Examining Predictors for Diet Quality: A Needs Assessment of Rural Versus Urban Older Adults

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Objective

To assess rural and urban older adults' diet quality, food insecurity, and self-efficacy for overcoming barriers to making informed nutrition-related decisions.

Introduction

- Diet and lifestyle are vital in maintaining good health and independence for OAs.

- OAs in rural areas are at greater risk for chronic diseases, poor diet quality and limited accessibility to healthy foods, compared to their urban counterparts.[1]

- Increasing one's self-efficacy or the confidence to change certain health behaviors can improve self-management of chronic diseases and overall health.

- The Dietary Screening Tool (DST),[2] is a validated tool to assess nutrition risk and dietary quality and patterns of OAs.

Methods

- The study was approved by the University of Maryland's Institutional Review Board [1397895-1].

Participant sampling

- From April-August 2019, self-reported surveys in a cross-sectional study were administered to 475 (Urban n=215, Rural n=260) OAs (≥ 50 years+) in Maryland, who participated at senior and community sites (n=44).
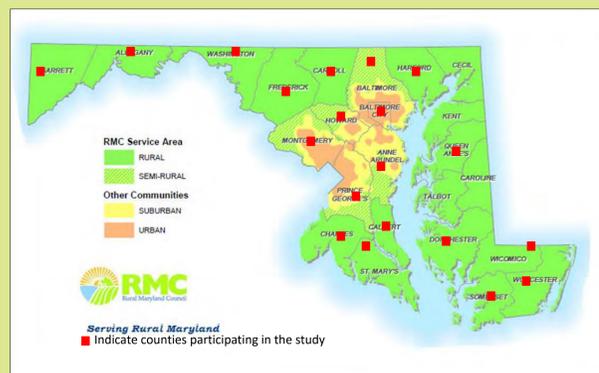- Convenience sampling was used to recruit OAs.

Evaluation tool

- The DST[2]
- Healthy Eating Self-Efficacy Scale[3]
- Food insecurity[4]

Data Analysis

- Data were analyzed using SPSS 24.0 (t-test, Chi-square, and multiple linear regression).

Figure. Map of rural-urban counties in Maryland,[5] denoting 19 counties that participated in the needs assessment of OA.

Results

Table. A comparison of demographics, perceived health, food insecurity, and dietary quality of rural and urban older adults in Maryland.

Variables	Total	Urban (n=205)	Rural (n=260)	P-value
Age (n=427)	74.53 ±8.47	74.75 ±7.98	74.39 ±8.96	NS
Gender (n=457)				
Male	??	28 (13.8)	45 (18.4)	NS
Female	382 (83.6)	175 (86.2)	199 (81.6)	
Marital Status (n=448)				
Single/Never married	51(11.4)	21 (10.8)	29 (11.9)	NS
Married	112(25.0)	53 (27.2)	57 (23.4)	
Divorced/Separated	109(24.3)	44(22.6)	62(25.4)	
Widowed	176(39.3)	77(39.5)	96(39.3)	
Ethnicity (n=384)				
Hispanic /Latino/Latina	12(3.1)			
Not Hispanic/Latino/Latina	372(96.9)			
Race (n=457)				
White	247 (54.0)	92(45.1)	151(62.1)	<.001
Black or African American	172 (37.6)	87(42.6)	82(33.7)	
Asian	22 (4.8)	18(8.8)	2(0.8)	
Other (American Indian, Alaska Native, Native Hawaiian, Tow or more races)	16 (3.5)	7(3.4)	8 (3.3)	
Education (n=448)				<.001
Less than high school	34(7.6)	6(3.1)	28(11.5)	
High school graduate/GED	164(36.6)	66(34.0)	96(39.3)	
Some college, Associate's degree or technical degree	151(33.7)	64(33.0)	83(34.0)	
Bachelor's or higher	99(22.1)	58(29.9)	37(15.2)	
Perceived health status (n=448)				NS
Very poor/somewhat poor	63(14.1)	28(14.6)	34(13.8)	
Average	147(32.8)	55(28.6)	90(36.6)	
Somewhat good/Very good	238(53.1)	109(56.8)	122(49.6)	
Living arrangement (n=446)				
Live alone	239(53.6)	102(52.6)	132(54.1)	NS
Live with spouse	120(26.9)	55(28.4)	64(26.2)	
Live with adult children, grandchildren/Other	87(19.5)	37(19.1)	48(19.7)	
Average number of diseases (range 0-7)	1.98 ± 1.33	1.76 ± 1.18	2.14 ±1.41	.002
Food Security(n=428)				
Food Secure	307(71.7)	149(75.3)	154(69.7)	NS
Food Insecure	121(28.3)	49(24.7)	67(30.3)	
Average DST score (n=475)**	60.6 ± .53[a]	61.90 ± 11.08*	59.46*	.024*
		62.6 ± 11.10	59.44 ± 11.95	.012
DST category**				
At Risk	215	62(40.0)	95(46.8)	NS
Possible risk	212	75(48.4)	86(42.4)	
Not at risk	48	18(11.6)	22(10.8)	
Average Self-efficacy score (n=432)	15.1±3.6	15.59±3.42	14.54±3.69	.003

*multiple answers

**multiple imputation was conducted and pooled data was used.

a: Std. Error

- Median age of participants was 74.5 years old.

- Geographic location was statistically significantly associated with race (p<.001) and education (p<.001). African Americans and other ethnic minorities and those with a bachelor or higher degree were more likely to live in urban areas.

- Prior to controlling for other variables, rural OAs compared to urban/suburban OAs had significantly:
  ○ Lower DST scores (p=.024)
  ○ Higher average number of chronic diseases (p=.004)
  ○ Lower self-efficacy for changing health behaviors (p=.001)

- After controlling for other variables, DST scores were significantly related to food insecurity (β= -3.097, p<.05) and perceived self-efficacy (β=1.145, p<.001) among OAs. Those who were food insecure and had higher self-efficacy were more likely to have a higher DST score.

Conclusions

- Food insecurity and perceived self-efficacy were significant predictors of DST scores among OAs. [6] [7]

- This needs assessment indicated the necessity for nutrition education interventions that address food insecurity and barriers to self-efficacy for improving diet quality of OA.

Limitations

- Because this was self-reported data, these findings may not truly reflect the risk for poor diet quality among rural older adult populations.

Implications

- Findings support the value of needs assessments for identifying priority areas to serve as the basis for nutrition education interventions.

- Nutrition educators should include self-efficacy and food insecurity when assessing dietary quality of OA.

Acknowledgements

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