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Letters to the Editor

Social capital and the history of mortality in Britain

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Sirs—Szreter and Woolcock have argued that demographic history has a significant contribution to make in the debate about the role of social capital in shaping health patterns. They illustrate this by focusing on the impact of social welfare on mortality in Britain during the eighteenth and nineteenth centuries. While agreeing with the authors about the importance of history, we will present evidence to suggest different conclusions about the historical role of social capital.

The authors' thesis on the historical relationship between social capital and mortality may be summarized in their own words as follows:

> The British polity had by the beginning of the 19th century established itself as the most prosperous, socially cohesive, and socially secure in Europe, proven through the capacity of its national security system, the Poor Law, to protect its citizens from local famines since the 17th century . . . . There was abundant and burgeoning bridging and linking social capital, particularly in the towns . . . . For almost a century, from the 1730s until the 1820s . . . its average life expectancy also steadily improved . . . . But then all this changes. For about a half a century, from the 1820s until the 1870s . . . the growing towns' physical environment were simply allowed to deteriorate as ever more workers crowded in to work in the money-making factories . . . the industrial urban workers and their families experienced a catastrophic crises in the second quarter of the 19th century . . . in the central parishes of cities such as Manchester, Liverpool and Glasgow, life expectancies dropped to about 25 years . . . . The breakthrough did not come until the 1870s . . . pioneered in the city of Birmingham through the political leadership of Joseph Chamberlain . . . [who] legitimized the moral and politically energizing imperative for the collective attack on squalor, poverty and disease.[1]

Although data on the history of mortality is incomplete, new research on long-term mortality raises serious questions about the above thesis. Detailed work, using parish registers for London and the county of Bedfordshire, suggests that infant and child mortality approximately doubled between the sixteenth and the eighteenth century, both amongst wealthy and non-wealthy families. In London mortality peaked in the middle of the eighteenth century, whereas in Bedfordshire and possibly elsewhere this peak in infant and child mortality did not occur in the general population until the second half of the eighteenth century.[2]

This is the period in which Szreter and Woolcock believe there was a benign political and social regime, providing effective bridging and other social capital, generating better health in the population. However, this is contradicted by the increase in mortality, which was probably a result of the growth in the virulence of smallpox, typhus, and other infectious diseases during this period. For example, the case fatality rate of smallpox increased in London from about 5% in the sixteenth century to approximately 45% amongst unvaccinated children in the 1880s, possibly due to the importation of more virulent strains with the growth of world trade.[3]

Increasing smallpox virulence may partly account for the low life expectancy in some areas in the second quarter of the nineteenth century. There is evidence that smallpox vaccination was neglected in Glasgow in this period,[4] and it is possible that there were variations in the pattern of urban mortality depending on the practice of vaccination and other measures. Mortality was also higher in Liverpool, Glasgow and Manchester because of an influx of poor lrish escaping famine and disease, which elevated mortality levels in the 1840s.[5,6] Additionally, birth registration was probably defective among lrish Catholics, artificially elevating infant mortality levels.[7]

The life expectancy levels quoted by Szreter and Woolcock for these cities are not representative of all urban areas in the middle of the nineteenth century. In the 1850s, life expectancy at birth in seven other English cities with populations above 100 000 was in the range of 35–39 years, compared with the 31 and 32 years for Liverpool and Manchester.[4]

Expectation of life at birth in England and Wales was 41 years in the 1850s, suggesting that the majority of urban areas did not suffer mortality significantly higher than elsewhere in this period. Gains in life expectancy in cities after the 1870s were not greater than for the country as a whole. For example, life expectancy in Birmingham increased from 37 to 42 years between the 1860s and 1890s, whereas the equivalent increase in England and Wales was 41 to 46 years,[10] suggesting that public health measures in Birmingham were not of especial importance in the reduction of mortality.

There is also evidence that the fall in infant, child, and adult mortality in urban areas during the late eighteenth and early nineteenth century was much more significant than that which occurred after the 1870s, indicating that the latter was not a key period of 'beakthrough'.[2] The most important city in Britain during the eighteenth and nineteenth centuries was London. In 1821, it had a population more than two-and-a-half times larger than that of Manchester, Liverpool, and Glasgow combined,[8] and dominated the economic, social, and cultural life of the country. A number of demographic studies have been carried out on London and they all indicate that infant, child, and adult mortality fell sharply between the middle of the eighteenth and nineteenth centuries. Approximately two-thirds of the children under the age of five died in the 1750s, a proportion which had fallen to about a third by the 1840s.[9–12] Much of the fall occurred in the nineteenth century, some of it probably in the second quarter of the century.[8,13]

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An important part of the debate about the role of social capital is the controversy about the reasons for the decline in mortality in the eighteenth and nineteenth centuries. Szreter is probably correct in concluding that shifts in the standard of living were not central in shaping mortality patterns.[14] Infant and child mortality increased between the sixteenth and middle of the eighteenth century at a time when real incomes were rising,[2] and fell in rural areas during the first half of the nineteenth century at a time when incomes were probably at best static.[15,16] More importantly, the historical relationship between social class and mortality suggests that living standards were not a primary factor in the mortality transition.

Although complete data is not yet available, provisional research suggests that infant, child, and adult mortality levels were similar among wealthy groups and the general population until the middle of the eighteenth century. Outside of London, it appears that infant and child mortality fell first among the professional and upper classes, and then subsequently—fifty or so years later—among the general population. There were major reductions in absolute levels of adult mortality among all social groups from the eighteenth century onwards, but there seems to have been little or no social class gradient in adult mortality in the eighteenth and the first half of the nineteenth century.[13]

Even by the end of the nineteenth century, there was only a minimal gradient in infant and adult mortality, although strong social class differences in child mortality had probably been established by the beginning of the nineteenth century.[2] The pattern of social class mortality reductions continued throughout the late nineteenth and the whole of the twentieth century. The fall in infant mortality at the end of the nineteenth and beginning of the twentieth century first took place amongst the professional and upper classes, and it is probable that similar changes occurred in the adult mortality gradient.[13,17–19]

Historically, the professional and upper classes appear to have played the leading role in introducing improvements in hygiene and medical practices which led to the reduction in mortality. They were the first to adopt—amongst other measures—inoculation (variolation) and vaccination against smallpox, the elimination of contaminated earth flooring in houses, the introduction of wash basins, baths, and water closets, and in the twentieth century, the reduction in the incidence of cigarette smoking. Some measures were promoted by local authorities—for example most districts in London introduced improvement acts in the middle of the eighteenth century,[20] and many rural parishes paid for the inoculation and vaccination of their poor.[3] However, many measures occurred as a result of changes in individual behaviour influenced by medical and other cultural developments.

The association between social class and mortality has a direct bearing on the debate about the role of social capital. Szreter and Woolcock point to the importance of 'bridging social capital', reflecting the work of Wilkinson, Marmot, and others on the influence of social inequality on health. Wilkinson and Marmot have argued that social inequality has a general impact on mortality levels, and have made reference to links between poverty and high mortality in eighteenth and nineteenth century England.[21–23] However, the minimal social class gradient in infant and adult mortality before the end of the nineteenth century suggests that social inequality was not a crucial dimension in the determination of health before the twentieth century.

It is possible that the epidemiological transition changed the relationship between social class and mortality in the twentieth century, although this does not easily fit with Wilkinson and Marmot's argument about the impairment of immunity from 'status stress'. Only further demographic research will help clarify these topics, but the debate on the history of social capital and health initiated by Szreter and Woolcock has made an important initial contribution to clarification of these central epidemiological issues.

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