Health inequalities in later life

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A re-examination of the education-cognition relationship: Evidence from low and middle-income countries
Columbia University - University of Pennsylvania

Educational attainment is positively associated with cognitive outcomes at older ages, a finding firmly established in existing literature. The paper sets out to investigate a nuanced problem- whether the relationship between education attainment and cognitive outcome varies across the distribution of the cognitive outcome in five low- and middle-income countries with distinct institutional features and varying levels of development. Triangulating data from harmonized LASI Wave 1 and LASI-DAD Wave 1 along with data on older adults (≥50 years) from the World Health Organization Study on Global Ageing and Adult Health Wave 1, the study sets out to examine if the returns to education are non-linear across the different domains of cognition score distribution. Our results indicate the heterogeneous effect of education on cognition score distribution in some domain, but not all. The results illustrate a stronger association between education and two domains - orientation and delayed memory recall, in the lower tail of the distribution, and with verbal fluency, in the upper tail of the distribution. Preliminary results suggest a complex relationship between education and different cognitive domains - insights largely overlooked in existing research, yet essential for understanding how educational inequalities in cognitive performance emerge.

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Frailty and Precarious Ageing: Intersecting Social Risks in Later Life
Alan Marshall, Laurence Rowley Abel - University of Edinburgh

The older population is becoming increasingly diverse with growing inequalities that are likely exacerbated by a decade of crises. In response, the concept of precarity is being applied in social gerontology to understand the risks and uncertainties faced by older adults. However, there has been less attention to how we can capture precarity quantitatively nor how it is associated with older adults' health. In this paper we develop a Later Life Precarity Index and model its association with frailty. We extend our analysis to consider whether specific intersections of social risks are associated with particularly elevated frailty in a random sample of 8,549 older adults in the English Longitudinal Study of Ageing. Using Multilevel Analysis of Individual Heterogeneity and Discriminatory Accuracy (MAIHDA), we identify several intersections of risks that appear to have particularly detrimental effects, above and beyond what would be expected by adding the individual effects of these exposures together. The strongest effect was observed for older women who are divorced, widowed and/or living alone and who lack financial and pensions security. In the MAIHDA model, this group had a predicted Frailty Index (FI) of 0.350, which was substantially higher than the FI that would be expected form a simple additive prediction (0.293). Other groups who experienced particularly detrimental, precarious ageing environments were unpaid carers experiencing financial/pensions precarity, and women experiencing housing precarity. Or findings suggest the need for further research and policy that addresses combinations of social risks to prevent acute levels of frailty.

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Blood biomarkers mediating social inequalities in frailty: evidence from longitudinal structural equation models
Laurence Rowley-Abel - University of Edinburgh

Frailty represents a condition of physiological vulnerability that increases as individuals age. There is strong evidence demonstrating social inequalities in frailty, with lower socio-economic status being associated with substantially earlier onset of frailty, as well as worse overall levels. However, little attention has been paid to the biological mechanisms leading to such inequalities. In this study, we therefore examined which blood biomarkers may mediate the social gradient in frailty, using blood samples from a longitudinal biosocial dataset – the English Longitudinal Study of Ageing. We used structural equation models to examine the role of 12 common clinical blood biomarkers in mediating the relationship between wealth and frailty at follow-up, in a sample of 6309 older adults. Results suggest that markers of inflammation (c-reactive protein, white

blood cell count and fibrinogen), chronic stress (dehydroepiandrosterone sulphate) and metabolic function (glycated haemoglobin and low-density-lipoprotein cholesterol) mediate the relationship between wealth and frailty, including when controlling for the biomarkers' associations with baseline frailty. Even when controlling for physical activity, smoking and BMI, several of these biomarkers continue to show statistically significant mediating roles. Our findings show that inflammatory, stress-related and metabolic pathways all play a role in driving social inequalities in frailty. Given that these pathways remain even when controlling for health behaviours, we suggest that the conventional focus around the effect of individual behavioural factors on ageing should be reconsidered, and that more attention should be paid to the relationship between socio-economic status, chronic stress, inflammation and metabolism.

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Social frailty and its widowhood disparities among older adults in India
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Background:

Literature on social frailty and its widowhood disparity is particularly sparse in India despite being a rising public health concern for the growing community-dwelling elderly population. Drawing upon the baseline data from the Longitudinal Ageing Study of India (2017-18), this study aims to assess the prevalence of social frailty and its widowhood disparity among the community-dwelling older adults of India.

Methods:

The study analyzed 28,275 older adults aged 60+. The social frailty index was developed based on the conceptual framework given by Bunt and colleagues in 2017. Preliminary findings were derived from descriptive analysis, followed by a chi-squared test to check the independent associations of the factors. Ordered logistic regression analysis was employed to identify the contributions of covariates which explain the association of widowhood with social frailty among older adults.

Results:

The overall prevalence of social frailty was 25 per cent. Virtually everyone (99%) had at least one of the social frailty components. This warrants more attention to social frailty among older adults in India. Results further suggested that widowed individuals were at a relatively higher risk of having higher social frailty compared to their non-widowed counterparts. The impact of widowhood aggravated by its long-term duration. Living alone, in rural areas with poor schooling emerged as significant risk factors for experiencing higher social frailty among older adults.

Conclusion:

Interventions aimed at promoting social activities and increased access to social support are thought to be helpful for promoting active ageing and mitigating the risk of social frailty.

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