HEALTH STATUS AND SOCIAL ACTIVITY OF THE ELDERLY IN RUSSIA

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Background. Life expectancy of the elderly in Russia is noticeably lower compared to their European peers; those figures conceal essential variability of living conditions, health status and social activity of the elderly in the country. Diversity of rates and strategies of ageing calls for adaptation of social policy to the actual differentiation of the elderly population.

The **aim** is to study health status and social activity of the elderly and older old people depending upon their place of residence, household composition and living conditions.

Methods and data

The study is based on the results of the integrated surveillance of living conditions of population conducted by Rosstat in 2011 on the ground of sample interviews of representatives of different population groups and strata with the coverage of 10,000 of households (http://www.gks.ru/free_doc/new_site/KOUZ/survey0/index.html). Multi-stage systematic random sample was built according to territorial principle and ensured representativeness of surveillance results within the specified accuracy rate of the program's main indicators. Information array based on the All-Russia population census 2002 was used as a basis for surveillance sampling. Sample of the elderly over 60 included 4988 people.

Results.

Applying the principle component analysis method we studied a set of characteristics describing health status of the elderly (table 1). Characteristics included the following: indicators of disability and its severity, length of disability and its revisions; availability of the rehabilitation program and completeness of its execution; limitations to everyday life; need for different rehabilitation means and their availability; utilization of both inpatient and outpatient healthcare including ways to receive services, financial sources, availability of medications, waiting period; reasons for care non-seeking and treatment rejection; and behavioural risk factors.

The first principal component is determined by the variable that characterizes availability of rehabilitation means, the second –need for specialized or high-tech rehabilitation means. Combined with the fourth component that is highly affected by the presence of disability and consequently rehabilitation programs, it is possible to state that health status of the elderly is characterized by disability which restricts certain life spheres but could be recompensed by specialized or high-tech rehabilitation means.

Composition of the third component mainly affected by behavioural risk factors is also interesting. It is important that among all behavioural factors only smoking including length of smoking turned out to be significant although one could have expect alcohol use, diet and blood pressure as well. This may be due to the fact that the abovementioned risk factors that accelerate development of chronic diseases have already contributed to lethal outcome, that's why those factors are less common among the elderly than smoking.

Table 1. Factors affecting the principal components

	Component 1	Component 2	Component 3	Component 4
Current disability	0.367148	0.169891	0.091974	-0.666326
Current access to medical rehabilitation program	0.174968	0.057369	0.076357	-0.689852
Whether the rehabilitation program is fully executed?	0.171056	0.093481	0.130041	-0.420457
Need for specialized rehabilitation means	0.438603	-0.867173	-0.092956	0.009972
Need for glasses (contact lenses)	0.179696	-0.107025	0.010630	-0.148237
Need for hearing aid	0.647239	0.313096	0.085012	0.078111
Need for wheel chair, walking frame	0.361857	0.156562	0.070082	0.267021
Need for prosthesis	0.288096	0.149162	0.097203	0.170822
Need for prosthetic and orthopaedic appliances	0.319906	0.243437	0.080514	0.136800
Need for high-tech rehabilitation means	-0.618050	0.755036	0.060638	-0.046924
Availability of the necessary rehabilitation means	0.788695	0.437406	0.154681	0.263782
A current smoker	-0.117741	-0.144088	0.855983	0.025217
Age of smoking debut	-0.104087	-0.126691	0.848551	0.028706
Alcohol use	0.143309	0.157284	-0.419136	-0.081755
Total variance	2.203794	1.831341	1.724047	1.323966
Total variance rate	0.157414	0.130810	0.123146	0.094569

*Red indicates significant influence, Blue – close to them but beyond limits of the statistical error (p=0.05)
** The table contains only variables with non-zero factor influence.

Next we studied dependence of health status on factors under discussion. We applied multiple recursive regression analysis. According to the results of the component analysis we selected "current disability" characteristic as a dependent variable. It's obvious that sex and age are positively related to this variable. Among the living conditions within a settlement "poor management of housing and communal services" characteristic was noted as positively related, however, this characteristic is mainly relevant for small towns and rural settlements. At the same time such characteristics as "public transport management" as well as "roads condition and road-traffic safety" also characterize such types of settlements but relationship with the dependent variable is negative. Lack of transportation may be more essential for people with limited capabilities in terms of applying and receiving official disability status.

Positive relationships between educational level and number of years of education with disability look surprising. One could have expected the reverse relationship. It looks like we face a disguised effect of the demographic factor. Educational level is higher in women; on average, the female respondents were older than males in the sample. In its turn, disability in women is more prevalent than in men and obviously increases with age. The same explanation is relevant to understanding the role of the "willingness to get supplementary (additional) education" characteristic. Gender factor forms the basis of positive relationships with such characteristics as "going out to cafes and restaurants" and "visiting religious institutions". However, "attendance of foreign language courses" and "use of the internet for distance learning" are negatively related to the dependent variable.

Table 2 – Results of the regression analysis

R= 0.46671215 R2= 0.21782023 F (76.4911)=17.995 p≤0.000 μ_R=0.76860					
	β	μ_β	b	μ_b	t(4911)	p
intercept			-1.73389	0.210922	-8.22053	0.000000
Sex	0.043964	0.014319	0.08078	0.026309	3.07026	0.002150
Age	0.189176	0.016727	0.02106	0.001862	11.30945	0.000000
Poor management of housing and communal services in the settlement	0.060044	0.014730	0.02518	0.006178	4.07626	0.000046
Poor public transport management	-0.043561	0.015437	-0.01874	0.006640	-2.82195	0.004792
Problems with roads condition and road-traffic safety	-0.043475	0.015532	-0.02220	0.007931	-2.79903	0.005146
Workers' estimation of working conditions including occupational risk factors (noise, vibration etc.)	0.068283	0.029589	0.06747	0.029239	2.30768	0.021058
Time spent by workers to get to work and backwards	-0.057324	0.023485	-0.00266	0.001089	-2.44086	0.014688
Level of satisfaction with work schedule	0.125517	0.032703	0.24567	0.064010	3.83804	0.000126
Level of satisfaction with the distance to the place of work	0.103987	0.034357	0.17837	0.058934	3.02669	0.002485
Level of education	0.077974	0.015297	0.03426	0.006722	5.09719	0.000000
Total years of education	0.040670	0.017099	0.00588	0.002474	2.37849	0.017422
Attendance of foreign language courses	-0.027564	0.013877	-0.17935	0.090292	-1.98629	0.047056
Willingness to get supplementary education on a certain program	0.057366	0.013246	0.06459	0.014914	4.33087	0.000015
Use of the Internet for distance learning	-0.046246	0.019080	-0.03223	0.013297	-2.42380	0.015395
Visiting restaurant during the last 12 months	0.504118	0.167747	1.10795	0.368675	3.00523	0.002667
Visiting religious institutions during the last 12 months	0.419536	0.154140	0.25595	0.094036	2.72180	0.006516

Regression model included several characteristics related to the working population. Significant ones included the following: presence of professional risk factors (according to respondents' estimation), satisfaction with work schedule as well as time spent to get to work and satisfaction with the distance to the place of work. Absence of harmful working conditions, non-satisfaction with working schedule and working place distance – those relationships with the dependent variable disguise influence of the gender factor, namely prevalence of women among the respondents.

Conclusions
• Health status of the elderly is mainly characterized by disability which restricts certain life spheres however, could be recompensed by specialized and high-tech rehabilitation means. Behavioural risk factors especially smoking remain their significance for characterizing health status in older ages.
• Health status determined by disability is obviously dependent upon demographic factor – age and gender composition of the respondents. Being disguised, those factors affect relationships between health and level of education, employment and social activity of the elderly.