

ERGONOMIC ASSESSMENT OF PHYSIOTHERAPIST HEALTH STATUS

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Introduction: Ergonomics is a scientific discipline that helps people set more comfortable and productive working atmosphere by minimizing physical and mental stress. Ergonomics focuses on job design, improving conditions and product quality of work in order to reduce the risk of injury and work-related illness. By understanding and applying the principle of ergonomics, man can work more comfortably and efficiently, and can have a beneficial effect on health, pleasure and personal development. The aim of this study is to analyze the working conditions and workplace, to determine the influence of ergonomic factors on the health of physiotherapists, and to recognize stress factors in the workplace. The aim of the paper is also to examine whether the conditions, the way of work and the working environment affect the psychological and physical health of the physiotherapist.

Subjects and Methods: The study was prospective, descriptive and analytical on a sample of 30 examinees/physiotherapists employed in the Sarajevo Canton Sarajevo Health Center (CBR Saraj polje, Otoka and Vrazova). The research was conducted through the questionnaire: "Physical-ergonomic workplace evaluation", "Workplace stressor questionnaire", "Örebro Musculoskeletal Pain Questionnaire" (ÖMPQ).

Results: The greatest stressors for physiotherapists are overloaded work, inadequate material for work, inadequate number of employees and time limit for patient treatment. Örebro score to 100 points were scored by 21 (70%) respondents, and Örebro score over 101 points scored 9 (30%) respondents. The greatest ergonomic workplace problems are inadequate posture during work, lifting the load, repetitive movements.

Conclusion: Unfavorable ergonomic factors can lead to various disorders and illnesses to healthcare workers, and can lead to a high risk of chronic pain and the risk of losing working ability. Workplace stress represents a global public health problem, one of the major causes of occupational illness and sick leave generally, and is among the leading economic problems of developed countries.

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The authors declare no competing interests.

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INTRODUCTION

Ergonomics is a scientific discipline that focuses on working place creation, improving conditions and quality of work products in order to reduce the risk of injury and work-related illnesses and promote healthy attitudes towards the living and working environment (1). The goal of ergonomics is to provide maximum productivity with minimal costs (in this context, the cost stands for the physical or psychological health of the worker.) There is a large number of tasks in the work environment that exceed the capabilities of workers. There are certain jobs that require great efforts that cannot be performed for a long period of time. By using ergonomic principles, workers should be able to carry out injury-free tasks/jobs (2).

Health care workers may be exposed to various injuries, violence and stress at the

workplace and many other factors that can endanger their health. These factors or hazards can be: biological (e.g. viruses), chemical (e.g. cytostatics), ergonomic (e.g. work mode, workplace design), organizational (e.g. working in shifts) or psychosocial ones that include work-related violence. These factors may also affect physical and psychosocial health (3).

Health care workers, considering their huge responsibility towards human life and health, as well as exposure to specific dangers and hazards at workplace, such as chemical, biological and physical hazards, are classified into a group of risky occupations (4.) In addition to the dynamic and static load, majority of the occupation is dominated by increased pressure on sight and nervous system, what can lead to tension, fatigue, grumpiness and many other disorders (5). The aim of this prospective study was to analyze the

working conditions and the workplace, to determine the influence of ergonomic factors on the health of physiotherapists, and to recognize stress factors in the workplace. Another aim was to examine whether the conditions, the way of work and the working environment affect the psychological and physical health of physiotherapist.

SUBJECTS AND METHODS

The survey included 30 physiotherapists employed in the Sarajevo Canton Health Center (CBR Saraj polje, Otoka and Vrazova). The research was conducted in the period from 01.03. 2017. until 30.04.2017. The study was designed as prospective, descriptive, and analytical.

The study involved physiotherapists who had at least one or more episodes of pain in the lower back, spine, shoulder and thorax, and physiotherapists of both sexes aged 20 to 60 in the last 2 years. All respondents were tested using the questionnaire: "Physical-ergonomic workplace assessment", "Workplace stressors questionnaire", "Orebo questionnaire for musculoskeletal disorders."

RESULTS

A total of 30 respondents participated in the study, 60% (18) of which men and 40% (12) women. 56% (17) were at the age of 30-40, 37% (11) were 41-50 years old and 7% (2) were older than 51 years.

Table 1. Descriptive stressor values (Questionnaire about stressors at workplace)

	M	SD	Minimum	Maximum
Overwork	3.8	1.1	1	5
Bad business organization	3.1	1.1	1	5
Overtime work	1.1	1.3	1	2
Time limit for treating a patient	3.5	1.4	1	5
Inadequate funds for work	3.8	1.3	1	5
Scarce communication with co-workers	1.8	1.1	1	4
Administrative tasks	2.8	1.6	1	5
Insufficient number of employees	3.5	1.4	1	5
Conflicts with colleagues	1.7	1.1	1	5
Confronting the patients with terminal diseases	2.4	1.2	1	5
Fear the possibility of contagious disease	2.4	1.3	1	5

Processing the results obtained from the questionnaire regarding stressors at the workplace, the results showed that the greatest stressors for the physical therapists were overwork M=3.8 (SD=1.1), inadequate

funds for work M=3.8 (SD=1.3), inadequate number of employees M=3.5 (SD=1.4) and time limit for patient treatment M=3.5 (SD=1.4)(Table1).

Table 2. Orebro questionnaire

		N	%
Orebro total score	Up to 100 value	21	70%
	Over 101 value	9	30%
	Total	30	100%

By analyzing and processing data from the Orebro questionnaire, the results showed that 70% (21) respondents scored less than 100 points and 30%

(9) respondents scored more than 101 points. The 100-point limit point indicates the high risk of chronic pain and the risk of loss of working ability (Table 2).

Table 3. Orebro questionnaire

		N	%
Are ergonomic problems caused by:	Inadequate posture/body position during work	19	83%
	Repetitive work	11	48%
	Lifting of heavy things	13	57%
	Other	2	9%
	Total	23	100%

*p<0,05

Analyzing the data obtained from Orebro questionnaire, relating the multiple choice question, the greatest ergonomic problems at the workplace

of physiotherapists are inadequate posture during working 83% (19) of respondents, and lifting heavy items 57% (13) of respondents (Table 3).

Table 3. Orebro questionnaire

	Orebro	Stressors
Orebro	1,000	,466*
Stressors		1,000

The presence of statistically significant correlation between the overall level of stress experience and results on the Orebro questionnaire was checked. For that purpose, Spearman's correlation coefficient was used as a nonparametric coefficient, where results show that there is a statistically significant correlation (0.466) between the Orebro score and total stress level, meaning that respondents experiencing higher stress score higher on the Orebro questionnaire and vice versa (Table 4).

CONCLUSION

The analysis of the gender structure of respondents (physiotherapists) indicates a statistically significant increase in male gender (60%) in relation to female gender (40%). The evaluation of age structure of respondents shows that the largest number of respondents (56%) is aged between 30 and 40 years.

Data obtained by processing the Orebro questionnaire show that 30% of respondents scored more than 101 points during testing, indicating a high risk of chronic pain and risk of losing the working ability.

Stress factor analysis shows that the greatest stressors in the workplace are physiotherapist burdened with overwork, inadequate funds for working, inadequate number of employees and time limit for treating patients.

REFERENCES

1. Mačak-Hadžimerović A. Efekat aktivnih pauza na kliničke manifestacije nastale ponavljajućim pokretima pri radu na računaru. Doktorska disertacija. Sarajevo: Fakultet zdravstvenih studija Univerziteta u Sarajevu. 2015: 7-33.
2. Health and Safety Authority: Ergonomics in the workplace. Dostupno na: <http://www.impact.ie/wp-content/uploads/2015/07/HSA-Ergonomics-2006.pdf>
3. Froneberg B. Domaći i međunarodni odgovori na opasnosti na radu u zdravstvu (National and international response to occupational hazards in the healthcare sector), Ann NY Acad Sci 2006; 1076: 607-614.
4. World Health Organisation. http://www.who.int/occupational_health/activities/occupational_work_diseases
5. Andrijašević M. Workload, active breaks and leisure-time recreational activities. Arh Hig Rada Toksikol; 2012; 63 (Supplement 3): 59-65.



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