COMPARISONS BETWEEN BRAZIL AND ENGLAND

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Objectives: To examine health variation by income and education

Study population

Brazil: National Household Survey, 2008 (representative sample of the Brazilian population aged 50 + years); n = 75,527

England: English Longitudinal Study of Ageing, 2008; n = 9,589
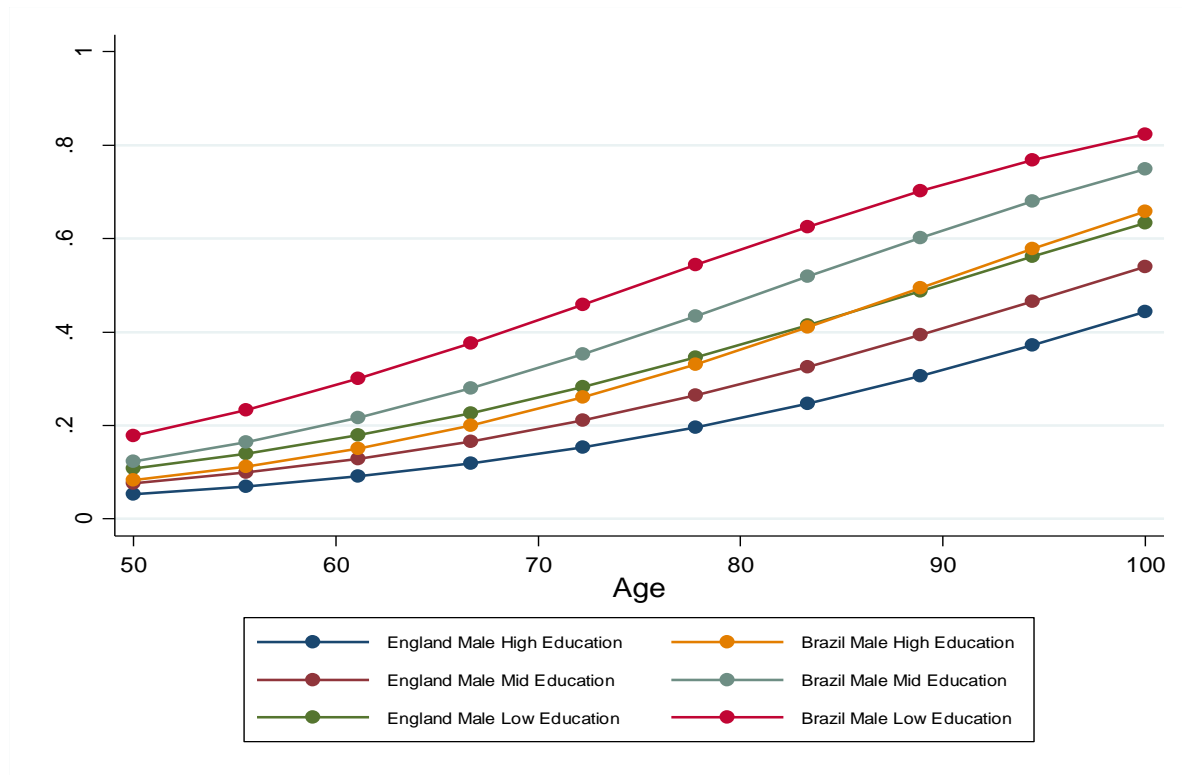
Measures

Outcomes: self-rated health, medically diagnosed diseases and physical functioning

Exposure variables: number of years of schooling and tertiles of household income

Lima-Costa MF, De Oliveira C, Macinko J, Marmot M. Socioeconomic inequalities in health in older adults in Brazil and England. Am J Public Health. 2012 Aug;102(8):1535-41.

Predicted probabilities of having 2 or more physical functioning limitations among older adults males in Brazil and England (2008)

Legend:
- England Male High Education
- England Male Mid Education
- England Male Low Education
- Brazil Male High Education
- Brazil Male Mid Education
- Brazil Male Low Education

The probability of having 2 or more physical limitations among **English with the lowest education and income** was similar to that of the **wealthiest Brazilians**, for both men and women.

Prevalence ratios adjusted by age and sex (lowest vs. highest education level, by country

Health indicators	Brazil	England
Poor self-rated health	**3.24**	**3.50**
One or more diseases	**1.14**	**1.36**
Two or more physical limitations	**1.81**	**1.96**

Strong inverse gradient of similar magnitude across education and income levels for most health indicators in each Country

Source: Lima-Costa et al (AHPH, 2012)

CONCLUSION

Socioeconomic inequalities affect **both populations**, despite a **less pronounced absolute difference** in household income and education in Brazil compared to England

Background:

Self-rated health is among the most widely used measures of health given its simplicity and strong predictive power for mortality.

There **is mixed evidence** that socio-economic status (SES) affects the predictive power of self-rated health (SRH) for mortality

Objective:

To compare the **predictive value of SRH for 6 year mortality** in English and Brazilian older adults, and to assess whether this association **varies by SES in these populations**

Lima-Costa MF, Steptoe A, Cesar CC, De Oliveira C, Proietti FA, Marmot M. The Influence of socioeconomic status on the predictive power of self-rated health for 6-year mortality in English and Brazilian older adults: the ELSA and Bambuí cohort Studies. Ann Epidemiol. 2012 Sep;22(9):644-8

Methods

Data: the English (ELSA) and the Bambuí (Brazil) cohort studies of ageing

Participants: 5,183 English and 1,499 Brazilians aged 60 + years

Outcome: Six-year mortality

Variable of interest: self-rated health

Potential confounding variables:
- Socio-demographic characteristics,
- Lifestyle, self-reported diseases, physical symptoms, mental symptoms
- Biomarker measures (systolic blood pressure, waist circumference, non HDL cholesterol, triglycerides, and high sensitivity C-reactive protein)

Selected baseline characteristics of study participants, by country

Characteristics	England	Brazil
Monthly income in GBP, median	**1040**	**205 ***
Mental symptoms	**15.1**	**38.7 ***
ADL limitation	**23.0**	**40.2 ***
Systolic blood pressure in mmHg, mean (SD)	137.2	137.5
Waist circumference in cm, mean (SD)	95.4	91.4 *
Non HDL cholesterol in mmol/L, mean (SD)	4.3	4.7 *
Triglyceride in mmol/L, median	1.5	1.5
C-reactive protein in mg/L, median	**2.1**	**3.2 ***

*: $p < 0.05$ for differences between countries

Baseline self-rated health, by country
(The ELSA and Bambuí studies)

	England	Brazil
Good	70.4	24.8
Fair	22.0	49.2
Poor	**7.5**	**26.0**

6-year mortality, by Country (The Elsa and Bambuí studies)

	England	Brazil
% lost to follow-up	1.9	2.6
No. death	591	292
No. PYRS	29,648	8,089
Mortality rate per 1.000 PYRS	**19.8**	**31.8**

Hazard ratios (HR) and 95% confidence intervals (CI) for 6-year mortality by baseline self-rated health, stratified by country (the ELSA and Bambui studies)

Self-rated health	England	Brazil
Good	1.0	1.0
Fair	2.25 (1.70-2.96)	0.94 (0.65-1,35)
Poor	**4.45 (3.04-6.51)**	**1.88 (1.25-2.81)**

Poor self rated health (SRH) was independently associated with subsequent mortality in both populations. However, **the predictive power of SRH for death was much higher for the English** (a population with a higher SES level) than for Brazilians.

Fully adjusted hazard ratios (HR) and 95% confidence intervals (CI) for 6-year mortality by poor baseline self-rated health (SRH) relative to fair/good SRH, stratified by income tertile in each country (the ELSA and Bambui studies)

Income tertile	England	Brazil
Lowest (poorer)	2.86 (1.96-4.18)	1.62 (0.99-1.63)
2nd	1.60 (0.96-2.66)	1.96 (1.22-3.15)
Highest (wealthier)	**5.33 (3.31-8.60)***	**2.99 (1.61-5.36)***

*: p<0.05 for difference between the lowest and the highest tertiles

In each population, the predictive value of poor SRH for mortality was about **twice higher for those in the highest income tertile** relative to their lower income counterparts

CONCLUSION

Our results suggest that the association between SRH and mortality is **weaker** in population and in sub-groups of population with low SES level.

Further international research is needed to examine the generalisability of this pattern.

COMPARISON BETWEEN BRAZIL AND ENGLAND PERSPECTIVES:

•To explore genome wide associations (GWAS) by using the Bambuí and ELSA datasets

•The genotyping of 1,500 (93% of total) Bambui cohort participants was concluded in August 2012

2.6 million SNPs by Illumina

Similar genotyping is ongoing for 8,000 ELSA participants

ELSI BRASIL

ESTUDO LONGITUDINAL DA SAÚDE E
BEM ESTAR DOS IDOSOS BRASILEIROS

THANK YOU !