

WELLSO 2017
**IV International Scientific Symposium on Lifelong Wellbeing
in the World**

**REGULAR PHYSICAL ACTIVITY AS IMPORTANT FACTOR IN
INCREASING EMPLOYEE WORK PRODUCTIVITY**

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Abstract

The human well-being directly depends on the economic state and continuous increasing the volume of output. Specialists of different scientific fields are studying the possibilities of growing the efficiency of production processes. Increasing the volume of output is related to the widespread automation of the manufacturing. The motor functions of workers are decreased on the background of the introduction of automated labor: static repetitive moves are prevailed; also it is associated with work on a personal computer. At the same time, blood supply of the body is impaired; the working efficiency is decreasing. Analysis of the basic factors affecting labor productivity is presented in this paper. These factors are age and sex signs, the level of physical activity of workers, working conditions, etc. Results of this research presents that regular physical exercises are main factor for increasing labor productivity of company workers (study was carried out based on the worker's data of Public Corporation "Tyumen Oil Research Center", Tyumen (TORC)). This company is mainly engaged in scientific research. The production activity of personnel has a physical activity low level in the workplace under such conditions. Also, it is shown that systematic physical load of workers leads to lower number of colds. In this regard, the number of days of incapacity for work is reduced; it increases the production process efficiency. Thus, it is necessary to popularize a healthy lifestyle and systematic physical exercises to improve the well-being and health of employees.

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Keywords: Physical exercises, employee, productivity, labor, factor.



1. Introduction

At present the well-being of society, its educational, political and cultural level are depend on technological progress and effective organization of production; in turn, it directly depends on the productivity of workers. Strong health and good physical training of a person are a guarantee of achievement of labor success and long-term preservation of its working efficiency.

Studies of scientists of various scientific fields (physiology, medicine, psychology, pedagogy) also show that systematic physical exercises, observance of the correct mode of work and rest are powerful means to improve well-being and prevent of many diseases of people of different ages and professions (Feilder, 2012; Kuznetsova et al., 2017).

For each type of professional activity there is a set of physical and psychological qualities that need to be improved. In other words, it is necessary to increase the resistance of the organism to the influence of unfavorable production factors. This is achieved by constantly consciously overcoming difficulties (for example, the ability to overcome increasing fatigue, sleep, anxiety, etc.) through regular physical exercises. Sports activity (for example, volleyball, swimming, basketball, etc.) fosters self-confidence, the will to win and result and the ability to competently spend the resources of the body and feel comfortable in the team.

A person, who is regularly engaged in physical training, more quickly and fully restores his strength after a working day, less susceptible to traumatism, quickly overcomes its consequences. Physical fitness significantly increases the body's resistance to unfavorable working conditions.

2. Problem Statement

The well-being of the society is connected with the level of labor productivity of the population, which, in turn, depends on the physical training of the workers.

3. Research Questions

3.1. What factors affect the productivity of workers?

3.2. How are regular exercises and labor productivity related?

4. Purpose of the Study

The aim of this research is to investigate the relationship between systematic physical exercises and worker productivity.

5. Research Methods

Automation of production has led to decrease of workers' activity. At this moment, most types of labor are characterized by physical inactivity (hypodynamia). Against this background, there are large neuro-emotional loads, which lead to the fatigue development. Low activity leads to a decrease in blood flow velocity; saturation of the brain with oxygen is impaired. Thus, the functional capabilities of the

body and work efficiency become limited; the person productivity is reduced. Let's consider the factors which influence on the worker's activity.

5.1. Age and gender features.

The age and gender features make a contribution to an estimation of labor productivity. In process of biological aging of workers, there is a decrease of the functional usefulness of organs and, in connection with this, a decrease of the body ability to restore to the next working day (Cherednichenko, 2004). We intentionally use the term "biological aging" (calendar and biological aging of the organism may not coincide). If we talk about the influence of gender factor, then according to the author Muradova: "Expressed gender differences in the tension of physiological functions, less work efficiency and labor productivity, the development of uncompensated fatigue in earlier periods, a significant frequency of violations in the implementation of specific functions are grounds for inclusion of gradations on the basis of gender to classification of severity and labor intensity" (Muradova, 2013).

5.2. Level of physical activity.

Most people engaged in mental work evaluate their motor activity as a low. Often this level of activity is not enough to maintain a good level of health and high work capacity. At such labor activity the employee needs to compensate for the lack of activity with help of regular physical exercises: at this time all labor and physical indicators of a person noticeably improve, which increases the body's capacity and increases work efficiency and labor productivity.

5.3. Personnel health state.

The data of survey, organized by HeadHunter and "Healthy office" teams (The organization of the workplace and motivation of staff in the office, 2009), show, that the "health state" factor is the most important in comparison with other factors which impact on the work efficiency (64%) (Figure 1).

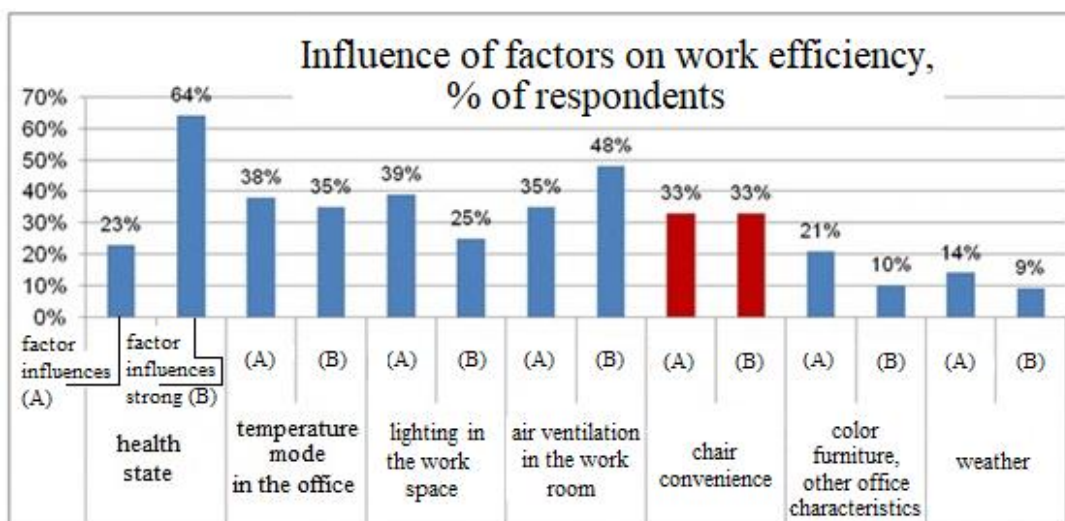


Figure 01. The data of the survey to identify the impact of factors on work efficiency

The impact of this factor on work productivity is undeniable. The state of human health can be assessed in various ways. For example, periodic medical examination helps to reveal the general picture of the health status of personnel. It is also necessary to promote a healthy lifestyle and regular exercises that positively effects on the level of health of workers.

5.4. General working conditions.

All production tasks can be divided according to the work character (mental or physical labor, duration and intensity of the work process, etc.), the conditions of the work process and the characteristics of the reaction of the worker's body during work activity (degree of fatigue, recovery time, etc.).

The study of the features of labor of any worker is possible on the basis of analysis of the professionogram of workers. Professionogram allows systemically to describe the social, psychological and other requirements for the subject of a defined profession and determines, based on these requirements, the qualities of personality necessary for this type of activity, which form the basis of professional aptitude of people.

It is convenient to use complete professionograms for analyzing the conditions which influence on the increasing labor productivity, i.e. it is possible to analyze the ready professionograms of workers (Electronic catalogue of professions, 2016).

5.5. Analysis of factors influencing the labor productivity

Data of a survey of workers of the Tyumen Oil Research Center, Tyumen (TORC) were used in the study. An analysis of the influencing factors was carried out according to the above factors, influencing the labor productivity, and based on the work features of the TORC team. As the workers of the company mainly has a mental workload (scientific work), gender factor does not effect on the final result in these conditions. Therefore, only the factor "age of the employee" is included in the questionnaire from the two proposed factors (age and gender factors). Information about the regularity of physical exercises of employees was analyzed to assess the factor "The level of physical activity". In terms of assessing the health status of TORC staff, the task was to identify the presence of colds of the employees, which led to temporary disability, for a period of 12 months at the time of the survey. In general, the working conditions of the employees of the company are identical (according to the ready professionograms of scientific workers); they are satisfactory. Based on the above, a questionnaire for TORC staff was developed (Figure 2).

Figure 2 demonstrates an external appearance of the questionnaire.

Dear colleague, Please, evaluate listed factors or fill a gap.			
Your age	<input style="width: 80%;" type="text"/>		
Please, tick the appropriate level of the factor.			
The factors	Regularly (2-3 times on a week)	Not regularly	I don't do
Regularity of the physical exercises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of colds (for 12 months)	More 3 times <input type="checkbox"/>	1 or 2 times <input type="checkbox"/>	0 <input type="checkbox"/>
Satisfaction of working conditions	More yes than no <input type="checkbox"/>		More no than yes <input type="checkbox"/>
Please, give your suggestions and recommendations below			
_____ Thank you!			

Figure 02. External appearance of the questionnaire

The questionnaire was distributed among TORC employees by e-mail and in paper form. The results of the study of the influence of regular exercises on labor productivity are given below.

6. Findings

The object of the study is the staff of the Tyumen Oil Research Center (Tyumen). The center was established in 2000; since the formation the average number of employees is 750. Employees of the Center carry out more than 90% of works on scientific support of projects (Milovidov et al., 2015); that is, intellectual activity with minimal physical exercises prevails in this company.

There were 384 participations of the study. Initially, the study of series by age factor of participants was planned. Data of a survey are showed that there is no large dispersion of age in the company. The average age of employees is 34 years. The employee demonstrates a maximum ability to work and sports in this age (29-38 years). 100 questionnaires of employees who regularly engage in physical exercises (volleyball, running, gymnastics, etc.), and 100 questionnaires of employees who do not exercises were chosen for analysis.

Figure 3 shows the results of the analysis of labor productivity for 12 months.

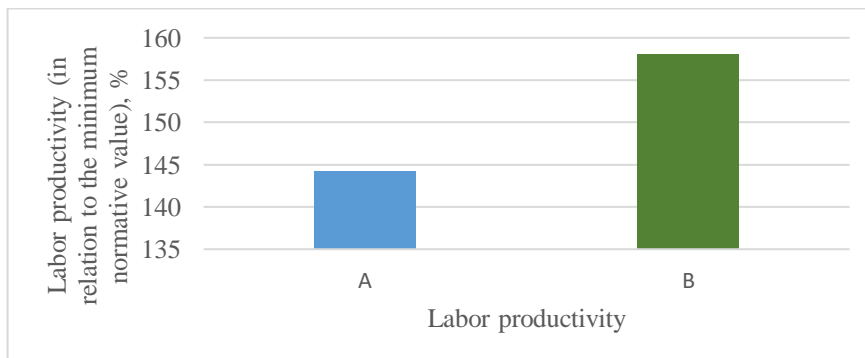


Figure 03. The results of the study of labor productivity indicators for workers who do not engage in physical exercises (A) and who are constantly engaged in them (B)

The data show that the labor productivity of workers, who do physical exercises, is 13.7% higher than that of those who do not exercise. Similar data were obtained in the studies of other authors (Kokoulina et al., 2016).

Analysis of the number of colds demonstrated that their number is 1.9 times greater in the group of workers, who are not engaged in systematic physical exercises.

7. Conclusion

As shown by the conducted studies, regular physical exercises are the main factor of increasing the overall labor efficiency and strengthening the health of workers. Thus, as a result of systematic physical training, labor productivity increases substantially in the company.

In turn, the increasing the labor productivity leads to an increase of the level of health and well-being of the population.

Acknowledgments

Collective of authors thanks the staff of the Tyumen oil research center (Tyumen) for participation in the study.

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