Multiple Chronic Conditions in Older People and Their Effects on Health Care Utilization: A Network Analysis Approach Using SHARE Data

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Abstract

The presence of multiple coexisting chronic diseases in individuals and the expected rise in chronic diseases over the coming years are increasingly being recognized as major public health and health care challenges. At present, the common belief is that persons with multiple diseases have high rates of health care utilization. In our article we use Slovenian data of the Wave 5 of SHARE dataset (only population 65 years of age or older). We model the presence of multiple coexisting chronic diseases as a network analysis problem. This has special scientific relevance as, to our knowledge, network analysis has not been used so far to study this problem, and, also, very seldom before in the analysis using SHARE data. To verify the effects of multiple diseases on the rates of health care utilization we construct several different health care utilization variables and model the effects of different combinations of most commonly connected diseases on the health care utilization using econometric models. We find that a) the method of network analysis can be used for this purpose and provides a set of consistent main groupings/clusters of diseases with common prevalence among the elderly; b) the groupings have strongly statistically significant effects on the health care utilization. The analysis provides a new statistical method and model with extensive applications for the analysis of multiple coexisting diseases in health economics and medical sciences in general in future.

Keywords: multiple chronic diseases, older people, health care utilization, SHARE, social network analysis, econometric models