TRENDS IN SUBJECTIVE HEALTH ASSESMENT BETWEEN 1981 AND 2011 AS AN INDICATOR OF PERSISTENT SOCIAL INEQUALITIES

TRENDI OCEN SUBJEKTIVNEGA ZDRAVJA V OBDOBJU 1981-2011 KOT KAZALNIK VZTRAJAJOČIH DRUŽBENIH NEENAKOSTI

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Abstract

Background: *Historically speaking, public health systems were established to guarantee every citizen equal access to health care and to separate the issue of an individual's health from issues of material welbeing. Using social science methodology, the study set out to explore how successful the welfare system in Slovenia was in achieving this goal during the last three decades, i.e. to what extent social inequalities in Slovenia are being reproduced as health inequalities.*

Methods: *The study is based on six waves of Slovenian Public Opinion surveys carried out between 1981 and 2011 on representative samples of the adult Slovenian population. The main dependent variable is the respondent's self-assessed health and the main independent variable is his or her socio-economic status. The relationship between them was examined using Chi-square tests and regression analysis.*

Results: *The thirty year trend shows persisting inequalities in health as throughout the entire period, self-assessed health is significantly lower at the bottom of the educational and income scale. The largest differences between social strata are observed in the 30 to 60 age group when labour market pressures are most pronounced.*

Conclusions: *The results indicate that inequalities in health are almost impossible to eliminate as long as their deeper causes lie in social inequality. An additional factor that decreases self-assessed health in Slovenia compared to Western Europe is the low level of trust in people and social institutions, which is the likely reason why the relatively favourable statistical picture of social inequalities is not translated into an equally favourable picture of subjective health.*

Key words: public opinion, self-rated health, social inequality, social capital

Izvleček

Uvod: *Zgodovinsko gledano, je bil cilj javnega zdravstva vsem prebivalcem zagotoviti enak dostop do zdravstvenega varstva in s tem ločiti vprašanje zdravja od problematike materialnega standarda posameznika. Namen študije je bil z uporabo družboslovne anketne metode posredno odgovoriti na vprašanje, koliko je bil naš blaginjski sistem v zadnjih desetletjih pri tem uspešen oziroma koliko se socialne neenakosti pri nas še vedno odražajo tudi skozi neenakostih v zdravju.*

Metode: *Študija temelji na šestih anketnih meritvah raziskave Slovensko javno mnenje, ki so bile izvedene v obdobju 1981 in 2011 na reprezentativnih vzorcih odraslega prebivalstva Slovenije. Poglavitna odvisna spremenljivka je anketirančeva samoocena zdravja, poglavitna neodvisna pa socialno-ekonomski položaj. Zvezo med njima smo ugotavljali hi-kvadrat testom statistične značilnosti in z regresijsko analizo.*

Rezultati: *Analiza trendov za 30-letno obdobje jasno pokaže vztrajajoče neenakosti v zdravju, saj je samoocena zdravja v nižjih izobrazbenih in dohodkovnih skupinah v celotnem obdobju značilno nižja. Največje razlike med*

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sloji opazimo v starostnem obdobju od 30. do 60. leta, torej med največjo izpostavljenostjo stresom, povezanim s trgom dela.

Zaključek: Rezultati te in številnih drugih študij kažejo, da vztrajajoče neenakosti v zdravju predstavljajo težko odpravljiv problem, saj so njihov dejanski izvor neenakosti v družbi kot celoti. Dodatni dejavnik zmanjševanja subjektivnega zdravja v Sloveniji v primerjavi z zahodno Evropo je nizka stopnja zaupanja v soljudi in družbene ustanove, ki je verjetni vzrok, da se statistično sorazmerno ugodna slika neenakosti ne prevede v enako ugodno sliko subjektivnega zdravja.

Ključne besede: javno mnenje, samoocena zdravja, družbena neenakost, socialni kapital

1 Introduction

Most statistical indicators suggest that Slovenia, speaking globally, qualifies as one of the world's rich societies. According to the HDI (*Human development index*), composed of life expectancy at birth, education and the country's gross domestic product, Slovenia ranked 29th among 182 countries in 2008, with the value 0.929, and has generally ranked around 30th place or slightly better during the last 20 years (1). We could therefore expect that the population's health would display a similarly favourable pattern, as health is generally better in richer countries. The relationship between the level of gross domestic product and population health is not linear however, as the marginal effect of increasing welfare gradually diminishes (2). There is plenty of empirical evidence that, in the developed world, the absolute standard of living loses its association with health in comparison with relative inequalities. It is not the richest countries that have the best health, but the most egalitarian (3). Even in rich societies, studies have found marked differences in health levels between people at the bottom of the social system and those at the top. People in the lower classes have much higher mortality rates, children weigh less at birth, they suffer from more chronic illness etc. (4). Social inequalities affect health primarily by causing social disintegration and increasing the feeling of relative deprivation. The larger they are, the more stress they bring to those lower on the income scale (2, 5). In addition, long-term social stresses have a tendency to accumulate toward the bottom of the social ladder and are eventually converted into physiological symptoms such as high blood pressure, increased heart rate, rapid breathing, changes in the skin, increased amounts of fatty acids etc. Most directly social stresses are translated into medical conditions by affecting the cardiovascular and immune system (6), while less direct paths include heart disease, diabetes, cancer, stroke, depression, low birth weight (4), or harmful 'consolation' habits such as smoking, alcohol consumption, high fat and high sugar diets and the like.

The issue of social inequalities in health was primarily highlighted by sociological studies, which examined some of the key mechanisms behind their reproduction, such as the unequal distribution of unhealthy lifestyles, unequal access to quality health care and unequal exposure to material deprivation and stressful situations (7). In this fashion, social sciences made a significant contribution to understanding differences in health, an effort that resulted in socioeconomic status measures and measures of social networks and support now being routinely included in mortality studies (8). Obviously the way health is measured in sociological studies differs quite significantly from medical studies and relies primarily on standardized survey questionnaires. The key indicator is the subjective perception of the respondent's health, provided by the respondents themselves. This lay and holistic self-assessment proved a very efficient measure of individual health in numerous surveys so far for several reasons. Firstly, self-rated health captures the full array of illnesses a person has and possibly even symptoms of disease as yet undiagnosed but present in preclinical stages. Next, self-rated health indirectly reflects family history and a personal estimate of longevity, which is not only based on the respondent's current health, but also on the knowledge of familial risk factors. Self-rated health is also a dynamic evaluation, judging trajectory and not only the current level of health. It reflects the presence or absence of resources such as income, education, living arrangements, social networks and psychological strength. In summary, a large number of variables would be required to match the power of this question, which combines a set of factors from different domains of life (8). Or as Kaplan puts it, poor perceived health may be a feature that links various adverse psychosocial states, such as social isolation, negative life events, depression and job stress. It holds the key to understanding psychosocial influences on health by capturing the respondent's general experience of personal health in a simple and direct way (8). The validity of this indicator and the link between self-assessed health and medical indicators of health has been confirmed in numerous

studies. Idler, for instance, performed a meta-analysis of 27 such studies and in 23 cases, self-ratings of health, which takes only seconds to obtain in a survey, reliably predicted survival in populations (8) and similar findings have been reported by other authors (9, 10).

We are first going to examine the most important background factors that influence the subjective assessment of health and, indirectly, health itself. The strongest influence is, of course, the effect of age but in this paper we are primarily interested in social factors. Age is relevant mainly in relation to 'cumulative advantage' theory, which predicts that social differences in health will increase with age because positive and negative effects accumulate on both ends of the social ladder (7). Among social factors alone, the biggest impact on self-rated health comes from education, as suggested by numerous sociological and epidemiological studies that found strong positive relationships between health and education (11). The fact that the impact of educational inequalities is so strong comes as no surprise, since education is the key to the position of an individual in the stratification system. As a rule, higher education leads to a better individual financial situation, better career, a job with a lower risk of unemployment and, consequently, higher income, all of which facilitate access to health care and prevention, and reduce economic stress. In addition, higher education brings more socio-psychological resources, such as social support and a sense of control over one's life, as well as a healthier lifestyle characterized by less smoking, less alcohol consumption, more physical activity and a healthier diet (11, 7, 12). To capture the full effect of educational inequalities, some studies include significant others in their explanatory model, because regardless of people's own level of education, having a higher-educated partner is associated with feeling healthier, better health-related behaviour and lower mortality rates (11).

In addition to education, income has an independent effect on self-reported health as well, but to a lesser extent. Education and occupational class are mostly driven by parental characteristics and as a result, it is likely that educational and occupational class causally precede income (13). Nevertheless, studies show that people in all countries reported significantly better health and were less likely to suffer from longstanding illness as they had a higher income. Income indicates the availability of material resources that facilitate the maintenance of one's health, but may also influence health through non-material mechanisms by inducing feelings of relative deprivation and frustration (13, 5). The effect of income inequalities also depends on other factors such as age or family status. Financial stress is greatest in early adulthood and five to ten years before retirement (13), it tends to be significantly higher among single mothers compared to two-parent families and similar (14). It is, however, important to note that the absolute level of income is less vital for the individual's subjective wellbeing than his or her *satisfaction* with the income, which shows how much the actual income situation deviates from individual's expectations and where a person stands in comparison with significant others. Satisfaction with income is therefore highly related to health. Those saying that they live comfortably or cope on their present income are more likely to report better health (2).

The third important variable predicted by literature is employment status, including the perception of the possibility of job loss. According to Durkheim's classic theory, work may be understood as one of the important ties that integrates individuals into the community and provides them with a means of fulfilling some of their basic needs (15). Paid work is of fundamental importance in modern societies, not only to provide individuals with a means of subsistence, but also to play an important structuring role in status attribution and the allocation of social prestige. Self-perceived job insecurity can give rise to a number of negative effects, such as physical and mental illnesses or increased family problems that may occur as the stress-related consequences of feelings of uncertainty (16). The relationship between unemployment and the increased risk of morbidity and mortality is well established, on both individual and country levels where increases in the unemployment rate have been associated with increased mortality (17). Many studies therefore treat employment status as a key factor influencing suicidal behaviour. Being unemployed is associated with a two to threefold rise in the relative risk of death by suicide. This is partly the result of an expectation that the standard of living will decline with unemployment, but even beside that unemployment is a stressful and stigmatizing condition that at least temporarily deprives individuals of their established social position. Job loss thus tends to precede the onset of psychiatric disorders and is associated with clinical depression, anxiety, substance and alcohol abuse, antisocial behaviour, aggression etc. (15). It is therefore not just actual unemployment that is a health hazard, but also the fear of job loss to an almost equal extent. This fear is not distributed evenly through society though. The perception of job insecurity is higher among the older, the less skilled, those with previous negative unemployment experience, those with precarious financial situation in the household, very

short or very long work years and those on fixed-term contracts, and lower among those employed in the public sector. Insecurity is also higher among those low on trust in other people (16, 15), as well as in countries with a history of high long-term unemployment rates.

Education, income and unemployment status are three key factors influencing the subjective assessment of health. However, not all socially deprived individuals suffer from poor health, which is why it is also important to investigate factors of 'resilience', which help individuals overcome the effect of adverse social circumstances. At the individual level, the most important of these factors is social capital, i.e. the scope and quality of a person's social networks and the level of trust in other people. Partnership is one of the most important social ties that can reduce stress and provide emotional support (2). People who are isolated have an increased mortality risk, while persons who are engaged in diverse social activities and integrated into their community were found to have better health. The explanations are both psychological and related to a healthier lifestyle and better access to health care enabled by social networks (2). Some studies find religion among the factors of resilience, but the association with better health is stronger for religious attendance than other dimensions such as spirituality and prayer. This again suggests that the social contact that comes with church attendance is the key dimension here, especially for men who otherwise have little social resources (18).

Among the macro factors, the welfare regime seems to be the most important variable explaining differences in self-assessed health at the country level. After World War 2, interventionist governments came into power in Western Europe and part of their agenda was to alleviate market-related differences in health. Public health systems were introduced to guarantee all parts of the population equal access to health and generally separate health care from issues of individual economic standard (19). Other elements of the welfare systems that have beneficial effects on an individual's health are social cash transfers and services, which mediate between someone's labour market situation and health by sustaining an adequate level of income and preventing their slide into poverty. In other words, social benefits reduce income inequality between those who have jobs and the jobless, indirectly easing the influence of the market on health (20, 15). From the perspective of population health, the most efficient welfare regime is Scandinavian with a package of universalism, generous replacement rates and extensive welfare services, which result in narrower income inequalities and higher levels of decommodification, both of which

are associated with better population health (5). Eastern European countries[1], on the other hand, are showing the lowest levels of health after controlling for individual characteristics, which means strong divisions in self-assessed health remain between eastern and Western Europe (2). This does not imply that the gap is exclusively the result of differences in welfare regimes – it can rather be explained by a wider set of social factors, in particular the context of transition. The welfare regime explains only about 10% of the country-level variation in health, while 90% of the variation is attributable to individual level characteristics (5).

Following the rich social science tradition of measuring self-assessed health, we are going to analyse the association between social inequalities and self-assessed health in Slovenia during the 30 year period and test the hypothesis that due to persistent structural inequalities in education, income and social risks, the scope of social inequalities in health also persist.

2 Methods

Our cross-time analysis is based on the *Slovenian public opinion* survey[2], the only survey in Slovenia that began its measurements several decades ago. In the time period between 1981 and 2011, six waves were carried out that included identical measures of self-assessed health, using representative samples of the adult Slovenian population: 1981 (N=2100), 1989 (N=2093), 1994 (N=1037), 2001 (N=1093), 2007 (N=1010) and 2011 (N=1079). The sequence of waves through time is such that it covers all the significant historical periods. The first two waves date back to the socialist era, the third wave was carried out in the middle of the nineties when transition-related social stresses reached their peak, the fourth and fifth waves are from the period of social stabilization and economic prosperity after the year 2000, while the last wave was fielded when the global economic downturn that began in 2008 was well under way. In this manner, we can observe the relationship between self-assessed health and socio-economic position in two political systems, as well as examine how this relationship is affected by major episodes of social stress and economic crises. The key dependant variable in our study is the respondent's self-assessed health. The exact question wording was as follows: '*How is your health in general?*

Would you say it is … 1 – excellent, 2 – very good, 3 – good, 4 - bad, 5 – very bad. Unfortunately in 2011 the value 4 stood for *fair* and 5 for *bad*, which makes this part of the scale non-comparable. Nevertheless, we included the 2011 measurement in several charts, given the importance of measuring the effect of the economic crisis and taking into account the fact that the first three options were not changed, which makes the positive end of the scale comparable through time. We used two background variables to derive socio-economic position, namely the level of education and the net personal income. Education was recoded into four categories (primary school, vocational school, secondary school and college or higher), while income was divided into three tiers (lower, middle and upper). The reason personal income was used instead of household income is that the latter was not measured in 1981 and because non-response is consistently lower for the personal income question. The relationship between self-assessed health and socio-economic position was determined using the chi-square of statistical significance for each time point, while linear regression analysis was used to construct the model of the strongest predictors of self-rated health for the most recent measurement in the series.

3 Results

An overview of 30-year trends by education and income groups clearly demonstrates persistent inequalities in health. During the entire period, self-assessed health is significantly lower in the bottom educational and income groups. In the 1981-2007 period, the mean value on a 5 point scale was between 3.26 and 3.50 for the most educated group, while it ranged between 2.77 and 2.94 in the least educated group (Figure 1). The 2011 measurement is not shown here because the negative end of the scale is not comparable with the other waves. It is, however, included in the chart depicting the positive end of the scale where response categories were identical (Figure 2). Here social inequalities stand out even more, as the share of those who rate their health as 'excellent' or 'very good' is always several times higher in the top education group, compared with the bottom one. The percentage of favourable self-ratings of health ranges between 28% and 50% in the former group, and only between 10% and 17% in the latter and the gap keeps growing. The chi square test confirms that the differences between educational groups are statistically significant in all six measurements.
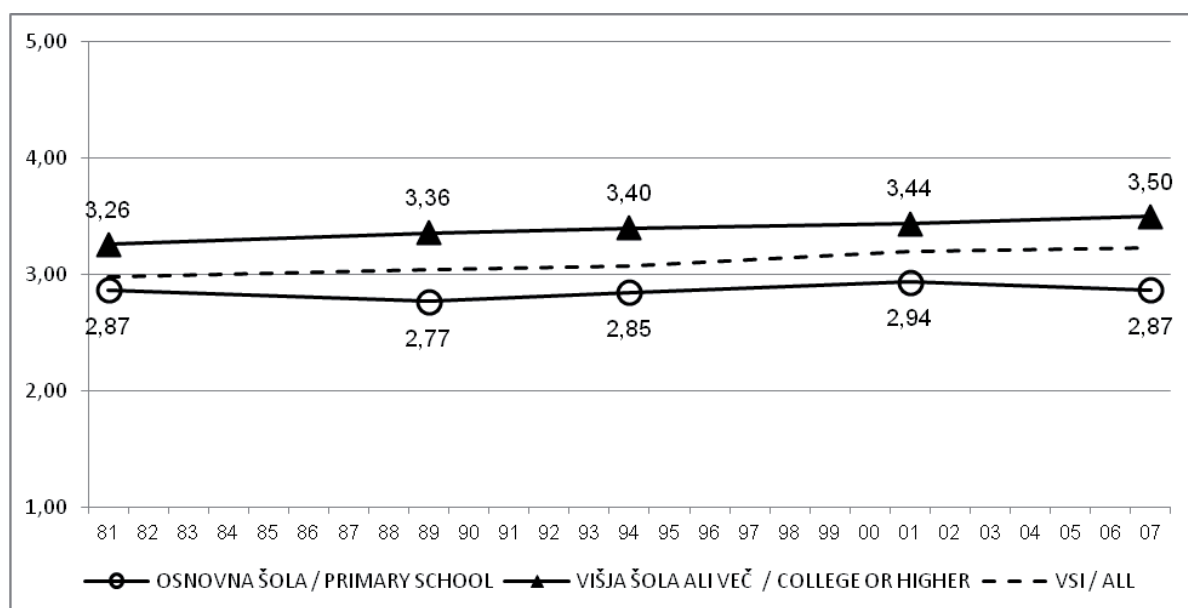

*Figure 1. The mean value of self-assessed health in the highest and lowest educational groups.
          (Scale: 5 = excellent health, 1 = very bad health)*
*Graf 1.   Povprečna samoocena zdravja v najvišji in najnižji izobrazbeni skupini.
          (Lestvica: 5 = odlično zdravje, 1 = zelo slabo zdravje)*

Source: Slovenian public opinion survey
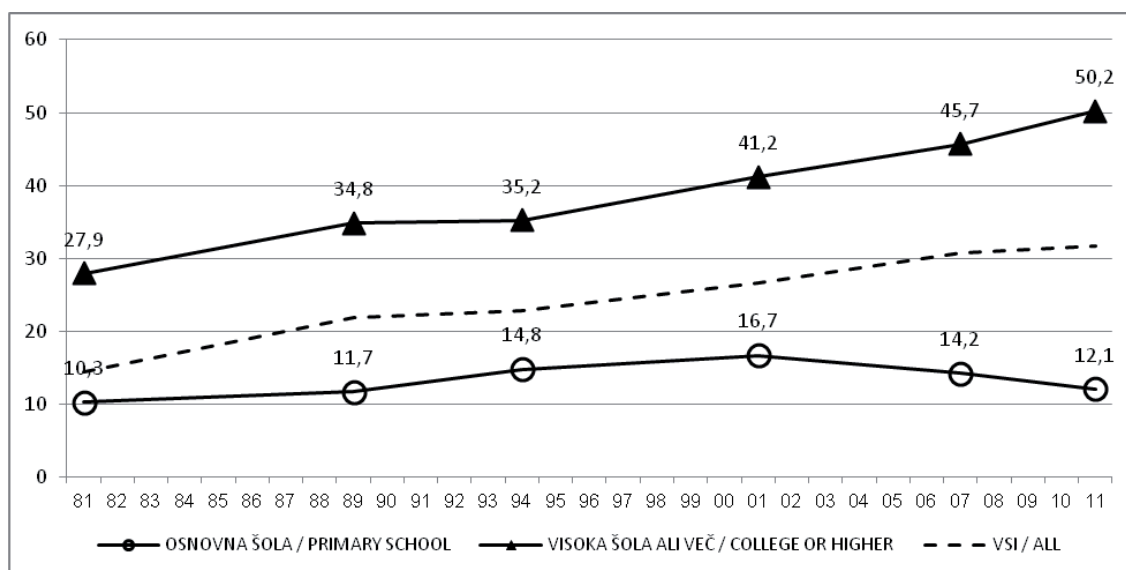Vir: raziskava Slovensko javno mnenje

Figure 2. Share of respondents with 'excellent' or 'very good' health in the highest and lowest educational group.
Graf 2. Odstotni delež anketirancev z 'odličnim' ali 'zelo dobrim' zdravjem v najvišji in najnižji izobrazbeni skupini.

Consistently, better education translates into better health and poorer education into poorer health. To a somewhat lesser extent, this pattern repeats itself within the income groups, where the average gap between the top income third and the bottom third is 15%. If we look at the opposite, i.e. negative end of the scale, we can see the mirror image of this picture (Figure 3). The risk of poor health is unevenly distributed throughout the entire period under observation, ranging between 24% and 34% in the bottom educational category and remaining very low (between 2% and 8%) in the top one. The differences between educational groups are statistically significant in all five measurements.
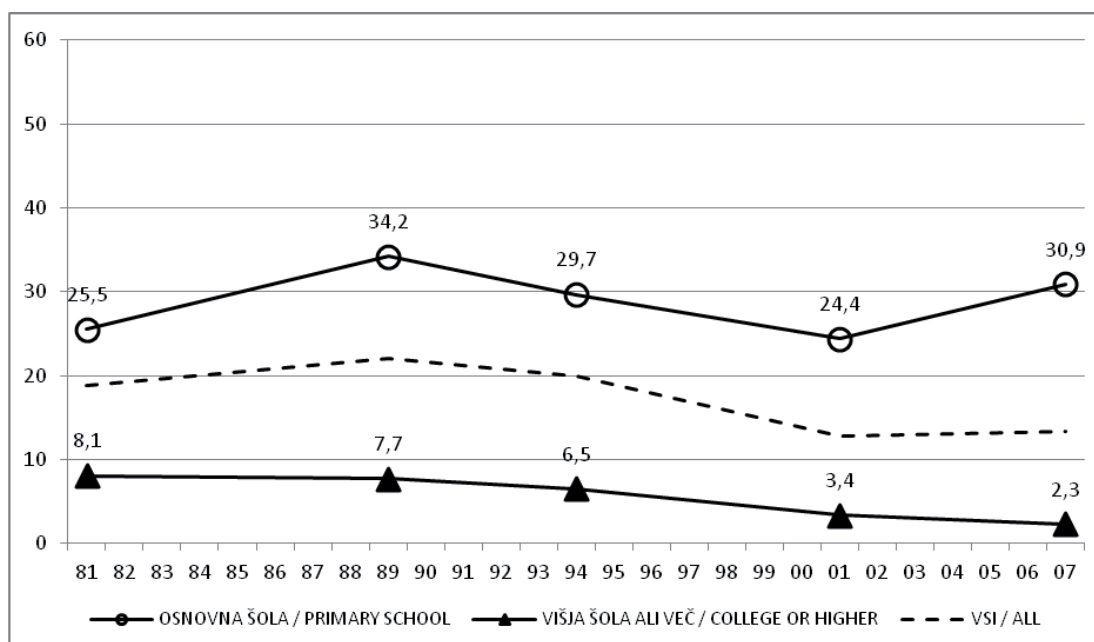

Figure 3. Share of respondents with 'bad' or 'very bad' health in the highest and lowest educational group.
Graf 3. Odstotni delež anketirancev s 'slabim' ali z 'zelo slabim' zdravjem v najvišji in najnižji izobrazbeni skupini.

A very similar picture is obtained if we compare the bottom and top income thirds, where the share of poor health is again significantly higher in the bottom group across all five measurements (Figure 4). The year 2011 was not included in the last two charts because the response categories on the negative end of the scale are not equivalent to the other years.

If we examine the relationship between self-assessed health and education within four age groups, a pattern of socially produced health gradation emerges in each of them (Figure 5). As expected, shares of poor health self-ratings (i.e. the sum of 'fair' and 'bad' that form the negative end of the five point scale) increase in all age groups during the life-cycle, but within each age group those with lower education have a markedly higher percentage of poor health self-ratings than their peers in better educated categories. The biggest differences are observed between the age of 30 and 60, when job and labour market stresses are most pressing. Here the proportion of bad health self-ratings is more than three times higher in the bottom education group than in the top one. The gap is relatively smallest among respondents over 60 years of age, but even here those with a low education have a much bigger chance of suffering from poor health.
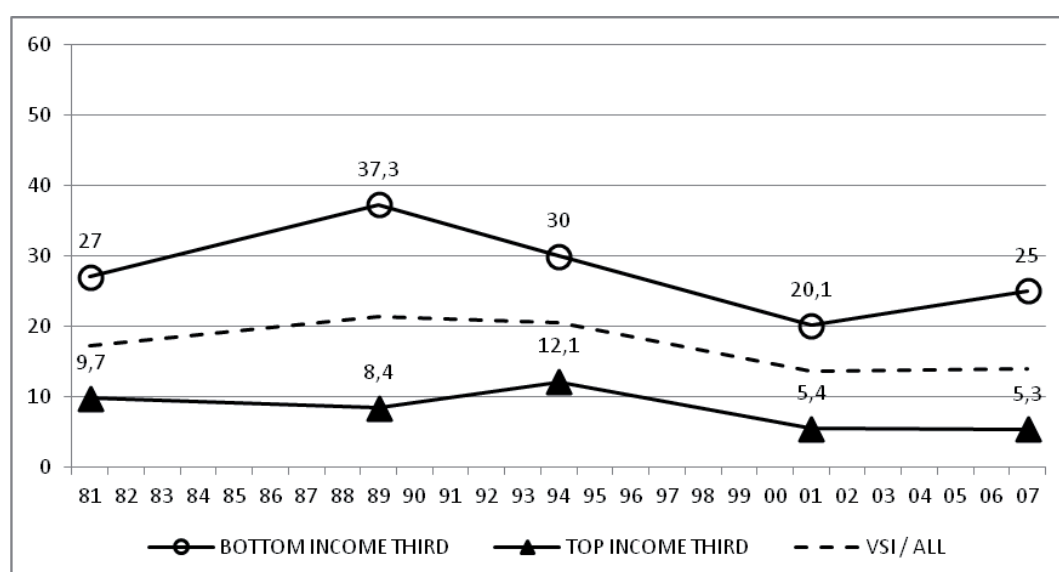

Figure 4. Share of respondents with 'bad' or 'very bad' health in the top and bottom income thirds (personal income).
Graf 4.   Odstotni delež anketirancev s 'slabim' ali z 'zelo slabim' zdravjem v zgornji in spodnji dohodkovni tretjini (osebni dohodek).

For the year 2011, the effect of education and income was also tested using regression analysis. In addition to these two variables, the initial model included a number of other measures of material wellbeing, values and personal characteristics. We used the stepwise method to identify the most powerful predictors of self-rated health and apart from the biological factor of age, the regression model identified the following significant social predictors: education (Beta = 0.297), fear of job loss (Beta = -0.278) and feelings of pessimism and optimism (Beta = 0.220). The total explained variance for the final model is 29.4%. Personal income was dropped from the final model because its effect is highly correlated with education. Regression results are very much in line with a number of other studies that found lack of education and issues of job security to be the main causes of socially produced stresses that result in poorer self-assessed health. Another important factor seems to be individual's psychological ability to cope, i.e. how powerful or weak a person feels when facing these challenges, as suggested by the significance of the pessimism/optimism variable.

4 Discussion

Our analysis confirmed that due to persistent structural inequalities in education, income and social risks, health inequalities between the social strata also persist throughout the 30 year period under observation. The finding is not surprising since similar results were obtained in more or less every country where such
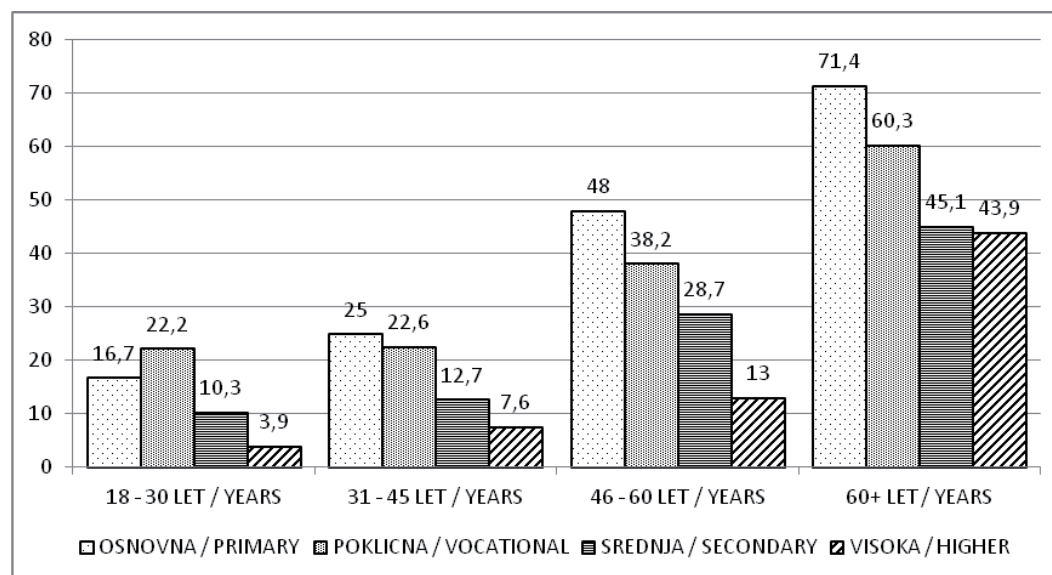
Figure 5. Share of respondents with 'fair' or 'poor' health by education and age group (full health self-assessment scale: 5 = excellent, 4 = very good, 3 = good, 2 = fair, 1 = poor).

Graf 5. Odstotni delež anketirancev z 'zadovoljivim' ali s 'slabim' zdravjem po izobrazbi in starostnih skupinah (Celotna lestvica samoocene zdravja: 5 = odlično, 4 = zelo dobro, 3 = dobro, 2 = zadovoljivo, 1 = slabo).

Source: Slovenian public opinion survey 2011
Vir: raziskava Slovensko javno mnenje 2011

an analytical model was tested. It is nevertheless very interesting to see that the social, economic and political transition from a socialist to a market society failed to bring about any dramatic changes. Socially produced health inequalities date back deep into the socialist era and continue unabated in the context of a market society. Historically, the highest levels of poor self-rated health and the lowest levels of good health were recorded in the most politically and economically precarious years of 1989 and 2011, an effect that is even more pronounced in the lower education and income groups. Economic and political turmoils clearly bring additional social stresses, which translate to lower self-rated health. In this context, we believe it is analytically fruitful to bring together this finding with that of other studies, that self-assessed health in Eastern European countries, including Slovenia, tends to lag markedly behind that of other European regions (2, 10). The question is why?

During the last two decades, transition countries underwent fundamental socioeconomic changes. As a rule, the period of transition was accompanied by severe disruption of economic activity and high labour market insecurity, which, among other things, resulted in a rapid rise in suicide mortality (15). Due to these historical circumstances, eastern European countries have experienced a marked increase in levels of social and political risk and stress during the last couple of decades. This is even more detrimental to health if we take into account that the publics in these countries traditionally have very high expectations with respect to the government role in providing social welfare. According to the Slovenian public opinion survey, more than 80% of respondents expect the government to be fully or mostly responsible for providing jobs for all, controlling prices, providing universal health care, pensions and benefits for the unemployed (21). Anxiety that results from the conflict between such expectations and the emergence of new social risks is one of the key reasons that eastern European countries stand out for having high shares of respondents who rate their health as poor.

But according to literature, another factor is involved, namely low levels of social trust. In his study, Rostila finds that low social trust might contribute to health inequalities between the post-socialist welfare regime type and the rest of Europe and suggests that, in order to improve health and wellbeing, policy makers should

develop policies and social structures that promote and maintain social trust and citizen participation (20). The key measure is thus improving political structures and social networks, which is an interesting notion and one where Slovenia could be a case in point. According to statistical parameters, income inequalities in Slovenia are relatively mild. The Gini index was around 23 in the years preceding the 2008 economic downturn, which puts Slovenia among the European countries with the lowest income differences (22). The country's welfare system and social safety network are also relatively strong, but despite these favourable contextual elements, self-assessed health on an aggregate level is relatively low, similar to other eastern European countries (20). It is therefore important to know that Slovenia is consistently classified among the countries with the lowest levels of trust in other people and political institutions. In Rostila's study for instance, Slovenia ranked 17th among 20 European countries on social trust (see also 23, 24) and, along with other eastern European nations, was also low on life expectancy and self-assessed health (20). Other writers note that the scope of inequalities between social strata in Eastern Europe is no larger than in the west (7), which again suggests that factors other than the size of inequalities may contribute to the observed differences in health between Eastern and Western Europe.

5 Conclusion

Our analysis of the 30 year trends revealed persistent social inequalities in subjective health among the social groups in Slovenia. At the same time, other studies classify Slovenia among the wider group of Eastern European nations with relatively low self-assessed health, suggesting that there is a broader background to these relatively unfavourable health patterns. It seems that a combination of three factors – the increased social risks of transition, especially fear of unemployment, high public expectations with respect to the government role in social welfare and very low trust in the key political institutions responsible for fulfilling these expectations – provide a good part of the answer as to why Slovenia and other eastern European countries lag behind in self-assessed health. It is certainly vital to preserve the current level of material wellbeing and the extent of social welfare to uphold the existing level of population health and prevent the health gap between social strata increasing. But this may not be enough to narrow the gap between Eastern Europe and other countries, knowing that the effect of wealth redistribution and

lowering income differences is markedly weaker in low trust societies. It therefore seems equally important to increase the perceptions of system legitimacy and, as a result, increase the individual's sense of security and trust in people and social institutions. Trust in particular should be further explored as the key mediating factor that translates a statistically favourable picture of social inequalities into a favourable picture of subjective health, even more so among the underprivileged strata.

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