

# GEORGIAN MEDICAL NEWS

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ISSN 1512-0112

№ 4 (313) Апрель 2021

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ТБИЛИСИ - NEW YORK



ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии  
საქართველოს სამედიცინო სიახლენი

# GEORGIAN MEDICAL NEWS

No 4 (313) 2021

Published in cooperation with and under the patronage  
of the Tbilisi State Medical University

Издается в сотрудничестве и под патронажем  
Тбилисского государственного медицинского университета

გამოიცემა თბილისის სახელმწიფო სამედიცინო უნივერსიტეტთან  
თანამშრომლობითა და მისი პატრონაჟით

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ  
ТБИЛИСИ - НЬЮ-ЙОРК

**GMN: Georgian Medical News** is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board and The International Academy of Sciences, Education, Industry and Arts (U.S.A.) since 1994. **GMN** carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

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**GMN: Georgian Medical News** – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

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**Версия:** печатная. **Цена:** свободная.

**Условия подписки:** подписка принимается на 6 и 12 месяцев.

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Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press; International Academy of Sciences, Education, Industry and Arts (USA).  
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2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრაფიების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შედეგების ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფხიხლებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.



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## INFLUENCE OF A PSYCHOTYPE OF A PATIENT WITH MUSCULOSKELETAL DISORDER ON THE DEGREE OF WORK DISABILITY

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Disease prevalence among working-age population in Ukraine is as follows: circulatory diseases (23.93%), respiratory diseases (18.92%), diseases of the digestive system (10.7%), diseases of the genitourinary system (7.89%); diseases of the musculoskeletal system and connective tissue (5.55%) are in the fifth place and have growing extension dynamic [1].

Among musculoskeletal system (MSS) diseases, the most importance is placed upon osteoarthritis; inflammatory arthritis; back pain; musculoskeletal injuries, including sports injuries; crystalline arthritis (uretic arthritis and calcium pyrophosphate disease) and metabolic diseases, mainly osteoporosis [2].

Within the last decade, musculoskeletal system pathologies have moved up from the fourth to the third rank in the structure of primary factors leading to disability of adult population [3]. MSS disease is a major work-related disease among EU employees, which accounts for more than 59% of work-related diseases with above 2.5% extension rate among employees [4]. In the US, work-related MSS diseases of the people employed in manufacturing and service sectors account for about half of all types of musculoskeletal diseases [5]. Osseous-articular diseases significantly impair people's life quality through constant pain, functional activity disorders, loss of movement, burdening the lives of not only the patient and his/her family, but also society as a whole [6]. MSS work-related diseases are related to great expenses of employers and a state [7].

Much attention has been paid to the effectiveness of trauma and MSS disease rehabilitation. Funds spent on rehabilitation are frequently reimbursed [8,9]. The results of labor productivity restoration are important while studying rehabilitation of employees [10].

Therefore, supplementing and generating new data on work limitations and disability among people with MSS disorders, on physical therapy impact can help to change slightly priority healthcare strategies. It has been previously reported that patients with musculoskeletal system disorders have work limitations in all WLQ spheres [11]. Keysor et. al. [12] also note that disability level is high among people with musculoskeletal system disorders, and emphasize the need to develop effective programs of reducing work limitations and preventing disability. Besides, there are data on the influence of patient's psychological characteristics on the level of work limitations [13]. The biopsychosocial paradigm is generally accepted. Based on these data, it seems relevant to study the impact of physical therapy on the dynamic of work limitations among patients with musculoskeletal disorders, taking into account the type of attitude to the disease. It is assumed that the results of the study may be one of the factors shaping the biopsychosocial model physical therapy. The purpose of the work was determined based on the considered data and opinions.

Purpose: to determine specificities of work limitation dynamic amongst the patients with lower back and lower limbs musculoskeletal disorders grouped by their psychotypes within the outpatient program.

**Material and methods.** The Work Limitations Questionnaire

(WLQ) measures the degree to which employed individuals experience limitations on the job due to their health problems and health-related productivity loss [14-16]. The WLQ has 25 items, aggregated into four scales [14,16]: "Time Management"; "Physical Demands"; "Mental-Interpersonal Demands"; "Output Demands". Scale scores range from 0% to 100% and represent the reported amount of time for the previous two weeks of the respondents [11,17]. Thus, a higher percentage (score, index) corresponds to a worse result, i.e. greater work limitations. The WLQ Index Score and WLQ Productivity Loss Index (WLQ At-Work Productivity Loss Score) were calculated according to the guidance [17].

To determine the type of attitude towards the disease, a questionnaire Type of Attitude towards the Disease was used. It was developed at the Laboratory of Clinical Psychology at V.M. Bekhterev Institute [18].

According to the literature data [19,20], which refer harmonious, ergopathic and anosognostic types of reaction to the "rational" ones, patients were divided into G+ group (n=28, rational types of reaction to the disease) and G- group (n=27, irrational).

Within 2013-2015, the possibility of working with patients based on the IFC approach and biopsychosocial paradigm (function and activity disorders) was analyzed. The study involved 55 patients who completed a standard course of physical therapy during 2013-2015. The criteria for joining the group were the following codes of the International Classification of Functioning, Disability and Health: body structure s740, s750, s760 (s76002 Lumbar vertebral column); body function b710, b715, b730, b735, b740, b770. The following broad including criteria are determined by the fact that disorders in these structures affect locomotor abilities of a person, maintenance of an upright position and mobility. The patient was included in the study if he/she had disability in one or two structures. The samples included patients who had properly completed the questionnaires after signed an informed consent form; worked at least 15 hours per week, did not have comorbid conditions, and had systematically completed the entire course. The research was approved by the Institutional Ethics Committee (number 2/2013) and was carried out in compliance with the international principles of the Helsinki Declaration of the World Medical Association on ethical norms and rules for conducting medical research involving human.

A standard course of physical therapy comprised 12-15 classes (40-60 minutes each; therapeutic physical exercises and mechanotherapy according to the doctor's prescription), physiotherapy (magnetotherapy, electromyostimulation according to the doctor's prescription) and massage (7-8 procedures). Course duration was 5-6 weeks. Since the study was conducted at the outpatient stage, after restrictions on physical activity were removed, the emphasis was made on eliminating pain, increasing movement amplitude in the joints, improving balance and mobility. The methodology of applying these means of physical therapy varied according to disorder localization, had some differences, but common means or approaches to physical therapy were also selected.

Table 1. Indicators of work limitations according to the WLQ among orthopedic profile patients grouped by their psychotypes, %

Scales	Group G <sup>+</sup> (n=28)		Group G <sup>-</sup> (n=27)	
	M±SD	Me (25%; 75%)	M±SD	Me (25%; 75%)*
Time Management	55.0±17.32	60.0 (40.0; 67.5)	71.85±16.94	70.0 (60.0; 90.0)*
Physical Demands	55.8±14.89	54.2 (45.8; 66.7)	59.88±14.30	58.3 (50.0; 70.8)
Mental-Interpersonal Demands	50.09±9.24	50.0 (42.4; 57.7)	60.8±9.16*	61.1 (52.8; 66.7)
Output Demands	53.57±15.08	55.0 (40; 63.8)	66.11±15.28	65.0 (55.0; 80.0)*
WLQ Index Score	15.14±3.73	15.4 (11.0; 18.1)	18.45±3.66	18.0 (16.1; 21.8)*
WLQ At-WPLS	13.99±3.20	14.3 (10.4; 16.6)	16.79±3.04	16.5 (14.9; 19.5)*

notes: G<sup>+</sup> group – rational psychotypes; G<sup>-</sup> group – irrational psychotypes;  
WLQ – Work Limitations Questionnaire; At-WPLS – At-Work Productivity Loss Score; \*p<0.01

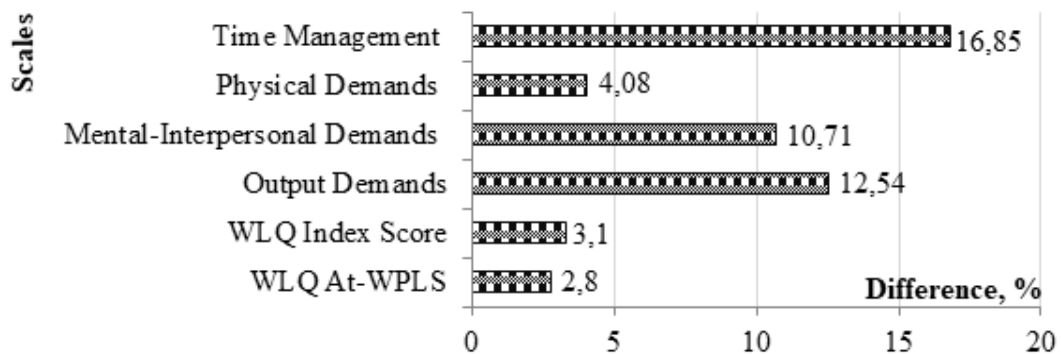


Fig. 1. The difference between the results of the patients grouped by a psychotype in work limitation indicators

All statistical analyses were conducted using SPSS 21.0 program (Chicago, IL, USA). Mean±standard deviation (M±SD), median (Me), upper and lower quartiles (25%; 75%) were measured. The nonparametric Mann–Whitney U-test and Student’s t-test was used to determine differences between the groups.

**Results and discussion.** The average age in G<sup>+</sup> group was 43±8.94 years, whereas in G<sup>-</sup> group it was 42.37±9.31 years (p>0.05). The share of males was 50% and 45.5%, respectively (p>0.05). The shares of patients in G<sup>+</sup> and G<sup>-</sup> groups with low back pain comprised 53.6% and 51.9%, with knee arthrosis 25% and 29.6%, with hip arthrosis – 10.7% and 7.4%, with knee musculoskeletal injuries – 25% and 25.9%, with hip musculoskeletal injuries – 10.7% and 7.4%. No significant differences between the groups in the distribution of pathology were found. The study did not include patients with end-stage pathologies.

Initial results of work limitation analysis amongst the patients grouped by the type of attitude to the disease are presented in Table 1. While comparing the results of the groups, the existence of conformity to normal distribution was taken into account.

We should note that no significant difference between the indicators of the groups was observed on the «Physical Demands» scale, which covers a person’s ability to perform tasks that involve physical strength, movement, stamina, coordination and flexibility.

The determined statistical differences confirmed the existence of greater work limitations in the group of patients with irrational psychotypes. Accordingly, the largest difference between the groups was observed on the scales with determined statistical differences (Fig. 1). The smallest difference was observed on the “Physical Demands” scale, taking into account the maximum possible level of index indicators (WLQ Index – 28.6%, and WLQ At-WPLS – 24.9% with restrictions on all scales on 100% level).

Before considering the specificities of work limitation dynamic among the patients with lower body disorders (Table 2), we should note that all WLQ scales had significant improve-

ments during a standard physical therapy course in both groups (p<0.01). Table 2 presents final M±SD and Me (25%; 75%) indicators; mean change indicator of the groups (Δx); the results of comparing final indicators taking into account conformity of distribution of the results to a normal one.

The “Time Management” scale had statistical improvements in both groups: decrease of scale mean values comprised 23.04% and 20.74% in G<sup>+</sup> and G<sup>-</sup> groups respectively (Table 2). Dynamic difference comprised 2.3%, which is 11.1% of the decrease in G<sup>-</sup> group. At the same time, G<sup>+</sup> group had no statistical advantage of Δx indicators (p>0.05). However, statistically significant differences were determined between final Me (25%; 75%) indicators of the groups in favor of the group with rational psychotypes (p<0.01). Difference between final mean values comprised 19.1% in G<sup>+</sup> and G<sup>-</sup> groups.

Specificities of the “Physical Demands” scale dynamic in G<sup>+</sup> and G<sup>-</sup> groups consisted in the fact that the decrease of scale mean values comprised 24.55% and 20.06%. Decrease difference comprised 4.49%, which is 22.4% of the decrease in G<sup>-</sup> group. Mean value dynamic was more pronounced in the group with rational psychotypes, but the significance of this advantage was not determined (p>0.05). A statistically significant difference in favor of G<sup>+</sup> group was determined between final M±SD results of the groups on the “Physical Demands” scale, which was not observed in the analysis of primary results. Thus, M±SD indicators were 31.2±6.76% in G<sup>+</sup> group and 39.8±10.03% in G<sup>-</sup> group (p<0.01). Difference between final mean values comprised 8.6%.

According to the results of the statistical analysis, specificities of the “Mental-Interpersonal Demands” scale dynamic consisted in the fact that the decrease of scale mean values comprised 16.17% and 12.14% in G<sup>+</sup> and G<sup>-</sup> groups respectively. Dynamic difference comprised 4.03%, which is 33.2% of the dynamic in G<sup>-</sup> group. Therefore, mean value dynamic was more pronounced in the group with rational psychotypes, but the significance of

Table 2. Indicators of work limitations according to the WLQ after repeated questioning according to rational (G<sup>+</sup>) and irrational (G<sup>-</sup>) psychotypes, %

Scales	Groups	M±SD	Δx	Me (25%; 75%)
Time Management	G <sup>+</sup>	32.0±12.72	-23.04	30.0 (20.0; 35.0)*
	G <sup>-</sup>	51.1 ±14.89	-20.74	50.0 (35.0; 60.0)
Physical Demands	G <sup>+</sup>	31.2±6.76*	-24.55	33.3 (25; 37.5)
	G <sup>-</sup>	39.8±10.03	-20.06	41.7 (33.3; 45.8)
Mental-Interpersonal Demands	G <sup>+</sup>	33.9±4.98*	-16.17	33.3 (28.5; 38.2)
	G <sup>-</sup>	48.7±7.40	-12.14	47.2 (44.4; 55.6)
Output Demands	G <sup>+</sup>	37.5±10.58	-16.07	40.0 (26.3; 40)*
	G <sup>-</sup>	51.5±11.67	-14.63	50.0 (40.0; 60.0)
WLQ Index Score	G <sup>+</sup>	9.89± 2.20*	-5.25	9.79 (7.81; 10.81)
	G <sup>-</sup>	14.02±2.81	-4.43	13.67 (11.65; 16.31)
WLQ At-WPLS	G <sup>+</sup>	9.40±1.98*	-4.59	9.32 (7.52; 10.24)
	G <sup>-</sup>	13.04±2.43	-3.75	12.78 (11.0; 15.05)

notes: WLQ – Work Limitations Questionnaire; At-WPLS – At-Work Productivity Loss Score; \*p<0.01

this advantage was not determined (p>0.05). At the same time, a statistically significant difference in favor of G<sup>+</sup> group was determined between final M±SD results of the groups. Thus, M±SD indicators were 33.9±4.98% in G<sup>+</sup> group and 48.7±7.40% in G<sup>-</sup> group (p<0.01). Difference between final mean values of G<sup>+</sup> and G<sup>-</sup> groups comprised 14.8%.

The decrease of the “Output Demands” scale mean values was 16.07% and 14.63% in G<sup>+</sup> and G<sup>-</sup> groups respectively. No statistical difference between Δx indicators was determined. A statistically significant difference was observed between final Me (25%; 75%) indicators of the groups: 40 (26.3; 40)% in G<sup>+</sup> group and 50 (40; 60)% in G<sup>-</sup> group (p<0.01). At the same time, difference between final mean values of the groups increased slightly and comprised 14%.

Like the scale indicators, the WLQ Index Score had statistical improvements in both groups (p<0.01). The decrease of index mean values comprised 5.25% and 4.43% in G<sup>+</sup> and G<sup>-</sup> groups respectively. Dynamic difference comprised 0.82%, which is 18.5% of the dynamic in G<sup>-</sup> group. It should be noted that the dynamic of Δx indicators had no statistical advantages in any of the groups (p>0.05). However, a statistically significant difference in favor of G<sup>+</sup> group was observed between final M±SD indicators of the groups: 9.89±2.20% in G<sup>+</sup> group and 14.02±2.81% in G<sup>-</sup> group (p<0.01).

The dynamic of WLQ At-WPLS indicator was statistically significant (p<0.01). The decrease of the scale mean values comprised 4.59% and 3.75% in G<sup>+</sup> group and G<sup>-</sup> group respectively. No statistical difference between Δx indicators was determined (p>0.05). Dynamic difference comprised only 0.84%, which is 22.4% of the decrease in G<sup>-</sup> group. At the same time, a statistically significant difference was observed between final M±SD indicators, as in the analysis of the first survey. Thus, M±SD indicators were 9.40±1.98% in G<sup>+</sup> group and 13.04±2.43% in G<sup>-</sup> group (p<0.01). As a result, difference between mean values of the groups increased slightly and comprised 3.64%.

Considering dynamic indicators during physical therapy course, it should be noted that all changes in work limitations were positive; the most significant absolute quantitative changes in the groups were observed in the “Physical Demands” and “Time Management” scales (Fig. 2).

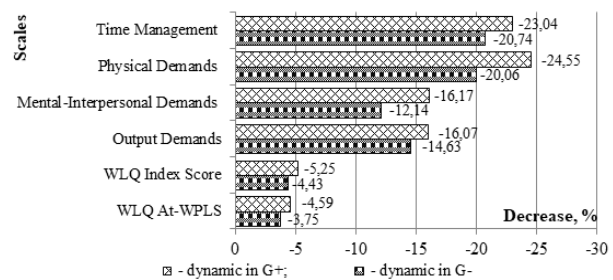


Fig. 2. The indicators of scale dynamic according to the WLQ in the groups of patients with rational (G<sup>+</sup>) and irrational (G<sup>-</sup>) attitudes to the disease during a physical therapy course

At the same time, the analyzed results of comparing dynamic between G<sup>+</sup> and G<sup>-</sup> groups are represented in Fig. 3, namely the results of subtracting the values of G<sup>+</sup> group Δx indicator from the values of G<sup>-</sup> group Δx indicator. The diagram reflects dynamic advantages (with “-” sign) of the group with rational psychotypes over the group with irrational psychotypes.

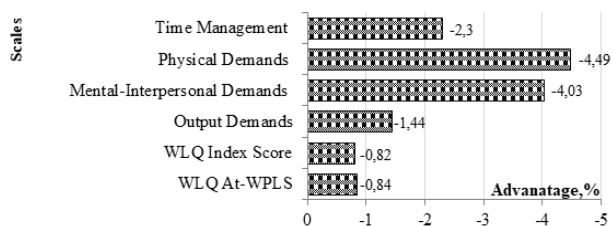


Fig. 3. Indicators of an absolute advantage in the work limitation dynamic according to the WLQ of the patients with rational psychotypes over the patients with irrational psychotypes

According to the results obtained (Fig. 3) the largest absolute difference in dynamic between the groups was observed on the “Physical Demands” and “Mental-Interpersonal Demands” scales.

To get an indicator of a relative advantage of the group with rational psychotypes in the reduction of work limitations, we calculated a percentage, which is an absolute advantage (Fig. 3) of the dynamic value of the group with irrational psychotypes (Table 2).

The diagram (Fig. 4) reflects relative advantages of the dynamic in the groups with rational psychotypes over the dynamic in the groups with irrational psychotypes.

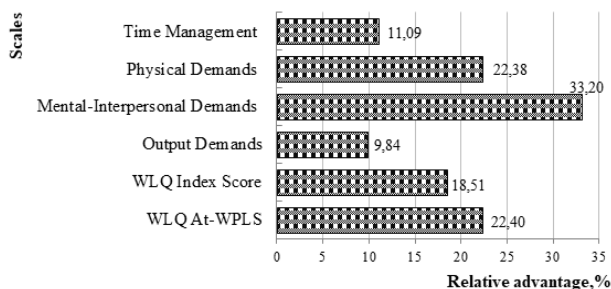


Fig. 4. Advantage in work limitation dynamic according to the WLQ of the patients with rational psychotypes over the dynamic of the patients with irrational psychotypes

When comparing the diagrams that represent absolute and relative advantages, one can immediately notice the change of indicators with the most significant differences. In particular, the advantage of index indicators became more pronounced. Relative advantage in the dynamic of the “Physical Demands” and “Mental-Interpersonal Demands” scales remained the most pronounced. This reflects the impact of the type of attitude to the disease on work limitation dynamic among the patients with musculoskeletal disorders.

After grouping the patients by the type of attitude to the disease, a number of significant differences in the indicators of work limitations were observed. Three scales of work limitations showed better results among patients with rational attitudes to the disease, despite the absence of differences between the groups in Physical Demands scale. Thus, patients with irrational attitudes to the disease had greater limitations on three scales, which is a result of peculiar perception of the disease, its symptoms and assessment of its impact on the working process.

Though being slightly better, dynamic indicators did not register any statistical advantages in G<sup>+</sup> group during physical therapy. Therefore, the determined statistical differences in the results of the groups were preserved slightly increasing. These results are important for working out an individualized physical therapy program according to the type of attitude to the disease, improving dynamic of work limitation indicators, and probably the quality of life.

We did not manage to find any studies of the impact of the type of attitude to the disease on WLQ indicators. In this way, the results obtained supplemented the findings of a number of authors focused on work limitations of the patients with musculoskeletal system disorders.

In particular, Walker [11] report in their survey that patients with rheumatoid arthritis had work limitations on all WLQ scales: “Physical Demands” (27.5%), “Mental-Interpersonal Demands” (15.7 %), “Output Demands” (19.4%) and “Time Management” (28.6%).

Bültmann et.al. [13] drew attention in her study to the dependence of WLQ-16 indicators on the level of depressive symptom among injured employees. Participants with high depression level were found to have worse indicators on the “Physical Demands” and “Time Management” scales.

Schmidt [21] used the WLQ-25 questionnaire to calculate the cost effectiveness of physical therapy for patients with musculoskeletal pain. Physical therapy was found to reduce expenses in the treatment group from an average level of \$ 3,846 per employee to \$ 2,087.

According to our study, physical therapy is effective in reducing work limitations, which confirms the results of other researchers stating its role in restorative treatment. Alongside with the disease severity, the factors increasing the likelihood of disability include underestimation of physical therapy role and absence of succession among healthcare institutions [22].

According to Danylova [23], 36.8% of the patients who had on-the-job injuries fully recovered their working capacity after timely rehabilitation, whereas only 9.1% of them recovered after an untimely Zeidler [24] concluded that economically outpatient rehabilitation is the best alternative as compared to inpatient one in case of musculoskeletal diseases. Pieber [25] referred sustained improvement of muscle strength, pain reduction, improved performance and life quality to the long-term effects of the outpatient rehabilitation program for patients with chronic low back pain.

**Conclusions.** The study confirmed the existence of greater work limitations amongst the patients with irrational psychotypes. The biggest difference between the groups was observed on the “Time Management” scale. All questionnaire scales had significant improvements during a standard physical therapy course in both groups. The most significant absolute quantitative changes in the groups were observed on the “Physical Demands” and “Time Management” scales. The largest absolute difference between the groups was observed on the “Physical Demands” and “Mental-Interpersonal Demands” scales. These results are important for future development of individualized physical therapy programs and improvement of work limitations dynamic among patients with irrational attitudes to the disease, since it is necessary to achieve better dynamic of the indicators among these patients.

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## SUMMARY

### INFLUENCE OF A PSYCHOTYPE OF A PATIENT WITH MUSCULOSKELETAL DISORDER ON THE DEGREE OF WORK DISABILITY

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Musculoskeletal diseases significantly impair the quality of life and work limitation. Purpose: to determine specificities of work limitation dynamic amongst the patients with lower back and lower limbs musculoskeletal disorders grouped by their psychotypes within the outpatient physical therapy.

The Work Limitations Questionnaire (WLQ) was used in the research. The study involved 55 patients who completed a course of physical therapy.

The data obtained confirmed the impact of the type of attitude to the disease on all indicators of work limitations according to the WLQ, except for the “Physical Demands” scale. The study confirmed the existence of greater work limitations amongst the patients with irrational psychotypes. The biggest difference between the groups was observed on the “Time Management” scale. All questionnaire scales had significant improvements during physical therapy in both groups. The most significant changes were observed on the “Physical Demands” and “Time Management” scales. The largest difference between the groups was observed on the “Physical Demands” and “Mental-Interpersonal Demands” scales.

After grouping the patients by the type of attitude to the disease, a number of significant differences in the indicators of work limitations were observed. Though being slightly better, dynamic indicators did not register any statistical advantages in group rational psychotypes during physical therapy. These results are important for working out an individualized physical therapy program according to the type of attitude to the disease, improving dynamic of work limitation indicators, and probably the quality of life.

**Keywords:** musculoskeletal system, injury, recovery, physical rehabilitation, therapeutic exercises, functioning.

РЕЗЮМЕ

ВЛИЯНИЕ ПСИХОТИПА ПАЦИЕНТА С НАРУШЕНИЕМ ОПОРНО-ДВИГАТЕЛЬНОГО АППАРАТА  
НА ДИНАМИКУ ОГРАНИЧЕНИЙ ТРУДОСПОСОБНОСТИ

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Заболевания опорно-двигательного аппарата ухудшают качество жизни и ограничивают трудоспособность.

Цель исследования - определить специфику динамики ограничений трудоспособности на протяжении амбулаторной программы физической терапии у пациентов с нарушениями опорно-двигательного аппарата в нижней части спины и нижних конечностях, отношения к болезни.

В исследовании использовался опросник по ограничению работоспособности (ООР), который состоит из 25 пунктов, объединенных в четыре шкалы: «Управление временем»; «Физические требования»; «Ментально-межличностные запросы»; «Спрос на продукцию». 55 пациентов, прошедших курс физической терапии, опрошены с использованием ООР.

Полученные данные показали влияние типа отношения к заболеванию на все показатели ограничений трудоспособности, кроме шкалы «Физические потребности». Исследование подтвердило наличие более серьезных ограничений в работе у пациентов с иррациональными психотипами.

Наибольшая разница между группами наблюдалась по шкале «Управление временем». В обеих группах все шкалы опросника показали значительное улучшение после курса физической терапии. Наиболее значительные изменения наблюдались по шкалам «Физические потребности» и «Управление временем». Наибольшая разница между группами наблюдалась по шкалам «Физические потребности» и «Ментально-межличностные потребности».

После группировки пациентов по типу отношения к заболеванию выявлен ряд значимых различий в показателях ограничений работоспособности. Несмотря на то, что показатели динамики были лучше, статистических преимуществ динамики в группе с рациональными психотипами на фоне физической терапии не зафиксировано. Полученные результаты значимы для разработки индивидуальной программы физической терапии в соответствии с типом отношения к болезни, улучшения динамики показателей ограничения труда и, возможно, качества жизни.

რეზიუმე

საყრდენ-მამოძრავებელი აპარატის დარღვევის მქონე პაციენტის ფსიქოტიპის გავლენა შრომისუნარიანობის შეზღუდვის დინამიკაზე

ს.ფედორენკო, ი.ონოპრიენკო, ვ.ვითომსკი, მ.ვითომსკაია, ა.კოველსკაია

უკრაინის ფიზიკური აღზრდისა და სპორტის ეროვნული უნივერსიტეტი,  
ფიზიკური თერაპიის და ერგოთერაპიის კათედრა, კიევი, უკრაინა

კვლევის მიზანს წარმოადგენდა შრომისუნარიანობის შეზღუდვის დინამიკის სპეციფიკის განსაზღვრა ფიზიკური თერაპიის ამბულატორიული პროგრამის მიმდინარეობის განმავლობაში პაციენტებში საყრდენ-მამოძრავებელი აპარატის დაზიანებებით ზურგის ქვედა ნაწილსა და ქვედა კიდურებში დაავადებებისადმი დამოკიდებულების სხვადასხვა ტიპის ჯგუფებში.

კვლევაში გამოყენებულია კითხვარი შრომისუნარიანობის შეზღუდვასთან დაკავშირებით, რომელიც მოიცავს 4 სკალად გაერთიანებულ 25 პუნქტს: “დროის მართვა”, “ფიზიკური მოთხოვნები”, “მენტალურ-ინტერპერსონალური მოთხოვნები”, “მოთხოვნა პროდუქციაზე”. ამ კითხვარის მიხედვით გამოიკითხა 55 პაციენტი, რომელთაც გაიარეს ფიზიკური თერაპიის კურსი.

მიღებული შედეგებით გამოვლინდა დაავადებისადმი დამოკიდებულების ტიპის გავლენა შრომისუნარიანობის შეზღუდვის ყველა მანევრებელზე, გარდა “ფიზიკური მოთხოვნებისა”. კვლევით დადასტურდა მუშაობაში სერიოზული შეზღუდვების არსებობა პაციენტებში ირაციონალური ფსიქოტიპით. ჯგუფებს შორის ყველაზე დიდი განსხვავება აღინიშნა სკა-

ლით “დროის მართვა”. ორივე ჯგუფში ფიზიკური თერაპიის კურსის შემდეგ კითხვარის ყველა სკალის მიხედვით გამოვლინდა მნიშვნელოვანი გაუმჯობესება. ყველაზე გამოხატული ცვლილებები აღინიშნა სკალებით “ფიზიკური მოთხოვნები” და “დროის მართვა”. ჯგუფებს შორის ყველაზე დიდი განსხვავება აღინიშნა სკალებით “ფიზიკური მოთხოვნები” და “მენტალურ-ინტერპერსონალური მოთხოვნები”.

პაციენტების დაჯგუფების შემდგომ დაავადებისადმი დამოკიდებულების მიხედვით შრომისუნარიანობის შეზღუდვის მანევრებლებს შორის გამოვლინდა რიგი მნიშვნელოვანი განსხვავებანი. მიუხედავად იმისა, რომ დინამიკის მანევრებლები უკეთესი იყო, რაციონალური ფსიქოტიპების ჯგუფში ფიზიკური თერაპიის ფონზე სტატისტიკური უპირატესობანი დინამიკაში არ დაფიქსირდა. მიღებული შედეგები მნიშვნელოვანია ფიზიკური თერაპიის ინდივიდუალური, დაავადებისადმი დამოკიდებულების ტიპის შესაბამისი, პროგრამის შემუშავებისათვის შრომისუნარიანობის შეზღუდვის დინამიკის მანევრებლების და, შესაძლოა, სიცოცხლის ხარისხის გაუმჯობესებისათვის.