The health gap: the challenge of an unequal world

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For an interview with Michael Marmot see Online

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In Aldous Huxley's dystopia, *Brave New World,* there were five castes. The Alphas and Betas were allowed to develop normally. The Gammas, Deltas, and Epsilons were treated with chemicals to arrest their development intellectually and physically, progressively more affected from Gamma to Epsilon. The result: a neatly stratified society with intellectual function, and physical development, correlated with caste.

That was satire, wasn't it? We would never, surely, tolerate a state of affairs that stratified people, then made it harder for the lower orders, but helped the higher orders, to reach their full potential. Were we to find a chemical in the water, or in food, that was damaging children's growth and their brains worldwide, and thus their intellectual development and control of emotions, we would clamour for immediate action. Remove the chemical and allow all our children to flourish, not only the Alphas and Betas. Stop the injustice now.

Yet, unwittingly perhaps, we do tolerate such an unjust state of affairs with seemingly little clamour for change. The pollutant is called social disadvantage and it has profound effects on developing brains and limits children's intellectual and social development. Note, the pollutant is not only poverty, but also social disadvantage. There is a clear social gradient in intellectual, social, and emotional development—the higher the social position of families the more do children flourish and the better they score on all development measures.[1,2] This stratification in early child development, from Alpha to Epsilon, arises from inequality in social circumstances.

Emphasising social circumstances and the social gradient is not to say that all differences in early child development can be linked to the social environment. Were the conditions under which children grew and developed to be equalised there would still be differences between individuals in cognition and social and emotional development. Twin studies show substantial heritability of cognitive ability, for example.[3] That said, the Flynn effect refers to the substantial increases in IQ scores that have occurred over time that are due to the environment, broadly conceived.[4] The evidence shows clearly that social conditions influencing parenting affect children's ability to reach their potential and are the major determinants of the social gradient in early child development.[5] This social gradient, in its turn, has a profound effect on children's subsequent life chances. We see a social gradient in school performance and adolescent health; a gradient in the likelihood of being a 20 year old not in employment, education, or training; a gradient in stressful working conditions that damage mental and physical health; a gradient in the quality of communities where people live and work; in social conditions that affect older people; and, central to my concern, a social gradient in adult health.[2] A causal thread runs through these stages of the life course from early childhood, through adulthood to older age and to inequalities in health. The best time to start addressing inequalities in health is with equity from the start. But intervention at any stage of the life course can make a difference. Relieving adult poverty, paying a living wage, reduction in fuel poverty, improving working conditions, improving neighbourhoods, and taking steps to reduce social isolation in elderly people can save lives.[1]

The health gradient to which these life course influences give rise is dramatic. There is a cottage industry, taking subway rides in various cities and showing how life expectancy drops a year for each stop. The gap at the ends of the gradient is truly large. In the London Borough of Westminster, UK, there is an 18 year gap in male life expectancy between the most and least salubrious parts of the borough.[6] Similarly, in the US city of Baltimore there is a 20 year gap at the ends of the gradient. 20 years is huge—it is the gap in life expectancy between women in India and in the USA. Health inequalities are perhaps the most damning indictments of social and economic inequalities. These subway rides used social characteristics of area of residence. We see similar social gradients in health if we classify people by education, wealth, income, or occupational status.

All societies have social and economic inequalities and all societies have social gradients in health, but the magnitude varies. At the UCL Institute of Health Equity, London, UK, we led a review of social determinants and health inequalities for the European Commission. As part of that review we examined life expectancy at 25 years by level of education.[7] In each country there is a gradient in life expectancy—the higher the level of education, the longer the life expectancy. Three striking findings emerged from the comparison. First, average life expectancy is lower in the countries of central and eastern Europe than in Sweden, Italy, and Norway. In other words we must add to our concern health inequalities between countries as well as those within countries. If we extend beyond Europe we see differences in life expectancy of 40 years and more. Second, the gradient is steeper in the east than in the west. Third, and linked to the steeper gradient, the country differences in life expectancy are much greater for people with little education than they are for people with tertiary education. The health risks associated with being low status vary greatly.

The variation in health inequalities gives grounds for optimism. The data show shallower socioeconomic gradients are possible. Further, Estonia, Romania, and Hungary are able to achieve good health. They do it for people with tertiary education. The challenge is to bring the health level of the more disadvantaged up to the level

of those at the top. The explanations for health inequalities between these countries and within countries are highly likely to overlap.

The gradient must shape our search both for explanations of health inequalities and policies to deal with them. My original observations of a striking gradient in health in the Whitehall studies of British civil servants meant that we had to look beyond income poverty for explanations.[8] The gradient changes the question. If health inequalities are confined to poor health for the poor and reasonable health for everyone else, then the challenge is to reduce poverty—a worthy goal that is simpler conceptually than it is politically. But the gradient involves the whole of society; it involves all of us below the very top. The average resident of the UK or USA might be concerned, but no more than that, by living in a society marked by health inequalities that follow on from the unequal distribution of society's benefits. But should that seem a touch too altruistic there is the more pressing concern that the social gradient in health includes all of us so-called average people. Tackling the gradient implies reducing inequality and improving society.

In the report of the WHO Commission on Social Determinants of Health, *Closing the Gap in a Generation,* we linked health inequalities within and between countries to inequities in the distribution of power, money, and resources and to the inequities in conditions of daily life to which they give rise.[9] My book, *The Health Gap,* endorses the statement the WHO Commission made: social injustice is killing on a grand scale.

Put simply, social injustice is disempowering. It deprives people of control over their lives. In low-income countries where people struggle to feed their children and have no access to clean water and sanitation, their disempowerment is material, as well as a sense of being at the mercy of forces beyond one's control. Children die for lack of access to the material necessities of life. But for every child who dies, there are perhaps 25 who do not fulfil their development potential—in part because of malnutrition and infection, but in part because of poverty of the social environment and consequent lack of appropriate psychosocial stimulation and education. In countries of low, middle, and high income the mind is the major gateway through which social circumstances lead to health inequalities.[10] The mind? Conventional wisdom would focus on more tangible causes of ill health: poor lifestyle choices or lack of access to health care. Lack of access to health care is, by and large, not the cause of ill health; it might be the cause of a great deal of unnecessary suffering as a consequence of ill health. Unhealthy lifestyle, smoking, alcohol, diet, and obesity are of course implicated in non-communicable disease, along with stress pathways, but we have to ask why increasingly these unhealthy lifestyles follow a social gradient. We have to address the causes of the causes—the social conditions acting through the life course that both affect exposures and people's behaviour.

One of the causes of the causes is education. It is empowering. Especially for women in low-income countries, education is the route to employment and autonomy, to control of their sexuality and reproduction, to survival of the children they choose to have, to reduced likelihood of intimate partner violence, and to better health.[1]

In high-income countries, too, social circumstance acting through the mind can account for the social gradient in health: even a 28 year gap in life expectancy in Glasgow, and 20 years in Westminster. To see this, consider a typical young man growing up in the down-at-heel part of Glasgow, life expectancy 54 years, subject to physical and sexual abuse from a succession of male partners of his mother; moving house about once every 18 months; entering school with behavioural problems, which then led on to delinquency, gang violence, and spells in prison. At various times, psychiatrists labelled him as having personality disorder, anxiety, depression, and antisocial tendencies. He has this in common with men in prisons, more than 70% of whom have two or more mental disorders[11]—14 times more common than the general population. It is true that tobacco, alcohol, drugs, and an appalling diet, along with liberal indulgence in violence, are major contributors to his ill health, but the causes of the causes are his tragic life history. To argue that this young man is responsible for his own poor health is to ignore the imprint on him of his life circumstances.

A second reason for thinking that the mind is implicated comes from Sir Harry Burns and colleagues.[12] They compared mortality in Glasgow with that in Liverpool and Manchester. The causes of death with the biggest relative excess in Glasgow were drug-related poisonings, alcohol-associated deaths, suicide, and other external causes of death. These are all psychosocial in origin. They are what happens when people are disempowered, and have little control over their lives.

Our modern-day real-life version of Huxley's savage satire allows us to understand why in countries of high income, as well as middle and low, relative social disadvantage continues, so strongly, to be linked with poor health. It also changes the moral question. Our rush to blame the poor for their irresponsibility in indulging in risky behaviours that are bad for their health should be tempered by knowing that social disadvantage in childhood might have had an enduring influence on adult behaviour.

The case history from Glasgow I have just sketched is the severe end of the spectrum. Some adverse child experiences affect up to a half of the population in England and the USA. Further, evidence shows a social gradient in markers of early child development; it is a litmus test for political views. The political right say the gradient results from poor parenting; the left that it is poverty and social disadvantage. They are both correct. The ability of parents to do what children need is constrained by poverty and disadvantage.

The gradient in health in rich countries makes clear that we are discussing social inequalities more than absolute amounts of money. The poor of Glasgow are rich compared with the average in India, for example, but their health is worse. They are relatively disadvantaged compared with others in their society. Following Amartya Sen,[13] I argue that relative disadvantage with respect to income translates into absolute disadvantage in empowerment and control over one's life. It is not what you have that is important for health, but what you can do with what you have.

There is not a simple relation between the magnitude of income inequality and the slope of the gradient of health inequality. But that does not let income inequality off the hook. What do the 48 million population of Tanzania, the 7 million population of Paraguay, the 2 million population of Latvia, and the top 25 earning hedge fund managers in the USA have in common? In 2013, the combined income of each of these groups was between US$22 and 28 billion. Theoretically, taking 1 year's income from 25 hedge fund managers and transferring it would double Tanzania's national income. I am not suggesting that we simply give individual Tanzanians a cash infusion. But think of the schools that could be built, the clean water that could be piped, and the nurses that could be trained with that money. High levels of income inequality and low rates of taxation for the rich make it harder to invest in conditions, throughout the life course, that would reduce health inequality.

Health inequalities should be an important part of the argument to change our national and global discussion from one that gives priority to economic growth of whatever form to one that puts human development at the heart of the debate. Growing inequalities are a challenge, but not a counsel of despair. All over the world, there are inspiring examples of communities and countries that are making a difference to people's lives and improving health as a result: in the slums of Ahmedabad, in Maori communities in New Zealand, in the UK city of Coventry, in Brazil, in Slovenia, in Taiwan, and many more.

In Thailand, they speak of the triangle that moves the mountain. The three sides of the triangle are government, knowledge, and the people. Get the three sides in place together and we can move mountains.

Declaration of interests

MM was chair of the Commission on Social Determinants of Health and of the Marmot Review. He is the author of *The Health Gap: the Challenge of an Unequal World*. He declares no other competing interests.

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