



The negative health consequences of unemployment: The case of Poland

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ABSTRACT

In the 1990s Poland began to make a transition to a free-market economy: a transition accompanied by a variety of negative socio-economic developments, most notably a rise in unemployment. The aim of this study is to shed light on the relationship between occupational status (including unemployment) and the risk of cardiovascular disease (CVD), by examining the experience of 542 men and 572 women between the ages of 40 and 50 of the town of Wrocław in 2006. The Framingham Risk Score (FRS), which uses certain health and life-style parameters to predict the risk of major coronary problems over a 10-year period, was calculated, and the effect of occupational status on the FRS was assessed. The results showed that the FRS varied according to sex and to occupational status, with the highest FRS rating among unemployed men. Thus governmental policies to counter the adverse effects of unemployment should be developed to remedy the problem.

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1. Introduction

Over the course of the past two decades, Poland, along with other Central and Eastern European countries has undergone a radical transition, from a centrally planned to a free-market economy. This shift has had many dramatic consequences throughout Polish society. The privatization of state-run enterprises has led to gross discrepancies in income, with nearly every socio-economic segment suffering a decline in the standard of living (Pałaszewski-Reindl, 1998).

With the transition, one's income level became a function of one's educational status (Górecki, 1994). Whereas the Polish wage structure had previously been extremely compacted, during the 1990s a positive correlation between a college degree and the two higher income quartiles developed, while those workers equipped

with no more than a primary-school education were concentrated in the two lower income quartiles (Zienkowski, 2000). Unemployment, nonexistent in 1989, rose to above 16% in 1994 (CSO, 2002a); although it decreased, to 11% in 1998, it soared, to nearly 20%, by 2002 (CSO, 2002b). Among young men and women (aged 20–24) with a university-level education, the unemployment rate is negligible (2.5 and 3.5%), whereas among men and women with only basic vocational skills the rates are 10 and 16%, respectively (Wróblewska, 2002). Although Poland joined the European Union in 2004, the unemployment rate remains, at 11% (CSO, 2007).

Many studies have shown that unemployment has a negative impact on health (Bartley and Owen, 1996). The loss of one's job not only means a financial loss but also can lead to several secondary difficulties, both physical and psychological: the loss of a structured, fulfilling daily life, of a certain social status, and thereby of a variety of supportive social relationships (Warr and Jackson, 1985; Rasky et al., 1996). Martikainen (1990) showed that unemployment significantly increased the mortality rate among Finnish men from 1981 to 1985. After having controlled for all background variables, he found that relative total mortality among the unemployed was 93%

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higher and the relative death rate from circulatory diseases was 54% higher than it was among men who were employed. Furthermore, unemployment can cause psychological disturbances (Morrell et al., 1994), depression (Dew et al., 1992), and minor psychiatric morbidity (Ferrie et al., 2001), and is associated with hypertension and cardiovascular diseases (Cook et al., 1982). The high rate of unemployment in Poland since 1995 may have a number of serious health consequences, and therefore warrants epidemiological research. This study uses the Framingham Risk Score scale to determine the cardiovascular consequences of employment status.

2. Data and methods

Our database was provided by a screening program, the Program for the Prevention of Cardiovascular Disease, carried out by the municipal health department of Wrocław, Poland, in cooperation with the Institute of Anthropology of the Polish Academy of Sciences. All of Wrocław's inhabitants between the ages of 40 and 50 were invited to participate; 25% – 506 men and 642 women – accepted. We are unable to determine whether the participation of these 25% was representative of the population at large. Because we restricted our analysis of this group to those individuals whose data were complete, the sample size shrank to 452 men and 572 women (the data are located in the Institute of Anthropology PASSES, Wrocław, Poland).

The data collected from each participant comprised: (1) a consultation with a cardiologist, including the medical history and a physical examination; (2) a resting electrocardiogram; (3) an assessment of vital signs, including resting systolic and diastolic blood pressure; (4) a measurement of body fat, by means of two anthropometrical indices: BMI (body mass index = weight (kg)/(height (m))² and WHR (waist-hip ratio = waist circumference (cm)/maximal hip circumference (cm)); (5) standard laboratory tests, including fasting plasma levels of glucose, total cholesterol, LDL (low density) cholesterol, HDL (high density) cholesterol, and triglycerides; (6) a questionnaire regarding educational level, professional career, various actual life-style elements (including smoking and drinking habits), and the family's social status.

We divided the participants into three groups: professionals, skilled and unskilled workers, and unemployed individuals. The first group included many clerks, teachers, physicians, lawyers, office managers, and business owners. The second group included drivers (taxi, buses, trucks), locksmiths, welders, steelworkers, and mechanics whose education had not gone beyond elementary or trade school. All of those in the third group were currently unemployed. Education level, was defined as one of three categories: university, secondary, and elementary or trade school. 38.5% had attended elementary or trade school; 48% had graduated from secondary school; and 13.5% had received a university degree. While this classification, according to occupation, differs from the socio-economic models used in studies of Western countries, it provides an accurate image of the stratification characteristic of Poland.

The Framingham Risk Score, derived from the Framingham Heart Study cohort, was designed to predict the risk over a 10-year period of an individual's experiencing one or more of several major adverse coronary events, including mortality due to coronary artery disease and non-fatal myocardial infarction (Wilson et al., 1998; D'Agostino et al., 2001). The FRS comprises, in fact, two scores: FRS-LDL, based on LDL cholesterol, and FRS-TCH, based on total cholesterol. In both cases calculations are derived from data on the traditional risk factors for cardiovascular disease: age, sex, LDL-cholesterol level, HDL-cholesterol level, systolic and diastolic blood pressure, the presence or absence of diabetes mellitus, and smoking status (Wilson et al., 1998; D'Agostino et al., 2001). We calculated both of these versions of the FRS, on the basis of the data provided by each participant in the study.

Table 1

Sample characteristics: distribution (%) within three demographic and life-style categories according to sex and occupational status. Differences in distribution were tested by means of Pearson's Chi-square test.

	Professionals	Skilled workers	Unemployment
(a) Males			
Marital status			
Single	16.7	18.7	28.0
Married ^a	83.3	81.3	72.0
		$\chi^2 = 2.03$	
Smoking			
Yes	25.7	38.5	60.0
Never	45.3	28.7	20.0
Ex-smoker	29.0	32.8	20.0
		$\chi^2 = 22.8^{***}$	
Drinking			
Never	3.2	5.6	12.0
Medium	74.2	68.0	60.0
Frequently	22.6	26.4	28.0
		$\chi^2 = 6.14$	
	Professionals	Skilled workers	Unemployed
(b) Females			
Marital status			
Single	27.7	28.8	24.3
Married ^a	72.3	71.2	75.7
		$\chi^2 = 0.49$	
Smoking			
Yes	22.3	36.5	34.3
Never	56.0	44.3	47.9
Ex-smoker	21.7	19.2	17.8
		$\chi^2 = 13.2^*$	
Drinking			
Never	5.2	7.8	12.2
Occasionally	89.6	90.4	83.8
Frequently	5.2	1.8	4.0
		$\chi^2 = 8.13$	
	Males		Females
(c) Education			
Education			
University	31.3		32.3
Secondary	38.3		48.1
Elementary or trade	30.4		19.6
		$\chi^2 = 19.6^{***}$	

^a Includes unmarried couples.

* Differences significant at $p < 0.05$.

** Differences significant at $p < 0.01$.

*** Differences significant at $p < 0.001$.

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