

Introduction

Physical inactivity, a major risk factor for disability and mortality, is related to **socioeconomic circumstances (SEC)**. However, **solid evidence** on the impact of early-life SEC on life-course trajectories of physical inactivity and its predictive pathways is **still lacking**.

Here, we investigate on a **large scale** and **longitudinally** the impact of accurate measures of **early- and adult-life SEC** on the level of and change in **physical inactivity** as adults grow older.

H1: We hypothesized that **disadvantaged early-life SEC** is positively associated with the level and change of **physical inactivity** with ageing.

H2: We also hypothesized that the association between early-life SEC and physical inactivity is **mediated** by adult-life SEC.

Methods

Data

Survey of Health Ageing and Retirement in Europe (SHARE), a **ten-year** population-based cohort study (2004-2013) with **repeated measurement every 2 years** and collection of retrospective life-course data of **22,846** participants (**63,845 observations**; 12,711 women).

Measures:

- **Physical inactivity:** self-reported questionnaire (2 items)
- **Early-life SEC:** Occupational position breadwinner, number of books at home, overcrowding, housing quality.
- **Adult-life SEC:** Level of education, occupational class, satisfaction with household income.
- **Prior confounders:** body mass index (BMI), birth cohort, living with biological parents, and participant attrition. All models were stratified by sex.

Data analysis:

Logistic mixed-effects models (R language) to predict the odds of being inactive

Model 1: Early-life SEC only

Model 2: Adult-life SEC were added as potential mediators

Results

Risk of physical inactivity was increased for women with the **most disadvantaged early-life SEC** (odds ratio 1.49, 95% confidence interval 1.20 to 1.86).

With ageing, the **risk of physical inactivity increased** for both sexes and was **strongest** for those with the **most disadvantaged early-life SEC** (1.04, 1.02 to 1.06 for women; 1.02, 1.00 to 1.05 for men).

The impact of early-life SEC on physical inactivity was **mediated by adult-life SEC**, with **education** the strongest mediator.

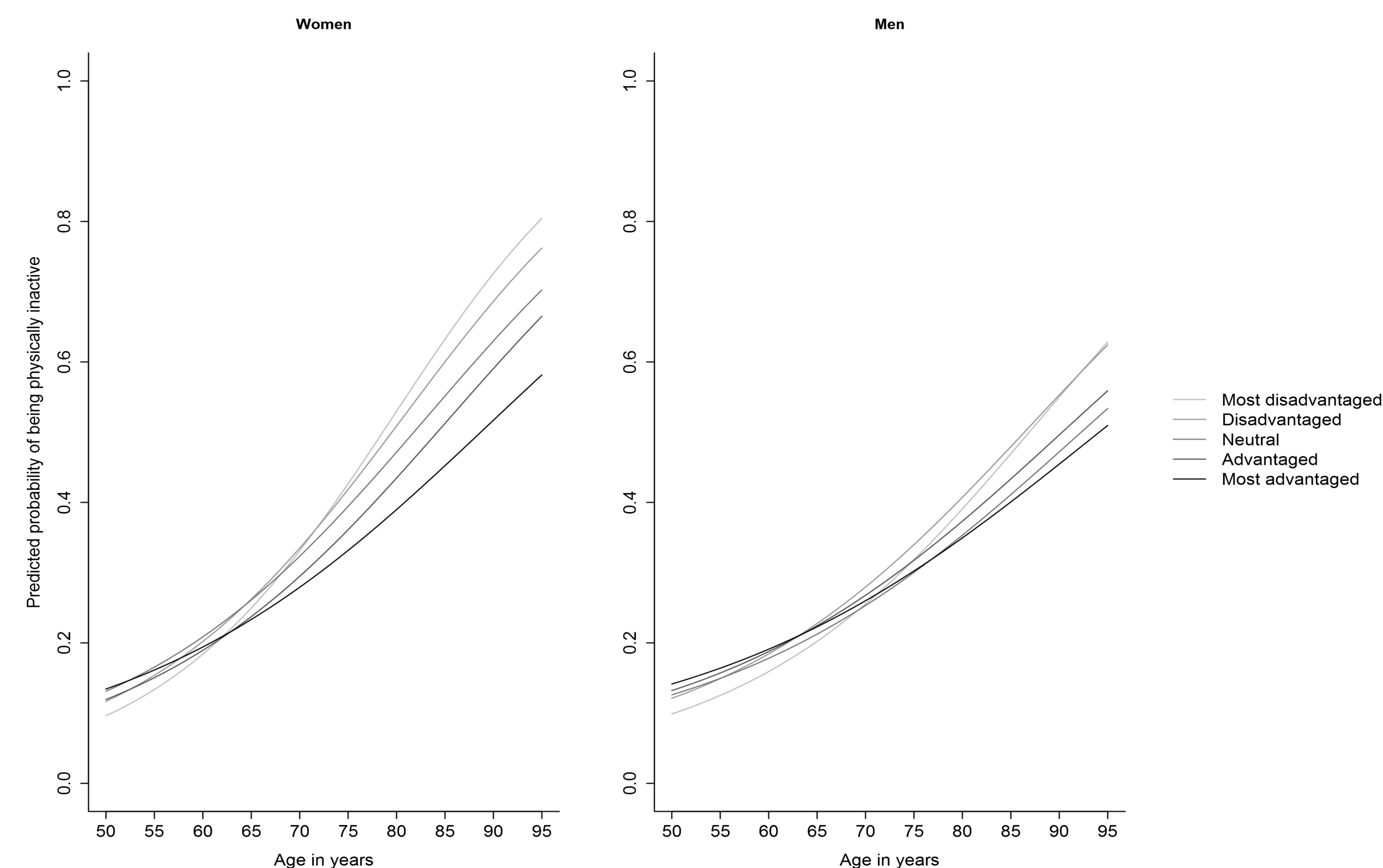


Figure 1. Predicted probability of risk of physical inactivity across age depending on early-life socioeconomic circumstances (SEC).

Conclusion

Early-life SEC predicted **high levels and steep age-related increases of physical inactivity**, but this effect was **mediated by socioeconomic indicators in adult life**.

This finding has implications for **public health policies**, which should continue **to promote education** to reduce physical inactivity in people at older ages and **to ensure optimal healthy ageing trajectories**, especially among **women** with disadvantaged early-life socioeconomic circumstances.