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Social determinants of self-rated health of the population in Bulgaria. Results of European Social Survey*

Elitsa Dimitrova

Abstract. This study aims to analyse at individual level the social determinants of the self-rated health of the Bulgarian population. The author has drawn on data from the European Social Survey conducted in Bulgaria in 2010. A theoretical overview of the basic concepts related to subjective rating of health status is provided. Descriptive analysis, and a logistic regression model of the impact of various factors on self-rated health are presented. The results of the analysis show that women rate themselves on health lower than men do. The older the respondent, the lower his/her self-rating. Respondents of Bulgarian ethnic background, and those with a higher education level, rate themselves higher than those of non-Bulgarian ethnic background and with a lower education. Persons with higher household incomes are less likely to rate their health as bad or very bad.

Keywords: self-rated health, social determinants, social differences, European Social Survey

Introduction

The determinants of the population's health status are a widely discussed research topic. Social inequalities in access to health services exist in all societies; these inequalities vary across the countries of the world (Dahlgren, Whitehead 1991; Marmot et al. 2008; Social Inequalities in Health and their Determinants 2016). During the 1940s, the World Health Organization defined health as a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO Constitution 1946). However, few studies focus on the connection between *the social stratification system, living conditions and self-rated health*[1]. In these studies the emphasis is on *behaviour and social factors*

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[1] Studies of this sort are the European Social Survey and Eurostat's European Health Interview.

related to lifestyle, and their impact on health (Cockerham 1999; Cockerham 2005, 51-67; Dimitrova, Kotzeva 2014, 44-66).

Literature offers various models of the connection between the social determinants and the health status of individuals. According to Dahlgren, Whitehead (1991), the factors influencing health are related to the *socio-economic and cultural differences in societies and the environment*. According to the quoted authors, health is influenced by the *living and working conditions*, which include education, unemployment, health services, and agricultural production. Another basic determinant of health is the influence of the *social and community networks*. Not least in importance are the determinants related to *individual lifestyles,* including risky behaviour like tobacco smoking, alcohol abuse, or healthy behaviour like adequate physical activity, healthy diet, etc. The next influential component related to health consists in *individual characteristics*, such as gender, age, ethnicity/race, etc.

Focused on the social determinants of health is the report by Marmot et al. (2008) "Closing the gap in a generation: Health equity through action on the social determinants of health". In it, the social determinants of health refer to the organization of the *healthcare sector, living conditions* in a society, *social and health policies, economic conditions, poverty and social justice*.

Studies based on the European Social Survey (ESS), also contribute significantly to advancing the study of the social determinants of health in Europe and the connection between health and the stratification system of society. Studies conducted in the framework of ESS are focused on three components of health: self-rated health (or subjective general health), chronic diseases and depression, and health determinants related to education, income, and the socio-economic status of persons. In general, studies based on ESS show that persons with lower socio-economic positions have a worse self-rating on health (Eikemo et al. 2008a, 565-582; Eikemo et al. 2008b, 1072-1078; Social Inequalities in Health and their Determinants 2016). This conclusion is confirmed by other socio-demographic and epidemiological studies, showing that persons with higher education levels and higher income have lower illness rates and longer life expectancy (Huijts 2011; Van de Velde, Bracke, Levecque 2010, 35-313; Dimitrova 2015, 5-18).

Most studies on the social determinants of subjective, or self-rated health explain the social inequalities in people's health in different European countries in terms of *behaviour factors*. The conclusions drawn by these studies are that the socio-economic inequalities in health status are related primarily to factors such as the frequency of tobacco-smoking and low physical activity. Factors related to lifestyle behaviour (alcohol abuse, smoking, physical activity, healthy diet, etc.) are easy to operationalize and have an impact on morbidity and mortality, as proven in many scientific publications and studies. This area of research, related to lifestyle behaviour and health-oriented behaviour, has been criticized for disregarding the basic collective and structural mechanisms of society that influence the health status of individuals, i.e., they overlook the factors connected with access to health services and health-related policies. They also underestimate the role of factors like living conditions, work environment conditions, which have a strong impact on the individual's health.

Apart from behaviour indicators, such as medical symptoms and complaints or healthy (unhealthy) habits and behaviour, another basic indicator used in research on health and determinants of health is the so-called *self-rated health* or *subjective general health*. This indicator is measured through questions such as "How is your health in general?", where the possible answers are "very good, good, fair, bad, very bad". It is based on the assumption that *individuals are able to generalize the physical, psychological and social aspects of their health condition into a summary assessment of their health*. Although the assessment is subjective and non-professional, various surveys have shown a strong correlation between this assessment and the objective indicators of morbidity (Avendano, Huijts, Subramanian 2009, 1581-1582; DeSalvo et al. 2005, 267-275; Idler, Benyamini, 1997, 21-37). Hence, the subjective general health may be used as an indicator of the individual's objective state of health (Jylhä 2009, 307-316). The studies also show that the subjectively assessed health is a significant predictor of morbidity and mortality among various socio-economic groups (Benjamins et al. 2004, 1297-1306; Burstrom, Fredlund 2001, 836-840). It is also a significant predictor of health among various ethnic groups (Chandola, Jenkinson 2000, 151-159). A number of international comparative studies use this measure to investigate health inequalities between countries (Eikemo 2009; Eikemo 2010, 95-117).

Many studies have shown a strong educational component in the health status of individuals; persons with a higher level of education have better self-rated health (Geyer et al. 2006, 804-810; Lahelma et al. 2004, 327-332; Ross, Wu 1995, 719-745). According to an ESS report, the type of work a person performs, his/her educational status and living conditions account for a large percentage of the variation in self-rated health (Social Inequalities in Health and their Determinants 2016). The results of the study on Social Inequalities in Health and their Determinants show that the behaviour determinants (medical symptoms and complaints, healthy/unhealthy habits and behaviour) have a smaller explanatory power than *the living condition and the work status* of individuals. This finding warrants the conclusion that the emphasis solely on the spread of risky behaviours is insufficient to explain why higher educated groups have better health. The results of the above-mentioned study, which is based on ESS, show that it is impossible to significantly decrease the spread of chronic diseases when the focus is placed only on decreasing the rate of risky behaviour. According to the results of the study, *healthcare and health inequalities are deeply embedded in the social stratification systems of contemporary societies*. Policies of redistribution of income to the sphere of healthcare, and action to improve working conditions, can be just as effective for achieving better health among the population (Social Inequalities in Health and their Determinants 2016, 14). Social inequalities related to health are a result of the interaction of contextual and behaviour factors. Hence, the authors of the report reach the conclusion that, in itself, the promotion of healthy lifestyles is not enough, and account should be taken of the broader social inequalities in living and working conditions in a society. According to Eikemo et al. (2008a, 565-582; 2008b, 1072-1078), the institutional context, and more precisely, the type of social regimes in a concrete country, likewise affect the population's health status, alongside individual behaviour and lifestyle. Huijts, Eikemo (2009, 452-453) stress the need for more interna-

tional comparative studies focused on the socio-economic inequalities related to health across countries; these would better identify the connection between societies' stratification systems and cross-country health inequalities.

Huijts (2011), following Durkheim ([1897] 2006), shows that *social ties* also have a significant effect on health. Individuals feel healthier, and have a lesser degree of risk behaviour, and better access to healthcare, when they have stronger social ties. Following Putnam's (1995) studies on the importance of social capital (i.e., civic engagement and social trust) for the functioning of society, Engström et al. (2008, 2268-2280) and Kawachi, Kennedy, Glass (1999, 1187-1193) conclude that high levels of social capital in a country have a positive effect on the health of its population.

The transition to democracy and a market economy in Bulgaria has led to crisis phenomena in all spheres of social life. Growing economic insecurity, the impoverishment of a considerable part of the population, the restructuring of the healthcare system, and growing social inequalities in access to healthcare services have led to a deterioration of the epidemiological picture in the country.

After 1990, the indicators of morbidity and mortality of the Bulgarian population have displayed various negative trends. There has been a rise of mortality, the crude mortality rate reaching 15.5‰ in 2017. Although the average life expectancy has grown, it remains relatively low with respect to the average EU levels. The average life expectancy for the country's population in general, calculated for the period 2015-2017, is 74.8 years, compared with 80.9 years for EU28. Despite the tendency of decrease, the premature mortality rates remain too high. The premature mortality indicator[2] in 2017 was 21.8% (Naselenie i demografski protsesi 2017).

The explanation for these trends can be sought in several areas. Some of the factors determining growing mortality and morbidity among Bulgarians in the transition period are related to changes in the demographic structure that had begun in the preceding decades. Specifically, population ageing, which intensified after 1990 due to the sharp decrease of the birth rate and growing outward migration, has resulted in a larger percentage of elderly population, among whom the morbidity and mortality rates are higher.

These changes of composition in the demographic structure, however, do not fully explain the deteriorated health status and growing frequency of deaths among Bulgarians in the transition period. Some structural and behaviour changes interact with the other factors. Foremost, we should point out the prolonged and ineffective reforms of the healthcare system. The shift from universal, state subsidized healthcare to a system based on health insurance tied to the economic activity of the persons, a system that includes additional payment for part of the health services, greatly strengthens the connection between growing social inequalities in Bulgarian society after 1990 and the health status of individuals (Rechel, McKee 2009, 1186-1195). The fact that health has become a "value" in the broad sense of the term leads to unequal access to, and even exclu-

[2] The share of people who died before the age of 65 years out of the total number of deaths.

sion from, the healthcare system for a considerable share of people, and especially for the poorest strata of Bulgarian society: those without health insurance, which includes people working in the "grey" economy, the unemployed, the socially disadvantaged, people from the ethnic minorities, etc. The incomplete funding of health services in the state sector, the growth of private healthcare, which competes with the public sector in terms of the quality of services, have turned healthcare into a luxury commodity that only a small part of the population can afford.

Besides this enhanced connection between health and social inequalities due to the restructuring of the Bulgarian healthcare system, the negative trends in mortality and morbidity are also due to the growing presence of various forms of health-risk behaviour. Studies show a growing trend of alcohol consumption, increased tobacco smoking, and decreased physical activity, among nearly all layers of Bulgarian society (Evropeysko zdravno intervyu 2014).

The socio-economically based gradient of risky behaviour among Bulgarians after 1990 interacts with certain psychological factors related to the attitude to health and health prophylactics. More precisely, the shift from a paternalistic model of healthcare, where the state takes full responsibility for organizing prophylactics and assumes care for the individual's health, to a model that requires greater activeness and informed awareness on the part of the individual, have turned health from a "universal good" into a value that must be maintained and preserved through specific health-oriented action and behaviour. The adoption of modes of health-related behaviour committed to a healthy lifestyle, the growth of health culture, active prophylactics, initiated by the individual, have become a problem for a large share of Bulgarians after 1990. The poor dissemination of healthy lifestyles is determined by a number of structural barriers, but also by subjective psychological factors related to the individual's failure to adopt models of pro-active health behaviour.

Description of the sample of the European Social Survey - 2010. Statistical analysis of the determinants of self-rated health

This analysis examines the results of the social determinants of self-rated health registered by the European Social Survey conducted in Bulgaria in 2010. *In our discussion, the social determinants we are examining include various individual characteristics of the respondents, such as gender, age, marital status, number of children, ethnic origin, education, place of residence, employment status and income*.

The European Social Survey, wave 2010, is a nationally representative survey covering 2,434 respondents aged over 15 years.[3] 43.7% of the surveyed persons are male, and 56.3% are female.

The age distribution shows that 8.4% of respondents are aged 15-25 years, 11.0% are between 25 and 35. The next age interval - 35 to 45, amounts to 13.6% of the respondents. Those aged over 45 are 67.0%. The average age of persons in the sample is 53.4 years, with a standard deviation of ±17.9% years.

[3] The survey was conducted by the Agency for Social Analyses (ASA).

The married respondents are 52.4%; 25.7% are separated, divorced, or widowed; those without a partner are 21.8%.

Every third respondent has basic or lower education - 32.9%, while 44.9% have secondary education and 22.2% have tertiary education.

Residents of large cities are 40.8%, while 27.1% live in small towns and 32% live in villages.

81.9% of the survey participants are of Bulgarian ethnic origin. One fifth of the respondents (18.1%) identify as members of ethnic minorities.

The percentage of households without children under the age of 18 is 67.3%; households with one child are 19.6%; with two children under the age of 18 are 11.1%; with three or more children are 2%.

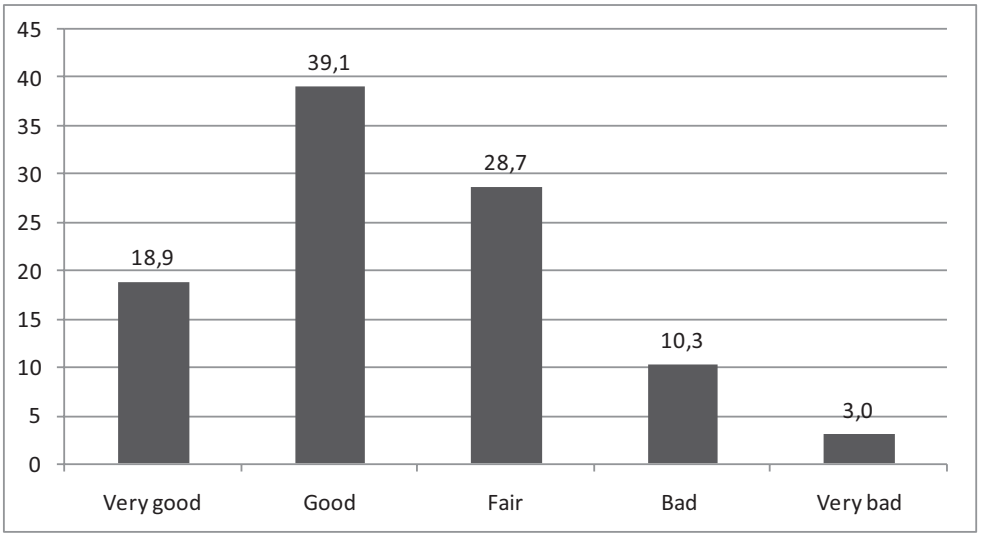

Fig. 1. Self-rated health of the respondents (%)

Source: European Social Survey, own calculations.

The question that measures the respondent's general health status is "How is your health in general?" The distribution of responses shows that the highest percentage of answers point to good health status - 39.1%, followed by fair health - 28.7%. One fifth of the surveyed persons indicate very good health - 18.9%. Those responding that their health is bad or very bad are respectively 10.3% and 3.0% of the surveyed participants (Fig. 1).

There are statistically significant gender-based differences in self-rated health: women considerably less often assess their health as (very) good or fair (51.7%) than men do (66.2%) (Fig. 2).

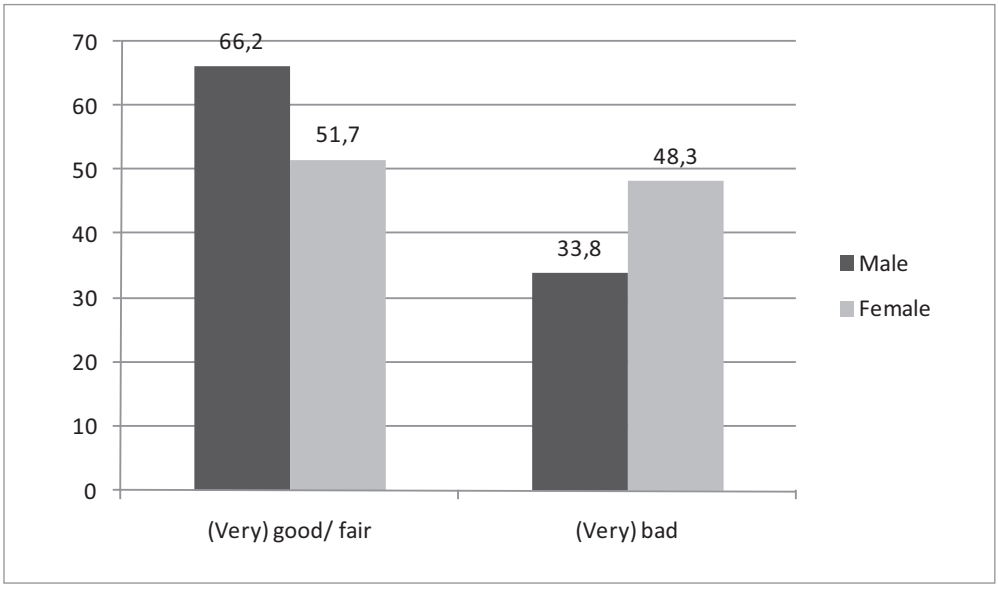

Fig. 2. Self-rated health by gender (%)

Source: European Social Survey, own calculations.

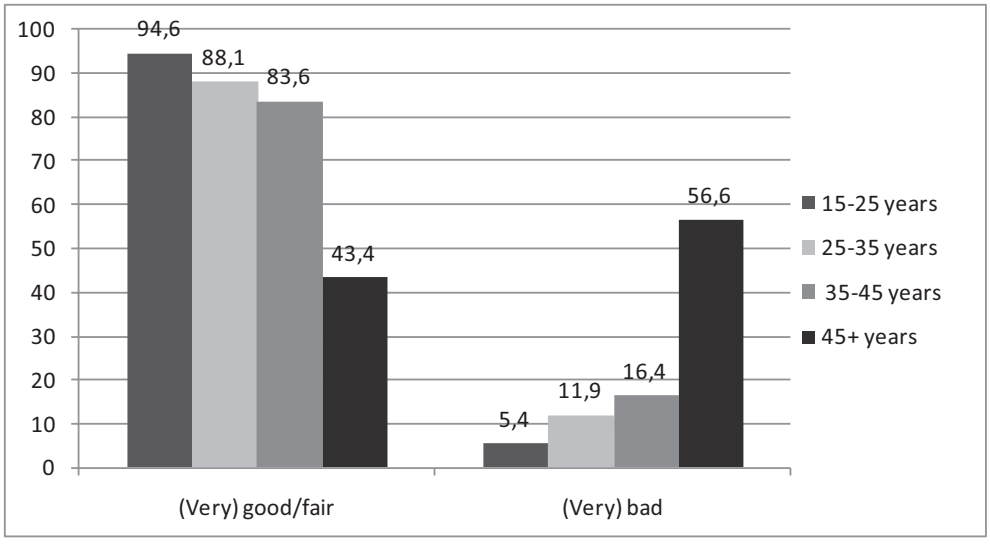

Fig. 3. Self-rated health by age (%)

Source: European Social Survey, own calculations.

Age is also a significant factor of self-rated health. The results show that as the respondents' age increases, their self-rating as to health becomes more negative; among persons aged over 45, more than half (56.6%) respond that their health is (very) bad (Fig. 3).

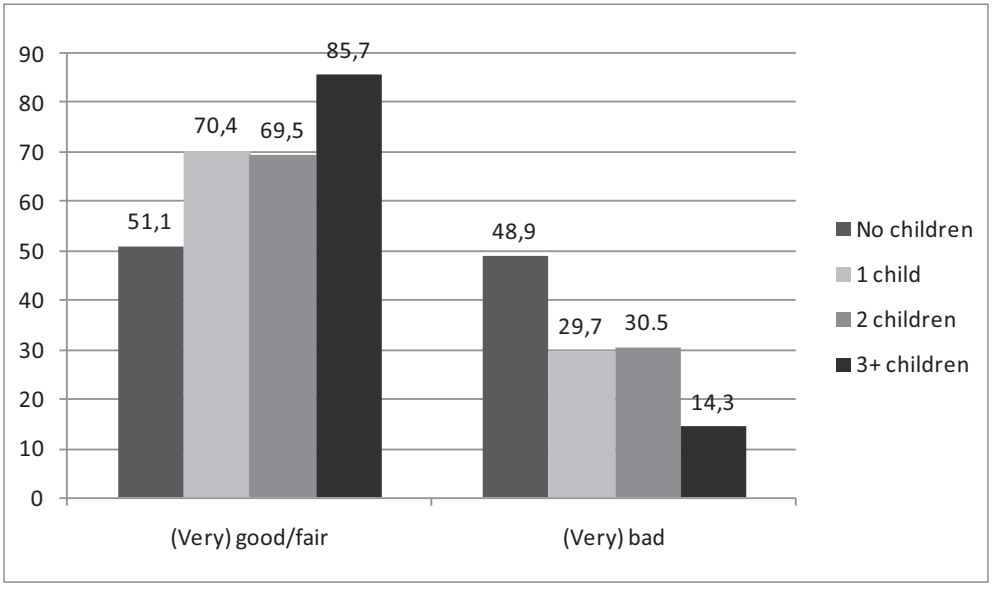

Fig. 4. Self-rated health by number of children below 18 years in the household (%)

Source: European Social Survey, own calculations.

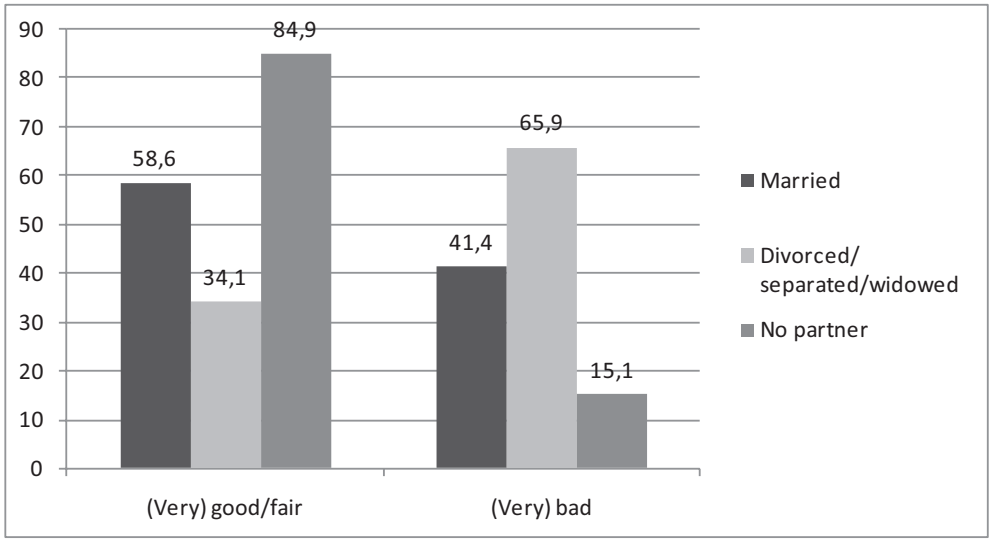

Fig. 5. Self-rated health by marital status (%)

Source: European Social Survey, own calculations.

Considerable differences are evident in the relation between the number of children under the age of 18 living in the respondent's household and his/her self-rated health. 51.1% of persons without children have rated their own health status positively, while the remaining 48.9% of them have given a negative as-

sessment. The highest share of people indicating (very) good or fair health are those with three or more children below 18 years - 85.7%. This may be due to the fact that respondents with three or more children in the household are young, and hence their self-rating on health is higher (Fig. 4).

Marital status also has a differentiating effect on self-rating. 84.9% of persons living without a partner have indicated their health as (very) good or fair. More than half of the married respondents have also rated their health positively - 58.6%. Among the separated, divorced, or widowed, 65.9% have a negative self-rating (Fig. 5).

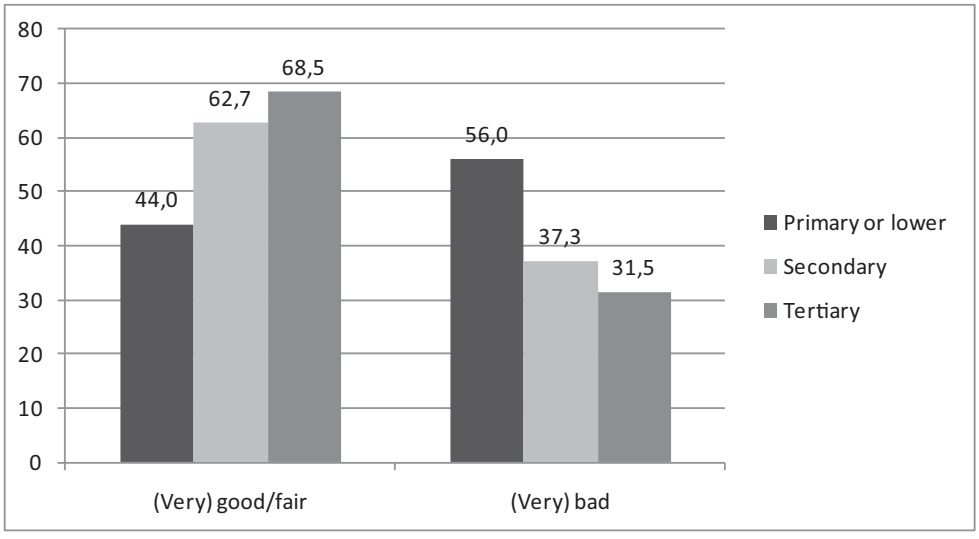

Fig. 6. Self-rated health by education (%)

Source: European Social Survey, own calculations.

Education is another significant factor of self-rated health. The analysis shows that respondents with tertiary education give the highest self-rating on health: 68.5% of them have indicated their health is (very) good or fair. The contrary is true for persons with basic or lower education: more than half of them (56.0%) have stated their health is (very) bad. Among persons with secondary education, positive self-rating predominates: 62.7% have assessed their health positively (Fig. 6).

Significant differences are also observed across the types of settlements in which the respondents live. More than half of those living in small or large cities (61%) have assessed their health as (very) good or fair. The highest share of persons assessing their health as (very) bad live in villages 49.4% (Fig. 7).

Persons of Bulgarian ethnic origin are more inclined to give a positive assessment of their subjectively rated health status than those of non-Bulgarian ethnic origin - 63.9% and 56.8% respectively. However, the differences are not statistically significant (Fig. 8).

Statistically significant differences also occur in the responses regarding employment status. Self-employed respondents represent the largest share of those answering that their health is (very) good or fair, 74.8%, followed by

respondents working in a family business, 68.0%, and the employed, 55.0% (Fig. 9).

The descriptive analysis of the self-rating on health across the population shows significant differences based on gender, age, marital status, number of children in the family, education, type of settlement in which the respondent lives, and employment status. In the next part of our analysis, we will dwell on the influence of the determinants of self-rated health among respondents of ESS - 2010. For this purpose, the variable for self-rated health has been recoded

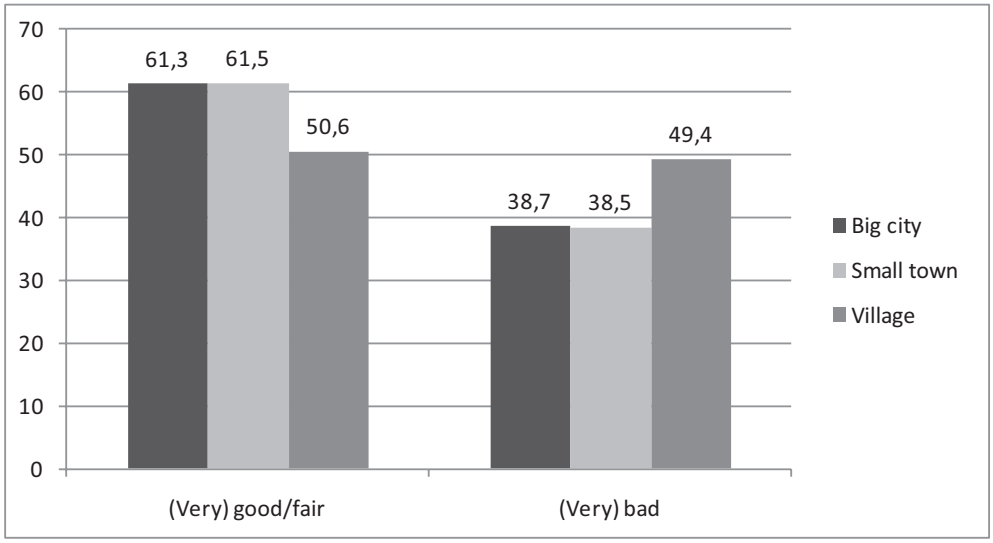

Fig. 7. Self-rated health by place of residence (%)

Source: European Social Survey, own calculations.

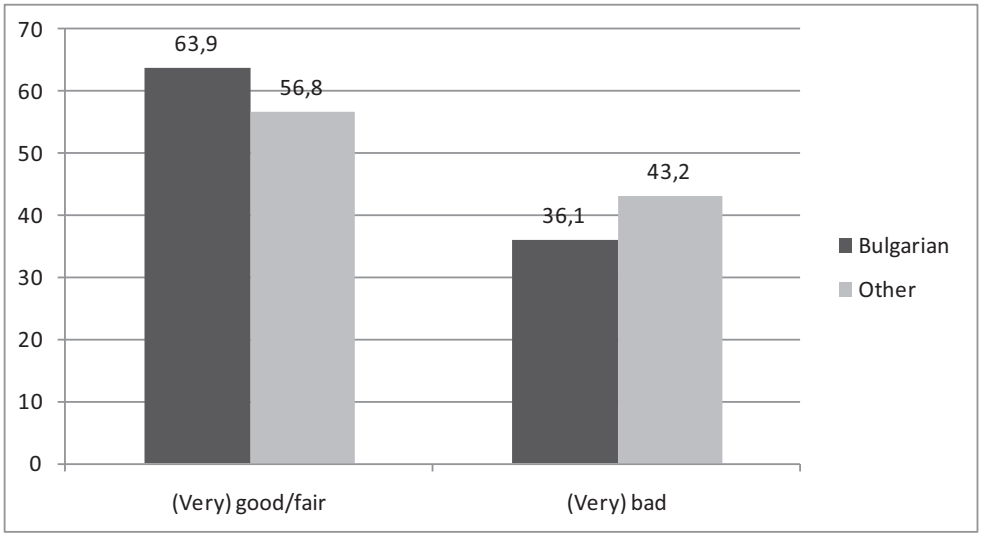

Fig. 8. Self-rated health by ethnicity (%)

Source: European Social Survey, own calculations.

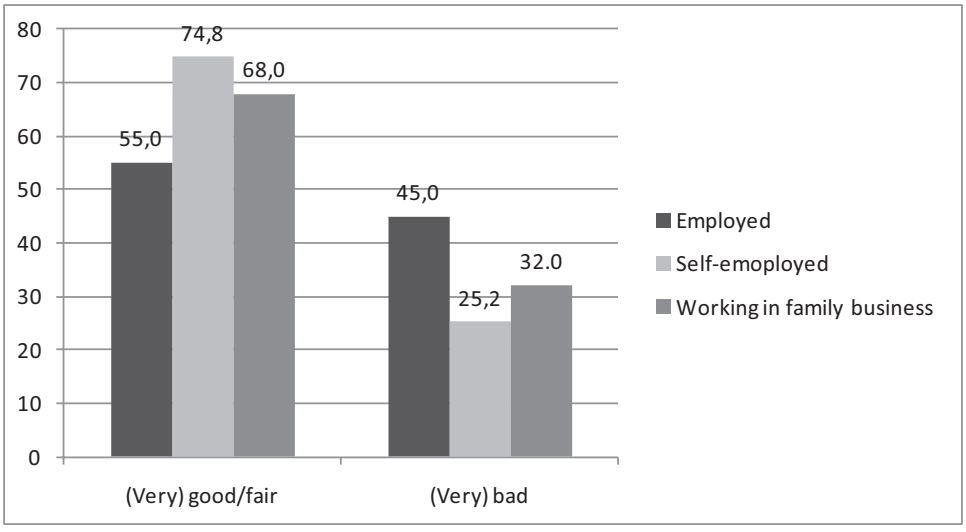

Fig. 9. Self-rated health by labour status (%)

Source: European Social Survey, own calculations.

as follows: persons who have indicated very good, good, or fair health are united under a single category - persons self-rating their health as fair/(very) good; while those who stated their health was bad or very bad, are united under a second category - persons with (very) bad health status. The reference category of the logistic regression model is the category "fair/(very) good health status".

The results for the logistic regression model are presented in Table 1. The first variable in the analysis is the gender of the surveyed persons. The analysis shows that women are more likely to rate their health as bad or very bad than men (reference category). With increased age, there is a growing probability that the respondent will rate his/her health as (very) bad, and people above the age of 45 are much more likely to give this answer. Compared with respondents without children under the age of 18 in the household (reference category), those who have one child are less likely to rate their health as bad or very bad. Compared with married persons (reference category), those who have no partners are less likely to rate their health as bad or very bad. These are usually the youngest respondents. Education is a significant predictor of self-rated health among the respondents. The analysis shows that as education level rises, the likelihood that a person will rate his/her health as (very) bad decreases. The next variable is the type of settlement where the respondent resides. When controlling for various individual characteristics of the respondents, those living in small towns and villages are significantly less likely to rate their health as bad or very bad compared with respondents living in large cities (reference category). Another important determinant of health is ethnic origin. The analysis shows that persons of non-Bulgarian ethnic origin are less likely to rate their health as (very) bad compared with Bulgarians (reference category). The household income level of respondents is also a significant predictor of self-rated health. The higher the household income, the less likely it is that persons will rate their health as bad or very bad.

Table 1. Self-rated health of the participants in ESS - 2010. Results from binary logistic regression

Factors	**Odds Ratio**	**P > z**
Gender		
Male (ref.)	1	
Female	1.53	***
Age		
[15, 25) (ref.)	1	
[25, 35)	3.14	*
[35, 45)	3.60	**
> = 45	14.40	***
Number of children		
No children (ref.)	1	
1 child	0.67	**
2 children	0.60	
3+ children	0.29	
Marital status		
Married (ref.)		
Divorced/separated/widowed	1.14	
No partner	0.52	**
Education		
Primary of lower (ref.)	1	
Secondary	0.44	***
Tertiary	0.41	***
Settlement of residence		
Big city (ref.)	1	
Small town	0.63	***
Village	0.71	**
Ethnicity		
Bulgarian (ref.)	1	
Other	1.79	***
Employment status		
Employed (ref.)	1	
Self-employed	0.69	
Working in family business	1.97	
Household income	0.86	***
Constant	0.21	**
Log likelihood	-1011.42	

Conclusion

The results from the analysis show the presence of considerable gender-related differences in self-rated health: women rate themselves considerably lower on health than men. By contrast, their life expectancy is higher. This phenomenon is known in literature as the "gender gap in mortality and health" (Schünemann, Strulik, Trimborn 2017, 79-90). The explanation lies in the difference between men and women with regard to chronic illnesses. The older a respondent, the poorer his/her self-rated health.

Watson (1995, 923-934) and Kohler et al. (2008, 2011-2042) have found that in Russia and Bulgaria, single men have considerably higher mortality rates than those living with a partner. According to the cited researchers, the preventive effect of the family environment is related to the support the family usually provides to cope with various problems, including those related to health. A family environment and the presence of a partner decrease the psychological stress, which is particularly strong in the current period in Bulgaria; the family encourages seeking medical aid and provides care when needed.

Respondents of Bulgarian ethnic origin, and those with tertiary education level, have a higher self-rating on health compared with those of non-Bulgarian origin and those with low levels of education. The social inequality between persons of different ethnic origin in Bulgarian society translates into differences in health status and survival rate.

The analysis has also found a negative education gradient in self-rated health among Bulgarians. As the education level decreases, the likelihood increases that persons will have a bad or very bad self-assessment of health. Education is strongly correlated with income and employment status of individuals. The higher the household income, the less likely it is that the respondents will rate their health as bad or very bad. Thus, the analysis outlines the presence of significant socio-economic inequalities with regard to self-rated health in the contemporary Bulgarian society.

The transition period in Bulgaria has had a negative impact on the health and survival rate of individuals. The growing social inequalities interact with various elements of the social environment, leading to increased levels of psychosomatic vulnerability (Piko 2002, 280) among certain social groups (the poor, low-educated persons, marginalized ethnic communities, and lonely men and women). The deteriorated health picture in the country involves increased mortality, especially among men, and relatively low - in a European comparative perspective - life expectancy for the two genders, increased morbidity from cardio-vascular diseases and cancer (diseases that are related to deteriorating quality of life and the increased spread of risk behaviour such as alcohol abuse, smoking, a sedentary lifestyle, unhealthy diet, etc).

The changing stratification structure of Bulgarian society in the current period has affected negatively the health of individuals, especially men's health. The traditional view of the man's role in the family and in the public sphere interacts with structural changes, as a result of which we observe increased morbidity among the "stronger sex". Economic difficulties, the in-

ability to meet people's expectations, combined with the traditional notion that men have to prove themselves in risky situations, negligence with regard to health, underestimating the importance of a healthy lifestyle, all lead to excessive mortality among men in Bulgaria. Thus, the survey data reveal an unexpected effect of the paternalistic order that still prevails in Bulgarian society: we find that the frequently dominant role of men in the private and public sphere is often maintained at the expense of their health and longevity. This paradox related to the mortality and morbidity crisis in Eastern Europe, and Bulgaria in particular, suggests that we should take into account the structural preconditions of labour market opportunities, social mobility, income level, etc., as well as the cultural specificity of a society. The last mentioned determines certain personal choices that have a direct influence on a person's health and well-being. It thus becomes clear that, while individuals are free to choose certain health-oriented lifestyles, their choices are largely structure-determined. Thus, the theoretical stance that accommodates the individualistic and the structural paradigms in the sociology of health, finds empirical verification in the Bulgarian context.

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Assoc. Prof. Elitsa Dimitrova, PhD
Institute for Population and Human Studies
Bulgarian Academy of Sciences
Acad. Georgi Bonchev Str., Bl. 6
1113 Sofia, Bulgaria
Plovdiv University "Paisii Hilendarski"
24 Tzar Assen Str.
4000 Plovdiv, Bulgaria
Email: elitsa_kdimitrova@yahoo.com