OASIS Alzheimer's Demographics Dataset

Project Author	Project Title	Last Updated
Jessica Abt jba2484	Cognitive Performance Across Educational Levels and Alzheimer's Diagnostic Groups	02/21/2026

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Dataset Overview

This data card describes a subset of the publicly available OASIS (Open Access Series of Imaging Studies) longitudinal demographics dataset from Washington University School of Medicine. The dataset contains demographic and clinical information from older adults, including individuals diagnosed with Alzheimer's disease and cognitively normal controls. For this project, only baseline visits are used to ensure each participant is represented one time.

Dataset at a Glance

- Dataset type: Observational, human-subjects data
- Access: Public
- Unit of observation: Individual participants (only baseline visits: n > 100)
- Study design: Cross-sectional (limited to baseline visit [visit = 1] only)

Guiding Question

How are cognitive performance scores (MMSE) related to education level and Alzheimer's diagnostic group?

Research Question 1 – Numeric Explanatory

Are MMSE scores associated with years of education among older adults with and without Alzheimer's disease?

Research Question 1 – Numeric Explanatory

RQ2 – Do MMSE scores differ between individuals diagnosed with Alzheimer's disease and cognitively normal individuals?

Hypothesis

Individuals with more years of education will, overall, have higher MMSE scores, because higher educational attainment is associated with greater cognitive reserve.

Key Variables

Variable	Type	Description
MMSE	Numeric	Response Variable – Mini-Mental State Examination (MMSE) score measuring cognitive performance
EDUC	Numeric	Explanatory Variable #1 – Years of formal education completed
Group	Categorical (Binary)	Explanatory Variable #2 – Clinical status (Alzheimer's disease ("Demented") vs. cognitively normal ("Nondemented"))

Intended Usage

This dataset is used for an academic statistics project examining whether education level is associated with cognitive performance and whether this association differs across Alzheimer's groups. The data are used for exploratory analysis and visualization only and are not intended for clinical or diagnostic purposes.

Source and Access

- ○ Dataset: Open Access Series of Imaging Studies (OASIS)
- ○ Publisher: Washington University School of Medicine
- ○ Website: https://sites.wustl.edu/oasisbrains/

Privacy and Ethics

The dataset is fully de-identified and publicly available. It does not contain personally identifiable information. Because the data are anonymized and used for educational purposes, the risk of participant re-identification is minimal.

Data Processing Notes

Only baseline visits (Visit = 1) are included to avoid repeated measurements from the same participants. Observations with missing values in key variables (MMSE, EDUC, Group) are excluded prior to analysis. Participants classified as "Converted" (initially nondemented but later diagnosed as demented in follow-up visits) were excluded to maintain clearly defined clinical groups in this cross-sectional analysis.

Exploratory Analysis Plan

Planned analyses include summary statistics, scatterplots of MMSE versus years of education, and comparisons of MMSE scores across diagnostic groups. Visualizations are designed to support interpretation in an introductory statistics context.