



Contents lists available at ScienceDirect

Clinical Nutrition ESPEN

journal homepage: <http://www.clinicalnutritionespen.com>

## Review

## The burden and nature of malnutrition among patients in regional hospital settings: A cross-sectional survey

Natasha F. Morris<sup>a, b, c</sup>, Simon Stewart<sup>a, b, d</sup>, Malcolm D. Riley<sup>e</sup>, Graeme P. Maguire<sup>a, b, \*</sup><sup>a</sup> Baker Heart and Diabetes Institute, 75 Commercial Road, Melbourne, VIC 3084, Australia<sup>b</sup> Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, VIC, Australia<sup>c</sup> The University of Melbourne, Department of Nursing, Melbourne, Australia<sup>d</sup> Mary MacKillop Institute for Health Research, Australian Catholic University, Melbourne, Australia<sup>e</sup> CSIRO Health and Biosecurity, PO Box 10041, Adelaide BC, SA 5000, Australia

## ARTICLE INFO

## Article history:

Received 2 April 2017

Accepted 13 December 2017

## Keywords:

Indigenous patients

Malnutrition

Malnutrition risk

Malnutrition screening tool

Subjective Global Assessment

## SUMMARY

**Background/aims:** Indigenous people experience a higher burden of nutrition-related conditions and are more likely to experience food insecurity compared to non-Indigenous people. Consequently, they remain at increased risk of malnutrition; particularly when residing in regional or remote areas. This study aims to compare and characterise the burden and nature of malnutrition among a representative cohort of Indigenous and non-Indigenous Australians admitted to regional hospitals for medical inpatient care.

**Methods:** This was a cross-sectional survey conducted in three regional hospitals in the Northern Territory and Far North Queensland of Australia from February 2015 to September 2015. A total of 1606 adult medical inpatients were screened for eligibility. Of these, 608 eligible patients were screened for malnutrition using the validated Malnutrition Screening Tool and assessed for malnutrition using the Subjective Global Assessment. Socio-economic and health-related variables and anthropometric measurements were collected to identify the correlates of malnutrition.

**Results:** Of the 271 Indigenous patients and 337 non-Indigenous patients screened and assessed for malnutrition, 250/608 (41.7%, 95% CI 40.1–52.3%) were found to be malnourished. Significantly higher rates of malnutrition (46.1%, 95% CI 40.1–52.3% versus 37.1%, 95% CI 31.9–42.5%) were found in Indigenous patients compared to non-Indigenous patients ( $P = 0.024$ ). Higher rates of malnutrition were observed in Indigenous patients residing in Central Australia (56.7%, 95% CI 46.7–66.4%) than in the Top End of the Northern Territory (40.7%, 95% CI 31.7–50.1%) and in Far North Queensland (36.7%, 95% CI 23.4–51.7%). Factors independently predictive of malnutrition for both Indigenous and non-Indigenous participants included residence in Central Australia (OR 4.31, 95% CI 2.63–7.90,  $P < 0.001$ ); an increased Charlson Comorbidity Index prognostic score (OR 1.37 [per incremental score], 95% CI 1.19–1.59,  $P < 0.001$ ); and an underweight Body Mass Index (OR 29.97, 95% CI 3.68–244.0,  $P < 0.001$ ). Of the 250/608 patients who were malnourished, the positive predictor value (PPV) for malnourished patients who were underweight was 96.6% (95% CI 88.3–99.6%); for Indigenous Australians who were malnourished and underweight, the PPV was 100%. A mid-upper arm circumference of less than 23 cm demonstrated a strong PPV for all patients who were malnourished (96.1%, 95% CI 89.0–99.2%).

**Conclusion:** This is the first study to characterise malnutrition in adult Indigenous Australians in a hospital inpatient setting. Compared to non-Indigenous patients the burden and pattern of malnutrition was both higher and markedly different among Indigenous patients. These data highlight the critical importance for actively screening for and responding to malnutrition in this vulnerable patient population in regional and remote settings.

© 2017 European Society for Clinical Nutrition and Metabolism. Published by Elsevier Ltd. All rights reserved.

\* Corresponding author.

E-mail address: [graeme.maguire@baker.edu.au](mailto:graeme.maguire@baker.edu.au) (G.P. Maguire).

## 1. Background

Malnutrition in hospital inpatients is a well-recognised and reported problem [1–4]. Although malnutrition refers to both a state of over-nutrition or under-nutrition, in the context of this study, malnutrition is defined according to The European Society of Clinical Nutrition and Metabolism (ESPEN) as either a body mass index (BMI) of  $<18.5 \text{ kg/m}^2$ , or unintentional weight loss and either reduced BMI, or low fat free mass index [5]. Malnutrition in hospital patients is a global problem, however, rates of malnutrition vary between different studies due to the heterogeneous nature of different study participants and their socio-demographic, economic and health status, as well as different health settings [6].

In Australia, the prevalence of malnutrition in hospital patients was reported in 2010 as 32 percent [7]. This cross-sectional survey, is the largest point-prevalence audit to date that was conducted across 56 hospitals in Australian and New Zealand measuring both malnutrition risk and malnutrition in hospital inpatients [7]. However, some noted limitations of this study included: the exclusion of hospitals in regional areas such as the Northern Territory (NT) and Far North Queensland (FNQ); and only two percent of the study's population identified as Aboriginal Australian and/or Torres Strait Islander [7]. Furthermore, to date, no study has specifically aimed to measure the prevalence of malnutrition in Aboriginal and/or Torres Strait Islanders (hereafter referred to as Indigenous Australians), who may be at greater risk of malnutrition due to their current burden of chronic diseases and socioeconomic factors [8–12].

Similar to other Indigenous populations worldwide, health disparities between Indigenous and non-Indigenous populations continue to exist due to ongoing socioeconomic disadvantage, burden of chronic diseases, poor nutrition, and difficulties accessing health services [11]. Today, this health disparity gap between Indigenous and non-Indigenous people in Australia is evident by the life-expectancy gap, with a lower life-expectancy of

10.6 years for Indigenous males and 9.5 years for Indigenous females [13]. While there are global problems related to diet-related diseases, such as cardiovascular disease, type 2 diabetes mellitus and chronic kidney disease [8], diets high in saturated fats and sugars are attributable to the overweight and obesity epidemic [14]. However, while Indigenous people are more likely to be overweight or obese compared to non-Indigenous populations [15], Indigenous Australians are also more likely to be underweight or suffering from protein-energy malnutrition due to food insecurity, poor or limited food choices, socioeconomic disadvantage, which when combined with chronic disease, creates a 'perfect storm' for malnutrition. However, despite these risk-factors, the prevalence of malnutrition in Indigenous Australians is not clearly understood and not fully-appreciated by health care providers and policy decision-makers.

### 1.1. Study objectives

Using a combination of socio-demographic, health-characteristic, anthropometry and other assessment data, the study objectives were to: (1) determine the burden and nature of malnutrition among adult Indigenous and non-Indigenous Australian medical inpatients in three different regional hospitals in Australia; and (2) identify nutrition-related factors to facilitate screening patients for malnutrition and the early detection and diagnosis of malnutrition.

## 2. Methods

This was a prospective observational study using a cross-sectional survey to screen eligible medical inpatients for malnutrition risk and malnutrition, and malnutrition-related risk-factors in three regional hospitals in Northern Territory (NT) and Far North Queensland (FNQ) in Australia (see Fig. 1). Royal Darwin Hospital is a 360-bed public hospital located in the Top End of the NT which services approximately 140,000 patients per year; Alice Springs

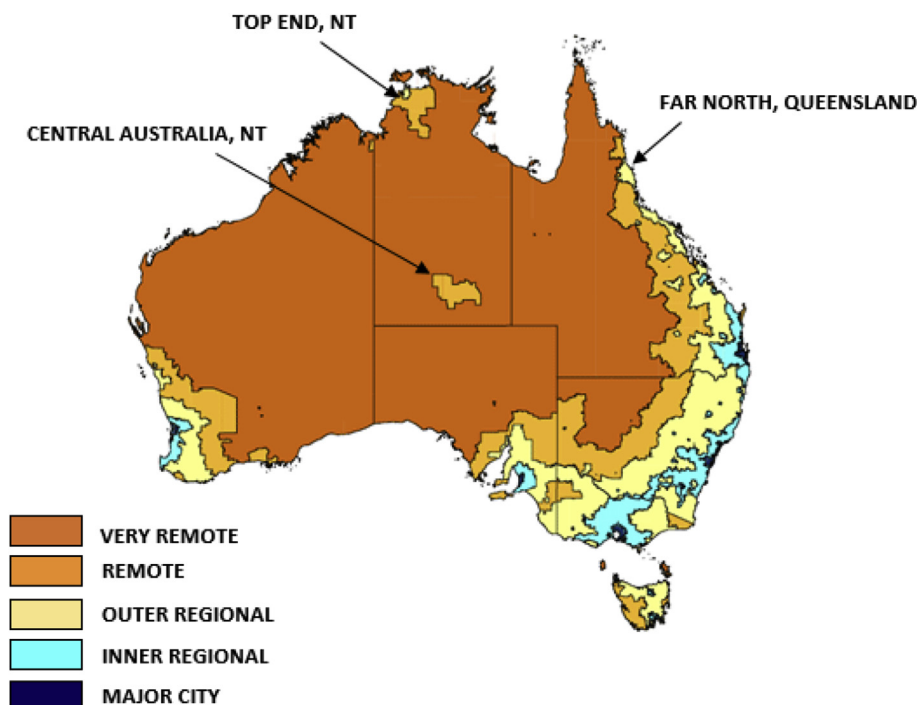


Fig. 1. ASGC remoteness areas & study sites (Australian Government Department of Health, 2006).

Download English Version:

<https://daneshyari.com/en/article/8587350>

Download Persian Version:

<https://daneshyari.com/article/8587350>

[Daneshyari.com](https://daneshyari.com)