
ANALYSIS OF MORTALITY IN THE CZECH REPUBLIC USING THE NEWLY CONSTRUCTED SOCIO-ECONOMIC DEPRIVATION INDEX

Šplíchalová A, Šlachťová H, Tomášková H, Polaufová P
Institute of Public Health in Ostrava, Czech Republic

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Objective: Progressive increase of mortality by the level of deprivation is a serious social health problem in many countries. The aim of the study was the analysis of total and specific mortality in the Czech Republic using by authors newly constructed socio-economic deprivation index.

Material and methods: Two indicators were constructed to indicate the level of deprivation in 77 districts of the Czech Republic – INDEX1 was created according to the methodology of Townsend index and INDEX2 was based on the methodology of indices MATDEP and SOCDEP. The socioeconomic characteristics of districts were based on 2001 Census data. Five material (ownership of accommodation – including cottage houses, car, phone and density of housing) and 4 social factors (education, unemployment, singles' households and incomplete families with children) were covered by these indicators. Data on total standardized mortality and specific mortality was used from the routinely collected health statistics sources (2001). Correlation analysis was applied for the analysis of the relationship between the level of deprivation and mortality in the areas of interest for INDEX1 and INDEX2 and sub-indices of INDEX2 for material (INDEX2mat) and social (INDEX2soc) factors using the software STATA v 9. The GIS (Geographical Information System) was used for presentation of the results.

Results: The correlation of INDEX1 and INDEX2 was high ($r = 0.99$). Both in men and women a positive association was confirmed between the level of deprivation and total mortality (INDEX1:

men $r = 0.60$, women $r = 0.53$, INDEX2: men $r = 0.60$; women $r = 0.52$), cancer mortality (INDEX1: $r = 0.47$; 0.44 , INDEX2: $r = 0.48$; 0.44), mortality for gastrointestinal diseases (INDEX1: $r = 0.53$; 0.41 , INDEX2: $r = 0.52$; 0.40) and mortality for lung cancer in men (INDEX1: $r = 0.55$, INDEX2: $r = 0.54$). These associations were stronger in men than in women. Weak positive association was identified between the level of deprivation and mortality for respiratory diseases and cardiovascular diseases (in both sexes) and mortality for breast cancer in women. Further results of detail analysis using INDEX2soc and INDEX2mat also showed that the investigated total and specific mortality in men and women was more strongly correlated with factors of social deprivation than with material deprivation. In both sexes a positive correlation was found between the level of deprivation and total mortality (INDEX2soc: men $r = 0.72$; women $r = 0.63$, INDEX2mat: men $r = 0.41$; women $r = 0.36$), cancer mortality (INDEX2soc: $r = 0.60$; 0.46 , INDEX2mat: $r = 0.31$; 0.38), mortality for gastrointestinal diseases (INDEX2soc: $r = 0.58$; 0.42 , INDEX2mat: $r = 0.40$; 0.33) and mortality for lung cancer in men (INDEX2soc: $r = 0.61$, INDEX2mat: $r = 0.40$).

Conclusions: In the Czech Republic positive association was confirmed between the level of deprivation and total and some specific mortality. These associations were stronger in men than in women. Mortality in men and women was more strongly correlated with factors of social than material deprivation.

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