The „Real“ Old Age and the Transition between the Third and Fourth Age[1]

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The „Real“ Old Age and the Transition between the Third and Fourth Age. My paper focuses on the relation between chronological age and health. I understand health decline as an indicator of the transition into the fourth age. Currently the definition of the fourth age has been somewhat unclear. Some of the authors consider the fourth age as a synonym of the oldest-old and they define individuals in the fourth age based on their chronological age, mostly between 75 and 80 years. From the perspective of social gerontology, however, such a view is insufficient. Fourth-agers might be characterized especially by the loss of agency, ability to care and to make decisions about themselves. The SHARE data analysis for the Czech Republic confirmed the connection between health decline, frailty and chronological age, but it is not easy to define the exact boundary of the fourth age. Ageing is undoubtedly very individual. The frequently used boundary of 75 years seems to be unsuitable since frailty and general health decline occur more after 80 in men and women. Although the quality of life of older adults declines apparently with age, the decline is more affected by health status than chronological age. Health and quality of life are significantly influenced by the cultural and economic capital of older adults. Older adults with basic education and low income are more at risk of poorer health and lower quality of life. There are also significant gender differences. Women are more fragile, the analysis of the impact of income and education showed, however, that the relationship of gender, health and quality of life is much more complicated. To reach higher quality of life, women benefit from higher income more than men, higher education, however, brings greater benefit to men. Generally, structural factors seem to intervene in health and quality of life significantly.
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Introduction

In the last few years, social gerontology has shown growing interest in the fourth age, or the oldest-old, a small sample of the many studies include. (Gilleard – Higgs 2010, 2011, 2013; Higgs – Gilleard 2015; Williams et al. 2012; Boudiny 2013) Until recently, most of the findings about advanced age were based on the care of individuals suffering from dementia and generally social gerontology was satisfied with a negative depiction of this stage of life. Baltes and Smith (2003: 123) pointed out our ignorance of advanced age and considered it a new, important research area. The terms fourth age and old-old, or the oldest old, are considered identical in professional literature. From the perspective of sociology, the fourth age concept remains somewhat unclear due

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to the large number of different approaches in defining it. The most influential of these approaches will be discussed below. This text focuses not on the fourth age itself, but on the transition between the third and fourth age. If we think about the third and fourth age or the young-old and old-old, it raises the important question of when and how a third ager changes into a fourth ager? What are the most important characteristics of this transition?

These issues has gained importance due to the already well-described population ageing (Rabušic 1995) affecting all the countries of the world and bringing proportional increase especially in the oldest old. Population ageing in the countries of Central Europe takes place rapidly, while until recently these countries have been demographically young compared to Western Europe, it is believed that between 2030 – 2050 they would belong to the demographically oldest countries. (Eurostat 2010) In the context of the transition between the third and fourth age the increase in the number of older adults is not as significant as the physical and cognitive condition of older adults reaching the old age. The indicator, although imperfect, might be the Healthy life years (HLY), which show that in 2013 Czech women and men at age 65 can expect to spend 46% and 54% of their life without self-reported long-term activity limitations respectively, while Slovak women and men can expect to spend respectively 20% and 29% of their life without self-reported long – term activity limitations. (Source: EHLEIS 2015) This significant difference at the macro level has obviously far-reaching effects in the micro perspective, it might refer to considerably different forms of especially advanced age, differences in the timing and form of the transition into the fourth age. The transition into the fourth age is significantly conditioned by health and therefore my text focuses primarily on the relationship between health decline and age and conditionality of this relationship based on other structural factors on the example of Czech older adults. First, however, the theoretical part will introduce the concept of the fourth age and I will briefly discuss the difference from the concept of the old-old.

The concept of the fourth age

Basically, the fourth age embodies all the fears of old age; it brings fragility, helplessness and loss of autonomy. For active people in the third age, fourth agers represent „the others“. (Gilleard – Higgs 2000) The fourth age is „them“ disabled and passive versus „us“ healthy and active. (Hasmanová Marhanková 2013) The question is whether or not the fourth age does represent „real“ old age, compared to the third age young-old without significant health limitations. The biggest concern and fear (not only) for older adults is the loss of independence and autonomy. (Sýkorová 2007)

The division of old age into the young-old and old-old, or the third and fourth age, is based on the simple idea of multiple stages of old age. Old age is usually defined as age 60+, which can mean a range of 40 years if you reach 100. The homogenization of older adults, however, is unsustainable due to this group's significant diversification in age and the anticipated increase in the number and proportion of the oldest age cohorts in the near future. The dual view of old age, i.e. the concept of the young-old and old-old, was first presented by Neugarten (1974); not long after that third and fourth age terminology was introduced by Laslett (1991). Both authors, however, use the distinction of older adults to emphasize the uniqueness of the third age, young-old age, which began to be established during the second half of the 20th century thanks to welfare state development. (Phillipson 2015) A similar differentiation in the two age groups can be found in the distinction between normal and pathological, or successful optimal ageing including the assumption that very old age is characterized by a number of pathologies. Recently, most of the research interest has focused explicitly and implicitly just on the young-old age or third age and the older adult population has been researched from the perspective of activities and the fulfilment of the active ageing concept. (Bútorová – Gyárfášová 2010; Hasmanová Marhánková 2013; Petrová Kafková 2013) The focus on the young-old has been reflected, for example, in the Active Ageing Index (Zaidi 2014; Zaidi et al. 2013), a tool developed for measuring and comparing the potential of older adults in different countries, based on the data on individuals aged 50-74, omitting the population of the old-old. On the other hand, the oldest population is typically paid attention in the context of quality of care and quality of institutional facilities for the care of older adults. (Repková 2011; Triantafillou et al. 2010; Vanková et al. 2008) This dual view of the older adult population ignores the fact that, between the young old age and old old age or the third and fourth age, there is a transition period, and that the transition may take a different course and various duration, as mentioned below. There are many ways how to define the third and fourth age, now let´s focus on the most important of them. According to developmental psychologists Baltes and Smith (2003), there are two ways to define the third and fourth age; population-based and person-based. Both these approaches are based on chronological age, while the original Laslett´s (1991) definition was cultural. According to the population-based approach, the transition from the third to the fourth age happens when 50 per cent of that age cohort remains alive. In developed countries, this is approximately 75-80 years, although due to significant population migration in the 20th century it must be difficult to identify the turning age. A more sophisticated approach only calculates the proportion of 50 per cent from individuals who didn't die young. It typically only includes those who have lived past 50 or 60. The transition

boundary is thus shifted to 80-85 years. This boundary is also used by Baltes and Smith (2003). Setting a boundary that is person-based does not rely on life expectancy, but on maximum life span. From this perspective however, the age of the transition to the fourth age significantly varies between 60 to 90 years. It is necessary to add that Baltes employs the term fourth age as a synonym of oldest-old.

Similarly, other authors´ (such as Walker 2000) definitions are characterized by chronological age and the fourth age is a synonym for older adults of 75+. This boundary follows the French tradition and corresponds to the medical discourse, as it is possible to identify specific old age phenomenology in the majority of the population. (Kalvach 2004; Pacovský 1990) This classification is based on biological ageing and the needs of social policy to clearly define the target population. The original definition of the third and fourth age, however, was cultural. (Laslett 1991)

Laslett (1991) considers the third age a completely new phase of life but does not pay much attention to the fourth age in his book. Laslett (1991) characterized the fourth age as a period of final infirmity, decrepitude and death. In his view, the fourth age contrasts sharply with the third age, the peak of life, a period full of activity and enjoyment. He believes the fourth age onset can be postponed by individual effort (1991: 61-62), but the effect of that effort does vary widely. According to Fries´s theories (1980) on the compression of morbidity in old age, a human natural lifespan of up to 85 years and the rectangularization of the survival curve, Laslett assumes that the period of the fourth age will shorten.

According Baltes and Baltes (1993) most third-agers (i.e. approx. 60-80 years) in many industrialized countries can compensate weaknesses caused by biological ageing through cultural and social resources. The authors are not optimistic about the fourth age. They assume that in the future more and more people will experience it (i.e. approx. 80+), but that these added years will generally lead to increased disability and reduced quality of life. Considering that recent studies show a significant rise in dysfunctions with age, authors see the increasing number of people living to the fourth age, or rather 80+, as a test of resilience and adaptability. There is, therefore, an essential question of whether current intensive efforts to extend lifespan do not contribute to a reduced number of people who could die with dignity. (Baltes – Smith 2003) Due to the loss of mental plasticity and very limited ability to learn new things at advanced age, the oldest-old cannot be considered a simple continuation of the young-old. (Ibid.)

Baltes and Baltes (1993) agree with Gilleard and Higgs (2010: 122) on the significant differences between the third and fourth age. However, Gillears and Higgs, from the point of view of cultural gerontologists, emphasize that the

fourth age cannot be seen as a counterpoint to the third age. According to them, the fourth age is neither an inevitable stage of life nor an unsuccessful opposite of successful ageing. They define it as the social imaginary, a set of assumptions about dependency and indignity of actual age. (Gilleard – Higgs 2013: 368-389) They question the possibility of understanding it through personal experience, because a crucial role is played by social structures, especially social policy strategies. (Gilleard – Higgs 2010) They compare the fourth age with a black hole and similarly to other authors (Higgs – Jones 2009; Lloyd et al. 2014), they understand the loss of agency and incompetence of self-control as an essential feature of the fourth age. To put it differently, „individuals are no longer able to manage their everyday lives" as fourth-agers. (Gilleard – Higgs 2010: 125)

Health is a significant determinant of the fourth age condition. Although the ageing body's health conditionality is very individual, we can generally characterize old age by varying degrees of involutional deterioration, i.e. multiple-cause, age-conditioned changes, especially the development of the age phenomenology, health potential loss, functional and health status deterioration, and the growth of health problems and functional deficits. (Kalvach et al. 2008: 111) This leads to an advanced stage of geriatric frailty, which is characterized by significant cognitive, physical, sensory or nutritional impairment, and to disability, i.e. direct violation of individual self-sufficiency. (Kalvach et al. 2008) All these symptoms are also referred to as geriatric syndromes. In addition to restricted mobility and sense deterioration, which might also significantly limit mobility, participation in various activities and social life in general. Ageing significantly increases chances of dementia. Dementia's most common cause, Alzheimer's disease, affects approximately five per cent of 60-year olds, while among 85+ adults, more than half are affected. (Sorbi et al. 2012) Even without dementia, old age results in loss of intellectual potential and plasticity of self. For example, people older than 90 are almost unable to learn complicated cognitive techniques such as mnemonics. (Baltes 2009) Old age also introduces the challenge of maintaining acceptable self-conception, self-esteem and dignity. (Baltes – Mayer 2001; Erikson – Erikson 1999; Sýkorová 2007) Maintenance or re-construction of identity in the fourth age is a key challenge. Successful adaptation mechanisms of the third age might fail during the transition into the fourth age. (Jopp et al. 2008) The optimization process[3] in the fourth age is inherently far more difficult than in young old age. (Baltes – Smith 2003)

[3] Principle of selective optimization with compensation, where optimization reflects the view that people engage in behaviours which enrich and augment their general reserves and maximize their chosen life course with regard to quantity and quality. (Baltes – Baltes 1993: 22)

If we understand the fourth age as loss of power, agency and self-sufficiency and the beginning of geriatric frailty, an essential question arises. What portion of the population has entered this life stage? We can look at Care Allowance and use it as an imperfect indicator. It is granted in the Czech Republic due to loss of everyday self-sufficiency. The Statistics of Care Allowance shows that the proportion of people entitled to the assistance increases significantly with age, which is logical. But only 43 per cent of women and 24 per cent of men among octogenarians and older actually receive care allowance, and of septuagenarians, only nine per cent of women and seven per cent of men. (Source: MoLSA – statistics of care allowance 12/2014) These statistics are certainly not perfect but do indicate that being 80+ cannot be automatically identified with the fourth age.

The transition into the fourth age can be sudden as well as gradual. A typical abrupt transition can be the consequence of an injurious fall, stroke or heart attack. In old age, serious incidents usually need extensive care, sometimes requiring a move to a long-term care facility. A fall is not just the cause of a serious injury but a major loss of independence as well. Vidovičová et al. (2013: 127) claims that of Czech older urban adults, 82 per cent of those who fell the previous year are afraid of another fall. Even the 27 per cent who had not experienced a fall in the past year, still worried about it. Falls often create psychological barriers, fear of the next fall. Uncertainty and its impacts can force an older adult into increased dependence. (Vellas et al. 1997; Vidovičová et al. 2013)

Social workers in our focus group[4] describe *growing uncertainty* in day-to-day activities as a characteristic feature of the gradual the third to fourth age transition. It is linked to the gradual loss of mobility, such as the loss of hand strength and weakening of vision. In residential facilities for older adults, residents are very perceptive of this transition. Our research shows that residents distinguish the transition of one of them into the „others“ accurately and negatively.

What has been described above poses an important question about the relationship between chronological age and the transition between the third and fourth age. Specifically, if it is possible and meaningful to define the transition by chronological age and which age describes the transition best? The progress and form of physical frailty and its accompanying uncertainty is highly individual. Despite this, I think that the connection between physical weakening and age is an important issue. What structural, as well as individual,

[4] The qualitative part of our project included, in addition to individual interviews with fourth-agers and their loved ones, a focus group of social workers working in retirement homes as well as in the field. This part of the project is being completed and the results will be presented in individual articles.

factors speed up this process and what is the impact of this progression on older adults´ quality of life?

These questions are discussed step by step in the following text. In regards to health's key role in the fourth age and its decline as a reduced agency indicator of one's care and decision-making, I will particularly focus on the relationship between chronological age and health status.

Data and main indicators

To answer the questions concerning the relationship between chronological age and third and fourth age, I used the Czech 5th wave data SHARE[5] (Börsch-Supan et al. 2015; Börsch-Supan et al. 2013), which was collected in 2012. I limited the data set to respondents over 60 years old (N = 4 939). Women make up 58 per cent of the data set and 27 per cent of the respondents are people over 75. The respondents´ educational background is distributed as follows: elementary – 14 per cent, secondary – 74 per cent, tertiary – 13 per cent. To determine the extent of economic capital I used household income, which I categorized as low (31 per cent), middle (35 per cent) and high (34 per cent).

I generally utilized the Instrumental Activities of Daily Living index (IADL), frailty and subjective health as health indicators, the CASP index, agency and life satisfaction as indicators of quality of life. I always observe health and quality of life through one simple subjective variable and two more complex indicators. IADLs have seven levels with each raising level being more dependent. 79 per cent of respondents in the data set did not indicate any limitations. The concept of frailty is a very complex gauge of health status. In accordance with Borrat-Besson et al. (2013), I used five indicators to measure frailty and I sorted the final index into three categories. The five dimensions are as follows (Ibid. 176): (1) shrinking refers to the self-reporting of appetite loss; (2) exhaustion refers to the self-reporting of poor endurance and lack of energy during the month preceding the interview; (3) low physical activity refers to individuals who were rarely or never engaged in activities that required a low or moderate level of energy such as gardening, cleaning the car, or going for a walk; (4) muscle weakness was based on measurements of grip strength (unlike

[5] This paper uses data from SHARE Waves 1, 2, 3 (SHARELIFE), 4 and 5 (DOIs: 10.6103/SHARE.w1.260, 10.6103/SHARE.w2.260, 10.6103/SHARE.w3.100, 10.6103/SHARE.w4.111, 10.6103/SHARE.w5.100), see Börsch-Supan et al. (2013) for methodological details. The SHARE data collection has been primarily funded by the European Commission through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812) and FP7 (SHARE-PREP: N°211909, SHARE-LEAP: N°227822, SHARE M4: N°261982). Additional funding from the German Ministry of Education and Research, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064) and from various national funding sources is gratefully acknowledged (see www.share-project.org)

in Borrat-Besson et. al, the mean of all four measurements were used)[6]; (5) slow walking speed was operationalised by asking participants whether they experienced difficulty walking 100 meters and/or climbing one flight of stairs due to health problems. According to the number of fulfilled dimensions, respondents were considered non-frail (zero dimension), pre-frail (one or two dimensions) or frail (three plus dimensions). The distribution of respondents in these three categories was as follows: non-frail – 45 per cent, pre-frail – 43 per cent and frail (12 per cent). The question of subjective health was asked as follows: „Would you say your health is…" with five possible answers (1- excellent, 2 – very good, 3 – good, 4 – fair, 5 – poor). The mean of the variable in the data set is 3.5 (±1.0, median 3.0), the median of 3 was chosen by 39 per cent of the respondents.

As a gauge of quality of life I used a life satisfaction variable, the agency index and the CASP index. The question of life satisfaction was asked as follows: „On a scale from 0 to 10 where 0 means completely dissatisfied and 10 means completely satisfied, how satisfied are you with your life?" The prevailing proportion of respondents expressed their life satisfaction with a mean of 7.2 (±2.0, median 8.0), where the high standard deviation indicates considerable variability of the data. The CASP index is based on the assumption that the quality of life should be assessed as the degree to which human needs are satisfied. (Hyde et al. 2003) It focuses on the quality of life in young old age. The original index had 19 items which includes the following domains of need: (1) control, (2) autonomy, (3) self-realisation and (4) pleasure, measured by the Likert scale. A reduced 12-item version is used in the SHARE data. (Von dem Knesebeck et al. 2005) The indicator mean of the data set is 8.5 (±1.3, median 8.5). The control dimension, the feeling of control over one´s own life, served me as an indicator of agency with a mean of 1.9 (±0.6, median 1.8) within the data set.

Out of structural factors I have tested the influence of education and income. Education is classified into three categories and the used data set shows the following distribution: Basic – 14%, secondary - 74%, higher – 13%. Income is operationalised through household income and categorized into terciles: low, medium, high. Both of these variables can be used to operationalise the socio-economic status (SES) and the relationship between the socio-economic status and health in the population in general has been demonstrated by numerous studies. (Kreidl 2008) Given some specificity of the

[6] The level of arm and hand function may be used to identify older people with functional limitations, grade disabilities, and estimate the risk of disability in non-disabled people. Poor muscular strength estimated by a hand-grip dynamometer predicts physical disability. (Giampaoli et al. 1999) Hand grip strength in middle age even predicts functional limitations and disability 25 years later. (Ranganathan et al. 2001) SHARE 2010 data include four measurements of hand grip strength, two for each hand.

older adult population (lower level of education than the younger population and low income diversity with considerable dependence on state pension payments) both indicators have been used. Mutual non-interchangeability of both variables is proved by their weak correlation (Kendall's tau-b) 0.18 in the data set.

These variables have different scales and but for their comparability I standardized them using Z-scores. Women in general report worse health, and geriatric deterioration begins earlier and occurs more rapidly. For this reason, the gender variance is searched.

Results

Relationship between age and health

First, let´s look at the relationship between age and health indicators. The increase in health limitations with age is clearly evident in both indicators, i.e. IADL and frailty, and it is about the same for both. A slight decline in health begins approximately at age 70 and after reaching 80 the decline is more significant. Results confirm greater frailty in women than men and these gender differences are more pronounced after reaching 80. A closer connection between age and health in women compared to men is confirmed by correlation coefficient values. Pearson´s r for IADL in men is 0.240 ($p < 0.01$), IADL in women is 0.400 ($p < 0.01$). The correlation between age and frailty in men is slightly stronger (0.335, $p < 0.01$), but remains the same as IADL in women, i.e. 0.396 ($p < 0.01$). There is a significant gender difference in the relationship between age and subjective health as subjective health declines with age more in women than in men (0.301, $p < 0.01$ vs. 0.186, $p < 0.01$).

The link between age and declining health is relatively strong; a significant decline in health begins to occur after the 80th year of life. At the same time the relationship between subjective health and age is weaker than with the other two indicators. This is especially true for women. When aged approximately 72-75 years, women feel subjectively worse than it is reflected in IADL and frailty. In the case of women around 80 the relationship reverses and on average they perceive better health than it is reflected in IADL and frailty, whose values rise with age. An analogous phenomenon is slightly visible in men. These results confirm earlier findings about subjective and objective indicators of health in relation to age. (Baltes – Smith 2003)

Figure 1: **Health limitations according to age** (Z-scores)

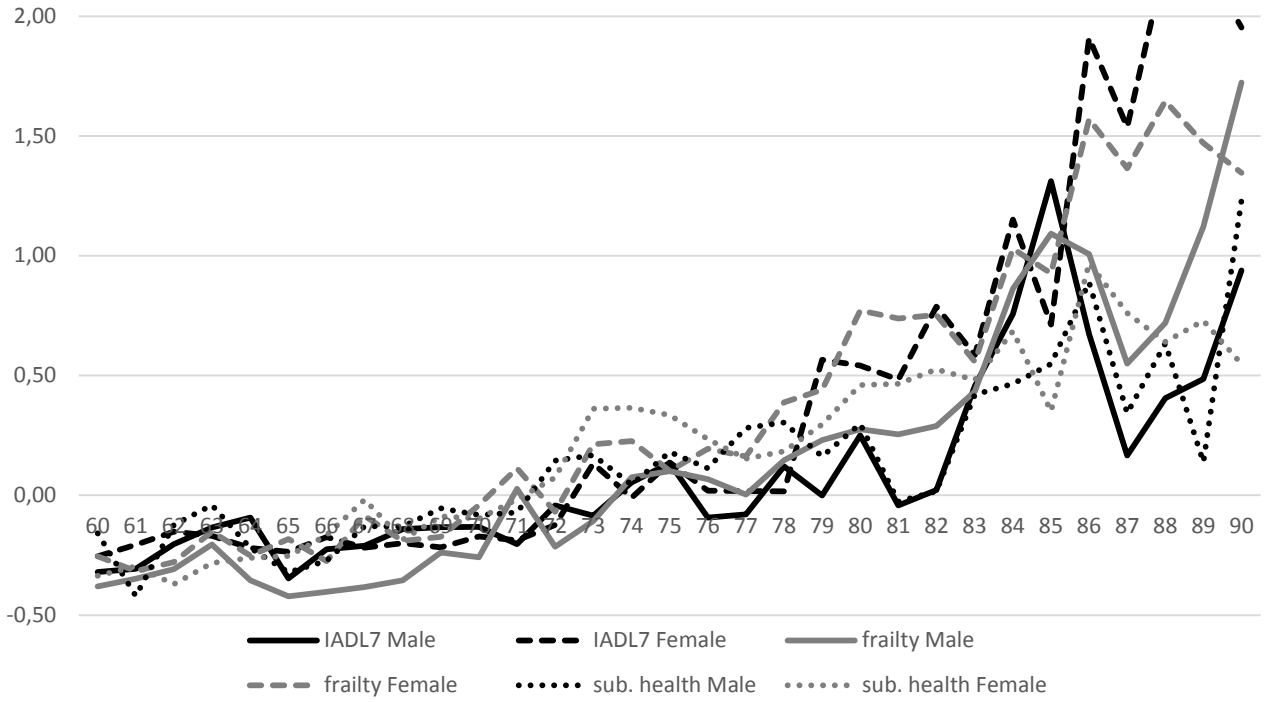
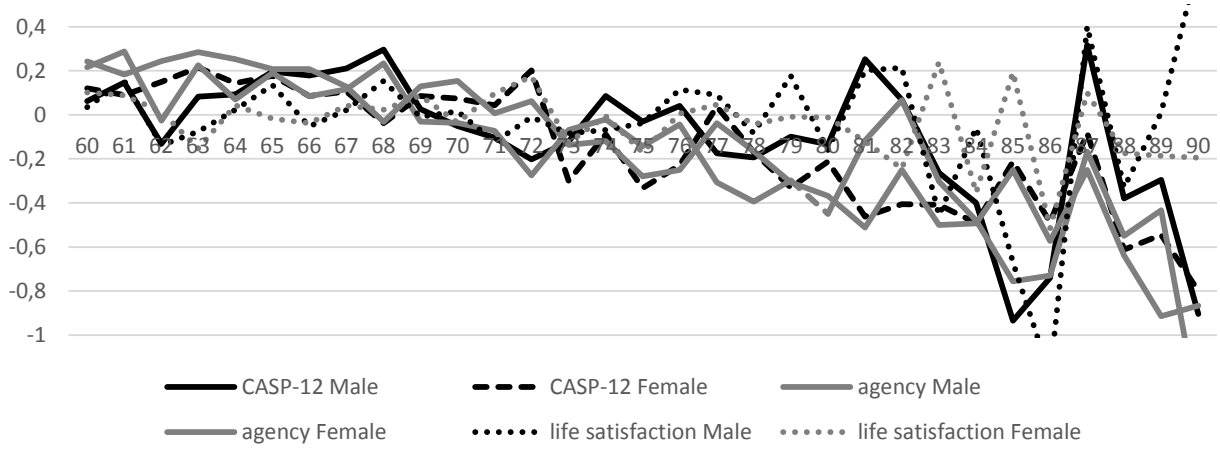


Figure 2: **Quality of life according to age** (Z-scores)



Relationship between age and quality of life

The connection between age and quality of life is less clear. Although results shown in Figure 2 indicate a slight decline, the only exception is agency, which decreases under the age of 80 for men as well as women. The value of correlation between age and agency is, according to Pearson´s r, -0.018 ($p < 0.01$) for men and -0.023 ($p < 0.01$) for women. There is also slight correlation between age and CASP for women (-0.017, $p < 0.01$), where the value for men is substantially zero (-0.009, $p < 0.01$). There is also no correlation between age and life satisfaction (men: 0.02, women: -0.003).

The decline in quality of life with age has not been confirmed in the Czech data set. Although there a slight decrease in the quality of life, the connection is not close and the decrease is really very slight.

Relationship between health and quality of life

Let´s look at the relationship between health and quality of life. As other studies have shown, declining health results is reduced quality of life, and this correlation is relatively tight. (See table 1) As shown by higher Pearson correlation coefficient r values, deteriorating health reduces the quality of life women more than men. A further complex indicator of frailty affects the quality of life more closely than IADL.

Table 1: **Relationship between health and quality of life** (Pearson´s r)

		CASP	Agency	Life satisfaction
IADL	**Male**	-,285*	-,272*	-,215*
	Female	-,319*	-,301*	-,225*
Frailty	**Male**	-,366*	-,300*	-,259*
	Female	-,426*	-,380*	-,260*
Subjective health	**Male**	-,383*	-,334*	-,317*
	Female	-,391*	-,359*	-,281*

Note: *p<0.01

A significant finding to be considered is that life satisfaction correlates with health indicators less than agency and CASP. Subjective evaluation of the quality of life is affected by individual health status less than more complex indicators.

Structural conditionality of health (impact of income level)

Thus far I have only focused on the simplest connection between health indicators and quality of life in relation to age, but a major question is what factors influence this relationship. The above-mentioned results have already shown that the quality of life is affected more by individual health status than

chronological age, but which structural factors enter into this relationship? In the following sections I will analyse how this relationship is influenced by education and income, which can be considered simple indicators of individual cultural and economic capital.

A first look at the result data (see table 2 below) shows a significantly above-average value of health and quality of life in low-income older adults. Older adults with low incomes therefore have significantly worse health and lower quality of life than corresponding average values. If we follow the income inequalities in health, the major differences are in frailty. Women with lower incomes are significantly frailer on average (mean of z-score is 0.323) than other categories including low income men (ø of z-score = 0.196). On the contrary, men with higher incomes are considerably less frail (ø of z-score = -0.304), even though this effect is not seen in high income women, and frailty is of average value (ø of z-score = -0.050). Therefore, it seems that women are still more disadvantaged by lower incomes than men. Conversely, higher income improves health, particularly men's.

Table 2: **Income inequalities in health and quality of life** (mean z-scores)

	IADL7		Frailty		Subjective health		CASP		Agency		Life satisfaction	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
low	0,140	0,245	0,196	0,323	0,193	0,180	-0,173	-0,165	-0,136	-0,107	-0,268	-0,152
middle	-0,040	-0,116	-0,080	-0,098	0,062	-0,011	0,006	-0,010	-0,006	0,057	0,014	0,102
high	-0,204	-0,035	-0,304	-0,050	-0,228	-0,161	0,125	0,174	0,030	0,121	0,120	0,092

Structural conditionality of quality of life (impact of income level)

Quality of life is influenced by income a bit differently. Although it is also true that low-income older adults have a lower quality of life, men are more disadvantaged. There is a significant difference between men and women primarily in low-income life satisfaction, as men are significantly less satisfied than women (ø of z-score = -0.268 vs. -0.152). There are also big differences the effect of income has on the agency indicator. While higher income produces above-average agency in women (ø of z-score = 0.121), and women with medium incomes are also slightly more favoured (ø of z-score = 0.057), the results are different for men. Only higher income results in slightly above-average agency (ø of z-score = 0.125), medium income is a slight disadvantage (ø of z-score = 0.006). Higher income brings higher quality of life according to the CASP indicator as well. It clearly shows for both men and women that lower income produces below-average values, medium average and higher income above average. Women, slightly more than men, benefit from higher income (ø of z-score = 0.174 vs. 0.125).

Generally, older adults´ income significantly influences their health and quality of life and lower income results in poorer health and lower quality of life.

The influence of education on quality of life

Now let´s examine how education affects quality of life and health. In general, we can say that basic education brings worse health and lower quality of life, while tertiary education has the opposite effect. Education diversifies older adults´ health even more than income. With the frailty indicator, a basic education worsens the health of women more than men (ø of z-score = 0. 444 vs. 0.220). It has the same effect on subjective health assessment (ø of z-score = 0.452 vs. 0.347). In the case of IADL, the opposite is true, even if the difference between men and women is smaller (ø of z-score = -0.131 vs. -0.279). Men benefit slightly more than women from tertiary education in all three indicators of health.

Table 3: **Educational inequalities in health and quality of life** (mean z-scores)

	IADL7		**Frailty**		**Subjective health**		**CASP**		**Agency**		**Life satisfaction**	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
elementary	0,429	0,311	0,220	0,444	0,452	0,347	-0,216	-0,187	-0,092	-0,058	-0,427	-0,147
secondary	-0,077	-0,009	-0,101	0,010	0,000	-0,041	0,015	0,022	0,007	0,042	-0,002	0,024
tertiary	-0,188	-0,053	-0,279	-0,131	-0,297	-0,220	0,100	0,049	-0,106	-0,063	0,141	0,116

The effect of education on older adults´ quality life is somewhat weaker but still apparent. Even here I can state that primary education produces below-average quality of life and that, as in the case of income, men are more disadvantaged than women by low education. As with income, the biggest disproportion is in the variable of life satisfaction. While men with primary education reach on average 0.427 of the standard deviation, women only reach 0.147, quite below average. Tertiary education, on the contrary, has the most positive effect on life satisfaction, although the differences are still rather small. The agency indicator is not much diversified by education. Yet a strange tendency is evident; Both basic education and tertiary education results in below-average agency and is more valid for men than women.

Generally, a considerable effect on health and quality of life of men and women in old age by income and education is evident. Basic education and low income produces poorer health and lower quality of life. The beginning of the fourth age is therefore conditioned by these structural characteristics and determination of one chronological age is not entirely effective.

Conclusion and discussion

My text focused on the relation of chronological age and the transition between the third and fourth age, using the example of the Czech Republic. The above-presented results confirm that health decline and frailty are indeed strongly associated with chronological age. However, it is not easy to define the age boundary of the fourth age. Ageing is undoubtedly very individual. Frailty and general health decline occur markedly after 80 in both men and women and are much worse first after reaching 85. The age boundary of 75 years widely used in analytic practice seems to be inappropriate. Neugarten introduced her division into young-old and old-old older people with the age boundary of 75 years in 1974, and since then, life expectancy has increased significantly. E.g. the life expectancy in the Czech Republic in 1974 was 66.9 years for men and 73.6 years for women, while in 2014 it was 75.8 years for men and 81.7 years for women. (Source: CSO – Population – annual time series, 2016) The boundary of 80 years has been used to define the oldest-old e.g. by Baltes. (Baltes – Mayer 2001; Baltes – Smith, 2003)

Besides the relationship between ageing and health decline, I also focused on the relationship with quality of life.

Although the decline in the quality of life with age of older adults is apparent, this is affected more by health status than chronological age itself. Health and quality of life are significantly influenced by the cultural and economic capital of older adults. Older adults with a basic education and low income are more at risk for poor health and lower quality of life. There are also significant gender differences. Women are frailer, but the analysis of the impact of income and education demonstrated that the relationship of gender, health and quality of life is much more complicated. Regarding quality of life, women benefit more from higher income than men and higher education is of greater benefit to men than women. To explain this, it would be appropriate to take into consideration other esp. subjective characteristics of individuals, that – according to some research (Bowling – Windsor 2001) – seem to have a significant effect on the quality of life in old age.

Although the simple division of the older adult population based on age is useful for analytical purposes as well as setting policies, it seems to me that it is not always an appropriate instrument for grasping social reality. The solution seems to be the distinction between the old-old as an age-defined category and the concept of the fourth age as defined by cultural gerontology. As the fourth age can be particularly characterized by the loss of agency, the ability to care and make decisions about oneself. From this standpoint it is not an inevitable stage of life, and affects only a portion of the population.

Swapping the fourth age and the oldest-old, however, results in improper homogenization of older adults. It includes about a twenty-year range of the population, whose mental and physical abilities, and therefore the possible need of social and health care, is extremely diversified. There are individuals among the oldest-old who are fully dependent on other´s help as well as totally self-sufficient people. The dividing line between them is not chronological age. Literature describes examples of significantly self-sufficient centenarians (Bishop et al. 2010; Kock et al. 2010), as well as nonagenarians (Nosraty et al. 2015), and these cannot be seen as exceptions, but rather proof of significant diversification of the oldest-old. On the contrary, the fourth age is inevitably associated with the loss or limitation of agency. Institutions increasingly affect this image and it is essentially a social imaginary. (Gilleard – Higgs 2013) In the context of the fourth age it is necessary to think about risks and limits of current forms of ageing, including the current dominant concept of active ageing. Active ageing is typically reduced to a form resembling Laslett´s (1991) third age or economically oriented productive ageing (Moody 2001) and strengthens the distinctions of fourth-agers and their understanding as a „they", instead of being an inclusive strategy to promote the quality of life for all. (WHO 2002)[7] The focus on economic activity or enjoyment of leisure time necessarily causes ignoring and marginalizing of those who are unable to fulfil the ideal of activity (Biggs 1993) and together with the improved image of (young) old age creates new inequalities (Hasmanová Marhánková 2013) and tends to bring all the negative stereotypes of old age into the fourth age. Such a concept does not bring the improved quality of life during ageing, which was the active ageing goal established by WHO.

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[7] According the World Health Organisation (2002: 12) active ageing is the process of optimizing opportunities for health, anticipation and security in order to enhance quality of life as people age. is the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.

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