Reducing health inequality is a major public health priority, but public health has so far failed to provide the evidence base needed to fully capture and handle this complex challenge. To address this, health science needs to evolve from focusing primarily on individual exposures and single diseases to a system-oriented approach, considering the dynamics between diseases and events at an individual level, and the subsequent group dynamics at a population level.

The study by Linda Ejlskov and colleagues is an important contribution towards achieving this aim. The authors leverage nationwide multilevel data from Denmark to address the effect of a cross-level interaction between family socioeconomic position and neighbourhood affluence on the risk of self-harm and violent crime among adolescents and young adults. The topic is important and taps directly into ongoing policy discussions about the development of economically mixed neighbourhoods and schools. The authors’ findings indicate a weak but consistent interaction, with lower rates of self-harm and violent crime among young adults from low-income or low-education households living in affluent neighbourhoods than among those living in socioeconomically deprived neighbourhoods. Living in such a deprived neighbourhood might induce chronic psychological stress, owing to a perception of threat and inadequate resources, which can eventually cause adverse physiological changes and impair health. However, living in an affluent neighbourhood might create opportunities and social networks of long-term importance for children from low-income families, for example, through attending socially mixed schools. These findings indicate that neighbourhoods might be an important leverage point for interventions aimed at reducing health inequality.

Although the size and coverage of the study by Ejlskov and colleagues are impressive, their results are observational and potentially prone to selection bias. Individuals with a low income who choose or manage to live in an affluent neighbourhood might initially be different to those who do not. Thus a comprehensive investigation is needed into what characterises low-income families who end up residing in an affluent neighbourhood, taking their residential history into account. Perhaps low-income families living in affluent areas are simply doing better than people living in economically disadvantaged areas because they have more resources (eg, social, biological, or networked) to begin with? Such families might even carry with them opportunities inherited from earlier generations who had higher income and education, independent of the family’s own current socioeconomic position. Research on social segregation (eg, findings on the interrelation between educational policies, school segregation, and social inequality) could further enlighten some of these discussions. Such research could be supplemented by evidence from natural experiments associated with the introduction of policies aimed at creating more socially mixed neighbourhoods or schools.

Ejlskov and colleagues have chosen to focus mainly on children’s family and neighbourhood social disadvantages at age 14 years, but some children have a high and accelerating rate of social adversity (eg, poverty, poor health, and alcohol or drug misuse in the family) throughout their entire childhood. Indeed, the study found that family income family income at age 1 or 4 years seem to be more associated with self-harm and violent crime in young adulthood than any measurements at age 14 years. An important next step would be to investigate how such family-related adversity interacts with residential histories throughout entire childhoods. This approach might help to identify some of the structural and family-related processes that create an accumulation of adversity across multiple layers over time, potentially ending up in extreme outcomes such as self-harm or violent crime.

Health is spatially patterned, and the importance of communities and places in shaping the physical and mental health of populations is increasingly being acknowledged. In England, healthy life expectancy can differ between the most and least deprived areas by as much as 12 years. Even in a strong welfare-state system such as Denmark, surprisingly large differences in health indicators exist across regions and municipalities. Multiple forms of adversity tend to intersect in geographical areas. For example, socially disadvantaged people often reside in cheaper housing in neighbourhoods close to industrial activity or busy roads that are often associated with high amounts...
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of air pollution. Although Ejlskov and colleagues’ arguments are centred on the social mechanisms in a neighbourhood, other dimensions might be equally important. Air pollution, for example, is a major environmental risk factor for socially patterned diseases such as cardiometabolic disorders and respiratory diseases, and it is hypothesised that toxic social and environmental exposures have synergistic effects on neuroimmunological pathways that underlie the development of chronic diseases such as cardiometabolic diseases and depression.\(^9\) Adding a spatial perspective to inequality research will be essential for the development of effective preventive strategies aimed at reducing health inequality at the community level in young adulthood.

I declare no competing interests.

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