Health & Place 19 (2013) 74–79

Contents lists available at SciVerse ScienceDirect

Health & Place

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

Coal mining, social injustice and health: A universal conflict of power and priorities

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ARTICLE INFO

Article history:
Received 31 May 2012
Received in revised form
11 September 2012
Accepted 17 October 2012
Available online 9 November 2012

Keywords:
Coal
Mining
Health
Social injustice
Environmental injustice

ABSTRACT

Given the current insatiable demand for coal to build and fuel the world's burgeoning cities the debate about mining-related social, environmental and health injustices remains eminently salient. Furthermore, the core issues appear universally consistent. This paper combines the theoretical base for defining these injustices with reports in the international health literature about the impact of coal mining on local communities. It explores and analyses mechanisms of coal mining related injustice, conflicting priorities and power asymmetries between political and industry interests versus inhabitants of mining communities, and asks what would be required for considerations of health to take precedence over wealth.

1. Introduction

Throughout modern history coal has played a key role in human development, powering the industrial revolution and, more recently, globalisation. Although coal is increasingly being replaced by alternate energy sources such as natural gas, nuclear, wind and hydroelectric power, the perceived low cost of coal has resulted in it remaining a dominant source of power. It has contributed to the development and ongoing advancement of an astonishing array of technologies that shape the way we live, work and play. These technologies exert extensive influence over many aspects of our lives: what we eat, the manner and speed with which we access information and communicate, and the way we move from one location to another. Even the steady increases in human longevity over the past century or so are largely attributable to advances enabled by coal power. But, inevitably, there is a downside. The negative effects of our use of coal are primarily manifested in environmental damage and detriments to health and well-being, not only for those who work in the industry but also for people living in proximity to coal mines and/or coal combustion facilities.

With the surge in demand for coal in recent years, the mining-related health and well-being of local communities in many countries has become increasingly politicised and contested. This is due to the competing priorities between health and social justice versus a profitable mining sector and robust economic growth. However the surge in demand for coal has been predicted to have peaked, and recent reports have forecast an end to the coal mining boom within two years for some countries such as Australia (Heinberg and Fridley, 2010; Mohr and Evans, 2009). Despite these predictions, the current scale of coal mining activity makes the expansion of research into its health and social impacts critical regardless of whether or not the trend is towards a boom or a decline. Even in countries with no local mining industry, the perceived need for coal to power escalating urbanisation and technologies ensures that few nations are immune to the negative environmental, health and social impacts of coal extraction, combustion, and their by-products. Hence, given the demand for coal to build and fuel the world's burgeoning urbanisation, and our increasingly automated labour practices and lifestyles, the age old debate about social injustices and health harms associated with mining is as relevant, or even more so, than ever. Further, despite marked differences in national resources and political systems, the core issues appear universally consistent.

These issues include environmental impacts, such as permanent scarring of landscapes, soil degradation and the depletion of habitat and biodiversity, and the less direct but nonetheless serious harms such as the excessive generation of greenhouse gasses from coal combustion. For example, in 2005 coal contributed 25% of global energy consumption, but 41% of carbon dioxide emissions (Epstein et al., 2011). Epstein and colleagues propose that all stages of the life cycle of coal pose potential risks to human health and well-being, and this is well supported by other researchers and analysts. For example, with regard to air pollution

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1353-8292/$ - see front matter © 2012 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.healthplace.2012.10.006

Onder and Yigit (2009) claim that all major opencast mining operations produce dust from blasting, drilling, loading/unloading and transporting. Coal washeries can create further dust exposure and the heavy machinery required in mining generally uses industrial diesel fuels and may contribute to noise pollution in addition to producing harmful fumes. Coal burning generates a variety of pollutants; depending on the composition of the coal and the precautions taken to control emissions. Emissions include heavy metals, potential carcinogens such as poly-aromatic hydrocarbons, sulphur dioxide and nitrous oxides which can cause respiratory illnesses. These and other pollutants may migrate considerable distances, which is evidenced by the identification of coal burning in Europe and North American from 1860 onwards as likely sources of heavy metal deposits of thallium, cadmium and lead from a Greenland ice core (McConnel and Edwards, 2008).

Stored coal combustion waste products (fly ash) can pose serious health hazards if leakages occur. Additional health risks may accrue from the use of coal combustion by-products in building materials and Castleden et al. (2011) report serious secondary health impacts such as death and injury associated with coal transport vehicles.

This paper considers fundamental social injustices associated with mining, their implications for the health of local communities, and the tension between health and economic gain that resonate across resource and political contexts regardless of national culture, geographical location or stage of economic development. To achieve this, it draws on (i) the theoretical base for defining and understanding these injustices and their linkages, and (ii) published reports in the international social and health literature about the impact of coal mining on local communities. It explores the mechanisms of coal mining related injustice, conflicting priorities and power asymmetries between political and industry interests versus inhabitants of mining communities, and asks what would be required for considerations of health to take precedence over wealth.

The impetus for the paper came from a commissioned report developed by the authors and colleagues entitled '*Health and Social Harms of Coal Mining in Local Communities: Spotlight on the Hunter Valley*' (Colagiuri et al., in press). In the course of preparing the report and this paper, we noted the surprisingly small pool of international literature focusing directly on the theory of social *in*justice compared with the large volume of literature on social justice. We attempt to address this gap by using social injustice as the central concept and exploring its relationship with human health.

2. Defining health and social injustice

In the constitution of the World Health Organisation (WHO) health is defined as 'a state of complete physical, mental, and social well-being and not merely the absence of disease'. This definition conceptualises health as a positive combination of physical, mental and spiritual health. As noted by Rapport and Mergler (2004), traditionally human health is viewed in terms of the individual without evaluating the social and environmental context around it. This understanding of health is limited in its ability to explore the interrelationships between the natural environment and human health. A different paradigm for understanding health, called 'ecosystem health', has emerged to re-imagine the approach to human health by expanding the focus of health beyond the individual. The beginnings of this approach were in the early 1960s, when researchers such as Rachael Carson and Murray Bookchin started to explore the connections between toxic chemicals and the health of humans and the environment (Albrecht et al., 2008). Insights arising from the ecosystem health approach are important for understanding the health impacts of coal mining activity on local communities because they emphasise the adverse impacts that even small changes to the natural environment can have on human health. Ecosystem health also focuses on establishing a healthy environment in order to prevent ill health, rather than focusing on disease states in isolation.

Despite recent developments in understanding health in relation to place, health systems around the globe, often wryly referred to as 'sick systems', tend to focus almost exclusively on quantifiable pathological states which are mostly of physical manifestation and, to a much lesser extent, mental ill health. In doing so, 'sick systems' fail to acknowledge the full spectrum of threats and harms to health as defined by the WHO. Furthermore, health harms may be (i) real and perceived, (ii) real but not perceived or (iii) perceived but not real. Certainly, perceptions of health offer a limited understanding of the actual status of the health of an individual or community (Ruger, 2009). Nonetheless, these perceptions are invaluable and should be taken into account, including in the precautionary principal to avoid and avert harming individuals and communities (Higginbotham et al., 2010). This approach is similar to the approach Amartya Sen (2009) takes to defining social injustice. By emphasising the role that society's perception of social injustice plays on the experience of social injustice, it is understood that perceptions can be performative and therefore both reflect and shape reality.

There is no single definition of social injustice. Political philosopher John Rawls offered the foundation for a contemporary understanding of social justice with the notion of 'justice as fairness' (Rawls, 1999). This concept provides the building blocks for society to determine the principles of justice. Rawl's system for building social justice is extended by Sen with the assertion that social justice not only has to take place according to the principals of justice, but it also needs to be 'seen' to take place (Sen, 2009). This approach emphasises the role of public perception in determining social justice, and offers a platform from which to reconcile perceived injustices and objectively determined injustice. The role of perceiving an injustice is similar to how perceived health problems are 'real' in a performative sense. That is, the anxiety of fearing health implications can create ill health.

There is ample literature about social justice, and social justice and health have been approached together by Gostin (2007) with discussions of how distributive and participatory just should be key values of public health. However, as noted by Bufacchi (2012), there has been surprising little research undertaken on the concept of social *in*justice. Rather, social justice is commonly the focus of study and has 'attracted more attention than any other single concept in moral and political philosophy over the past 50 years' (Bufacchi, 2012). This implies that social injustice is simply understood as the opposite of social justice, which offers a limited understanding of precisely what constitutes an injustice in the societal context. Although the two concepts are inextricably linked, the focus on social justice leads to abstract discussions of what constitutes the 'best' society, in which there is very little consensus, whereas social injustice is a tool with which to achieve social justice through the elimination of a real world phenomenon. Social justice can then be approached as the 'absence of social injustice' (Bufacchi, 2012). This paper perceives social injustice as 'the unequal or unfair social distribution of rewards, burdens, and opportunities for optimising life chances and outcomes' (Colagiuri et al., in press). It echoes Bufacchi's understanding of social injustice and is mindful of the precautionary principle i.e. that social injustice is not necessarily inflicted solely by abusive actors, but also by complacent authorities who fail to act when they are in a position to avert or prevent harm (Venkatapuram et al., 2010).