

Emerging trends and future research on the role of socioeconomic status in chronic illness and multimorbidity



Many chronic illnesses are more prevalent in people from socioeconomically deprived backgrounds.¹ Multimorbidity—the presence of two or more long-term health conditions—poses a growing global health-care challenge, and is more common and can occur a decade earlier in individuals from areas of socioeconomic deprivation.²

People from socioeconomically deprived areas with chronic illness or multimorbidity have higher morbidity³ and mortality^{3,4} than their more affluent counterparts. Although this observation was initially assumed to be due to a higher prevalence of unhealthy lifestyle factors, such as smoking, there is growing evidence that this theory does not completely explain the excess morbidity and mortality.⁵ Research suggests that individuals from more socioeconomically deprived backgrounds are inherently more vulnerable to the adverse effects of unhealthy lifestyles.⁵

In their report on multimorbidity,⁶ the Academy of Medical Sciences highlighted the need for studies that help us understand the implications of different disease clusters in multimorbidity and to explore the determinants of common clusters of conditions.

In *The Lancet Public Health*, Mika Kivimäki and colleagues⁷ explore this research gap by examining the relationship between socioeconomic status and the development of 56 diseases over time using two Finnish cohorts and one UK cohort, involving 119 084 participants. The authors followed up these cohorts over 1110 831 person-years at risk and their work advances the field of health inequality research in several ways. They studied a range of major diseases and health conditions, capturing 1204 International Classification of Disease codes, whereas previous research on this topic has mainly focused on mental health and cardiometabolic conditions. In this study, the analysis on interconnectedness and bidirectionality between socially patterned mental and physical conditions is novel and highlights the temporal trends and associations in the development of these conditions.⁷ The authors found that low socioeconomic status was associated with an increased risk of 18 (32.1%) of 56 conditions compared with

more advantaged groups, after adjusting for lifestyle factors. 16 (88.9%) of these 18 conditions were strongly interconnected and almost all socioeconomically patterned conditions were interconnected with mental health problems and substance abuse. Conditions with the highest threshold for interconnectedness showed that mental health problems and substance abuse were strongly connected with diseases of the liver, the cardiovascular and cerebrovascular systems, and dementias. Therefore, this study shows the influence of socioeconomic status on development of diseases related to the CNS.⁷ The findings of this study were consistent across three large datasets from two high-income countries with different health-care systems, strengthening the generalisability and comparability of the observed associations.

Taken together with the existing literature, Kivimäki and colleagues' findings⁷ suggest there is overwhelming evidence of the influence of socioeconomic status on both development and prevalence of chronic illness and multimorbidity. This work has two important implications for public health and policy makers in high-income countries. First, continued attention for individual behaviour change strategies without equal emphasis on upstream determinants of health will be insufficient to address the epidemic of chronic illness, multimorbidity, and health inequality that we face. Second, greater attention to and investment in psychological support services early in the life course is merited.

However, important research gaps in this area remain unexplored. The analysis done by Kivimäki and colleagues⁷ was adjusted for lifestyle factors such as smoking, alcohol consumption, physical activity, and obesity. These factors are likely to be part of the causal pathway in the relationship between socioeconomic status and various health conditions, as acknowledged by the authors. Therefore, further research is needed to explore the triad of socioeconomic status, lifestyle, and development of health conditions in greater detail. This strategy might require use of mediation analyses and other similar techniques to further explore these issues. Additionally, previous evidence found an association

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between lower socioeconomic status and high-risk cardiometabolic and inflammatory biomarkers.⁸ Therefore, future research should explore the potential mediating role played by biomarkers in the social patterning of health conditions.

Most importantly, a key limitation of this work relates to the context, which involved cohorts from two high-income countries. We cannot assume that these findings will be generalisable to low-income or middle-income countries (LMICs), where the picture appears more mixed.⁶ Indeed emerging evidence suggests that the prevalence of chronic disease risk factors and many of the chronic conditions reported by Kivimäki and colleagues⁷ might be more prevalent in more affluent individuals compared with socioeconomically deprived individuals in some LMIC settings.^{9,10} Therefore, there is a need to invest in research in LMIC contexts to study risk factors for chronic illness and the influence of socioeconomic status alongside other factors—such as gender, age, and ethnicity—on chronic illness and multimorbidity trajectories and clusters to inform public health and policy decisions globally.

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**Frances S Mair, Bhautesh Dinesh Jani*
frances.mair@glasgow.ac.uk

General Practice and Primary Care, Institute of Health and Wellbeing, University of Glasgow, Glasgow G12 9LX, UK

- 1 Dalstra JA, Kunst AE, Borrell C, et al. Socioeconomic differences in the prevalence of common chronic diseases: an overview of eight European countries. *Int J Epidemiol* 2005; **34**: 316–26.
- 2 Barnett K, Mercer SW, Norbury M, Watt G, Wyke S, Guthrie B. Epidemiology of multimorbidity and implications for health care, research and medical education: a cross sectional study. *Lancet* 2012; **380**: 37–43
- 3 Scott A, Chambers D, Goyder E, O’Cathain A. Socioeconomic inequalities in mortality, morbidity and diabetes management for adults with type 1 diabetes: a systematic review. *PLoS One* 2017; **12**: e0177210.
- 4 Jani BD, Hanlon P, Nicholl BI, et al. Relationship between multimorbidity, demographic factors and mortality: findings from the UK Biobank cohort. *BMC Med* 2019; **17**: 74.
- 5 Foster HME, Celis-Morales CA, Nicholl BI, et al. The effect of socioeconomic deprivation on the association between an extended measurement of unhealthy lifestyle factors and health outcomes: a prospective analysis of the UK Biobank cohort. *Lancet Public Health* 2018; **3**: e576–85.
- 6 Academy of Medical Sciences. Multimorbidity: a priority for global research. April, 2018. <https://acmedsci.ac.uk/file-download/82222577> (accessed Jan 6, 2020).
- 7 Kivimäki M, Batty GD, Pentti J, et al. Association between socioeconomic status and the development of mental and physical health conditions in adulthood: a multi-cohort study. *Lancet Public Health* 2020; published online Jan 30. [https://doi.org/10.1016/S2468-2667\(19\)30248-8](https://doi.org/10.1016/S2468-2667(19)30248-8).
- 8 Cornman JC, Gleib DA, Goldman N, Ryff CD, Weinstein M. Socioeconomic status and biological markers of health: an examination of adults in the United States and Taiwan. *J Aging Health* 2015; **27**: 75–102.
- 9 Hosseinpoor AR, Bergen N, Mendis S et al. Socioeconomic inequality in the prevalence of noncommunicable diseases in low- and middle-income countries: results from the World Health Survey. *BMC Public Health* 2012; **12**: 474.
- 10 Biswas T, Townsend N, Islam MS, et al. Association between socioeconomic status and prevalence of non-communicable diseases risk factors and comorbidities in Bangladesh: findings from a nationwide cross-sectional survey. *BMJ Open* 2019; **9**: e025538.