**Background**

- Low- and middle-income nations are projected to experience 70% of global dementia cases by 2050 [1], yet few prior studies have examined the drivers of cognitive health among older populations in these countries.
- South Africa is undergoing rapid population aging, while being a country with extreme social inequalities in health.
- The majority black population of South Africa is uniquely characterized by the experience of Apartheid (1948-1994).
- Education is a key determinant of cognitive health, but education in Apartheid South Africa was of poor quality with limited curricula, it was often inaccessible by geography, and did not necessarily lead to social mobility for its recipients.
- However, education was strongly associated with later-life cognitive function in older South Africans in early analyses.
- Receipt of education in Apartheid South Africa may represent social stratification, influenced by other early-life factors such as health and socioeconomic resources.

**Objectives**

1. Examine the association between self-rated health during childhood and later-life cognitive function.
2. Examine the association between father’s occupation during childhood and later-life cognitive function.
3. Formally assess the degree to which educational attainment mediated the above associations.

**Methods**

- “Health and Aging in Africa: Longitudinal Study of an INDEPTH Community” (HAALSI) is a population-based study in rural Agincourt sub-district, South Africa, near the Mozambique border [2].
- 5,059 men and women aged ≥40 years (85% response rate).
- Agincourt is a former Apartheid ‘homeland’.
- In-person interviews with local fieldworkers.

**Variables:**

- Self-rated childhood health: ‘very bad’ to ‘very good’.
- Father’s occupation during childhood: skilled vs. unskilled based on the 2008 International Standard Classification of Occupations.
- Educational attainment: total years of education.
- Cognitive function: validated measures of time orientation, word recall, and numeric pattern recognition.
- Control variables: Age group, gender, and country of birth.

**Statistical analyses:**

- Confirmatory factor analysis was used to obtain a single factor z-standardized latent score variable incorporating the cognitive measures.
- Linear models estimated the total effects of each childhood risk factor on latent cognitive function score.
- Educational attainment added to models to get the direct effects of each childhood risk factor and the indirect effects mediated by educational attainment with bootstrapped 95% confidence intervals.

**Results**

**Study Population: Key Demographic Characteristics**

- Mean age: 61.7 years (SD: 13.1).
- 54% were women; 46% were men.
- 70% born in South Africa; 30% born in Mozambique.
- 46% had no formal education.
- 12% reported very bad to moderate childhood health.
- Father’s occupation: skilled (49%), unskilled (29%), other (11%), unknown (11%).

**Father’s occupation: 20% mediation by education**

![Figure 1. Mediation model, adjusted for age, sex, nativity. *p<0.01 †p<0.0001](image1)

**Self-rated childhood health: No mediation by education**

![Figure 2. Mediation model, adjusted for age, sex, nativity. *p<0.01 †p<0.0001](image2)

**Conclusions**

Poorer self-rated childhood health and having a father who worked in unskilled labor were associated with lower later-life cognitive function scores.

One-fifth of the effect of father’s occupation on later-life cognitive functioning was mediated by educational attainment.

Education did not appear to explain the association between self-rated childhood health and later-life cognitive function.

Results indicate that the link between father’s occupation during childhood and lower cognitive scores in later life was partly because people whose fathers worked as unskilled laborers received little, if any formal education.

Despite low educational quality and poor social conditions, results are consistent with those from predominantly higher income countries confirming the importance of education for cognitive performance in later life [3-5].

**Impact and Significance**

This study is one of the first to examine the cognitive health of older South African adults from a life course perspective, capturing early life exposures that mostly occurred during a long period of Apartheid that resulted in widespread poverty, low access to education, and a lack of social mobility among the majority of the country’s population.

Future follow-up of the HAALSI cohort will allow for longitudinal studies of cognitive aging among men and women living in this post-Apartheid context.

**References**


