SOCIAL DETERMINANTS OF HEALTH

SOCIO-ECONOMIC DEPRIVATION INDEX OF THE CZECH REPUBLIC – CONSTRUCTION

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Objective: Results of epidemiological studies confirm association between socio-economic deprivation and health. In the Czech Republic any socio-economic deprivation index (SESDI) has been constructed for the use in ecological studies yet. The aim of this study financed by the grant agency of the Czech MoH was to create such SESDI.

Material and methods: The SESDI was based on census data (2001) on the level of census enumeration districts (ED). The total area of detail analysis was 5,555 km^2, this being divided into 5,114 ED (maximum 140 flats or 400 inhabitants) in six Moravian districts. In total population of 1,253 thousands inhabitants and more than 470 thousands permanently inhabited flats were analysed. In the first phase applicable routinely collected factors were analysed. Based on this analysis the following factors were selected for the construction of SESDI: material factors – ownership of accommodation including recreational one as well car, phone and density of housing; and social factors – proportion of basic education, number of unemployed and singles. Two methods were used for creating the SESDI based on: 1. Townsend index that was calculated as a sum of Z-scores of specific factors (INDEX1). In the next step Z-score for specific factors of INDEX1 was transformed from negative values to 0 (INDEX1A); 2. MATDEP and SOCDEP that use standardized score for each of the

factors for maximal value of all areas, the final index reaches values in interval 0–8 (INDEX2). Using the same method as for INDEX2 another two sub-indexes were created for material (INDEX2mat) and social (INDEX2soc) factors. Pearson's correlation coefficient was used for analysis of relationship between factors and between indexes. For analysis the software Stata v. 9 was used. The GIS (Geographical Information System – software ArcView v. 9.0) was used for presentation of enumeration districts deprivation.

Results: Mean value of INDEX1 was -0.03 (SD=5.44; range -20.9 to 29.5) and mean value of INDEX2 was 4.35 (SD=0.70; range 2.17 to 7.50). Their correlation was high (r=0.95). INDEX1A expressed only the deprivation and its mean value was 3.33 (SD=3.52). Mean value of sub-index INDEX2mat was 2.87 (SD=0.53) and mean value of INDEX2soc was 1.49 (SD=0.27). Correlation between INDEX1 and both sub-indexes was strong (INDEX2mat r=0.82; INDEX2soc r=0.90). Correlation between INDEX2 and sub-index INDEX2mat (r=0.82) was higher than for INDEX2soc (r=0.77). Association between sub-indexes was not very strong (r=0.53). Enumeration districts were divided into 10 categories by INDEX1 and then GIS visualization was done for six Moravian districts. The final indexes were applied for all districts in the Czech Republic (N=77). Ranges of indexes were: INDEX1 (-10.11; 16.84), INDEX2 (5.17; 8.02), INDEX2mat (2.75; 4.16) and INDEX2soc (2.25; 3.87). Again the GIS visualization of the whole republic was created by districts on 10-degree scale.

Conclusion: INDEX1 provides more detailed information on level of deprivation. In the next phases both indexes (INDEX1, INDEX2) and two their sub-indexes (INDEX2mat, INDEX2soc) were used for analysis of association between socio-economic deprivation and selected health indicators on the district's level in the Czech Republic.