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Assesment of work ability in physiotherapists

Procjena radne sposobnosti fizioterapeuta

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Summary

Contemporary concepts of work ability emphasise the need to adjust work conditions to workers' ability, bearing in mind that the psychophysical abilities of workers change over time. A physiotherapist is a health expert who assesses plans and implements therapeutic and rehabilitation procedures.

The aim of this study was to determine the level of work ability of physiotherapists and to investigate its relations to some socio-demographic variables.

The study included 61 physiotherapists at the Zagreb University Hospital Centre. The average subject age was 42.8 ± 11.05. We used the Work Ability Index Questionnaire – WAI for assessing their work ability.

The results show that the average work ability index is 39.16 ± 6.9 points which indicates that the self-reported work ability of physiotherapists is very good. In addition, we found a negative correlation between work ability, age and duration of employment. The most frequent confirmed diagnoses were movement related disorders.

We can conclude that on average physiotherapists rate their work ability as very good, while those who are older and have been working longer show lower work ability.

Key words: work ability, physiotherapist, Work Ability Index Questionnaire

Sažetak

Moderni koncept radne sposobnosti naglašava potrebu prilagođavanja radnih uvjeta sposobnostima i mogućnostima radnika, pri čemu je potrebno razumjeti da se psihofizičke sposobnosti radnika mijenjanju tijekom vremena. Fizioterapeut je zdravstveni stručnjak koji procjenjuje, planira i provodi terapijske i rehabilitacijske postupke.

Cilj ovoga rada je bio procijeniti stupanj radne sposobnosti, te ispitati odnos između radne sposobnosti i sociodemografskih obilježja fizioterapeuta.

Istraživanje je provedeno na 61 ispitaniku zaposlenom u Kliničkom bolničkom centru Zagreb. Prosječna dob ispitanika bila je 42,8 ± 11,05 godina. Istraživanje je provedeno primjenom standardiziranog upitnika: Upitnik za određivanje indeksa radne sposobnosti (engl. WAI – Work Ability Index Questionnaire).

Prema Upitniku za određivanje indeksa radne sposobnosti, prosječan ukupni indeks radne sposobnosti iznosio je 39,16 ± 6,9 bodova, tj. prosječna radna sposobnost ispitanika samoprocijenjena je vrlo dobrom. Također, dobivena je statistički značajna, obrnuto proporcionalna povezanost između radne sposobnosti, te dobi i staža ispitanika. Rezultati istraživanja pokazuju da su najčešće potvrđene liječničke dijagnoze kod ispitanika oboljenja mišićno-koštanog sustava.

Istraživanjem je dokazano da fizioterapeuti starije životne dobi s duljim radnim stažom imaju manju radnu sposobnost, tj. utvrđena je statistički značajna, obrnuto proporcionalna povezanost između radne sposobnosti, te dobi i staža.

Ključne riječi: radna sposobnost, fizioterapeuti, Upitnik za određivanje indeksa radne sposobnosti

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Introduction

Many scientific disciplines study the concept of work ability, particularly those related to the research into the rehabilitation and working life of an individual. It is one of the important concepts in laws regulating health insurance.[1]

Work ability of employees depends on several factors. These are the duration of employment, age, working conditions, living conditions and family circumstances.

From the health-psychological point of view, work ability depends on the health status of the individual and the compatibility of his/her health and mental capacities with work demands and motivation.[2]

As personal potentials change with age, the change in work potential takes place with the development of new technologies and globalization, so the factors that affect work ability are continually changing.

In the late 1990s, Finnish scientists defined the indicator of work ability: Work Ability Index (WAI), to describe work ability in correlation with the current job requirements. The WAI is calculated using the WAI Questionnaire.

The WAI is higher when there is a better compliance between job requirements and worker's abilities and possibilities to meet them.

The work ability index is influenced by gender, age, health status, type of job, and conditions and mode of operation.[3]

Over the last decade, the concept of work ability has been changing in a more holistic direction.

The modern concept of work ability emphasizes the need to adapt working conditions to workers' abilities and capabilities whereby it is necessary to understand that workers' psychophysical abilities change over time.[4]

Provisions of the Regulation on Health and Safety at Work in the European Union, can also apply to psychosocial characteristics of work (89/391/EEC). The European Parliament adopted a resolution highlighting the need for compatibility between job characteristics and required skills with employees' needs, as well as the need to prevent discrepancies between job demands and employee opportunities (Resolution A4-0050/99). The resolution emphasizes problems concerning the lack of autonomy at work, monotonous and repetitive jobs, and the importance of ergonomics as well as the application of new technologies to improve working conditions related to health and safety at work.[5]

The Croatian Official Gazette published a new Labour Protection Act[6] in 2014.

A physiotherapist is a health professional who plans and carries out therapeutic and rehabilitation procedures, applying knowledge and skills in physio-therapy, clinical kinesiology, basic biomedical sciences, clinical medicine and other related areas.

A physiotherapist performs assessment, therapeutic treatment and evaluation of therapeutic effects.

A physiotherapist also participates in primary and secondary prevention procedures.[7]

A physiotherapist uses different techniques such as therapeutic exercises, special manual techniques and mobilization, facilitation of normal movement, and others. A physiotherapist performs the following forms of therapy: thermotherapy, electrotherapy, acupuncture.

In order to explain and describe physiotherapy as a particular profession, the World Confederation for Physical Therapy defines physiotherapy as an "independent health profession providing services for developing, retaining and restoring maximum mobility and functional abilities including support in circumstances where movement and function are jeopardized by aging, injury or illness".[8]

A physiotherapist works according to the ethical and professional principles of healthcare professionals in accordance with the Code of Ethics of The Croatian Council of Physiotherapists and established physio-therapy practices.

Due to work complexity, a physiotherapist needs to be in good physical condition, fit, skilled, with calm and precise movement performance. A physiotherapist should also have developed tactile, visual and auditory senses, as well as the ability for nonverbal communication (through touch, voice, facial expression, body movement, etc.) and skills of teaching, guidance and encouragement.

A physiotherapist works either in a team or individually, usually in the morning and afternoon, and very rarely at weekends.

Since a physiotherapist's job involves frequent standing, squatting, kneeling, bending, lifting, and handling patients, physiotherapists are exposed to numerous static and dynamic burdens during their work.

The objectives of this study are:

1) To assess the degree of work ability in physio-therapists;
2) To examine the relationship between work ability and socio-demographic characteristics;
3) To offer suggestions for improving physio-therapists' work ability.

Subjects and methods

A cross-sectional questionnaire survey was conducted at the Zagreb University Hospital Centre, Croatia, at the Department of Rheumatology and Rehabilitation, Department of Orthopaedic Surgery and Department of Rehabilitation and Orthopaedic Devices.

The questionnaire was distributed to all the physiotherapists (N=85) working at the Zagreb University Hospital Centre and 63 respondents completed it. The response to the survey was very good with the completion rate of 74%.

63 employed physiotherapists were involved, two of whom failed to respond and were excluded from further procedure (N=61) (96.8%). 3 physiotherapists had secondary school education, 53 had a BSc and 5 an MSc, 48 female and 13 male. The average age was 42.5±11.12. 31.1% of the subjects were aged from 40-49 and 27.9% from 50-59. Only 4.9 % were aged from 60-65 and approximately the same number of subjects were aged from 20-29 (19.7%) and from 30-39 (16.4%). Most of the subjects were aged between 40 and 59.

Half of the subjects (52.4%) were employed at a polyclinic, while 31.1% worked at a clinic and 16.4% in an intensive care unit (ICU).

A workgroup under the guidance of Professor Juhani Ilmarinen developed the Work Ability Index Questionnaire (WAI Questionnaire) at the Finnish Institute of Occupational Health in the 1990s. The main goal of this questionnaire is self-assessment of work ability.

Previous research on the validity and reliability showed that the WAI Questionnaire provides a good instrument for assessing work ability.

The WAI Questionnaire was used to identify risk factors for reduced work ability and as a method of choice for assessing the impact of intervention programs to improve work ability and eliminate factors of reduced work ability.

The WAI score is determined on the basis of answers to a number of questions that take into account the mental and physical demands of the job as well as the psychological and physical status of employees.

The WAI Questionnaire covers 7 items:

1. Subjective assessment of the current work ability compared to the best during life;
2. Subjective assessment of work ability in relation to physical and mental job demands;
3. Number of diseases diagnosed by a physician;
4. Subjective assessment of work impairment caused by diseases;
5. Sick leave during the past 12 months;
6. Personal prognosis of work ability 2 years from now;
7. Psychological resources (enjoying regular daily activities, physical and mental activity, optimism about the future).

The WAI score classifies work ability into four categories: poor (7-27 points), moderate (28-36 points), good (37-43 points), and excellent (44-49 points).[8-12]

The data was analysed by the SPSS 17.0. A descriptive statistical method (the arithmetic mean and standard deviation) was used for sample description. Categorical variables and value percentages were calculated and differences between the groups were tested by the T-Test and variance analysis. Relationships between continuous variables were expressed by the Pearson correlation coefficient.

The study was approved by the Ethics Committee of the University Hospital Centar Zagreb, reference number 02/21 AG.

Results

According to the WAI Questionnaire, the mean work ability was 39.16±6.9 points, the average work ability was good.

Self-assessment of work ability by categories at group level was: poor - 6.5%, moderate - 26.2%, good - 37.9%, and excellent - 29.6% (Picture 1).

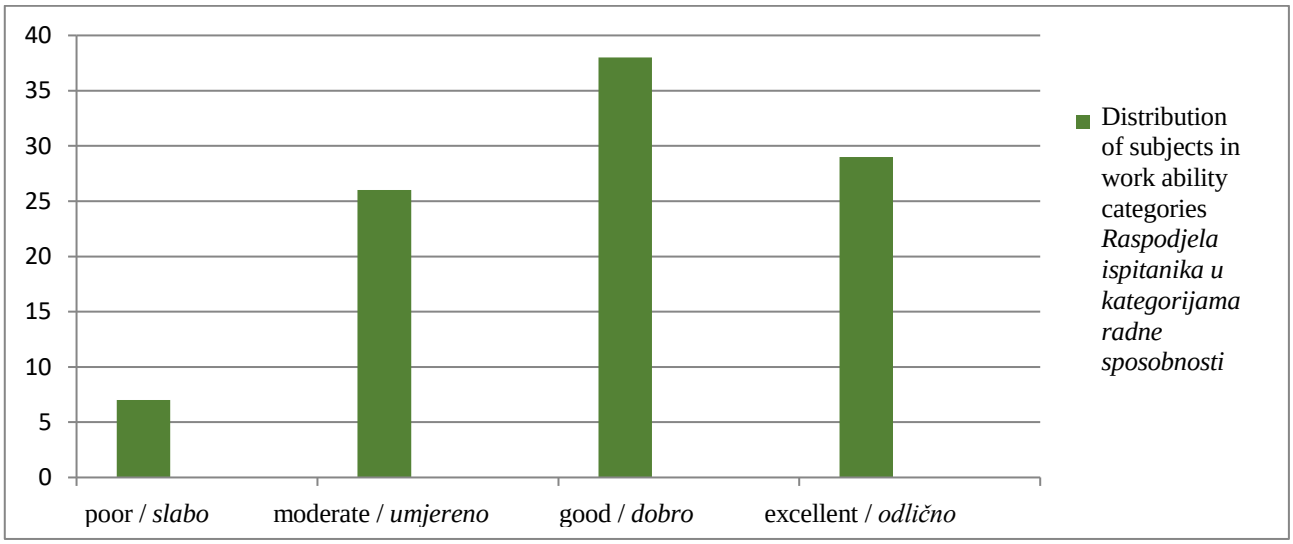
The average WAI in relation to gender was 38.54±6.9 points for women and 41.46±6.43 points for men.

Based on the conducted analysis, we can conclude that there is no statistically significant difference in work ability regarding gender (t=1.369; p=0.176).

In addition, we were interested in whether physiotherapists differ in work ability depending on the workplace. The variance analysis showed that there was no statistically significant difference (F=0.493, p=0.613). The average values are shown in Table 1.

With regard to workplace and age, the majority of physiotherapists employed at the polyclinic are aged from 50-59 (27.9%). There is an equal number of employed physiotherapists in the 30-39 and 40-49 age groups at the clinic (9.8%), while the majority of employed physiotherapists in ICU belong to the 40-49 age group (8.1%) (Picture 2).

A statistically significant inversely proportional relationship between work ability and age and performance was established. Thus, older age and longer duration of employment (total and at the current position) are associated with a lower level of work ability (Table 2).

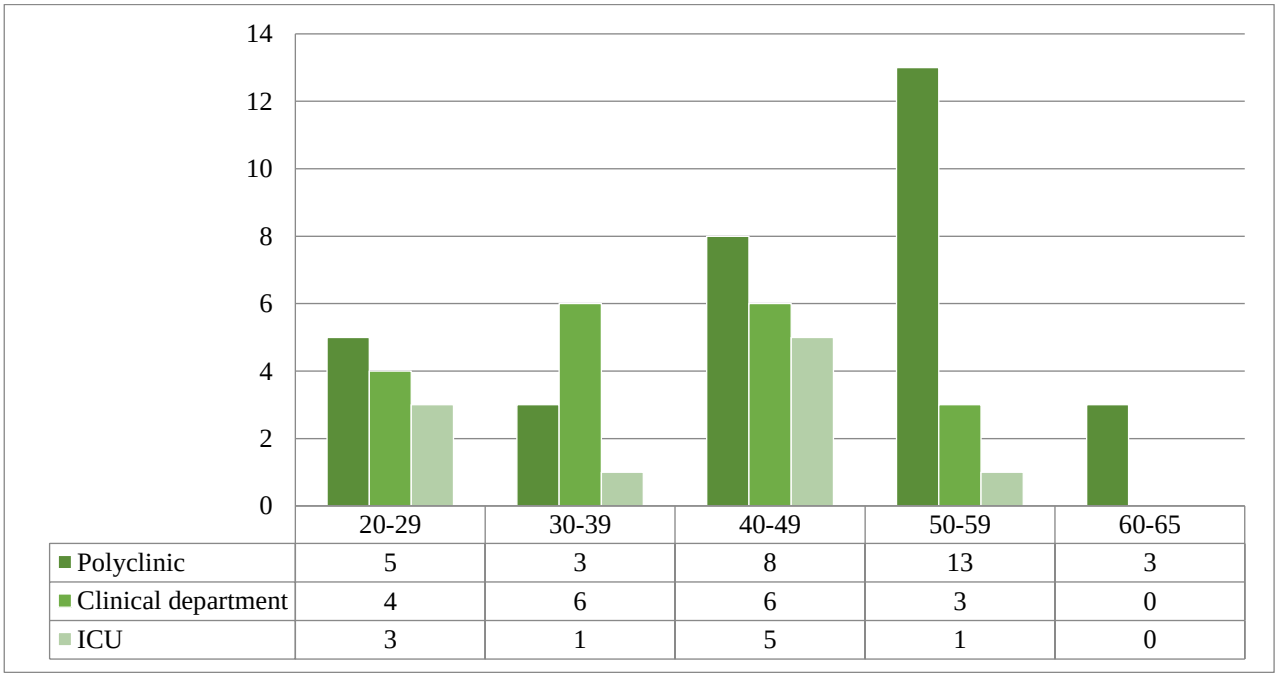


Picture 1 Distribution of subjects in work ability categories
Slika 1. Raspodjela ispitanika u kategorijama radne sposobnosti

Table 1 Average work ability regarding work place.
Tablica 1. Prosječna radna sposobnost u pogledu radnog mjesta.

	Workplace *Radno mjesto*	N	*M±SD
Work ability / *Radna sposobnost*	Polyclinic / *Poliklinika*	32	38.6±7.12
Work ability / *Radna sposobnost*	Clinical department / *Klinički odjel*	19	40.5±6.17
Work ability / *Radna sposobnost*	Intensive care unit / *Jedinica intenzivne njege*	10	38.6±7.65

* M±SD- Score/Mean

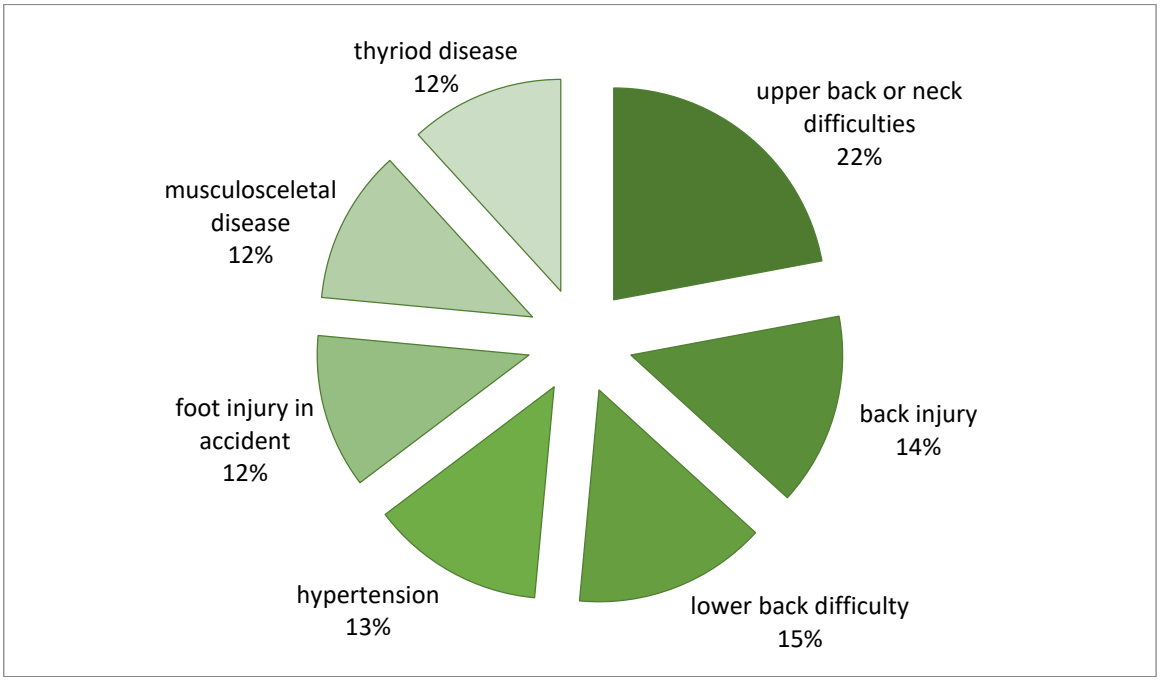


Picture 2 Number of participants regarding age and workplace
Slika 2. Broj sudionika s obzirom na dob i radno mjesto

Table 2 Correlations between ages, length of service, length of service at current work place and work ability.
Tablica 2. Korelacije između dobi, dužine radnog staža, radnog staža na trenutnom radnom mjestu i radne sposobnosti.

		Age *Dob*	Length of service *Dužina službe*	Length of service at current work place *Dužina službe na trenutnom radnom mjestu*
Work ability *Radna sposobnost*	*r	-0.57	-0.58	-0.50
	*p	0.001	0.001	0.001

*p - indicates a statistically value of p
**p - pokazuje statističku vrijednost p*



Picture 3. Most frequent confirmed medical diagnosis in physiotherapists
Slika 3. Najčešća potvrđena medicinska dijagnoza kod fizioterapeuta.

*f – frequency / *učestalost*
Thyroid disease / *Bolest štitnjače*
Musculosceletal disease / *Mišićno-koštana bolest*
Foot injury in accident / *Povreda noge u nesreći*
Hypertension / *Hipertenzija*
Lower back difficulty / *Poteškoća gornjeg djela leđa ili vrata*
Back injury / *Ozljeda leđa*
Upper back or neck difficulties / *Poteškoća donjeg djela leđa*

Picture 3 shows the most frequent diseases in physiotherapists diagnosed by a physician.

The most commonly confirmed medical diagnoses are musculoskeletal disorders. The results indicate that subjects self-assessed their work ability as good. According the WAI Questionnaire physiotherapists in this study named musculoskeletal disorders and recurrent pain associated with impairment (66%) as the most common health problems. The largest number of physiotherapists (24%) reported neck and low back impairment (16%), while the same number of subjects (13%) suffered from hand and foot impairments. 14% named hypertension and 13% thyroid disease. These diseases belong to the group of psychosomatic diseases.

Discussion

Employees in healthcare are continually at the top of the back injury list, primarily due to transferring and lifting patients. All employees are at risk of back injury caused by transferring and lifting patients.

A survey conducted among the staff at the Emergency Centre of the Zagreb University Hospital Centre (N=101) showed that 72% of subjects had problems with the musculoskeletal system, 31% had digestive disorders, 11% were obese, and 5% had diabetes. 16% complained about mild mental disorders (mild depression, tension, anxiety, insomnia).[13] Musculoskeletal disorders are the most common reported diseases on both studies: ours and in the Emergency Centre; they can be linked to ergonomic factors. A comprehensive Swedish study found that regular patient handling and lack of auxiliary devices were associated with back injuries among hospital staff. At the same time, back problems and other musculoskeletal disorders may be an important factor contributing to decreases in healthcare workers.[14]

Estimates in the United States suggest that every year 12% of hospital staff consider changing work to reduce workload, and 12-18% leave due to chronic back pain. Similar estimates are made in Europe. A recent Swedish study has shown that hospital staff who suffer from musculoskeletal impairments and who rarely use transfer devices leave their job more often.[15-19]

Ergonomic adaptation at the workplace, proper sitting position at the computer, and appropriate physical activity can prevent low back pain or the so-called "third millennium civilization disease".[14,15,18,20,21]

The level of work ability among physiotherapists tested in this study shows that subjects employed at Zagreb University Hospital Centre in Croatia, have good work ability.

The self-assessment of work ability results by categories at group level was: poor - 6.5%, moderate - 26.2%, good - 37.9%, and excellent - 29.6%. It is important to emphasize that 41 physiotherapists evaluate their work ability as good and excellent, 4 physiotherapists between ages 40 and 60 assess their work ability as poor, and 16 physiotherapists as moderate.

It is important to point out subjects with poor work ability assessment. According to literature, there is a high probability they will leave their workplace in the next five years, retire or change job unless something is done to improve their working conditions or their health.[18, 22]

A quarter of respondents rated their work ability as moderate; it is a warning that measures should be taken to improve their work ability.

The above organizational or individual measures to meet workers' job demands are necessary.

Professionally demanding jobs provide fuller self-realization, professional advancement and opportunity to move up the hierarchy so these workers maintain a better work ability than in less professionally demanding jobs.

The mean work ability in relation to gender was 38.54±6.9 points for women and 41.46±6.43 points for men. There was no statistically significant difference in work ability with regard to gender and work place. Due to a small number of male respondents the results cannot be generalized.

Statistically significant inversely proportional correlation between work ability and age is found. Hence, older age, longer duration of employment (total and at the current workplace) is associated with a lower level of work ability.

The obtained results suggest that measures to improve the work ability among older physiotherapists with longer work experience need to be taken.

Research on work ability in hospitals in Croatia (N= 1663) based on the WAI Questionnaire included nurses (N=228), nurses and technicians (N=1124), laboratory and radiology nurses (N=104), pharmacists (N=7), biochemistry engineers (N=14). Physio-therapists, psychologists and other health professionals were jointly analyzed as "other health professions" due to the small number of subjects in a particular group (N=135). The results showed that the average work ability in all health professions was 39-41 (33.50-44.25) or good.[4]

Another research conducted in 5 hospitals in Zagreb, Croatia, (N=1856; 67.5% nurses, 25.8% doctors, 2.0% other medical staff) showed that the average work ability of healthcare workers was good.

The WAI score was more statistically significant in men (M=40.43 ± 5.81) than in women (M=38.27 ± 6.32).[3]

Health professionals employed at emergency hospital admission had the WAI rated as "good" with the average value of 40.16.

Nurses/technicians had the best average WAI value (good 40.9), followed by nurses (good 39.8), then medical doctors (good 39.1) and administrators (good 38.9). Administrators are also the oldest group; it is most likely the reason for low WAI values.[13]

Croatian literature mentions no research conducted on the work ability of physiotherapists. Similar surveys in Croatia mainly investigate the work ability among medical doctors and nurses while other health professions are classified as "other healthcare staff".[3,4,13]

Health professionals are described as a group with high work stress and their work ability is of particular importance, both for them and for the wider community, due to the importance and sensitivity of their work.[13,23,24]

The Ministry of Health, in cooperation with the WHO Collaborating Centre for Occupational Health in the Republic of Croatia, the Ministry competent for labour issues, and organizations responsible for the protection and improvement of occupational health and safety of persons employed in healthcare developed the National Programme on Occupational Health and Safety for persons employed in healthcare for the period 2015-2020.[25]

The proposal of preventive measures to preserve and improve the work ability of physiotherapists should be in accordance with the national program. It includes measures ensuring the highest level of occupational health and safety in all work processes and at all levels of organization and management.

Based on this research, preventive measures can be divided in two groups: 1) measures at the organizational level and 2) measures at the individual level. The suggested measures at the organizational level in physiotherapy services include changes in job organization, employee involvement in decision-making and problem solving. Measures at the organizational level should include the following: an optimal number of employees to reduce work overload and lack of time, and assigning young physiotherapists to work on physically more demanding jobs.

Employee education on the identification of dangers, hazards and occupational safety with the aim of preserving employees' health is an essential precondition for maintaining work ability. At the level of individual measures, adequate health control is important with a particular emphasis on health in relation to work and workplace and the conditions and mode of operation.

Conclusion

Based on the research results, it can be concluded that the work ability of physiotherapists employed at Zagreb University Hospital Centre, Croatia, has been estimated as good, which can have a positive effect on the physiotherapists' productivity and efficiency.

Since some physiotherapists estimated their work ability as poor or moderate, it should be taken into account that this group of employees is at a greater risk of changing their job as well as developing health problems.

According the WAI Questionnaire, physio-therapists in this study reported a very high incidence of musculoskeletal pain, including neck and back pain, that may be related to the physically demanding nature of the physiotherapy profession.

We are of the opinion that interventions should primarily be aimed at the risk group. The interventions should include measures at the organisational level (assigning older physiotherapists to less demanding positions, increasing the number of employees in physically demanding workplaces, and a permanent education in health preservation) as well as on the individual level (improved workplace ergonomics and continuous health monitoring).

Further studies should determine if there is coherence between musculoskeletal pain and work demands in the physiotherapy profession, if musculo-skeletal pain is caused by ageing, or if it is a combination of both factors.

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