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Epidemiological Approaches to Healthy Ageing Research: Using Data from the SHARE Project

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INTRODUCTION

As populations age, public health systems face the challenge of understanding and supporting healthy ageing trajectories [1]. Life-course transitions – such as retirement – affect health behaviours, psychosocial wellbeing, and cognitive functioning. Longitudinal datasets offer key opportunities to track these changes, but require rigorous analytical strategies to fully exploit their potential in epidemiology [2].

Objectives

To provide scientific evidence to support decision-making in response to the needs of an increasingly ageing population, through a Healthy Ageing and life-course research approach, by leveraging the longitudinal and multidimensional potential of SHARE data [3].

Specific objectives are:

i) to analyse the short- and long-term impact of retirement on behavioural risk factors (e.g. smoking, alcohol use, food consumption, physical activity) and mental health (e.g. depressive symptoms and suicidality);

ii) to evaluate individual, socioeconomic, and environmental determinants of cognitive decline using harmonised cognitive assessment protocols.

METHODS

For the specific objective i) We implemented a longitudinal cohort design using SHARE waves 1-8 (2004–2020), selecting 8,998 individuals aged 50+ employed at baseline and retired during follow-up [3,4]. Retirement timing served as a temporal exposure to construct repeated-measures analyses. Generalised estimating equations (GEE) were applied to model selected outcomes (e.g., smoking, alcohol use, food consumption, physical activity, depressive symptoms), accounting for intra-individual correlation [5]. Time was modelled in different intervals relative to the retirement year. Covariates included sex, age, marital status, education, occupation, and chronic disease. For the specific objective ii) We adopted a retrospective design based on SHARE-HCAP Wave 9 (2021–2022), which included 2,685 individuals aged 65+ from five European countries. Respondents were classified through machine learning techniques as cognitively normal, mildly, or severely impaired based on harmonised neuropsychological protocols. To explore associations with cognitive status, we retrospectively reconstructed exposure histories using previous SHARE waves. These included educational attainment, occupational trajectories, chronic conditions, housing characteristics (e.g., presence of architectural barriers, accessibility), and perceived neighbourhood quality. Multivariable models were applied to evaluate the role of these life-course exposures in shaping late-life cognitive outcomes.

RESULTS

Retirement was associated with dynamic shifts in health behaviours and mental health. Physical activity increased during the early post-retirement period, particularly among previously inactive individuals (RR=1.49, 95%CI 1.36–1.63), but declined after a decade (RR=0.90, 95%CI 0.88–0.93). Smoking prevalence and intensity decreased substantially over time, with average daily cigarette consumption falling from 27 to 9 per day, and risk of smoking dropping by 42% a decade post-retirement (RR=0.58, 95%CI 0.46–0.74). Alcohol use patterns shifted: while daily drinking increased moderately (RR=1.28 at 10+ years), binge drinking declined (RR=0.78, 95%CI 0.66–0.93). Dietary habits showed favourable trends: intake of protein-rich foods (meat, fish, legumes, eggs) increased significantly over the long term (RR=1.09, 95%CI 1.01–1.17), while fruit, vegetable, and dairy consumption remained stable. Depressive symptoms declined in the short term (RR=0.89, 95%CI 0.81–0.99), but increased again after 10 years among non-manual workers and late

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retirees (RR up to 1.37). Notably, suicidality ideation risk rose substantially in the long term, particularly among men (RR=1.78, 95%CI 1.11–2.86).

Cognitive assessment from SHARE-HCAP data showed that 63.4% of respondents were classified as cognitively normal, 25.8% as mildly impaired, and 10.7% as severely impaired. Preliminary results suggest that environmental disadvantages

Results from the SHARE HCAP wave showed that 63.4% were classified as cognitively normal, 25.8% as mildly impaired, and 10.7% as severely impaired. Retrospective reconstruction of life-course exposures showed that environmental disadvantages, including poorer perceived neighbourhood quality, may contribute to impaired cognitive impairment in later life.

CONCLUSIONS

Our findings offer a comprehensive view of behavioural and psychological changes during the transition to retirement, distinguishing short- and long-term effects across key health domains. SHARE data offer a powerful resource for life-course epidemiology with different epidemiological approaches and appropriate statistical modelling. The methodological strategy – centered on record linkage, repeated measures, and harmonised indicators – demonstrates how survey data traditionally used in economics and social sciences can inform public health. Future research should address compositional bias, improve data harmonisation, and explore other life-course transitions.

REFERENCES

1. WHO (2022) Ageing and Health, 2022 https://www.who.int/news-room/fact-sheets/detail/ageing-and-health
2. Beard JR, Officer A, de Carvalho IA, et al (2016) The World report on ageing and health: a policy framework for healthy ageing. Lancet 387:2145–2154. https://doi.org/10.1016/s0140-6736(15)00516-4
3. Börsch-Supan A., Brandt M., Hunkler C. et al., Data Resource Profile: the Survey of Health, Ageing and Retirement in Europe (SHARE). Int J Epidemiol. 2013;42(4):992–1001.
4. Mosconi G., Vigezzi GP., Bertuccio P. et al., Transition to retirement impact on risk of depression and suicidality. Epidemiol Psychiatr Sci. 2023;32:e34.
5. Bertuccio P., Vigezzi GP., Mosconi G. et al., Transition to retirement impact on smoking habit. Aging Clin Exp Res. 2023;35:1117–26.
6. Lipsitz SR., Kim K., Zhao L. Analysis of repeated categorical data using generalized estimating equations. Stat Med. 1994;13:1149–63.

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