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Health profile of the urban community members in Lithuania: Do socio-demographic factors matter?

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ABSTRACT

Background and objective: Objective of the study was to explore self-perceived health status, health determinants and its associations with socio-demographic factors among urban community members in Lithuania.

Materials and methods: Data were obtained from a European survey on urban health, conducted as part of the EURO-URHIS 2 project. The postal questionnaire survey of 3200 adults from Kaunas and Šiauliai (Lithuania) was conducted in 2010. A total of 1407 valid questionnaires were analyzed. Statistical analysis was carried out by using SPSS 17.0 inside Complex Sample module that takes design effects into account.

Results: Younger respondents (aged 19–64 years) perceived most of the health status indicators better than the older ones (65+ years), while they were less likely to report healthy lifestyle and less often perceived their neighborhood as being socially cohesive than the older ones. Men less frequently experienced psychological problems, indicated regular contacts with friends and/or family and had a greater tendency to be overweighted and obese, daily smokers and drinkers compared to women. Those having secondary or lower educational level perceived most of the health status indicators worse than those with university educational level. Respondents living with a partner less often experienced psychological problems than those living alone. Respondents who indicated having enough money for daily expenses more often perceived their health and health determinants better.

Conclusions: The results of this study demonstrate associations between socio-demographic factors and self-perceived health status, lifestyle and factors of living environment among urban community members in Lithuania.

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1. Introduction

Urbanization is likely the single most important demographic shift worldwide, and it represents a sentinel change from how most of the world's population has lived for the past several thousand years [1]. A recent data about the growth of urban populations from the World Health Organization (WHO) notes that more than half of the world's population now lives in urban areas, and within next 20 years, 6 out of every 10 people will live in a city [2]. The United Nations (2001) estimated that the level of urbanization in more developed regions of the world will increase to 80% by 2015, compared to 76% in 2000. Urban growth, by altering cities and the surrounding countryside, presents numerous challenges for the maintenance of urban green space, and consequently also for human health and well-being [3]. In Lithuania, 66.9% of the total population lived in urban areas in 2011 [4]. The understanding of the role of the urban environment in shaping the health of populations requires consideration of different features of the urban environment that may influence population health. Urbanization has been traditionally linked to development and development with health, but in the face of development is the growth of slums, which are linked to poor health [5]. Typical large city problems such as segregation, neighborhood degradation, increased road traffic, socio-economic deprivation and inequalities in health, well-being and health care accessibility, have become central political issues in most European Union countries [6]. While WHO is committed to improving health through the Millennium Development Goals, the first three of which are specifically focused on reduction of inequalities vis-à-vis poverty, education, and gender, all of which are important social determinants of health [7]. Likewise, one of the strategic objectives of the Health 2020 policy is improving health for all and reducing health inequalities [8].

Self-perceived health, as an indicator of the health status of populations, is widely used in comprehensive health measurements, and is recommended for broader implementation by the WHO [9]. However, no analysis has been done to evaluate self-perceived health and health determinants in association to socio-demographic factors in urban community in Lithuania.

The objective of this study was to explore self-perceived health status, health determinants and its associations with socio-demographic factors among urban community members in Lithuania.

2. Materials and methods

The study is based on the results of the EURO-URHIS 2 (European Urban Health Indicators System Part Two: Urban Health Monitoring and Analysis System to Inform policy) international research project. EURO-URHIS 2 aimed to develop methodology and validated tools useful to policy makers at all levels to make health gains via evidence-based policy decisions for urban populations. EURO-URHIS 2 gathered information by collecting data from routinely available registration data, and by conducting youth (14–16 years old) and adult (19–64 and 65+ years old) surveys at the end of 2010

in 26 urban areas in Europe. Ethics committees' approvals for the surveys were obtained by all partners of the project, according to their national regulations. In Lithuania, approval was obtained from the Kaunas Regional Ethics Committee for Biomedical Research (No. BE-2-14; May 5, 2010).

This paper is based on the adult postal questionnaire survey, which was carried out in Kaunas and Šiauliai cities (Lithuania) involving representative sample of adults who had permanent residence in these previously defined cities. A stratified representative random sample of 1600 adults (800 aged 19–64 and 800 aged 65+) in each city (3200 in total) was composed from the population register. In Kaunas, 372 aged 19–64 years and 340 aged 65+ years, while in Šiauliai, 385 aged 19–64 years and 310 aged 65+ years completed valid questionnaires. The response rate was 44.5% for Kaunas and 43.4% for Šiauliai. Thereby, 1407 valid questionnaires were analyzed in this study. The questionnaire was developed and approved by international experts in the EURO-URHIS 2 team. Firstly, the questionnaire was developed in English, then translated into Lithuanian language and back translated into English. The questionnaire included questions on socio-demographic characteristics, self-rated health, relationship with other people and neighborhood, lifestyles, living environment, usage of health care services (67 questions in total). Data was entered to an on-line database, situated in Manchester University (UK). Data cleaning was performed in 2011.

In this paper, the health profile of the adult urban populations was described while analyzing 9 health status indicators based on self-rated health: (1) (very) good self-perceived health, % of adults who perceive their health to be good or very good; (2) psychological problems, % of adults with a score of four or more on the General Health Questionnaire (GHQ); (3) depression/anxiety, % of adults who reported to be diagnosed with or treated for anxiety or depression during the past year; (4) cardiovascular disease (age 65+), % of adults aged 65 years and older who were diagnosed with or treated for heart attack, angina, or heart failure during the past year; (5) rheumatoid arthritis or osteoarthritis, % of adults who reported to be diagnosed with or treated for rheumatoid arthritis or osteoarthritis during the past year; (6) cancer, % of adults who reported to be diagnosed with or treated for cancer (any kind of malignant) during the past year; (7) asthma or bronchitis, % of adults who reported to be diagnosed with or treated for bronchial asthma or chronic bronchitis during the past year; (8) long-standing illness with restrictions, % of adults who suffer from any long-standing illness, long-standing effect from injury, disability, or other long-standing condition; and (9) low back pain, % of adults who had low back pain longer than one day in the past month; 9 lifestyle factors (1) regular consumption of fruits/vegetables, % of adults who eat, on average, four or more portions of fruits and/or vegetables per day; (2) regular breakfast, % of adults who have breakfast at least four times a week; (3) Being physically active \geq twice a week, % of adults who are physically active for at least 30 min twice a week or more; (4) overweight and obesity, % of adults overweight or obese, defined as a BMI of ≥ 25 kg/m²; (5) daily smoking, % of adults who smoke everyday; (6) passive smoking by nonsmokers, % of nonsmokers who are exposed to second-hand smoking inside their home; (7) drinking alcohol, % of adults who drink spirits and/or wine

and/or beer, cider ≥ 2 –3 times a month; (8) Binge drinking, % of adults who drink 6 or more portions of alcohol on one occasion, at least once a week (men) or at least once a month (women); and (9) ever used cannabis, cocaine, amphetamine, and/or ecstasy (19–64), % of adults aged 19–64 years who ever used cannabis, cocaine, amphetamine, and/or ecstasy; and 8 environmental factors (1) green areas suitable for recreational activities – % of adults who perceive the green areas in their neighborhood to be suitable for active recreational activities; (2) belonging to immediate neighborhood, % of adults who feel that they belong to their immediate neighborhood; (3) social cohesion in neighborhood, % of adults who perceive their neighborhood to be socially cohesive; (4) regularly meet friends and/or family, % of adults who at least once a week meet friends and/or family on average in the last 12 months; (5) regularly have contact with friends and/or family, % of adults who at least once a week have contact with friends and/or family on the phone, by letter, fax, email, internet on average in the last 12 months; (6) exposure to severe noise, % of adults who were exposed to severe noise from outdoors during the past 12 months; (7) cars and/or heavy vehicles pass home, % of adults who indicated that cars and/or heavy vehicles pass their house constantly or frequently; and (8) damp spots or mold at home, % of adults who had wet or damp spots and/or mold or mildew inside their homes (other than basements) within past 12 months. All the listed above health and health determinants were analyzed according to major socio-demographic characteristics: age (19–64 and 65+), gender (male and female), educational level (adults who achieved secondary level education or lower and university education), marital status (living with partner, e.g. married or cohabiting or living alone, e.g. single, separated, divorced, widowed), and economical status (based on answers to the question “Do you have enough money for daily expenses, e.g. accommodation, travel, clothing, food?”). Data analysis for Kaunas and Šiauliai separately is not presented, since there were no statistically significant differences in major indicators estimated.

For the estimation of associations between two categories, z test was used. All analyses were conducted at $P < 0.05$ level. To give representative urban area estimates, the data weighting procedure was used. Sample weights are required to compensate for unequal probabilities of selection, to adjust for the potentially biasing effects of failure to obtain data from some persons or reporting units (nonresponse), and to adjust for failure to cover some portions of the population not included in the sampling frame. Since this would bias the results, extreme weights were trimmed. Statistical analysis was carried out using SPSS 17.0 Inside Complex Sample module that takes design effects into account.

3. Results

The characteristics of the study group are presented in [Table 1](#). The sample consisted of a total of 1407 respondents from Kaunas and Šiauliai (Lithuania). There were no significant differences between actual proportions and proportions after the weighting, except age, what shows that according to gender, educational level, marital and economical status studied sample did not differ from the study population.

Table 1 – Characteristics of the study population.

Social and demographic characteristics	n (%)	% After weighting
Age		
19–64	757 (53.8)	81.5
65+	650 (46.2)	18.5
Total	1407 (100.0)	100.0
Gender		
Men	611 (43.4)	43.3
Women	796 (56.7)	56.7
Total	1407 (100.0)	100.0
Educational level		
Higher level	616 (44.5)	49.1
Secondary level or lower	769 (55.5)	50.9
Total	1385 (100.0)	100.0
Living with partner		
Yes	946 (67.4)	68.4
No	458 (32.6)	31.6
Total	1404 (100.0)	100.0
Enough money		
Enough	839 (60.6)	58.0
Not enough	546 (39.4)	42.0
Total	1385 (100.0)	100.0

The difference between actual proportions and proportions after weighting in age could be explained by the fact that representative samples were drawn separately for two age groups, to ensure equal participation in the survey of the representatives from different age groups.

Health status and health determinants of the adult urban population, based on the self evaluation are presented in [Table 2](#). The proportion of population who perceived their health to be good or very good was 41.6%. Even one third of the respondents reported psychological problems (32.1%) and long-standing illness with restrictions (34.8%). Several lifestyle factors were analyzed. One-fifth (21.6%) of the respondents reported daily smoking; 70.8%, regular alcohol consumption (drinking spirits and/or wine and/or beer, cider ≥ 2 –3 times a month), and 20.7%, regular binge drinking. More than half (55.3%) of the respondents reported being overweight and obese and only 35.1% were physically active at least twice a week. Some environmental factors have to be mentioned: 77.9% of the respondents mentioned cars and/or heavy vehicles passing their home constantly or frequently and every tenth respondent was exposed to severe noise from outdoors. Nevertheless, 84.0% mentioned existence of green areas in their neighborhood to be suitable for active recreational activities, more than a half indicated feeling that they belong to their immediate neighborhood.

Self-perceived health and health determinants varied considerably according to the studied socio-demographic characteristics ([Table 2](#)). Respondents aged 19–64 years more often perceived their health as good or very good, less frequently experienced psychological problems, were less often restricted by a long-standing illness, and less frequently diagnosed with or treated for chronic diseases (rheumatoid arthritis or osteoarthritis, cancer, asthma or bronchitis, and low back pain) than the older counterparts. Younger respondents had lower tendency to be overweighted and obese than the older ones. However, younger respondents were less likely to have a breakfast on

Table 2 – Health status and health determinants by social and demographic groups.

Indicator	Total population	Age		Gender		Educational level		Living with partner		Enough money		
		19-64	65+	Male	Female	Secondary level or lower	Higher level	Yes	No	Enough	Not enough	
	%	%	%	%	%	%	%	%	%	%	%	
Health status	1. (Very) good self-perceived health	41.6	48.5	10.5*	45.1	38.9	35.5	48.3*	42.3	40.2	49.2	30.7*
	2. Psychological problems	32.1	30.1	41.1*	26.6	36.2*	35.3	28.8	29.0	38.8*	22.1	45.6*
	3. Depression/anxiety	13.1	12.0	17.7	9.7	15.7	15.4	10.8	12.8	13.8	6.4	22.4*
	4. Cardiovascular disease (age 65+)	38.1	-	38.1	31.3	41.6	43.6	30.1*	36.6	40.2	32.3	49.6*
	5. Rheumatoid arthritis or osteoarthritis	19.2	14.0	41.9*	13.1	23.8*	21.9	16.2	18.0	21.8	13.3	27.2*
	6. Cancer	1.1	0.3	4.4*	1.2	1.1	1.6	0.6	1.0	1.3	1.2	0.9
	7. Asthma or bronchitis	8.6	7.4	13.7*	9.0	8.3	9.0	8.0	7.4	11.1	6.3	11.5
	8. Long-standing illness with restrictions	34.8	28.5	63.7*	35.1	34.6	39.7	29.9*	33.8	37.2	27.8	45.1*
	9. Low back pain	64.9	62.9	73.6*	61.9	67.1	69.0	61.0	65.7	62.7	58.9	73.0*
Lifestyle factors	1. Regular consumption of fruits/vegetables	48.0	49.3	42.5	40.4	53.7*	43.4	53.1	49.6	44.9	52.4	40.9*
	2. Regular breakfast	80.8	77.7	94.6*	79.6	81.7	79.0	83.0	80.8	80.8	83.8	76.9
	3. Being physically active ≥ twice a week	35.1	34.8	36.8	37.4	33.4	35.8	34.3	31.1	43.7*	36.3	33.5
	4. Overweight and obesity	55.3	50.8	75.6*	65.2	47.7*	56.0	53.8	58.2	49.2	53.9	57.4
	5. Daily smoking	21.6	25.3	5.1*	33.8	12.3*	24.2	18.9	23.2	17.6	16.9	28.5*
	6. Passive smoking by non-smokers	12.1	13.0	9.5	11.1	12.7	14.0	10.4	10.8	14.9	9.9	15.5
	7. Drinking alcohol	70.8	74.8	48.5*	81.3	62.0*	70.2	71.1	74.5	62.4*	72.6	68.5
	8. Binge drinking	20.7	22.8	10.3*	23.4	18.6	23.1	18.5	21.1	19.6	18.2	24.7
	9. Ever used cannabis, cocaine, amphetamine, and/or ecstasy (19-64)	8.2	8.2	-	12.0	4.9	10.6	6.1	5.0	16.0*	9.2	6.6
Environment	1. Green areas suitable for recreational activities	84.0	84.9	78.9	82.5	85.2	82.6	85.4	85.0	81.5	85.9	81.6
	2. Belonging to immediate neighborhood	51.8	52.8	46.8	47.0	55.3	49.9	53.6	52.9	49.6	55.6	46.0
	3. Social cohesion in neighborhood	38.2	36.1	49.4*	34.5	41.2	35.4	41.2	39.4	35.8	40.2	35.2
	4. Regularly meet friends and/or family	73.3	75.5	63.8*	76.1	71.2	71.7	74.9	71.2	77.7	75.5	70.2
	5. Regularly have contact with friends and/or family	84.0	86.4	73.3*	80.0	87.0*	81.4	86.3	83.6	84.5	87.0	79.4*
	6. Exposure to severe noise	10.2	9.6	12.6	9.0	11.1	12.8	7.5	9.2	12.5	6.2	15.4*
	7. Cars and/or heavy vehicles pass home	77.9	76.9	82.1	79.9	76.4	82.1	73.1*	76.5	80.8	75.6	81.1
	8. Damp spots or mold at home	32.5	33.8	26.8	33.8	31.6	34.8	30.3	36.0	25.3*	30.7	35.0

* Statistically significant difference between subgroups at the 5% level.

regular basis and were more often daily smokers, regular drinkers and binge drinkers than the older ones. Younger respondents less often perceived their neighborhood as being socially cohesive, though they more often indicated regular meetings and contacts with friends and/or family.

Data analysis by gender disclosed that men less frequently experienced psychological problems, had a greater tendency to be an overweight and obese, to be daily smokers and drinkers compared to women. Men also less frequently indicated regular contacts with friends and/or family compared to women.

Adults who attained secondary level education or lower less frequently perceived their health to be good or very good, were more often diagnosed with or treated for cardiovascular diseases, were more often restricted by a long-standing illness, and more often indicated that cars and/or heavy vehicles pass their home than adults with higher level (university) education. All studied lifestyle indicators did not differ significantly by educational level.

There were no significant differences in majority of health status indicators by the marital status. However, respondents living with a partner less often experienced psychological problems than those living alone. Those living with a partner were less physically active, more often indicated drinking alcohol, less common ever used drugs, and more often indicated damp spots or mold at home.

Data analysis by the economical status revealed significant differences in majority of health status indicators. Those who indicated having enough money for daily expenses more often perceived their health to be good or very good, less frequently experienced psychological problems, were less often restricted by a long-standing illness, and less frequently diagnosed with or treated for chronic diseases (depression/anxiety, cardiovascular diseases, rheumatoid arthritis or osteoarthritis, and low back pain). Also those having enough money for daily expenses more frequently ate fruits and vegetables, were less common daily smokers, had more often regular contacts with friends and/or family, and were less exposed to severe noise from outdoors.

4. Discussion

Several methodological issues of this study have must be noted. The main limitation of our data is their cross-sectional nature, which could introduce two types of bias: selection and reporting bias. In this study, we are more concerned about reporting bias. Self-rated health status indicators are a subjective measure, perception of which can be influenced by other factors, including social circumstances. On the other hand, the measures of social and economic circumstances may be influenced by perceived health status (reverse causation). This type of bias would overestimate the effects of deprivation and control, but could only be excluded in prospective data. The response rates were relatively low, nevertheless, since all the data analyses were conducted Inside Complex Sample module, we were able to take design effects into account.

Discrepancies between subjective reports of health status and more objective measures of it are often associated with social and demographic factors, implying that perceptions of health status are frequently influenced in some way by a respondent's social position [10].

The proportion of people in studied Lithuanian cities who perceived their health to be very good or good was much lower (41%) than the average (64%) in the other European urban areas in EURO-URHIS 2 [11]. As well as the prevalence of self reported psychological problems (32% vs. 23%), depression, anxiety, cardiovascular diseases among elderly, long-standing illness with restrictions, and low back pain were significantly higher in Lithuanian cities than in the other EURO-URHIS 2 cities. The proportion of daily smokers and those who regularly drink more than six units of alcohol in one occasion did not differ significantly, while regular consumption of fruits and vegetables, being physically active twice a week or more, were lower than the total EURO-URHIS 2 proportion. Being overweighted or obese was also higher in Lithuanian cities. Nevertheless, proportion of adults who reported cannabis use during the last year was lower and reporting of regular breakfast was higher than the EURO-URHIS 2 average. The proportion of adults who perceived their neighborhood to be socially cohesive was significantly lower than the overall EURO-URHIS 2 average.

Our study, likewise other studies confirm that health risk behaviors tending to be more common among men than women [12] as well as the socio-economic gradient tending to be stronger in men than women [13] and rates of mortality and disability differing significantly between men and women [14].

The results of this study clearly show associations between socio-demographic factors and self-evaluation of health status, lifestyle and environmental factors. The findings are consistent with those encountered in previous studies in Lithuania and in other countries. Educational attainment is a composite socio-economic variable, reflecting a number of influences on health status and mortality. Our research confirmed classical associations reported in many studies that level of education is directly related to better health within population [15,16]. Increasing inequalities in mortality and in life expectancy by education due to declining mortality amongst persons with higher educational achievements, and conversely, an increasing mortality in groups with low levels of education were estimated in Lithuania in 1989 and 2001 [15]. Educational inequalities in health are related to a great number of other social and economic factors that influence health. The possible role of psychosocial factors has been discussed extensively in the literature as well [17].

The association between marital status and health is not consistent, with remarkable variations among countries over time. Some studies have shown increasing mortality differences between marital status groups over the past few decades, occurring mainly from a decline in mortality among married people [18]. Widowed men and never married women were found to be at highest risk of mortality in Lithuania [19]. Mortality differences by marital status can be largely attributed to the psychological states and lifestyles associated with different marital roles [20]. Our study confirmed the evidence that those living with a partner less often experienced psychological problems than those living alone; however, there were no significant differences in majority of other health status indicators by the marital status.

Notwithstanding, newer methods may eventually contribute to an improved understanding of the competing influences on the health of urban populations over time. We hope that

efforts such as this study, aimed to structure our thinking about cities and health, are helpful in stimulating both empirical and theoretical developments that can lead to improved health in cities. Nevertheless, policy makers should take seriously into account the challenge of large socio-demographic inequalities in health. Effective public health programs should use available scientific evidence to meet the needs of urban populations and to understand the social and political contexts to manage the process of implementation of health promoting and disease protecting measures.

5. Conclusions

Younger urban community members in Lithuania perceived most of the health status indicators better than the older ones, while they were less likely to report healthy lifestyle and less often perceived their neighborhood as being socially cohesive than the older ones. Men less frequently experienced psychological problems, indicated regular contacts with friends and/or family and had a greater tendency to be an overweighted and obese, to be daily smokers and drinkers compared to women. Those having secondary or lower educational level perceived most of the health status indicators worse than those with university educational level. There were no significant differences in majority of health status indicators by marital status. However, respondents living with a partner less often experienced psychological problems than those living alone. Those respondents who indicated having enough money for daily expenses more often perceived their health better, more frequently ate fruits and vegetables, were less common daily smokers, had more often regular contacts with friends and/or family, and were less exposed to severe noise from outdoors.

Conflict of interest

The authors state no conflict of interest.

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