

# CONTENT VALIDITY OF METHODS TO ASSESS MALNUTRITION IN PATIENTS WITH CANCER: A SYSTEMATIC REVIEW

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## Rationale:

Inadequate operationalisation of the multidimensional concept of malnutrition may result in inadequate evaluation of nutritional status. In this systematic review we aimed to assess content validity of methods used to assess malnutrition in patients with cancer, according to domains directly derived from the European Society for Clinical Nutrition and Metabolism (ESPEN) and the American Society for Parenteral and Enteral Nutrition (ASPEN) definitions for malnutrition. Furthermore, we intended to investigate whether there has been a change in median content validity in studies before as opposed to after the ESPEN definition was published in 2006.

## Methods:

- Studies with malnutrition as a (outcome) variable in adult patients with cancer published between 1999 and 2013 were considered eligible.
- Methods to assess malnutrition were classified using 13 indicators within three domains that the malnutrition definitions of ESPEN and ASPEN have in common: Domain A: Nutrient balance; Domain B: Body shape, body area and body composition; and Domain C: Body function.
- Content validity index per method ( $M-CVI_{A-C}$ ) was calculated by averaging indicator scores weighted per domain, quantifying to what extent the methods covered the construct of malnutrition.
- Acceptable content validity was defined as  $M-CVI_{A-C} \geq 0.80$ , in line with established summarized content validity index cut off values.

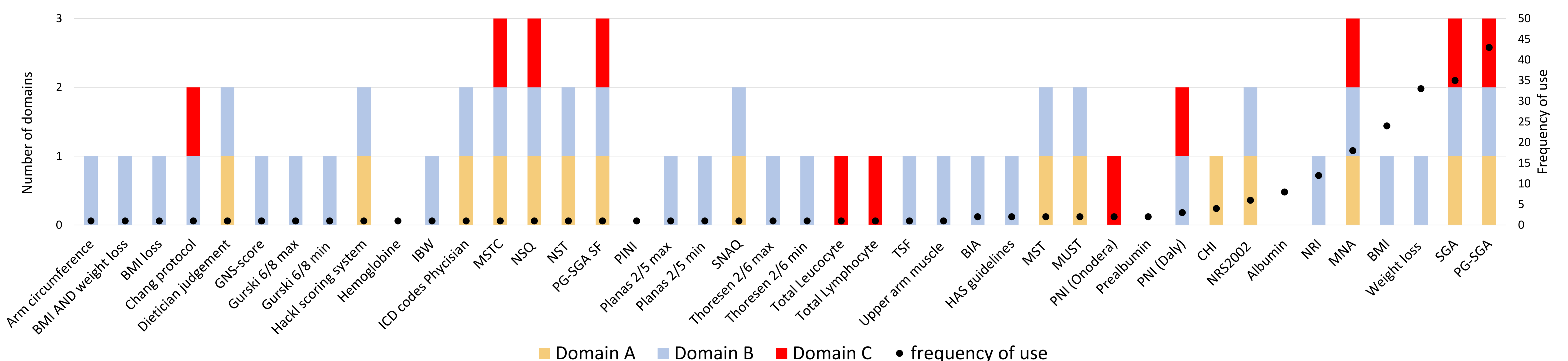


Figure 1: Number of domains covered per method sorted by frequency of use to assess malnutrition in cancer patients

## Results:

- After removal of duplicates, 4421 articles were found. After screening by title and abstract 515 full text articles were assessed for eligibility.
- 40 different methods for assessing malnutrition within 166 articles were identified.
- Malnutrition was operationalised 222 times, in which the PG-SGA was used most frequently (n=43).
- Six methods covered all three domains of malnutrition: Mini Nutritional Assessment (MNA), Malnutrition Screening Tool for Cancer patients (MSTC), Nutrition Screening Questionnaire (NSQ), Patient-Generated Subjective Global Assessment (PG-SGA), PG-SGA Short Form and Subjective Global Assessment (SGA).
- None of the methods reached  $M-CVI_{A-C}=0.80$ .
- Median  $M-CVI_{A-C}$  of studies both before and after ESPEN definition was 0.47 (Interquartile Range: 0.08-0.53)

## Conclusion:

Content validity of methods that assess malnutrition in patients with cancer varies widely. Less than one sixth of all methods retrieved cover all domains of the malnutrition definition, of which MNA, NSQ, and PG-SGA score highest on content validity. However, none of the methods studied met the pre-specified acceptance threshold of 0.80. Unfortunately, after publication of the ESPEN definition, content validity of methods in studies that assess malnutrition in patients with cancer has not improved.

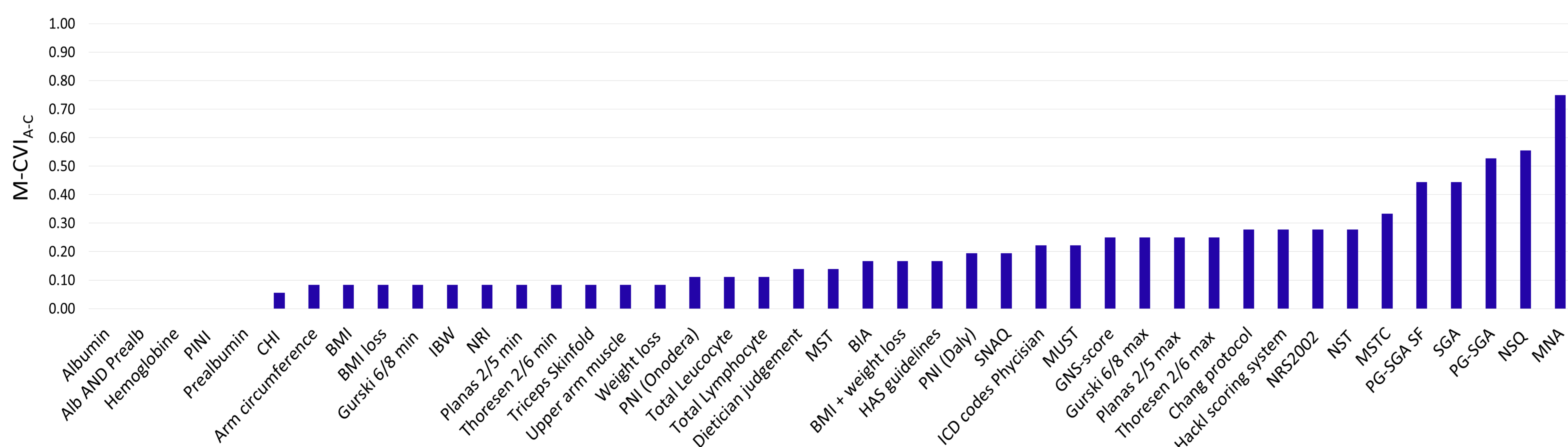


Figure 2: Methods used to assess malnutrition in cancer patients, distributed by content validity scores



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