

# Anti-Aging Healthcare Programs at Companies of the Russian Federation Regions: Relevance, Conditions and Algorithm for Successful Implementation

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**Abstract**—The article presents the results of the study aimed to reveal the relationship between the implementation of anti-aging healthcare programs at companies in the regions of Russian Federation, the health of employees and the efficiency of companies. Based on the results of the study, the authors proposed the main factors that affect the efficiency of companies in connection with absenteeism of employees due to illness. The article notes the crucial importance of employees' personal interest for successful implementation of anti-aging healthcare programs. The article emphasizes the necessity for companies to take measures aimed at motivating employees to participate in anti-aging healthcare programs. The authors of the article emphasize the increasing prevalence of lifestyle-related chronic diseases, their negative impact on the health of employees and the efficiency of companies, as a result of increased absenteeism from work due to illness and reduced work performance of employees. Based on the results of this study, a number of foreign and Russian studies, the authors came to the conclusion that the implementation of anti-aging healthcare programs at companies in regions of Russian Federation in order to preserve the employees' health and improve the efficiency of companies is currently extremely relevant. Based on the results of the survey, the authors also propose an algorithm for successful implementation of anti-aging healthcare programs at companies in regions of Russian Federation.

**Keywords**—anti-aging healthcare programs, anti-aging medicine, regions of Russian Federation, chronic diseases, disease prevention, healthy lifestyle, work performance, economic costs, economic efficiency

## I. INTRODUCTION

Recently, more and more attention has been paid to lifestyle-related diseases. Unhealthy lifestyle, associated with

risk factors for chronic diseases, such as low physical activity, unbalanced diet, bad habits, chronic stress leads to increased morbidity, reduced life quality and life expectancy. According to the Ministry of Health of Russian Federation 45% of the population Russia have chronic diseases [1]. The increase in the incidence of diseases and the deterioration of the health status of employees, in turn, becomes a serious burden for companies and affects their efficiency.

The purpose of this article is to justify the relevance, identify the conditions and propose an algorithm for successful implementation of anti-aging healthcare programs in companies of regions of Russian Federation.

Chronic diseases among employees increase the economic costs of companies as a result of an increase in employees' absenteeism from work due to illness and a decrease in their productivity, on the one hand, and an increase in the employers' expenses for healthcare of employees, on the other hand. This determines the crucial importance of researches describing the relationship between employees maintaining a healthy lifestyle, preserving their health and improving the efficiency of companies where they work [2].

## II. METHODS AND MATERIALS

In order to obtain primary data for the research, the authors of the article developed a questionnaire for conducting a survey among employees of Belgorod Region companies. Further, the primary data obtained by the method of interviewing were processed using the methods of statistical analysis.

The article presents the materials of the research results aimed at substantiating the relevance, conditions and

algorithm for the successful implementation of anti-aging healthcare programs at companies in the regions of the Russian Federation. The study was carried out on the basis of a survey of employees of Belgorod Region companies using the questionnaire designed by the authors. As part of the survey, data were obtained on the diseases of employees, their diet, physical activity, absence from work due to illness and preferable measures for implementation of anti-aging healthcare programs.

### III. RESULTS AND DISCUSSION

One of the areas of modern healthcare in which preventive measures can be successfully applied, in particular, measures to promote a healthy lifestyle and programs to prevent diseases, is anti-aging medicine [3].

In Russia, a number of research institutes and centers study anti-aging medicine: Russian Clinical and Research Center of Gerontology, Research Medical Center "Gerontology", St. Petersburg Institute of Bioregulation and Gerontology. However, it should be noted that studies in this area are at the initial stage of development. There are very few studies proving the relevance of anti-aging healthcare programs implementation at companies in the regions of Russian Federation, and offering recommendations for their successful implementation.

At present, a promising direction of healthcare development in Russia, along with treatment of chronic diseases, is the implementation of medical examination of the population with the aim of early detection and prevention of various diseases development. Therefore, anti-aging medicine is firmly strengthening its position, since it is primarily prevention, in particular, leading to healthy lifestyle to preserve health and prolong the life of the population.

Anti-aging health care program at a company is a program organized and paid for by the employer aimed at stimulating employees' personal responsibility for preserving their health and maintaining a healthy lifestyle, reducing the risks of health loss and increasing their individual effectiveness (work productivity) at work.

Anti-aging health care programs in companies usually consist of two blocks: lifestyle management programs and chronic disease management programs. The programs of the first block are mainly aimed at working with employees who have risk factors for health deterioration, such as bad habits (smoking, drinking alcohol, etc.), a sedentary lifestyle, obesity, etc., and are aimed at reducing these risks and preventing the development of chronic diseases. Disease control programs are aimed at working with employees who already have chronic diseases in order to compensate for diseases and prevent exacerbation [4].

The idea of implementing anti-aging healthcare programs at companies is relevant today, since according to statistics, most people older than 40 years old start to develop age-related changes: involutive changes in organs and tissues, decreased joint mobility, changes in the vascular wall, attention and memory deterioration and others that have a negative impact on the quality of life, in general, and ability to work, in particular.

Anti-aging healthcare programs implemented at companies should be aimed at both preventing the onset of diseases among employees (primary prevention) and at diagnosing and treating diseases in the early stages before

complications arise (secondary prevention). Primary prevention focuses on promoting healthy lifestyle and identifying risk factors to prevent the development of diseases, such as maintaining a low-fat and low-calorie diet, which can prevent the development of a number of diseases, in particular diabetes. Improving the health and quality of life of employees, with primary prevention, is associated with the prevention of diseases through lifestyle changes. Secondary prevention is aimed at achieving compensation for diseases and preventing exacerbations and relapses – for example, for someone with bronchial asthma, it is necessary to monitor the intake of prescribed medications in order to prevent an exacerbation in the form of an attack, which can lead to hospitalization [5].

This article presents the results of the study conducted at Belgorod Region companies aimed at substantiating the relevance of implementing anti-aging healthcare programs at companies in regions of Russian Federation and also determines the conditions and offers an algorithm for their successful implementation. Common chronic diseases of employees at Belgorod Region companies were identified within the framework of the study. The most common diseases among employees of Belgorod Region companies are diseases of the gastrointestinal tract, diseases of the musculoskeletal system, neurological diseases and hypertension. Statistics on the diseases prevalence among employees interviewed in the study indicate that most of the study participants lead a sedentary lifestyle, do not exercise or rarely exercise, have unbalanced diet and often experience stressful situations at work.

The most common bad habits and observed healthy lifestyle practices of employees of Belgorod region companies were revealed. There is a serious problem with physical activity, since most of the interviewed employees of Belgorod region companies rarely engage in sports and physical exercises.

Also, the majority of the interviewed employees of Belgorod Region companies choose diets that are not balanced and adequate to their condition. More than 50% of the interviewed employees of Belgorod Region companies are subject to chronic stress at work.

According to the results of the study, a link was established between employee absence from work due to illness and leading healthy lifestyle practices. Fig. 1 shows that employees who follow healthy lifestyle practices have less absence from work due to illness. This undoubtedly leads to an increase in the productivity of employees and an increase in the efficiency of the companies where they work.

In Fig. 1 we can see that the difference in absence from work among all interviewed employees of Belgorod Region companies and those employees who do not follow healthy lifestyle practices does not differ much within the range up to 2 weeks of absence at work due to illness. Thus, the rate of absence at work due to illness less than 1 week among interviewed employees who do not adhere to any healthy lifestyle practices is only 1.47% higher than among the total number of interviewed employees, and the rate of absences from work due to illness from 1 to 2 weeks is higher by 0.48%.

A significant difference in absenteeism between all interviewed employees of Belgorod Region companies who do not adhere to any healthy lifestyle practices is observed in the range of absenteeism from 2 to 4 weeks. Thus, the rate of

absence from work due to illness from 2 to 3 weeks among employees who do not adhere to any healthy lifestyle practices is 18.08% higher than among all interviewed employees of Belgorod Region companies. And the rate of absence from work due to illness from 3 to 4 weeks among employees who do not adhere to any healthy lifestyle practices is 12.29% higher compared to absence from work due to illness among all interviewed employees.

It should also be noted that there is a significant difference in the number of employees who were not absent from work due to illness. As we can see in Fig. 1, 39.94% of all interviewed employees of Belgorod region companies were not absent from work due to illness, while among interviewed employees who do not adhere to any healthy lifestyle practices, this indicator is by 33.56% lower and amounted to only 6,38%.

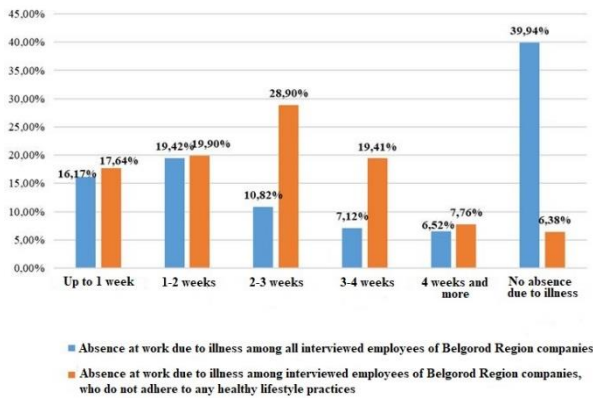


Fig. 1. Absence of employees from work due to illness within a calendar year at Belgorod Region companies

The results of the study show that bad habits, low physical activity, and unhealthy diet among employees of Belgorod Region companies lead to their health status deterioration and increase in the incidence of chronic diseases.

The deterioration in the health status of employees of Belgorod Region companies, in turn, leads to an increase in the employees' absenteeism due to illness, which in turn affects the efficiency of these companies.

Attention should be paid to the fact that for any company, the main purpose of implementing anti-aging healthcare programs is their economic efficiency, which is mainly achieved through increasing employee productivity by reducing absenteeism from work due to sickness as a result of the implementation of anti-aging healthcare programs at companies in the regions of the Russian Federation and reducing healthcare costs of employers.

The decrease in the efficiency of companies in the regions of the Russian Federation as a result of an increase in employee absenteeism due to illness occurs due to two groups of factors:

- effect on the amount and quality of business due to the decrease in the employees' work performance;
- an increase in the employee's expenditures on the employers' healthcare associated with the treatment of a new disease or an exacerbation of chronic diseases.

In addition to the factors indicated in Table 1 that cause the decrease in the efficiency of Belgorod Region companies due to the absence of employees from work due to illness, it

should also be noted that more than 50% of the employees at Belgorod Region companies interviewed in the study noted that they go to work being unwell.

These groups of factors are presented in Table 1.

TABLE I. FACTORS AFFECTING THE EFFICIENCY OF COMPANIES IN THE REGIONS OF RUSSIAN FEDERATION IN CONNECTION WITH THE ABSENCE OF EMPLOYEES FROM WORK DUE TO ILLNESS

Effect on the amount and quality of business	Increase of employers' expenditures on the employee's healthcare
- reduction of work performance of employees absent from work due to illness	- additional costs due to deadline delays
- part of the work performed by employees who are absent from work due to illness falls on other employees of the company	- additional costs related to using additional resources
- decrease in the quality of work performed by those employees who get extra amounts of work	- depending on the payment system, additional costs may arise for the remuneration of those employees who are responsible for performing the work of employees who are absent from work due to illness
- delays of deadlines	- expenses for sick leave payments for employees who are absent from work due to illness

It is obvious that the quality and volume of performance of employees who go to work, feeling unwell, decreases. This also leads to a decrease in the efficiency of the companies where they work [6].

When implementing anti-aging healthcare programs at companies in the regions of Russian Federation, it is important to ensure that the main conditions for their successful implementation, given below, are met.

1. Personal motivation of employees.

This condition involves implementation of measures aimed at motivating employees of companies to participate in anti-aging healthcare programs and comply with healthy lifestyle principles [7].

Employees of companies can be motivated to participate in anti-aging healthcare programs and lead a healthy lifestyle through a system of rewards and fines for compliance and non-compliance with healthy lifestyle practices, respectively. However, a survey conducted among employees of Belgorod region companies showed that the system of rewards and fines is not in the list of preferable ones for the interviewed employees.

According to the results of the conducted survey among the employees of Belgorod region companies, it was revealed that employees of Belgorod region companies are most interested in such types of anti-aging healthcare programs as support for physical activity and an active lifestyle, adherence to a balanced and healthy diet, periodic medical checkups. More than 50% of the interviewed employees prefer such healthy lifestyle supporting measures as compensation of gym costs by the employer, providing employees with conditions for a healthy balanced diet at the workplace, partial compensation of food costs by the employer and assistance in diseases prevention.

Less than 50% of the interviewed employees of Belgorod Region companies show interest in activities aimed at combating bad habits, providing psychological counseling

and stress relief, events and trainings aimed at promoting healthy lifestyle.

The low interest of interviewed employees of Belgorod region companies in such activities as providing psychological counseling and stress relief is confusing, since the study showed a fairly high level of frequency of stress situations at work among employees. Thus, approximately 22% of the employees of the Belgorod Region companies interviewed within the framework of the study note that they constantly experience stress at work, and about 45% of the interviewed employees experience stress at work from time to time.

2. Raising awareness among employees of companies about the importance of anti-aging healthcare programs for maintaining their own health. For example, about the importance of a balanced diet which most of the interviewed employees of Belgorod region companies do not follow, the importance of medical checkups for early diagnosis of diseases, their timely and accordingly more effective treatment, the relevance of the psychological component in health status.

3. Active campaigning of employees to participate in healthy lifestyle programs, for example, through the personal example of anti-aging healthcare programs implementing company managers.

4. Providing measures aimed to encourage employees to participate in healthy lifestyle maintaining programs – co-financing of physical activities, healthy diet, providing an effective medical examination system, etc.

5. Studying the results of scientific researches in the field of antiaging medicine.

6. Studying the experience of practical implementation of anti-aging healthcare programs at companies.

7. Evaluation of the possibilities of applying different experiences at a particular company and developing their own model of an anti-aging healthcare program, taking into account the characteristics of the company and the employees' health and psychological state.

It is important to note that there is no single model of anti-aging healthcare program that would be successful and effective for all companies. When developing an anti-aging program, one should rely on scientifically based practical strategies and, on their basis, build their own model for implementing an anti-aging program in a particular company.

Based on the studied Russian and foreign materials, we have developed an algorithm for successful implementation of anti-aging healthcare programs at companies in the regions of Russian Federation [8, 9]:

- to assign a group of employees responsible for the implementation of the anti-aging healthcare program and performing coordinating and information functions;
- to define measures included in the anti-aging healthcare program;
- to determine methods for assessing the effectiveness of the anti-aging healthcare program implementation at the company for the employer and employees;

- to compile questionnaires for the program participants at the stages of development and implementation of the anti-aging healthcare program at the company;
- to provide monitoring of the employees' health status at the company where the anti-aging healthcare program is implemented;
- to track changes in indicators of economic efficiency of implementing the anti-aging healthcare program at the company;
- to develop and implement measures to encourage employees to participate in the anti-aging healthcare program at the company;
- to create a system of indicators that will be used to evaluate the economic efficiency of the anti-aging healthcare program (the average number of working days of employees per year, the average number of employee absent days for all reasons (including due to sickness), the working time, working productivity, savings in employee healthcare costs, etc.);
- to perform measures at the company aimed to promote a healthy lifestyle among employees;
- to arrange educational training for employees of the company that implements anti-aging healthcare programs (for example, about the harmful effects of smoking);
- to refund employees' expenses related to maintaining a healthy lifestyle (for example, gym costs);
- create a corporate culture of healthy lifestyle among employees of the company through direct participation and on the example of senior managers.

#### IV. CONCLUSION

Thus, one of the major problems of the modern society from the standpoint of health and socio-economic aspects is the increasing prevalence of chronic diseases, leading to the decrease of companies efficiency as a result of increased absences of employees from work due to illness and reduction of their work performance.

In Russia, the number of people suffering from chronic diseases, often associated with a sedentary lifestyle and unbalanced diet, is growing annually. According to statistics, the number of people suffering from diabetes is 369.6 thousand people, respiratory diseases – 52832.6 thousand people, digestive diseases – 4856.3 thousand people [10]. However, there are no significant theoretical or practical studies on the implementation of anti-aging healthcare programs at enterprises in the regions of the Russian Federation to maintain public health and improve their work performance. At the same time, the need for medical guidance to determine how to maintain health, increase work performance of employees and contribute in the national economy on the level companies, regions and countries is becoming more and more obvious.

The results of numerous foreign and a number of Russian researches and practical experience of foreign and Russian companies indicate that the most promising and relevant intervention to change the situation in a positive way is to identify the conditions and design an algorithm for wide implementation of anti-aging healthcare programs at the

companies of regions of the Russian Federation aimed at maintaining the health of employees and improving companies efficiency. And the main conditions for successful implementation of anti-aging healthcare programs at the companies of the Russian Federation regions are personal motivation of employees, awareness of employees about the importance of anti-aging healthcare programs for their own health preservation, encouraging employees to participate in healthy lifestyle program, studying the results of scientific researches in the field of anti-aging medicine and the experience of practical implementation of anti-aging healthcare programs at companies, Evaluation of the possibilities of applying different experiences at a particular company and developing their own model of an anti-aging healthcare program, taking into account the characteristics of the company and the employees' health and psychological state.

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