Health Equity Measurement Choices and Considerations

Andrew Anderson, PhD

Assistant Professor, Department of Health Policy & Management

Associate Director, Partners for Advancing Health Equity (P4HE)

Tulane School of Public Health & Tropical Medicine

Basic components of a health equity measure

1. An indicator of health or modifiable determinant of health, such as health care, living conditions, or the policies that shape them

2. An indicator of social position (i.e., a way of categorizing people into different groups (social strata)

3. A method for comparing the health (or health determinant) indicator across the different social strata, such as rate ratios between the least and most advantaged strata

An indicator of health or modifiable determinant of health

- Risk
- Perception
- Care-seeking behavior
- Diagnosis
- Treatment
- Incidence of disease, disability, and death
- Socioeconomic consequences

An indicator of social position

For example, in analysis of *racial and ethnic disparities*:

- Some argue for considering "race as a bundle of sticks" (e.g., cues of categories)
  - Neighborhood, diet, power relations, norms, skin color, class, and religion.

- Some focus not only on membership in racial groups, but also on skin color as an *embodied cue* of categorical membership
  - According to nationally representative data, there is more educational inequity within Black populations along the color continuum than there is between Black and White populations

Methods of comparison

1. Population groupings across which comparisons are made

2. Reference group

3. Absolute or relative terms

4. Valuing health improvements in health differently along the health distribution

Choice of groupings

- For some social groups, there are clearer hierarchies (e.g., income and education level) than others (e.g., occupation).

- A predictor between social status and health does not necessarily imply the direction of causation
  - Poor health could lead to low income just as low income could lead to poorer health
  - Could be a third factor that explains the association between health and exposure to a disadvantaged status in status

- The social hierarchy implied by different groups such as occupation may vary across different societies

Choice of reference group

Example options:

1. Select a reference group deemed to be advantaged *a priori* (e.g., high SES)

2. Select a minimum or standard below which health performance is judged to be inequitable

3. Select the reference group value at the mean of all groups

4. Select the group with the highest or maximum observable health status
    1. May not be based on *a priori* assumptions of the social hierarchy

Choice of reference group

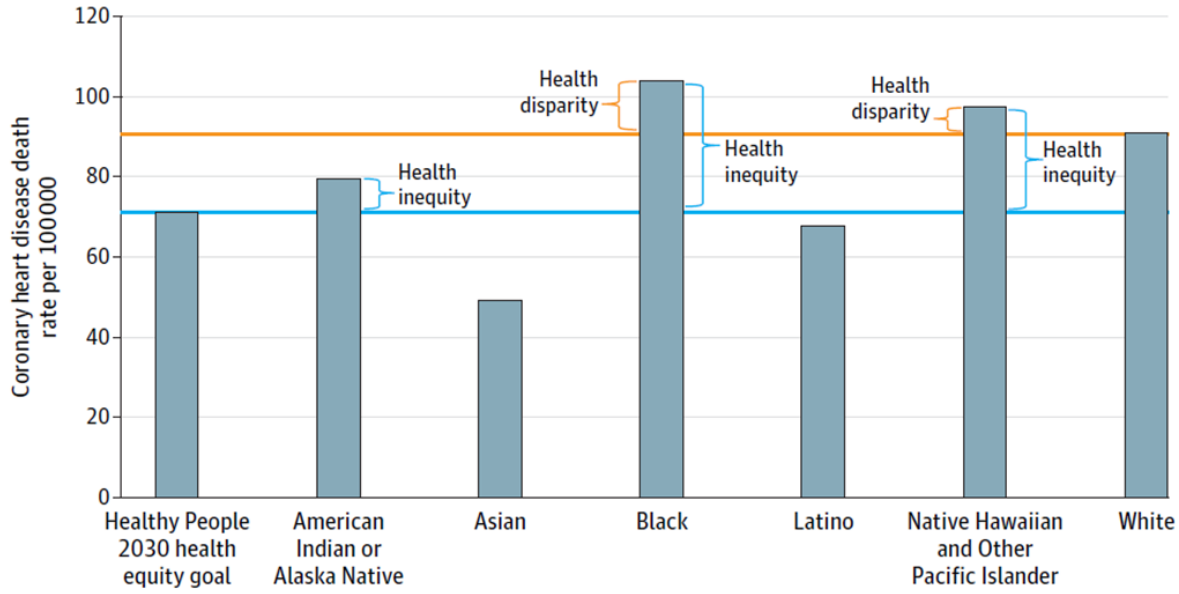
In data released in 2017, the suicide rate for White Americans was around 19 per 100,000, and it was about 7.1 for both Hispanics and Asian-Americans/Pacific Islanders, and 6.6 for Black Americans (CDC, 2017).

Have we achieved health equity?

Moving forward what reference group would we select to monitor inequities?

Health Inequity vs. Health Disparity

Figure. Health Inequity vs Health Disparity



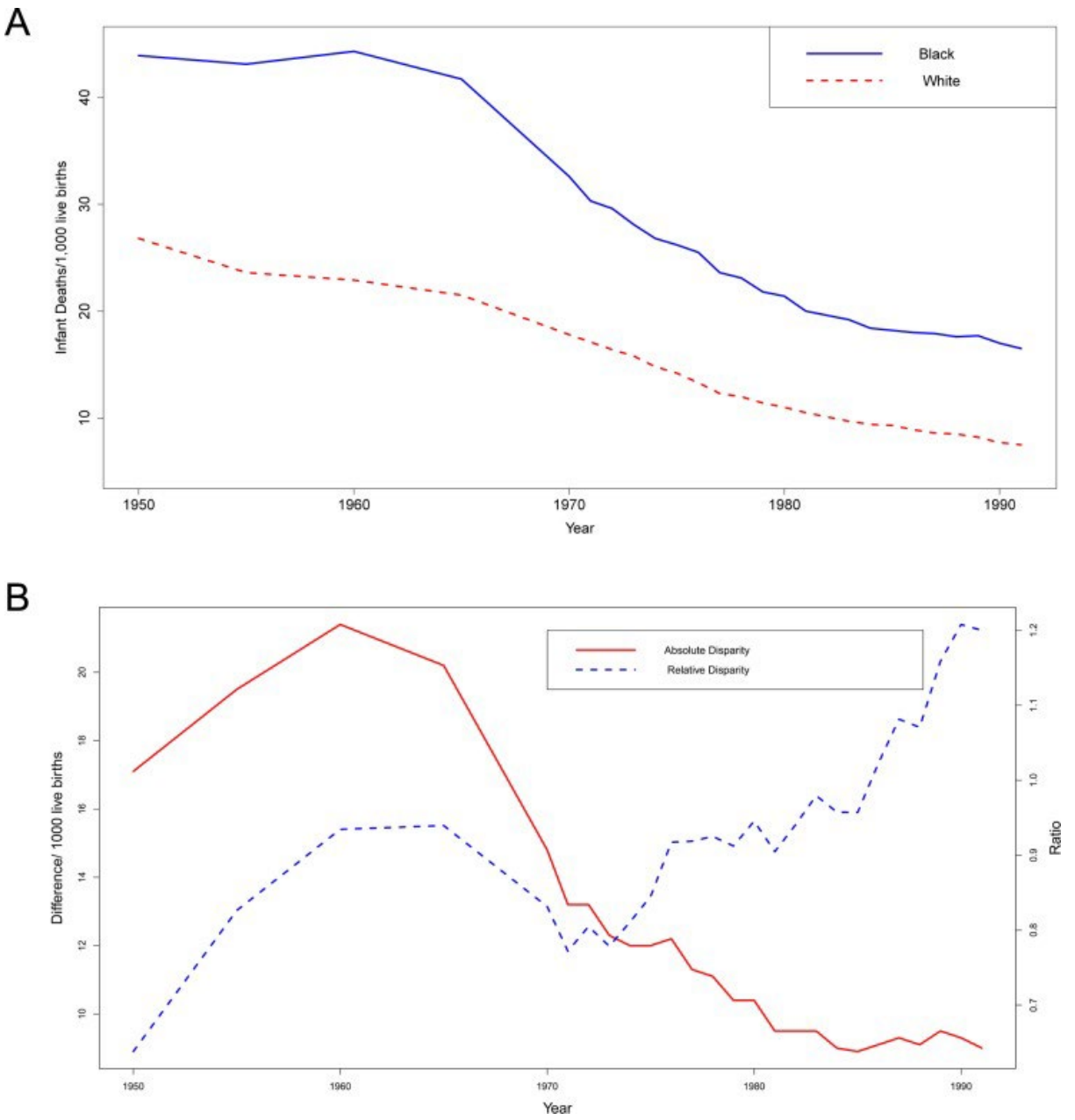
2019 Coronary heart disease death rate. Health inequity and disparity are illustrated for each of 6 racial and ethnic population groups. The baseline for health inequity (shown in blue) is the Healthy People 2030 equity goal. The baseline for health disparity (shown in orange) is the mean for the White population.

LaVeist TA, Pérez-Stable EJ, Richard P, et al. The Economic Burden of Racial, Ethnic, and Educational Health Inequities in the US. JAMA. 2023;329(19):1682–1692. doi:10.1001/jama.2023.5965

Absolute vs. Relative Measures

(A) Infant deaths per 1,000 live births from 1950 to 1991 in Black and White populations.

(B) The black–white absolute disparity and relative disparity in infant deaths from 1950 to 1991.

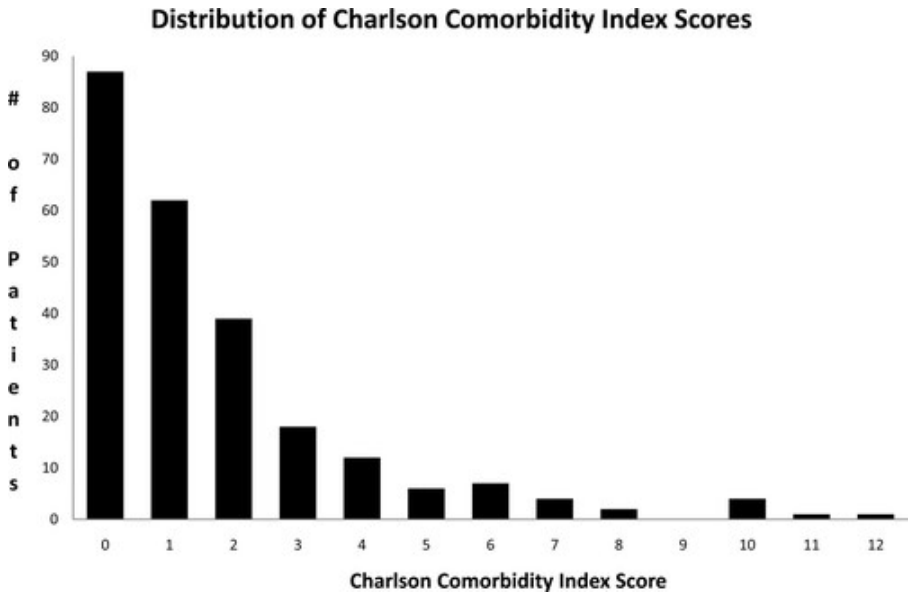


Moonesinghe, R., & Beckles, G. L. (2015). Measuring health disparities: a comparison of absolute and relative disparities. PeerJ, 3, e1438. https://doi.org/10.7717/peerj.1438

Valuing health differently along the distribution

- How should changes in one part of the distribution be valued relative to changes in another part of the distribution?

- Some might argue improvements among the least healthy should be weighted more than improvements among the healthiest



Distribution of Charlson Comorbidity Index sum scores across the entire intracerebral hemorrhage cohort (n=243)

Domains for Measurement	Attention
Basic causes – societal institutions (political, legal, economic, and cultural)	Low
Social status (norms) – socioeconomic status, race/racism, gender, age, martial status	Low
Proximal Pathways – stress, economic opportunities, societal resources (e.g., medical care, housing, education, neighborhood) , knowledge	Medium
Responses – behavioral patterns/respondents, psychological responses (e.g., internalized racism), physiological (e.g., immune and metabolic responses)	High
Health Outcomes – morbidity, morality, disability, mental health	High

Takeaways

- Choice of health measure, groupings, referents, absolute vs. relative, and valuation of improvements (among other considerations) are essential to defining progress towards achieving equity

- The complexities warrant a plurality of measurement approaches

- Measuring and describing disparities in outcomes are still essential to assessing progress towards health equity

- More recent attention to upstream factors that lead to inequities in health and health care outcomes

Bibliography

- Anand, Sudhir and others, 'Measuring Disparities in Health: Methods and Indicators', in Timothy Evans and others (eds), Challenging Inequities in Health: From Ethics to Action (New York, 2001; online edn, Oxford Academic, 1 Sept. 2009), https://doi.org/10.1093/acprof:oso/9780195137408.003.0005, accessed 12 Mar. 2023.
- Albert-Ballestar, S., García-Altés, A. Measuring health inequalities: a systematic review of widely used indicators and topics. Int J Equity Health 20, 73 (2021). https://doi.org/10.1186/s12939-021-01397-3
- Bar B, Hemphill JC 3rd. Charlson comorbidity index adjustment in intracerebral hemorrhage. Stroke. 2011 Oct;42(10):2944-6. doi: 10.1161/STROKEAHA.111.617639. Epub 2011 Jul 28. PMID: 21799172; PMCID: PMC3183144.
- Braveman P. Health disparities and health equity: concepts and measurement. Annu Rev Public Health. 2006;27:167-94. doi: 10.1146/annurev.publhealth.27.021405.102103. PMID: 16533114.
- Keppel, K., Pamuk, E., Lynch, J., Carter-Pokras, O., Kim Insun, Mays, V., Pearcy, J., Schoenbach, V., & Weissman, J. S. (2005). Methodological issues in measuring health disparities. Vital and health statistics. Series 2, Data evaluation and methods research, (141), 1–16.
- National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Population Health and Public Health Practice; Committee on Community-Based Solutions to Promote Health Equity in the United States; Baciu A, Negussie Y, Geller A, et al., editors. Communities in Action: Pathways to Health Equity.
- Monk, E. P. (2022). Inequality without Groups: Contemporary Theories of Categories, Intersectional Typicality, and the Disaggregation of Difference. Sociological Theory, 40(1), 3–27.
- Williams DR, Mohammed SA. Racism and Health I: Pathways and Scientific Evidence. Am Behav Sci. 2013 Aug 1;57(8):10.1177/0002764213487340. doi: 10.1177/0002764213487340. PMID: 24347666; PMCID: PMC3863357.