Nutritional screening in clinical practice: comparison of the trust nutrition screening tool with the malnutrition universal screening tool

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Screening of nutritional status is a key recommendation in the NICE guideline on Nutritional Support in Adults[1]. Effective screening relies on a number of components: (i) the majority of patients are screened, (ii) the tool is used correctly and (iii) appropriate action is taken for at-risk patients. Current practice in our Trust is to use the Nutrition Screening Tool (NST) a modified version of the Birmingham Heartland Screening Tool[2]. The aims of this study were (1) to identify rates of screening, (2) to assess accuracy and (3) to compare the NST with the MUST tool.

A prospective audit was carried out on two general medical wards over a 4-week period. Nursing staff were trained on and asked to use the NST and the malnutrition universal screening tool (MUST) in all patients. The researcher measured height, weight and mid upper-arm circumference (MUAC); if height could not be measured, ulna length was used to calculate height; if neither height nor weight could be measured MUAC was used to calculate BMI. The researcher then completed an NST and a MUST tool for each patient; if screening was not possible the reason was recorded. The researcher aimed to screen all patients within 3 d of nursing staff.

There were 182 admissions during the study period but fifteen patients were discharged before being assessed. A further forty-five could not be screened by the researcher as they were off the ward (*n* 21), unrousable or could not communicate (*n* 12), too unwell (*n* 7) or refused (*n* 5), leaving 122 patients. Rates of screening by nursing staff were sixty-three out of 167 (38%). Of these sixty-three, sixty-one had been screened by both nursing staff and the researcher, four were excluded as screening was greater than 4 d apart, leaving fifty-seven for comparison. Of these fifty-seven the MUST had been completed in only twenty-six patients.

Nurse *v.* researcher measurements of height, weight, BMI and MUAC were examined using Bland and Altman plots[3]. If the two measurements are similar, points are expected to lie around the zero line. Height showed good repeatability with most points lying on the zero line. Weight and BMI had only a few outliers but differences were large (±10 kg). MUAC showed poor repeatability.

Nurse *v.* researcher inter-rater agreement for total screening tool score and each step/score contribution to the total score were compared using κ statistics. For both screening tools inter-rater agreement was poor; the only aspect of the score that had good agreement was the BMI. This resulted in five patients being assigned a different risk group (Table).

	Agreement (%)	κ	Interpretation
Total NST score (nurse *v.* researcher; *n* 57)	28%	0.18	poor
Weight loss score	67%	0.45	fair
BMI score	89%	0.71	good
Appetite score	56%	0.38	poor
Ability to eat score	67%	0.38	poor
Stress score	80%	0.47	fair
Total MUST score (nurse *v.* researcher; *n* 26)	68%	0.27	poor
BMI score	92%	0.71	good
Weight loss score	34%	0.22	poor
Days without eating score	too few rating categories		

When NST and MUST were compared using the score obtained by the researcher for each tool, agreement was poor (κ 0.05, 17% agreement). There were differences in rates and patterns of referral between the tools; the NST identified twenty-five patients (21%) at moderate risk and thirty (25%) at high risk whereas MUST identified seventeen (14%) at risk and twenty-eight (23%) at high risk. Although numbers of patients at high risk were similar (*n* 30 *v.* *n* 28) only twenty were identified as at high risk by both tools.

This study showed low rates of screening by nursing staff in these two wards and accuracy of screening was poor compared with the researcher. As screening patterns in these wards are likely to reflect other wards in the Trust, these findings raise questions about the effectiveness of the nutritional screening in the Trust. Although the MUST and the NST both assess nutritional status agreement between the tools was poor.

1. www.nice.org.uk/guidance/CG32
2. Reilly HM, Martineau JK, Moran A & Kennedy H (1995) *Clin Nutr* **14** (55), 269–273.
3. Bland JM & Altman DG (1986) *Lancet* **i**, 307–310.