

Viewpoints

The scope of health injustice

Recent commentaries in this journal have reignited discussion about the causal claims and policy implications of health inequalities research—particularly strikingly, whether socioeconomic differences in health are confounded by cognitive or genetic factors (‘inconvenient truth 1’).¹ An alternative way to frame this issue is to reconsider the role of these and other controversial factors. Even if this claim were entirely true—the totality of empirical evidence does not suggest this in my view—what would it mean for the field of social epidemiology?

Health differences according to socioeconomic position (SEP) are widely framed as being health inequities; monitoring and reducing these health differences are major focuses of national and transnational organisations, with seminal policy-directed reviews focusing on SEP differences in health. Awareness of the injustice of SEP differences in health is an important motivator for research, the focus of epidemiological investigation, funding and policy action.² For example, the UK’s then Prime Minister Theresa May’s first speech noted as motivation for policy action ‘the burning injustice that, if you’re born poor, you will die on average 9 years earlier than others’ (<https://www.gov.uk/government/speeches/statement-from-the-new-prime-minister-theresa-may>). It seems intuitive that SEP differences in health are unjust, and are thus health ‘inequities’ rather than simply health ‘differences’. Considering whether other health differences are inequities is important, give the implications for research and policy. To explore whether the same definition could or indeed should also be applied to cognition and genetic factors, consider the below:

Individuals in the population are exposed to ‘X’ at birth—they therefore do not choose their exposure, yet it has lasting (probabilistic) causal effects on multiple health and social outcomes, which extend across life. It is thus arguably unfair. It is also avoidable, since society can enact policies to prevent these health consequences from occurring, despite exposure to X. It is thus arguably unjust.

Is ‘X’

- (1) Socioeconomic status/position
- (2) General cognitive capability—‘intelligence’ or
- (3) Genetic propensity to ill health?

As implied, there are several similarities in the above risk factors; each in fact meets multiple commonly utilized definitions of health inequity (see [table 1](#)). The most widely used definition of health inequity, seemingly adopted by the World Health Organization, is Whitehead’s 1991 definition that inequities are differences in health that are ‘unnecessary, avoidable, unfair and unjust’. The authors of this seminal paper noted that it was intended to stimulate debate on these issues rather than forming a canonical definition of health inequity. Whitehead noted that ‘natural, biological variation’ as a cause of health differences is probably not health inequities. Yet, this was before insights from genetically informed studies, and should perhaps now be re-addressed given there is nothing particularly ‘natural’ about how common genetic propensities affect health. The relative importance of genetic factors is likely specific to context—time, place and the health outcome considered—and thus subject to modification by the environment which we (hope to) modify. As such, examination of factors, such as genetic propensities, is still within the remit of health inequalities research.

A key component of a health inequity is the notion that some differences in health are unjust. According to multiple commonly utilized definitions of justice—e.g. Rawls’ theory of distributive

justice and luck egalitarianism—differences in health according to socioeconomic, cognition and genetic predictors of ill health can all be considered unjust. Indeed, a detailed application of luck egalitarianism to health noted that healthcare is ‘society’s obligation to reverse individuals’ disadvantaging biological conditions for which they are not responsible’.³ The social science literature is increasingly considering the role of genetic propensities on important social outcomes, and in doing so helping to dispel widely held myths: consideration of genetic factors can in fact help us to better understand social injustice, and does not imply genetic determinism.⁴ Strong causal links between (partly) genetically determined traits, such as cognition and socioeconomic outcomes, may both exist *and* contribute to social injustice—a ‘meritocracy’ was first coined to describe a hypothetical social dystopia. There are clearly many routes to inequity including and beyond SEP, which likely apply to both social and health outcomes.

In an extreme example, genetic variants, which cause increased alcoholism risk will not have an observed effect in the absence of alcohol, or arguably smaller effects in societies in which alcohol is a less predominant part of culture. In another, where the environment is more obesogenic, obesity-related genes appear to have larger effects.⁵ As such, the suggestion that ‘genetic effects’ are inevitable and not modifiable by society may be largely misguided; estimates of genetic effect show what has been the case in the observed sample, not what could be the case in future in a different context. The heritability value for a given health outcome is simply a value, which ranges from 0% to 100% depending on the environment (both its variability and its relevance for the genetic propensity).⁶

Gaps in current evidence

A framework to represent the different strands of health equity research is suggested below. Researchers interested in better understanding (and ultimately using evidence to reduce) health inequity will typically investigate:

- (1) The presence and causal nature of health inequity
- (2) Modification across time (i.e. is the problem worsening?)
- (3) Amelioration/prevention by intervention.

Further economic and broader societal considerations are then undertaken to appraise the cost-effectiveness of the proposed interventions and their relative utility in the contexts of opportunity costs of investing in other policy areas. Active lines of research exist across each strand exist for SEP—including e.g. high profile reports documenting the presence of health disparities, studies investigating their causal nature, change across time and potential amelioration by intervention. For each plausible group by which health inequity can be defined—such as religion, race, area of residence etc.—progress across these different aspects of research can be evaluated.

For genetic propensities and cognition, evidence is notably lacking; something which social epidemiologists may wish to consider. The consideration of these two controversial factors helps illustrate that health inequities may exist across many more possible dimensions than typically considered. Continued epidemiological evidence is required to inform such considerations across the multiple possible health equity stratifiers: evidence on their magnitude, causal nature, change across time and potential reduction via intervention.

Table 1 Multiple health inequity definitions and their applicability to socioeconomic, cognition and genetic determinants of health

Health equity/inequity definition (abridged)	Applicable to the following exposures, yes/no		
	Socioeconomic position	Cognition	Genetic propensities
Whitehead (1992) ⁷ : 'unnecessary, avoidable, unfair and unjust'	Arguably yes	Arguably yes	Arguably yes
Braveman and Ruskin (2003) ⁸ : 'Health equity is the absence of systematic disparities in health (or its social determinants) between more and less advantaged social groups.'	Arguably yes	Arguably yes, assuming in a complex society lower cognition leads to relative social disadvantage	Arguably yes, assuming that genetic propensities may cause health and social differences in outcomes which result in social disadvantage
Porta (2008) ⁹ health equity: 'Fairness and impartiality in any health related determinant or outcome'	Arguably yes	Arguably yes	Arguably yes
Norheim and Asada (2009) ¹⁰ : every group should have equal health unless it makes others less healthy or it is not possible to improve it	Arguably yes	Arguably yes	Arguably yes

Acknowledgements

The author would like to thank the following for providing helpful comments on an earlier version of this manuscript: Prof. Mel Bartley, Dr Vanessa Moulton, Prof. Alex Bryson and Dr Neil Davies. An earlier more extended version of this manuscript was posted on the OSF preprint server: <https://osf.io/preprints/hcn7a/>.

Funding

The author is supported by the Economic and Social Research Council (grant number ES/M001660/1) and the Academy of Medical Sciences/Wellcome Trust ('Springboard Health of the Public in 2040' award: HOP001/1025), and Medical Research Council (MR/V002147/1).

Conflicts of interest: None declared.

References

- Mackenbach JP. *Re-Thinking Health Inequalities*. New Jersey, USA: Oxford University Press, 2020. <https://doi.org/10.1093/eurpub/ckaa001>.
- Marmot M. Social justice, epidemiology and health inequalities. *Eur J Epidemiol* 2017;32:537–46.
- Segall S. *Health, Luck, and Justice*. New Jersey, USA: Princeton University Press, 2009.

- Harden KP, Koellinger PD. Using genetics for social science. *Nat Hum Behav* 2020; 4:567–576.
- Brandkvist M, Bjørngaard JH, Ødegård RA, et al. Quantifying the impact of genes on body mass index during the obesity epidemic: longitudinal findings from the HUNT Study. *BMJ* 2019;366:l4067.
- Tenesa A, Haley CS. The heritability of human disease: estimation, uses and abuses. *Nat Rev Genet* 2013;14:139–49.
- Whitehead M. The concepts and principles of equity and health. *Health Promot Int* 1991;6:217–28.
- Braveman P, Gruskin S. Defining equity in health. *J Epidemiol Community Health* 2003;57:254–8.
- Porta M. *A Dictionary of Epidemiology*. Oxford, UK: Oxford University Press, 2008.
- Norheim OF, Asada Y. The ideal of equal health revisited: definitions and measures of inequity in health should be better integrated with theories of distributive justice. *Int J Equity Health* 2009;8:40.

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doi:10.1093/eurpub/ckaa230
Advance Access published on 1 February 2021

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The European Journal of Public Health, Vol. 31, No. 3, 459–460

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Is the study of genetic propensities within the remit of health inequalities research?

In his viewpoint, Bann¹ claims that social epidemiologists and others working in health inequalities research should concern themselves with cognition and genetic factors. But do differences in health between groups defined on the basis of cognition or genes constitute health inequity?

There are many definitions of health (in)equity, including that of Whitehead (cited in the viewpoint¹) which, based on a review of the literature, concluded that 'health differences determined by [biological variation] would not normally be classified as inequities in health'.² It is arguable whether this definition needs to be updated in view of more recent research.

Based on the Braveman and Gruskin³ definition of equity in health as 'the absence of systematic disparities in health (or in the

major social determinants of health) between social groups who have different levels of underlying social advantage/disadvantage', Bann argues that this is applicable to genetic propensity for disease because the disease may lead to social disadvantage. This is an argument of reverse causation: social position is determined by health rather than the other way round. Traditionally, social epidemiology has been thought of as the study of the social determinants of the distribution of health across populations,⁴ but it seems reasonable to extend this to improving our understanding of the social patterning of disease and, as such, would include reverse causation.

The idea that genetic predisposition might influence health, and this in turn impact on social position, differs from the suggestion by Mackenbach⁵ that socioeconomic differences in health may be