Regional mortality in Slovakia

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Chapter 2

Data sources

This chapter provides a general overview of the origin of the data (2.1), measures (2.2) and statistical analyses (2.3) used in this thesis.

2.1 Origin of the data

In this thesis three study samples were used. Table 2.1 provides a brief description of these samples and information about their use in separate chapters of this thesis. In the following text, the samples are described in chronological order based on the year of data collection.

Table 2.1 *– Basic characteristics of the research samples*

		Sample 1	*Sample 2*	*Sample 3*
Chapters		6	3, 4, 7	5
Age study population		whole	20 – 64	20 – 64
Age deceased		0 – 1	20 – 64	20 – 64
	area	all SK districts	all SK districts	neighbourhoods and districts of cities Bratislava and Košice; individual data
Data collection			3: 2002	
	years	2004	5: 2001 – 2003	2003 – 2005
			7: 1997 – 1998, 2007 – 2008	

The first sample used in this thesis (Chapter 6) consists of all inhabitants of the Slovak Republic in the year 2004. The second sample, used in the Chapters 3, 4 and 7,consists of the inhabitants of the Slovak Republic aged 20-64 years. In Chapters 3 and 4 selected indicators are used to explore their relationship with all-cause mortality of inhabitants aged 20-64 years, and in Chapter 7 the relationship with alcohol-related mortality in the population aged 20-64 years is studied. Data from the second sample were collected over a one-year period (Chapter 3), a 3-year period (Chapter 7) and two comparable two-year periods (Chapter 4). The third sample includes inhabitants aged 20-64 years of Bratislava and Kosice, the two biggest cities of the Slovak Republic. Data from the third sample were collected at the individual, the neighbourhood and the district levels over a three-year period.

2.2 Measures

This section provides an overview of the variables and measures used in this thesis.

The central dependent variables were mortality rates by age or by diagnosis. In Chapter 6 the dependent variable was mortality under the 1st year of life. Besides perinatal and infant mortality, mortality in weeks 2 to 52 was also calculated for statistical comparisons and to highlight the differences between perinatal and infant mortality. In Chapters 3 and 4 the dependent variable was the standardised mortality rate of population aged 20-64 years by gender, in Chapter 5 the standardised mortality rate of population aged 20-64 years adjusted by age and gender, and in Chapter 7 the standardised mortality rate for alcohol-related deaths by gender in the age group 20-64 years. Standardised mortality rates were standardised by age using the Slovak population as the standard.

The independent variables used in this thesis included selected socioeconomic indicators and ethnicity. Table 2.2 provides a brief outline of dependent and independent variables and a short description of them.

Table 2.2 *– Brief summary of measurements used in this thesis*

Measure	Chapter	Source	Year	Description
Dependent				
Standardised death rate by gender in the population aged 20-64 years	3, 4, 5	Statistical Office of the Slovak Republic	2002, 2003-2005, 1997-1998, 2007-2008	number of deaths in the 20-64 age group per 100,000 inhabitants; standardised by age using the Slovak population as the standard
Perinatal mortality	6	Statistical Office of the Slovak Republic	2004	number of stillbirths and deaths under 7 days of age per the number of live births
Infant mortality	6	Statistical Office of the Slovak Republic	2004	number of deaths under 1 year of age per the number of live births
Mortality in weeks 2-52	7	Statistical Office of the Slovak Republic	2004	number of deaths over 7 days and under 1 year of age per the number of live births
Standardised mortality rate for alcohol-related deaths	7	Statistical Office of the Slovak Republic	2001-2003	number of alcohol-related deaths in the 20-64 age group per 100,000 inhabitants; standardised by age using the Slovak population as the standard
Independent				
Education tertiary	3, 5, 7	Statistical Office of the Slovak Republic, Population Census	2001	the proportion of inhabitants aged 20-64 years with tertiary education to the total number of inhabitants aged 20-64 years by gender
Education elementary	5, 6	Statistical Office of the Slovak Republic, Population Census	2001	the proportion of inhabitants over 16 years old with elementary education to the total number of inhabitants
Education without elementary	6	Statistical Office of the Slovak Republic, Population Census	2001	the proportion of inhabitants over 16 years without elementary education to the total number of inhabitants

Table 2.2 (continued)

Unemployment rate	3, 5, 7	Office of Labour, Social Affairs and Family of the Slovak Republic	2002, 2001-2003, 2003-2005	the proportion of the number of unemployed inhabitants aged 20-64 years to the total number of inhabitants by gender
Registered unemployment rate	6	Office of Labour, Social Affairs and Family of the Slovak Republic	2004	the proportion of the number of unemployed inhabitants to the number of economically active inhabitants
Unemployment rate	4	Office of Labour, Social Affairs and Family of the Slovak Republic	1997-1998, 2007-2008	the proportion of the number of unemployed inhabitants aged 20-64 years to the total number of economically active inhabitants by gender
Income	3, 4, 5, 6, 7	Statistical Office of the Slovak Republic	2002, 2004, 2001-2003, 2003-2005, 1997-1998, 2007-2008	average monthly gross income by gender
Roma population	3, 5	Statistical Office of the Slovak Republic, Population Census	2001	the proportion of the Roma population aged 20-64 years to the total number of inhabitants aged 20-64 years by gender
Roma in settlements	6, 7	Office of the Government Plenipotentiary for the Roma Community	2004	the proportion of the Roma population living in settlements to the total number of inhabitants
Inhabitants in material need	4	Office of Labour, Social Affairs and Family of the Slovak Republic	1997-1998, 2007-2008	the proportion of the total number of recipients of benefits in material need to the total number of population

2.3 Statistical analyses

Several statistical methods were used to analyse the data in this thesis. They were performed using the statistical software SPSS 12.0, 14.0, 15.0 and 17.0 for Windows, SAS version 9.1 and Mlwin version 2.22. Further details of the analyses can be found in the 'Statistical analyses' section of the separate chapters. Using the regional mortality rates and data by socioeconomic indicators, maps were constructed using ArcView.

Standard descriptive analyses regarding the studied variables were performed in Chapters 3-7. Linear regression analysis was used in the Chapters 3-7 to describe the associations between regional mortality and selected socioeconomic indicators and ethnicity, separately for males and females (except Chapter 6). In Chapter 5 a three-level Poisson regression analysis was applied, in Chapter 7 a transformed linear regression. Correlations between the studied variables were explored by Pearson correlation in Chapters 3 and 4 and by Spearman correlations in Chapter 3. The effect of indicators on regional differences in standardised alcohol-related mortality in Chapter 7 was explored using a non-parametric regression tree.