Introduction

The nutritional status of hospitalised patients has been a growing concern during the past four decades. Worldwide studies indicate that 30% to 60% of hospitalised patients are malnourished. The complications of undernutrition, which include prolonged healing, increased length of hospital stay and increased hospital cost are well known. Early identification of undernutrition and/or risk to develop undernutrition while in hospital has been recommended. Various nutrition risk screening tools have been developed and are frequently used in the nutritional management of hospitalised patients. Based on sensitivity and specificity, the following four screening tools seemed to be valid and therefore recommended for nutrition risk screening: the Nutrition Risk Screening tool (NRS-2002), the quick and easy Malnutrition Universal Screening Tool (MUST), the Malnutrition Screening Tool (MST) as well as the Short Nutritional Assessment Questionnaire (SNAQ). Since 2003, the Nutrition Risk Screening tool (NRS-2002), developed by European Society for Clinical Nutrition and Metabolism (ESPEN) has been used to determine the nutritional risk of patients admitted to Pelonomi, Universitas and National Hospitals in Bloemfontein. Forty to 60% of these patients had a high nutritional risk and would likely benefit from nutritional support. However, the need for a more easy to apply screening tool was identified. The MUST was considered quick and easy and the screening criteria were available on the NRS screening form.

In view of the paucity of comparative data in the country on the use of such screening tools, we compared, in this study, the results obtained from MUST and NRS-2002 screening tools in the 2005–2008 period with the aim of establishing which of the two tools would be the most appropriate to use in the Bloemfontein academic hospitals.

Methods

The study was based on the screening results of a sample of adult patients (N = 3938) aged 18 years and older, who were admitted during February to October 2005–2008 to the medical and surgical wards in Pelonomi and Universitas Hospitals and the cancer wards of the National Hospital. Ethics approval was obtained from the Ethics Committee of the Faculty of Health Sciences, University of the Free State (ETOVS number 30/01).
Short Communication: Agreement between NRS-2002 and MUST nutrition risk scores – a retrospective study

NRS-2002 was 89.5%, while the negative predictive value was 61.2%. The sensitivity was 59.1% with 95% CI [57.1% ; 61.1%] and the specificity was 90.3% with 95% CI [88.9% ; 91.7%].

Discussion

The diagnostic accuracy of any screening tool is important as it determines whether a patient will be accurately diagnosed as nutritionally at risk and would need nutrition support. The positive predictive value of the MUST was high (89.5%) while the negative predictive value was low (61.2%). The positive result is very predictive because there is 89.5% certainty that a person with a positive result based on the test will be identified.

The sensitivity of the MUST was low (59.1%), and the specificity was high (90.3%). If the sensitivity and specificity of 70% that was used by Neelemaat et al3 to represent validity is used as the criterion, then the sensitivity of the MUST compared to the NRS-2002 was too low.

The limits of agreement by the Bland-Altman analysis showed a large level of disagreement between the two methods. Narrowing the limits of agreement would contribute to a more accurate assessment of the patient who would need nutritional support, thus a clinical decision of ± 1 was used, which shows how large the level of disagreement really is.

Conclusion

Findings obtained by the MUST screening tool were not found to be in agreement with those of the NRS-2002. The fact that the MUST was derived from the NRS-2002 and was not determined on its own probably contributed to the disagreement found between the two methods. It is recommended that the NRS-2002 be compared prospectively with the MUST and other screening tools.

References