



## Health-related quality of life in people with different diabetes-related foot ulcer health states: A cross-sectional study of healed, non-infected, infected, hospitalised and amputated ulcer states

Joshua Byrnes<sup>a,\*</sup>, Lauren Ward<sup>a</sup>, Sarah Jensen<sup>b</sup>, Manjeet Sagoo<sup>c</sup>, Danielle Charles<sup>d</sup>, Rebecca Mann<sup>e</sup>, Son Nghiem<sup>a,1</sup>, Jennifer Finch<sup>f</sup>, Belinda Gavaghan<sup>f</sup>, Liza-Jane McBride<sup>f</sup>, Peter A Lazzarini<sup>b,g</sup>

<sup>a</sup> Centre for Applied Health Economics, School of Medicine and Dentistry, Griffith University, Brisbane, Queensland, Australia

<sup>b</sup> Allied Health Research Collaborative, The Prince Charles Hospital, Brisbane, Queensland, Australia

<sup>c</sup> Diabetes Resource Centre, Gold Coast Hospital and Health Service, Gold Coast, Queensland, Australia

<sup>d</sup> Cairns Diabetes Centre, Cairns and Hinterland Hospital and Health Service, and Metro North Hospital and Health Service, Queensland, Australia

<sup>e</sup> Chronic Disease Brisbane South, Community and Oral Health, Inala Community Health Centre, Metro South Health, Queensland, Australia

<sup>f</sup> Office of the Chief Allied Health Officer, Clinical Excellence Queensland, Queensland Health, Brisbane, Queensland, Australia

<sup>g</sup> School of Public Health and Social Work, Queensland University of Technology, Brisbane, Queensland, Australia

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### ABSTRACT

**Aims:** Diabetes-related foot ulcers (DFU) are a leading cause of infection, hospitalisation and amputation. However, to our knowledge no studies have compared the health-related quality of life (HRQoL) of people with DFU that were infected, hospitalised or amputated. This study aimed to investigate and compare the HRQoL of different groups of people with healed, non-infected, infected, hospitalised, or amputated DFU.

**Methods:** This was a multi-centre cross-sectional study measuring the HRQoL of patients, attending one of 18 Diabetic Foot Services across Queensland, Australia, with one of five DFU health states: healed, non-infected, infected, hospitalised, amputated. HRQoL was measured using the EQ-5D-5L to estimate age-sex adjusted utility values.

**Results:** Of 376 included patients (mean age 63 (12) years, 75% male), age-sex adjusted HRQoL utility estimates (95% CIs) were: healed DFU 0.57 (0.51–0.64), non-infected DFU 0.55 (0.49–0.62), infected DFU 0.45 (0.36–0.55), hospitalised DFU 0.53 (0.42–0.64), and amputated DFU 0.55 (0.46–0.63).

**Conclusion:** People in any DFU health state have considerably reduced HRQoL, with greatest reductions in those with infected DFU. These findings provide valuable HRQoL estimates and comparisons for several different important DFU health states, adding to our understanding of the impact of DFU on HRQoL and facilitating future economic evaluations.

### 1. Introduction

Diabetes-related foot ulcers (DFU) are a leading cause of infection, hospitalisation, and amputation, and in turn the global disability burden.[1–5] DFU is defined as a break of the skin on the foot that involves the dermis in a person with diabetes usually accompanied by peripheral neuropathy and/or peripheral artery disease (PAD).[6] Each year an estimated 20 million people have a DFU, [2] with accompanying poorer health-related quality of life (HRQoL), [7–10] and higher risk of

infection, hospitalisation and amputation.[11–15].

HRQoL in people with DFU has consistently been found to be reduced compared to those without DFU.[7–9] Whilst improved HRQoL has been found in those with healed DFU, [7–10,16–22] worse HRQoL has been found in those hospitalised or with more severe DFU, such as with pain, infection or PAD.[7–9,23–27] Perhaps surprisingly though, HRQoL has also been found to be similar in those with DFU having an amputation compared to those not having an amputation.[22,28–30] While most studies have compared HRQoL in two or three of these

\* Corresponding author at: Griffith University Nathan Campus, Bld N78, Rm 2.43, 170 Kessels Road, Nathan Qld 4111, Australia.

E-mail address: [j.byrnes@griffith.edu.au](mailto:j.byrnes@griffith.edu.au) (J. Byrnes).

<sup>1</sup> Present address: Department of Health Economics, Wellbeing and Society, Australian National University, Canberra, Australia.