



Hand Grip Strength (HGS) as an indicator of nutritional status in patients in a rural hospital



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INTRODUCTION

Handgrip strength (HGS) has been proposed as a simple, economical and objective measure of nutritional status. This study aimed:

1. To evaluate the use of handgrip strength by dynamometer in the detection of malnutrition in a group of patients 60 years and older in Bega District Hospital.
2. Produce practice guidelines for the measurement of HGS in this group of patients.

METHODS

Study design: Cross sectional analytical

Subjects: 96 surgical and medical patients aged 60 years or older in an 80 bed rural hospital.

Outcome measures: Handgrip measures were taken in the dominant and non-dominant hand with patients either seated in a chair or reclined in bed. Both malnutrition risk and actual diagnosed malnutrition were compared to the maximum and mean of three HGS measurements. Malnutrition risk was identified using the standard methods of direct observation and the Malnutrition Screening Tool (MST). Malnutrition diagnosis was made using the Patient Generated- Subjective Global Assessment (PG-SGA).

RESULTS

There were significant associations between malnutrition risk and muscle weakness, as indicated by HGS, for the mean of three measurements in both the left ($P = 0.029$) and right hand ($P = 0.017$), and in the dominant hand ($P=0.015$). Overall, the results suggest that the mean of the three HGS measurements for the dominant hand is the most accurate when assessing nutritional status. Sensitivity analysis indicated that combining direct observation, MST and HGS (using 85% cut off point for normative data) gave a sensitivity of 88.5% when screening for malnutrition.

There were no significant associations between malnutrition diagnosis and HGS in the 30 participants who were assessed by PG-SGA.

CONCLUSION

Handgrip strength enhanced the standard malnutrition screening process. The fact that this study did not find an association between malnutrition diagnosed by PG-SGA and HGS may be a feature of the small proportion of malnourished patients, bias in sampling or that HGS alone is not a sensitive enough tool in this group of people.

IMPLICATIONS FOR PRACTICE

Hand grip strength should be used in conjunction with other assessment tools and clinical judgement.

Further research is needed to support this work and assist in quantifying significant change in HGS over time in relation to dietetic care.

For the full report on this project visit our website, follow the link to the Rural Research Capacity Building Program and click on 'view completed projects'

Bridget Thompson is a senior dietitian in the Bega Valley Health Service.

For 30 years she has worked in Bega in rural NSW – a job that allows her to specialise as a generalist dietitian and also follow other areas of interest, including renal, oncology, and nutritional support. She enjoys working with students and in 2005 completed a graduate certificate in Clinical Education (CSU).



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