

SOCIOECONOMIC INEQUALITIES AND THEIR IMPACT ON THE HEALTH OF SENIORS 65+

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SUMMARY

Objectives: The main aim of the article is to indicate how selected socioeconomic factors contribute to the selected characteristics of the subjectively perceived health of seniors 65+ living in the Czech Republic.

Methods: Data collection took place in the Czech Republic from 27 January 2020 to 14 February 2020. The total number of interviews carried out in the research was 1,172, from a representative quota sample of seniors from the senior population living in the Czech Republic. Questionnaires were distributed in the form of PAPI interviews.

Results: The assessment of subjective social status increases with education and employment (these three aspects are closely linked), and the assessment transferred to the senior years.

Conclusion: The accumulation of advantages and disadvantages should encourage the Government of the Czech Republic, as well as other European states, to focus on those who, based on their low levels of education and social status, have very low assessments of their subjective health. Prevention (in both health and social fields), which includes access to information and the subsequent better life decisions, must be implemented throughout a person's lifetime (so as to reduce the disadvantages that accumulate from the cradle to the grave).

Key words: socioeconomic inequalities, health, elderly, social exclusion, social status

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INTRODUCTION

Seniors in Europe and the Czech Republic

At the beginning of 2018, according to Ageing Europe (1) in the European Union (EU–28), there were 101.1 million elderly people, i.e., people over 65 years of age. This number represents almost one fifth (19.7%) of the EU's total population, with the forecasting assumption that the relative share of seniors will reach 28.5% in 2050, i.e., almost one third (2, 3). The number of the elderly at an age when they are generally economically inactive and their share of the number of working-age people is indicated by the so-called “old-age dependency ratio” is increasing.

The above-mentioned share of seniors in the number of people of working age illustrates the problems of pension systems that are continuously financed (when economically active people pay pensions directly to seniors from their taxes). Figure 1 highlights the need to urgently reform the system in the Czech Republic due to limited economic sustainability and transparency for Czech citizens. At the national level, expert advisory systems have already been established by the Government of the Czech Republic, e.g., Fair Pension Commission, which works with the Ministry of Labour and Social Affairs (4). The increase in the share of seniors (as the share of elderly in the selected populations) is also illustrated in Figure 2, which also compares the Czech Republic with the EU since 2008.

Figure 1 also shows the increasing representation of seniors in the population of the Czech Republic and the EU (excluding the UK). Seniors are and will remain a significant part of the European and North American populations; additionally, these regions also have larger senior populations compared to the rest of the world. This “regional” phenomenon will lead to a transformation of societies and social systems. It will also present a set of challenges to which these regions will have to respond. These challenges will include socioeconomic factors and their impact on health, especially with regard to preventive measures and major political decisions (e.g., changes to pension systems).

Social Exclusion, Socioeconomic Inequalities and Health

According to Picker social exclusion and social inclusion correspond to material, symbolic and existential deprivation (social exclusion) or the absence of these characteristics (social inclusion) (5). Social exclusion is the inability of some population groups to participate fully in society (6), with socioeconomic health inequalities being closely linked to social participation. Social exclusion of seniors is defined as a complex process that includes insufficient access to resources, rights, material security and services, and the inability of seniors to participate in normal relationships and activities that are available to the rest of the

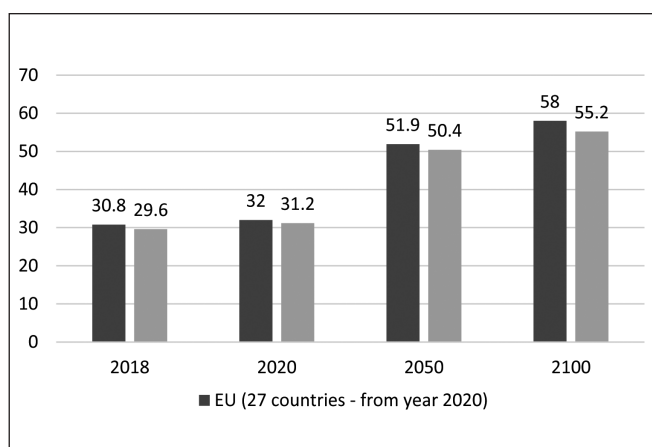


Fig. 1. Ratio of people older than 65 divided by the number of people aged 14–65.

Conversion to 100 people aged 14–65, i.e., working-age people, counted for years 2018, 2020, 2050 and 2100.

Source: Projected Old-age dependency ratio, Per 100 persons, Eurostat, 2020. Comparison of the Czech Republic and the EU created by the authors of the article. Data available at <https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&lang=age=en&pcode=tps00200&plugin=1>

population (7). There are several basic conceptual frameworks that clarify the terminological and relationship orientation between various aspects of the multidimensional concept of social exclusion. Health also represents a complex phenomenon that can be explored by both objective and subjective approaches.

A well-known concept regarding the relationship between health and social exclusion involves the social determinants of health, first published by Wilkinson and Marmot in 1998 (8). The concept significantly helps to define the causes of health inequalities (9). The timeliness of the concept has been confirmed by parallel studies taking place in many countries around the world. They are widely used by governments to find and study meaningful preventive measures. The most extensive study found extremely interesting data regarding social health determinants in selected locations (10). The study proposed a strategy for overcoming health inequalities in the UK. Social determinants of health are based on the fundamental hypothesis concerning the relationship between specific characteristics linked to a social situation and selected aspects of health; linearity was demonstrated in some areas – i.e., higher = better, which is typical, e.g., of the social gradient (11).

Each concept represents a certain perception of reality that surrounds us and brings risks arising from interpretations. In case of social determinants of health, bear in mind that the theory of social drift draws attention to the two-sided hypothesis, i.e., selected characteristics of health effect can influence the chosen social aspects (12, 13). Therefore, when talking about the social determinants of health, we cannot speak about a one-way hypothesis but instead about the mutual influence of both aspects, namely the health and social aspects (14, 15).

It must be remembered that the central tenet of this concept is not and cannot be rejected (i.e., the relationship between social characteristics and health is internationally recognized). On the contrary, this central tenet serves to review and constantly correct the findings, which goes hand in hand with the health and social reality in which we live (16).

It is obvious that socioeconomic inequalities experienced by people of working age persist even in old age (17). In the human life cycle, i.e., living conditions at an early age are reflected in adulthood, and then they move from adulthood to old age with a cumulative effect. In some cases, according to Hertzman and Power, it is possible to speak about the so-called “chain of risks” (18). The cumulative advantage/disadvantage (CAD) theory in human life calculates age as a certain variable – age as a leveller (AAL) hypothesis, which creates an axis along which advantages or disadvantages are accumulated, and their effects can be monitored even in old age (19).

Socioeconomic inequalities can be measured using different selected parameters, which can be generally divided into subjective and objective ones. Objective parameters include, e.g., income, education, housing (character, type), and employment (20). Socioeconomic factors that can be measured subjectively include the subjective social status (SSS), which is a scale where people are individually ranked on an imaginary stratification ladder. At its top of the ladder, is the best of the best (those with the most money, the best education, and the best jobs), and at the bottom of the ladder are those with the worst jobs, the least money, and the lowest level of education (21). SSS measurements can detect dimensions of social status that objective measurements cannot. This article deals with selected socioeconomic factors and their impact on health (22). The main aim of the article is to indicate how selected socioeconomic factors contribute to the selected characteristics of the subjectively perceived health of seniors 65+ living in the Czech Republic.

MATERIALS AND METHODS

Among the selected socioeconomic aspects surveyed were the assessment of net personal income and net household income per month; additionally, the study assesses the subjective social status and housing satisfaction ratings (21).

Respondents' health status was mapped by means of questions focused on the subjective perception of health on a physical and psychological level, as well as a subjective assessment of the overall health condition during the last three months. Objective parameters of health assessment obtained on the basis of, e.g., blood tests, medical documentation were not included in the study (this data collection was not a part of the project budget, and if done additionally, it would be an extreme economic expense).

Socio-demographic aspects that have entered into selected analyses include age, gender, family status (category: living with a spouse or living alone), education (categorization to primary ISCED 1, 2), apprenticeship (vocational, secondary with or without the school-leaving examination – ISCED 3; university – ISCED 5 and more) and categories of employment divided by the Czech Statistical Office in differentiation from legislators, managers to auxiliary and unskilled workers (23, 24).

Data Collection and Research File

Data collection took place in the Czech Republic from 27 January 2020 to 14 February 2020. The average duration of an interview was approximately 45 minutes; it was the distribution of questionnaires in the form of Paper Aided Personal Interview (PAPI)

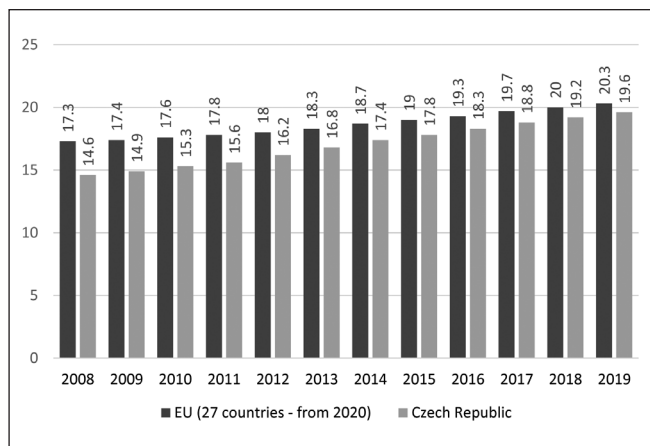


Fig. 2. Representation of seniors in the population (%).

Source: Share of population aged 65 and over compared to the total population, Eurostat, 2020. Comparison of the Czech Republic and the EU created by the authors of the article. Data available at <https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00028&plugin=1>

when the answers of seniors were recorded by an interviewer in a printed questionnaire. Data for the analysis was obtained within the project INTER-COST with reg. No. LTC18066 and title “Social exclusion of seniors 65+ living in the Czech Republic” (project duration 2018–2020). The data were collected by STEMMARK with an established interviewing network in the Czech Republic.

The total number of interviews carried out in the research was 1,172, from a representative quota sample of seniors from the senior population living in the Czech Republic in their own homes (seniors living in residential facilities were not included). The above results are summarized in Table 1.

The project defines seniors as people 65+ years of age (elderly 65 years old are included), which is essentially the western definition of old age, i.e., the age-associated with receiving pension benefits (9). The definition of old age was also established in statistical processing at the age of 65+ (Eurostat statistics).

Table 1. Selected socio-demographic characteristics of the representative sample of Czech seniors

Characteristics		%
Age	65–69	36.3
	70–74	32.2
	75–79	14.7
	80–84	10.6
	85–89	5.2
	90 and more	1.0
Gender	Man	42.9
	Woman	57.1
Marital status	Married living with spouse	47.3
	Married living separately from spouse	1.7
	Single	2.3
	Divorced	16.3
	Widowed	32.4

Source: Research INTER-COST with reg. No. LTC18066, entitled “Social exclusion in seniors 65+ living in the home environment in the Czech Republic.”

Data Processing

The Pearson chi-squared test was used to process selected analyses (the minimum level of significance chosen for each test was $\alpha \leq 0.05$; software SPSS, version 24.0). To reveal selected significant relationships in contingency tables and the direction of dependence, we used the analysis of adjusted residuals displayed in the text via so-called “sign scheme”. For selected areas, a multidimensional correspondence analysis was carried out, the main output of which can be seen in Figure 3, which displays categories in multidimensional space that are associated with each other. Descriptive statistics were used to reveal basic characteristics in a representative sample of seniors living in the Czech Republic.

RESULTS

Selected social, economic, and demographic factors were compared with selected aspects of subjective perception of the health of seniors living in the Czech Republic. Respondent health was largely based on age. There was a statistically significant link between the variables (Table 3). Older respondents were more likely to feel less healthy than younger respondents (including physically or mentally). There was no statistically significant difference between men and women in the perception of one’s own health. However, it was different for marital status, i.e., those who lived alone (either widowed, divorced, single or living separately from their spouse) felt relatively less healthy or very less healthy, while seniors living in marriage/partnership more often reported having very good health (Table 2).

Half of the respondents of a representative sample of Czech seniors who were willing to report their net monthly income reported between 10,000 CZK and 15,000 CZK (385–577 EUR), 20% were between 15,000 and 20,000 CZK per month (578–770 EUR), and 18% of respondents did not want to report their monthly income.

Net monthly income also showed a weak but statistically significant dependency on age (Table 3). However, there was a stronger relationship between income and education ($p < 0.001$) and gender ($p < 0.001$). People with a university education, even at retirement age, generally had a higher monthly income than those with secondary education and no school-leaving examination. As for income, people with secondary school education were between these two groups. Men had a higher monthly income than women. Gender inequality in salaries in the Czech Republic is present even into retirement years.

Table 2. Sign scheme: health vs. family status

		Living with a spouse (partner)	Living alone
Assessment of overall health	Satisfied or very satisfied	+++	---
	Neither good nor bad health	0	0
	Bad to very bad health	---	+++

Source: Research INTER-COST with reg. No. LTC.18066, entitled “Social exclusion of Seniors 65+ living in a home environment in the Czech Republic.”
+/- materiality level $\alpha \leq 0.05$; + +/- - significance level $\alpha \leq 0.01$; + + +/- - - significance level $\alpha \leq 0.001$; 0 – no statistical significance

Table 3. Selected aspects of subjective health perception vs. economic and social factors

	Assessment of overall health p-value	Physical health p-value	Mental health p-value	Self-sufficiency assessment p-value
Age	< 0.001*	< 0.001*	< 0.001*	< 0.001*
Gender	0.250	0.647	0.164	0.583
Education	< 0.001*	< 0.001*	< 0.001*	< 0.001*
Employment category	< 0.001*	< 0.001*	< 0.001*	< 0.001*
Marital status	< 0.001*	< 0.001*	< 0.001*	< 0.001*
Range of subjective social status	< 0.001*	< 0.001*	< 0.001*	< 0.001*
Net monthly personal income	< 0.001*	< 0.001*	0.003*	0.002* ^b
Net income per family per month	< 0.001*	< 0.001*	0.001*	< 0.001*
Satisfaction with housing	< 0.001*	< 0.001*	< 0.001*	< 0.001*
Self-sufficiency assessment	< 0.001*	< 0.001*	< 0.001*	0 ^c

Results are based on nonempty rows and columns in each innermost sub-table.

*The chi-square statistic is significant at the 0.05 level.

^bMore than 20% of cells in this sub-table have expected cell counts less than 5. Chi-square results may be invalid.

^cThe chi-square test was not performed for this sub-table because row and column variables are identical.

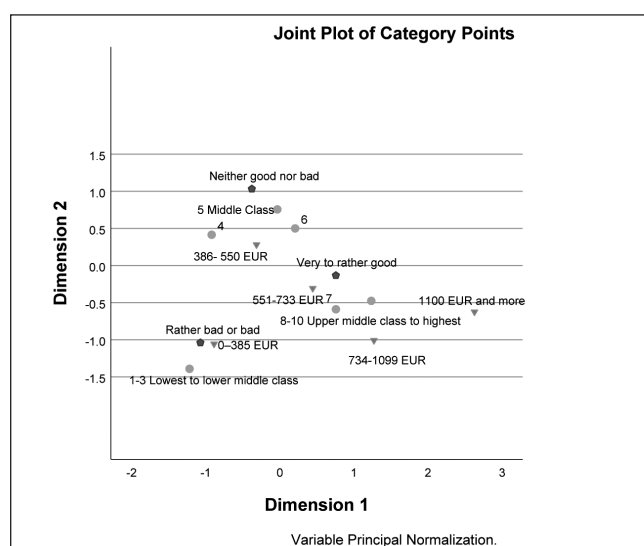
Source: Research INTER-COST with reg. No. LTC18066, entitled "Social exclusion in seniors 65+living in the home environment in the Czech Republic."

Seniors who had incomes above 20,000 CZK (about 770 EUR) were satisfied up to very satisfied with their physical, mental, and overall health. On the contrary, those with incomes below CZK 15,000 (about 577 EUR) were subjectively more dissatisfied with their mental, physical, and general health). Housing satisfaction also affects one's health assessment. Those who felt satisfied up to very satisfied were also satisfied up to very satisfied with their housing situation (Table 2). This table shows that gender does not affect one's perception of subjective health.

The perception of one's position on an imaginary social ladder, using a scale from 1 (lowest grade) to 10 (highest grade), was distributed very evenly among the elderly on both sides of the scale. The average rating of their own position was extremely close to the median of 5.5.

The average position on the social ladder for selected items is as follows – respondents over 80 (5.08), without a school-leaving examination (5.09), former workers and craftsmen (5.09), lonely (4.85), with poor health (4.79), lower-incomes (4.57), non-self-sufficient (4.38), and repeatedly discriminated against during last half a year (4.31).

The relationship of subjective social status, net monthly personal income, and health were shown using the correspondence analysis (Fig. 3), the representation of variability in both dimensions was 92.1%. Figure 3 shows that seniors can be divided into three groups – according to their subjective perception of health and its relationship to income, as well as their subjective assessment of social status (upper, middle, and lower part – including the accumulation of selected parameters, which represents an "assessment of overall health"). It is obvious that those who rank themselves between 1 and 3 (the lowest categories on the imaginary social ranking scale) feel the worst about their health on the imaginary social ladder and also received the lowest monthly incomes (0–10,000 CZK, 0–385 EUR; EUR exchange rate 1 EUR = 25.9 CZK according to the Czech National Bank of 19 March 2020). As mentioned above, most seniors were close to the median (5.5), and reported feeling satisfied up to very satisfied with their physical, mental, and overall health. Those who ranked

**Fig. 3.** Multiple correspondence analysis of health, income, and subjective social status.

Source: Research INTER-COST with reg. No. LTC18066, entitled "Social exclusion in seniors 65+living in the home environment in the Czech Republic."

Numbers on 10-points social status scale (4, 5, 6 represent the middle class; 7, 8, 9, 10 represent upper middle class to highest; 1, 2, 3 – represent the lower middle class).

at the highest levels of the imaginary social ladder also reported feeling satisfied up to very satisfied with their physical, mental, and overall health. They also receive the largest monthly incomes (30,000 CZK and more; circa 1,100 EUR or more).

DISCUSSION

Socioeconomic aspects selected in the above analysis show a statistically significant impact on the subjective perception of health (overall, mental, and physical health), including the demonstration of linearity (analysis of adjusted residuals), i.e., higher levels of education and higher the net monthly personal

income or monthly family income are associated with housing satisfaction. People with a university education, even at retirement age, generally have higher monthly incomes than people with a secondary education without a school-leaving examination. As for the income, people with secondary school education (passed with A level) are between these groups. Men have a higher monthly income than women. Unfortunately, gender inequality in salaries has transferred to older citizens in the Czech Republic. Gender, on the other hand, does not affect how people feel subjectively, unlike living arrangements, i.e., living alone vs. living with a partner. Czech seniors who do not live alone report a generally better feeling of health than those who do not have a partner or a spouse. It is obvious that marital status also affects the level of income of the elderly (25), and the influence of family, or close family relationships, on socioeconomic aspects (26). All selected characteristics, including socio-demographic (except gender) or socioeconomic influence the assessment of self-sufficiency of Czech seniors.

The results show that seniors, who at working age, placed themselves on the imaginary social ladder at medium, upper-middle, and highest levels, report feeling very well in retirement age. The assessment of subjective social status increases with education and employment (these three aspects are closely linked), and the assessment transferred to the senior years. This is also confirmed by the finding that socioeconomic inequalities experienced by people during their working years persist into old age (17). These findings also support the cumulative CAD advantage/disadvantage theory, where the accumulation of advantages/disadvantages can also be seen in old age (19). The relationship of subjective socioeconomic status and health, which has been demonstrated by the Czech senior population, confirms the findings of many studies already carried out (11). Subjective social status and health show linearity in terms of higher social status and better health (27).

Structural inequalities, including age above 65+ (e.g., in addition to people with disabilities or people living in selected locations, etc.), have been demonstrated as a part of social exclusion (28) to support its terminological definition. This is a process that affects the quality of life of the elderly, fairness, and the cohesiveness of the aging society (29). With regard to the forecast, which clearly shows the aging of the European population, it would be very irresponsible to leave the elderly on the edge of interest (28).

Limitations of the Study

The above description of the methodology shows that this is a representative quota sample of the Czech senior population, i.e., the research was not aimed directly at seniors who met a specific set of inclusion/exclusion parameters. There are numerous studies in the Czech Republic focusing on the existence, identification, and characteristics of socially excluded locations (e.g., a research project of the Ministry of Labour and Social Affairs of the Czech Republic or the Agency for Social Inclusion by the Ministry of Regional Development*, where socially excluded locations are described; however, the largest proportion of socially excluded are people of the Roma ethnicity. For this reason, quantitative data collection was not limited to specifically defined territories.

The areas chosen for this representative study are those that seniors themselves subjectively evaluate. Thus, these are not objective sets of criteria – documented income, list of assets, etc., which would contribute to the overall picture of socioeconomic status. An objective assessment would be considerably more costly (in terms of data collection) and de facto impossible to implement with a representative sample of the senior population from the project subsidy.

CONCLUSION

The accumulation of advantages and disadvantages should encourage the government of the Czech Republic, as well as other European states, to focus on those who, based on their low levels of education and social status, have very low assessments of their subjective health. Prevention (in both health and social fields), which includes access to information and the subsequent better life decisions, must be implemented throughout a person's lifetime, so as to reduce the disadvantages that accumulate from the cradle to the grave (30). Health inequalities, which are closely related to the principle of justice (not just the principle of equality), should be part of an active search for vulnerable seniors in institutions, municipalities, and ministries. It is obvious that social exclusion and socioeconomic inequalities in health play an important role in the lives of all who want to age actively.

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Adherence to Ethical Standards

The project was approved by the Ethical Committee of Faculty of Health and Social Sciences, University of South Bohemia, České Budějovice, Czech Republic.

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