UNIVERSITY of WASHINGTON
SCHOOL OF PUBLIC HEALTH

Measuring Nutrition Risk Changes of Meals on Wheels & Community Dining Clients in the Greater Seattle Area

Vanessa H. Tran, MPH Nutrition Student and Dietetic Intern | Program: Food Systems, Nutrition and Health
Faculty Advisor: Anne Lund MPH, RDN, FAND | Site Supervisors: Stefanie Sismaet MS, RD, CD and Dorothy Nguyen MPH, RD, CD.

Background

According to the U.S. Census Bureau, older adults are predicted to make up approximately 22% of the population by 2040.[1]

Nutrition Risk Factors for Older Adults (Age 60+)[2]
- Loss of appetite
- Food insecurity
- Chronic illness
- Social isolation

Food security and nutrition programs like Meals on Wheels (MOW) and Congregate/Community Dining (CD) are essential to help community-dwelling older adults improve and maintain their nutritional status.

Introduction

Sound Generations strives to provide accessible and inclusive services to support the changing needs of older adults as they age.

Their Meals on Wheels program delivers frozen prepared meals to homebound seniors in the Greater Seattle area and the Community Dining program serves free meals for seniors at 27 different community centers. Both programs aim to address nutrition risk factors common in older adults, namely food insecurity, social isolation, mobility/transportation, and chronic/acute illness.

Photo Credit: Sound Generations

Practicum Aims

- Quantitatively assess the impact on nutrition risk, measured by the Nutrition Risk Screening (NRS) Higher score → higher nutrition risk
- Compare the performance of Sound Generations' MOW/CD programs to national benchmarks and similar programs
- Identify possible funding sources for program capacity building
- Provide recommendations based on data analysis findings and generate a list of questions to assess the cultural relevance of meals at culturally-specific CD sites

Photo Credit: Sound Generations

Methods

Descriptive statistics were completed for both MOW and CD client populations.

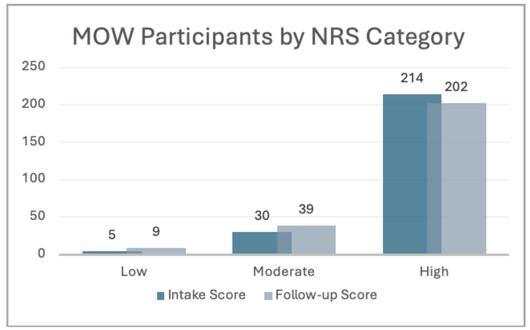
Statistical Analyses - Significance level at 0.05
- Change in NRS score: Paired t-test and one-sided t-test
- Question-based Analyses: McNemar's test and Exact Binomial Test
  - "I eat few fruits or vegetables or milk products"
  - "I eat alone most of the time" (for CD only)
  - "I eat fewer than two meals/day" (for MOW only)
- Subgroup risk analysis: Multivariate linear regression

Key Findings

At intake, the average NRS score for MOW clients (n=249) was 10.59 and at ~12 months it was 9.10, with the average change in score at – 1.49 (p = 1.894e-08).

"I eat fewer than 2 meals per day."
(p-value = 0.010)

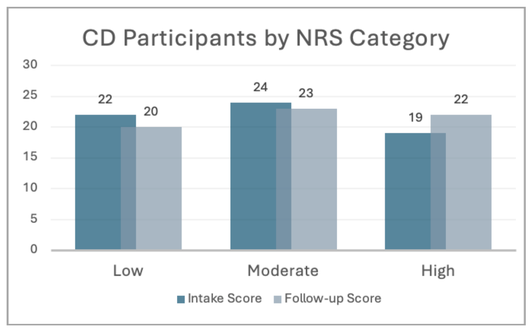
"I eat few fruits or vegetables or milk products."
(p-value = 9.537e-08)



For CD clients (n=65), the average intake score was 4.66 and the average follow-up score was 5.03, making the mean difference +0.37 (p = 0.493).

"I eat fewer than 2 meals per day."
(p-value = 1)

"I eat few fruits or vegetables or milk products."
(p-value= 1)



Implications of Findings

Data analyses demonstrate that MOW clients' changes in NRS scores/answers to questions were statistically significant, indicating that they were not simply due to chance. The analyses for CD were not statistically significant.

Recommendations

MOW should consider supplementing current nutrition assessment tools with the MNA-SF.
- NRS was initially designed as an awareness tool and has been found to overestimate nutrition risk[3]
- MOW-Central Texas has piloted supplementation of the MNA-SF (Mini Nutritional Assessment-Short Form)[4]
  - Case managers and clients felt comfortable
  - ~4 minutes to complete

CD should prioritize increasing NRS and other survey completion, starting with sites with the lowest completion.
- Certain sites had disproportionately high NRS scores, but few completed surveys
- Increasing NRS completion will help the CD program identify sites with more high-risk clients
  - Can inform resource allocation

Sound Generations should advocate for data sharing and sponsor/host research projects.
- Lack of recent, published research on changes in NRS score
- Lack of data sharing between organizations running similar programs

References

1. Get the Facts on Older Americans. Published June 1, 2024. https://www.ncoa.org/article/get-the-facts-on-older-americans/
2. Cruz-Jentoft AJ, Volkert D. Malnutrition in older adults. New England Journal of Medicine. 2025;392(22):2244-2255. doi:10.1056/nejmra2412275
3. Nutritional screening in community-dwelling older adults: a systematic literature review. PubMed. Published 2010. https://pubmed.ncbi.nlm.nih.gov/20805090/
4. Ullevig SL, Sosa ET, Crixell S, et al. Impact of Home-Delivered Meals on Nutrition Status and Nutrient Intake among Older Adults in Central Texas.The Journal of Nutrition Health & Aging. 2018;22(7):861-868. doi:10.1007/s12603-018-1038-0