Malnutrition: an under-recognised issue in our ageing population

Jane Maxine Kellett

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Abstract

Background

Older adults are the largest group of nutritionally vulnerable people in Australia. With the proportion of Australians over the age of 65 years increasing, malnutrition is becoming an increasingly important clinical and public health issue for Australia. This PhD aims to examine the prevalence of malnutrition in the Australian Capital Territory (ACT) and surrounding region in selected acute care and residential aged care facilities (RACFs); to estimate the unclaimed financial reimbursement of hospital income in the acute care setting due to undiagnosed or undocumented malnutrition; to determine how many RACFs in Australia routinely use a nutrition screening tool on residents to identify those at risk of malnutrition; review practice following identification of aged care residents as being at risk of malnutrition; and to inform future strategies for improved identification of malnutrition which will ultimately impact on improved patient care.

Methods

Four individual studies were conducted to address the research questions in this thesis. The first was conducted in the acute care setting and used the Patient-Generated Subjective Global Assessment (PG-SGA) tool to determine the prevalence of malnutrition in 189 adult inpatients in the ACT region. Patients determined to be malnourished were audited to assess if malnutrition was documented and included in clinical coding. These data were compared to two historical control groups and two subsequent cohorts from the same hospital to determine the proportion of patients coded as being malnourished prior to our study and after our study. Unclaimed potential reimbursements to this hospital (per annum) were calculated based on previous studies. The second and third studies were conducted in the RACF setting and used the Subjective Global Assessment (SGA) tool to determine the prevalence of malnutrition in

57 and 101 residents respectively in the ACT region. In the third study, residents were also asked questions relating to the presence of any eating or swallowing difficulties, dentures, problems with gum or oral mucosa, and if assistance was required with meals. The fourth study collected data from a stratified sample of 229 RACFs in each state and territory in Australia. The Director of Nursing at each site was contacted by telephone and asked standardised questions relating to current nutrition screening practices at their residential aged care facility.

Results

In the acute care setting, 53% of inpatients were classified as malnourished. Significant associations were found between malnutrition and increasing age ($p = 0.040$), decreasing body mass index ($p < 0.001$), and increased length of stay ($p < 0.001$). Ninety-eight percent of malnourished patients were coded as malnourished in medical records. The results of the medical history audit of patients in historical and subsequent control groups showed between 0.9-5.4% of patients were coded as malnourished which is remarkably lower than the 52% of patients who were coded as malnourished from the point prevalence study data. This is most likely due to lack of identification. The estimated annual unclaimed financial reimbursement due to undiagnosed or undocumented malnutrition was AU$8,536,200. In RACFs, 22-33% of residents were malnourished. In the RACF setting, malnutrition was also significantly associated with increasing age ($p = 0.038$). The majority of RACFs in Australia used a nutrition screening tool (82%), however only 52% used a tool which is validated in the RACF setting. There was a significant association between facilities using a nutrition screening tool and the staff members being trained to conduct nutrition screening ($p < 0.001$). Facilities that employed a dietitian were more likely to use a validated nutrition screening tool ($p < 0.005$).

Conclusion

Early recognition is one of the most effective ways to prevent and reduce the prevalence of malnutrition in older people, who are particularly vulnerable. Despite the awareness of this issue in the medical literature, these studies show that malnutrition continues to go unrecognised or undiagnosed. The findings highlight the importance of timely nutrition screening to identify older adults at risk of malnutrition, and regular dietetic assessment amongst high-risk patients to ensure malnutrition is recognised and diagnosed. It is imperative that validated tools are used to ensure malnutrition does not go undetected, and to provide training to staff to ensure that malnutrition is identified in a timely manner and documented appropriately.

Publications and Presentations

Peer-reviewed publications

1. **Kellett J**, Kyle G, Itsiopoulos C, Naunton M, Luff N. Malnutrition: the importance of identification, documentation and coding in the acute care setting. Journal of Nutrition and Metabolism. 2016, DOI 10.1155/2016/9026098
2. **Kellett J**, Kyle G, Itsiopoulos C, Naunton M, Bacon R. Malnutrition Prevalence in Aged Care Residents. A pilot study. Topics in Clinical Nutrition. 2015;30(3):276-280.
3. **Kellett J**, Kyle G, Itsiopoulos C, Naunton M, Bacon R, Costello L. Malnutrition prevalence and nutrition issues in five Australian Residential Aged Care Facilities. In Luszcz M and Feist H (Eds) Making Research Matter: Program and Proceedings of the 13th National Conference of Emerging Researchers in Ageing, pp72-75. Adelaide, 24-25 November, 2014. (Full peer-reviewed conference paper)
4. **Kellett J**, Kyle G, Itsiopoulos C, Naunton M. Nutrition screening practices amongst Australian residential aged care facilities. Journal of Nutrition, Health and Aging. February 2016, DOI 10.1007/s12603-015-0693-7

Conference presentations with peer-reviewed abstracts

1. **Kellett J**, Kyle G, Itsiopoulos C, Naunton M. 'Nutrition Screening Practices amongst Australian Residential Aged Care Facilities.' Dietitians Association of Australia 32nd National Conference, Perth, May 2015.
2. **Kellett J**, Kyle G, Itsiopoulos C, Naunton M, Bacon R, Costello L. 'Malnutrition prevalence and nutrition issues in five Australian residential aged care facilities.' 13th National Conference of Emerging Researchers in Ageing, Adelaide, November 2014.
3. **Kellett J,** Itsiopoulos C, Kyle G, Luff N. 'Prevalence of malnutrition amongst adult inpatients at a tertiary teaching hospital in the ACT region.' Australian Society for Medical Research New Investigator Forum, Canberra, June 2013.
4. **Kellett J**, Kyle G, Itsiopoulos C, Bacon R, Chapple L. 'A snapshot of malnutrition prevalence in five residential aged care facilities in the ACT region.' Dietitians Association of Australia 30th National Conference, Canberra, May 2013.
5. **Kellett J**, Itsiopoulos C, Kyle G, Luff N. 'Prevalence of malnutrition amongst adult inpatients at a tertiary teaching hospital in the ACT region.' Dietitians Association of Australia 30th National Conference, Canberra, May 2013.
6. **Kellett J**, Bacon R, Simpson A, Richards C. 'Malnutrition prevalence in aged care residences.' 16th International Congress of Dietetics, Sydney, September 2012.
7. **Kellett J**, Bacon R, Simpson A, Richards C. Malnutrition in Australian Aged Care Residents – A pilot study, Canberra Health Annual Research Meeting Program, Canberra, August 2012.

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Abbreviations

ACT	Australian Capital Territory
ASPEN	American Society for Parenteral and Enteral Nutrition
BMI	Body Mass Index
CNS	Clinical Nurse Specialist
DAA	Dietitians Association of Australia
DRG	Diagnosis Related Group
EN	Enrolled Nurse
MNA	Mini Nutritional Assessment
MNA-SF	Mini Nutritional Assessment – Short Form
MST	Malnutrition Screening Tool
MUST	Malnutrition Universal Screening Tool
PG-SGA	Patient-Generated Subjective Global Assessment
RACFs	Residential Aged Care Facilities
RDI	Recommended Dietary Intake
RN	Registered Nurse
SNAQ	Simplified Nutritional Assessment Questionnaire
SGA	Subjective Global Assessment

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