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Cautionary accounts in the use of health equity measures from linkable administrative data in population health intervention research

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Objectives

There is increased interest in identifying strategies to reduce health inequities. With this focus, population health scientists have applied equity measures first developed in other disciplines to health equity research. The objective of this study is to illustrate the application of these measures in research using linkable administrative databases. This presentation will provide a brief description of some commonly-used equity measures and issues investigators face when applying them in their own health equity research.

Methods

Analyses focused on children born in Manitoba, 1984 to 2014. We used linkable administrative data from health, social services, and education to develop indicators of health and the social determinants of health. Income data from the Canadian Census were used to stratify children by socioeconomic status. Our study considered the distribution of several child outcomes: breastfeeding initiation, mortality, complete immunization rates at age 2, Grade 9 completion, and high school completion. We examined several measures often used to capture income-related health inequities: rate ratios and rate differences comparing children from high-income neighbourhoods with children from low-income neighbourhoods; the concentration index which quantifies the equity in the distribution of outcomes across the entire socioeconomic gradient; and the relative and absolute indices of inequality which compare the most advantaged individuals with the least advantaged individuals in the population while accounting for the distribution of health across the population.

Results

When these measures are applied to health equity, they can be affected by factors not initially considered by investigators. The application of Concentration measures using health outcomes that are frequently dichotomized, and the prevalence of the health outcome can affect the degree of inequity that is possible, with highly prevalent outcomes showing very little divergence from the line of equity. Comparing concentration measures to the inequality indices can produce contradictory and seemingly incompatible results. Sample selection that alters the distribution of income from the population can also change the apparent equity of health outcomes. These matters are complicated when monitoring changes in health equity, over time.

Conclusion

Summary measures of equity can be useful but come with limitations that need to be considered when interpreting and applying study findings. We offer some suggestions to consider when applying these measures in health equity research.

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