Diabetes and Cognitive Decline: The Role of Social and Genetic Factors

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Background

The United States, much like other Western nations, is aging.

Cognitive function is an essential contributor to quality of life and general health status among older adults.

Cognitive decline is associated with type 2 diabetes.

Hypotheses

1. Older adults who report diabetes will also report lower baseline cognitive function than those without diabetes. Additionally, those with diabetes will experience more rapid declines in cognitive function than those without diabetes.
2. The timing of diagnosis will be predictive of cognitive decline among diabetics. Those with early diagnoses will experience lower cognitive function and steeper declines than those with late diagnoses.
3. Genetic risk for diabetes, as denoted by polygenic risk scores, will be predictive of cognitive decline in older adults, suggesting that genetic risk impacts cognition through a pathway above and beyond a diagnosis of diabetes.

Data, Measures, and Analytic Strategy

Data: Health and Retirement Study (HRS) 1994-2016

- n = 11,898 non-Hispanic white adults aged 50 years or older

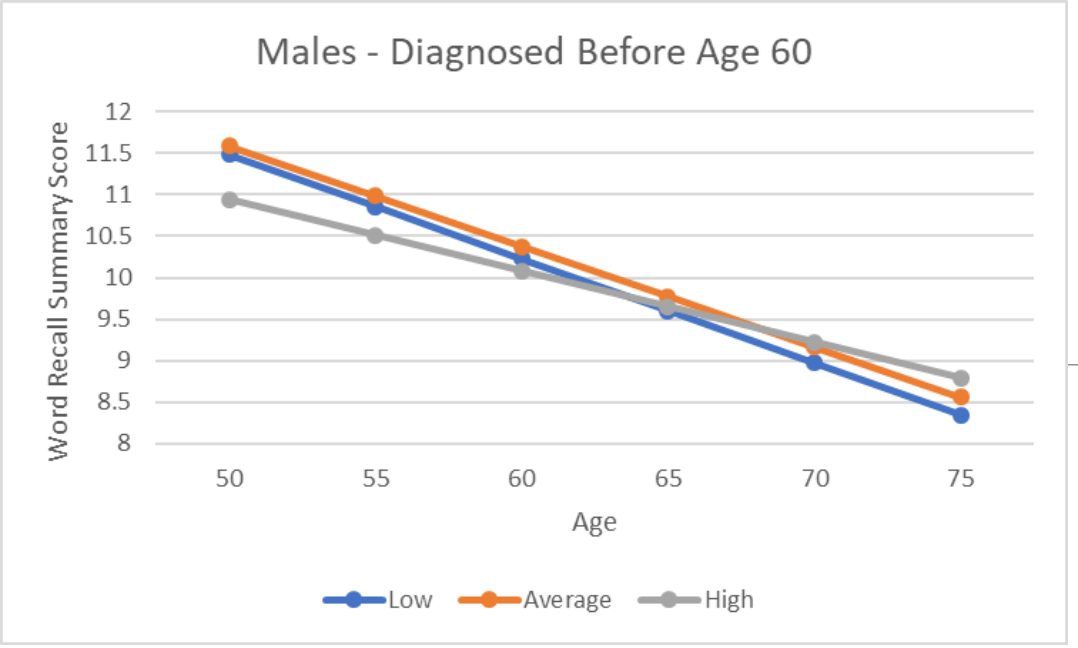
Measures

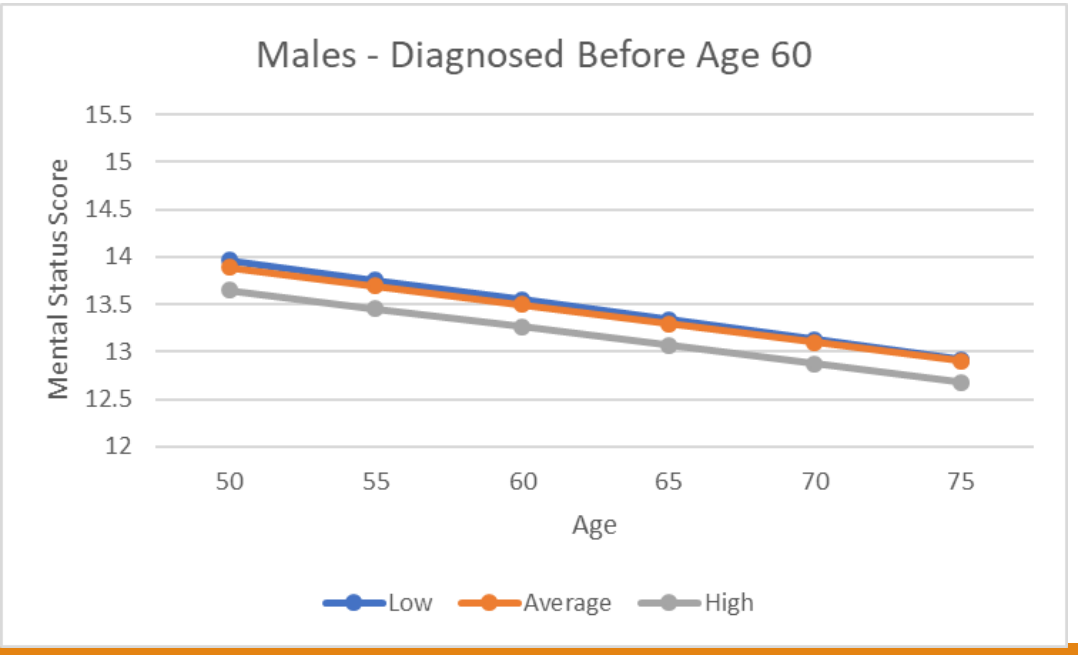
- IV: Type 2 Diabetes Diagnosis; Polygenic Risk Score for Type 2 Diabetes
- DV: Word Recall Score; Mental Status Score; Total Cognition Score
- Controls: Top 10 Principle Components, Sex, Hypertension Diagnosis, and Educational Attainment

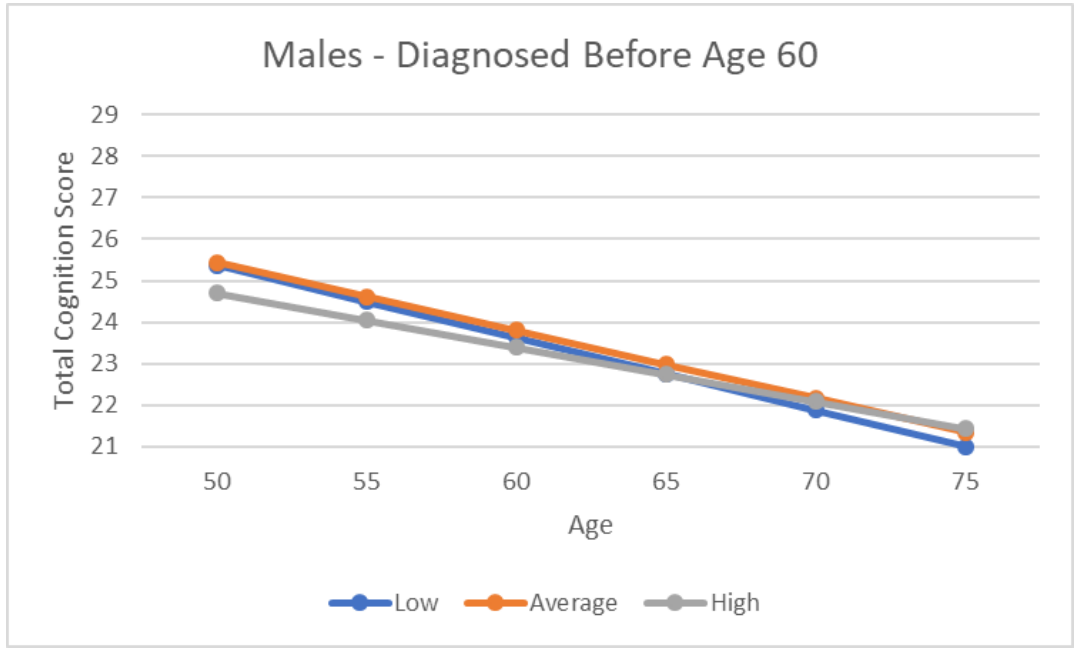
Analytic Approach

- Mixed Effects Linear Regressions

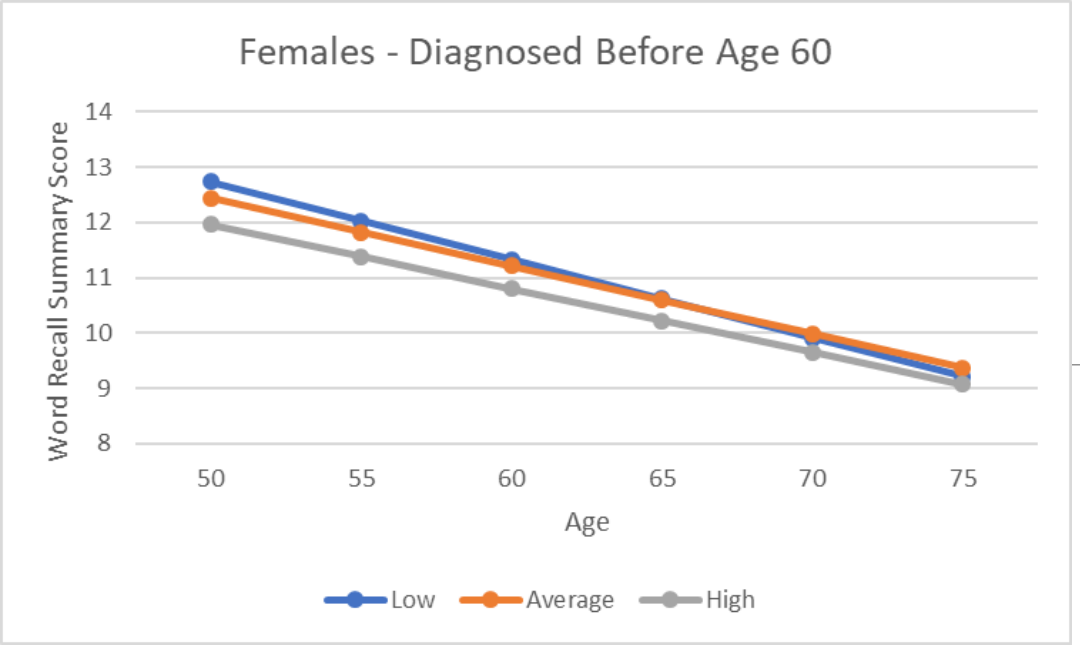
Preliminary Results - Men

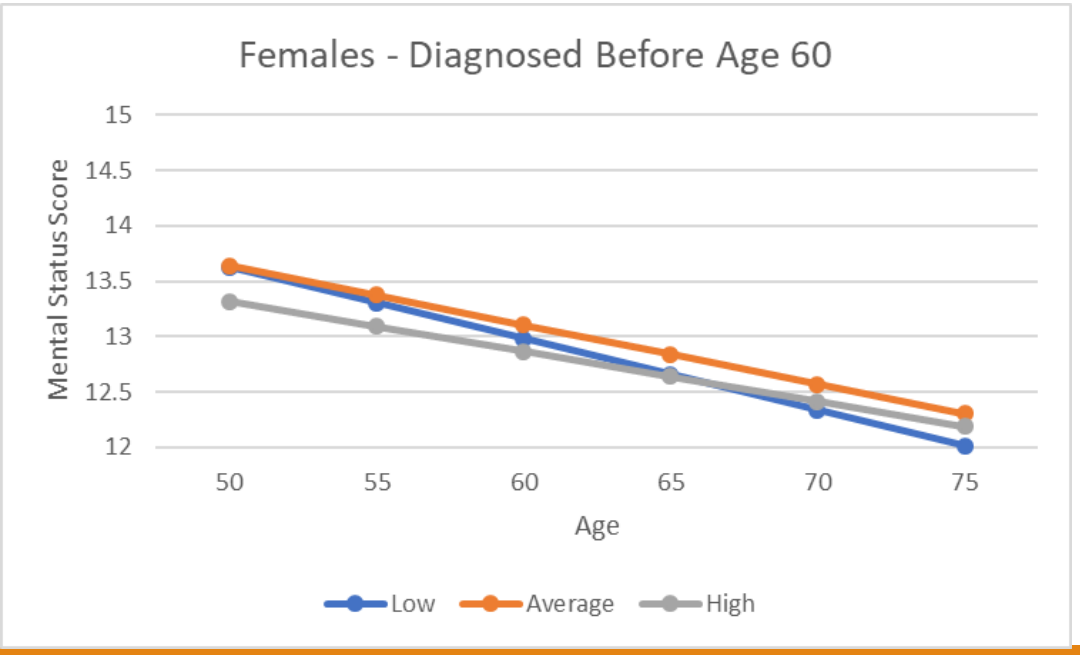


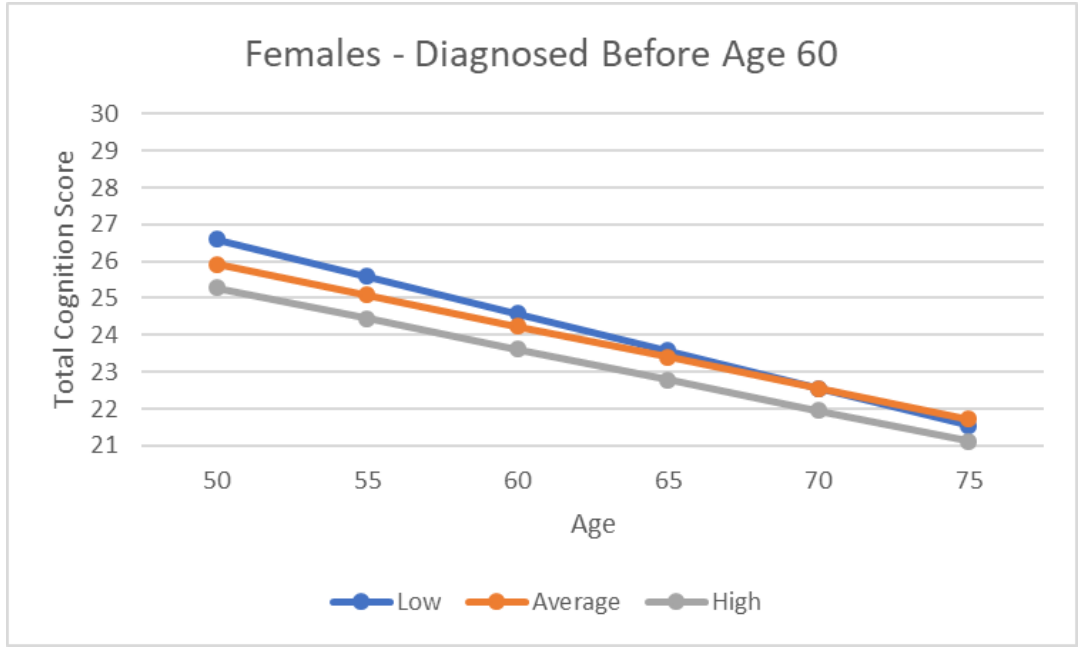




Preliminary Results - Women







Conclusions and Future Steps

Polygenic risk score for type 2 diabetes may be associated with cognitive decline among those with earlier diagnoses of diabetes.

Future Steps:

- Including controls for: Depression, Education PGS, Income, Marital Status