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### **HEALTH STATUS OF ELDERLY PEOPLE IN THE KOMI REPUBLIC AS A FACTOR IN INCREASING LIFE EXPECTANCY**

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**Abstract:** *The article makes the assessment of the older population's health status in the Komi Republic in the frame of the new medical examination campaign for the adult population in the context of Russia's stated objectives in life expectancy. The sources of information are the official statistics, the annual "State report on the health state of the population in the Komi Republic" and the results of the two sociological studies "Problems of the third age" conducted in 2013 and 2018. The study has revealed the positive impact of the medical examination on the older people's awareness about their health, their increased responsibility for their health status, strengthening of the independent component of orientation on active, healthy lifestyle, increase of motor activities. At the same time, at older age there is an increase of problems associated with diabetes, unbalanced and excessive nutrition, overweight and obesity.*

**Keywords:** Russia; Komi Republic; life expectancy; population aging; older population health.

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## INTRODUCTION

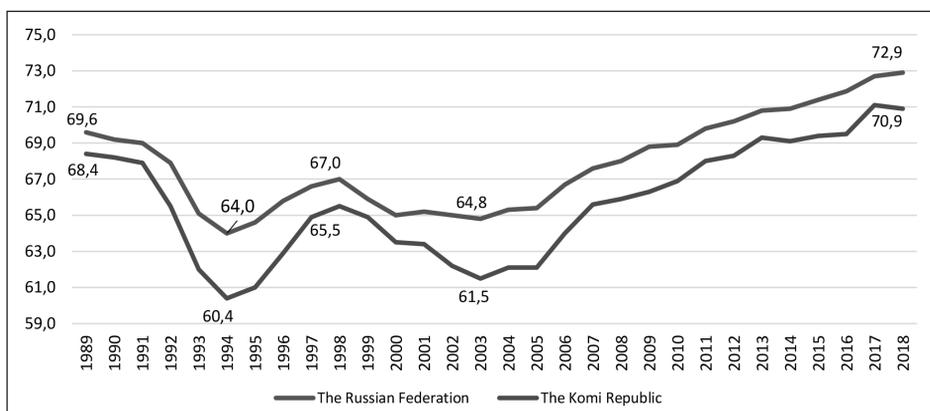
The Komi Republic is a huge area located in the northeast of the European part of Russia with the population of 830.2 thousand people at the beginning of 2019 (Demographic Yearbook of the Komi Republic. 2019: 11). Within the period of 30 years since the census survey made in 1989, that placed on record the maximum number of 1 million 250.8 thousand inhabitants, the population of the region has decreased by one third. That happened mostly due to migration outflow that is typical for almost all northern regions in Russia. In addition to that, during the time period of 1993-2010 it was common in Komi like on average in Russia to have natural population decline, caused by the low birth rate and high mortality rate. Since 2011 there was the short period of the natural population growth. In 2017, we observed the natural decline. In Russia, in general the new stage of natural decline started already in 2016.

That new stage of natural population decline is caused mainly by fertility decline, because since 2004 the Russian population longevity has been increasing. By 2018 it increased by 8.1 years compared to 2003 and made 72.9 years (Official website of Rosstat). The male indicator was 67.8 years, the female one was – 77.8. These data are the absolute maximum in the Russian history. According to preliminary estimates, in 2019 the life expectancy of the Russian population exceeded 73 years.

However, in spite of the achieved success, Russia is lagging behind the world leaders for more than 12 years, for the male longevity 15-16 years, for the female longevity more than 10 years. In 2018 the increment of longevity was quite small (from 72.7 years to 72.9 years). This indicator decreased in 23 out of 85 regions. At that in Russia in 2018 one of the declared national goals was to achieve longevity of 78 years by 2024, and 80 years by 2030 (Decree of the President of the Russian Federation No. 204 of 07.05.2018).

In such conditions, there is a need to activate realization of all reserves in order to rise longevity. Russia has substantial reserves in the structure of death reasons (share of mortality due to external reasons of death is 8%), gender (the difference between female and male indicators is 10 years), urban-rural (rural indicator lags behind the urban indicator by 1.7 years), regional (difference between the max indicator in Ingushetia and the min in Chukotka exceeds 18 years) and other reserves for longevity increase. They are ultimately dealing with aligning the differences in the level and way of life for different categories of people, which is to say in quality of life for different categories of people.

The Komi Republic is a territory with substantial regional reserves. The region is traditionally characterized by lower longevity than on average in Russia (fig. 1) (in 2018 the backlog made 2.0 years) (Demographic Yearbook of the Komi Republic. 2019: 176), higher percentage of mortality due to external reasons (11.2%), more important gender difference in the level of life expectancy (11.3 years), rural indicator is recently lagging behind really substantially (5.4 years). Under conditions of longevity increase, as a rule, we can see convergence of the republican indicator with the average indicator in the country. Within the period of 2003-2018 longevity in the region raised from 61.5 years to 70.9 years (by 9.4 years). Lagging from the



Source: Official website of Rosstat – <http://www.gks.ru>.

**Figure 1.** Dynamics of life expectancy of the population of the Russian Federation and the Komi Republic in 1989-2018, in years

all-Russian level decreased from 3.3 to 2.0 years. Nevertheless, in spite of that fact the Komi Republic continues keeping big reserves of increment of longevity that demands to be studied and realized.

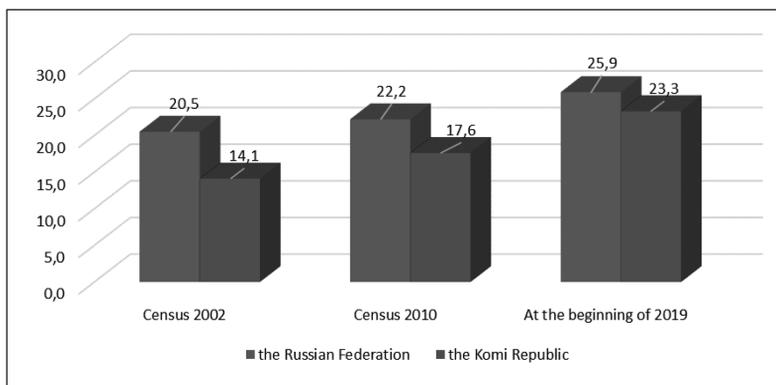
### HEALTH OF ELDERLY PEOPLE AND ACTIVE LONGEVITY AS RESERVES FOR INCREASING THE LIFE EXPECTANCY OF THE POPULATION

In this article, we consider possibilities of longevity increment dealing with the health status of people over working age. Obviously, the further growth of longevity in Russia is mostly determined by decrease of early and avertable mortality, I mean mortality of active working age population due to external reasons and heart diseases that can be explained in most cases by unfavorable lifestyle. But recently, the ageing of the Russian population has increased. The country is approaching the model of demographic ageing, which is typical for developed countries. Since 2004 the absolute number of people older than working age has been increasing (Rosstat). And this age group exceeded one fourth of the population. In such conditions reduction of mortality for old people is getting more and more important to prolong longevity, that can be achieved by active way of life and preservation of health.

The ageing of the population, as a multifaceted phenomenon, is the subject of research in a number of sciences: medical science, demography, economics, history, political science, sociology, psychology, etc. Biodemographic researches in conditions of “aging from above”, i.e. an increase in the number of old people as a result of reduction in the mortality rate at the old age and a relatively slow increase in the number of children are focused on the issues of the life expectancy increase, healthy life expectancy and the social consequences of aging (for example, Vaupel (2001); Meslé, Vallin (2002); Minett (2002); Wolfson (2012)). Russian researches also tra-

ditionally focus on the medical aspects of ageing, health of older people and their active longevity (for example, Nikitin et al. (1999); Khavinson et al. (2005); Anisimov (2008); Safarova (2009); Khavinson (2011)). The goal of this article is to assess the health status of people over working age and its dynamics in the frame of the new health examination campaign for the adult population in the context of Russia's stated objectives in life expectancy. The study is based on the example of the Komi Republic.

The Komi Republic can be characterized by a comparatively young age structure of population, though within the recent 30 years' time the rate of population growth older than working age in the region has been remarkably exceling than in Russia on average. In the beginning of 2019, the share of population older than working age in Komi was 23,3% compared to 25.9% in Russia in general (fig. 2) (Demographic Yearbook of the Komi Republic. 2019: 160). But the Komi Republic is located in the north, therefore, people in the region have the privileged age of retirement. They get retired 5 years earlier than in Russia on average. Low retiring age considerably contributes to an early decrease of labor, physical and mental public involvement that has an impact on elderly people's health. That is why the above-mentioned issues are acute in the Republic.



Source: Official website of Rosstat – <http://www.gks.ru>.

**Figure 2.** Share of the population over working age in the Russian Federation and the Komi Republic in 2002-2019, %

## SOURCES OF RESEARCH INFORMATION

The Analysis of the health condition of people in age was made based on «The State Report about the public health condition in the Komi Republic», which has been annually published since 2013 (Official website of the Ministry of health of the Republic of Komi) and results of two quantitative sociological researches «Problems of the third age», that we arranged in the region in 2013 and 2018.

In 2013, 932 people over 55 years old were interviewed (the selection is described in (Popova, Zorina, 2014)) and 1521 people in 2018 (the selection is described in (Popova, Zorina, 2019)). Before 2019, the retirement age in the Republic

of Komi was 50 for women and 55 for men, i.e. all respondents referred to persons over working age. In case of different volumes of the sampling population size their basic characteristics (gender, age, type of settlement, educational background, and family status) are almost the same. That allows us to compare the results of two studies. Apart from the gender distribution of respondents, characteristics of the sampling in fact corresponds to people over the age of 55. Noticeable exceedance of women in the inquiry share (in the sampling 75% of women compared to 63% in total population over 55) can be explained by the frequent refuse of men to respond the inquiry.

The crucial difference in arrangement of those two researches is that in Russia a new campaign on the medical examination of all adult population started in 2013. The medical examination is aimed at detection and disease prevention, which determines the main causes of death and disability. Every citizen, since the age of 21, once in three years' time can voluntarily free of charge get the medical examination made by medical specialists and to have some medical testing. Some groups of people can take the medical examination every year. Compared to the previous campaigns on medical examination the current stage is based on four groups of diseases that specify 75% death cases of the Russian population: heart diseases, inveterate bronchopulmonary pathematology, diabetes mellitus, cancer. In 2013, we interviewed people in age mostly before screening. In 2018 every respondent could have had a chance to be examined at least once.

### **ASSESSMENT OF THE HEALTH STATUS OF THE ELDERLY POPULATION OF THE KOMI REPUBLIC**

120-130 thousand people in the Komi Republic have a medical examination every year (Official website of the Ministry of health of the Republic of Komi). While making the medical examination of aged people first detected diseases are quite often: circulatory diseases, diseases of the endocrine system, diseases of the urogenital system, diseases of the digestive system, diseases of the blood and the blood-forming organs. That specifies the necessity of measures on prevention of the listed diseases distribution and training the population to follow healthy lifestyle.

In addition to that, among people who have a medical examination, every year groups of persons with the risk factor of chronic non-contagious diseases are defined, they make a considerable contribution into the structure of disease incidents, disability and mortality. Among such risk factors are: high level of blood pressure, high and very high integral cardiovascular risk, unhealthy diet, overweight, dyslipidemia, hyperglycemia, low physical activity, hereditary tainted chronic non-contagious diseases, tobacco smoking, alcohol drinking, use of drugs. The rank order of the above listed risk factors among people older than the working age is changing every year. However, the top three positions are annually the same: high level of blood pressure, overweight, unhealthy diet.

Both researches «Problems of the third age», that were devoted to studies of the spectrum of problems (level and quality of life of aged people, main problems of elderly people, their health and social well-being, resources and possibilities), contained clusters of questions devoted to public's own subjective assessment of health.

The interviewees were asked to estimate by means of 9-rating scale their physical health. The average weighted score in 2013 was 5.5 scores, in 2018 – 5.4 (out of 9) (tab. 1). That means that we got almost identical assessment remarkably above the average. But there is a slight decrease.

**Table 1**  
Self-esteem of physical health and psychological well-being, based on the results of surveys in 2013 and 2018

	Average self-esteem of physical health (scale 1-9)	Average self-esteem of psychological well-being (scale 1-9)
2013	5,5	6,2
2018	5,4	6,2

Curiously, that men's assessment is a bit higher than the women's one, but the difference is statistically insignificant (5.5 and 5.3). With aging, health assessment is definitely decreasing. It is noticeably lower in the rural areas. And it is directly related to the educational background. Just like 5 years ago, the subjective assessment of psychological well-being of respondents was higher than their physical state assessment. In both cases it made 6.2 scores (with the similar patterns of distribution). That means that people in age are quite optimistic, but are more critical to their health state assessment than to life evaluation in general.

At that, people tend to visit a doctor mostly only in case they get ill (59% respondents in 2013 and 56% in 2018). It should be noted as a favorable trend that by 2018 the percentage of people visiting healthcare centers increased not only when they had got ill but in order to prevent some diseases (from 25% to 29%). And what is more, in 2018 a considerably smaller percent of the interviewed people had difficulties in responding questions about their blood pressure, glycemic level and level of cholesterol (tab. 2).

**Table 2**  
Some health indicators of respondents according to the 2013 and 2018 surveys

	Response option	2013	2018
Blood pressure, in %	Normal	26,4	34,3
	Above the norm	52,8	52,1
	Below the norm	7,9	5,5
	Difficult to answer	12,9	8,1
Glycemic level, in %	Normal	47,5	56,5
	Above the norm	16,1	19,2
	Below the norm	2,2	1,3
	Difficult to answer	34,2	23,0
Level of cholesterol, in %	Normal	36,5	46,2
	Above the norm	24,1	28,3
	Below the norm	0,8	0,9
	Difficult to answer	38,6	24,5

This testifies to the fact that there are positive results in the medical examination, as well as aged peoples' increased responsibility for their health. It should also be underlined that it is significant mostly for women. In other words, the specific male gender-based cultural behavior, leading to a substantially higher male mortality in the young and mature ages in Russia, remains in age as well. Women tend to get ill more frequently (i.e. they are aware of their diseases: 69% women indicated that they have chronic diseases opposed to 54% men), but they live much longer. According to the data of 2018, the upcoming life expectancy in the Komi Republic among men aged 55 is 17.8 years, among women – 25.4 years (Demographic Yearbook of the Komi Republic. 2019: 59). The difference is 7.6 years. It should be reminded that the gender difference of the life expectancy at birth in 2018 was 11.2 years. Between the ages of 55 and 85 male age coefficients of mortality exceed female 1.7 – 3.3 times.

However only in case of the blood pressure, the difference between those who had difficulties in answering the question in percent in both surveys almost completely moved to the option «normal». High blood pressure in 2013 was mentioned by 53% of respondents, in 2018 – by 52%. 43% of the interviewed people at the age of 55-59 years indicated higher pressure, over 60 years – more than a half, over 75 years – more than 65% of respondents.

In case of glucose level and cholesterol, the difference partly passed to the option «Above the norm». In 2018 glucose and cholesterol was above the norm with 19% and 28% of respondents in accordance. In 2013, those figures were lower and made 16% and 24%. On the one hand, old people's awareness raising about their chronic diseases is good enough in itself. Since early detection of disease and its adequate treatment plays a very important role. But on the other hand, it testifies to the increased problems like diabetes, extra weight and obesity among old people. This fact can be proved by responds about the weight. Within 5 years' time percentage of people over 55 who estimate their weight like extra, has increased from 39% to 44%. Moreover, it typically occurs in the “youngest” old age – from 55 to 65 years – when half of respondents indicate such a problem. And it is remarkably mostly a female problem.

It should be noted here that a new coronavirus infection, which appeared in the world at the end of 2019, being extended to the pandemic mostly affect the older population. Hypertension, obesity, and diabetes increase the likelihood of severe and fatal outcomes. At the same time, Swiss scientists at the Basel University Clinic who examined the deceased from coronavirus have found out that all of those examined had high blood pressure and most of them were overweight. They were mostly men. Two thirds of the patients examined after death had coronary vascular damage and one third had diabetes ([https://doctor.rambler.ru/coronavirus/44081024/?utm\\_content=doctor\\_media&utm\\_medium=read\\_more&utm\\_source=copylink](https://doctor.rambler.ru/coronavirus/44081024/?utm_content=doctor_media&utm_medium=read_more&utm_source=copylink)). Consequently, identified trends in the older population are an additional risk factor for the new severe diseases.

64% of respondents of 2018 survey gave an answer to the question about presence of unhealthy habits (what is called modified risk factors in the medical examination). The rest 36% of respondents avoided this question (apparently as not referring to them). In doing so almost 40% of respondents who answered that question (that makes 26% of all respondents) pointed out sedentary lifestyle. That was the most common respond in both researches. Attention may be drawn to the fact that within

five recent years, people in age have become a little more active: in 2013 30% of respondents marked sedentary lifestyle.

With regard to food, the situation is getting worse according to our estimations. However, at once it should be noted that in the question about unhealthy habits in both researches there were different variants of prompts. In the research made in 2013, there was no variant about the unbalanced diet (that is not necessarily dealing with its abundance). That was our mistake in 2013 that was corrected in 2018.

In 2018 22% of all respondents mentioned the “unbalanced diet (abundance of bread and sweet, salty, spicy, fat meals)”. In addition, 9% pointed out the option “overeating”. Even if we do not summarize these variants (as that was a question with alternative options of answers), it is still more than in 2013 when 16% of all respondents pointed out the option «Overeating and extra weight» (that I repeat at that time was the only option dealing with the food culture). An unbalanced diet is not necessarily dealing with its abundance. That is why there are certain grounds for other interpretation of results: percentage of those who are overeating, on the contrary has decreased. However, as it was shown above, the number of respondents with extra weight (according to their self-assessment) increased within 5 years’ period from 39% to 44%. It speaks well for the idea about the deteriorating quality of food among old people.

Here it is important to note that the main causes of mortality of population in the Komi Republic (like in Russia): circulatory diseases, cancer and external reasons. The list of main reasons in the mortality structure of older population used to be the same until 2012 when the digestive system diseases took the third position (Demographic Yearbook of the Komi Republic. 2019: 101).

Actually, the food culture for Russia is a problem. Especially in the North, where there was always a little fruit, greenery and even vegetables in the diet of local people. The basis of the ration is – too much meat, potatoes, macaroni and bread and bakery products. At that in the lifelines of present-day cohorts of old people, they had difficult years of the soviet deficit of meat products and the 1990-ies were really complicated economically. Consequently, the improved social and economic situation led not to the healthy diet, but firstly to increase of meat products in the ration in the beginning of the XXI century.

Tobacco smoking in the question about unhealthy habits was pointed out by 16% of respondents in 2018. That is more than in 2013 (14%). It should be noted that this is the only unhealthy habit that has a clear age and gender dependence. The results of the medical examinations also show some recent growth in the percentage of aged smoking people. It might be dealing with the fact that the generation where smoking was common even for women became older. A few respondents (3%) indicated alcohol drinking; it was on the contrary much less compared to 6% in 2013. However, in principle both variants of responds by people in age (and not only old) even in anonymous questionnaires indicate randomly, especially questions dealing with taking alcohol. Medical examinations provided the same results.

Prevalence of the risk factors makes the vector of further efforts in the issue of formation of responsible attitude of people to their health. First of all, it concerns old people themselves. There was a question in the questionnaires what people could do by themselves to improve their health status. In our survey made in 2013 most frequent responds were: could follow the doctor’s recommendations, could keep a

healthy diet, could increase physical activities. In 2018 three priority directions were pointed out just the opposite way: increase of physical activities, keeping a healthy diet, following the doctor's recommendations. This testifies to strengthening of the self-component orienting on the healthy life style. The rest of directions in two surveys are distributed similarly: having regular medical examination, improving the daily routine, getting rid of or reduction of the unhealthy habits.

Let us draw attention to the fact that so called «unhealthy habits» are at the low end. And people mean solely tobacco smoking and alcohol drinking without any additional explanation. Perhaps in the further surveys we need to change the question about “bad habits” (that was missed by 36% of respondents). We should call them like in the medical examination “risk factors”.

### **POLICIES FOR IMPROVING HEALTH OF OLDER PEOPLE**

Issues of the of public health status in age are fairly in the focus area of the healthcare organizations. According to the results of medical examinations, the number of people in age with risk factors (i.e. high level of blood pressure, extra weight and keeping unhealthy diet) is significantly growing. That makes the necessity for further activities aiming at healthy lifestyle promotion and prevention of modifiable risk factors. In order to increase the level of public awareness about the healthy lifestyle principles, risk factors of development of chronic non-contagious diseases, necessity of responsible attitude to health the staff of healthcare institutions provide health campaigns intended to disseminate knowledge of keeping a healthy diet and the basic principles of the healthy diet in case of diseases.

Under conditions of accelerating population ageing, possibilities of further longevity growth depend much more on development of specialized health service. The national projects “Public Health” and “Demography” have been taking place in Russia since last year, they are developed for the period of 2019-2024 (Decree of the President of the Russian Federation No. 204 of 07.05.2018). Their implementation is provided in the frame of the regional programs. In the Komi Republic, there are seven regional programs in the frame of the national project «Public health». They include programs, aimed at treating cardiovascular diseases and cancer. They are largely addressed to the older generation. Three regional programs out of five are devoted to “Demography”: “Development and implementation of the program aimed at the systematic support and life quality increase for the older generation “Older generation”, “Creation of the system of public motivation to keep a healthy life style, including keeping a healthy diet and getting rid of unhealthy habits” and “Sport as a norm of life” – are also aimed at longevity increase of population. They all are to some extent addressed to people of the older generation. While the first program is addressed directly to the older generation.

Many activities are planned in the Republic as part of the implementation of national projects. The geriatric service was established in the frame of the program implementation “Older generation” in the Komi Republic in 2019. They are planning to establish 10 geriatric offices and 40 geriatric beds in the healthcare centers in the

region, as well as to train geriatricians and nurses “Nursing in geriatrics”. In addition, the most effective preventive methods that are required to keep health of old people were added to the regional project “Older Generation” (on health care improvement, increase of active longevity and growth of life expectancy). Activities are aimed at improvement of activities of the existing health schools based on the healthcare centers and medical facilities, as well as to improve mobile forms of preventive work. The Republican Center of Medical Prevention has started the project implementation “Moving is living”. 26 schools of hypodynamy prevention will be established in the frame of this project, one of the main trends is introduction and extension of Nordic walking. Establishment of five family schools on cognitive disorders prevention is also planned. Health problems should be detected at the very early stage. 80% of people older than working age will get preventive examination by means of annual medical examinations and the screening system including mobile visiting forms at home by 2024 according to the plan. In case some pathological conditions are detected more than 90% of old people should be under medical observation by that time (<https://komiinform.ru/news/173674>).

Currently healthcare efforts are concentrated mainly on preventable at the modern level of society development and medical opportunities death reasons. The healthcare policy related to aged people should be also focused on reduction of preventable losses of death. For this purpose, first of all it is required to update the list of preventable death causes for the aged people and to make inventory of activities that have already been implemented. Then there is a need to clearly identify levels of preventability (prevention, early detection, and appropriate treatment) with the focus on the preventable component that is defining the majority of preventable mortality in the country, as evidenced by the surveys. Strengthening of reserves for decrease of preventable mortality by means of preventive measures has its own specific characteristics at all ages. At old age mortality decrease prevention can be achieved by people’s involvement (by means of respective capacities and stimulus) into active public and cultural life of society (Demographic situation in Russia. 2019: 60-61).

## CONCLUSION

In conclusion, once again, we highlight that in the Komi Republic and on the whole in Russia there are significant reserves for prolongation of the positive trend of longevity increase. Under conditions of accelerating population ageing much more important role belongs to the mortality decrease in the old age, defined by the health preservation. Preservation of health is closely connected with development of public healthcare including specialized health service, strengthening and improving activities on the healthy lifestyle promotion, creation of the responsible public attitude for health, prevention of main modifiable risk factors for development of the chronic diseases, early detection and the appropriate treatment of diseases, prolongation of active full-fledged life of people (that is largely determined by prolongation of the working age, but that is a separate topic). The main goal of the ageing society is to stimulate active and healthy longevity of people. It contributes to a great extend to longevity increase of the entire population.

## REFERENCES

1. **Анисимов В. Н.** Молекулярные и физиологические механизмы старения: в 2 т. Санкт-Петербург, 2008, 481 с. **Anisimov V. N.** (2008). Molekulyarnye i fiziologicheskie mekhanizmy starenia [Molecular and physiological mechanisms of aging]: in 2 vol. Saint Petersburg, 481 p. (in Russian).
2. **Демографическая ситуация в России: новые вызовы и пути оптимизации: национальный демографический доклад /** Под. ред. С. В. Рязанцева. Москва, 2019, 79 с. **Demograficheskaya situaciya v Rossii: novye vyzovy i puti optimizacii: nacional'nyj demograficheskij doklad [Demographic situation in Russia: new challenges and ways to optimize: national demographic report] (2019) /** ed.by S. V. Ryazantsev. Moscow, 79 p. (in Russian).
3. **Демографический ежегодник Республики Коми.** 2019: стат.сб./Комистат. Сыктывкар, 2019. **Demograficheskij ezhegodnik Respubliki Komi.** 2019 [Demographic Yearbook of the Komi Republic. 2019] (2019). Syktyvkar, Comistat, 200 p. (in Russian).
4. **Хавинсон В. Х., Анисимов С. В., Малинин В. В., Анисимов В. Н.** Пептидная регуляция генома и старение. Москва, 2005, 208 с. **Khavinson V. H., Anisimov S. V., Malinin V. V., Anisimov V. N.** (2005). Peptidnaya regulyaciya genoma i starenie [Peptide regulation of the genome and aging]. Moscow, 208 p. (in Russian).
5. **Хавинсон В.Х.** Молекулярные основы пептидергической регуляции старения. Санкт-Петербург, 2011, 172 с. **Khavinson V. H.** (2011). Molekulyarnye osnovy peptidergicheskoy regulyacii starenia [Molecular bases of peptidergic regulation of aging]. Saint Petersburg, 172 p. (in Russian).
6. **Никитин Ю. П., Татарина О. В., Черных Н. И.** Долгожительство в Сибири и на Дальнем Востоке: демографические и клинические аспекты. Новосибирск, 1999, 163 с.
7. **Nikitin Yu. P., Tatarinova O. V., Chernykh N. I.** (1999). Dolgozhitel'stvo v Sibiri i na Dal'нем Vostoke: demograficheskie i klinicheskie aspekty [Longevity in Siberia and the far East: demographic and clinical aspects]. Novosibirsk, 163 p. (in Russian).
8. **Попова Л. А., Зорина Е. Н.** Экономические и социальные аспекты старения населения в северных регионах России. Сыктывкар, 2014, 122 с. **Popova L. A., Zorina E. N.** (2014). Economic and social aspects of population aging in the Northern regions of Russia [Ekonomicheskie i social'nye aspekty starenia naseleniya v severnyh regionah Rossii]. Syktyvkar, 122 p. (in Russian).
9. **Попова Л. А., Зорина Е. Н.** Состояние здоровья населения старшего возраста в регионе как фактор увеличения продолжительности жизни // Россия: тенденции и перспективы развития. Ежегодник. Вып 14. / РАН. ИНИОН. Москва, 2019. Ч. 2, 968 с. С. 700-705. **Popova L. A., Zorina E. N.** (2019). The health status of the older population in the region as a factor of increasing life expectancy (Sostoyanie zdorov'ya naseleniya starshego vozrasta v regione kak faktor uvelicheniya prodolzhitel'nosti zhizni). Russia: trends and prospects of development (Rossiya: tendencii i perspektivy razvitiya), 14 (2), pp. 700-705. (in Russian).
10. **Сафарова Г. Л.** Демография старения: современное состояние и приоритетные направления исследований // Успехи геронтологии. 2009, № 2 (1). С. 49-59. **Safarova G. L.** (2009). Demografiya starenia: sovremennoe sostoyanie i prioritetnye napravleniya issledovanij [Demographics of aging: current state and priority research areas]. Uspekhi gerontologii (Advances in gerontology), 2 (1), pp. 49-59. (in Russian).
11. **Что удалось выяснить после вскрытия тел жертв коронавируса.** URL: [https://doctor.rambler.ru/coronavirus/44081024/?utm\\_content=doctor\\_media&utm\\_medium=read\\_more&utm\\_source=copylink](https://doctor.rambler.ru/coronavirus/44081024/?utm_content=doctor_media&utm_medium=read_more&utm_source=copylink) (дата обращения 24.04.2020). **С**hto udalos' vuyasnit' posle vskrytiya tel zhertv koronavirusa [What was found out after the autopsy of the victims of the coronavirus]. URL: [https://doctor.rambler.ru/coronavirus/44081024/?utm\\_content=doctor\\_media&utm\\_medium=read\\_more&utm\\_source=copylink](https://doctor.rambler.ru/coronavirus/44081024/?utm_content=doctor_media&utm_medium=read_more&utm_source=copylink) (accessed 24.04.2020). (in Russian).
12. **Указ Президента Российской Федерации от 07.05.2018 г. № 204 «О национальных целях и стратегических задачах развития Российской Федерации на период до 2024 года».** URL: <http://www.kremlin.ru/acts/news/57425> (дата обращения 18.03.2020). Decree of the President of the Russian Federation No. 204 dated 07.05.2018 «On national goals and strategic objectives for the development of the Russian Federation for the period up to 2024\*]. URL: <http://www.kremlin.ru/acts/news/57425> (accessed 18.03.2020). (in Russian).

13. **Официальный сайт Росстата.** URL: <http://www.gks.ru> (дата обращения 18.03.2020). [Official website of Rosstat]. URL: <http://www.gks.ru> (accessed 18.03.2020). (in Russian).
14. **Официальный сайт Министерства здравоохранения Республики Коми.** URL: <http://minzdrav.rkomi.ru/page/10256/> (дата обращения 18.10.2019). [Official website of the Ministry of health of the Republic of Коми]. URL: <http://minzdrav.rkomi.ru/page/10256/> (accessed 18.10.2019). (in Russian).
15. **В Коми будет создана гериатрическая служба.** URL: <https://komiinform.ru/news/173674> (дата обращения 18.10.2019). V Komi budet sozdana geriatricheskaya sluzhba [A geriatric service will be established in Коми]. URL: <https://komiinform.ru/news/173674> (accessed 18.10.2019). (in Russian).
16. **Meslé F., Vallin J.** (2002). Mortality in Europe: The divergence between East and West. *Population*, 57 (1), pp. 157-197.
17. **Minett C.** (2002). Prevention better than cure for optimised active ageing. *Quality in Ageing and Older Adults*, 13 (4), pp. 291-300.
18. **Vaupel J. W.** (2001). Demographic insights into longevity. *Population: An English Selection*, 13 (1), pp. 245-260.
19. **Wolfson M. C.** (2012). Population Ageing and Health – Empirical Needs for Effective Foresight. *The Lancet*, 379 (9823), pp. 1295-1296.

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