

# Utility of the Spanish Baylor Profound Mental Status Examination in Advanced Alzheimer's Disease

Bobbi K. Isaac, MA; Sagit Gilboa-Fried, MPH; Sergio Salmerón Ríos, MD, PhD; Adriana M. Strutt, PhD, ABPP

Baylor College of Medicine, Houston, Texas



## Background

As of 2019, an estimated 1 in 10 U.S. adults over the age of 65 are believed to be living with Alzheimer's disease. Alzheimer's incidence rates are relatively higher among some racial and ethnic minority groups, with older African American adults being twice as likely and Hispanic older adults being approximately 1.5 times more likely than white older adults to develop Alzheimer's disease.<sup>1</sup> Furthermore, from 2012 to 2050, substantial growth is anticipated in the U.S. Hispanic older adult (65+) population, with the current population estimated to quintuple.<sup>2</sup> Notably, among Hispanic older adults, an estimated 43% of individuals report being proficient in English and 22% report not speaking English.<sup>3</sup>

Brief mental status examinations play a key role in screening and monitoring for disease progression for individuals with Alzheimer's disease and other neurodegenerative conditions. However, existing mental status examination measures often have limited clinical utility among individuals with advanced, moderate to severe, Alzheimer's disease due to reduced sensitivity to functional and cognitive changes in later disease stages.

Furthermore, existing measures may also not reflect the diversity of patients being assessed, as few validated mental status examination measures are available for non-English speakers. Failure to administer a linguistically validated measure in the patient's primary or preferred language has been shown to be associated with reduced performance, which could conceivably result in misdiagnosis or errors in disease staging.<sup>4</sup>

Thus, the BPMSE seeks to fill this gap in clinical practice regarding language availability and utility in advanced Alzheimer's disease. The present study examines the clinical utility of a Latin American Spanish version of the BPMSE within a group of Spanish-speaking older adults.

## Baylor Profound Mental Status Examination

The Baylor Profound Mental Status Examination (BPMSE) is a clinician-administered neuropsychological screening tool for examining basic mental status and behavioral tendencies in individuals in the advanced stages of Alzheimer's disease (AD). The original measure was modeled after the Mini-Mental Status Exam (MMSE) to address the MMSE ceiling effects observed among individuals with advanced AD.<sup>5</sup> Few neurocognitive measures suitable for use in patients with moderate to severe AD exist.

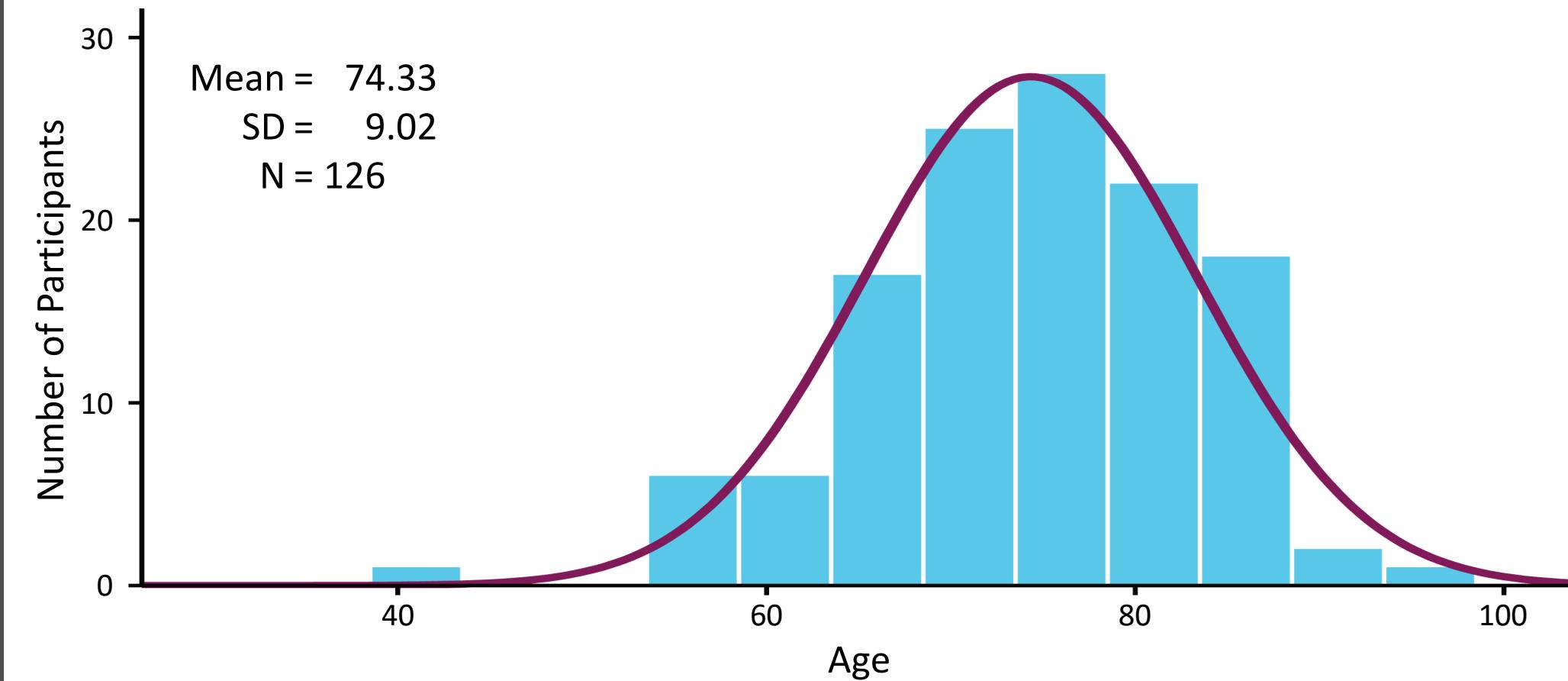
Furthermore, the vast majority of existing neurocognitive screen measures have not been validated for use with non-English speakers. The BPMSE has previously been translated into and validated in multiple languages, including Korean, Danish, and Castilian Spanish using native speakers.

BPMSE administration takes approximately five minutes and does not require a collateral informant. Domains assessed include orientation, language, attention, and motor skills. Behavior and communication are also noted.

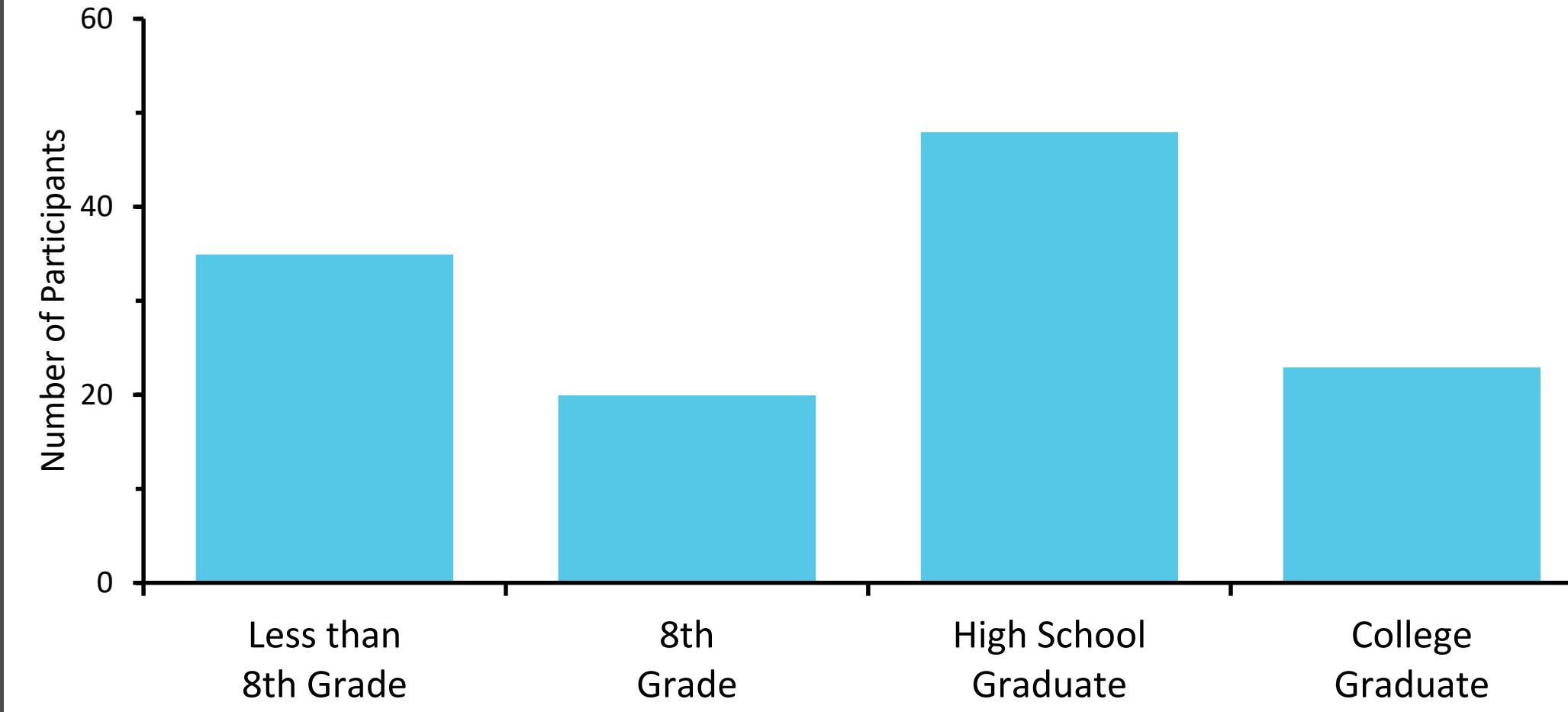
## Objectives

- The present study examines the clinical utility of a Latin American Spanish version of the BPMSE amongst a heterogeneous group of Spanish-speaking older adults.
- To evaluate the cross-linguistic validity of a Latin American Spanish version of the BPMSE.

**Figure 1.** Histogram of Participant Age Distribution



**Figure 3.** Participants by Level of Education Completed

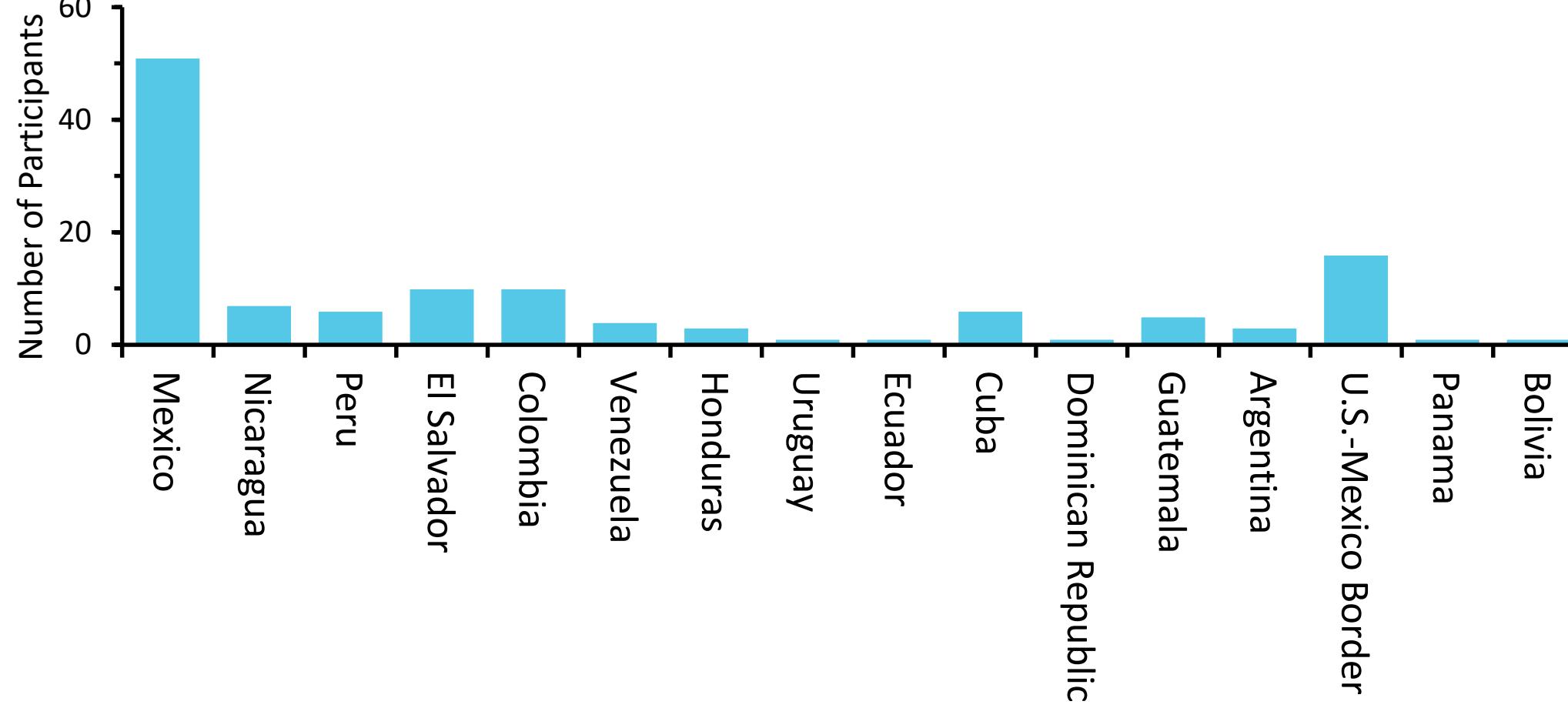


## Spanish BPMSE

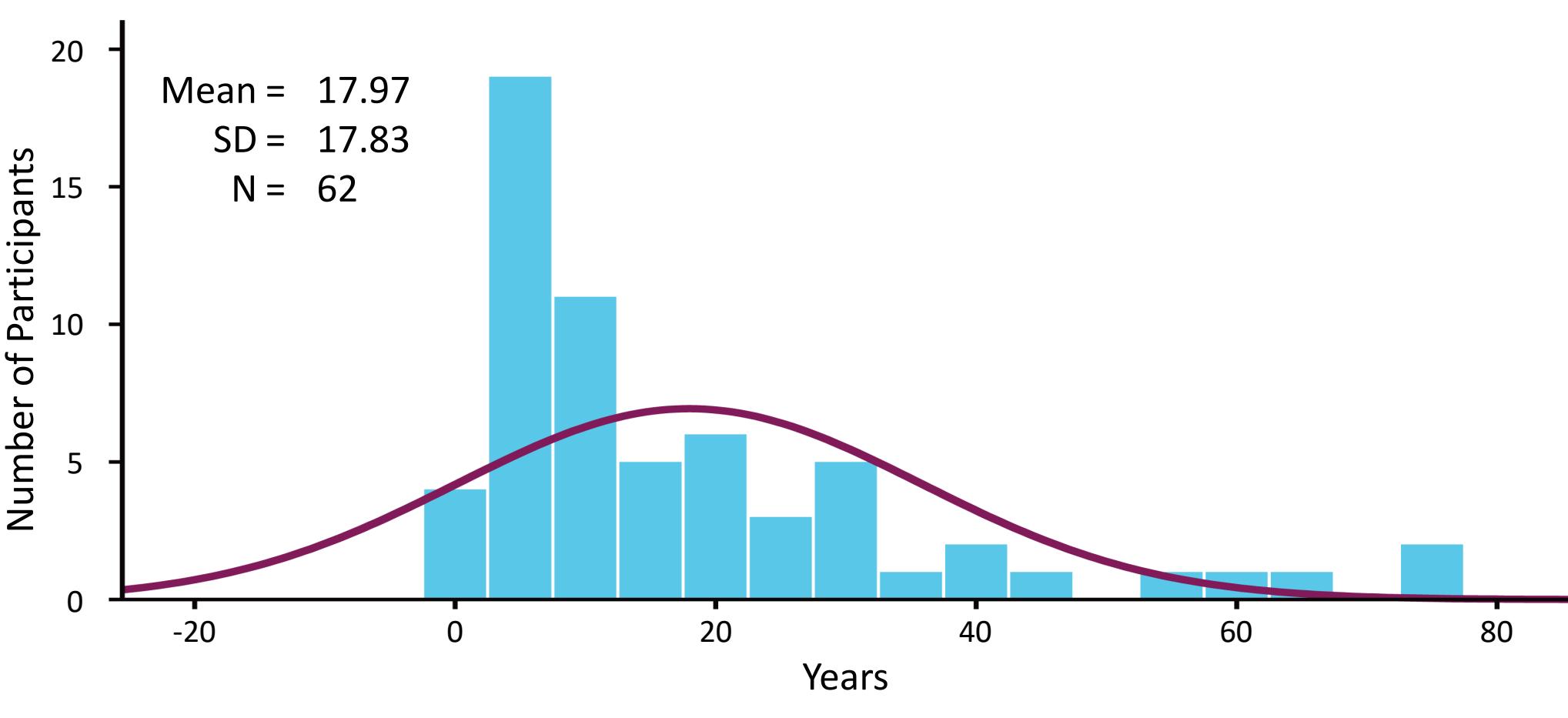
## Methods

- Study participants included 126 Spanish-speaking older adults (mean age=74.33, SD=9.02), diagnosed with AD, from 16 Latin American countries and U.S. border towns, currently residing in the United States.
- Participants completed both the BPMSE and the MMSE in Spanish.
- Demographic data (age, gender, educational attainment, country of origin, years residing in the U.S.) was collected.

**Figure 2.** Participants by Country of Origin



**Figure 4.** Participants by Years of U.S. Residency



## English BPMSE

## Results

- Sample mean MMSE score fell in the severely impaired range (mean=11.90, SD=5.593).
- Sample mean BPMSE score was 21.56/30 (SD = 3.305).
- BPMSE performance was not significantly impacted by age.
- BPMSE performance was not significantly impacted by country of origin.
- BPMSE orientation, language, and motor domain performances were not significantly impacted by level of education.
- BPMSE attention domain performance was significantly impacted by level of education, with better performance observed for individuals with high school or greater education.
- Qualitatively, clinicians administering the BPMSE suggest that the measure may serve as a psychoeducational tool.

## Conclusion

- The Latin American BPMSE likely maintains good sensitivity for measuring neurobehavioral status in adults with Alzheimer's disease, including those in advanced disease stages.
- With the exception of the attention domain score, the BPMSE is generally robust to education effects among U.S. Spanish-speaking Hispanic older adults.
- Possibly because of its more face valid nature, the Latin American BPMSE may also serve as a psychoeducational tool for clinicians to demonstrate cognitive impairments to caregivers, who often struggle to disentangle the difference between typical aging and a neurodegenerative process

## References

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