Introduction

- Cognitive decline in older age is a risk factor for poor quality of life, institutionalization, and mortality\(^1\), highlighting the importance of identifying vulnerability factors amenable to early interventions. There is a pressing need to evaluate these factors in ethnically diverse cohorts.
- As compared to white non-Hispanics, Hispanic older adults have a 50% higher risk of developing cognitive impairment\(^2\).
- A limitation to interpreting these results is the susceptibility of cognitive measures to demographic factors such as acculturation, low education, and bilingualism\(^1\).
- Given that changes in everyday functioning are an early indicator of neurodegenerative diseases\(^2\) and are more resistance to influence from cultural factors\(^3,4\), integration of cognitive and functional statuses may provide more accurate assessment of clinically significant decline in ethnically diverse populations.
- The goal of the current study was to identify joint trajectories of cognitive and functional decline with an aging biethnic cohort of Mexican Americans and European Americans.

Participants

- Participants included 394 Mexican Americans and 355 European Americans, ages 65-74, who completed the SALSA baseline exam (1992-1996) and were followed at three timepoints over a mean of 9.5 years.

<table>
<thead>
<tr>
<th></th>
<th>Mexican American</th>
<th>European American</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>69.3±(3.2)</td>
<td>70.3±(3.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Education</td>
<td>8.9±(4.6)</td>
<td>13.3±(2.6)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Body Mass Index</td>
<td>29.2±(6.2)</td>
<td>27.4±(5.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Systolic Blood Pressure</td>
<td>133.8±(21.8)</td>
<td>132.3±(19.1)</td>
<td>0.323</td>
</tr>
<tr>
<td>MMSE</td>
<td>24.8±(4.0)</td>
<td>27.7±(2.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SAILS</td>
<td>57.0±(19.7)</td>
<td>39.4±(13.9)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Materials and Methods

- General cognition was assessed with the Mini-Mental State Examination (MMSE).
- Ability to perform instrumental activities of daily living was objectively assessed with the SALSA Structured Assessment of Independent Living Skills (SAILS).
- Trajectories jointly based on MMSE and SAILS were identified with latent growth mixture modeling.
- Predictors of latent classes were evaluated with odds ratios with covariates for income, education, age, sex, ethnicity, language of test administration, diabetes, hypertension, body mass index, stroke, coronary artery disease, and smoking status.

Results

1. Two latent trajectory classes were identified; one with relatively stable high general cognition and functional independence (termed successful aging group, 64% of the cohort) and the other with deteriorating cognition and functional abilities (termed vulnerable aging group, 36% of the cohort).

2. The odds of classification within the successful aging class was significantly associated with Mexican ethnicity (OR=0.29, p<0.001), after adjusting for covariates. Additional significant factors included income (OR=1.35, p=0.001), education (OR=1.74, p<0.001), age (OR=0.83, p=0.008), diabetes (OR=0.32, p=0.002), and smoking (OR=0.34, p=0.024).

3. Hypertension, body mass index, stroke, coronary artery disease, and language of test administration were not significant predictors of classification within the successful aging group (all p>0.05).

Conclusion

- The primary aim of the current study was to evaluate the joint trajectories of cognitive and functional decline in an ethnically diverse cohort of Mexican American and European American older adults. Within our sample, two distinct classes emerged.
- Approximately two-thirds of individuals demonstrated relatively stable global cognition and functional independence over time, synonymous with successful aging.
- A third of the sample evidenced deteriorating cognition and functional abilities associated with increased vulnerability for adverse health outcomes.
- The findings highlight the importance of addressing disparities in access to education as higher educational attainment predicted maintenance of cognitive and functional abilities in later life.
- Smoking status and diabetes were also predictors of long-term cognitive and functional trajectories, implicating the value of lifestyle interventions and promotion of health behaviors for successful aging.
- Even with adjustment for demographic factors and chronic medical conditions, Mexican Americans were significantly less likely to display stable cognitive and functional outcomes in late life.
- The results suggest the presence of additional factors shaping long-term trajectories within this ethnic group.

References