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Nutrition screening: time to address the skeletons in the bedroom closet as well as those in hospitals

Abstract

Ever since Dr Charles Butterworth's seminal article in 1974¹ on the widespread prevalence of malnutrition in hospitalised patients and its detrimental effect on recovery, attempts have been made to improve the detection of malnutrition through screening initiatives. However, despite compelling evidence that those who are either malnourished at admission or become malnourished during their hospital stay experience increased surgical complications, greater morbidity and increased length of hospital stay^{2,3} as well as higher rates of mortality at 12 months,^{4,5} malnutrition often remains undetected and untreated because it is not considered to be a clinical priority. Even overt signs of malnutrition are often missed in medical wards. A French study identified that 12% of patients admitted to an acute geriatric ward over a 1-year period had clinical symptoms of scurvy.⁶ Of particular concern was that half of those with scurvy had been referred from another acute medical department in which the diagnosis had gone unnoticed. The failure to recognise patients who are at risk of malnutrition and subsequent implementation of timely nutritional intervention often results in a downward spiral whereby patients are discharged back to the community or to a higher level of care, later to be readmitted in a more compromised nutritional state.

Keywords

those, closet, screening, nutrition, bedroom, time, hospitals, well, address, skeletons

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LEADING ARTICLE

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Introduction

Ever since Dr Charles Butterworth's seminal article in 1974¹ on the widespread prevalence of malnutrition in hospitalised patients and its detrimental effect on recovery, attempts have been made to improve the detection of malnutrition through screening initiatives. However, despite compelling evidence that those who are either malnourished at admission or become malnourished during their hospital stay experience increased surgical complications, greater morbidity and increased length of hospital stay^{2,3} as well as higher rates of mortality at 12 months,^{4,5} malnutrition often remains undetected and untreated because it is not considered to be a clinical priority. Even overt signs of malnutrition are often missed in medical wards. A French study identified that 12% of patients admitted to an acute geriatric ward over a 1-year period had clinical symptoms of scurvy.⁶ Of particular concern was that half of those with scurvy had been referred from another acute medical department in which the diagnosis had gone unnoticed. The failure to recognise patients who are at risk of malnutrition and subsequent implementation of timely nutritional intervention often results in a downward spiral whereby patients are discharged back to the community or to a higher level of care, later to be readmitted in a more compromised nutritional state.

Nutrition screening practices in hospitals

Many countries, including Australia,^{7–9} have adopted clinical guidelines that recommend nutrition screening of patients admitted to hospital. However, guidelines do not necessarily translate into practice. This is evidenced by a 25-country study in Europe and Israel (n > 21 000 patients recruited from 325 hospitals) in which wide variation in nutrition screening practices both between and within countries was reported. Both validated and non-validated instruments were used for this purpose.⁹

The paper by Ferguson and colleagues in this issue of the journal¹⁰ reports a dramatic increase in the number of Australian hospitals that conduct routine nutrition screening, from 23% in 1995 to 78% in 2008. While this is encouraging, there may have been selection bias in the sampling of the 68 hospitals that responded to the survey, representing only 5% of all Australian hospitals. Indeed, only dietitians were targeted and it is possible that those who were passionate about nutrition screening and worked in hospitals that were compliant with the clinical guide-

lines⁷ may have been more likely to respond. The study, however, paves the way for a national survey of both public and private sector hospitals to obtain nationally representative figures on such practices in hospitals and to determine the barriers to implementation that occur in various settings.

Barriers to universal screening

As has been reported by others,^{11–13} Ferguson *et al.*⁹ found that insufficient knowledge and training, as well as insufficient time and staffing, are major obstacles to the implementation of nutrition screening. Nutrition screening was mostly performed by nurses in the hospitals surveyed by Ferguson *et al.*,⁹ which is appropriate given that dietitians would be able to focus on nutrition assessment, intervention, monitoring and evaluation. If routine nutrition screening (which takes less than 5 minutes) is to be followed up with a full nutritional assessment (which takes between 30 and 45 minutes per patient), staffing levels required to achieve this need to be taken into account. An Australian rehabilitation setting has been able to achieve rates of full nutritional assessment (using the MNA) in 90% of patients within 3 days of admission using a dietetic staffing ratio of a 0.3 full-time equivalent staff member per 10 beds, assuming an admission rate of up to 15 referrals per week and an average length of stay (LOS) of 28 days.¹⁴ The dietetic profession probably needs to be more pro-active in providing nutrition education to nurses, both during their training and *in situ* practice settings in order to promote nutrition screening practices, followed by appropriate referral to a dietitian.

Nutrition screening tools

The problem of comparing the prevalence of malnutrition in various hospital settings and patient groups is complicated through the lack of use of standardised instruments and criteria. There has been much debate in the literature about which screening instruments are most appropriate to use in various patient groups and a number of validated instruments are available, including the Universal Screening Tool (MUST),¹⁵ the Short Nutritional Assessment Questionnaire (SNAQ),¹⁶ the Nutritional Risk Screening 2002 (NRS)¹⁷ and the Malnutrition Screening Tool (MST).¹⁸ For geriatric patients, a 2009 revised version of the Mini Nutritional Assessment Short-Form (MNA-SF)¹⁹ is recommended. This has been validated in a large database of older participants

from various settings and countries, including Australia.²⁰ In two-thirds of the Australian hospitals where nutrition screening was being performed, Ferguson *et al.*⁹ report that the MST was the instrument of choice. However, the MST may not be appropriate for use in all hospitals, and difficulties with its use in culturally diverse populations have been documented.²¹

Nutrition screening in the community

Despite policies for detection and treatment of malnutrition being focused on the hospital setting, it is becoming recognised that the majority of malnutrition is found in the community.^{22,23} For example, in the UK it has been estimated that more than 3 million individuals are at risk of malnutrition, about 93% of whom live in the community while only 2% of all malnutrition is found in hospitals.²² In recognition of this, the National Institute for Health and Clinical Excellence (NICE)⁶ guidelines recommend that patients should be screened not only on admission to hospitals but also on admission to care homes, on their first outpatient appointment and on registration with a General Practitioner. The guidelines also recommend that screening should be repeated weekly for inpatients and where there is clinical concern for outpatients and residents in care.

In Australia, Visvanathan²⁴ has recommended that nutrition screening for older adults should occur not only in acute care, rehabilitation and residential aged care settings, but also be included regularly as part of general practice health assessments and eligibility assessments in community programmes for the elderly. A systematic review of nutrition screening tools used in community-dwelling older adults confirmed that the MNA-SF appears to be the most appropriate tool for use in this setting.²⁵ National nutrition screening initiatives for the elderly have been adopted in some countries, notably the Nutrition Screening Initiative (NSI) in the USA, that uses a self-administered 10-item checklist with the acronym DETERMINE.²⁶ In 1995, an adapted version of the NSI was launched in Australia (Australian Nutrition Risk Initiative)²⁷ but the 12-item questionnaire has been shown to exaggerate the true extent of nutritional risk among community-living older individuals and may be of limited value as a screening tool *per se*.²⁸

The usefulness of applying consistent criteria across all care settings, including the community, has been demonstrated by the British Association for Parenteral and Enteral Nutrition (BAPEN)'s large-scale Nutrition Screening Week surveys in the UK. Using the MUST tool, 28% of individuals were malnourished on admission to hospital, compared with 30–40% of those admitted to nursing care homes in the previous 6 months. Sixteen to twenty percent of outpatients were malnourished, as well as 10–14% of elderly tenants in sheltered housing accommodation. In terms of absolute numbers, there are a greater number of people at risk of malnutrition living in sheltered housing schemes than in hospitals.²² This data highlight the need for integrated

strategies to detect and treat malnutrition risk between and within care settings.

Cost-benefit of nutrition screening

Data from the UK suggest that malnutrition-related costs are in excess of €9.2 billion per year, and are mostly attributed to the treatment of malnourished patients in hospital and in long-term care facilities such as nursing homes.²⁹ A recent Australian study reporting on routine nutrition assessment conducted in older patients admitted to rehabilitation hospitals over a 5-year period found that the increased length of hospital stay in malnourished and at-risk groups, compared with their well-nourished counterparts (18.5 days and 12.4 days, respectively), equated to an estimated additional cost burden of AU\$12 765 and AU\$8556 per malnourished and at-risk patient, respectively (assuming a cost of AU\$690 per day per inpatient).¹³ Based on admission rates to those hospitals in 2008 alone, the additional cost of treating nutritionally compromised elderly patients was estimated in excess of AU\$8.8 m. Other authors have estimated the cost of treating a nutritionally at-risk patient to be 20% higher than the average for the respective diagnosis-related group.³⁰ As well as the actual additional cost of treating a nutritionally compromised patient, inadequate identification of malnutrition results in financial shortfalls to hospitals due to under-reporting of diagnostic related group (DRG) codes for malnutrition being allocated. A case study from an acute care Melbourne hospital estimated a loss to the hospital in casemix reimbursements for malnutrition of over \$1.8 m, extrapolated for the 2007/2008 financial year.³¹

Nutrition screening is only the first step in the pathway to improved nutritional care, and screening alone is unlikely to result in beneficial patient outcomes. Implementation of malnutrition risk screening has been shown to improve identification of individuals at risk of malnutrition,⁶ but this is only of relevance if patient-related outcomes change. More studies on the cost-effectiveness and efficacy of different nutritional interventions are needed. Nutritional supplements, despite only having a modest benefit on weight gain and mortality in older patients,³² are commonly prescribed in the nursing home setting. It has recently been shown that providing between-meal snack foods and fluids is slightly less expensive and more effective in increasing energy intake, compared with commercial supplements.³³ Other examples of innovative ways in which to improve patient dietary intake include the incorporation of feeding assistants onto a trauma ward.³⁴ A positive impact of family-style dinners instead of a tray service has been demonstrated in a nursing home setting.³⁵ A Community & Outpatient Nutrition Extended Care Team (CONNECT) approach that provides outpatient dietetic services, such as face-to-face consultations in convenient locations, telephonic support and home visits, to nutritionally at-risk patients in the Illawarra region who have been discharged from hospital has been shown to be beneficial.³⁶ Such initiatives warrant further evaluation.

Conclusion

Nutrition screening is an essential first step in early detection of those at nutritional risk. The challenge remains for this to become routine practice in Australian hospitals, as well as in the community at large.

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