Assessing the Effectiveness of the Nutrition Focused Physical Examination in the Acute Care Setting

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Background

- The Academy of Nutrition and Dietetics (AND) and American Society for Parenteral and Enteral Nutrition (ASPEN) guidelines for indication of protein-energy malnutrition (PEM) require a minimum of two positive indicators for diagnosis.
- Multiple studies quote time constraint as a barrier for registered dietitian nutritionists (RDNs) to regularly complete the nutrition focused physical examination (NFPE).
- Handgrip strength is an underutilized assessment tool during the PEM assessment due to decreased feasibility.

Methodology & Participant Demographics

- Patients with positive PEM assessments during the standard nutrition assessment and met inclusion criteria were referred to the Primary Investigator (PI).
- With informed consent, the PI completed a second PEM assessment and assessed the participant's handgrip strength and respiratory muscle strength using a negative inspiratory force manometer to measure maximum inspiratory pressure.
  - n = 61, 49.2% male and 62.97±15.59 years old
  - 31 participants with severe PEM
- A non-malnourished control group was recruited through chart review and the PI completed the same assessment.
  - n = 30, 40% male and 62.80±13.11 years old

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Cross-tabulation of AND/ASPEN Malnutrition Assessment of Severity Between Two RDN Assessments on the Same Participants

	Standard Assessment		
PI Assessment	Moderate	Severe	Total
Moderate	**19 (31.1%)**	11(18%)	30 (49.2%)
Severe	10 (16.4%)	**21 (34.4%)**	31 (50.8%)
Total	29 (47.5%)	32 (52.5%)	61 (100%)

	Handgrip Strength	Maximum Inspiratory Pressure
Assessment Time ≤5 min	100%	95.1%
p=		
vs. Severity of PEM	**0.032**	**0.043**
vs. Etiology of PEM	**0.009**	**0.002**
Moderate vs. Severe PEM	0.503	0.512
Control vs. PEM	**0.012**	**0.028**
Control vs. Moderate PEM	**0.016**	**0.013**
Control vs. Severe PEM	0.078	0.131
Control vs. Moderate vs. Severe PEM	**0.037**	**0.072**
vs. Severity of Muscle Loss	**0.023**	**0.034**
vs. Severity of Weight Loss	**0.034**	*0.058*
Male vs. Female	1.576	0.461
vs. Age	**0.002**	*0.066*
Handgrip Strength vs. Maximum Inspiratory Pressure = **0.013**		

Frequency of AND/ASPEN Malnutrition Characteristics Assessed by LVHN RDNs

Characteristic	Frequency Used
Energy Intake	53 (86.9%)
Weight Loss	56 (91.8%)
Body Fat Loss	28 (45.9%)
Muscle Loss	35 (57.4%)
Fluid Accumulation	18 (29.5%)

Results

- The NFPE increased severity of documented PEM in 45.9% of participants (p = 0.022) as opposed to using energy intake and weight loss alone.
- The NFPE took ≤10 minutes in 64.7% of participants among RDNs and ≤5 minutes in 59% of participants for the PI.

Conclusions

- Maximizing the use of each PEM identifier allows for an in-depth clinical picture to properly identify PEM and provides the opportunity for increased revenue generation in the hospital setting.
- Repetition of the NFPE skillset can lead to quicker patient exams.
- The relationship between handgrip strength and respiratory muscle strength warrants further investigation as a possible PEM identification tool.

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