Social Science & Medicine 147 (2015) 121–125

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Short communication

Beyond inequality: Acknowledging the complexity of social determinants of health

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ARTICLE INFO

Article history:
Received 6 August 2015
Received in revised form
22 September 2015
Accepted 21 October 2015
Available online 30 October 2015

Keywords:
Complexity
Culture
Health
Inequality
Social determinants
Wellbeing

ABSTRACT

The impact of inequality on health is gaining more attention as public and political concern grows over increasing inequality. The income inequality hypothesis, which holds that inequality is detrimental to overall population health, is especially pertinent. However the emphasis on inequality can be challenged on both empirical and theoretical grounds. Empirically, the evidence is contradictory and contested; theoretically, it is inconsistent with our understanding of human societies as complex systems. Research and discussion, both scientific and political, need to reflect better this complexity, and give greater recognition to other social determinants of health.

1. Introduction

There was a time, about 20 years ago, when research into the social determinants of health seemed to tell a simple, coherent and compelling story (Eckersley, 2001, 2005 pp. 59–76, 2006). The research focused on inequality, especially income inequality, and it showed that there were social gradients in health, such that at any point in the social hierarchy, people on average had worse health than those above them and better health than those below them. More unequal societies had more unequal health–i.e., steeper gradients in health. And more unequal societies appeared to have poorer average health–i.e., inequality was bad for everyone's health, not just those of lower socio-economic status. In other words, income inequality produces health inequalities both within and between countries.

Since then, the science of health inequalities has become widely known outside the field, thanks largely to two publications: The report of the WHO Commission on Social Determinants of Health (2008), headed by Michael Marmot; and the 2009 best-selling book, *The spirit level*, by Richard Wilkinson and Kate Pickett (2010a). The WHO report, *Closing the gap in a generation: Health equity through action on the social determinants of health*, centres on inequities (or avoidable inequalities) in health, both within and between societies. *The spirit level* also covers both effects, but deals mainly with population-level impacts of inequality measured between countries, as emphasised in its subtitle, 'Why equality is better for everyone'. This has become known as the income inequality hypothesis.

In the past few years, the topic of inequalities in health has gained renewed and wider relevance as a result of growing public and political concern about rising inequality and its social and economic costs (Stiglitz, 2012; SSCCA, 2014; Hardoon, 2015). *The spirit level*, in particular, has generated a great deal of public debate and argument, with some critics deriding it as 'a sweeping theory of everything' (Equality Trust, 2010; Saunders, 2010; Snowdon, 2010; Rowlingson, 2011; Zagorski et al., 2014). Much of the debate has focused on the validity of its statistical analyses, and been framed in terms of an ideological contest between the political left and right.

In their defence, Wilkinson and Pickett say *The spirit level* is not a 'theory of everything' (although the quotation, from a *Guardian* review, is on the cover of the cited edition), but a theory of problems which have social gradients–problems which become more common further down the social ladder (Wilkinson and Pickett, 2010b). 'We have never claimed that income inequality is the only cause of worse health and social problems in a society.'

Nevertheless, it is easy to understand why people have thought otherwise. Reflecting the emphasis on inequality in the research on

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http://dx.doi.org/10.1016/j.socscimed.2015.10.052
0277-9536/

social determinants in general, Wilkinson and Pickett (2010a) attach great importance to tackling inequality in shaping social outcomes, including improving the health and quality of life of all of us. More than this, reducing inequality would help us to address other problems: We can regain a sense of optimism that social and environmental problems can be solved, they write (p.272), knowing that 'greater equality will help us rein in consumerism and ease the introduction of policies to tackle global warming' (p. 272). Their vision has seen health inequalities become part of broader debates about progress and sustainability (e.g. Costanza et al., 2014).

However, the research emphasis on socio-economic status and inequality can be challenged on both empirical and theoretical grounds. This argument applies especially to the income inequality hypothesis, on which current research focuses, but also, by extension, to health inequalities research more broadly and to the research on the social determinants of health, given its dominant theme has been health inequality. As a corollary, science and politics need to pay more attention to other social determinants. This is the focus of my paper: the paradox between the growing political and public awareness and influence of the research on health inequalities and its contested scientific status. The paper draws on my own transdisciplinary analysis of progress and wellbeing, which includes social determinants of health and, in particular, cultural influences and young people's health and wellbeing.

The paper is not, then, a comprehensive review of the research on inequality and health and the debate that swirls around it; nor is it a review of the literature on culture and health or young people's health. Rather I use culture and youth health to illustrate, briefly and from different perspectives, the multidimensional and still unresolved nature of the social determination of health. Thus my analysis differs from those that dominated the debate several years ago: it is conceptual rather than methodological, scientific rather than ideological. Its justification and relevance derive from the renewed political significance of health inequalities in a time of increased concern over rising inequality, as noted above.

2. Empirical and theoretical doubts

As public and political interest in inequality and health has increased, the scientific story appears to have become less straightforward. It remains true that poverty and disadvantage harm health, and that most societies have social gradients in health (WHO, 2008). But more unequal societies do not necessarily have more unequal health (Mackenbach et al., 2008), raising doubts about whether reducing inequality would reduce health inequalities. And whether more unequal societies have worse health overall–the income inequality hypothesis– remains contested and inconclusive, despite hundreds of studies over several decades. Empirical findings are inconsistent and contradictory and there is still no consensus among researchers; researchers who support the hypothesis acknowledge this (Barford et al., 2010; Kondo et al., 2009).

Even by the early 2000s, some reviews were challenging the view that income inequality was a major determinant of differences in population health (Eckersley, 2006). The debate continues to this day. In a meta-analysis of multi-level studies, Kondo et al. (2009) found only a 'modest' effect of income inequality on health, and call for further investigations. Zagorski et al. (2014) showed in a recent multi-level analysis of data for 28 European countries that there were simple correlations between income inequality and a range of measures of health and wellbeing. However, unequal societies were on average much poorer; once per capita GDP was controlled, national inequality did not reduce health or wellbeing. 'These results all imply that directing policies and resources towards inequality reduction is unlikely to benefit the general public in advanced societies', they say.

Theoretically, the emphasis on a single factor–inequality–defies what we know about human societies as complex adaptive or dynamical systems (Eckersley, 2005 pp. 8–15; Helbing, 2013; McKenzie, 2014). These systems are dynamic and self-organising, and display openness, fuzziness, messiness, novelty and learning. They exist within other interdependent systems; are driven by multiple and diffuse interactions between their components; and are governed by feedback. Change in one part of the system can cause changes, often non-linear and unpredictable, in other parts. These can be rapid, triggering amplifying and cascading effects that are often hard to identify and map. Rather than deterministic one-to-one relationships between 'causes' and 'effects', there are many possible paths between them.

Importantly, complex systems show emergence: i.e., their characteristics 'emerge' from the collective behaviour of the whole system, not from the behaviour of its individual components; in other words, the whole is more than the sum of its parts. If we do not understand the patterns of interactions between the components of a system, we will not understand how it works. Problems in complex systems are often not amenable to permanent solutions, but instead tend to 'morph' into new predicaments, including as a result of interventions to deal with them; they have to be constantly monitored and managed (McKenzie, 2014).

Complexity science implies that it is a mistake to focus too heavily on one or a few factors in understanding patterns and trends in population health. It also suggests, in the concept of emergence, that we need to look at entire systems, rather than breaking them down into components, as research so often does. A striking example is the mapping of the causal pathways to obesity, prepared for the UK Government's Foresight Programme, which identified a multitude of interacting factors –resembling a bowl of spaghetti–that lies behind rising rates of obesity (Butland et al., 2007).

This is not to say that complexity is completely ignored in the social determinants literature; it is one aspect of the contested nature of the science. For example, a 2001 study concluded that population health was the product of a complex interaction of history, culture, politics, economics and the status of women and ethnic groups (Lynch et al., 2001). In health and medical sociology, research into 'fundamental causality' acknowledges complexity in 'the potential for a massive multiplicity of connections' in which no individual mechanism is dominant (Lutfey and Freese, 2005).

The literature also recognises the political ideology that lies behind growing inequality. Kawachi and Subramanian (2014) state that some scholars do not consider income inequality to be the real problem, which is the underlying political ideology which gave rise to the widening gap between the 'haves' and 'have nots'. 'According to this view, the mal-distribution of income is a by-product, or an epi-phenomenon, resulting from broader adversarial class relations.'

Nevertheless, the full implications of the science of complexity and complex systems for population health appear to have had little effect in shifting the emphasis of research away from socio-economic status and inequality. This is particularly evident in the 2008 WHO commission report and *The spirit level*, as well as in the wider political and public understanding of the social determinants of health.

3. The complexity of causation and the role of culture

Two decades ago, the scientific debate about health inequalities centred on the mechanisms or pathways by which inequality affected health: were they primarily, or fundamentally, material–