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Revisiting Compression of Morbidity and Health Disparities in the 21st Century

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“COMPRESSION OF MORBIDITY,” A NOTION INTRODUCED BY PHYSICIAN James Fries in 1980, remains an important construct in aging and population health research.¹ Also referred to as the “rectangularization” of morbidity and mortality curves, compression of morbidity denotes an ideal population health dynamic in which people live long, healthy lives with declines in physical and cognitive health associated with senescence “compressed” into a short time period at the end of life. Fries posited that postponing health declines until just before death would have “profound” positive social consequences and should be the priority of health policy.¹

In 1990, sociologists James House, Ronald Kessler, and Regula Herzog published an article titled “Age, Socioeconomic Status, and Health” in *The Milbank Quarterly*.² This well-cited article is an important contribution in the history of population health research for two key reasons. First, it presents one of the first empirical tests of the construct of compression of morbidity in the United States, using cross-sectional data from two nationally representative population-based surveys: the 1984 National Health Interview Survey and the 1986 Americans’ Changing Lives (ACL) survey, which the authors had codesigned.

Second, the article astutely shifted focus from Fries’ positive predictions regarding compression of morbidity on population health and social well-being to a clear warning regarding the likelihood of significant social disparities in progress toward Fries’ ideal. As House and colleagues noted, every material social condition and psychosocial risk factor related to health and successful aging is patterned by socioeconomic position. As such, their analyses sought “to determine whether the postponement of morbidity and functional limitations into the last years of life is more characteristic of advantaged socioeconomic groups.”²

The primary research question of House, Kessler, and Herzog was to assess whether the relationship between age and health is constant or whether it varies across socioeconomic groups, defined by income and educational attainment. The results from their careful and layered analyses of the two national datasets were quite similar, revealing that “the vast bulk of what might be termed excess or preventable morbidity and functional limitations in the US population...is concentrated (both absolutely and relatively) in the lower socioeconomic strata of our society.”² This led the authors to conclude that efforts toward the goal of a compression of morbidity must focus primarily on the myriad social and economic drivers—well beyond medical care—of the inequalities in illness, disability, and mortality that are strikingly apparent by middle age.

House and colleagues acknowledged that their cross-sectional analyses were limited regarding the population dynamics of compression of morbidity. Empirical investigations of compression of morbidity are challenging because they require simultaneous control of age, period, and cohort effects for the total population and key sociodemographic subgroups. Nonetheless, their sociological analyses and commentary in 1990 set an important stage for many subsequent research endeavors regarding the ways in which the socioeconomic position of individuals has a profound impact on their health trajectories as they age.

There are many ongoing debates in the compression of morbidity literature, including which measures of morbidity should be prioritized and the best methodological approaches for life course analyses that adequately address the thorny challenge of isolating age, period, and cohort effects. Even so, the extant research literature regarding compression of morbidity in the United States suggests that it is *not* happening at the population level.³ However, much of the published research does not stratify analyses by socioeconomic position, as House and colleagues had recommended in 1990. House, Lantz, and Herd’s 2005 longitudinal analysis of ACL data affirmed that those in the highest income and education groups were significantly more likely to postpone physical functional impairments until much later in life.⁴ Most other analyses, though, do not adequately investigate progress toward compression of morbidity by gender, income, education, race, ethnicity, and other social factors related to health.

While not currently realized in Fries’ ideal state, the ultimate goal of population health should be for all people—not just the socially advantaged—to live long lives, with aging-related declines in

physical and cognitive health compressed into a short time period before death. With the explosion of research regarding the social determinants or social drivers of health and health inequities across the life course, there are unrealized opportunities for researchers, community advocates, and policymakers to focus on compression of morbidity as an important population-level metric and goal.

Within this type of work, there is a dire need for better data, analysis, and action regarding health trajectories by race and ethnicity, as socioeconomic position does not confer the same social and health benefits across racial and ethnic groups, owing in large part to structural racism and systemic discrimination. In addition, compression of morbidity research and action in the 21st century needs to take into account the impact of the recent observed declines in life expectancy in all middle-aged racial and ethnic groups in the United States.⁵ Alarming declines in life expectancy are primarily the result of significant increases in causes of death that are more sudden than chronic in nature, more common at younger ages, are not associated with senescence, and have strong social drivers and patterns. This includes deaths from drug overdose (including opioids) and suicide; and the COVID-19 pandemic is likely to further fuel this awful trend.

House and colleagues wrote that the “impact of socioeconomic status on health may be like a powerful river. If you identify its present course or block that course, it may simply find a new route to its destination.”² Those with socioeconomic and racial advantages that translate into material and psychosocial resources are empowered to avoid and overcome health risks and hazards across the entire life course. The compression of morbidity remains a useful construct for population health research, and this seminal work by House, Kessler, and Herzog remains a potent reminder that population health policy should have as its goal changing the powerful rivers of social inequality, which are the driving, forceful currents behind the dramatic health inequities in the United States.

References

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