

CONTINUITY-OF-CARE MODEL FOR NUTRITIONAL MANAGEMENT IN HAEMODIALYSIS PATIENTS: IDENTIFYING GAPS AND OPPORTUNITIES FOR IMPROVEMENT IN SINGAPORE

Grace Liew, Zet Hui Liang, Chooi Fong Yee

Department of Allied Health Services, The National Kidney Foundation Singapore

INTRODUCTION

Haemodialysis patients are at high risk of malnutrition due to reduced dietary intake, inflammation, comorbidities, and nutrient losses during dialysis. Their nutritional status often declines during hospitalisation, increasing susceptibility to post-discharge deterioration. Prompt identification of patients experiencing nutritional decline during and after hospitalisation is crucial to support recovery and prevent further decline. However, continuity of nutrition care between acute hospitals and community settings remains limited, resulting in gaps in management. In Singapore, there is currently no data on the prevalence of malnutrition among haemodialysis patients post-discharge, highlighting the need to identify gaps and opportunities for improvement in care transitions. This ongoing study aims to determine the prevalence of malnutrition among haemodialysis patients post-discharge and develop a collaborative pathway to enhance continuity of nutritional care for haemodialysis patients transitioning from acute to community settings.

METHODS

- This is an ongoing prospective observational study conducted from October 2024 to October 2026, involving haemodialysis patients reviewed by acute hospital (AH) dietitians during admission.
- Nutritional status is assessed using the Subjective Global Assessment (SGA) tool by AH dietitians during hospitalisation or prior to discharge. The SGA classifications are as follows:

Nutrition Status	SGA Classification
Well nourished	A
Malnourished	B or C
At risk of malnutrition	Patients identified with early signs of nutritional decline or with risk factors predisposing them to deterioration, but not yet sufficient to be classified as SGA B

- Demographics and clinical data, including biochemical markers (serum albumin, normalised protein catabolic rate (nPCR) and pre-dialysis urea (Pre-U)), are retrieved from the electronic medical record system.
- Descriptive statistics (mean ± SD) are used to summarize the variables. Comparisons between well-nourished (WN) and at-risk/malnourished (MN) groups are performed using Welch's t-test, with statistical significance set at $p < 0.05$.
- In parallel, the study involves the development of a collaborative pathway aimed at enhancing continuity of nutritional care for haemodialysis patients. The feasibility and effectiveness of this pathway will be evaluated in the later phase of the study.

PRELIMINARY RESULTS (OCTOBER 2024 – APRIL 2025)

- A total of 79 nutrition memos have been received with a mean age of 70 ± 11 years, with 50.6% being male, and a mean dialysis vintage of 5.6 ± 5.6 years (Table 1).
- After excluding patients with missing nutrition-related biochemical data (e.g., hospitalised, newly enrolled, or deceased), 67 patients were included in the analysis.
- Among these, 55% ($n = 37$) were identified as being at risk of malnutrition or malnourished (Figure 1).
- Baseline nutrition-related biochemical markers showed a statistically significant difference in serum albumin between well-nourished (WN) and at risk/malnourished (MN) groups (WN: 36.1 ± 5.0 g/L; MN: 32.8 ± 5.6 g/L, $p < 0.05$) (Table 2).
- However, differences in nPCR (WN: 0.89 ± 0.29 g/kg/day; MN: 0.84 ± 0.24 g/kg/day, $p = 0.5$), and Pre-U (WN: 100.9 ± 38.6 ; MN: 90.7 ± 30.5 , $p = 0.2$) were not statistically significant.

Table 1: Characteristics of patients (n=79)

	Overall (n=79)	Well Nourished (n=33)	At Risk/Malnourished (n=46)	P-value
Age (year) ^a	70 ± 11	66 ± 12	73 ± 9	0.002*
Race ^b				0.027*
Chinese	56 (70.9)	19 (57.6)	37 (80.4)	
Non-Chinese	23 (29.1)	14 (42.4)	9 (19.6)	
Gender ^b				0.436
Male	40 (50.6)	15 (45.5)	25 (54.3)	
Female	39 (49.4)	18 (54.5)	21 (45.7)	
Dialysis Vintage (year) ^a	5.6 ± 5.6	4.4 ± 4.6	6.5 ± 6.1	0.11

^a Mean ± standard deviation ^b Frequency, n (%) *P-value <0.05 shows statistical significance

Figure 1: Distribution of patient's nutrition status at discharge (n=67)

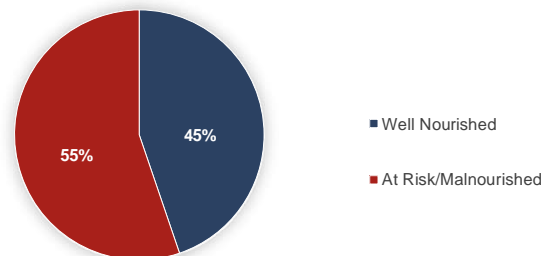


Table 2: Baseline biochemical markers of discharged patients (n= 67)

Indicator	Overall (n=67)	Well Nourished (n=30)	At Risk/Malnourished (n=37)	P-value
Serum Albumin (g/L)	34.3 ± 5.6	36.1 ± 5.0	32.8 ± 5.6	0.015*
nPCR (g/kg/day)	0.86 ± 0.26	0.89 ± 0.29	0.84 ± 0.24	0.493
Pre-U (mg/dL)	95.3 ± 34.5	100.9 ± 38.6	90.7 ± 30.5	0.234

*P-value <0.05 shows statistical significance.

CONCLUSION

Preliminary findings reveal a high prevalence of malnutrition among haemodialysis patients following hospital discharge, with at-risk/malnourished patients showing poorer nutrition-related biomarkers.

The implementation of this continuity-of-care model has facilitated prompt communication of patient nutrition information and improved post-discharge follow-up. Extending this approach to other acute hospitals could further enhance continuity of care and improve patient outcomes nationwide.

Ongoing data collection on nutrition-related biochemical markers and hospital readmission rates will provide additional insight into the impact of this model.

Let's get social

