Nativity Differences Within Living Arrangement and Cognitive Impairment in Older Mexican Americans Over 12 years of Follow-Up

Vedant Agrawal, BS[1]; Soham Al Snih MD, PhD[2,3,4]

[1]John Sealy School of Medicine, [2]Department of Population Health and Health Disparities/School of Public and Population Health, [3]Geriatrics Medicine/Department of Internal Medicine, [4]Sealy Center on Aging

BACKGROUND

- **American Latinos** face **higher rates of cognitive impairment** and dementia, with 1.5 times greater Alzheimer's risk than non-Hispanic whites.
- Factors like **nativity and living arrangements significantly impact late-life cognitive health** in older adults, with cultural heritage and community factors modifying these relationships.
- **Limited research has specifically examined** how nativity and living arrangements affect cognitive health in Mexican American older adults.

AIM

To examine nativity differences in the relationship between living arrangement and cognitive impairment among Mexican Americans aged ≥ 75 years with normal or high cognitive function at baseline over a 12-year period.

METHODS

- Data from the **Hispanic Established Population for the Epidemiological Study of the Elderly (2004/2005–2016)**
- A total of **1,026 participants** aged ≥75 years were included, **grouped by nativity** (US-born vs. Foreign Born) and further divided based on **living arrangement.**
- **Independent variable** was *living arrangement*
  - Living alone
  - Living with 1 other
  - Living with 2+ people.
- **Outcome variable** was *cognitive function,* measured using the Mini Mental State Examination (MMSE), with scores ranging from 0-30
  - **Cognitive impairment** was defined as MMSE score < 21
- **Covariates:**
- **Sociodemographic factors** (age, gender, years of education, marital status)
- **Language of interview** (Spanish or English)
- **Pain** on weightbearing
- **Falls** (more than one in last twelve months)
- **Comorbidities** encoded as multimorbidity (2 or more of the following self-reported conditions: hypertension, arthritis, diabetes, heart failure, heart attack, stroke, cancer, hip fracture, anemia, kidney disease, COPD, thyroid disease)
- **Depressive symptoms** measured with the Center for Epidemiological Studies Depression Scale – CES-D ≥ 16)
- **Physical function** measured with the Short Physical Performance Battery (SPPB) test
- **Handgrip strength** measured in kg with a handheld dynamometer

Statistical Analysis

- **Chi-square and Analysis of Variance** (ANOVA) were used to test the baseline characteristics of the sample by living arrangement within each nativity group.
- **General estimating equation models** were used to estimate cognitive impairment as a function of living arrangement over time. All variables were used as time-varying except for gender and education. All analyses were performed using the SAS System for Windows, version 9.4 (SAS Institute, Inc., Cary, NC).

Contact:
Vedant Agrawal, BS
John Sealy School of Medicine
Email: vsagrawa@utmb.edu

RESULTS

Table 1

Baseline Descriptive Characteristics of the Sample by Nativity and Living Arrangement (N=1026).

	US-Born				Foreign-Born			
	Living Alone	Living With 1 Other	Living with 2+ People	p-value	Living Alone	Living With 1 Other	Living with 2+ People	p-value
Total, n (%)	104 (26.7)	166 (42.7)	119 (30.6)		170 (26.7)	303 (47.6)	164 (25.7)	
Age, mean ± SD	82.2 ± 5.6	80.4 ± 3.6	81 ± 4.9	0.0086	81.2 ± 4.2	80.2 ± 3.5	80.7 ± 4.2	0.0189
Female, n (%)	76 (73.1)	90 (54.2)	64 (53.8)	0.0033	126 (74.1)	189 (62.4)	92 (56.1)	0.0021
Marital status, n (%)				<0.0001				<0.0001
Married	3 (2.9)	117 (70.5)	70 (58.8)		2 (1.2)	203 (67.0)	89 (54.3)	
Separated /divorced	19 (18.3)	5 (3.0)	7 (5.9)		38 (22.3)	26 (8.6)	8 (4.9)	
Widow	82 (78.9)	44 (26.5)	42 (35.3)		130 (76.5)	74 (24.4)	67 (40.8)	
Education (years), mean ± SD	5.3 ± 3.5	5.2 ± 3.5	3.1 ± 2.8	0.0059	7.2 ± 3.8	7.4 ± 4.0	7.0 ± 4.0	0.5982
Spanish Interview, n (%)	99 (95.2)	157 (94.6)	113 (95.0)	<0.0001	110 (64.7)	208 (68.7)	111 (67.7)	0.6769
Multimorbidity, n (%)	63 (60.6)	123 (74.1)	87 (73.1)	0.0431	119 (70.0)	201 (66.3)	117 (71.3)	0.4849
Pain, n (%)	56 (53.9)	94 (56.6)	68 (57.1)	0.8671	100 (58.8)	144 (47.5)	86 (52.4)	0.0607
Falls (≥ 1) , n (%)	37 (35.6)	45 (27.1)	42 (35.3)	0.2194	54 (31.8)	80 (26.4)	43 (26.2)	0.4004
High depressive symptoms (CES-D ≥ 16) , n (%)	23 (22.1)	18 (10.8)	14 (11.8)	0.0237	23 (13.5)	17 (5.6)	17 (10.4)	0.0115
MMSE, score ± SD	24.8 ± 2.9	25.4 ± 3.2	24.7 ± 2.8	0.0946	25.6 ± 3.2	25.8 ± 3.1	25.3 ± 3.1	0.1894
SPPB, score ± SD	6.8 ± 3.3	6.6 ± 3.4	6.1 ± 3.8	0.2882	6.9 ± 3.3	6.6 ± 3.3	6.5 ± 3.8	0.5254
Handgrip strength, mean ± SD								
Male	28.6 ± 7.8	28.7 ± 7.7	28.4 ± 7.3	0.9365	28.6 ± 7.8	28.7 ± 7.7	28.4 ± 7.3	0.9365
Female	18.1 ± 4.8	17.9 ± 4.9	16.9 ± 5.4	0.0522	18.1 ± 4.8	17.9 ± 4.9	16.9 ± 5.4	0.0522

Table 1. SD – standard deviation, MMSE - Mini Mental State Examination, SPPB, Short Physical Performance Battery

Figure 1

Cognitive Impairment Over Time in US-Born

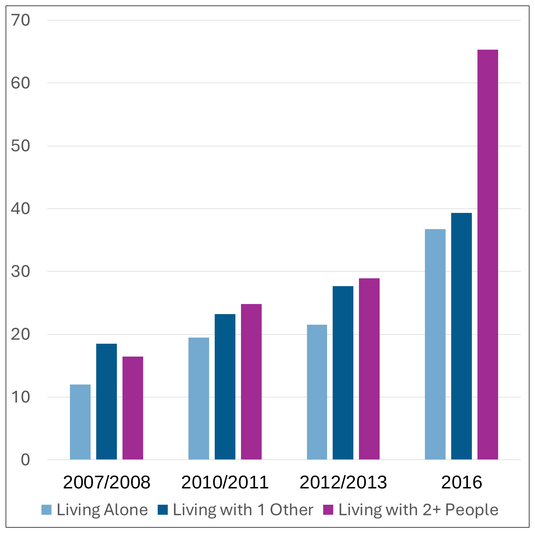

Figure 2

Cognitive Impairment Over Time in Foreign-Born

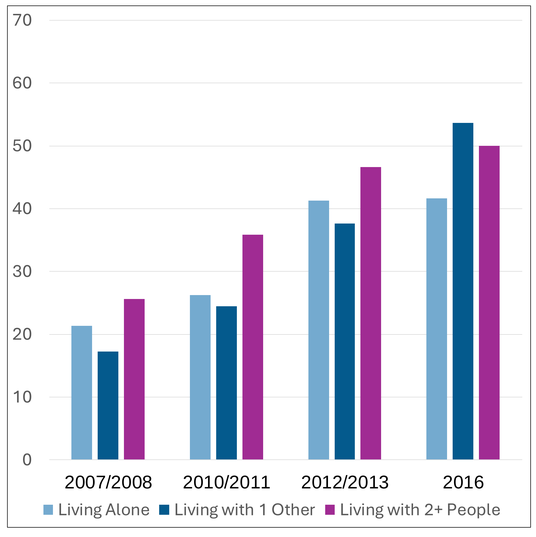

Table 2

General Estimating Equation for Cognitive Impairment as a Function of Living Arrangement by Nativity over a 12-Year Period (N=1026).

Living Arrangement	US-Born aOR (95% CI)	P-value	Foreign-Born aOR (95% CI)	p-value
Living Alone	1 [Reference]		1 [Reference]	
Living with 1 Other	1.68 (1.02-2.76)	**0.0415**	0.98 (0.56-1.73)	**0.9517**
Living with 2+ People	1.66 (1.02 -2.68)	**0.0395**	1.50 (0.84-2.68)	**0.1673**

Table 2. aOR – Adjusted odds ratio, CI – Confidence interval, aOR adjusts for sociodemographic factors, language of interview, pain, falls, comorbidities, depressive symptoms, SPPB, handgrip strength

DISCUSSION

RESULTS & INTERPRETATION

- **US-born Mexican American older adults living with one or more people** had significantly **higher odds of cognitive impairment** than those living alone.
- **No significant association between living arrangements and cognitive impairment** was found **among foreign-born participants** after adjusting for all covariates.
- **US-born participants living alone** experienced the **smallest cognitive decline**, contrary to studies suggesting that living alone increases cognitive impairment risk.
- Selection bias may explain the findings, as elders with better cognitive function might be more likely to live alone.
- Poorer cognitive function may prompt individuals to live with others, where higher care needs could be linked to increased cognitive decline.
- Foreign-born participants may benefit from extended family support and multigenerational living, which could buffer against cognitive decline.

STUDY STRENGTHS

- Longitudinal data with 12- years of follow-up from a large, representative sample of Mexican-American older adults.

STUDY LIMITATIONS

- Exclusion of participants with missing data introduces selection bias, and the HEPESE sample is not fully representative of the broader Latino population, limiting the generalizability of the findings.

IMPLICATIONS

CULTURALLY TAILORED APPROACHES

- Cultural factors, such as extended family support in foreign-born individuals, may buffer cognitive decline, highlighting the need for culturally sensitive health strategies

RESEARCH NEEDS

- Future research should examine changes in living arrangements over time and examine this relationship in other American-Latino communities

FUTURE POLICY

- Policies should prioritize support for both independent living and multigenerational households to improve cognitive health outcomes in older adults

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