

2.14 Deprivation and health

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ESSENTIALS The health of an individual is influenced by the circumstances in which he or she lives. Individuals who live in poverty are more likely to be unhealthy and die younger than individuals who are wealthy. The mechanism by which complex social circumstances cause health inequalities might be a failure to create capacity to manage life's challenges. Most agree that well-being is created where individuals have an optimistic outlook, a sense that they are in control of their own lives, a sense of purpose and meaning in life, confidence in their ability to deal with problems, a supportive network of friends and a nurturing family. If society is serious about tackling health inequalities, action needs to happen across the life course. Children from families who have no expectation of success need encouragement and, when they fall into addiction or criminality, society needs to think about rehabilitation rather than punishment. Inclusion into society and building empathy is the basis for narrowing inequality.

Early observations The industrial revolution was marked by increasing disparity in wealth across society. As the health of the rich improved, the health of the working classes was often damaged by the conditions in which they worked. In 1842, the social reformer Edwin Chadwick published a study in which he noted that labourers, on average, died around 20 years younger than members of the professional classes. Three years later, Friedrich Engels published a description of life in cities in Northern England. He reported that the annual death rate in mill towns such as Manchester and Liverpool was significantly higher than the national average (around 1 in 32 compared with an average of 1 in 45). In Glasgow, a city at the heart of the industrial revolution, city officials published in 1861 data linking infant mortality with levels of affluence. In the poorest areas of the city, infant mortality was 18 times higher than that seen in the wealthiest families. Over the last 150 years, it has become apparent that the relationship between poverty and health is complex and involves many aspects of society. It has now become customary to talk of 'socioeconomic determinants of health' and, where these determinants are unequally distributed, to see the resultant health inequality as a matter requiring action. The World Health Organization defines the social determinants of health as: 'the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems.' Health inequalities in the

21st century There are inequalities in life expectancy between countries, within countries, and within individual towns and cities. Internationally, the gap between industrialized countries and the low-income countries narrowed between 1960 and 1990 from around 23 years to approximately 12 years. The gap between the two groups in infant mortality was 123 (per 1000 live births) in 1960 and this narrowed to 61 by 1990. The exception to this improving picture was in some African countries where mortality from AIDS caused a fall in life expectancy. By 2010, the OECD countries had attained an average life expectancy at birth for the whole population of 79.7 years, a gain of almost 10 years since 1970. Japan had the highest life expectancy and most OECD countries had attained a life expectancy at birth of at least 80 years. Within the United Kingdom, life expectancy in England, Scotland, and Wales continues to improve, although there are differences between the three countries with Scotland having the lowest life expectancy for both men and women (Table 2.14.1). Despite increasing life expectancy across the United Kingdom, significant variations between districts are still apparent. In Kensington and Chelsea, the wealthiest part of London, a man can expect to live to 88 years, while a few kilometres away in one of London's poorer areas, Tottenham Green, male life expectancy is 71.

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The causes of health inequality

Health in any society is determined by the complex interaction of many factors, hence attempts to attribute inequality to any one factor are likely to be an oversimplification. However, several explanations have received attention over the years.

Access to healthcare

One commonly held belief is that reduced life expectancy among the poor is due to inequality in access to healthcare. In 1980, the UK government published a report by Sir Douglas Black. He had been asked to answer the question of why, after 30 years of a National Health Service, providing universal, free access to healthcare, there were persistent inequalities in health in the UK population. Black was able to discount this theory, saying healthcare was primarily to treat illness when it occurred, not to prevent its occurrence. However, it remains possible that, in countries without universal, free health services, this explanation could contribute to inequalities.

Other, more plausible explanations for inequalities in the United Kingdom were considered in Black's Report. These included the following.

Natural or social selection

Could it be that, rather than social position affecting health, health actually determines social position? People with poor health might be less effective in the workplace and gradually drift down the occupational hierarchy. However, it was generally accepted that this was not a credible explanation for the pattern of inequality observed in the United Kingdom at that time.

Cultural or behavioural factors

This explanation focuses on the choices made by individuals about their health. Use of alcohol, tobacco, lack of exercise, and consumption of unhealthy foods are more common at the lower end of the social scale. The resulting poor health is often seen as the consequence of a lack of education or simply a lack of interest in remaining healthy. However, a cohort study that followed British civil servants over a long period of time, collecting data on risk factors such as body weight, cholesterol, smoking, and blood pressure, found that risk factors could only explain one-third of the observed variation in health.

Material factors

Poor people are more likely to live in overcrowded homes of poor quality. They may work in noisy, polluted environments with inadequate safety regulations. They will be less financially secure and may be stressed by debt and difficulty paying bills. All of these factors can adversely affect health.

Psychosocial factors

If we feel overwhelmed by events around us, we will be stressed, and stress has behavioural and biological consequences. This makes it difficult to separate behavioural, structural, and psychosocial factors as causes of inequality. One way of unravelling the complexity of the relationship is to understand the biological mechanisms through

which social circumstances influence health. The biology of deprivation Many studies report high levels of stress hormones in people at the lower end of the socioeconomic scale. A normal stress response allows us to respond to challenge. Sitting an exam, moving house, or an accident will produce a short-lived elevation in stress hormones which will return to normal once the challenge is overcome. Many stressors are less easy to resolve. Unexpected bills, work conflicts, family crises are persistent and often difficult to manage. In poorer areas, problems may include noise, damp housing, discrimination, and living in a violent and dangerous neighbourhood. Greater resilience allows us to manage successfully everyday problems. This is particularly true for those who are more affluent and can afford to live in a safe environment. Chronically activated stress responses appear commoner among those in a poorer social position and this chronic stress burden may interfere with health in several ways which ultimately impair well-being and long-term survival (Fig. 2.14.1). Low socioeconomic status Adverse environments Poverty Lack of social support Chronic stress Biological damage Lack of control Poor health choices Poor health Fig. 2.14.1 Mechanisms by which low socioeconomic status may lead to poor health. Table 2.14.1 Life expectancy at birth by year of birth Year Men Women England Scotland Wales England Scotland Wales 07/09 78.2 75.3 77.2 82.3 80.1 81.5 08/10 78.5 75.8 77.6 82.5 80.3 81.8 09/11 78.9 76.2 78.0 82.9 80.6 82.2 10/12 79.2 76.5 78.2 83.0 80.8 82.2 11/13 79.4 76.8 78.3 83.1 80.9 82.3

2.14 Deprivation and health 159 The mechanism by which complex social circumstances cause health inequalities might be a failure to create capacity to manage life's challenges.

Salutogenesis—the creation of health The American sociologist, Aaron Antonovsky, studied the question 'How do people manage stress and stay well?'. Some people maintain health despite exposure to potentially overwhelming stressors. 'Salutogenesis' was the term he used to describe those factors that support human health and well-being, rather than the factors that cause disease. Salutogenesis represents a counterbalance to pathogenesis with which medicine is more concerned. Antonovsky's theory is only one of many concepts that might underpin the processes of health creation. Emotional intelligence, internal locus of control, empowerment are a few of many theories that have been advanced to explain why some individuals have an increased capacity for well-being. Some attributes are common to several of these theories. Most agree that well-being is created where individuals have:

- An optimistic outlook
- A sense that they are in control of their own lives
- A sense of purpose and meaning in life
- Confidence in their ability to deal with problems
- A supportive network of friends
- A nurturing family

Antonovsky's work is of special interest since he offers a link between the psychosocial drivers of inequality and their biological consequences. Central to Antonovsky's theory is the concept that, early in life, we acquire a mental outlook which he described as 'having a sense of coherence'. This he described as a set of psychological attributes which he identified as being associated with positive health outcomes. They include seeing the world as:

- Comprehensible: having a belief that things happen in an orderly and predictable fashion, a sense that you can understand events in your life and predict what will happen in the future.
- Manageable: confidence that you have the skills, ability, support, and resources necessary to manage events in your life.
- Meaningful: believing that things in life are interesting and a source of satisfaction, and that there is good reason or purpose to care about what happens.

Failure to develop a sense of coherence in early childhood, Antonovsky suggested, would result in the individual being chronically stressed. His thinking hinted at an explanation for the physical consequences of psychosocial adversity. The early origins of well-being The basis for a salutogenic outlook is laid down in early childhood and relates to the way the child learns to manage stress. A positive stress response might be caused by exposure to a new caregiver or an

immunization but, so long as the child attaches to an adult as part of a safe, consistent, nurturing relationship, they learn that the world is a comprehensible and manageable place. However, when a child experiences frequent, or prolonged adversity—such as physical or emotional abuse, or chronic neglect due to parental substance misuse or mental illness—such prolonged activation of the stress response can be associated with altered brain development. Specifically, abnormalities of the prefrontal cortex, hippocampus, and amygdala make it harder to suppress inappropriate behaviour, impair learning, and increase the risks of mental and physical health problems throughout the life course. Changes to the hippocampus also impair the individual's capacity to manage stress. Across the life course, adverse childhood events increase the risk of poor health, failure in education, increased risk of offending, and a criminal record as well as poor health. Antonovsky did not claim that sense of coherence alone could produce health. He also argued that individuals needed access to external supports that allowed them to be resilient in the face of severe challenge. These resources include assets such as money and social support. These are precisely the factors which those living in poverty and chaos are lacking. Fig. 2.14.2 outlines Antonovsky's concept of health creation. Resources which enhance resilience

Sense of coherence
 Events Stress Tension Resolution Well-being
 Seeing the world as: Structured Predictable
 Feeling that it is: Manageable Meaningful
 Wanting to engage Family Nurture Intelligence Work Material
 resource Identity Cultural stability Stable set of answers
 Optimism

Fig. 2.14.2 Antonovsky's concept of health creation.

160 section 2 Background to medicine How might health inequalities be improved? Healthy brain architecture depends on a foundation built by appropriate attachment formed between a child and stable, caring adults. If an adult's responses to a child are unreliable, inappropriate, or simply absent, the lifetime risk of failure is increased. Adverse childhood events can set in motion a lifetime of failure. Mental health problems in childhood can lead to school failure, poor educational record, and unemployment. One cohort study suggested that childhood abuse and neglect could have a significant impact on the likelihood of arrest for delinquency and violence. By the age of 32, almost half of the victims of abuse and neglect were arrested for a non-traffic offence. Criminal conviction enhances the likelihood of unemployment and poverty, and the individual becomes increasingly alienated from society. Domestic violence damages children and the cycle of alienation continues (Fig. 2.14.3). If society is serious about tackling health inequalities, action needs to happen across the life course. It needs to begin by ensuring that babies have the best possible start in life. Supporting parents who have not themselves experienced a nurturing childhood to nurture their children is a necessary first step. Children from families who have no expectation of success need encouragement and, when they fall into addiction or criminality, society needs to think about rehabilitation and repair rather than punishment. Inclusion into society and building empathy is the basis for narrowing inequality.

FURTHER READING Center on the Developing Child. Key Concepts. <http://developingchild.harvard.edu/> Kawachi I, Subramanian V, Almeida-Filho N (2002). A glossary for health inequalities. *J Epidemiol Community Health*, 56, 647–52. Lindstrom B, Eriksson M (2005). Salutogenesis. *J Epidemiol Community Health*, 59, 440–2. Marmot M, et al. (2010). *Fair Society, Healthy Lives (The Marmot Review)*. <http://www.instituteofhealthequity.org/resources-reports/fair-society-healthy-lives-the-marmot-review> Marmot MG (2015). *The health gap: the challenge of an unequal world*. Bloomsbury Press. ISBN 1632860783. McEwen BS, Morrison JH (2013). The brain on stress: vulnerability and plasticity of the prefrontal cortex over the life course. *Neuron*, 79, 16–29. Initial event Unequal outcomes Alienation Consequences Loss of self efficacy, self esteem, sense of control Worklessness Poverty Failure in education offending health Mental health problems Chaotic early years

Fig. 2.14.3 The

cycle of alienation.

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