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# **Commentary: Development of a resource-use measure to capture costs of diabetic foot ulcers to the United Kingdom National Health Service, patients and society**

**Stella F Bosun-Arije**

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Senior Lecturer and Senior Fellow of Advance HE, Faculty of Health and Education, School of Nursing and Public Health, Manchester Metropolitan University, Manchester, UK

## **Corresponding author(s):**

Stella F Bosun-Arije, Senior Lecturer and Senior Fellow of Advance HE, Faculty of Health and Education, School of Nursing and Public Health, Manchester Metropolitan University, Brooks Building, Bonsall Street, Manchester M15 6GX, UK. Email: F.Bosun-Arije@mmu.ac.uk

As diabetic foot ulcer (DFU) poses a strain on individuals living with it, so it presents various shades of financial burdens on the health facilities providing services to the people living with it. Therefore, it is pertinent to adopt collaborative strategies in halting the progression of DFUs.

DFU is preventable yet it is one of the most serious microvascular complications of diabetes mellitus (DM) which is caused by neuropathy, trauma, deformity, high plantar pressures and peripheral arterial disorder leading to lower limb amputations (Ahmad, 2016; Frykberg et al., 2006). From the point of DFU diagnosis, it becomes a burden for the individual, the families and the healthcare system to manage the exacerbation of the ulcers (Bosun-Arije et al., 2020; Margolis et al., 2011). One of the factors constituting the management challenges of DFUs in Europe is management heterogeneity intra-country and inter-country (Garcia-Klepzig et al., 2018) as well as delayed referrals (Manu et al., 2018). Consequently, most patients with the condition often develop anxiety and depression and a reduced quality of life (Polikandrioti et al., 2020). There is significant evidence that DFUs can lead to loss of job and income (Crocker et al., 2021), the risk for infections (Pitocco et al., 2019), financial burden (Raghav et al., 2018), loss of self (Kinmond et al., 2003), loss of foot (Meriç et al., 2019), stigmatisation, which is recently reported among the Chinese population (Liu et al., 2020; Luo et al., 2023; Yip et al., 2023) as well as causing a prolonged period of hospitalisation in the United Kingdom (Arias et al., 2019; Kerr et al., 2014; McInnes, 2012) and in the worst cases, death (Edmonds et al., 2021; Walsh et al., 2016).

Therefore, to minimise the impact of the condition on individuals, families and carers, the National Health Service (NHS), since the emergence of the National Service Framework (NSF) has a fundamental role to play in diabetes care – the NHS bears most of the management and health costs of DFUs. In 2013, it was estimated that 10% of the entire NHS budget was spent on diabetes (McInnes, 2012). The cost of NHS care for ulceration and

amputation in diabetes in 2014–2015 was estimated at between £837 million and £962 million. This means that over 90% of the NHS expenditure was related to ulceration management of which 60% was for care in community, outpatient and primary care (Kerr et al., 2014).

However, within the NHS and for over a decade, despite various interventions to halt the financial burden DFUs posed on the NHS, the high cost of managing DFU is relentless (Jodheea-Jutton et al., 2022). There have been different recommendations about how DFU can be effectively managed. Guest et al. (2017) advise that screening is a great way to identify individuals at risk of DFU and timely interventions such as prescription of healthy footwear and podiatry referral should be provided. Manu et al. (2018) add that timely referral to specialists is cost-intensive and effective. Somayaji et al. (2017) reiterated that the screening and referral approaches must be consistent and well-integrated to be effective. More recently, Pappachan et al. (2022) added that artificial intelligence can be used to improve the remote monitoring of diabetic foot ulcers with the use of mobile apps. Despite these interventions and to save the millions the NHS spends on DFUs, it was advised that everyone should pause and take one step at a time (Saving the NHS Millions, One Step at a Time, 2023).

Therefore, I believe it was in the light of taking one step at a time, that the authors of this paper sought to contribute to the body of knowledge around DFUs management in the United Kingdom. However, it is fascinating to see the unique approach adopted for the research. The researchers considered and involved the people most affected by DFUs; patients, family members and carers, and the healthcare professionals key to DFU management. This is an integrated approach which has a prospect of improving the quality of life of people living with DFUs (Bhandari et al., 2019; Mills, 2018; Tzeravini et al., 2018).

Additionally, this paper is theoretically driven. It provides a convincing justification for health professionals to reflect on the relevance of person-centred care in DFUs management. It is a novel idea for the authors to involve patients with DFUs during the data collection phase – their actions show that they see the condition as being patient foot and not diabetic foot.

Although the findings of the research are easy to read and understand, a pictorial presentation of findings may improve the understanding of non-clinical individuals when they read the article. Also, the initial discussion and pilot study should have explored the potential role that culture, religion and gender orientations play in informing ‘better quality and more relevant economic evaluations’.

In the contemporary world, strategies for cost-effective DFU management are not far-fetched, I believe this sits around collaboration, partnership and innovative use of technology. Patients, their relations, healthcare professionals, caregivers within healthcare settings,

community, local and national governments should work with health policymakers to ensure efficacious and cost-effective DFU care for the people and with the people.

In conclusion, there is a lesson for everyone to learn in this paper. I recommend that health professionals, families and carers of people living with DFUs should continually seek collaborative ways to apply these research findings in real-world settings. I am optimistic that the outcome of this research, which centres on integrated care and patient involvement, can contribute ‘a drop in the ocean’ of DFUs management not only in the United Kingdom but globally.

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## Biography

**Stella F Bosun-Arije** is a Registered Nurse/Midwife in Nigeria as well as a Registered Adult Nurse in the United Kingdom. Her research interests include the management and remission and management of type 2 diabetes mellitus.