



Review

Diabetic foot: A systematic review and meta-analysis on its prevalence and associated factors among patients with diabetes mellitus in a sub-Saharan Africa



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ABSTRACT

Background: Diabetes is one of the non-communicable diseases that represents the greatest public health challenge in sub-Saharan Africa, where diabetes related needs are currently largely unmet, and the debilitating aspects of the foot are worsened by issues related to healthcare costs, self-care practices, and inadequate knowledge. To estimate the pooled prevalence and associated factors of diabetic foot ulcers among patients with Diabetes mellitus, we conducted a systematic review and meta-analysis. Although studies on, diabetic foot ulcer among patients with diabetes mellitus have been available, the results have been inconsistent.

Objectives: To determine the pooled prevalence and associated factors of diabetic foot ulcers among patients with diabetes mellitus in sub-Saharan Africa.

Methods: A systematic review and meta-analysis was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guideline. To identify papers published in English up to May 29, 2024, the electronic databases of Medline, Science Direct, Excerpta Medica Database, Cochrane Library, African Journals Online, and Google Scholar were searched. The DerSimonian and Laird method for random-effects models was used to estimate the pooled prevalence of diabetic foot ulcers. To test for heterogeneity between studies and publication bias, forest plots and funnel plots were, respectively used.

Results: A total of 28 studies with 10,635 participants were included in this systematic review and meta-analysis. The pooled prevalence of diabetic foot ulcer among patients with diabetes mellitus was 13.35 % (95 % CI 10.86, 15.67). Rural residence (OR = 3.25, 95 % CI = 2.15–4.99), peripheral neuropathy (OR = 5.89, 95 % CI = 2.5–13.5), poor self-care practice (OR = 2.39, 95 % CI = 1.12–5.13), illness duration greater than 10 years (OR = 2.94, 95 % CI = 1.14, 7.63), and history of ulcer (OR = 6.07, 95 % CI = 1.68–21.9) were significantly associated with diabetic foot ulcers.

Conclusion: Sub-Saharan Africa has a high prevalence of diabetic foot ulcers. Thus, emphasis should be given to Prevention, periodic foot examination, and early identification of risk factors.

1. Introduction

Diabetes mellitus (DM) is a common metabolic disorder that affects individuals worldwide. It is characterized by prolonged hyperglycemia that results in long-term complications and comorbidities, predominantly affecting the sub-Saharan region [1]. Currently, an estimated 642 million individuals worldwide are expected to be living with DM, and

according to a projection, the number will escalate to 800 million by the year 2045 [2]. The World Health Organization (WHO) report stated, that approximately, 1.6 million deaths in 2016 were directly linked to diabetes, and one out of four patients with DM developed a diabetic foot ulcer (DFUs) in their lifetime [3]. The International Working Group on the Diabetic Foot (IWGDF) defined DFUs as “full thickness lesion of the skin distal to the malleoli in a person with DM”. DFUs are a public health

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