Exploring the Prevalence of Malnutrition Risk Across Inpatient Rehabilitation Settings

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BACKGROUND

- Literature regarding malnutrition in Canadian rehab programs is sparse. International literature reports malnutrition prevalences in rehab settings between 29.4% to 62.3%.
- Malnutrition in hospitalized patients can affect physical strength, ability to fight infection, wound healing, morbidity, mortality, length of stay, and lead to complications causing a return to acute care.

PURPOSE / OBJECTIVES

Primary objective:

- Determine the prevalence of those at risk for malnutrition based on Canadian Nutrition Screening Tool (CNST) score and determine the prevalence and timeliness of CNST screening at Toronto Rehabilitation Institute (TRI) facilities.

Secondary objectives:

- For patients with a positive CNST result, determine the prevalence of malnutrition as diagnosed by Subjective Global Assessment (SGA) score, and the prevalence of SGA completion at TRI.
- Assess the association of variables related to malnutrition risk upon admission to TRI facilities.

METHODS

Study design

- Data was collected retrospectively from records of inpatient adult (18+) patients admitted to a TRI facility (University, Bickle, or Lyndhurst) from July 2022 and discharged prior to October 2023.
- Included patients were from the following TRI streams: spinal cord (n 14 [22.58%]), low term long duration (n 20 [32.26%]), geriatric (n 25 {40.32%}), and musculoskeletal (n 3 {4.84%}).
- Patients were excluded from this study if they were: outpatients, admitted to the Complex Continuing Care, Transitional Care, or Specialized Dementia units.

Patient Characteristics

- Variables collected about patients at admission included age, sex, weight, height, BMI, level of dependence, dysphagia, prescribed medications, pressure wounds, diet orders, reason for admission, CNST result, and time until first seen by an RD.

•Statistical Analysis:

•Comparisons between groups were performed using two sample t-test or Wilcoxon Rank Sum tests for continuous variables and Chi-square tests or Fishers exact tests for categorical variables

ACKNOWLEDGEMENT

The authors would like to acknowledge the guidance and knowledge of PierretteBuklis and Tracie Burke of University of Toronto, Margaret De Melo of UHN, as well as the clinicians and patients at Toronto Rehab who made this project possible.

Scan for References

RESULTS

Table 1. Characteristics of rehabilitation inpatients at admission

Characteristic	N	Total
Age, years, median	62	77 (66.0 - 86. 00)
Sex (female, male)	62	38 (61.2 9%) , 24 (38.71 %)
Weight at admission, kilograms, median	57	66. 30 (5 9.64 - 77. 50)
Body mass index at admission , kg/m 2, median	50	25. 21 (2 2.59 - 28. 82)
Length of acute care stay at UHN facility prior to TRI admission, days, median	42	18. 50 (9 .00 - 29. 00)
Length of stay at TRI facility, days, median	62	29. 00 (1 8.00 - 50. 00)
Level of independence at admission		
Independent, n (%)	58	6 (10.34 %)
Supervision , n (%)	58	8 (13.79 %)
Limited assistance , n (%)	58	25 (43.1 0%)
Extensive assistance, n (%)	58	17 (29.3 1%)
Total dependence , n (%)	58	2 (3.45%)
Dysphagia , presence of , n (%)	62	9 (14.52 %)
Chewing difficulty, presence of, n (%)	62	13 (20.9 7%)
Patients with stage 3 or 4 pressure injury, n (%)	62	3 (4.84%)
Patient seen by a Registered Dietitian, after admission, n (%)	62	32 (51.6 1%)
Malnutrition Screening		
Patients screened with CNST at admission, n (%)	62	41 (66.1 3%)
CNST+ patients screened at admission, n (%)	41	9 (21.95 %)
SGAs completed on CNST+ patients, n (%)	9	0 (0%)

Table 2. Significant and near-significant differences between CNST+ and CNST- patients

Variable	N	CNST+ (*n* 9)	CNST- (*n* 32)	*p*
Sex: male, n (%) , female, n (%)	14, 27	6 (66.67 %), 3 (3 3.33%)	8 (25%), 24 (75%)	0.0 421
Rehabilitation stream:				0.0 179
Spinal cord rehab, n (%)	10	6 (66.67 %)	4 (12.50 %)	
Low tolerance long duration (LTLD), n (%)	12	1 (11.11 %)	11 (34.3 8%)	
Geriatric, n (%)	17	2 (22.22 %)	15 (46.8 8%)	
Musculoskeletal, n (%)	2	0 (0%)	2 (6.25%)	
Weight at admission, kilograms, median	37	77. 00 (7 2.50 - 81. 10)	65. 70 (5 8.40 - 77. 00)	0.0 308
Number of total scheduled medications prescribed, median	41	12. 00 (9 .0 - 13. 0)	7.5 0 (6. 50 - 9.0 0)	0.0 114
Patient seen by a registered dietitian after admission, n (%)	23	8 (34.78 %)	15 (65.2 2%)	0.0 535
Length of stay at TRI facility, days, median	41	37. 00 (2 3.00 - 55. 00)	24. 00 (1 4.50 - 39. 50)	0.1 562

P value < 0.05 statistical significance

CONCLUSION

- Variables associated with patients identified by CNST as being at risk of malnutrition were male sex, higher weight at admission, being prescribed more medications (pain relief, supplements, and total), and admission to the spinal cord stream. The percentage of patients identified at risk of malnutrition (21.9%) was lower than the malnutrition prevalence found in international literature.
- It is uncertain if those identified at risk were malnourished, as no SGAs were completed.
- Future research would benefit from a larger sample size and inclusion of SGA results to ensure malnutrition prevalence can be measured.