Abstract

Objective Structural and social neighbourhood constructs have been developed for studying a neighbourhood’s influence on a variety of health outcomes; community surveys are being increasingly used for capturing such information. This paper has proposed a six-fold approach which integrates existing methodologies (i.e. multilevel factor analysis, ecometrics, multilevel spatial multiple membership models and multilevel latent class analysis) for estimating reliable and valid measurement of neighbourhood conditions. Methods The proposed approach used seven demographic and socioeconomic variables reported in a community survey by 20,413 individuals residing in 244 neighbourhoods in Medellin, Colombia, to measure structural neighbourhood conditions. Results The set of variables reliably measured one neighbourhood construct: the deprivation index; this showed significant variation between neighbourhoods as well as significant spatial clustering across the city. Conclusions The approach presented here should enable public health researchers to better estimate neighbourhood indicators and may result in more accurate assessment of the relationship between neighbourhood characteristics and individual-level health outcomes.

Keywords

Residence characteristics, data collection, epidemiological method, psychometrics, multilevel analysis (source: MeSH, NLM).