

The comment below (as slightly modified in the online form) was submitted to the European Journal of Public Health as an eLetter on May 27, 2015. The EJPH site, however, has for a time been experiencing technical difficulties regarding its eLetter feature. This has also caused the links to items 16 and 79 of the online comments collected [here](#). I have been advised by the editor that the problem is being addressed.

Title: Time to stop thinking in terms of relative inequalities and absolute inequalities

The suggestion in the article by Mackenbach [1] that an appraisal of health inequalities commonly involves an ethical or value judgment in choosing between relative inequalities and absolute inequalities, like the article's reference 5,[2] reflects a fundamental misunderstanding of the reasons society examines favorable or adverse outcome rates of advantaged and disadvantaged groups. In fact, it would be sensible to dispense entirely with the terms "relative inequalities" and "absolute inequalities."

Society examines the favorable or adverse outcome rates of advantaged and disadvantaged groups in order to appraise differences in the groups' circumstances reflected by those rates, or, put another way, to appraise the strength of the forces causing the rates to differ. Society does so to learn about such things as whether the strength of such forces is increasing or decreasing over time, whether the strength of the forces is greater in one setting than another, and whether particular policies tend to increase or decrease the strength of the forces.

Relative differences in favorable outcomes and relative differences in the corresponding adverse outcomes are often used to appraise the strength of those forces, as are absolute differences between rates and odds ratios. None of these measures, however, can effectively quantify the strength of the forces because, for reasons related to the shapes of the underlying risk distributions, each measure tends to be affected by the frequency of an outcome.

As the frequency of an outcome decreases, relative differences in rates of experiencing it tend to increase, while relative difference in rates of failing to experience it tend to decrease. When uncommon outcomes become more common absolute differences between rates tend to increase; when common outcomes become even more common absolute differences tend to decrease. As the frequency of an outcome changes, differences measured by odds ratio tend to change in the opposite direction of absolute differences.

All measures can change in the same direction as the frequency of an outcome changes, in which case one may infer that there occurred a meaningful change in the strength of the forces causing outcome rates of the advantaged and disadvantaged group to differ. But in the more common situation where the two relative differences change in opposite directions, the absolute difference will change in the same direction as the smaller relative difference. The fact that observers relying on relative differences commonly focus on the larger relative difference explains why the examined relative difference and the absolute difference so often change in opposite directions.

The only way to effectively quantify the strength of the forces causing the outcome rates of advantaged and disadvantaged groups to differ is to derive from the groups' rates the difference between the means of the underlying distributions, as discussed in references 3 and 4. Such method can identify a decline in those forces even when some standard measure would indicate an increase in inequality (and vice versa). Thus, the fact that a measure has change in a particular direction does mean the inequality has changed in that direction.

References 3 and 4 also address the fallacies (the former with respect to its Table 1 and the latter with respect to its Table 5) that an absolute difference and the relative difference that the observer happens to be examining can both provide useful information about the changing nature of a health or healthcare inequality even when they yield opposite conclusions about whether the inequality is increasing or decreasing or that one must make a value judgment in choosing a particular measure. There can be only one underlying reality as to whether the strength of forces causing outcome rates to differ is increasing or decreasing or is otherwise larger in one setting than another. That reality may not always be easy to divine, but value judgments have no role in the matter.

References:

1. Mackenbach JP. Should we aim to reduce relative or absolute inequalities in mortality? Eur J Pub Health 2015/3/28, <http://dx.doi.org/10.1093/eurpub/cku21709>
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