

# Home-Delivered Meal Engagement Among Hemodialysis Patients and Providers in Denver

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## Introduction

- Hemodialysis (HD) patients face one of the most difficult diets among clinical patient populations.
- HD diet adherence is also reported as low with providers generally lacking the time & resources to implement effective behavior change.
- Medical meals** can address food insecurity & are formulated to meet nutrient recommendations for chronic diseases such as diabetes, kidney disease, & heart disease.

## Methods

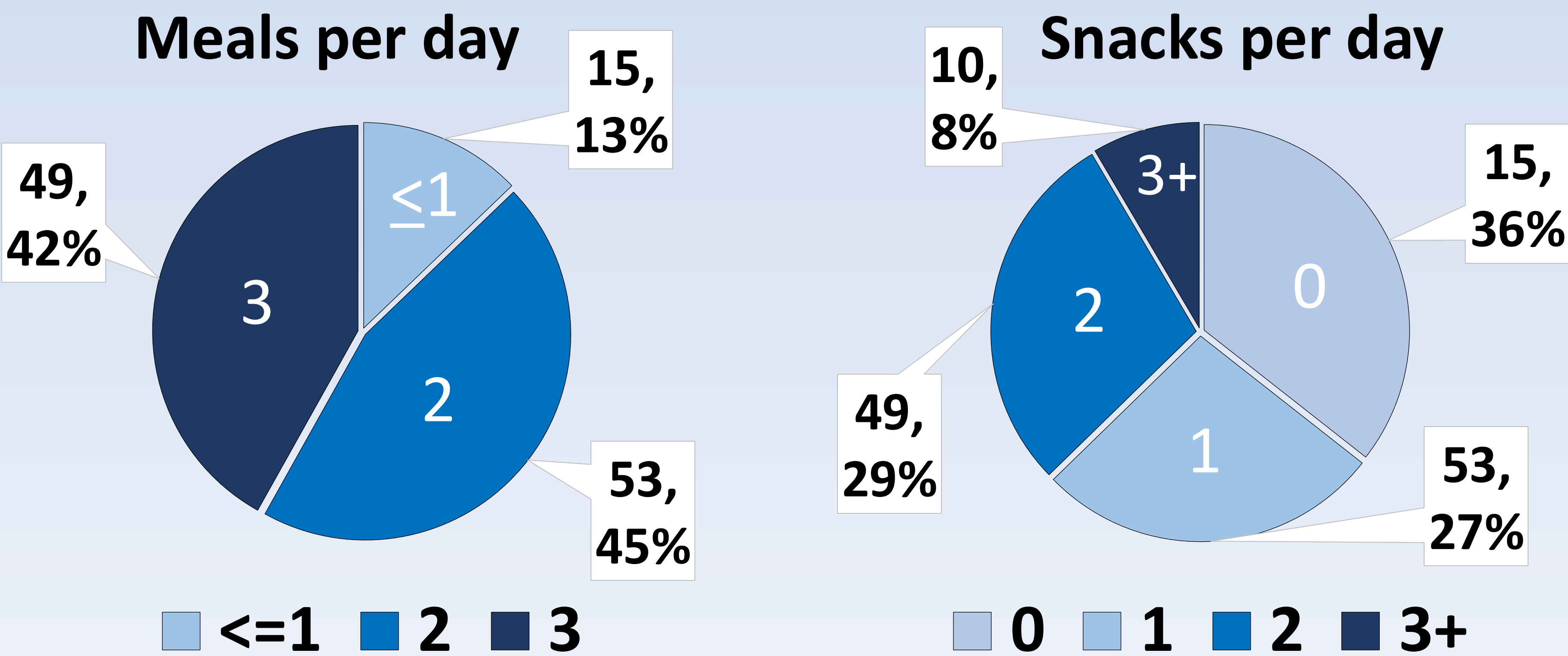
We surveyed 118 patients and 26 staff at Fresenius dialysis centers within the Denver metropolitan area. Surveys focused on:

- 1) Patient diet intake
- 2) Awareness, support, & utilization of meal programs, and
- 3) Nutritional challenges & barriers (including food security).

## Patient Demographics

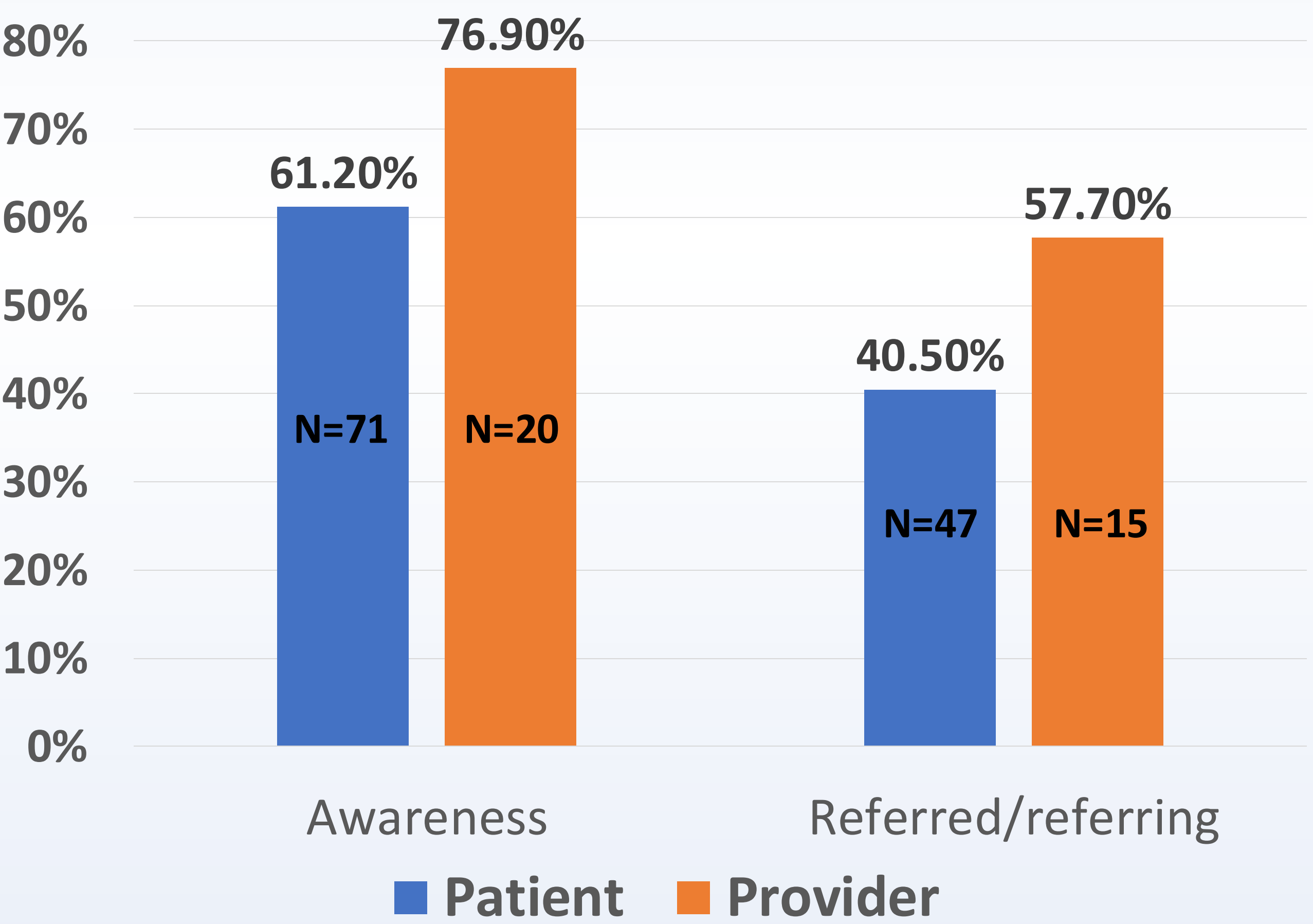
Characteristic	Values
Age, yr	61.0 ± 14.2
Dialysis vintage, yr	4.6 ± 4.9
Sex, N (%)	
Male	69 (58.5%)
Female	49 (41.5%)
Race, N (%)	
White, Non-Hispanic	24 (20.3%)
Hispanic or Latin	42 (35.6%)
Black or African American	37 (31.4%)
Education completed, N (%)	
Less than high school	28 (24.1%)
High school	40 (34.5%)
Some college or Associates	41 (35.3%)
College graduate or above	7 (6.0%)
Household income, \$	
Less than \$10,000	9 (7.6%)
\$10,001 - \$20,000	19 (16.1%)
\$20,001 - \$40,000	14 (11.9%)
More than \$40,001	14 (11.9%)
Don't know/refused	62 (52.5%)

## Results: Patient Reported



\* N=2 patients reporting eating “0” meals per day.  
\*\* N=1 patients reporting eating “4” meals per day.

## Medical Meal Awareness & Referrals



## Patient Reported Diet

Characteristic	Values
Exceeds renal dietary micronutrient restrictions, %	36.2 ± 31.6
Exceeds renal calorie and protein recommendations, %	46.1 ± 34.7
Eat fruit/vegetables daily, n (%)	78 (76.5%)
Eat processed foods daily, n (%)	41 (40.6%)
How often follows a renal diet, N (%)	
Not at all	17 (14.9%)
One-quarter of the time	10 (8.8%)
Half of the time	31 (27.2%)
Three-quarters of the time	35 (30.7%)

## Other Key Results:

- N=60, (52.2%) patients reported living in a food desert.
- More than a quarter (26.3%) of patients reported food insecurity.
- White individuals (81.5% vs. 55.0% Hispanic/Latin and 51.4% Black respectively) were the **most aware of meals** ( $\chi^2_2=6.8$ ,  $p=0.03$ ).
- Black individuals were the **lowest** general proportion of people to be **referred to meals or services** (29.7% vs. 48.1% White and 45.0% Hispanic/Latin).
- Lastly, Hispanic/Latin (42.9%) individuals were **more likely to be food insecure** than White (18.5%) or Black (18.9%) individuals ( $\chi^2_2=7.3$ ,  $p=0.03$ ).

## Provider Demographics

Mean Age:	42.7 ± 12.4 years
Dialysis care experience (years):	8.4 ± 6.7
Sex:	80.8% Female
Race (highlight):	69.2% White, Non-Hispanic
<b>Dialysis providers/staff self-reported as:</b>	
• N=9 (34.6%) “Medical doctor or Advanced practice provider (Nurse practitioner or physician assistant)”	
• N=4 (15.4%) “Registered nurse”	
• N=3 (11.5%) “Social worker”	
• N=4 (15.4%) “Registered dietitian”	
• N=6 (23.1%) “Other ( “Technician” or “Aide”).”	

## Results: Provider Reported

### Provider Estimates of Patients’ Diet

Characteristic	Values
Meals eaten per day:	
One or less	25.1 ± 11.5%
Three	24.2 ± 14.3%
Exceeds renal dietary micronutrient restrictions, %	62.5 ± 19.3
Exceeds renal calorie and protein recommendations, %	38.5 ± 18.6
Daily dietary habits, N (%)	
Eat fruit/vegetables daily	28.8 ± 13.4%
Eat processed foods daily	71.5 ± 11.3%

## Conclusions

- Our findings reveal a **need for education** around home-delivered medically tailored meals for both patients and providers.
- There is a significant need to address food insecurity/deserts in the HD population.
- Medically tailored meals represent a potential method to alleviate or bypass some of the barriers & challenges experienced by patients.