Methods of Subjective Health Assessment for Older Workers

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***Abstract*—The paper examines health as an integral part of labor potential and a prerequisite for success of a worker, methods that workers, employers, the state and public organizations can use to acquire health information, methods to assess subjective health of older workers, their results, and factors influencing subjective health.**

***Keywords*—Older workers, subjective health assessment methods, factors influencing subjective health.**

I. Introduction

Attainment and assessment of work results as successful can be done via a logical chain: "goal" → "action" → "result" → "assessment of result" [1], where "action" is the fulfillment of worker's potential and his/her capabilities. On the one hand, worker's health is an integral part of his/her potential. On the other hand, it is a prerequisite for his/her success. Health changes with time due to natural causes and external factors. Workers are able to manage a number of external factors, and others are managed by an employer, the state and society. Under the conditions of work force ageing, health preservation and promotion issues are relevant and challenging at individual, organizational, state and public levels. Labor market participants are interested in qualitative and quantitative indicators that allow measuring the efficiency of activities aimed at health preservation and promotion.

II. Methods to Acquire Health Information and Assess Health

In the western culture, the discussion about the notion of "health" can be traced back to the classical period. By the end of the 20th century, there were more than 300 definitions of health stemming from different viewpoints taken when studying this phenomenon. From the 60s of the previous century, health is considered not as a property "obtained for gratuitous use", but as an "instrument to maintain and improve the quality of human life requiring, along with its consumption, some investments into its promotion" [2]. By the 1990s, international declarations captured the recognition of healthy, motivated and highly qualified work force as a foundation of the future social and economic welfare, thus determining a vector of health preservation and promotion in theoretical and applied research as well as in actual practice.

Different scientific disciplines commonly use the definition given in the Constitution of the World Health Organization (hereinafter referred to as the "WHO"): "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity".

A number of health information acquisition methods, with the basic ones given in Fig.1, are used to assess health and the efficiency of health preservation and promotion proposals.

Table 1 shows how workers, employers, the state and public organizations use health information acquired by different methods.

Table 1

Health Information Use

	Medical examination results	Lost time incidence rate	Absenteeism and presenteeism	Subjective health data	Data of statistical studies	Results of opinion polls
Worker	+	+/–	–	+	–	+/–
Employer	+	+	+	+	+	+
State	+	–	–	+	+	+/–
Public organizations	–	–	–	+	+	+

where: + basic or the most frequently used method
– method is not used
+/– method is rarely used

Source: compiled by the author based on [3, 4, 5]

Each of the methods has advantages and disadvantages. Medical examinations provide the fullest objective health information, but their cost and ethical implications of data use limit the application of results. The data on lost time incidence

rate may distort a true picture due to widely spread latent incapacity to work. The results of subjective health assessment significantly correlate with statistical data [6], but, when using this data, heterogeneity shall be taken into account for different groups (systematic differences in answers), for example, senior respondents regularly overestimate their health as compared with other age groups [7].

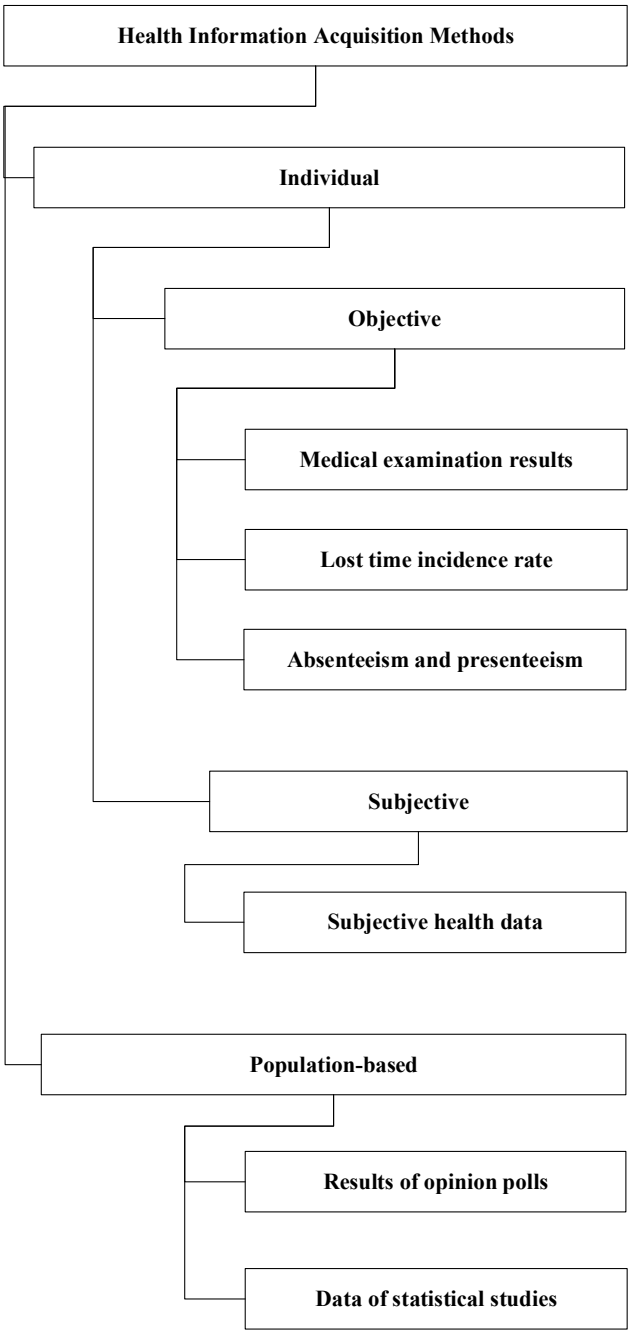

Figure 1. Health Information Acquisition Methods
Source: drafted by the author based on [3, 4, 5]

III. Subjective Health Assessment

Researchers are much more unanimous in opinions when defining the "subjective health" notion. Some of the definitions are given in Table 2.

The self-rated health assessment method appeared in the 1950s as a clinical method of patient status assessment and was used to assess the efficiency of treatment and rehabilitation [10]. In 1992, the first self-rated health questionnaire, SF-36, was presented, and it was recommended

Table 2

Definitions of Subjective Health

Author	Definition
Monden C.	Subjective health – general or physical health measured by self-assessment [8]
Johnston D.W., Propper C., & Shields M.A.	Subjective health – individual perception of one's own health at a certain point of time [9]

Source: drafted by the author based on [8, 9]

for use not only in clinical trials, but also for population monitoring. In 1996, a brief version of questionnaire, SF-12, was introduced. Those questionnaires were not free from drawbacks, for example, high total scores could be reached with high scores on physical health assessment scales and low scores on mental health scales; an obsolete language was used; it is difficult to use the questionnaires internationally as there is no reliable and valid versions in other languages. However, data accumulated during their use first demonstrated the influence of multiple factors on the self-rated health assessment (see Fig. 2 and 3). For example, it has been found that the age has a negative regression coefficient as related to physical health, and the coefficient value doubles every subsequent ten years.

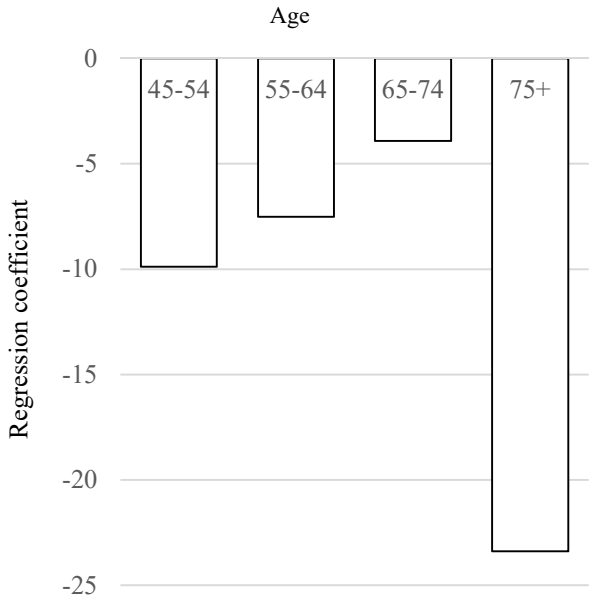

Figure 2. Regression coefficient – Age relation based on SF-36
Source: drafted by the author based on [10]

At the initiative and under the guidance of the WHO, a procedure for assessment of quality of life, WHOQOL, has been developed. It includes the subjective health assessment that can be used internationally: the results are comparable regardless of cultural, demographic and social living conditions of respondents.

In the context of population ageing, there emerged a need to monitor health and wellbeing of older generations, and integral indices of older population wellbeing, Active Ageing Index, Global AgeWatch Index, Natixis Global Retirement Index, Index of Wellbeing in Later Life, SCL/PRB Index of Well-Being in Older Populations, were developed. In Russia, a procedure for Active Ageing Index calculation was approved in late 2019; the first results are planned to be published in 2021.

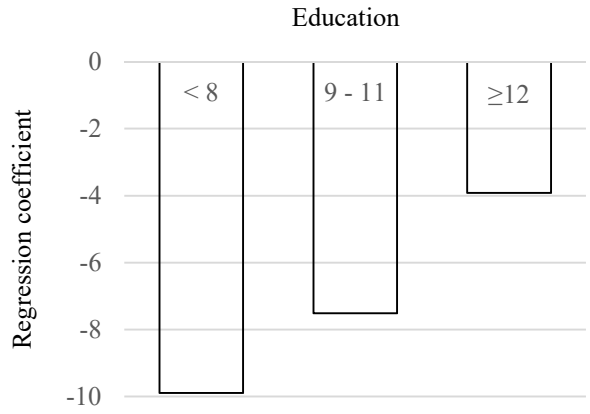

Figure 3. Regression coefficient – Education relation based on SF-36
Source: drafted by the author based on [10]

Starting with 1994, the Russian Longitudinal Monitoring Survey - HSE (hereinafter referred to as the RLMS-HSE) [11] has been being implemented. This is a set of annual nationwide representative surveys based on stratified multistage area probability sampling developed with leading international experts of this sphere involved.

IV. Results of Subjective Health Assessment for Older Groups

The analysis of data on older age groups of the 27th RLMS-HSE Round (2018) revealed that continuation of working activities beyond the retirement age increased the self-rated health assessment. Table 3 compares the average health assessment of working and nonworking groups.

Table 3

Average Subjective Health Assessment in Older Age Groups

Age group	Average subjective health assessment	
	working	nonworking
50-59 y.	3.02	2.80
60-69 y.	2.98	2.76
70 + y.	2.73	2.44

Table 4 shows the data on the shares of positive and negative assessments among working and nonworking men and women of older age groups.

Factoring in the "heterogeneity phenomenon" and the "age paradox" (decrease of assessment scores in 60-66 age group, increase of assessment scores in 67-86 age group, and a sharper decrease in 87+ group), it can be said that the perception of subjective health by workers of older groups is more positive as compared with non-working age-mates.

Table 4

Shares of Positive and Negative Subjective Health Assessments in Older Age Groups

Sex	Age group	Working activity continued	Share of positive subjective health assessments, %	Share of negative subjective health assessments, %
male	60-69	working	15.6	10.4
		nonworking	9.80	25.2
female	55-65	working	22.8	10.5
		nonworking	11.1	27.0

As a rule, workers of older groups have a wider social circle. When assessing subjective health, they report higher scores when they compare themselves with representatives of younger groups, and the scores do not change when socially compared with colleagues of the same birth cohort.

Based on the data of the 20th and 24th RLMS-HSE Rounds (2011 and 2015 respectively), completed higher education increases the probability of positive self-rated health assessment by more than 70%, and secondary professional education or incomplete higher education – by more than 20% as compared with secondary or general education.

According to the data of other research, the style and method of communication between older workers and representatives of other age groups of the business environment is also an influencing factor. Negative assessments of cognitive and adaptive abilities from younger colleagues, way of communication, use of oral and written language containing a large number of acronyms, jargonisms, etc. may bring about the deterioration of mental and general subjective health.

It has been also revealed that the self-rated health assessment procedure is "sensitive" to the preceding events and questions. Negative questions asked directly before the research decrease the number of positive assessments by 30% as compared with the control group.

When looking at the regional distribution of subjective health assessments, the heterogeneity is observed that is explained by self-rated assessment being influenced by relative positions of older workers in the local economy – at comparable level of income, older workers rate subjective health high in less economically developed regions.

V. Conclusion

The methods of subjective health assessment make it possible to obtain qualitative health indicators of older workers. According to the subjective health assessment results, older workers have more positive perception of their health compared with their nonworking age-mates. The social comparison with age-mates does not change the self-rated health assessment results, and, when compared with younger colleagues, older workers report higher rates. It has been revealed that self-assessment rates of mental and general subjective health of older workers decrease when they are negatively treated and (or) disparaged in the team. Subjective health of older workers depends not only on individual characteristics, but also on peculiarities inherent in this birth cohort as well as on economic factors.

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