

Prevalence, Risk Factors, and Outcomes of Lower Limb Amputation at Hoima Regional Referral Hospital, Uganda: A Retrospective Cross-Sectional Study

Authors: Okesina Akeem Ayodeji^{1,*}; Nsubuga Ivan²; Mohammed Abdullahi³; Okesina Kazeem Bidemi⁴; Olorunado Samson³; Archibong Victor³; Okesina Halimat Abiola⁵

Affiliations: ¹Department of clinical medicine and community, School of Health Sciences, College of Medicine and Health Sciences, University of Rwanda, Rwanda; ²Faculty of clinical medicine and dentistry, Kampala international university western campus Ishaka-Bushenyi, Uganda; ³Department of Human Anatomy, School of Medicine and Pharmacy, College of Medicine and Health Sciences, University of Rwanda, Rwanda; ⁴Department of medical Physiology, School of Medicine and Pharmacy, College of Medicine and Health Sciences, University of Rwanda, Rwanda; ⁵Department of Physiotherapy, faculty of medical rehabilitation, university of medical sciences, Ondo state, Nigeria

ABSTRACT

INTRODUCTION: Lower limb amputation (LLA) is the complete loss of any part of the lower extremity along the transverse anatomical plane. It is one of the oldest surgical procedures, with origins tracing back to Hippocrates and evidence of amputation dating 31,000 years ago. LLA is a common disability globally, affecting an estimated 65 million individuals, with 1.5 million amputations performed annually, 60% involving lower limbs. This study aimed to investigate the prevalence, risk factors, outcomes, and management of LLA at Hoima Regional Referral Hospital, Uganda.

METHODS: A retrospective cross-sectional study was conducted using data from operating room registries, medical files, and physiotherapy records. After verification for completeness and clarity, data were analysed using SPSS, with results presented in tables and graphs.

RESULTS: A total of 60 patient files were reviewed. Most patients were male (68.3%), aged ≥ 50 years (65.0%), from rural areas (61.7%), with secondary education (41.7%), and Catholic (35.0%). The prevalence of LLA was 6.7%. Significant risk factors included age, sex, diabetes mellitus, BMI, and gangrene. Of the four amputees, 25% required re-amputation, 25% experienced in-hospital mortality, and 50% utilized physiotherapy. Psychological scores ranged from 3 to 10 (mean: 6.0), with 75% showing good psychological status and 25% fair status.

CONCLUSION: LLA remains a significant public health concern, impacting quality of life. Key factors associated with LLA include age, sex, diabetes mellitus, BMI, and gangrene.

Keywords: Lower limb amputation, Quality of life, In-hospital mortality, BMI, Risk factors

***Corresponding author:** Dr Okesina Akeem Ayodeji, Department of Clinical Medicine and Community Health, School of Health Sciences, College of Medicine and Health Sciences, University of Rwanda. Email: akeemokesina@gmail.com. Telephone: +250790003253; **Potential Conflicts of Interest (CoI):** All authors: no potential conflicts of interest disclosed; **Funding:** All authors: No funding was sought for this study; **Academic Integrity.** All authors confirm that they have made substantial academic contributions to this manuscript as defined by the ICMJE; **Ethics of human subject participation:** The study was approved by the local Institutional Review Board. Informed consent was sought and gained where applicable; **Originality:** All authors: this manuscript is original has not been published elsewhere; **Review:** This manuscript was peer-reviewed by three reviewers in a double-blind review process; **Type-editor:** Shane (USA).

Received: 05th January 2025; **Initial decision given:** 24th May 2025; **Revised manuscript received:** 25th August 2025; **Accepted:** 16th November 2025.

Copyright: © The Author(s). This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY-NC-ND) ([click here](https://creativecommons.org/licenses/by-nc-nd/4.0/)) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. **Publisher:** Rwanda Biomedical Centre (RBC)/Rwanda Health Communication Center, P. O. Box 4586, Kigali. ISSN: 2079-097X (print); 2410-8626 (online)

Citation for this article: Okesina Akeem Ayodeji; Nsubuga Ivan; Mohammed Abdullahi et al. Prevalence, Risk Factors, and Outcomes of Lower Limb Amputation at Hoima Regional Referral Hospital, Uganda: A Retrospective Cross-Sectional Study. Rwanda Medical Journal, Vol. 82, no. 4, p. 17-24, 2025. <https://dx.doi.org/10.4314/rmj.v82i4.4>

INTRODUCTION

Lower limb amputation (LLA) is defined as the complete loss of any part of the lower extremity along the transverse anatomical plane for any reason [1]. Globally, LLA is among the most prevalent acquired disabilities, with a prevalence ranging from 3.6 to 68.4 per 100,000 population [2]. In the United States, approximately 30,000–40,000 amputations are performed annually, with an estimated 1.6 million amputees worldwide in 2005. This number is projected to rise to 3.6 million by 2050 [3].

In Uganda, the 2014 national population census revealed that the prevalence of limb disabilities increases with age, and older individuals have been reported to exhibit difficulty in walking [4].

LLA results from a wide range of conditions, including trauma and diseases, and is associated with significant morbidity, disability, and mortality. Beyond limb loss, amputation can lead to disability, unemployment, high medical expenses, depression, and a poor quality of life [5]. Common complications of LLA include infection, phantom limb sensation and pain, residual limb pain, painful neuroma, depression, and heterotopic ossification. Additionally, joint contractures are frequent and preventable sequelae, with knee and hip flexion contractures being particularly common in individuals with transtibial and transfemoral amputations, respectively [5].

Patients undergoing LLA often face significant comorbidities, such as diabetes, renal disease, and hypertension. Many present to healthcare facilities late, when limb salvage is no longer viable. This delay increases the risk of adverse outcomes, including prolonged hospital stays, postoperative complications, re-amputation, and in-hospital mortality [6].

Globally, it is estimated that 65 million people live with limb amputations, with 1.5 million amputations performed annually, 60% of which involve the lower limbs [7]. Two-thirds of people with amputations live in low-resource settings, and an estimated 5 million amputees reside in Africa, with 75% being lower limb amputees [8]. LLA not only causes physical disfigurement but also reduces mobility and independence [9]. Additionally, individuals with LLA often withdraw from social activities due to physical limitations, negative body image, and inadequate disability support infrastructure [10].

This study investigates the prevalence and factors

associated with lower limb amputation at Hoima Regional Referral Hospital in Hoima District, Uganda, from January 25, 2017, to March 25, 2023. Hoima has a relatively homogenous population with minimal variations in social deprivation, ethnicity, and access to specialist care, making it a suitable setting for this investigation.

METHODS

Research Design and Sampling Technique

The study adopted a retrospective cross-sectional design using quantitative approaches to collect and analyse data from patient records over a defined period to assess lower limb amputations. The design aimed to capture relevant information about lower limb amputations at a single point in time without patient follow-up. A systematic sampling technique with consecutive recruitment was applied, ensuring that only patients meeting the inclusion criteria were included. This method minimized selection bias and enhanced the reliability of the findings.

All male and female patients who underwent lower limb amputations, either emergently or electively, at Hoima Regional Referral Hospital (HRRH) between 25th January 2017 and 25th March 2022. Patients who underwent lower limb amputations before 25th January 2017, and those with severely incomplete or unclear medical records.

Sample Size Determination

This study analyzed all available cases of lower limb amputation at HRRH during the specified period. Consequently, no formal sample size calculation was applied. Every case that met the inclusion criteria between 25th January 2017 and 25th March 2022 was consecutively included, making the study population a complete census of eligible amputations.

Research Tool and Data Sources

Data were collected using a structured questionnaire designed to capture socioeconomic, clinical, and rehabilitation data. The questionnaire included the following sections:

Demographic details: age, sex, address (rural/urban), education level, marital status, and occupation.

Clinical details: affected lower limb, indications for amputation, levels of amputation, associated comorbidities, and necessary past medical history. Rehabilitation and outcomes: type of rehabilitation

(e.g., crutches or prosthesis) and patient outcomes upon discharge.

The data sources included: Operating room registry, patient medical files, and physiotherapy department registry. Data was reviewed for completeness, clarity, and accuracy. Records deemed severely incomplete or with unclear abbreviations were excluded.

Data Quality Control and Analysis

The data collection process involved the use of pretested questionnaires to ensure consistency and reliability. Supervisory oversight was provided to validate the methodology and data collection progress. After collection, the data were reviewed for completeness, accuracy, and clarity, and then entered and analyzed using SPSS software for statistical computations. The results were presented in tables and graphs generated with Microsoft Excel 2019. However, incomplete records were excluded to maintain the integrity of the analysis.

The study obtained ethical approval from the Dean of the Faculty of Clinical Medicine and Dentistry and the administration of HRRH. Permissions were secured to access hospital records, and no personal identifiers were extracted or used. Only data from patients who had previously consented to the use of their medical records for research purposes were included. Files and records were securely stored during the study process. Since no new patient interactions were involved and no identifiable information was used, additional consent was deemed unnecessary.

RESULTS

Socio-demographic characteristics of the study participants

A total of 60 patients who underwent lower limb amputation (LLA) between 2017 and 2022 were included in the study. The majority (65.0%) were aged ≥ 50 years, followed by 23.3% aged 31–49 years and 11.7% aged ≤ 30 years. Most participants were male (68.3%) and resided in rural areas (61.7%). Regarding education, 41.7% had secondary education, 30.0% primary education, 16.7% no formal education, and 11.7% tertiary education. Catholics constituted the largest religious group (35.0%), followed by Anglicans (30.0%), Muslims (15.0%), and others (20.0%) (Table 1).

Table 1: Socio-demographic Characteristics of Study Participants (N = 60)

Variable	N	%
Age (Years)		
≤ 30	07	11.7
31–49	14	23.3
≥ 50	39	65.0
Sex		
Male	41	68.3
Female	19	31.7
Area of residence		
Rural	37	61.7
Urban	23	38.3
Level of education		
None	10	16.7
Primary	18	30.0
Secondary	25	41.7
Tertiary	07	11.7
Religion		
Catholic	21	35.0
Anglican	18	30.0
Muslim	09	15.0
Others	12	20.0

Clinical Characteristics and Indications for Amputation

The leading indications for LLA were gangrene (33.3%), diabetes-related complications (26.7%), trauma (21.7%), and tumors or infections (18.3%). Most amputations were performed at the above-knee level (55.0%), followed by below-knee (40.0%), and foot/ankle amputations (5.0%). Regarding comorbidities, diabetes mellitus (30.0%) and hypertension (21.7%) were the most frequent (Table 2).

Factors Associated with Lower Limb Amputation (Bivariate Analysis)

Bivariate logistic regression identified several significant risk factors for LLA (Table 3). Advancing age (≥ 50 years) was strongly associated with higher odds of amputation (COR: 5.09, 95% CI: 1.59–9.62, $p=0.006$). Diabetes mellitus (COR: 6.75, $p=0.037$) and gangrene (COR: 7.15, $p=0.050$) were also strong predictors.

Table 2: Clinical Characteristics and Indications for Lower Limb Amputation at HRRH (2017–2022)

Variable	n	%
Indications for Amputation		
Gangrene	07	33.3
Diabetes-related complications	13	26.7
Trauma	13	21.7
Tumors/Infections	11	18.3
Level of Amputation		
Above-knee	33	55.0
Below-knee	24	40.0
Foot/Ankle	3	5.0
Common Comorbidities		
Diabetes Mellitus	18	30.0
Hypertension	13	21.7

Low education was a risk factor, with participants

who had no formal education being almost four times more likely to undergo LLA (COR: 3.97, $p=0.048$). Males and rural residents had higher odds (COR: 2.39 and 1.68, respectively), although these associations were not statistically significant.

Independent Predictors of Lower Limb Amputation (Multivariate Analysis)

After adjusting for confounders (Table 4), several factors remained independently associated with LLA. Patients aged ≥ 50 years had more than fourfold higher odds (AOR: 4.17, $p=0.001$), while those aged 31–49 years also showed increased risk (AOR: 1.20, $p=0.022$) compared to those aged ≤ 30 years. Male sex was significantly associated with LLA (AOR: 1.56, $p=0.041$).

Diabetes mellitus remained a strong predictor (AOR: 5.57, $p=0.005$), as did gangrene (AOR: 5.88, $p=0.002$). Educational level showed a trend toward higher risk among those with no formal education (AOR: 2.65, $p=0.094$) and primary education (AOR: 1.82, $p=0.072$), whereas secondary education was

Table 3: Bivariate Logistic Regression of Factors Associated with Lower Limb Amputation

Factor	COR	95% CI	p-value
Age (years)			
≤ 30 (ref)	1.00	–	–
31–49	1.62	0.87–3.45	0.081
≥ 50	5.09	1.59–9.62	0.006*
Sex			
Female (ref)	1.00	–	–
Male	2.39	0.92–4.18	0.072
Residence			
Urban (ref)	1.00	–	–
Rural	1.68	0.84–3.02	0.099
Education			
Secondary+ (ref)	1.00	–	–
Primary	2.15	0.96–4.85	0.062
No formal	3.97	1.05–7.49	0.048*
Comorbidities			
Diabetes mellitus	6.75	1.24–12.43	0.037*
Hypertension	1.85	0.77–4.38	0.134
Clinical condition			
Gangrene	7.15	0.98–12.36	0.050*
Trauma	1.42	0.64–3.18	0.246
BMI ≥ 25 kg/m ²	4.27	0.91–8.65	0.150

*Statistically significant at $p < 0.05$

Table 4: Multivariate Logistic Regression of Factors Associated with Lower Limb Amputation

Factor	AOR	95% CI	p-value
Age (years)			
≤30 (ref)	1.00	–	–
31–49	1.20	0.84–2.71	0.022*
≥50	4.17	1.93–8.01	0.001*
Sex			
Female (ref)	1.00	–	–
Male	1.56	1.02–3.88	0.041*
Residence			
Urban (ref)	1.00	–	–
Rural	1.10	0.82–2.33	0.068
Education			
Secondary+ (ref)	1.00	–	–
Primary	1.82	0.89–3.74	0.072
No formal	2.65	0.95–5.93	0.094
Comorbidities			
Diabetes mellitus	5.57	1.78–9.83	0.005*
Hypertension	1.22	0.64–3.28	0.204
Clinical condition			
Gangrene	5.88	2.01–9.64	0.002*
Trauma	1.14	0.59–2.45	0.152
BMI ≤25 kg/m ²	3.49	1.22–6.71	0.019*

*Statistically significant at $p < 0.05$

somewhat protective (AOR: 0.73); however, these associations did not reach statistical significance. Interestingly, a BMI ≤ 25 kg/m² was associated with an increased risk of LLA (AOR: 3.49, $p = 0.019$).

Outcomes of Patients with Lower Limb Amputation Among amputees, outcomes varied Figure 1. One in four patients (25.0%) underwent re-amputation, often due to post-operative complications such as infection or poor wound healing. The in-hospital mortality rate was also 25.0%, reflecting the severity of underlying disease and comorbidities. Encouragingly, 50.0% of patients engaged in physiotherapy, highlighting the importance of rehabilitation for functional recovery and quality of life (Table 5).

Psychological Status of Amputees

The psychological status of amputees was assessed at discharge. The majority (75.0%) were reported to have a good psychological status, indicating relatively positive adaptation to the

loss of a limb. However, 25.0% demonstrated only a fair psychological status, suggesting moderate distress or difficulty in coping with the amputation. This underlines the need for psychosocial support alongside physical rehabilitation (Table 6).

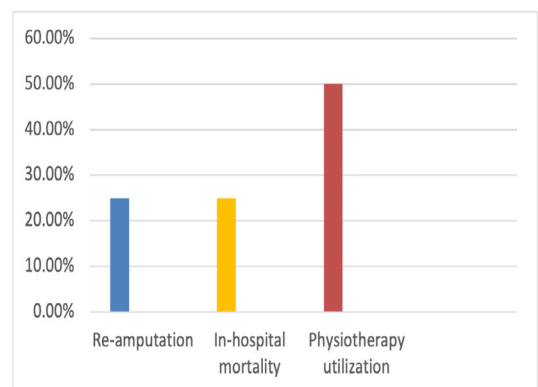


Figure 1: Outcome of patients with lower limb amputation

Table 5: Outcomes of Patients with Lower Limb Amputation (N = 60)

Outcome	n	%
Re-amputation	15	25.0
In-hospital mortality	15	25.0
Utilized physiotherapy	30	50.0

Table 6: Psychological Status of Patients Post-Amputation (N = 60)

Psychological Status	n	%
Good	45	75.0
Fair	15	25.0

DISCUSSION

The present study found the prevalence of lower limb amputation at Hoima Regional Referral Hospital to be 6.7%. This finding is consistent with the 7% prevalence reported in a study conducted in Brazil [11], but it is higher than the 1.9% prevalence found in a study from Ghana [12]. The study in Ghana, however, was limited to patients with diabetes, which could explain the lower prevalence observed. Furthermore, our finding is also higher than the 0.9% prevalence reported in Malawi [13]. These variations in prevalence rates may reflect differences in the study populations, healthcare settings, and methodologies, highlighting the complex and region-specific nature of lower limb amputation rates [13].

Many nations, including Uganda, lack comprehensive tracking systems for amputations, making it challenging to obtain a precise global count. According to a report, the global occurrence of amputations remains unclear [14]. However, it is estimated that over 150,000 patients are hospitalized each year due to amputations caused by diabetes or peripheral vascular disease [15]. The findings of the present study underscore the importance of documenting and understanding these rates, as they contribute to public health and healthcare resource planning.

Several factors were significantly associated with lower limb amputation, including age, sex, diabetes mellitus, obesity, and gangrene.

The male gender was significantly associated with a higher likelihood of lower limb amputation. This is consistent with findings from the USA [16] and

Sweden [17], where men were found to have a higher risk of amputation. A study in Ghana also supports this, indicating that men are six times more likely than women to undergo lower limb amputation [12]. This may be related to societal roles and occupational factors, as men in rural or low-income settings are more likely to be engaged in physically demanding jobs such as farming and construction [12]. These occupational risks, combined with emotional strain, stress, and lifestyle factors such as smoking and depression [18] may compromise foot care and contribute to higher amputation rates.

Age was another significant factor. Participants older than 50 years had higher odds of lower limb amputation compared to younger participants, which is in line with findings from studies in the USA and other settings, where older age was associated with a higher risk [19]. As individuals age, the likelihood of comorbidities such as diabetes and peripheral vascular disease increases, which are major risk factors for lower limb amputations [16]. Diabetes mellitus was found to be significantly associated with an increased risk of lower limb amputation. This finding is consistent with other studies, including those conducted in the USA [16] and Ghana [12], where diabetes was strongly linked to amputation risk. It has been revealed that patients with diabetes have a significantly higher risk of amputation. Additionally, obesity was found to increase the likelihood of amputation [19], likely due to its association with diabetes and related complications such as diabetic foot ulcers. This is in line with a study in Ghana, which found that obese patients had an adjusted odds ratio for amputation six times higher than normal-weight patients [12]. However, it is worth noting that the findings of this study contrast with a study from Sweden, where no significant relationship was found between obesity or severe obesity and increased amputation risk [17]. This inconsistency may be explained by differing population characteristics, including the presence of more severe comorbidities in the lower BMI group, which may heighten their amputation risk.

Finally, gangrene was another significant factor contributing to lower limb amputation in the present study. The presence of gangrene often signifies irreversible tissue damage, making amputation a necessary intervention to prevent further complications such as sepsis or systemic infection.

Patients who undergo lower limb amputation face significant clinical and psychosocial challenges. The extent of these challenges varies depending on the type of amputation, whether it is below the toes, partial, or total amputation. It has been reported that major amputations are linked to increased cardiovascular and all-cause mortality [20]. In the present study, out of the four amputees, 25% underwent re-amputation, in-hospital mortality was 25%, and 50% utilized physiotherapy services. The utilization of physiotherapy is critical for post-amputation rehabilitation and improving quality of life; however, the 50% usage rate indicates room for improvement in rehabilitation services.

Regarding psychological outcomes, the psychological distress scores for the patients ranged from 3 to 10, with a mean score of 6.0. Among the three patients assessed for psychological distress, 75% exhibited good psychological status, while 25% had fair psychological status. These findings are like those of a study in Uganda, which reported that 84% of amputees had good or very good psychological status scores. However, it is important to note that the sample size for psychological assessment in this study was small (n=3), limiting the generalizability of the findings. Future studies with larger sample sizes would provide a more robust assessment of psychological outcomes following amputation.

While the present study provides valuable insights into the prevalence and factors associated with lower limb amputation, further research is needed to clarify the factors influencing functional recovery post-amputation and the indicators of good outcomes before and after amputation. Future studies should explore the role of rehabilitation programs, patient-specific factors, and the effectiveness of physiotherapy interventions in improving quality of life and functional recovery. Additionally, there is a need for further investigation into socioeconomic factors and access to healthcare services, as these may significantly impact the outcomes of patients undergoing amputation.

CONCLUSION

This study aimed to establish the prevalence and factors associated with lower limb amputation at Hoima Regional Referral Hospital, Uganda. The prevalence of lower limb amputation was found to

be 6.7%, a rate comparable to studies in Brazil but higher than those reported in Ghana and Malawi. Factors significantly associated with lower limb amputation included male gender, advanced age, diabetes mellitus, obesity, and gangrene. These findings align with global studies, highlighting the compounding effects of chronic conditions, aging, and lifestyle factors on amputation risk.

Post-amputation outcomes showed significant clinical and psychosocial challenges, with re-amputation, in-hospital mortality, and physiotherapy utilization being notable concerns. However, most patients assessed for psychological distress had good psychological outcomes, which aligns with other studies in Uganda. This study emphasizes the importance of addressing modifiable risk factors, such as diabetes and obesity, and improving access to rehabilitation services for amputees. Further research is needed to better understand the predictors of functional recovery and the factors influencing long-term outcomes for patients undergoing lower limb amputation.

REFERENCES

1. Moxey, P.W.; Gogalniceanu, P.; Hinchliffe, R.J.; Loftus, I.M.; Jones, K.J.; Thompson, M.M.; Holt, P.J. Lower Extremity Amputations - a Review of Global Variability in Incidence: Lower Extremity Amputations-a Global Review. *Diabetic Medicine* 2011, 28, 1144–1153, doi:10.1111/j.1464-5491.2011.03279.x.
2. Okesina, A.A.; Nsubuga, I.; Omoola, O.O.; Okesina, H.A. Understanding Lower Limb Amputation: A Review of the Strategies for Healthcare Improvement, Prevention, and Management. *rmj* 2024, 81, 118–133, doi:10.4314/rmj.v81i1.13.
3. Ziegler-Graham, K.; MacKenzie, E.J.; Ephraim, P.L.; Travison, T.G.; Brookmeyer, R. Estimating the Prevalence of Limb Loss in the United States: 2005 to 2050. *Archives of Physical Medicine and Rehabilitation* 2008, 89, 422–429, doi:10.1016/j.apmr.2007.11.005.
4. Wandera, S.O.; Ntozi, J.; Kwagala, B. Prevalence and Correlates of Disability among Older Ugandans: Evidence from the Uganda National Household Survey. *Global Health Action* 2014, 7, 25686, doi:10.3402/gha.v7.25686.
5. Spichler, E.R.S.; Spichler, D.; Lessa, I.; Forti, A.C.E.; Franco, L.J.; LaPorte, R.E. Capture-Recapture Method to Estimate Lower Extremity

- Amputation Rates in Rio de Janeiro, Brazil. *Rev Panam Salud Publica* 2001, 10, doi:10.1590/S1020-49892001001100007.
6. Morgado Ramirez, D.Z.; Nakandi, B.; Ssekitoleko, R.; Ackers, L.; Mwaka, E.; Kenney, L.; Holloway, C.; Donovan-Hall, M. The Lived Experience of People with Upper Limb Absence Living in Uganda: A Qualitative Study. *African Journal of Disability* 2022, 11, doi:10.4102/ajod.v11i0.890.
7. Morgenroth, D.C.; Gellhorn, A.C.; Suri, P. Osteoarthritis in the Disabled Population: A Mechanical Perspective. *PM&R* 2012, 4, doi:10.1016/j.pmrj.2012.01.003.
8. Argyrides, M.; Koundourou, C.; Angelidou, A.; Anastasiades, E. Body Image, Media Influences, and Situational Dysphoria in Individuals with Visible Physical Disabilities. *Int. j. psychol. res.* 2023, 16, 78–88, doi:10.21500/20112084.6014.
9. Naing, L.; Nordin, R.B.; Abdul Rahman, H.; Naing, Y.T. Sample Size Calculation for Prevalence Studies Using Scalex and ScalaR Calculators. *BMC Med Res Methodol* 2022, 22, 209, doi:10.1186/s12874-022-01694-7.
10. Okello, T.R.; Magada, S.M.; Atim, P.; Ezati, D.; Campion, A.; Moro, E.B.; Huck, J.; Byrne, G.; Redmond, A.; Nirmalan, M. Major Limb Loss (MLL): An Overview of Etiology, Outcomes, Experiences and Challenges Faced by Amputees and Service Providers in the Post-Conflict Period in Northern Uganda. *Journal of Global Health Reports* 2019, 3, e2019018, doi:10.29392/joghr.3.e2019028.
11. Garcez, A.; Dias-da-Costa, J.S.; Souza De Bairros, F.; Anselmo Olinto, M.T. Body Mass Index and Prevalence of Obesity in Brazilian Adult Women: Temporal Comparison of Repeated Population-Based Cross-Sectional Surveys. *Journal of Obesity* 2024, 2024, 9950895, doi:10.1155/2024/9950895.
12. Tuglo, L.S. Prevalence and Determinants of Lower Extremity Amputations among Type I and Type II Diabetic Patients: A Multicenter-based Study. *International Wound Journal* 2023, 20, 903–909, doi:10.1111/iwj.13935.
13. Kasenda, S.; Crampin, A.; Davies, J.; Malava, J.K.; Manganizithe, S.; Kumambala, A.; Sandford, B. Prevalence and Risk Factors of Lower Extremity Disease in High Risk Groups in Malawi: A Stratified Cross-Sectional Study. *BMJ Open* 2022, 12, e055501, doi:10.1136/bmjopen-2021-055501.
14. Mulindwa, B.; Nalwoga, R.P.; Nakandi, B.T.; Mwaka, E.S.; Kenney, L.P.J.; Ackers, L.; Ssekitoleko, R.T. Evaluation of the Current Status of Prosthetic Rehabilitation Services for Major Limb Loss: A Descriptive Study in Ugandan Referral Hospitals. *Disability and Rehabilitation* 2024, 46, 969–978, doi:10.1080/09638288.2023.2188266.
15. McDermott, K.; Fang, M.; Boulton, A.J.M.; Selvin, E.; Hicks, C.W. Etiology, Epidemiology, and Disparities in the Burden of Diabetic Foot Ulcers. *Diabetes Care* 2023, 46, 209–221, doi:10.2337/dci22-0043.
16. Cai, M.; Xie, Y.; Bowe, B.; Gibson, A.K.; Zayed, M.A.; Li, T.; Al-Aly, Z. Temporal Trends in Incidence Rates of Lower Extremity Amputation and Associated Risk Factors Among Patients Using Veterans Health Administration Services From 2008 to 2018. *JAMA Netw Open* 2021, 4, e2033953, doi:10.1001/jamanetworkopen.2020.33953.
17. Ramstrand, S.; Carlberg, M.; Jarl, G.; Johannesson, A.; Hiyoshi, A.; Jansson, S. Exploring Potential Risk Factors for Lower Limb Amputation in People with Diabetes—A National Observational Cohort Study in Sweden. *Journal of Foot and Ankle Research* 2024, 17, e70005, doi:10.1002/jfa2.70005.
18. Pereira, M.G.; Pedras, S.; Louro, A.; Lopes, A.; Vilaça, M. Stress Reduction Interventions for Patients with Chronic Diabetic Foot Ulcers: A Qualitative Study into Patients and Caregivers' Perceptions. *Journal of Foot and Ankle Research* 2023, 16, 3, doi:10.1186/s13047-022-00592-x.
19. Noura, S.; Ach, T.; Bellazreg, F.; Ben Abdelkrim, A. Predictive Factors for Lower Limb Amputation in Type 2 Diabetics. *Cureus* 2023, doi:10.7759/cureus.39987.
20. Abola, M.T.B.; Bhatt, D.L.; Duval, S.; Cacoub, P.P.; Baumgartner, I.; Keo, H.; Creager, M.A.; Brennan, D.M.; Steg, Ph.G.; Hirsch, A.T. Fate of Individuals with Ischemic Amputations in the REACH Registry: Three-Year Cardiovascular and Limb-Related Outcomes. *Atherosclerosis* 2012, 221, 527–535, doi:10.1016/j.atherosclerosis.2012.01.002.