Socioeconomic determinants of cardiovascular disease – results of the European Health Interview Survey 2019 Survey

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Introduction: We know from the literature that socioeconomic variables, such as education and income level, are related to cardiovascular risks and outcomes[1]. Our goal was to explore possible differences in prevalence of risk factors for cardiovascular disease (CVD), stroke, myocardial infarction (MI), coronary heart disease (CHD) and raised lipid levels in older people (65+ years of age) population in Croatia, depending on their education and income level.

Methods: We used the data from the European Health Interview Survey (EHIS) conducted in 2019. Prevalence of MI, CHD, hypertension, raised blood lipids, overweight and obesity and smoking were calculated, stratified by income groups and education level. EHIS differentiates 5 quintiles/income groups; for the purpose of this research, we combined quintile 1 and 2 into "lower income" group, and quintiles 4 and 5 into "higher income" group. Education was stratified according to ISCED 2011 classification into lower levels (primary school or less), middle level (secondary school) and high level (tertiary education).

Results: Older people with lower income have higher prevalence of stroke, MI and CHD, while prevalence of high lipid levels is higher in people with higher income. Overweight is more prevalent in higher income group, while opposite is found for obesity and smoking. Stroke and raised lipid levels are more prevalent in the low education group, MI in high education group, while no difference is seen in CHD. Smoking and obesity are also higher in people with lower education levels. Results are presented in **Table 1.**

Conclusion: From a simple descriptive analysis, we can see a higher prevalence of some CVD risk factors (obesity and smoking) in people with lower income and lower levels of education in Croatia. Similarly, people with lower levels of education and income have higher self-reported prevalence of stroke and raised lipid levels. More complex analysis and research is needed to establish the relationship and interaction between these variables and targeting these higher risk groups in prevention activities and screening for CVD risk factors could reduce the inequalities.

TABLE 1. Percentages of cardiovascular disease, smoking, overweight and obesity by income and education levels in people aged 65+, results of the European Health Interview Survey 2019 survey in Croatia.

%	Income		Education level		
	Low income (Q1-2)	High income (Q4-5)	Low	Middle	High
Stroke	6.9	5.1	8.0	7.9	4.5
Myocardial infraction	6.7	6.3	6.8	9.2	10.0
Coronary heart disease	20.6	18.3	21.2	18.2	21.5
Raised lipid levels	27.2	34.6	34.5	32.4	31.4
Daily smokers	13.1	10.2	6.2	13.7	16.2
BMI >25	72.6	78.8	74.5	75.0	71.7
BMI >30	31.0	29.0	33.1	27.7	17.4

BMI = body mass index; Q = quintile

LITERATURE

1. Schultz WM, Kelli HM, Lisko JC, Varghese T, Shen J, Sandesara P, Quyyumi AA, Taylor HA, Gulati M, Harold JG, Mieres JH, Ferdinand KC, Mensah GA, Sperling LS. Socioeconomic Status and Cardiovascular Outcomes: Challenges and Interventions. Circulation. 2018 May 15;137(20):2166-2178. https://doi.org/10.1161/CIRCULATIONAHA.117.029652

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