Assessment of Nutrition Knowledge, Barriers, and Educational Needs to Inform Lifestyle Medicine Interventions in an Underserved Population in Galveston, Texas

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Introduction

Poor nutrition is a major modifiable risk factor for chronic diseases commonly managed in primary care, including type 2 diabetes, obesity, hypertension, and cardiovascular disease. Lifestyle medicine emphasizes evidence-based nutritional interventions to prevent and treat chronic disease.[1] Effective implementation of these interventions requires an understanding of the factors that influence dietary behaviors within the target community. Underserved communities often face significant challenges to healthy eating due to limited access to nutritious foods, food cost, and inadequate nutrition education.

In 2023, Feeding America's Map the Meal Gap estimated that 16.4% of Galveston County, Texas residents, representing approximately 58,210 individuals, experienced food insecurity.[2]

Objective

The **Family Medicine Interest Group (FMIG) at UTMB**, in partnership with **Access Care of Coastal Texas (ACCT)** and **Groundswell**, developed an outreach initiative to improve access to healthy meals and nutritional education among the Galveston community.

To assess nutrition knowledge, dietary behaviors, barriers to healthy eating, and nutrition education needs among adults participating in community outreach events in Galveston, Texas.

Methods

A **repeated cross-sectional, descriptive community needs assessment** was conducted among adults (≥ 18 years) attending FMIG at UTMB Community Meals outreach events in Galveston, Texas.

- The anonymous, voluntary Google Forms survey (IRB exempt) consisted of nine items:
  - Participant age range
  - Prior participation in FMIG at UTMB nutritional education sessions
  - Self-reported dietary quality
  - Estimated daily intake of dietary fiber, sodium, and protein
  - Sources of nutritional information
  - Perceived barriers to healthy eating
  - Topics of interest for future nutrition education

Data was analyzed using descriptive statistics.

Results

The community-based needs assessment included **75 survey respondents** who provided information on dietary habits, nutrition knowledge, and barriers to healthy eating. Key findings are summarized below. Most survey respondents were older adults, with 67% aged ≥ 50 years.

Respondents most expressed interest in learning about healthy, affordable meals (69%), with priorities including fiber and gut health (36%), meal planning (35%), and cooking skills (18%). These results emphasize a strong preference for practical, **actionable nutrition education** focused on **affordability** and **daily dietary decision-making.**

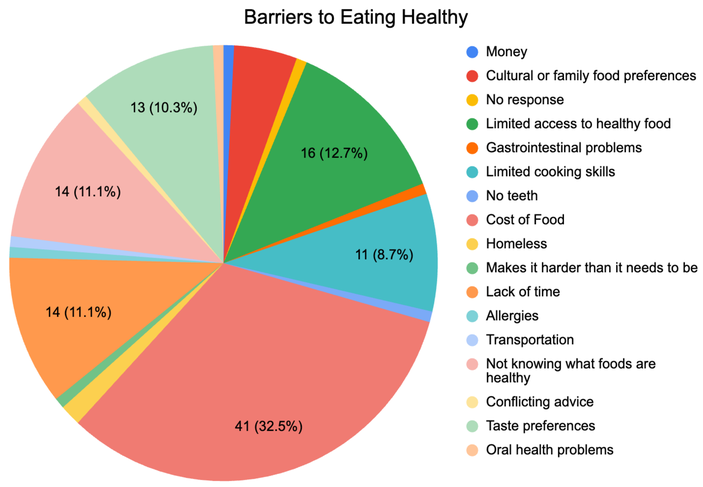


Figure 1. Barriers to healthy eating (n=74; multiple responses allowed).

The most reported barrier to healthy eating was food cost, followed by limited access to healthy foods, time constraints, and not knowing what foods are healthy.

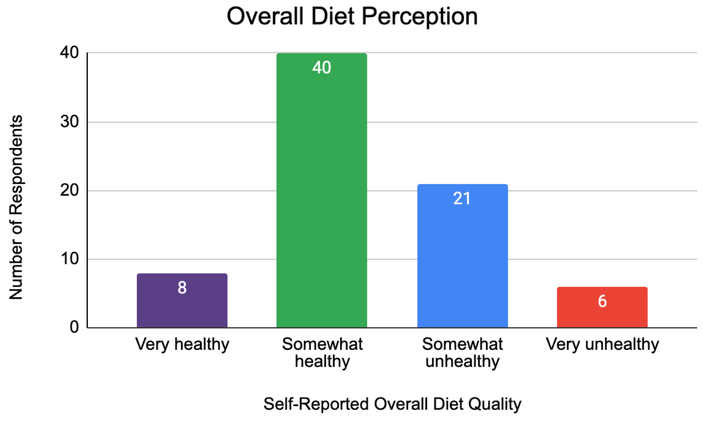


Figure 2. Self-reported overall diet quality (n=75).

Most respondents rated their overall diet quality as somewhat healthy (53%) or very healthy (11%).

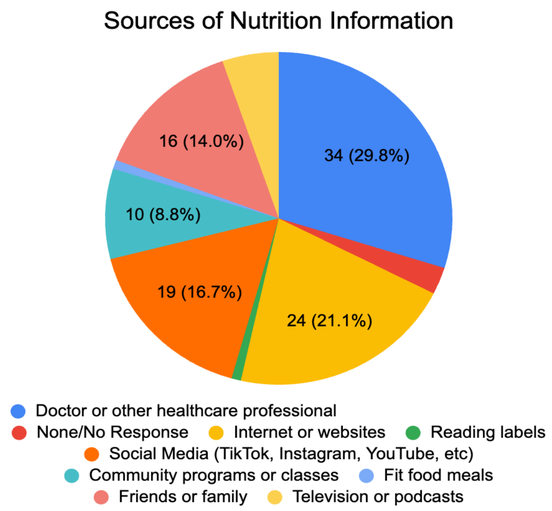


Figure 3. Sources of nutrition information (n=73; multiple responses allowed).

Healthcare professionals and internet-based sources were most reported as sources of nutrition information.

Intake of Key Nutrients Compared to FDA Daily Values

Nutrient	FDA Daily Value	# of Respondents Outside Recommendation
Fiber	28 g/day	32 (< 26 g/day)
Protein	50 g/day	10 (< 40 g/day)
Sodium	2300 mg/day	4 (> 2300 mg/day)

Table 1. Self-reported daily intake of key nutrients.

The Food and Drug Administration (FDA) recommends the above daily value for key nutrients.[3] Many respondents were unable to estimate their daily intake of key nutrients, particularly fiber (38 respondents; 52%), protein (32 respondents; 44%), and sodium (25 respondents; 35%).

Conclusion

Findings provide a foundation for developing **lifestyle medicine interventions** within primary care and community settings to improve **nutrition knowledge** while also addressing barriers to healthy dietary behaviors and preventing chronic disease through these approaches.

- The older age demographics of the survey represents a population with increased relevance for **preventive care** and **chronic disease management**.
- Although many participants perceived their diet quality as somewhat healthy, responses suggested **uncertainty regarding adequate intake of essential nutrients,** highlighting opportunities for targeted nutrition education.
- Dietary patterns are closely associated with chronic conditions commonly managed in primary care, including **hypertension, diabetes, and obesity.**
- Participants reported receiving nutrition information from diverse sources, suggesting a need for **consistent, evidence-based nutrition guidance** in community and clinical settings.
- Barriers to healthy eating highlight the complex interplay of **social determinants** and **dietary behaviors** within this community.

Limitations: Survey responses were collected from a sample of 75 participants, which may limit generalizability to other populations. Questions were not mandatory, and some participants did not respond to all questions. Findings were based on self-reported data.

Future Directions

Results can inform the development of a structured **nutrition education curriculum** and **healthy recipes** tailored to community needs within an underserved Galveston population in conjunction with ACCT and Groundswell.

- Future evaluation efforts may assess changes in **nutrition knowledge, health behaviors, and clinical outcomes** following lifestyle medicine interventions.

References