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# DETERMINANTS OF COGNITIVE TRAJECTORIES IN LOWER EDUCATED OLDER ADULTS: EVIDENCE FROM BRAZIL.

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# POLICIES

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# Background

- Today 12% of the world population is of age 60 and over and the proportion of older people is expected to continue increasing to 21,5% in 2050 (Custodio et al., 2017).

- For instance, in Brazil, the number of adults aged 60 years and older is expected to increase from 14.2 million individuals in 2000 to an estimated 54.2 million individuals in 2040 (Alves, 2016).

- Lower educational levels remain high among the older population and studies have shown that higher educational levels are associated with a lower risk for later-life cognitive decline (Rosselli et al., 2022; Zahodne et al., 2015).

- Studies exploring cognitive decline observed two to four distinct trajectories.

# Goals

Identify long-term trajectories of cognitive functioning and possible factors associated with cognitive decline among older adults:

- a) Heterogeneous long-term trajectories of cognitive functioning in one of the biggest cities of Latin America, São Paulo in Brazil;
- b) Explore possible sex/gender differences in cognitive decline;
- c) Investigate factors associated with cognitive decline beyond education, among older adults, that can be modified to delay or reduce cognitive decline.

# Measures and Methods

**Study Participants**

We analysed data from1,042 respondents from the Health, Well-Being, and Aging Study (SABE), a population-based longitudinal cohort study of older adults aged 60 years and older; without cognitive impairment at baseline participating in the baseline assessment (2000) and at least one follow-up (2006, 2010, and 2015).

**Ethics Statement**

SABE was conducted following the Declaration of Helsinki and was approved by The Human Research Ethics Committee at the School of Public Health, University of São Paulo, and the National Committee for Research Ethics.

# Measures and Methods

**Cognitive functioning – Dependent Measure**

Cognitive functioning was measured by the abbreviated version of the MMSE. The maximum score of the abbreviated MMSE is 19 points and the cut-off point of <= 12 points was used to indicate cognitive impairment.

**Baseline characteristics – Covariates**

Sociodemographic and Socioeconomic
Cardiovascular risk factors
Lifestyle factors
Childhood background

# Measures and Methods

**Statistical analyses**

- *Identify trajectory groups for cognitive functioning over time.*

Group-based trajectory modelling (GBTM).

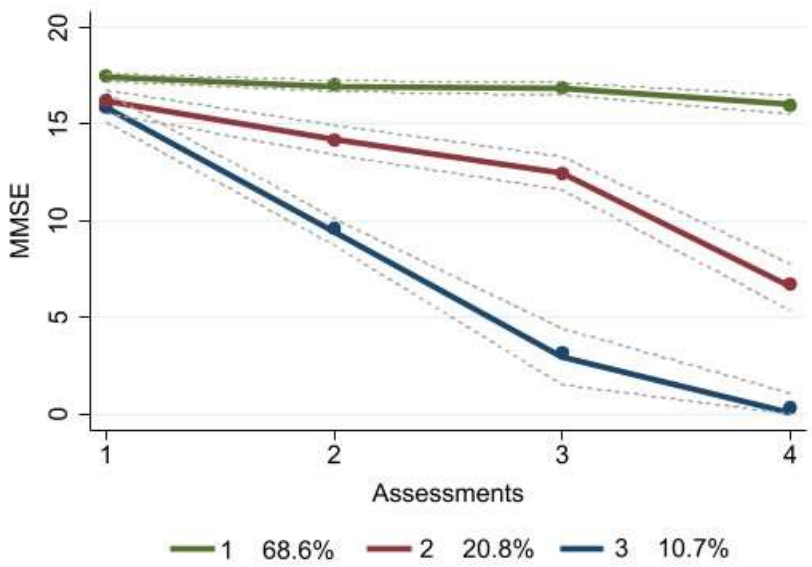
- *Descriptive statistics were stratified by trajectory groups and sex/gender.*

Weighted Analyses - Rao-Scott tests and Wald tests.

- *Associations of cognitive trajectory groups and baseline characteristics.*

Multinomial logistic regression analyses.

# Results




Trajectories of cognitive change among 1042 respondents to the SABE study across 15 years of follow-up

Note: 1 – stable, 2 – mildly , 3 – strongly declining.

**Baseline comparisons**

- **Strongly declining participants ≠ stable group**.

Self-identify themselves as mixed race

- **Mildly** and **strongly declining ≠ stable group**.

To have no schooling,

Be divorced/separated,

Receive less than 4 monthly wages,

Be underweight (BMI < 18.5)

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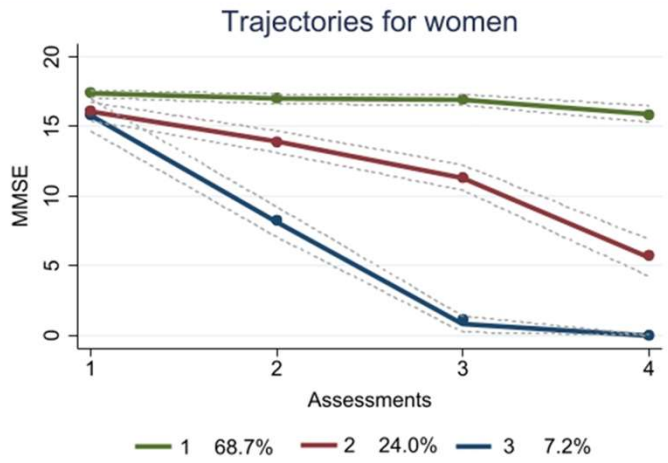
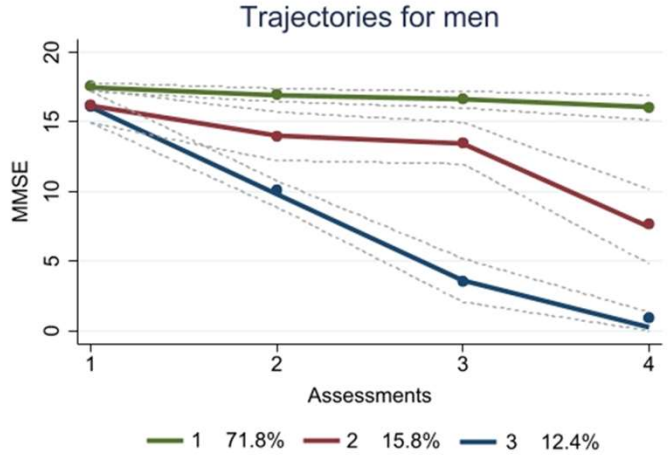
# Results




Note :
1 – stable,
2 – mildly declining,
3 – strongly declining.

**Baseline comparisons**

| *Women* | *Men* |
|---|---|
| + widowed | + current smokers |
| + < two wages per month | + daily alcohol |
| + obese | |
| + depression | |

**Multinomial logistic regression**

**Mildly** or **strongly** declining group:

+ self-reported their race as mixed
+ Older participants ,
+ had no schooling
+ Stroke

# Discussion

- We identified three trajectories of cognitive functioning using GBTM;
- Most participants in our sample had a higher likelihood of being allocated in the stable trajectory (68.6%);
- The analyses exploring gender-stratified trajectories presented a higher percentage of men allocated in a strong decline trajectory, while more women were allocated in the mildly decline group.
- A consistent finding across both descriptive and regression analyses was the association between self-reported mixed race and lower education with membership in the strongly declining group.

# Conclusion

Our findings suggest that besides education, interventions to reduce cognitive decline might include Health and social policies addressing inequalities to improve the later-life cognitive function of at-risk individuals.

Thank you!

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