

Importance of hospital food supply to manage malnutrition

Renée Blaauw* 

Division of Human Nutrition, Stellenbosch University, Stellenbosch, South Africa

* Correspondence: rb@sun.ac.za



Data on the prevalence of malnutrition amongst adult hospitalised patients globally range between 23–55%.¹ South African data is scarce but tend to be on the higher end of the range. A study from the Eastern Cape province reported a prevalence of 48.2%, using the MUST (Malnutrition Universal Screening Tool) high-risk group.² Using the Nutrition Risk Screening-2002 tool to identify participants at-risk of malnutrition, a prevalence of 53.7% were reported for three academic hospitals in South Africa.³ A recent study from Gauteng province reported a malnutrition prevalence of 56.8%, using the Global Leadership Initiative on Malnutrition (GLIM) criteria.⁴ As malnutrition is associated with longer length of hospital stay, more complications, increased re-admissions and greater mortality^{1,3,5,6}, early identification and appropriate management of malnutrition is crucial.⁷

The GLIM group recommends that nutritional status screening and assessment therefore should be performed on all patients on admission to hospital and those identified as malnourished or at-risk of developing malnutrition, should be referred for specialised nutrition support in an attempt to correctly manage and improve nutritional status throughout the management period.⁸ Referral of malnourished patients for nutrition support is unfortunately not routinely done in South Africa with referral figures of 18.8% and 19% respectively being reported by local studies.^{3,9} The malnutrition assessment according to the GLIM recommended guidelines consists of two sets of criteria and five components. The phenotypic criteria assess percentage weight loss, body mass index and reduced muscle mass as components. The aetiologic criteria take into consideration a reduced food intake or food assimilation and the presence of inflammation. At least one component from each of the two criteria should be present before the diagnosis of malnutrition can be made.⁸

The study by Theron and O'Halloran, page 133 of the current SAJCN issue, compared nutritional adequacy of meals served at three public hospitals in Cape Town in relation to patient needs and also determined patients' food satisfaction.¹⁰ This is the first study of its kind done in public hospitals in the Western Cape province. The energy and protein content of the meals were significantly lower than calculated average patient requirements, and significant differences were also found between the hospitals in the study. The served meals were also below the South African Hospital Ration Scale recommendations by 34% for energy and 54% for protein. The authors speculate that this finding could be due to inadequate staff training regarding adequate food portions or insufficient funds to cover the food budget required to meet the ration scale recommendations. They also report significant differences between the hospitals regarding patient perception of food quality and staff/service issues. This emphasises the importance of standardised approaches regarding menu planning and food service delivery amongst public hospitals in the province.

A recent systematic review¹¹ on hospital food service strategies to improve food intakes recommended five foodservice intervention strategies that hospitals should consider implementing in improving patients' intakes and ultimately nutritional status. These include (1) changes to the foodservice system, including meal ordering and delivery procedure; (2) modifications to the menu; (3) multidisciplinary approaches at individual and ward level; (4) protected mealtime and mealtime assistance and (5) improvements of meal presentation.¹¹ Many of these were also assessed by Theron and O'Halloran in their patients' food satisfaction questionnaire. Various levels of satisfaction were reported between the three hospitals for the different components, with the categories 'food quality' and 'meal size/sufficiency' scoring the lowest, at 67% satisfaction.

The European Society for Clinical Nutrition and Metabolism (ESPEN) guidelines on hospital nutrition contain various practical recommendations that can be employed by the foodservice unit. Although some of the recommendations are not necessarily applicable to the economic environment in South Africa, for instance the recommendation that patients should be offered meal choices at each meal, there are some of the guidelines which should be non-negotiable. These include the following: food served must be well-prepared and appear appetising for the individual; regular (annual) patient and staff surveys regarding hospital food and diets should be performed; hospitalised patients at nutritional risk should receive an energy and protein enriched diet and/or be provided with an oral nutritional supplement; the hospital diet for adults should provide 30 kcal/kg energy and 1.2 g/kg protein and mealtimes should have a protected timeslot.¹²

Adult hospital malnutrition in South Africa affects one in every two patients. It is the responsibility of the healthcare institutions to provide adequate meals that fulfil the nutritional requirements of the patient.

ORCID

Renée Blaauw  <http://orcid.org/0000-0001-7413-5918>

References

1. Marchand S, Lapauw B, Eeckloo K, Deschepper M. Malnutrition risk and severity: Impact on patient outcomes and financial hospital reimbursement in a tertiary teaching hospital. *Clin Nutr ESPEN*. 2022;48:386–92. <https://doi.org/10.1016/j.clnesp.2022.01.013>
2. Van Tonder E, Gardner L, Cressey S, Tydeman R, Gerber K. Adult malnutrition: prevalence and use of nutrition-related quality indicators in South African public-sector hospitals. *South African J Clin Nutr*. 2018;4(1):1–7. <http://doi.org/10.1080/16070658.2017.1410003>
3. Blaauw R, Achar E, Dolman RC, Harbron J, Moens M, Munyi F, et al. The problem of hospital malnutrition in the African continent. *Nutrients*. 2019;11(9):1–12. <http://doi.org/10.3390/nu11092028>
4. La Grange S, Kotze V, Pillay K, Coetzer C, Strauss S, Strydom C, et al. Assessment of the clinical usability of adult undernutrition

- diagnostic criteria in an academic hospital, Gauteng, South Africa. *Clin Nutr ESPEN* 2021;46:S603–4. <https://doi.org/10.1016/j.clnesp.2021.09.175>
5. Hudson L, Chittams J, Griffith C, et al. Malnutrition identified by Academy of Nutrition and Dietetics/American Society for Parenteral and Enteral Nutrition is associated with more 30-day readmissions, greater hospital mortality, and longer hospital stays: a retrospective analysis of nutrition A. *JPEN J Parenter Enter Nutr*. 2018;42(5):892–7. <https://doi.org/10.1002/jpen.1021>.
 6. Chin C, Lew H, Hons BND, et al. Association between malnutrition and clinical outcomes in the intensive care unit: a systematic review. *JPEN J Parenter Enter Nutr*. 2017;41(5):744–58. <https://doi.org/10.1177/0148607115625638>.
 7. Sriram K, Fracs C, Sulo S, et al. A comprehensive nutrition-focused quality improvement program reduces 30-day readmissions and length of stay in hospitalized patients. *JPEN J Parenter Enter Nutr*. 2017;41(3):384–91. <https://doi.org/10.1177/0148607116681468>.
 8. Cederholm T, Jensen GL, Correia MITD, et al. GLIM criteria for the diagnosis of malnutrition – A consensus report from the global clinical nutrition community. *Clin Nutr*. 2019;38(1):1–9. <https://doi.org/10.1016/j.clnu.2018.08.002>.
 9. Van Tonder E, Mace L, Steenkamp L, Tydeman-Edwards R, Gerber K, Friskin D. Mid-upper arm circumference (MUAC) as a feasible tool in detecting adult malnutrition. *South African J Clin Nutr*. 2019;32(4):93–8. <https://doi.org/10.1080/16070658.2018.1484622>
 10. Theron M, Halloran SO. Patients in public hospitals received insufficient food to meet daily protein and energy requirements: Cape Town Metropole, South Africa. *South African J Clin Nutr*. 2021;133–141. <https://doi.org/10.1080/16070658.2021.1997267>
 11. Osman NS, Nor NM, Sharif MSM, et al. Hospital food service strategies to improve food intakes among inpatients: A systematic review. *Nutrients*. 2021;13(10):1–26. <https://doi.org/10.3390/nu13103649>.
 12. Thibault R, Abbasoglu O, Ioannou E, et al. ESPEN guideline on hospital nutrition. *Clin Nutr*. 2021;40(12):5684–709.