RELATION OF EMPLOYMENT STATUS, BEHAVIORAL AND SOCIAL CONDITIONS ON INDIVIDUAL PERCEPTION OF HEALTH IN A REGION OF SLOVAKIA: PILOT STUDY

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SUMMARY

Background: The question of the health status of the unemployed in the Slovak Republic is a relatively unexplored area of study, in spite of the fact that the country has experienced one of the most consistently high unemployment rates among the 27 states of the EU. The aim of the pilot study was to identify the health and the other impacts of unemployment on the population in the region of Zvolen.

Methods: two groups of respondents were studied: the long-term unemployed and a control group of the employed. The data was collected using the guided-interview questionnaire procedure. A total of 214 respondents were observed out of which 107 were from the long-term unemployed group and 107 from the control group. There were 83 male (38.8%) and 131 female respondents (61.2%). The average age of the group was 36.0 (CI95% = 33.8–38.3).

Results: Using logistic regression, it was established that the chances of finding a job were 1.08 times greater in cases of a higher level of education (OR = 1.08, CI95% = 1.04–1.12, $P \leq 0{,}001$). It was also established that smoking decreases the chances of finding employment by OR = 0.91 (CI95% = 0.83–0.98) times ($P \leq 0.01$). People who are employed consume more alcohol attaining OR = 1.28 (CI95% = 1.21–1.35) compared to the unemployed ($P \leq 0.0001$).

Conclusion: The study proved that even with restricted resources it is possible to obtain credible results comparable with those achieved by more complex studies.

Key words: unemployment, health, perception of health

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INTRODUCTION

Over the past two decades, the countries of Central and Eastern Europe have faced significant social changes, accompanied in addition by unemployment as the new social and economic phenomenon. Socio-economic differences and their consequences on the health of individuals has often been the subject of research, though mainly in the context of inequalities in health. The focus of most investigations to date has been on explaining the relation between chronic diseases and the level of education, whereas the impact of income and employment has not been studied (1).

Generally it is considered, that health damages are influenced mainly by long term unemployment.

The question of the health status of the unemployed in the Slovak Republic is a relatively unexplored area of study, in spite of the fact that the country has experienced one of the most consistently high unemployment rates among the 27 states of the EU (10.5% in August 2007) (2). There still remain large regional differences in the levels of poverty, education and salaries, as well as the rate of unemployment and health status. The highest unemployment rate is in the higher territorial unit of Banska Bystrica (21.1% December 2006) (3). Over the past 3 years, in the region of Zvolen, mass dismissals of workers have been recorded in the production and renovation industry, particularly in the machinery, wood processing and railway sectors. These facts led staff at the Faculty of Health Care and Social Work at the Department of Public Health to conduct a pilot study aimed at determining the health and other consequences of unemployment in the region of Zvolen (Banská Bystrica higher territorial unit). The work was conducted as part of a master's dissertation of the first author and later completed for the purpose of this article. In addition to the results of the study in the region of Zvolen, the dissertation describes the methodology employed. This methodology may also be used for elaborating the background necessary for developing health policy. At the same time, the dissertation discusses efforts made by the Slovak Republic to enter the European and international debate on socio-economic determinants of health.

METHODS

Two groups of respondents were studied: the long-term unemployed and a control group of the employed, who all meet the following conditions of the study:

- period of respondent's employment was at least 12 months and maximum 132 months (i.e. 11 years);
- respondents were allowed to have changed employment, but without being listed among the unemployed population;
- respondents had to be unemployed or had to have belonged to the non-working population at least once.

For both groups, an abbreviated version of the VEGA project nr. 1/0454/03 (4) questionnaire was used. It was used in January and February 2006 for the long-term unemployed who applied for employment at the Department of Mediation Services of Labor Office in Zvolen. The total number of registered long-term unemployed people in Zvolen was 3,954, than we chose through the random selection 165 long-term unemployed respondents. The total participation of unemployed was 65% (we asked 165 long-term unemployed, but only the 107 want participate). Special care was given to the prevention of double registration of respondents. The control group of the employed was addressed in July 2007 via cluster selection from the employees of retail outlets (we choose 107 employees according to our criteria about unemployed history). In both groups, data was collected using the guided-interview questionnaire procedure, which lasted around 15 minutes. The anonymity of respondents was ensured through the allocation to each of a number, which matched the number of the questionnaire. The data from the completed questionnaires was processed and entered into an excel spreadsheet.

Statistical analyses were performed using R program (http://cran.r-project.org)for logistic regression. χ^2 test and Mantel–Haenszel Fischer tests were performed in the Statcalc programme. The lowest acceptable significance level was $P \leq 0.05$. The acceptable confidence interval for all results was 95%. Confounding variables were age and gender.

RESULTS

A total of 214 respondents were observed; 107 of them were from the long-term unemployed group and 107 from the control group. There were 83 male (38.8%) and 131 female respondents (61.2%). The average age of the group was 36.0 (CI95% = 33.8–38.3). 57.9% of the unemployed respondents were from urban areas and 42.1% from rural areas. 78.5% of the employed respondents were from urban areas and 21.5% from rural areas. The difference between permanent residence of the unemployed and the employed respondents was statistically significant ($P \leq 0{,}001$). As to the educational structure, the highest number of unemployed had secondary education including graduation (41.1%), followed by those without graduation (33.6%). Only 9.3% of unemployed respondents had university education. 59.8% of employed respondents had secondary education including graduation and 23.4% of respondents had university education. The difference between the level of education was statistically significant ($P \leq 0.0001$) (Table 1).

From the total of 214 respondents, 33.6% of the unemployed were smokers and 66.4% of the unemployed were nonsmokers. In the control group, 70.1% of respondents consumed alcohol whereas 38.3% of the unemployed consumed alcohol ($P \leq 0.0001$). 77.6% of the unemployed and 62.6% of the employed practiced no sport. Contrarily, sport was practiced by 22.4% of the unemployed compared to 37.4% of the employed respondents; this result showed a statistically significant difference ($P \leq 0.05$).

60.7% of the unemployed and 75.7% of the employed respondents stated that they felt they were under stress in their everyday life; the difference was statistically significant ($P \leq 0.05$).

39.3% of the unemployed and 38.3% of the employed respondents mentioned sleeping problems. No sleeping problems were found among 60.7% of the unemployed and 61.7% of the employed respondents.

Table 1. *Differentiation of observed group according to occupation and gender, residence and education. Average age with 95% confidence interval according to age and gender. (CI – confidence interval)*

Respondent							
Observed parameter		Unemployed		Employed		Total	P value
		N	(%)	N	(%)	N	
Gender	male	42	39.3	41	38.3	83	N.S.
	female	65	60.7	66	61.7	131	
	Total	107	100.0	107	100.0	214	
Residence	urban	62	57.9	84	78.5	146	P≤0.001
	rural	45	42.1	23	21.5	68	
	Total	107	100.0	107	100.0	214	
Education	basic	17	15.9	1	0.9	18	P≤0.0001
	secondary without graduation	36	33.6	17	15.9	53	
	secondary including graduation	44	41.1	64	59.8	108	
	university	10	9.3	25	23.4	35	
	Total	107	100.0	107	100.0	214	
Family status	single	34	31.8	50	46.7	84	N.S.
	married	59	55.1	43	40.2	102	
	divorced	14	13.1	14	13.1	28	
	Total	107	100	107	100	214	
Average age ($CI_{95\%}$)	male	39.2 (35.3–43.1)		33.2 (29.9–36.4)		36.2 (33.6–38.9)	
	female	37.5 (34.9–40.1)		34.2 (31.8–36.6)		35.8 (34.0–37.7)	

Table 2. *Frequency of smoking, alcohol consumption, sport, stress, sleeping problems, health status, life style, living standard and feelings in accordance with occupation*

Respondent							
Observed parameter		Unemployed		Employed		Together	P value
		N	(%)	N	(%)	N	
Smoking	yes	36	33.6	407	37.4	76	N.S.
	no	71	66.4	67	62.6	138	
	Total	107		107		214	
Alcohol	yes	41	38.3	75	70.1	116	P≤0.0001
	no	66	61.7	32	29.9	98	
	Total	107		107		214	
Sports	yes	24	22.4	40	37.4	64	P≤0.05
	no	83	77.6	67	62.6	150	
	Total	107		107		214	
Stress	yes	65	60.7	81	75.7	146	P≤0.05
	no	42	39.3	26	24.3	68	
	Total	107		107		214	
Sleeping problems	yes	42	39.3	41	38.3	83	N.S.
	no	65	60.7	66	61.7	131	
	Total	107		107		214	
Health status	excellent	37	34.6	51	47.7	88	P≤0.001
	good	44	41.1	51	47.7	95	
	bad	26	24.3	5	4.6	31	
	Total	107		107		214	
Life style	healthy	76	71.0	70	65.4	146	N.S.
	unhealthy	31	29.0	37	34.6	68	
	Total	107		107		214	
Living standard	excellent	8	7.5	16	15.0	24	P≤0.0001
	good	42	39.3	68	63.6	110	
	bad	57	53.2	23	21.4	80	
	Total	107		107		214	
Feelings	positive*	12	11.2	36	33.6	48	P≤0.0001
	negative**	65	60.8	29	27.1	94	
	neutral	30	28.0	42	39.3	72	
	Total	107		107		214	

*full of energy, calm, content, enthusiastic, cheerful, well accepted in society;
**tired, nervous, angry, doubtful, sad, useless, lonely, hopelessness

In the cluster of the unemployed respondents, 34.6% subjectively evaluated their health status as excellent, 41.1% evaluated their health status as good and 24.3% evaluated it as bad. 47.7% of the employed subjectively evaluated their health status as excellent, 47.7% as good and only 4.6% as bad. A significant statistical difference ($P \leq 0.001$) was found concerning evaluation of health status between employed and unemployed. According to the subjective evaluation of life style, 71.0% of unemployed and 65.4% of employed lead a healthy life style.

An excellent level of material well-being was reported by only 7.5% of the unemployed and 15.0% of the employed. Bad living standards were found in the case of 53.2% of the unemployed and 21.4% of the employed respondents. The difference in the level of material well-being between the unemployed and the employed respondents was statistically significant ($P \leq 0.0001$).

From the total cluster of 214 respondents there were only 11.2% of the unemployed and 33.6% of the employed who reported positive feelings. Negative feelings were found in 60.8% of the unemployed and 27.1% of the employed respondents (Table 2).

The first step taken was to conduct logistic regression analysis with the chosen parameters in order to define the relations of their influence on the unemployed and the employed respondents. No statically significant differences were found in the parameters of gender, age, GP visits and residence. On the other hand, statistically significant differences were confirmed for such parameters as education, smoking, alcohol, sport and sleeping. The second step taken was to conduct logistic regression only on those parameters which in the previous step were shown to be statistically significant. The results of the analysis indicated that the higher the level of education one attains, the higher the chance of finding a job (OR = 1.08, CI95% = 1.04–1.12, $P \leq 0.001$). In addition, the results indicated that smoking decreases the chance of becoming employed by OR = 0.91 (CI95% = 0.83 – 0.98) times ($P \leq 0.01$). People who are employed consume more alcohol, attaining OR = 1.28 (CI95% = 1.21–1.35) compared to the unemployed ($P \leq 0.0001$). Doing sport increases the chance of becoming employed by OR = 1.35 (CI95% = 1.29–1.41) times. The results also indicated the unemployed have OR = 1.65 (CI95% = 1.59–1.72)

Table 3. *Results of logistic regression where dependent variable was employment (employed = 1, unemployed = 0) and independent variables were GP visits, residence, education, smoking, alcohol, sport and sleeping. Confounding variables were gender and age*

	Regression factor	Standard error	t value	P value	OR	CI-	CI+
Gender	-0.073	0.038	-1.916	N.S.	0.93	0.85	1.00
Age	-0.003	0.002	-1.746	N.S.	1.00	0.99	1.00
Doctor visits	0.064	0.039	1.624	N.S.	1.07	0.99	1.14
Residence	-0.006	0.037	-0.15	N.S.	0.99	0.92	1.07
Education	0.077	0.022	3.503	P≤0.001	1.08	1.04	1.12
Smoking	-0.097	0.037	-2.584	P≤0.01	0.91	0.83	0.98
Alcohol	0.249	0.036	7.001	P≤0.0001	1.28	1.21	1.35
Sports	0.300	0.033	9.215	P≤0.0001	1.35	1.29	1.41
Sleeping	0.264	0.030	8.731	P≤0.0001	1.30	1.24	1.36

Table 4. *Results of logistic regression where dependant variable was health status (healthy = 1, unhealthy = 0) with independent variables: family status, living standard, stress, residence, education and change in living standard. Confounding variables were gender and age*

	Regression factor	Standard error	t value	P value	OR	CI-	CI+
Gender	-0.037	0.068	-0.548	N.S.	0.96	0.83	1.10
Age	-0.008	0.004	-2.153	P≤0.05	0.99	0.99	1.00
Family status	0.070	0.060	1.161	N.S.	1.07	0.95	1.19
Living standard	0.042	0.048	0.884	N.S.	1.04	0.95	1.14
Stress	-0.054	0.070	-0.763	N.S.	0.95	0.81	1.09
Residence	-0.171	0.068	-2.510	P≤0.01	0.84	0.71	0.98
Education	0.203	0.040	5.126	P≤0.0001	1.22	1.15	1.30
Change of living standard	0.088	0.040	2.193	P≤0.05	1.09	1.01	1.17

times higher chance of having sleeping problems compared to the employed ($P \leq 0.0001$) (Table 3).

Testing the relation between healthy and unhealthy respondents using logistic regression showed statistically significant differences in respect of the parameters of residence, education and change of living standards. People living in rural areas have OR = 0.84 (CI95% = 0.71–0.98) lower chance of being unhealthy ($P \leq 0.01$). There is a higher chance OR = 1.22 (CI95% = 1.15–1.3) that the health status of an individual with university education will be at a good level ($P \leq 0.0001$). A negative change in living standard increases by OR = 1.09 (CI95% = 1.01–1.17) times the chance it will have a negative influence on health ($P \leq 0.05$) (Table 4).

DISCUSSION

The selection of subjects for both groups was one of the most important factors influencing the validity of the study. One of the conditions for including an employed respondent into the study was that his/her employment period had to be at least 12 months, which ensured equality of conditions for further analysis of obtained results. We assumed that the employment period minimal 12 months can be used as a control of observed parameters.

In the observed cluster of the unemployed, the age range was from 18 to 59 years. Researcher assisted data collection on the basis of the questionnaire proved to be the decisive factor for collection of complete data. Generally it is possible to conclude that the quality of collected data was sufficient for the purpose of this research although it might be possible to verify some of the answers, for example the health status of respondents (the personal GPs of the respondents could be consulted in future). In addition, the economic parameters, such as income and expenditure, could be cross checked with official documents. However, in both such cases we would have to obtain the respondent's agreement, which would surely cause complications and prolongation of the research. Another solution might be interviews via post or telephone. In both cases there would be a lower rate of response, but it would be possible to address a larger number of people.

The age group 18 to 25 years was the most dominant among the cluster of long-term unemployed people. These results may be due to the fact that the youth and mainly recent graduates belong to the most threatened groups in the labour market. This fact is also proven by research on unemployed youth conducted in Poland, Hungary, Bulgaria and Slovakia in 1997. The results showed that unemployed youth are characterized by new life styles, increased social isolation and decreased civil participation (5). Due to the fact that in the last 20 years there has been a significant increase

in the number of unemployed youth in Europe, Kieselbach and other researchers identified reasons for youth unemployment in Sweden, Belgium, Germany, Spain, Italy and Greece. They discovered that this phenomenon is strongly correlated with factors such as insufficient education and family background. Long-term exclusion of the youth from the labour market causes individuals from this group to suffer a higher risk of social deprivation, causing passivity and lack of will to re-enter the labour market after a protracted period of unemployment (6).

In the observed cluster, it was found that the employed visited their GPs more regularly than the unemployed. Turner compared the effects of unemployment on depression and subjective physical health status. In his study, he included respondents who were unemployed in the past and presently unemployed. He found that unemployed respondents are ill more often than the employed (7).

The results of the statistical analysis of Kesler, House and Turner showed that unemployment significantly contributed to negative health effects (8). Buchtova in a pilot study also states that among the unemployed there is a higher frequency of respiratory, lung, and ischemic health problems (8). The research under the title "The influence of unemployment on health and mental state of Ostrava citizens and threats for social deprivation and poverty" conducted in Ostrava in 2003, confirmed the bad health status of long-term unemployed women and older respondents (9). Similar impacts were confirmed by the present research as well.

Furthermore, the results showed that more employed people claimed that they have more stress than the unemployed. More than half of the unemployed respondents stated that the main factor causing stress was lack of funds and unemployment itself. They also stated that during unemployment they felt much more stressed compared to the period during which they were employed. The intensity of stress in every day life was also significant in our cluster. Kasl (10) with his co-researchers showed the connection between stress from unemployment and health damaging habits – alcohol, smoking, drugs, pills and cardiovascular inflictions. It appears also to be the case that initial subjective neurotic problems are signals of more serious, often chronic diseases (11, 12). Jin et al. observed the effects of unemployment on health via metaanalysis. On the basis of 46 Canadian researches conducted between 1980 and 1990, they confirmed the fact that unemployment increases the death rate, suicidal tendencies and increased alcohol consumption (13). Voss et al. also found that the intensity of suicidal tendencies, alcohol consumption, smoking and sedative consumption increases in relation to the duration of unemployment (14). It could be the case that an increase in smoke, alcohol and drug addicting is not found among the unemployed due to the fact that the respondents' answers are not serious in response to this question or that the unemployed do not have enough money to fund such consumption (15).

Experiencing unemployment is assessed as a form of mental burden. The loss of a job, according to Zwicker, changes the mental and social life of the unemployed; it influences his/her mental and social habits. Zwicker claims that unemployment affects the whole mental system of the unemployed, his/her intellect, sentiment as well as will. In comparison with the Marienthal study (1932), which describes the gradual process of the unemployed person's decline from hopelessness to complete apathy, in Wales study (1937), feelings of resignation prevailed (16). Waters and Moore assessed the influence of financial deprivation, change of status and social support on the level of self-respect among 201 unemployed men and women. Their statistics have confirmed that among the unemployed men, financial deprivation negatively influenced the rate of their self-respect (17). In the study of depression epidemiology in Slovakia (2004), it was found that unemployment of significantly higher than 6-months showed a prevalence of depression in comparison to the employed (18). In the present study, we had neither space nor the opportunity to analyze the subjective processing of the unemployment period in detail. The study established a statistically significant difference between negative, positive and neutral feelings in the unemployed and control groups. It is necessary that future studies of this nature take into consideration the mental consequence of long-term unemployment.

An important aspect to take into consideration when assessing the influence of unemployment on mental and social comfort is how leisure time is utilized during the period of unemployment. Waters and Moore found that the unemployed spent less of their spare time in the company of other people, and preferred to be left alone which was caused not only by depression but also by decreased self-respect and self-confidence (19). In the present research, it was observed that the employed take part in sport more often than the unemployed, i.e. one spends more time in the company of other people.

The rate of unemployment in Slovakia has been dropping over the past few years, but long-term unemployment still remains an important phenomenon of our time. In the past 7 years (2000–2007), the number of the long-term unemployed in Slovakia increased from 7.6% to 23.7% in respect of all applicants (20). In order to gain a more complex view of the effects of unemployment on the health status of individuals it is necessary to take also the so-called voluntarily unemployed into consideration; they are often omitted from such studies because it is difficult to trace them.

For more detailed result analysis it would be appropriate to enlarge the observed cluster as well as the geographical scope and conduct long-term research, which would obtain information from respondents more often and in shorter intervals in order to establish also more detailed variations of their health and mental state. In this way it would be possible to reduce the likelihood of mistakes (biases) resulting from incomplete or incorrect recording of data. The future goal of the authors is to improve the methodology of observation via standardized questioners for data collection. Another goal is to start cooperation with foreign specialists and become involved in international discussions on this topic.

KEY POINTS

- This study proved that even with restricted resources it is possible to obtain credible results comparable with more complex studies.
- It was shown that the pilot study based on the given questionnaire was able to achieve results that may be of interest not only to scholars, but also to those involved in resource and project planning in the area of health and social care.
- The next mission is to start cooperation with foreign specialists and become involved in international discussions on this topic.

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