
Sirs,

The article by Low and Low (2004) suggests one method of quantifying socio-economic inequalities in health at the local level. However, the method they propose – based on the slope quantifying socio-economic inequalities in health at the local level – has two major flaws that are not identified in their paper and which may limit its utility.

The slope index of inequality is calculated using standard regression techniques. In simple terms, simple linear regression fits a ‘line of best fit’ to a group of data points for which information on two variables is available. The gradient of this line is then calculated and reported as the regression, or beta, coefficient. One of the key assumptions of this technique is that there is an underlying linear or straight line relationship between the two variables under study. Whilst it is often assumed – especially in statistical analysis – that there is a linear relationship between markers of health and socio-economic deprivation, there is substantial evidence that this is not the case and that the relationship is more curvilinear than linear. Contrary to the claims of Low and Low, then, that the slope of index of inequality ‘reflects the experiences of the entire population’, there is a serious risk that the index is a rather inaccurate measure of the relationship between health and socio-economic deprivation.

In addition, Low and Low suggest using the relative rank of wards on the chosen measure of socio-economic deprivation as the independent variable. This is calculated by simply ordering wards according to the measure of socio-economic deprivation used and then assigning a relative rank based on the population of each ward. This technique is highly simplistic and fails to take account of the range of deprivation that may exist between wards in any given area. We cannot tell if the 25 wards discussed in the example in the paper are the 25 most affluent wards in the country, the 25 least affluent wards in the country, or something in between. The technique, therefore, imposes a given range of socio-economic variation on the data and makes comparisons between different local areas difficult.

 Whilst I agree that quantifying socio-economic inequalities in health is important and the only way we will ever know if interventions aimed at reducing inequalities are effective, the plethora of proposed measures is testament to the complexity of the issue. The technique proposed by Low and Low should not be adopted uncritically and without due consideration of its limitations.

References


Yours sincerely

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