Educational Intervention on Resident Knowledge and Counseling Confidence on the Mediterranean Diet for Neurocognitive Health and Dementia Prevention

Jacquelin Kwentus BS; Nimmi Wickramasuriya MD; Heather Nace RD, LDN; Shail Vyas MD; Michele Longo MD, MPH

Tulane MEDICINE

The Goldring Center for Culinary Medicine
TULANE UNIVERSITY

INTRODUCTION

Nutrition education remains limited in U.S. medical training, with fewer than one-third of medical schools meeting recommended nutrition instruction standards, and trainees frequently reporting low confidence in dietary counseling (Adams et al., 2015). At the same time, growing evidence supports the role of diet in neurocognitive health: high adherence to the Mediterranean diet has been associated with a 36% reduction in the risk of developing Alzheimer's disease (Maraganore et al., 2021), and neuropathologic studies demonstrate that adherence to Mediterranean and MIND diets is linked to lower β-amyloid burden and reduced Alzheimer's disease pathology (Agarwal et al., 2023). Despite this, dietary counseling remains underutilized in neurologic and general clinical practice. This study aims to evaluate whether a culinary medicine–based educational intervention can improve resident knowledge of Mediterranean diet guidelines and increase confidence in counseling patients on nutrition for neurocognitive health and dementia prevention.

AIM

Implement a culinary medicine–based educational intervention to improve resident knowledge of Mediterranean diet guidelines and increase confidence in counseling patients on nutrition for neurocognitive health and dementia prevention.

METHODS

Neurology residents participated in a structured educational session led by the Goldring Center for Culinary Medicine at Tulane University School of Medicine. The educational intervention included evidence-based instruction on Mediterranean diet principles, neurocognitive health benefits, practical counseling strategies, and common patient barriers to healthy eating. Participants completed a pre- and post-session assessment consisting of:

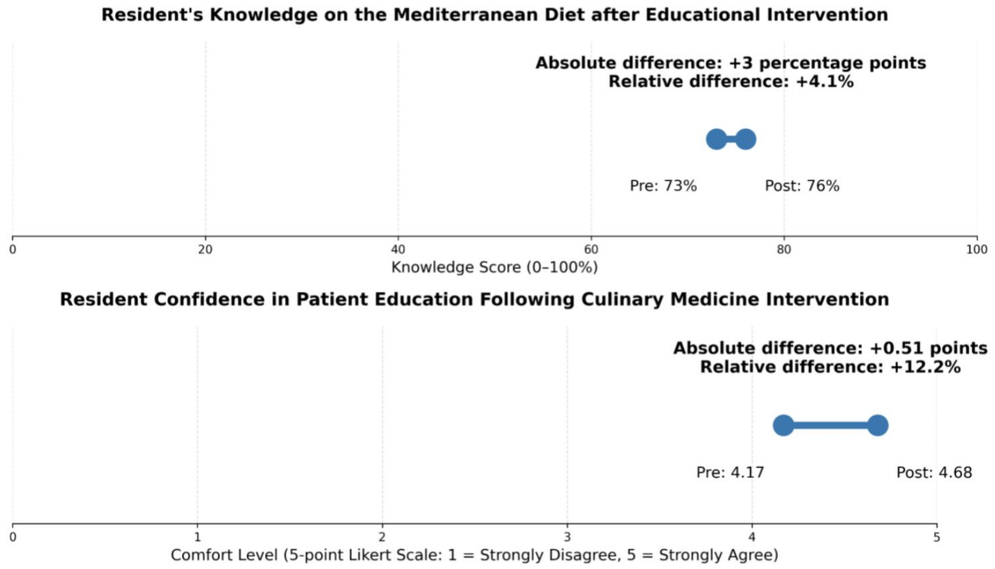
1. Knowledge-based multiple-choice questions evaluating Mediterranean diet recommendations (vegetable intake, fish consumption, fat sources, dairy selection) and evidence related to cognitive risk reduction
2. Likert-scale comfort assessments measuring confidence in counseling patients, understanding of heart-healthy dietary patterns, ability to provide practical advice during brief clinic visits, and perceived importance of nutrition counseling in neurologic care

Descriptive statistics were used to assess changes in anonymized overall knowledge accuracy and self-reported comfort levels.

QR code includes Mediterranean diet quiz answers and Likert scale comfort assessment

RESULTS

The mean value of comfort level (1 being uncomfortable and 5 being very comfortable) increased from 4.17 to 4.68, representing an absolute increase of 0.51 and a relative increase of 12.2%. The average pre quiz score increased from 73% to a post quiz score of 76%, an absolute increase of 3 percentage points and a relative increase of 4.1%.



CONCLUSIONS

A brief culinary medicine–based educational intervention demonstrated improvement in neurology residents' knowledge of Mediterranean diet principles while also increasing their confidence in providing nutrition counseling for neurocognitive health and dementia prevention. These findings suggest that targeted, practical nutrition education can address gaps in medical training and enhance clinicians' readiness to incorporate evidence-based dietary counseling into neurologic care. Integrating similar interventions into residency curricula may support broader adoption of diet-based strategies for neurocognitive risk reduction.

CITATIONS or ACKNOWLEDGEMENTS

Agarwal, P., Leurgans, S. E., Agrawal, S., Aggarwal, N. T., Cherian, L. J., James, B. D., Dhana, K., Barnes, L. L., Bennett, D. A., & Schneider, J. A. (2023). Association of Mediterranean-DASH Intervention for Neurodegenerative Delay and Mediterranean Diets With Alzheimer Disease Pathology. Neurology, 100(22), e2259–e2268. https://doi.org/10.1212/WNL.0000000000207176

Solch, R. J., Aigbogun, J. O., Voyiadjis, A. G., Talkington, G. M., Darensbourg, R. M., O'Connell, S., Pickett, K. M., Perez, S. R., & Maraganore, D. M. (2022). Mediterranean diet adherence, gut microbiota, and Alzheimer's or Parkinson's disease risk: A systematic review. Journal of the neurological sciences, 434, 120166. https://doi.org/10.1016/j.jns.2022.120166

Adams, K. M., Kohlmeier, M., & Zeisel, S. H. (2010). Nutrition education in U.S. medical schools: latest update of a national survey. Academic medicine : journal of the Association of American Medical Colleges, 85(9), 1537–1542. https://doi.org/10.1097/ACM.0b013e3181eab71b