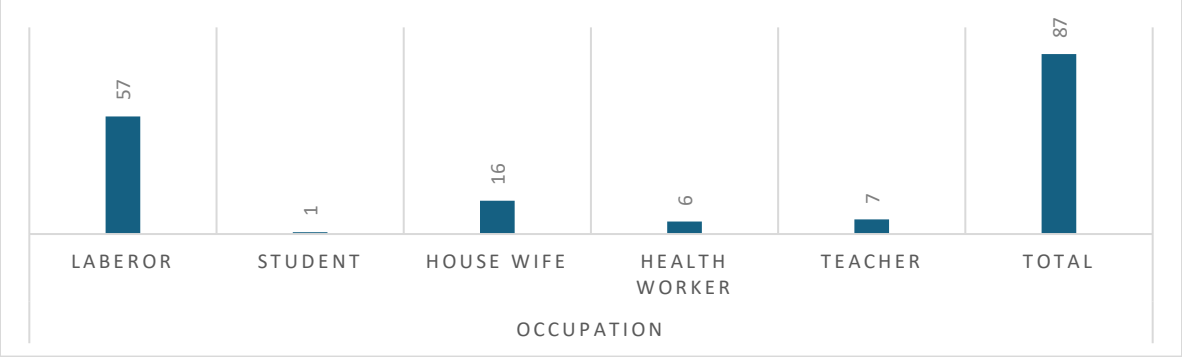
Table No 4:



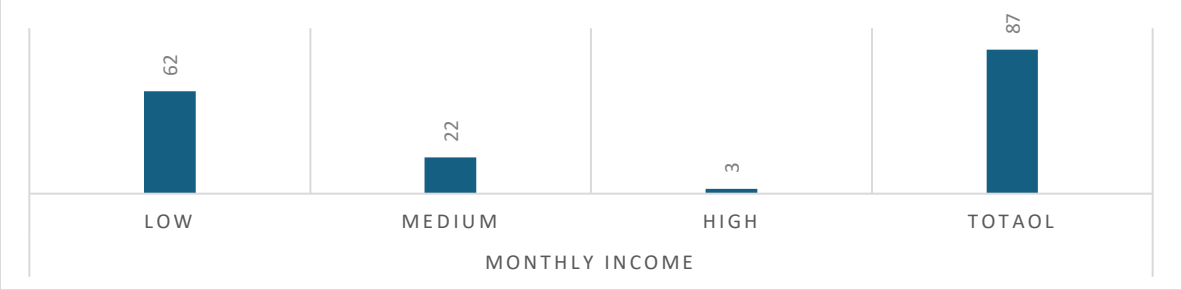
The education distribution shows that the majority of participants had no formal education (67.82%, n=59), while only 32.18% (n=28) had some level of formal education, indicating a predominantly low educational background among participants.

Table No 5:



The occupation distribution shows that laborers were the predominant group (65.52%, n=57), followed by housewives (18.39%, n=16), while other occupations had limited representation, indicating a mainly labor-based study population.

Table No 6:



The monthly income distribution indicates that most participants had low income (71.26%, n=62), while only 3.45% (n=3) belonged to the high-income category, reflecting a predominantly low-income study population.

ROKHAN Medical Science Journal
Vole: - (1) - Issue (1)
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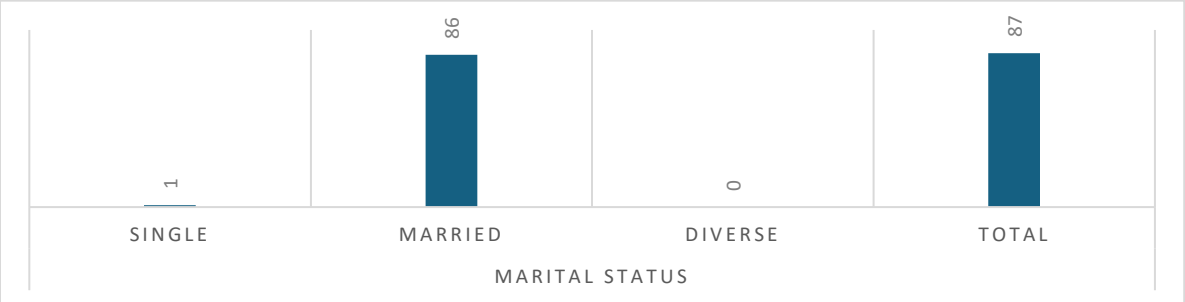
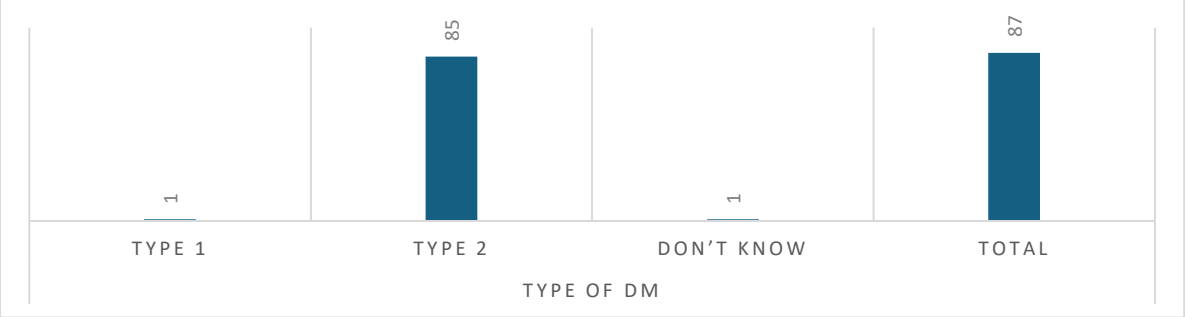


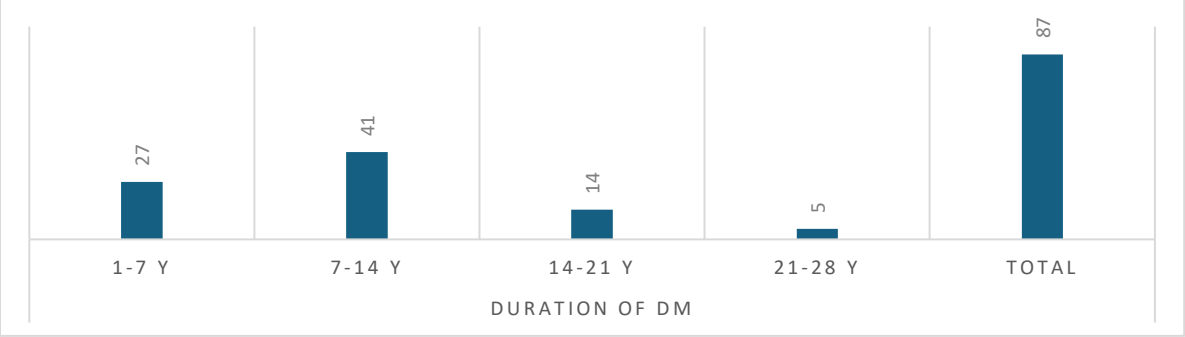
The marital status distribution shows that the majority of participants were married (98.85%, n=86), with only one single participant (1.15%) and no divorced individuals, indicating a predominantly married study population.

Table No 8:



The distribution of diabetes type shows that the majority of participants had Type 2 diabetes (97.70%, n=85), while Type 1 diabetes and unknown type each accounted for 1.15% (n=1), indicating a predominantly Type 2 diabetic population.

Table No 9:



The duration of diabetes distribution shows that most participants had diabetes for 7–14 years (47.13%, n=41), followed by 1–7 years (31.03%, n=27), indicating a predominance of patients with intermediate disease duration.

ROKHAN Medical Science Journal
Vole: - (1) - Issue (1)
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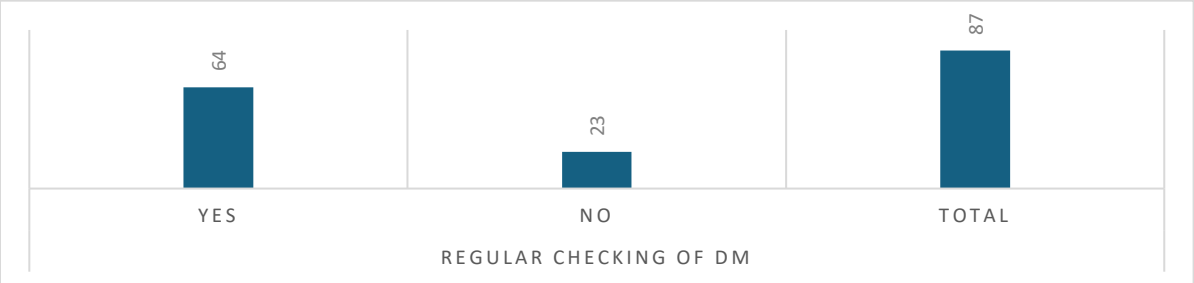
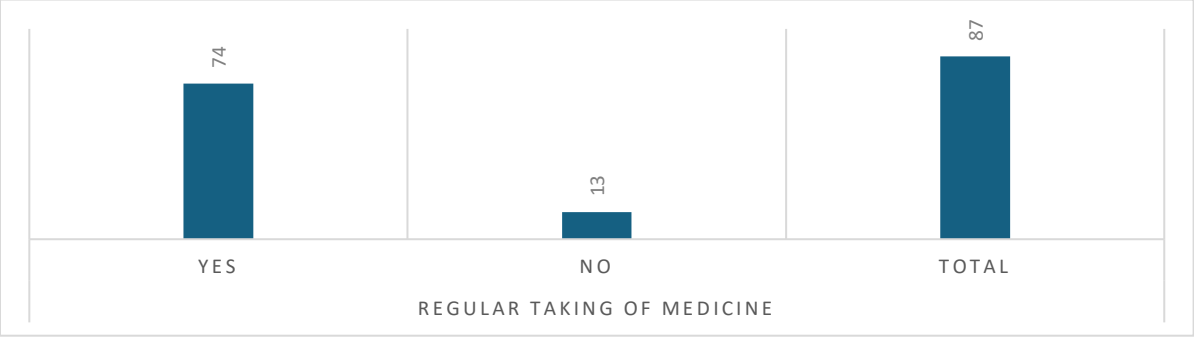
Table No 10:



The majority of participants reported regular diabetes monitoring (73.56%, n=64), while 26.44% (n=23) did not regularly check their diabetes status, indicating generally good monitoring practices.

Table No 11:



The majority of participants reported regular medication use (85.06%, n=74), while 14.94% (n=13) did not take their medicines regularly, indicating high treatment adherence among participants.

Table No 12:

The insulin usage distribution shows that 75.86% of participants (n=66) were using insulin, while 24.14% (n=21) were not, indicating a high prevalence of insulin therapy among the study population.

ROKHAN Medical Science Journal
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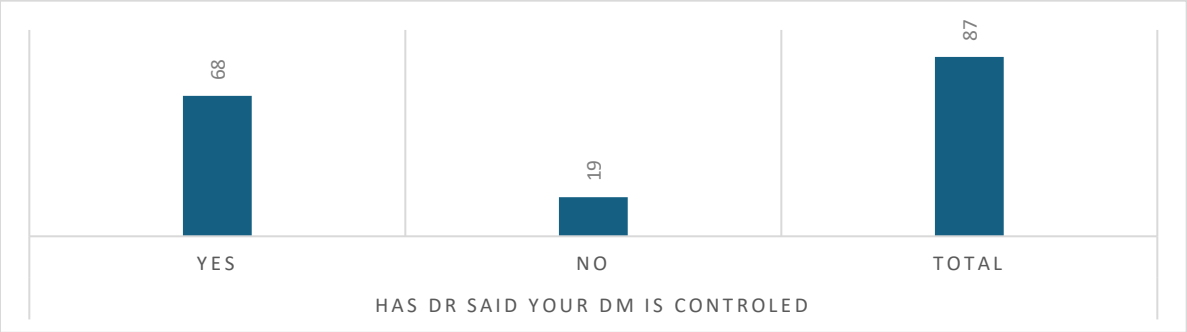
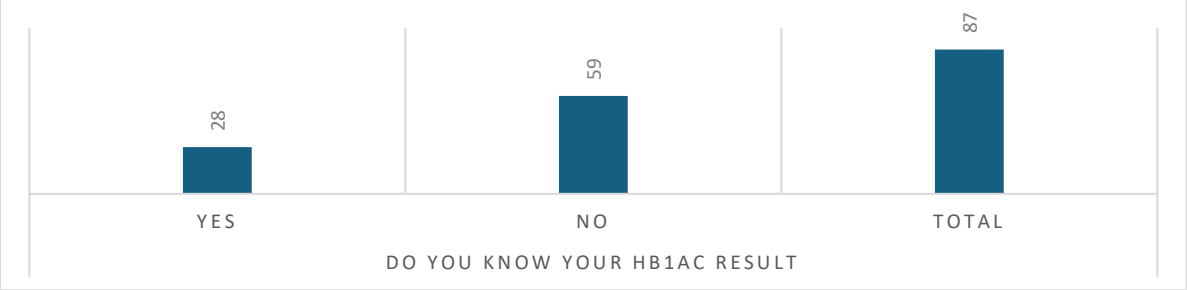
Table No 13:



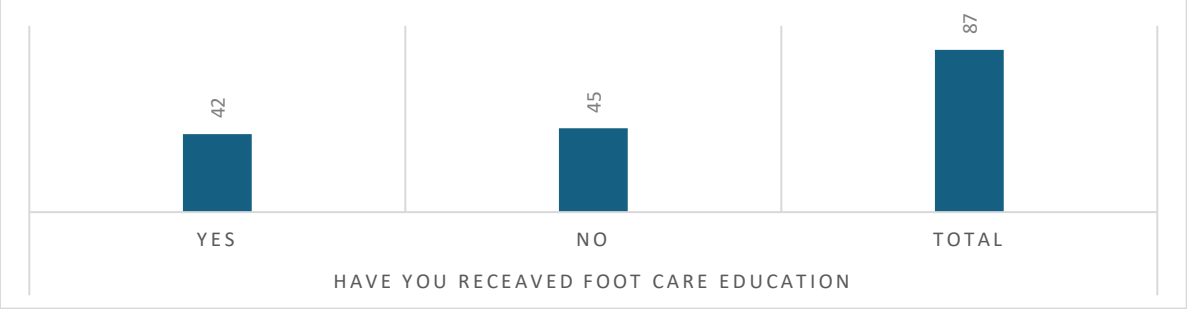
The majority of participants reported that their diabetes was considered controlled by a doctor (78.16%, n=68), while 21.84% (n=19) reported that their diabetes was not controlled.

Table no 14:



The distribution shows that only 32.18% of participants (n=28) knew their HbA1c results, while 67.82% (n=59) were unaware, indicating limited awareness of diabetes control indicators.

Table No 15:



The distribution shows that 48.28% of participants (n=42) had received foot care education, while 51.72% (n=45) had not, indicating nearly equal distribution but slightly inadequate exposure to foot care education.

ROKHAN Medical Science Journal
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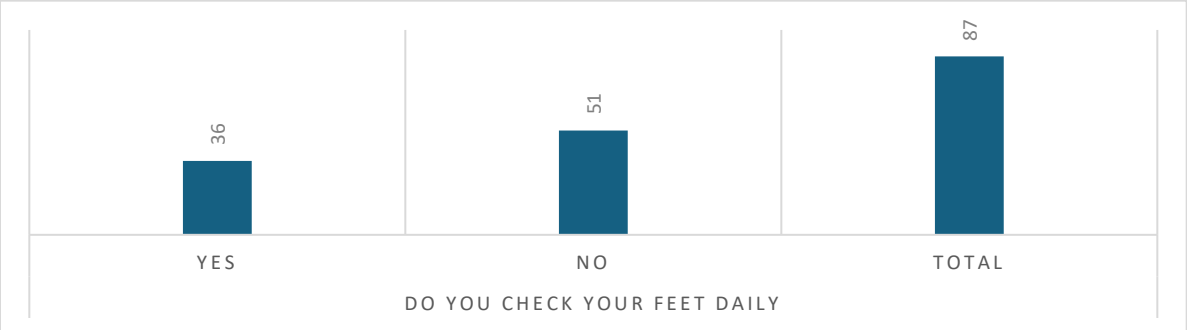
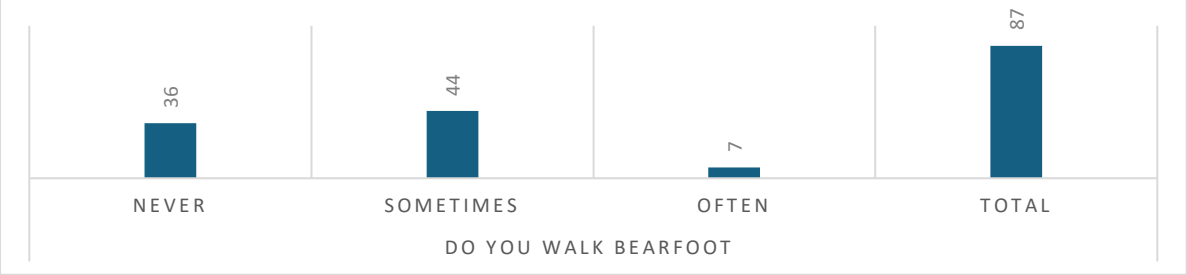


The findings show that 41.38% of participants (n=36) checked their feet daily, while 58.62% (n=51) did not, indicating poor adherence to recommended daily foot self-care practices.

Table No 17:

The majority of participants reported washing and drying their feet daily (91.95%, n=80), while only 8.05% (n=7) did not, indicating good foot hygiene practices among the study population.

Table No 18:



The distribution shows that 50.57% of participants (n=44) sometimes walked barefoot, while 41.38% (n=36) never did and 8.05% (n=7) often walked barefoot, indicating a common practice that may increase foot-related risks.

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Vole: - (1) - Issue (1)
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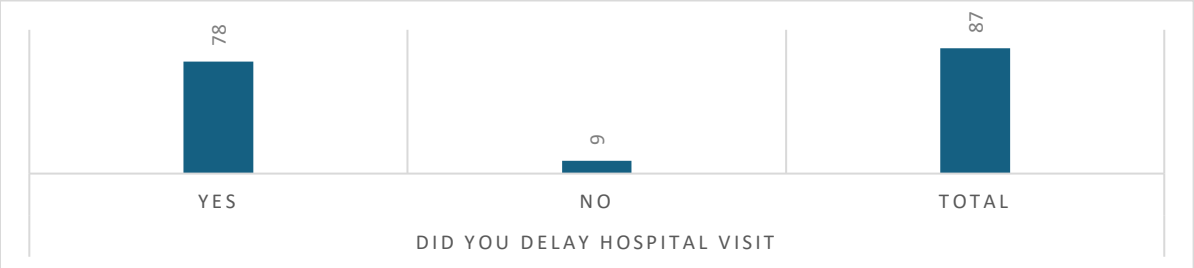
Table No 19:

The findings show that 67.82% of participants (n=59) wore protective shoes, while 32.18% (n=28) did not, indicating moderate adherence to protective footwear practices.

Table No 20:

The findings show that 95.40% of participants (n=83) had experienced foot ulcers, while only 4.60% (n=4) had not, indicating a very high prevalence of diabetic foot ulcer history among the study population.

Table No 21:



The findings show that 89.66% of participants (n=78) delayed hospital visits, while 10.34% (n=9) did not, indicating a high prevalence of delayed healthcare-seeking behavior among participants.

ROKHAN Medical Science Journal
Vole: - (1) - Issue (1)
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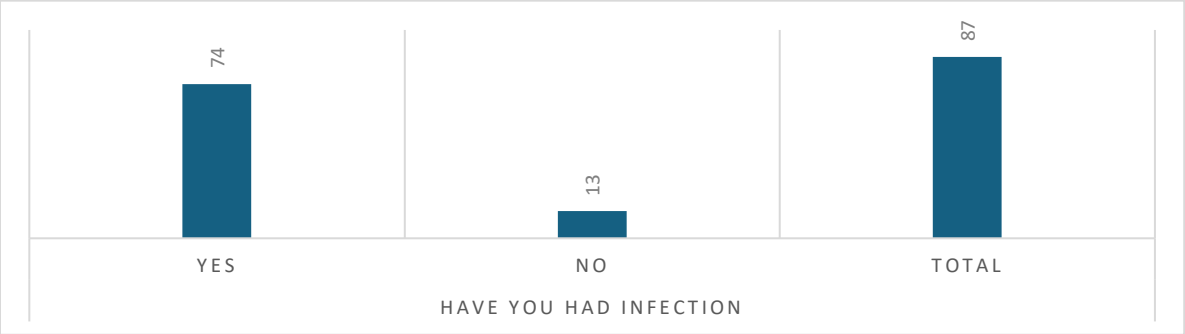
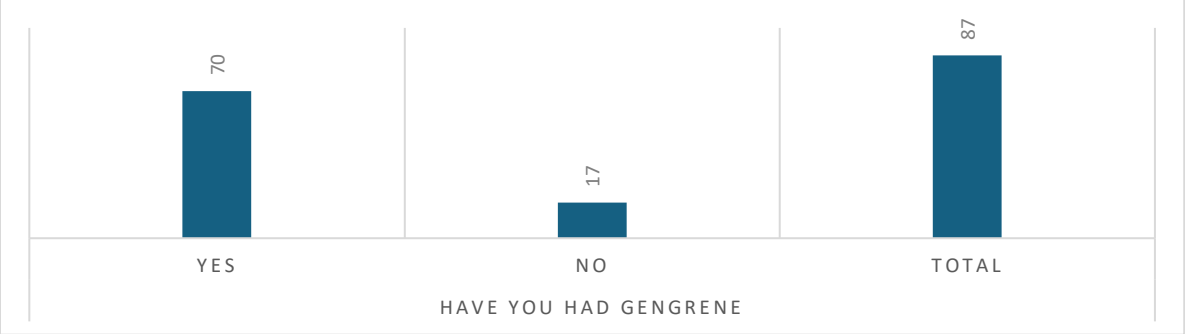
Table No 22:



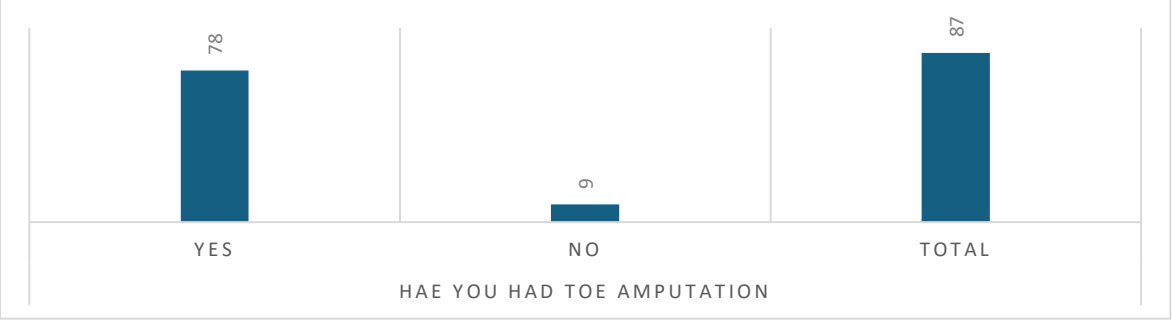
The findings show that 85.06% of participants (n=74) had experienced infection, while 14.94% (n=13) had not, indicating a high prevalence of infection among the study population.

Table No 23:



The findings show that 80.46% of participants (n = 70) had experienced gangrene, while 19.54% (n = 17) had not, indicating a high prevalence of gangrene among the study population.

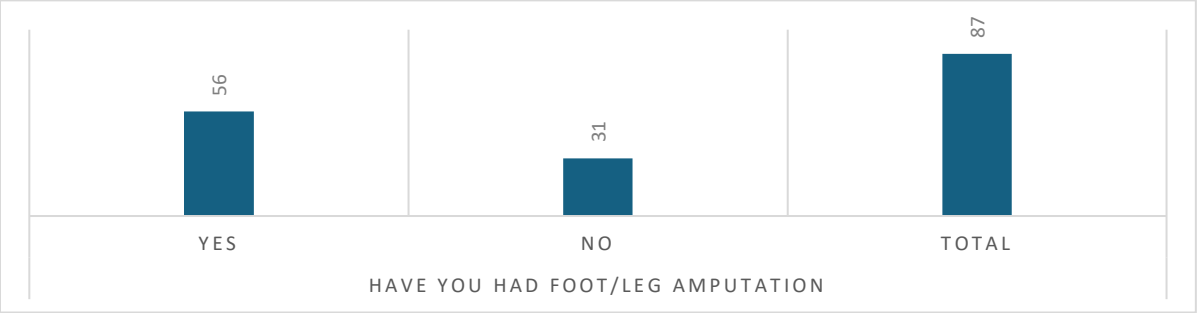
Table No 24:



The findings show that 89.66% of participants (n = 78) had undergone toe amputation, while 10.34% (n = 9) had not, indicating a high prevalence of toe amputation among the study population.

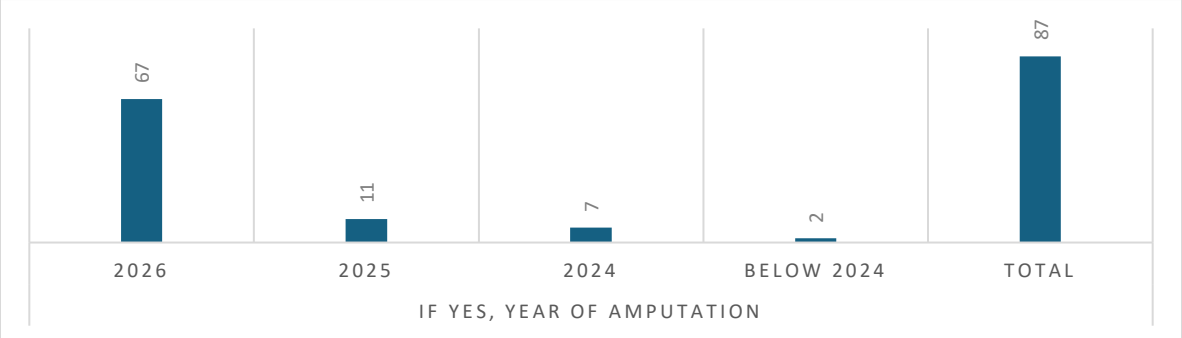
ROKHAN Medical Science Journal
Vole: - (1) - Issue (1)
https://rmsj.rokhan.edu.af https://doi.org/10.67608/rmsj.v1i1.53

Table No 25:



The findings show that 64.37% of participants (n = 56) had undergone foot or leg amputation, while 35.63% (n = 31) had not, indicating that foot or leg amputation was a common complication among the study population.

Table No 26:



The findings show that among the participants, 77.01% (n = 67) reported that their amputation occurred in 2025, 12.64% (n = 11) in 2025, 8.05% (n = 7) in 2024, and 2.30% (n = 2) before 2024, indicating that the majority of amputations were performed in 2025.

Table No 27:

The findings show that 94.25% of participants (n = 82) had hypertension (HTN), while 5.75% (n = 5) did not, indicating a very high prevalence of hypertension among the study population.

ROKHAN Medical Science Journal
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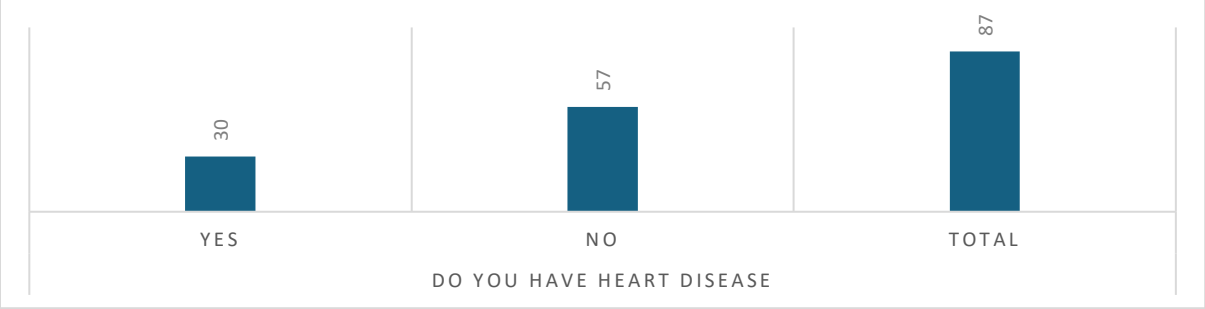
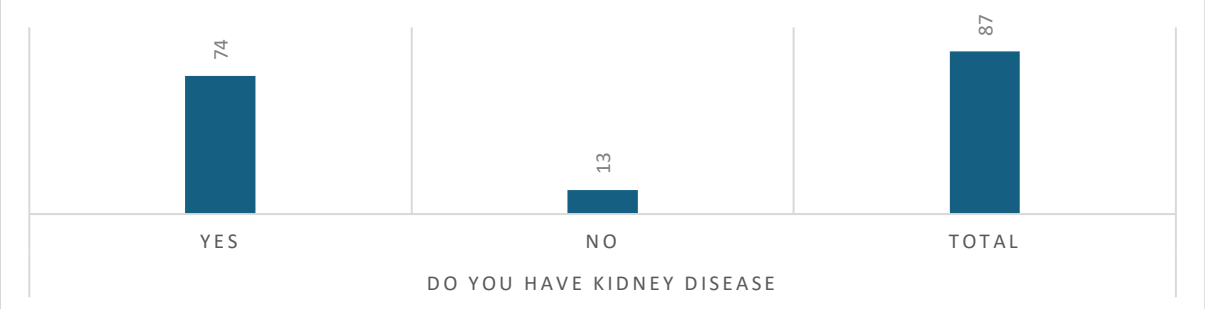
Table No 28:



The findings show that 34.48% of participants (n = 30) had heart disease, while 65.52% (n = 57) did not, indicating that heart disease was present in about one-third of the study population.

Table NO 29:



The findings show that 85.06% of participants (n = 74) had kidney disease, while 14.94% (n = 13) did not, indicating a high prevalence of kidney disease among the study population.

Table No 30:

The findings show that 58.62% of participants (n = 51) reported that they smoked, while 41.38% (n = 36) did not, indicating that smoking was common among the study population.

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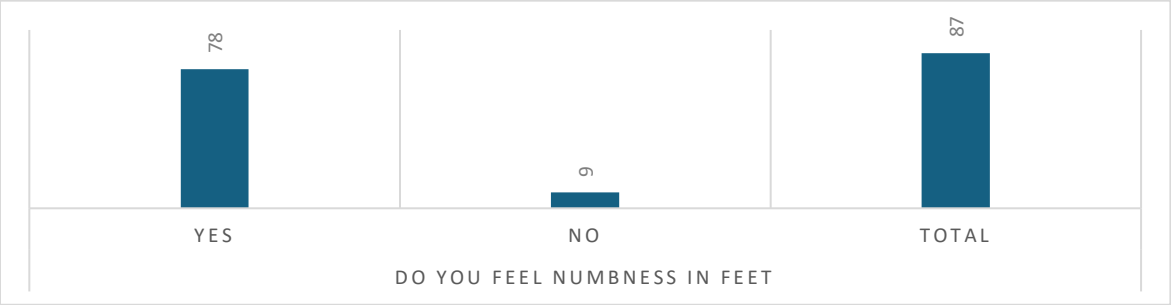
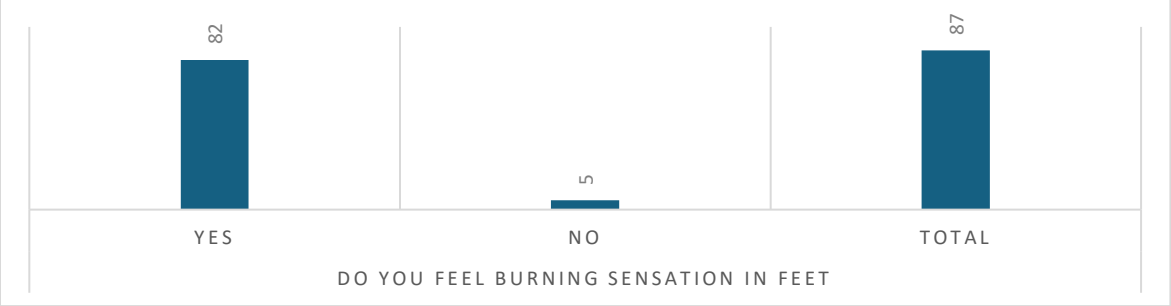
Table No 31:



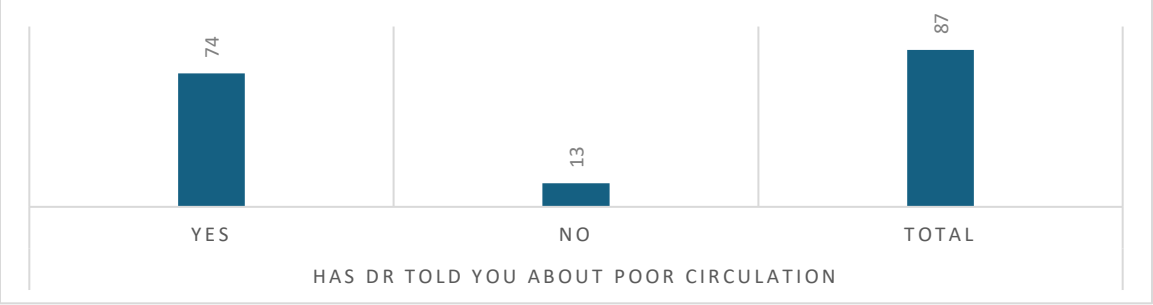
The findings show that 89.66% of participants (n = 78) reported experiencing numbness in their feet, while 10.34% (n = 9) did not, indicating a high prevalence of foot numbness among the study population.

Table NO 32:



The findings show that 94.25% of participants (n = 82) reported experiencing a burning sensation in their feet, while 5.75% (n = 5) did not, indicating a very high prevalence of foot burning sensation among the study population.

Table No 33:



The findings show that 85.06% of participants (n = 74) had been told by a doctor that they had poor circulation, while 14.94% (n = 13) had not, indicating a high prevalence of poor circulation among the study population.

ROKHAN Medical Science Journal
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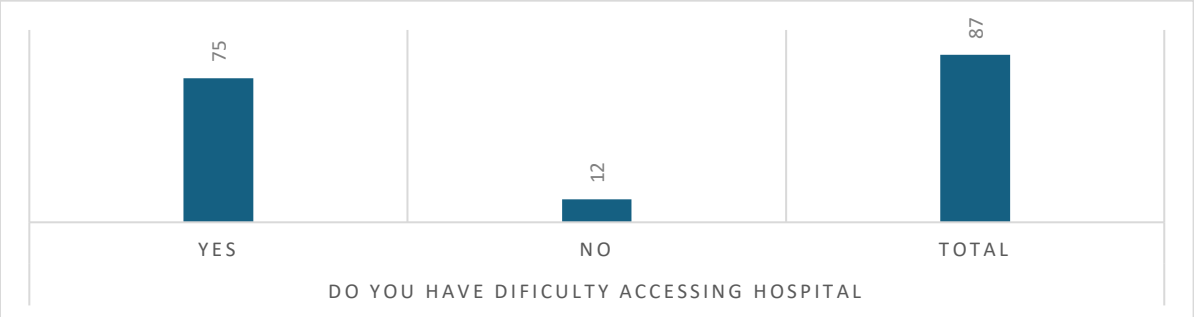
Table NO 34 :



The findings show that 86.21% of participants (n = 75) reported having difficulty accessing hospital services, while 13.79% (n = 12) did not, indicating that access to hospital care was a significant challenge among the study population.

Discussion:

This study assessed the incidence of diabetic foot amputation and the characteristics of diabetic patients in Jalalabad City, Afghanistan. The findings revealed a high burden of diabetic foot complications and amputations, particularly among older adults, males, rural residents, and individuals with low educational and socioeconomic status. These findings suggest that demographic and socioeconomic factors may contribute to delayed diagnosis, poor disease management, and an increased risk of diabetic foot complications. The majority of participants had Type 2 diabetes and had been living with the disease for several years, which is consistent with the increased risk of neuropathy, peripheral vascular disease, and foot ulcers associated with long-standing diabetes. Although many participants reported regular medication use and diabetes monitoring, awareness of HbA1c was low, indicating limited understanding of long-term glycemic control.

Foot care practices were inadequate. Less than half of the participants had received foot care education, and many did not perform daily foot examinations or consistently avoid walking barefoot. These behaviors may increase the risk of foot ulcers, infection, and subsequent amputation. Strengthening patient education on diabetic foot self-care is therefore essential. The study also found very high rates of foot ulcers, infection, gangrene, toe amputation, and lower-limb amputation. Delayed hospital presentation and difficulty accessing healthcare services were common, suggesting that late treatment and limited healthcare accessibility contribute significantly to disease progression and amputation.

Furthermore, hypertension, kidney disease, smoking, poor circulation, and symptoms of peripheral neuropathy were highly prevalent among participants. These comorbidities are recognized risk factors for poor wound healing and diabetic foot amputation. Overall, the findings highlight the urgent need to improve diabetes education, promote regular foot screening, encourage early healthcare seeking, and strengthen diabetic foot care services in Jalalabad. Early detection and appropriate management of diabetic foot complications could substantially reduce preventable amputations and improve the quality of life of patients with diabetes.

Conclusions:

This study demonstrated a high incidence of diabetic foot amputation among diabetic patients in Jalalabad City, Afghanistan. Most participants were older adults with Type 2 diabetes and had multiple risk factors, including prolonged duration of diabetes, limited foot care knowledge, delayed healthcare seeking, and inadequate self-care practices. The prevalence of diabetic foot ulcers, infection, gangrene, and lower-limb amputation was remarkably high, with many patients also suffering from hypertension, kidney disease, poor circulation, and peripheral neuropathy.

The findings highlight the need for comprehensive diabetes management programs that emphasize patient education, regular foot examinations, early diagnosis, improved glycemic control, and timely referral for specialized care. Strengthening diabetic foot care services and improving access to healthcare, particularly in

rural communities, are essential to reduce preventable amputations, minimize disability, and improve the quality of life of people living with diabetes in Afghanistan.

Recommendations

1. Strengthen patient education on diabetes management and diabetic foot care, with emphasis on daily foot inspection, proper foot hygiene, and avoiding walking barefoot.
2. Promote regular screening for diabetic foot complications in hospitals and outpatient departments to enable early detection and timely treatment.
3. Improve glycemic control by encouraging regular blood glucose monitoring, HbA1c testing, medication adherence, and routine follow-up visits.
4. Increase access to healthcare services**,** particularly for rural populations, by strengthening diabetic clinics and referral systems.
5. Establish multidisciplinary diabetic foot care teams consisting of physicians, nurses, surgeons, and diabetes educators to provide comprehensive patient care.
6. Implement community awareness programs to educate the public about the early signs of diabetic foot complications and the importance of seeking prompt medical care.
7. Encourage smoking cessation and control of comorbid conditions**,** such as hypertension and kidney disease, to reduce the risk of diabetic foot complications and amputation.

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Conflict of Interest
The authors declare that there are no conflicts of interest regarding the publication of this research.

Ethics Approval
This study is conducted in accordance with the ethical principles of research involving human participants. Ethical approval is obtained from the Research Ethics Committee of Rokhan University before data collection. Participation is voluntary, and respondents' anonymity and confidentiality are strictly maintained throughout the study.

Informed Consent

Informed consent is obtained from all participants before they completed the questionnaire. Participants were informed about the purpose of the study, their right to withdraw at any time without penalty, and the confidentiality of the information they provided.

Data Availability

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request. The data are not publicly available because they contain information collected from human participants.

Author Contributions

DR M Tariq noor: Conceptualization, research design, methodology, questionnaire development, data collection, statistical analysis, interpretation of results, manuscript writing, review, and supervision. Noman Mashwani: Literature review, data collection support, Abdurahman Salih: Data collection, interpretation of findings, Waheedullah: Data Collection, Khoshal_Bilalzai : Data collection manuscript review, editing, and final approval of the manuscript.

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