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### **Understanding how changes in prevalence of adverse health outcome affect health inequalities**

In attempting to determine the reason health inequalities have not narrowed in Britain, Wilkinson and Pickett overlook the crucial role of the prevalence of an outcome with respect to the size of relative differences in rates of experiencing it.<sup>1</sup> As a rule, when groups differ in their susceptibility to an outcome, the rarer the outcome the greater will be the relative difference in rates of experiencing it.<sup>2-5</sup>

Such patterns are the consequence of the fact that as an outcome becomes rarer, it become increasingly concentrated in the most susceptible segments of the overall population, and disadvantaged groups tend to comprise larger proportions of each increasingly more susceptible segment of the overall population. Correspondingly, disadvantaged groups experience lower rates of decline in the outcome, and relative differences in rates of experiencing it increase. The patterns can be observed in virtually any data set that allows one to examine rates at which two groups fall below various points on a continuum. But the patterns should be expected also to occur with respect to outcomes like mortality where the risk distributions cannot be directly observed, as was recently recognized in the Public Health Observatory Handbook of Health Inequalities Measurement.<sup>6</sup>

Thus, in Britain mortality has generally been declining; correspondingly, studies usually find that relative inequalities in mortality have increased. On the other hand, morbidity, as measured by self-assessed health, has been stable or increasing; correspondingly, studies usually find relative inequalities in morbidity to be stable or declining. A good example of the latter may be found in a recent study by Adams et al.<sup>7</sup> It found that in the single area where morbidity had declined, the socioeconomic inequality had increased, while in the three areas where morbidity had increased, socioeconomic inequality had declined.

Anyone inclined to believe either that increasing relative differences in rates of experiencing adverse outcomes that are solely the result of overall declines in the outcome, or that decreasing relative differences that are solely the result of overall increases in the outcome, somehow reflect true changes in the relative situation of disadvantaged groups should consider the other side of the picture. For the same declines in prevalence that tend to increase differences in rates of experiencing an outcome tend to decrease differences in rates of avoiding the outcome, while the same increases in the prevalence of an outcome that tend to decrease differences in rates of experiencing an outcome tend to increase differences in rates of avoiding the outcome.<sup>2-6</sup>

The report commissioned by the UK Presidency of the EU similarly fails to consider the extent to which increasing socioeconomic differences in mortality throughout the

European Union are the inevitable consequence of declining mortality (or whether they are attended by declining differences in survival rates).<sup>8</sup> But identifying meaningful changes in the relative health of advantaged and disadvantaged groups – i.e., those that are not solely the consequence of changes in prevalence of certain outcomes – requires a full understanding of the patterns that flow solely from those changes in prevalence.

References:

1. Wilkinson R, Pickett K. Health inequalities and the UK Presidency of the EU. *Lancet* 2006;376:1126-1128.
2. Scanlan JP. Can we actually measure health disparities? *Chance* 2006;19(2):47-51: [http://www.jpscanlan.com/images/Can\\_We\\_Actually\\_Measure\\_Health\\_Disparities.pdf](http://www.jpscanlan.com/images/Can_We_Actually_Measure_Health_Disparities.pdf)
3. Scanlan JP. Measuring health disparities. *J Public Health Manag Pract* 2006;12(3):294 [Ltrr]: [http://www.nursingcenter.com/library/JournalArticle.asp?Article\\_ID=641470](http://www.nursingcenter.com/library/JournalArticle.asp?Article_ID=641470)
4. Scanlan JP. Race and Mortality. *Society*. 2000;37(2):19-35: [http://jpscanlan.com/images/race\\_and\\_mortality.pdf](http://jpscanlan.com/images/race_and_mortality.pdf)
5. Scanlan JP. Divining difference. *Chance*. 1994;7(4):38-9,48: [http://jpscanlan.com/images/Divining\\_Difference.pdf](http://jpscanlan.com/images/Divining_Difference.pdf)
6. Carr-Hill R, Chalmers-Dixon P. *The Public Health Observatory Handbook of Health Inequalities Measurement*. Oxford: SEPHO; 2005: [http://www.sepho.org.uk/extras/rch\\_handbook.aspx](http://www.sepho.org.uk/extras/rch_handbook.aspx)
7. Adams J, Holland L, White M. Changes in socioeconomic inequalities in census measures of health in England and Wales, 1991-2001. *J Epidemiol Community Health* 2006;60:218-222.
8. Mackenbach J. *Health inequalities: Europe in profile*. London: UK Presidency of the EU, October, 2005: <http://www.dh.gov.uk/assetRoot/04/12/15/84/04121584.pdf>