SOCIOECONOMIC INEQUALITIES IN SELF-PERCEIVED HEALTH IN ROMANIA

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Abstract: Background: *Inequalities in health are a major problem worldwide. Most of these inequalities are strongly related to the social stratification of our societies, which makes them unfair. This study aims to investigate the inequalities in self-assessed health in Romania according to personal socio-economic characteristics such as gender, age, employment status, education and income level.* ***Methods:*** *Data were collected from European Quality of Life Survey 2011-2012 database. The survey in Romania used the random route method for selection of households and comprised 1542 participants. The sample was representative and included residents aged 18 or older. The exploration of the data set was performed using the Multiple Correspondence Analysis and comparative analysis. The statistical significance of the differences between the socio-economic subgroups was tested by* χ^2 *test and Somers' d ordinal directional measure.* ***Results:*** *Significant differences were found between seven occupational categories, the employed individuals clearly declaring a far better health than the unemployed ones (47.8% compared to 22.6%). The higher the education level, the higher the proportions of those who perceive their health as being very good and good: from 3.5% and 7.4% for respondents with primary education or less to 18.8% and 51.9% for respondents with tertiary education. The proportions of those who evaluate their health as very good tend to increase from lowest income quartile (6.8%) to highest income quartile (16.5%).* ***Conclusions:*** *Socio-economic factors play a significant role within the health inequalities in Romania. Health policy is social policy and, consequently, the principle of efficiency should be combined with the principle of equity when designing such policies.*

Keywords: Self-perceived health, Inequalities, Inequities, Multiple correspondence analysis, Romania.

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INTRODUCTION

The decrease in inequalities in health care has been in the forefront of public agenda in the last decades. Even if the indicators reflecting the population's health status have improved in most countries, inequalities still exist both between countries as well as inside them (Bahadori& Ravangard, 2013). According to the statistical data, life expectancy varies from over 80 years in Japan or Sweden, 72 in Brazil, to 63 in India and below 50 years in some African countries (CSDH, 2008).

The investments in health services has been a priority for a long time within the public policies in order to address the inequality issue, having a strong theoretical support in the human capital theories. This type of investment is considered justified from the perspective of the positive externalities since it is the type of investment which produces on a long term higher social benefits than costs. On the other hand, more recent empirical studies show that services determine 20% of the health status while other factors influence the other 80% (Buşoi et al., 2013).

The population's health status is influenced by many biological, economic and social factors which can be classified in four categories: biological or hereditary; lifestyle; socio-economic factors; and social capital (Dahlgren&Whitehead, 1991). Thus, in order to reduce the disparities between countries and substantiating the healthcare national policies, one should focus on the analysis of all specific determinants, both individual and contextual.

The causes of inequalities are to be found in all the aspects of everyday life and they ultimately reflect the inequalities within the society. They reside ″in the social, economic, and political mechanisms that lead to social stratification according to income, education, occupation, gender, and race or ethnicity″ (Beaglehole&Bonita, 2008, p.1991). In this context, they become unjust, turn into inequities since they are no more than the result of some social mechanisms that should be corrected by means of the welfare state.

The determinants of health which are known to influence inclusively the self-perceived health status are: education, income level and material endowments, including the access to different goods or services, occupational status, gender, rural/urban origin, dwelling quality, preventive behavior, food style, alcohol and tobacco consumption, regular practice of sports etc. Numerous studies from the literature, performed by groups of countries or at country level analyze the relationship between these factors and the self-assessed health. When they investigate the socio-economic inequalities at the level of 22 European countries, Mackenbach et al. conclude that the mortality rates and the rather poor self-assessed health are considerably higher at the level of groups with an inferior socio-economic status; even more, the differences between the rich and the poor are much higher in some countries (Mackenbach et al, 2008). On an average, the East-European citizens assess their health as being worse than those in the Western countries

(Mackenbach, 2008; Carlson, 1998). Kunst et al. (2005), in the end of a study concluded on a sample of 10 European countries, reach the conclusion that health inequalities persist at European level because they stem from the social stratification characterizing the modern societies. Using national statistical data for Serbia and the logistic regression analyses, Jankovic et al. (2012) identify inequalities in the self-perceived health according to the education level and occupational status.

The issue of health inequalities is of great importance for Romania, a country which since the collapse of communist regime, has undergone numerous systemic changes, including several attempts to reform the health care system. However, nowadays, Romania is one of the poorest European Union countries with a significant percentage of poor population and an increased level of social exclusion (41.7% in comparison with the European Union average of 24.8%, being surpassed only by Bulgaria), with an increased index of income inequalities of 6.3 (the European Union average being 4.8) (Eurostat) and high level of severe material deprivation (European Commission, 2013). In such context the inequalities in different socio-economic groups have increased during the last years.

Certain descriptive comparative studies highlight the impact of the socio-economic status on the access to health services in Romania (Olaru, 2013) and high inequalities between mortality rates in relation to gender, living environment, development regions and age groups (Pop, 2010). When analyzing comparatively Romania, the 10 non-European Union member states and the 15 European Union member states and taking into account both the individual and contextual factors which influence the inequalities in the self-rated health, Precupețu et al. show that the individual factors such as age, gender, education, occupational status and income are essential for the explanation of inequalities in the self-assessed health within the three groups of countries analyzed (Precupetu et al, 2013).

The Romanian health system has been ill for several decades, chronically sub-financed and unjust, incapable of meeting its citizens' health needs. The statistical data for the year 2013 highlight the weak results obtained in health care in comparison with the other European Union countries: in Romania, life expectancy at birth was 73.8 years, being among the poorest at European Union level and the under-five mortality rate of 12 per 1000 live births, the highest at the level of EU countries (UNDP-Human Development Reports, 2014).

As for the self-assessment of the health status, Romania, alongside Croatia, Hungary and Latvia are the countries with the highest number of respondents (4.2% - 5.6%, much higher than the EU-28 average, of 2.1%) who appreciated their health status as being very poor (Figure 1).

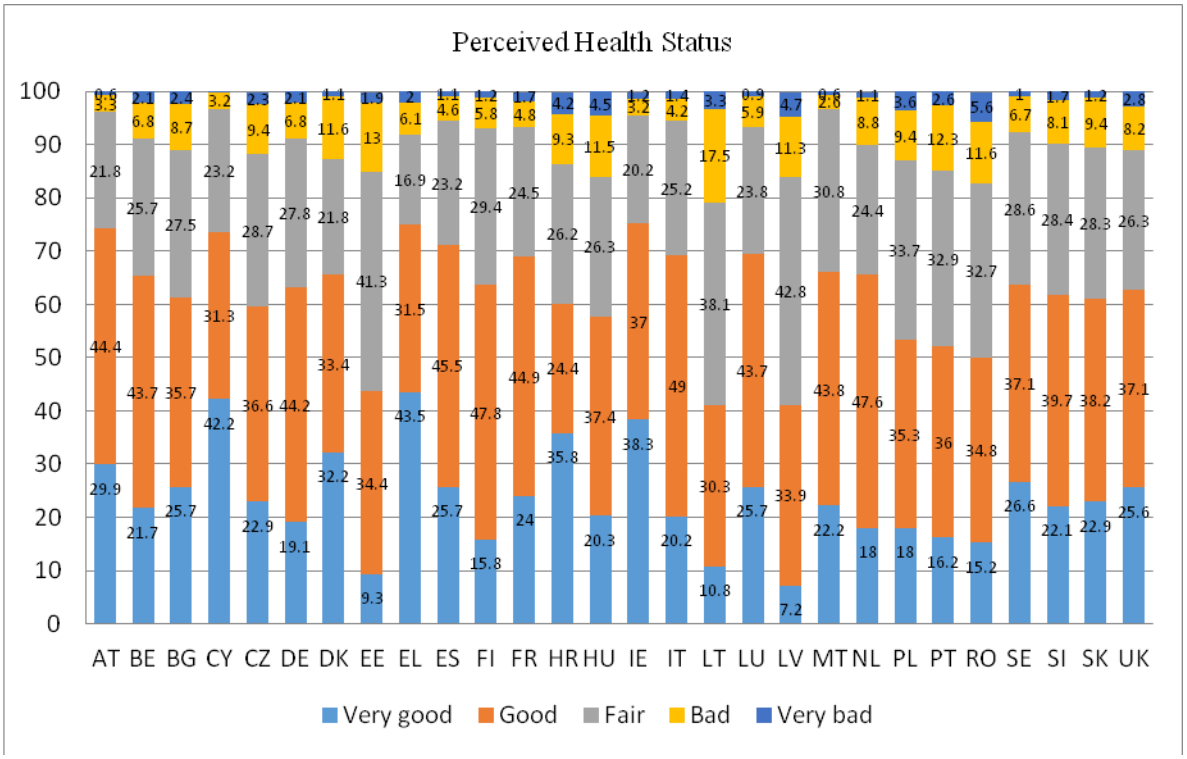

Figure 1: Self-perceived health at European level (%)
Source: European Quality of Life Survey EQLS 2011-2012

With a weight of 15.2% of persons who evaluate their health as being very good, Romania finds itself below the average proportion registered at the level of EU28, of 23.5%. Romania is also characterized by weights of those who assess their health as a bad (11.6%) and very bad one (5.6%) which are above the average values of EU28 of 8.0% and respectively, 2.1%.

Starting from the above considerations, the aim of this paper is to approach in a systematic manner the issue of health inequalities in Romania. Our analysis takes into consideration the individual determinants of health inequalities. We intended to investigate the inequalities in self-assessed health in Romania according to personal socio-economic characteristics such as gender, age, employment status, education and income level. Another aim of this study is to provide a comparative analysis of the several socio-economic subgroups regarding the manner in which they perceive their own health. We also discuss the results obtained in the context of existing literature studies and the measures to be taken to mitigate inequalities.

MATERIAL AND METHOD

Data source and sample

Data on self-perceived health status and its individual determinants were taken from *European Quality of Life Survey* EQLS 2011-2012 database. EQLS was launched

by *European Foundation for the Improvement of Living and Working Condition* (*Eurofound*) in 2003, when a sample of adult population randomly selected from 27 EU Member States and Turkey was surveyed. It took place every four years since then. Its geographical coverage was extended over time from 28 countries in 2003 to 34 states in 2011-2012 wave. This pan-European survey provides a comprehensive portrait of living conditions in European countries addressing issues such as employment, income, education, housing, family, health and work-life balance (*www.eurofound.europa.eu*). The target population is all residents of the countries mentioned above, aged 18 or older.

The basic sample is a multi-stage, stratified, random sample. Each country is divided into sections based on region and degree of urbanisation, in each of which a number of primary sampling units (PSU) is drawn randomly (Eurofound&GfK EU3C, 2012). Subsequently, a random sample of households is drawn in each PSU. Finally, in each household, the person chosen for interview is the one that has his or her birthday next.

In 18 countries, including Romania, a suitable sampling frame (covering at least 95% of the households/persons in a country) was not available. In those countries the random route method was used for selection of households (Eurofound&GfK EU3C, 2012). Samples of addresses were enumerated in advance by the national agencies.

Table 1 General characteristics of the Romanian sample

	Country: Romania
Parameter	(n = 1542)
Gender (%)	
female	56.4
male	43.6
Age (%)	
18-24	9.3
25-34	13.0
35-49	23.7
50-64	29.2
65+	24.8
Education (%)	
Primary or less	13.1
Secondary	69.6
Tertiary	17.3
Employment status (%)	
Employed	36.5
Unemployed	2.0
Unable	0.7
Retired	39.7
Homemaker	14.4
Student	3.9
Other	2.8
Rural or urban area (%)	
Countryside or village	53.4
Town or city	46.3

In 26 countries, the target number of interviews was 1000, and in the 8 countries with the largest population an increased sample size was used. The target sample size in Romania was 1500. The fieldwork for the EQLS 2011-2012 survey in Romania took place between 27th of September and 20th of December 2011. Upon completion of the fieldwork, the total number of completed interviews was 1542. General characteristics of the Romanian sample are presented in Table 1.

Questionnaire

The type of survey was questionnaire-based with interviews conducted face to face in people's homes in the national language of the country.

The survey questionnaire comprises 8 topics describing the quality of life, each topic being assigned between 13 and 21 questions.

In order to assess self-perceived health status, the respondents were asked to rate their health on a five degree scale: *very good*, *good*, *fair*, *bad*, and *very bad*. The question addressed was "*In general, would you say your health is …*".

Statistical analysis

Individual determinants of health refer to personal socio-economic characteristics: gender, age, employment status, education and income level, identified in literature as associated with inequalities in health (Kunst et al., 2005; Mackenbach et al. 2008; Pop, 2010; Olaru, 2013; Precupetu et al, 2013). Data on self-perceived health status were, therefore, analyzed by different subgroups corresponding to the categories of the above-mentioned characteristics. Table 2 presents selected individual determinants of health and their categories considered in the analysis.

The exploration of the data set was performed using the Multiple Correspondence Analysis (MCA), a multivariate technique appropriate when all the variables are categorical. The interpretation of correspondence maps is based on the proximities between points on a map with a reduced number of dimensions (two or three dimensions): the proximity between the modalities of different nominal variables means that these modalities tend to appear together in observations; the proximity between the modalities of the same nominal variable means that the observation groups associated with these two modalities are similar in their nature (Ionescu, 2008, p. 62).

Table 2: Selected individual determinants of health considered in the analysis

Determinant (individual characteristic)	Categories
Gender x Age	12 categories (female, male) x (18-29; 30-39; 40-49; 50-59; 60-69; 70-120)
Employment status	7 categories (employed, unemployed, student, homemaker, unable, retired, other)
Education	3 categories: (primary or less; secondary; tertiary)
Income quartiles based on equalized income	4 categories: (lowest quartile; quartile 2; quartile 3; highest quartile)

In order to deeply grasp the disparities in the perceptions on health status, existing between different socio-economic groups, findings of MCA have been completed through the comparative analysis of the percentages associated with each answer category to the question on how the person assesses his/her own health in general (*very good*, *good*, *fair*, *bad*, *very bad*) for each socio-economic subgroup considered in the study.

The statistical significance of the differences between the socio-economic subgroups was tested by χ^2 test and *Somers' d* ordinal directional measure. In both cases, a low significance value (typically below 0.05) indicates that there may be some relationship between the two variables. While the chi-square measures may indicate that there is a relationship between variables, they do not indicate the strength or direction of the relationship. *Somers' d* is an ordinal directional measure that indicates the significance, strength and direction of the relationship between two variables. This statistic is appropriate when both variables are ordinal, categorical variables.

All statistical procedures were performed with SPSS 13.0 for Windows.

RESULTS

Results of Multiple Correspondence Analysis

The values obtained through MCA highlight the first factorial axis which explains 56.7% of the total inertia of the variable group, while, for the other axes, a reduced explanatory power can be noticed (each explaining at the most 33.8% of the inertia) (Table 3).

Table 3: The model summary

Initial MCA				Final MCA			
Dimension	Cronbach's Alpha	Variance accounted for		Dimension	Cronbach's Alpha	Variance accounted for	
		Total (Eigenvalue)	Inertia			Total (Eigenvalue)	Inertia
1	0.809	2.836	0.567	1	0.807	2.820	0.564
2	0.510	1.690	0.338	2	0.492	1.649	0.330
Total		4.526	0.905	Total		4.468	0.894

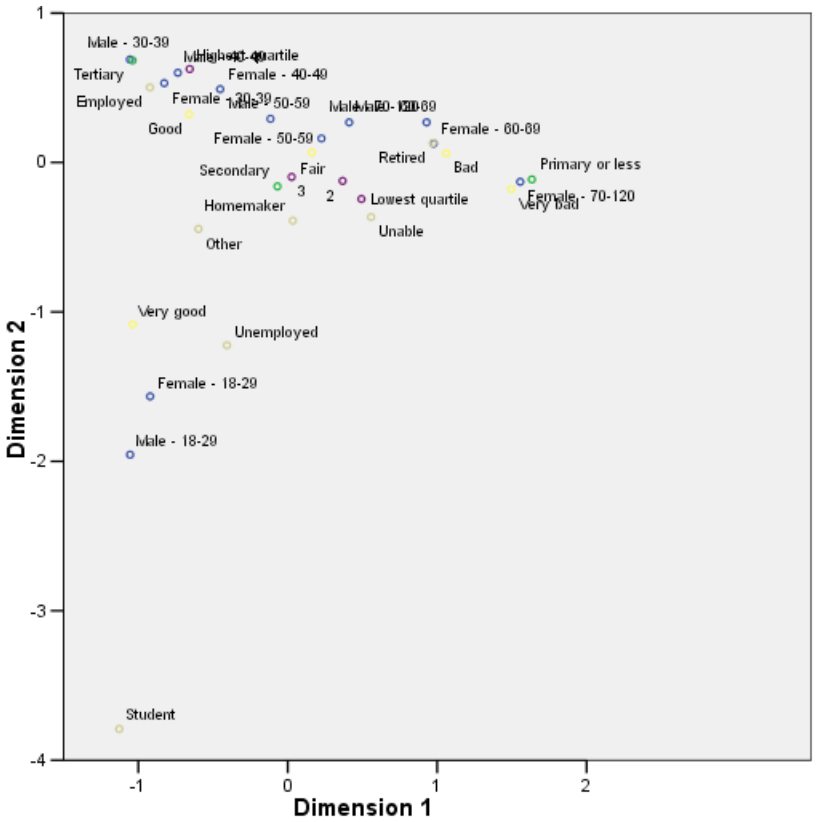

Figure 2: Joint plot of category points resulted from Multiple Correspondence Analysis

The graphical representation of categories on the first two factorial axes of initial MCA highlights the category *student* as being more strongly associated with the age group 18-29 years (both in the case of women and men) and with the assessment of health as being *very good* (Figure 2).

The position of this category on the correspondence map shows that it is far from the group of all other category points, which identifies it as an outlier. For a clearer image of the existing structure in the set of indicators under consideration, a new MCA was performed without introducing the category *student* in the analysis.

The final MCA applied to the set of indicators shows that the explanatory power of the first axis has been maintained to over 56% (Table 3) and at the same time, it has resulted in a clearer spread of the category points on the correspondence factorial map.

The position of the category points of the variable *Perceived health* (with the categories *very good* and *very bad* to the axis extremities and the category *fair* close to the origin) shows that this variable has the property of ordinal consistency with the first factorial axis, opposing the persons who perceive their health as being *good* or *very good* (in the left part of the axis) to those who evaluate their health as being *bad* or *very bad* (in the right part of the axis) (Figure 3).

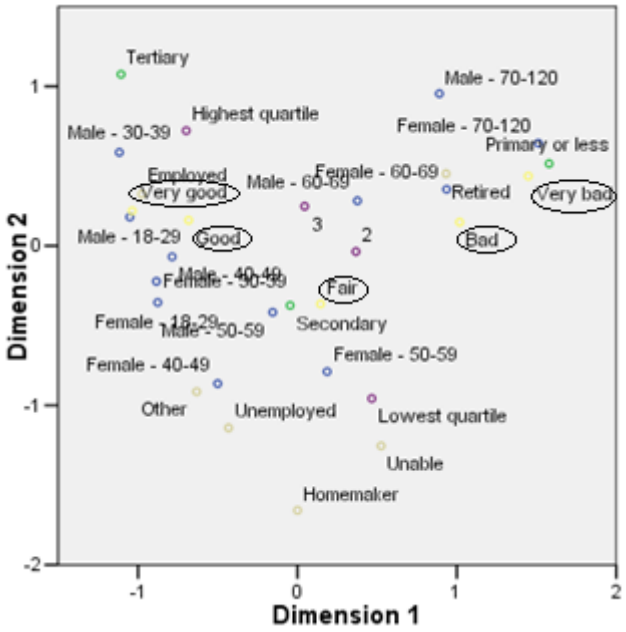

Figure 3: Joint plot of category points resulted from Multiple Correspondence Analysis (without *"student"* category)

Legend

○	Age of the respondent x Gender of the respondent (12 categories)	○	Income quartiles based on equivalised income (4 categories)
○	Education (3 categories)	○	In general, would you say your health is … (5 categories)
○	Employment status (7 categories)		

Another variable that has the property of ordinal consistency with the first factorial axis is the educational level. As we move along from right to left on the first factorial axis, the respondents' education level also increases. Thus, in relation to the first factorial axis, we can identify the following correspondences between the education level and the perceived health: the persons with primary or inferior training are inclined to assess their health as being *very bad* or *bad*, the respondents with secondary education tend to evaluate their health as being *fair* or *good*, while the tertiary-educated persons tend to perceive their health as being *very good*.

It can be also noticed that the second factorial axis opposes (from bottom to top) the first two income quartiles, corresponding to the persons with lower incomes, to the last two quartiles, corresponding to the persons with higher revenues.

Even if the variable of income does not meet the property of ordinal consistency with the first factorial axis, we can still identify a correspondence between the persons from the second quartile of incomes and the tendency towards appreciating the health status as being *fair* or *bad*, as well as that between the respondents from the third quartile and the assessment of the health status as being *good* or *fair*. At the same time, the persons who assess their health as being *very good* tend to be part of the two groups with the highest incomes (third and fourth quartiles).

The first factorial axis also opposes the aged persons (on the right), 60-69 years and 70-120 years, to those who are younger (on the left), 18-29 years, 30-39 years and 40-49 years.

The factorial map of correspondences highlights that the most deprived group as far as the perception on the health is concerned is represented by men and women with ages over 60, retired and holding at most a primary education. This category is the most inclined to perceive its health as being *very bad* or *bad*.

At the opposite spectrum there is the group of respondents represented by young males (18-29 years and 30-39 years) with tertiary studies and high incomes (the fourth income quartile), who are more inclined to self-perceive their health as a *very good* one.

The map allows the identification of some disparities between women and men. Thus, the category points corresponding to the women respondents tend to gravitate towards the occupational categories which are not employed (unemployed, homemaker, unable, retired, and other) and close to the groups with more reduced incomes (first and second income quartile). This situation deters them from assessing their health as being *very good*.

The comparative analysis of the proportions associated with each answer category (*very good, good, fair, bad, very bad*) to the question on how each person evaluates his/her health for each socio-economic category under study completes the results obtained through the MCA.

Employment status and perceived health

The analysis by employment status (Table 4) highlights the fact that among those employed, less than 20% (18.7%) perceive their health as being very good, while other 47.8% assess it as being a good one. Although both the occupied persons and the unemployed comprised in the survey register proportions close to 19% of those considering their health as being very good, in the case of respondents who assess their health as good there is a huge difference between the two occupational categories. Thus, the percentage obtained for the unemployed is more than two times lower (22.6% of unemployed comparing to 47.8% of employed). For the category of those unable to work one can notice that the proportions for those who assess their health as being bad or very bad are the highest in the sample. No person in this category evaluated his/her health as *very good* or, at least, *good*. Most of the retired persons (38.4%) evaluate their health as being fair. Besides the ones unable to work, the retired represent the category with the highest proportions of respondents who consider they have a bad (28.4%) and very bad health (14.4%) and the one with the lowest percentages of those thinking they have a very good health (2% of the total number of the retired) or a good one (16.5%). The more optimistic category in self-assessed health is represented by the students. Large proportions of the students assess their health status as being *very good* (36.7%) and *good* (43.3%). No person in this category evaluates his/her health as *bad* or *very bad*. The group of homemakers displays a distribution of the proportions similar to the unemployed.

The significance level of χ^2 test is 0, meaning that there are statistically significant differences between the seven occupational categories regarding self-perceived health.

Table 4 Employment status and proportions of respondents rating their health status as "very good", "good", "fair", "bad", and "very bad" (%)

Country: Romania	Employment status							Pearson χ^2 test
	Employed	Unemployed	Unable	Retired	Homemaker	Student	Other	Sig.
Very good	18.7	19.4		2.0	13.1	36.7	23.3	
Good	47.8	22.6		16.5	27.9	43.3	46.5	
Fair	29.1	45.2	54.5	38.4	40.5	20.0	25.6	0
Bad	3.9	6.5	27.3	28.4	11.3		4.7	
Very bad	0.4	6.5	18.2	14.4	7.2			

Age, gender, and perceived health

The analysis of the manner in which the Romanians perceive their health by age groups (Table 5) shows that the proportion of those who assess their health as being very good decreases once they grow old. Thus, more than one third (34.7%) of the respondents aged between 18 and 24 years and 27.5% of those aged between 25-34 years consider that they have a very good health in comparison with below 5% of the respondents aged 55-64 years (4%) and of those aged 65 years and over (2.1%). The negative self-assessment of the health status (bad and very bad) tends to be more spread with the age growth. If, for the age groups until 49 years, the proportion of those characterizing their health as being very bad is at the maximum 1.9%, for the last two age groups these proportion significantly increases to 6.7%, and respectively 18.6%. The self-assessment of the health as being good is a feature of the young to average age groups (18-24, 25-34 and 35-49 years), while health perception as being fair increases in intensity mostly once the persons get older.

The significance level of χ^2 test is 0, which means that there are statistically significant differences between the five age groups considered in the analysis regarding the way they perceive their health. The result is confirmed by the significance value of the *Somers'd* test, also equal to 0. The value of *Somers' d* statistic of 0.435 shows a positive and moderate to strong relationship between the considered variables, meaning that once they grow old the individuals tend to be more pessimistic when self-assessing their health.

Table 5: Age of respondent and proportions of respondents rating their health status as "very good", "good", "fair", "bad", and "very bad" (%)

Country: Romania	Age of the respondent					Pearson χ^2 test	Somers' *d*	
	18-24	25-34	35-49	50-64	65+	Sig.	Test value	Sig.
Very good	34.7	27.5	14.5	4.0	2.1			
Good	41.7	41.5	46.6	26.8	13.4			
Fair	21.5	28.0	31.0	43.7	35.3	0	0.435	0
Bad	1.4	2.0	6.0	18.6	30.4			
Very bad	0.7	0.5	1.9	6.7	18.6			

The analysis of the way the Romanians perceive their health by gender clearly shows a more pessimistic attitude of women compared to men. Only 7.9% of women assess their health as *very good*, compared to 17.1% of men. Large differences can also

be noticed in the proportions of those who perceive their health as *bad* (17.2% of women compared to 11.6% of men) or *very bad* (9.5% of women compared to 4% of men).

The significance level of χ^2 test is 0, confirming the existence of statistically significant differences between the two gender categories.

Table 6: Gender of respondent and proportions of respondents rating their health status as "very good", "good", "fair", "bad", and "very bad" (%)

Country: Romania	Gender of respondent		Pearson χ^2 test
	Female	Male	Sig.
Very good	7.9	17.1	
Good	28.5	35.3	
Fair	36.4	32.0	0
Bad	17.2	11.6	
Very bad	9.5	4.0	

The differences between women and men regarding the manner they self perceive their health can be also noticed if we comparatively analyze their answers by age category (Table 7). So, for all considered age groups, the proportions of those who evaluate their health as very good are much higher in the case of male population. At the same time, for all the analyzed age groups, the proportions of those who evaluate their health as very bad are much higher for women.

The significance level of χ^2 test is 0, which means that there are statistically significant differences between the 12 gender x age categories considered in the analysis regarding the way they perceive their health.

Table 7: Gender x age categories and proportions of respondents rating their health status as "very good", "good", "fair", "bad", and "very bad" (%)

Country: Romania	Gender x Age											
	Male 18-29	Male 30-39	Male 40-49	Male 50-59	Male 60-69	Male 70-120	Fem 18-29	Fem 30-39	Fem 40-49	Fem 50-59	Fem 60-69	Fem 70-120
Very good	47.3	30.1	13.1	5.0	6.3	3.1	21.8	19.0	5.6	3.1	2.0	0.6
Good	32.1	45.6	53.3	32.1	30.4	18.4	47.1	48.6	38.1	24.4	16.6	6.4
Fair	18.8	20.4	29.0	42.1	41.1	37.8	28.6	28.2	42.1	42.5	45.7	30.8
Bad	1.8	2.9	3.7	15.7	17.9	27.6	1.7	1.4	11.9	21.9	26.5	32.6
Very bad		1.0	0.9	5.0	4.5	13.3	0.8	2.1	2.4	7.5	9.3	29.1
Pearson χ^2 test Sig. = 0												

Education and perceived health

The higher the education level, the higher the proportions of those who perceive their health as being very good and good: 3.5% and 7.4% in the case of respondents with primary education or less, 11.8% and 30.9% in the case of those with secondary education, and 18.8% and 51.9% in the case of people with tertiary education (Table 8). The negative self-perception of the health status (bad and very bad) is more widespread as the education level is lower. Thus, 26.7% of the respondents with primary education or less assess their health as being very bad, in comparison with 4.9% of those holding secondary education and 1.1% of the respondents with a tertiary education. In the case of those evaluating their health as bad, the proportions are, in order, the following: 33.7%, 14.2%, and 3%.

The significance level of χ^2 test is 0, confirming the existence of statiscally significant differences between the three educational categories regarding the way in which people in these groups evaluated their own health. The result is confirmed by the significance value of the *Somers'd* test, also equal to 0. The value of *Somers' d* statistic of -0.427 shows a negative and moderate to strong relationship between the considered variables, meaning that with the increase of the educational level, the individuals tend to be less pessimistic when self-assessing their health.

Table 8 Education and proportions of respondents rating their health status as "very good", "good", "fair", "bad", and "very bad" (%)

Country: Romania	Education			Pearson χ^2 test	Somers' *d*	
	Primary or less	Secondary	Tertiary	Sig.	Test value	Sig.
Very good	3.5	11.8	18.8			
Good	7.4	30.9	51.9			
Fair	28.7	38.0	24.8	0	-0.427	0
Bad	33.7	14.2	3.0			
Very bad	26.7	4.9	1.1			

Income and perceived health

The study of the manner in which the Romanians perceive their health by income quartile highlights that the proportions of those who evaluate their health as *very good* tend to increase from lowest income quartile (6.8%) to highest income quartile (16.5%) (Table 9). The forth quartile, corresponding to the highest incomes, is the one for which significantly more reduced proportions have been obtained for the persons who evaluate their health as bad (7.9%) and very bad (2.4%) in comparison with the proportions of the other income quartiles (14.4%-21.4% and respectively, 6.1%-11.8%). Consequently, the proportion of those who assess their health as *very bad* or *bad* decreases with the increase of income, but this relationship is a fairly weak one.

The significance level of χ^2 test is 0, meaning that there are statistically significant differences between the four income groups regarding the manner in which people in these groups evaluated their own health. The result is confirmed by the significance value of the *Somers'd* test, also equal to 0. The value of *Somers' d* statistic of -0.216 shows a negative and moderate to weak relationship between the considered variables meaning that, with the increase of income, the individuals tend be less pessimistic about their own health.

Table 9 Income quartiles and proportions of respondents rating their health status as "very good", "good", "fair", "bad", and "very bad" (%)

Country: Romania	Income quartiles based on equivalised income				Pearson χ^2 test	Somers' *d*	
	Lowest quartile	2	3	Highest quartile	Sig.	Test value	Sig.
Very good	6.8	9.6	10.4	16.5			
Good	23.5	21.6	33.3	44.8			
Fair	36.2	39.9	35.8	28.4	0	-0.216	0
Bad	21.4	19.2	14.4	7.9			
Very bad	11.8	9.6	6.1	2.4			

DISCUSSIONS AND CONCLUSIONS

The present paper has aimed at analyzing the inequalities in the health status perceptions among the different socio-economic groups in Romania and has identified the individual socio-economic determinants of these inequalities. The results of the current study are in compliance with the outcomes of the literature research that tackles the issue of health inequalities and the socio-economic determinants; the people with a more reduced socio-economic status assess their health as being worse than those with a higher status (Mackenbach et al, 2008; Jankovic et al., 2012; Precupetu et al, 2013; Bauer et al, 2009; Sucur&Zrinscak, 2007).

This study is one of the few which empirically addresses the issue of health inequalities in Romania, a striking issue for the Romanian population. The method of MCA, used to analyze the patterns of relationship between self-perceived health and socio-economic individual characteristics allowed us to identify the most vulnerable categories in the society. The study also points to the preventive role of education for a better health status.

The analysis of the self-perceived health in Romania according to the main socio-economic features of the respondents (sex, age, occupational status, education level and income) highlights the inequalities among the different categories of respondents while identifying the groups with a more widespread negative self-assessment of the health status towards which state policies and support measures should be geared.

The results of the study show that a higher education level is associated with a better image of the health status. Our findings are in accordance with the results of numerous other European studies (Precupetu et al, 2013; Monden, 2005; Farkas et al., 2011) and confirm the preventive role of education for a person's health.

As for the occupational status, our results show that the unemployed rather than the employed perceive their health as being bad and very bad. The retired represent the category with the largest proportions of respondents who consider they have a bad and a very bad health. It is also the category with the lowest proportion of those evaluating their health as being very good. These results are in compliance with some studies performed in Serbia, Estonia, Finland, Sweden (Jankovic et al, 2012; Parna&Ringmets, 2010; Molarius et al, 2007). The relationship between occupation and health is a circular one (Pop, 2010), a poor health status affecting employment, on one side and unemployment having a negative impact on people' health, on the other.

A higher income is generally associated with a better health status. Our analysis on the relationship between the income level and the self-assessed health highlighted that persons evaluating their health as being poor or very poor tend to be part of the more reduced income categories. The relationship between the income levels and the self-assessed health is presented in the literature as a linear one, without decisive evidence in favor of the existence of significant disparities between the rich and the poor (Kunst et al, 2005).

The results obtained demonstrate the role of the socio-economic factors within the health inequalities as well as their fairly significant role in Romania. Up to now, the health care reforms in Romania have mostly been focused on the financial aspects, putting forward the idea of efficiency. This study underlines the fact that health policy is

social policy and the principle of equity should also be considered when designing such policies. Even more, any policy should rely on a bottom-up approach and make citizens′ needs the top priority. However, this study is not an exhaustive one; it only depicts a part of the reality. Individual factors are not the only ones causing health inequalities. Further studies should take into considerations the contextual factors which cause inequalities and inequities in society.

Decreasing inequalities and increasing equity can be obtained by improving the socio-economic status of the population. Economic policies tackling the most disadvantaged categories must be combined with the analysis of contextual determinants because only the growth of economic performance, in general, will lead to the increase of the standard of living and to the decrease of inequalities.

References

[1] Bahadori M, Ravangard R (2013). Analysis of the Systematic Relationships among Social Determinants of Health and Identification of their Prioritization in Iran Using DEMATEL technique. *Iranian Journal of Public Health*, 42(12): 1457-1464.

[2] CSDH (2008). Closing the gap in a generation: health equity through action on the social determinants of health. Final Report of the Commission on Social Determinants of Health. World Health Organization, Geneva. Available from *http://www.who.int/social_determinants/thecommission/finalreport/en/*

[3] Buşoi C, Gaiță DI, Vlădescu C, Cepoi V (2013). Politicile de prevenţie a bolilor în sistemul sanitar din România: boala coronariană ischemică. *Revista Română de Bioetică*, 11(4): 67-84.

[4] Dahlgren G, Whitehead M (1991). *Policies and strategies to promote social equity in health*. Stockholm: Institute for Future Studies.

[5] Beaglehole R, Bonita R (2008). Global public health: a scorecard. *The Lancet*, 372: 1988-1996.

[6] Mackenbach JP, Roskam AJR, Menvielle G, Leinsalu M, Kunst AE (2008). Socioeconomic Inequalities in Health in 22 Countries. *The New England Journal of Medicine*, 358(23): 2468-2481.

[7] Carlson P (1998). Self-perceived health in East and West Europe: another European health divide. *Social Science&Medicine*, 46(10): 1355-1366.

[8] Kunst AE, Bos V, Lahelma E, Bartley M, Lissau I, Regidor E, Mielk A, Cardano M, Dalstra JAA, Geurts JJM, Helmert U, Lennartsson C, Ramm J, Spadea T, Stronegger WJ, Mackenbach JP (2005). Trends in socioeconomic inequalities in self-assessed health in 10 European countries. *International Journal of Epidemiology*, 34: 295-305.

[9] Jankovic J, Janevic T, von dem Knesebeck O (2012). Socio-economic inequalities, health damaging behavior, and self-perceived health in Serbia: a cross-sectional study. *Public health*, 53: 254-262.

[10] Eurostat database. Available from *http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database.*

[11] European Commission (2013). EU Employment and Social Situation. Quarterly Review, Special Supplement on Trends in poverty and social exclusion between 2012 and 2013. Available from *http://ec.europa.eu/social/main.jsp?catId =737&langId=en&pubId=7699*

[12] Olaru B (2013). Inequalities in Access to Healthcare. A comparison between Romania and the European Union. *Revista Română de Bioetică*, 11(1): 111-122.

[13] Pop CE (2010). Starea de sănătate a populației din România în context european. O abordare din perspectiva calității vieții. *Calitatea vieții*, 21(3-4): 274-305.

[14] Precupetu I, Vasile M, Vlase I (2013). Individual and Contextual Factors in Self-Rated Health Inequalities: a Comparison between Romania and 10 NMS and EU 15. *Revista de Cercetare și Intervenție Socială*, 14: 28-39.

[15] UNDP- Human Development Reports (2014). Human Development Statistical Tables and Human Development Trends by Indicator. Available from *http://hdr.undp.org/en/data*
[16] Eurofound&GfK EU3C (2012). *Technical Report. 3rd European Quality of Life Survey*. Available from *www.eurofound.europa.eu/surveys/*
[17] Ionescu AM (2008). *Introducere în analiza statistică multivariată*. Editura Universității Alexandru Ioan Cuza din Iași. Iași.
[18] Bauer GF, Huber CA, Jenny GJ, Müller F, Hämmig O (2009). Socioeconomic status, working conditions and self-rated health in Switzerland: explaining the gradient in men and women. *International Journal of Public Health*, 54(1): 23-30.
[19] Sucur Z, Zrinscak S (2007). Diffrence that Hurt: Self-perceived Health Inequalities in roatia and European Union. *Croat Med J*, 48: 653-666.
[20] Monden CW (2005). Changing social variations in self-assessed health in times of transition? The Baltic States 1994-1999. *European Journal of Public Health*, 15(5): 498-503.
[21] Farkas J, Pahor M, Zaletel-Kragelj L (2011). Self-rated health in different social classes of Slovenian adult population: nationwide cross-sectional study. *International Journal of Public Health*, 56(1): 45-54.
[22] Parna K, Ringmets I (2010). Comparisons of socioeconomic differences in self-perceived health in Estonia and Finland. *Scandinavian Journal of Public Health*, 38(2): 129-134.
[23] Molarius A, Berglund K, Eriksson C, Lambe M, Nordström E, Eriksson HG, Feldman I (2007). Socioeconomic conditions, lifestyle factors, and self-rated health among men and women in Sweden. *European Journal of Public Health*, 17(2): 125-133.