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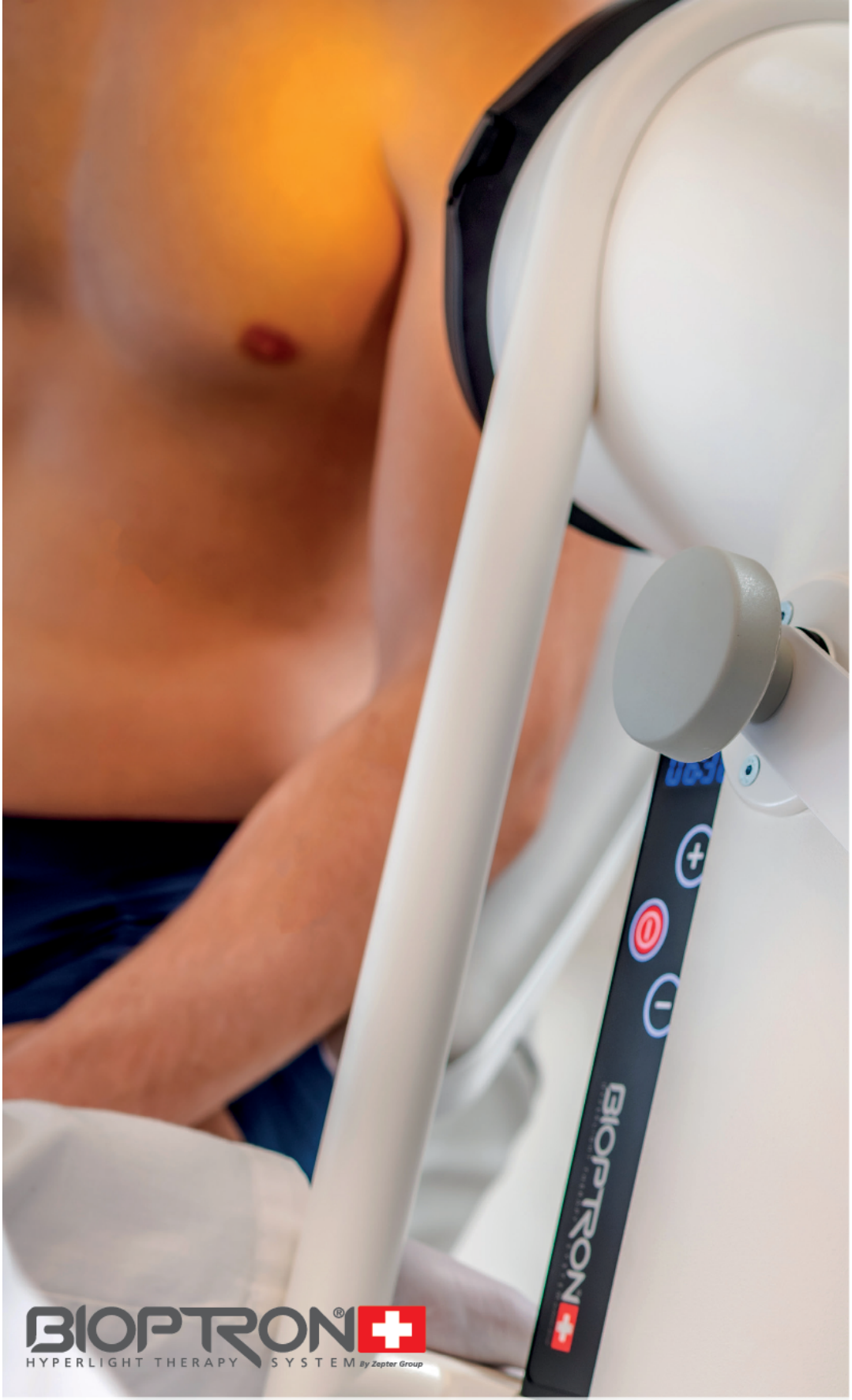

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nr 3/2021 (21)

Influence of classical massage on pain and functional state of people with lumbar discopathy

Wpływ masażu klasycznego na dolegliwości bólowe i stan funkcjonalny osób z dyskopatią lędźwiową

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Abstract

Introduction. Pain in the lumbar spine is a medical and social problem in highly developed countries. In Europe, about 25-43% of people suffer from them. Approximately 25-60% of patients suffer from chronic, progressive ailments, which lead to both incapacity for work and limitation of activities of daily living. The aim of the study was to assess the impact of classic massage on pain and functional state of people with lumbar discopathy.

Material and methods. The study included 61 people aged 45–50, attending therapy at the Independent Public Health Care Facility in Leżajsk due to pain in the lumbar spine. Patients were classified into 2 groups, depending on the applied rehabilitation program. The research tool was the NRS scale and questionnaires: ODI i RMDQ. The Chi-square test, Mann-Whitney U test, Wilcoxon test, Pearson linear correlation and Spearman rank correlation were used for analyses.

Results. After treatment statistically significant reduction of pain and improvement of func-tional efficiency were noted in both groups. A statistically significant positive relationship was found between the amount of improvement in functional capacity assessed by the ODI ques-tionnaire and the age of patients (R = 0.43; p = 0.026).

Conclusions. Classical massage has an effect on relieving pain and improving functional per-formance in people with lumbar discopathy. There are relationships between functional per-formance and age in people with lumbar discopathy. The improvement in functional perfor-mance is smaller with age. Body build is not a factor affecting the severity of pain and func-tional performance of people with lumbar discopathy.

Key words:

lumbar spine, pain, functional efficiency

Streszczenie

Wstęp. Dolegliwości bólowe kręgosłupa lędźwiowego stanowią problem medyczny i społeczny państw wysoko rozwiniętych. W Europie odczuwa je około 25–43% osób. U około 25–60% pacjentów obserwuje się przewlekłe, postępujące dolegliwości, które prowadzą zarówno do niezdolności zawodowej, jak i ograniczenia aktywności w życiu codziennym. Celem pracy była ocena wpływu masażu klasycznego na dolegliwości bólowe i stan funkcjonalny osób z dyskopatią lędźwiową.

Materiał i metody. Badaniami objęto 61 osób w przedziale wieku 45–50 lat, uczęszczających na terapię do Samodzielnego Publicznego Zespołu Opieki Zdrowotnej w Leżajsku z powodu dolegliwości bólowych lędźwiowej części kręgosłupa. Pacjentów zakwalifikowano do 2 grup, w zależności od zaaplikowanego programu usprawniania. Narzędzie badawcze stanowiła skala NRS oraz kwestionariusze: ODI i RMDQ. Do analiz zastosowano testy: chi-kwadrat, t-Studenta, U Manna–Whitneya, Wilcoxona oraz korelację liniową Pearsona i korelację rang Spearmana.

Wyniki. Po zakończeniu terapii w obu grupach odnotowano statystycznie istotne zmniejszenie dolegliwości bólowych i poprawę sprawności funkcjonalnej. Stwierdzono statystycznie istotne dodatni związek między wielkością poprawy sprawności funkcjonalnej ocenianej kwestionariuszem ODI a wiekiem pacjentów (R = 0,43; p = 0,026).

Wnioski. Masaż klasyczny ma wpływ na łagodzenie dolegliwości bólowych i poprawę sprawności funkcjonalnej u osób z dyskopatią lędźwiową. Występują związki między sprawnością funkcjonalną a wiekiem osób z dyskopatią lędźwiową. U osób bardziej zaawansowanych wiekiem poprawa sprawności funkcjonalnej jest mniejsza. Budowa ciała nie stanowi czynnika wpływającego na stopień nasilenia bólu i sprawność funkcjonalną osób z dyskopatią lędźwiową.

Słowa kluczowe:

kręgosłup lędźwiowy, ból, sprawność funkcjonalna

Introduction

The lumbar spine characterized by a large range of mobility deals with various motor tasks. Carrying the weight of the upper body makes it the most heavily loaded segment of the spine. It is located between two adjacent, less mobile sections, therefore significant axial loads affect this part of the spine [1]. Generally, pain in the lumbar spine is caused by functional disorders due to static and dynamic overloads. Aging, post-traumatic changes, congenital defects or spinal diseases that occurred during adolescence may also be the cause. Factors conducive to the occurrence of lumbar spine pain also include a sedentary lifestyle, obesity, heavy physical work, work at the assembly line, or exposure to vibrations. The pathomechanism of spinal disorders formation includes lesions of the intervertebral discs that are caused by decrease in their elasticity due of water loss in the nucleus pulposus and a decrease in the elasticity of the fibers of the annulus fibrosus [2-4].

Pain in the lumbar spine is a medical and social problem in highly developed countries. In Europe, about 25-43% of people suffer from them. Over 44% of the Polish population has experienced lumbar spine pain at least once in their lifetime. Approximately 25-60% of patients suffer from chronic, progressive ailments, which lead to both incapacity for work and limitation of activities of daily living [5]. Therefore, they are considered a challenge for modern physiotherapy. One of the most popular therapeutic treatments for patients is classic massage, which involves mechanical irritation of tissues. Mechanical stimuli, mainly in the form of pressure on tissues, are designed to affect the musculoskeletal system (muscles, tendons, joint capsules, periosteum, bones), skin, connective and adipose tissue, nerve endings in the skin, as well as blood and lymphatic systems [6]. Massage belongs to the oldest field of medical knowledge and was used in ancient times. In the 16th century, the French doctor Ambroise Paré conducted a study on the physiology of massage and recorded observations in a scientific work, recognizing massage as an official method of treatment. In the 19th century, the Swedish physician Per Henrik Ling made the greatest contribution to the development of massage. The classical massage school was established by a Dutch doctor Johan Mezger. In Poland, Polish physicians Izydor Zabłudowski, Jan Zaorski, Mieczysław Kosiński, Józef Jankowiak, Zygmunt Prochowicz, Tomasz Podgórski and Adam Zborowski contributed to the dissemination of the massage [7].

The aim of the study was to assess the impact of classic massage on pain and functional state of people with lumbar discopathy.

Research questions:

1. Does classic massage have an effect on relieving pain and improving functional performance in people with lumbar discopathy?
2. Are there links between the severity of pain and functional capacity and the age and BMI?

Material and methods

The study included 61 people attending therapy at the Independent Public Health Care Facility in Leżajsk due to pain in the lumbar spine. The age of the respondents was in the range of 45-50 years

(average age: x = 47.59 ± 1.55 years). Selection for research was purposeful. The following eligibility criteria were established: discopathy of the lumbar spine based on history, physical examination and medical records, age in the range of 45-50 years, spinal pain lasting for at least 12 weeks, participation in the whole therapy programme, adherence to the principles of ergonomics during the performance of everyday activities and written consent for participation in the study. Exclusion criteria were: neurological deficits, certain conditions after surgical procedures, e.g. discectomy, contraindications to treatments under the adopted therapy programme.

Patients were classified into 2 groups, depending on the applied rehabilitation program. The study group consisted of 33 people undergoing classical massage and individual gymnastics (average age $\bar{x}$ = 47.63 ± 2.00 years) and the control group of 28 people attending only individual gymnastics (average age $\bar{x}$ = 47.58 ± 1.39 years). Age was not a factor differentiating subjects from both groups (t = 0.61; p = 0.945).

For both groups, the physiotherapy programme included 10 treatment days (excluding Saturdays and Sundays).

In the study group, classical massage of the lumbar region of the spine was performed in the morning in the office. Relaxation and warming techniques were used: longitudinal and transverse stroking, longitudinal and transverse rubbing, longitudinal kneading, labile vibration, gentle shaking. Massage was applied daily before individual gymnastics. The duration of the procedure was 30 minutes. After the massage, the patients went to the gym for 30-minute individual gymnastics, which included exercises to strengthen the paraspinal muscles, relaxing and relieving the lumbar part of the spine, breathing exercises, including improving the work of the diaphragm, core stabilization exercises, strengthening of postural muscles. The therapy was conducted by a physiotherapist.

People from the control group attended individual gymnastics only. The types of exercises, methodology and frequency of therapy were the same as in the study group.

Patients qualified for both groups were educated on ergonomics during everyday activities and the importance of physical activity as well as proper nutrition in the prevention of spinal diseases.

There were 34 women and 27 men among all respondents. Both (study and control) groups were homogeneous in terms of sex: p = 0.753 (Table 1).

Tab. 1. Gender of study subjects

Gender	Study group (n = 33)		Control group (n = 28)	
	n	%	n	%
Women	19	58.0	15	55.0
Men	14	42.0	13	46.0
Chi-square test	$\chi^2(1) = 0.10$; p = 0.753			

Table 2 presents basic descriptive statistics and comparison of selected somatic features of the patients qualified for individual groups. There was no statistically significant intergroup differentiation in terms of body weight (p = 0.529), body height (p = 0.661) and BMI: p = 0.596.

Tab. 2. Comparison of somatic features in separate groups

Group	Mean ± SD	Max-min	Q25	Me	Q75	Student's t-test for independent variables
Body weight [kg]						
Study	75.85 ± 14.47	118.00–53.00	65.00	75.00	87.00	t = −0.63; p = 0.529
Control	78.14 ± 13.67	110.00–56.00	68.00	75.00	85.50	
Body height [cm]						
Study	170.70 ± 6.17	186.00–155.00	166.00	171.00	175.00	t = −0.44; p = 0.661
Control	171.57 ± 9.23	190.00–154.00	164.000	171.05	178.00	
BMI index						
Study	25.92 ± 4.04	34.11–18.78	23.59	26.35	28.41	t = −0.53; p = 0.596
Control	26.43 ± 3.27	35.29–21.00	24.69	26.11	27.63	

In terms of BMI in the study group, 14 people had normal body weight, 13 people were overweight, and 6 people were obese. In the control group, 10 people had normal weight, 15 were overweight, and 3 was obese. No statistically significant intergroup differentiation in body composition was found: p = 0.494 (Table 3).

Tab. 3. Body build of study subjects

Type of body build	Study group		Control group		Total	
	n	%	n	%	n	%
Correct	14	42	10	36	24	39
Overweight	13	40	15	53	28	46
Obesity	6	18	3	11	9	15
Chi-square test	$\chi^2(2) = 1.41$; p = 0,494					

The used research tool was the Numerical Raiting Scale) [8], Oswestry Disability Index (ODI) [9] and Roland Morris Disability Questionnaire (RMDQ) [10]. The subjects completed the form before the beginning of testing (examination I) and shortly after completion of rehabilitation (examination II).

In order to characterize the collected material, basic measures of descriptive statistics were calculated. The compliance of the results with normal distribution was verified using the Shapiro-Wilk test. Intergroup comparisons of qualitative features were made using the non-parametric Chi-square independence test. Differences in the average level of numerical features between the examined groups were assessed with Student's t-test for independent varia-bles or, alternatively, the non-parametric Mann-Whitney U test. To compare the results ob-tained in study I-II, within a given group Student's t-test for dependent variables or Wilcoxon pairs order test was used. For the study of relationships between variables meeting the assumption of distribution normality, Pearson's linear correlation (r) was used, and relationships between variables not meeting the normality distribution criterion were determined based on Spearman's rank correlation (R). Results were considered statistically significant if the probability level of the test was lower than the predetermined level $\alpha = 0.05$. The Stat Soft STATISTICA application (version 13.1) was used to process the test results.

Results

Data in Table 4 indicate that the level of pain intensity in people classified into individ-ual groups was similar both on the day of starting therapy ($p = 0.343$) and after it ($p = 0.569$). The mean change in pain intensity, determined by the difference in the results obtained on the basis of the NRS scale in examination II in relation to examination I, in the case of the study group was $\bar{x} = -1.88 \pm 1.32$ points and in the control group $\bar{x} = -2.04 \pm 1.88$ points. The Stu-dent's t-test for independent variables did not show statistically significant intergroup differentiation in this respect ($p = 0.704$).

Calculations with the Student t-test for dependent variables showed statistically significant intra-group differences in the results of examination I-II ($p < 0.001$). These differences indicate a statistically significant decrease in the severity of pain in both groups.

Statistically lower values were noted for each of the ODI questionnaire categories listed in the study group ($p < 0.05$). In the control group, statistically significant differences were not found only in the categories of "walking" and "sex life" (Table 5).

Tab. 4. Severity of back pain observed in particular groups

NRS	Study group			Control group			Student's t-test for independent variables
	Mean ± SD	Me	Max-min	Mean ± SD	Me	Max-min	
Examination I	6.21 ± 2.03	6.00	10.00–2.00	6.68 ± 1.74	7.00	10.00–4.00	t = −0.95; p = 0.343
Examination II	4.33 ± 2.25	4.00	8.00–0.00	4.64 ± 1.93	5.00	8.00–1.00	t = −0.57; p = 0.569
Student's t-test for dependent variables	t = 8.19; p < 0.001*			t = 5.74; p < 0.001*			
Difference	−1.88 ± 1.32	−2.00	1.00–(−4.00)	−2.04 ± 1.88	−2.00	1.00–(−7.00)	t = 0.38; p = 0.704

*α = 0.05

Tab. 5. Comparison of results obtained in individual categories of functional capacity based on the ODI questionnaire

ODI	Examination I			Examination II			Wilcoxon test
	Mean ± SD	Me	Max-min	Mean ± SD	Me	Max-min	
Study group							
1	2.88 ± 1.11	3.00	5.00–1.00	1.85 ± 1.25	2.00	5.00–0.00	Z = 4.19; p < 0.001*
2	1.70 ± 1.07	2.00	4.00–0.00	1.03 ± 1.07	1.00	5.00–0.00	Z = 3.77; p < 0.001*
3	2.85 ± 1.58	3.00	5.00–1.00	2.30 ± 1.57	2.00	5.00–0.00	Z = 2.83; p = 0.005*
4	1.55 ± 1.37	1.00	5.00–0.00	1.03 ± 1.21	1.00	5.00–0.00	Z = 2.98; p = 0.003*
5	1.91 ± 1.18	2.00	5.00–0.00	1.48 ± 1.09	1.00	5.00–0.00	Z = 2.74; p = 0.006*
6	2.52 ± 1.25	2.00	5.00–0.00	1.88 ± 1.34	2.00	5.00–0.00	Z = 3.31; p = 0.001*
7	1.85 ± 1.20	1.00	4.00–0.00	1.06 ± 1.14	1.00	4.00–0.00	Z = 4.01; p < 0.001*
8	1.70 ± 1.26	2.00	5.00–0.00	1.21 ± 1.29	1.00	5.00–0.00	Z = 3.17; p = 0.001*
9	2.03 ± 1.02	2.00	5.00–0.00	1.30 ± 0.95	1.00	3.00–0.00	Z = 3.82; p < 0.001*
10	2.24 ± 1.12	2.00	5.00–1.00	1.39 ± 1.37	1.00	5.00–0.00	Z = 4.10; p < 0.001*
Control group							
1	2.86 ± 1.18	3.00	5.00–0.00	1.75 ± 1.24	2.00	5.00–0.00	Z = 3.60; p < 0.001*
2	1.89 ± 1.26	2.00	4.00–0.00	1.29 ± 0.90	1.00	4.00–0.00	Z = 2.53; p = 0.011*
3	2.71 ± 1.27	3.00	4.00–0.00	1.86 ± 1.35	2.00	5.00–0.00	Z = 3.10; p = 0.002*
4	1.86 ± 1.48	1.50	5.00–0.00	1.54 ± 1.37	1.00	5.00–0.00	Z = 1.55; p = 0.120
5	2.21 ± 1.07	2.00	4.00–0.00	1.18 ± 1.19	1.00	4.00–0.00	Z = 3.43; p = 0.001*
6	1.75 ± 1.00	2.00	4.00–0.00	1.25 ± 0.93	1.00	5.00–0.00	Z = 2.07; p = 0.038*
7	1.89 ± 1.20	2.00	4.00–0.00	1.14 ± 0.89	1.00	3.00–0.00	Z = 3.46; p = 0.001*
8	1.68 ± 0.90	1.50	4.00–0.00	1.25 ± 1.00	1.00	4.00–0.00	Z = 1.79; p = 0.072
9	2.04 ± 1.00	2.00	4.00–0.00	1.43 ± 0.69	1.00	3.00–0.00	Z = 2.31; p = 0.021*
10	2.18 ± 1.63	2.00	5.00–0.00	1.14 ± 0.89	1.00	4.00–0.00	Z = 3.24; p = 0.001*

1 – Nasilenie bólu/Pain intensity; 2 – Pielęgnacja/Personal care; 3 – Podnoszenie/ Lifting; 4 – Chodzenie/Walking; 5 – Siedzenie/Sitting; 6 – Stanie/Standing; 7 – Spanie/ Sleeping; 8 – Życie seksualne/Sex life; 9 – Życie towarzyskie/Social life; 10 – Podróżowanie/Traveling
*α = 0.05

Data in Table 6 indicate that the functional capacity of people qualified to individual groups based on the ODI questionnaire was similar both on the day of starting therapy (p = 0.925) and after its completion (p = 1.000). The mean improvement in functional capacity, determined by the difference of results obtained in examination II in relation to examination I in the case of the persons in the study group was $\bar{x}$ = −13.15 ± 8.11 points and in the control group $\bar{x}$ = −14.57 ± 16.48 points. The Mann-Whitney U test showed no statistically significant inter-group differentiation in this respect (p = 0.690).
Calculations with the Wilcoxon test showed statistically significant intra-group differences in the results of examination I-II (p < 0.001), which indicate a statistically significant improvement in functional capacity in both groups.

Tab. 6. Functional capacity of patients based on the ODI questionnaire

ODI	Study group			Control group			Mann-Whitney U test
	Mean ± SD	Me	Max-min	Mean ± SD	Me	Max-min	
Examination I	42.42 ± 17.70	42.00	80.00–12.00	42.21 ± 16.05	40.00	72.00–10.00	Z = 0.09; p = 0.925
Examination II	29.27 ± 18.40	28.00	68.00–2.00	27.64 ± 12.78	24.00	60.00–8.00	Z = 0.00; p = 1.000
Wilcoxon test	Z_2 = 4.88; p < 0.001*			Z_2 = 3.92; p < 0.001*			
Difference	−13.15 ± 8.11	−14.00	4.00–(−34.00)	−14.57 ± 16.48	−11.00	8.00–(−54.00)	Z = −0.39; p = 0.690

*α = 0.05

Before starting therapy, the majority of the study group had a low or moderate level of disability caused by pain in the lumbar spine (12 people each). In examination II, the majority (14 people) declared minor disability and 13 did not show any disability characteristics. In the pretreatment control group, the majority (14 people) declared a minor disability, and in examination II the number increased to 30 people, and the lack of disability was recorded in 21 people. These changes were statistically significant both for the study ($p < 0.001$) and control group: $p = 0.005$ (Table 7).

Tab. 7. Comparison of the number of people presenting different levels of disability caused by back pain

Disability	Study group				Control group		
	Examination I		Examination II		Examination I		Examination II
	n	%	n	%	n	%	n
Lack (up to 20%)	3	9	13	39	2	7	
Low (up to 40%)	12	36	14	42	14	50	
Medium (up to 60%)	12	36	2	6	8	29	
Serious (up to 80%)	6	19	4	13	4	14	
Total (up to 100%)	0	0	0	0	0	0	
Wilcoxon test	$Z_2 = 4.19$; $p < 0.001$*				$Z_2 = 2.78$; $p = 0.005$*		

*α = 0.05

The data in Table 8 shows that the functional capacity tested on the basis of the RMDQ questionnaire in people qualified for both groups was similar both on the day of starting therapy ($p = 0.280$) and after its completion ($p = 0.218$). The mean change in the intensity of pain, determined by the difference in the results obtained in examination II in relation to I in the case of the study group was $\bar{x} = -2.09 \pm 3.23$ points and in the control group $\bar{x} = -1.86 \pm 3.30$ points. No statistically significant intergroup differentiation was found in this respect ($p = 0.612$).

There were statistically significant intra-group differences in the results of examinations: I-II in both the study ($p = 0.001$) and control groups ($p = 0.004$), which indicate an improvement in functional capacity in both groups.

Tab. 8. Sprawność funkcjonalna pacjentów na podstawie kwestionariusza RMDQ
Tab. 8. Functional capacity of patients based on the RMDQ questionnaire

RMDQ [scale 0–24]	Study group			Grupa kontrolna/Control group			
	Mean ± SD	Me	Max-min	Mean ± SD	Me	Max-min	Mann-Whitney U test
Examination I	5.61 ± 4.79	4.00	18.00–1.00	6.25 ± 4.07	5.50	14.00–1.00	$Z = -1.08$; $p = 0.280$
Examination II	3.52 ± 3.08	3.00	13.00–1.00	4.39 ± 3.46	3.50	16.00–1.00	$Z = -1.23$; $p = 0.218$
Wilcoxon test	$Z = 3.47$; $p = 0.001$*			$Z = 2.86$; $p = 0.004$*			
Difference	−2.09 ± 3.23	−2.00	3.00–(−13.00)	−1.86 ± 3.30	−1.00	2.00–(−11.00)	$Z = -0.51$; $p = 0.612$

*α = 0.05

A statistically significant positive relationship was found between the amount of improvement in functional capacity assessed by the ODI questionnaire and the age of patients: R = 0.43; p = 0.026 (Table 9).

Tab. 9. Relations of pain severity and functional capacity with age and BMI

Pair of variables	r/R	p
NRS (Examination I) & Age	r = −0.01	0.342
NRS (Examination II) & Age	r = −0.25	0.205
NRS (Examination I-II) & Age	r = 0.26	0.184
NRS (Examination I) & BMI	r = 0.34	0.081
NRS (Examination II) & BMI	r = 0.19	0.344
NRS (Examination I-II) & BMI	r = 0.09	0.662
ODI (Examination I) & Age	R = 0.09	0.640
ODI (Examination II) & Age	R = −0.31	0.121
ODI (Examination I-II) & Age	R = 0.43	0.026*
ODI (Examination I) & BMI	R = −0.06	0.751
ODI (Examination II) & BMI	R = −0.09	0.650
ODI (Examination I-II) & BMI	R = −0.12	0.548
RMDQ (Examination I) & Age	R = 0.17	0.179
RMDQ (Examination II) & Age	R = 0.17	0.178
RMDQ (Examination I-II) & Age	R = −0.01	0.945
RMDQ (Examination I) & BMI	R = 0.24	0.067
RMDQ (Examination II) & BMI	R = 0.26	0.404
RMDQ (Examination I-II) & BMI	R = 0.06	0.667

*α = 0.05

Discussion

The analysis of available literature indicates reports in which the therapeutic effects of massage were analyzed. Tools were often used in the form of questionnaires and scales to determine the level of pain, the impact of pain on functional capacity, psychosocial functioning and the quality of life of patients. Cherkin et al. [11] based on a systematic review of randomized, controlled studies published since 1995, assessing the therapeutic effectiveness of classical massage and spine manipulation and acupuncture in people with nonspecific back pain, they found that massage is the most effective form of analgesic therapy, spine manipulations have little clinical advantages compared to other commonly used therapy methods, while assessing the effectiveness of acupuncture requires in-depth scientific research. Juntakarn et al. [12] found a similar but short-term effect of traditional Thai massage and joint mobilization in reducing pain and improving performance in patients with chronic non-specific back pain. Patients qualified for each group attended 30-

minute procedures twice a week for 4 weeks. In turn, Kumar et al. [13] evaluated the effectiveness of Ayurvedic massage in 64 people with chronic low back pain. Subjects attended the massage for 2 weeks and were followed up during the next 2 weeks. The results of the VAS scale and the RMDQ questionnaire showed that the therapy used was effective in terms of alleviating back pain and improving functional performance in the short time follow up. The authors noted the need to continue research that includes longer follow-up periods to assess the long-term effects of this form of massage. Hernandez-Reif et al. [14] compared the effects of 5-week therapy in 24 people with lower back pain, randomly classified into 2 groups. Patients attended therapy twice a week, and the duration of a single therapeutic session was 30 minutes. Compared to progressive muscle relaxation, massage treatments have been found to be more effective in relieving pain, reducing stress hormone levels, and symptoms associated with chronic low back pain. Takamoto et al. [15] considered the results of randomized studies of 63 patients with acute pain in the lumbar spine and found that 2-week therapy 3 times a week, consisting of compression of myofascial trigger points in combination with massage gives much better results compared to superficial massage without compression of myofascial trigger points. Puszczałowska-Lizis and Bober [16] based on a study of 100 women with chronic lumbosacral spine pain of discopathic etiology, found that vibration massage and classic massage in a similar way reduce the frequency of painkiller medication and limit physical activity and improve functional efficiency. In addition, vibrating massage compared to classical massage has a better effect in terms of reducing the intensity and frequency of pain. Zhang et al. [17] evaluated the effectiveness of Chinese massage in combination with central stabilization exercises in 92 people with non-specific low back pain, which was divided into 2 groups. Patients from the study group were given massage and exercises, while patients from the control group were given massage only. After completion of the 2-week therapy, improvement was observed in both groups, but no statistically significant intergroup differences were found in this respect. On the other hand, subsequent tests carried out at an 8-week interval, showed better results only for patients from the study group. The authors concluded that including central stabilization exercises in the procedure increases the therapeutic effect. Kamali et al. [18] evaluated the effects of 10-day massage therapy preceding the exercises of paravertebral muscles stretching and central stabilization, compared to physical therapy (TENS currents, ultrasound and vibration therapy) in 30 patients with subacute and chronic nonspecific low back pain. A more beneficial effect of the therapy containing massage treatments was found to reduce the intensity of pain and the functional capacity of the examined people. Bellido-Fernandez et al. [19] assessed the effect of massage on alleviating pain in the lumbar spine in a group of people aged 20-65 with pain for at least 12 weeks with the ODI questionnaire and Schober's test. Eight massage sessions lasting 30 minutes were used. As a result, there was a decrease in the severity of pain, an improvement in functional capacity and an increase in the flexibility of the

lumbar spine. Majchrzycki et al. [20] based on studies of 59 people aged 51.80 ± 9.00 years with chronic back pain showed that therapy in the form of deep tissue massage, performed in a careful and gentle manner, gives a similar effect to combination therapy combined with deep tissue massage and treatment with non-steroidal anti-inflammatory drugs. Zhanq et al. [21] observed a better effect of a therapeutic program including deep tissue massage and lumbar traction compared to a program consisting only of lumbar traction. An algometer was used to assess pressure pain threshold in muscle tone, and the severity of pain was assessed using the VAS scale.

In our material it was found that both therapy programs reduce pain and functional limitations in a similar way. However, it is worth noting that there was no improvement in functional capacity in the categories of "walking" and "sex life" in persons exercising only individual gymnastics. These results emphasize the importance of classic massage treatments that promote relaxation, and thus reduce back pain, resulting in improvement in these important areas of human life.

According to some authors [22] the final result of therapeutic treatment may be influenced by various factors, such as the masseur's experience, techniques used, strength used, size of the area covered by the procedure, duration and frequency of application. Elder et al. [23] evaluated the long-time effect of ten 30-minute massage treatments on pain, quality of life and functional fitness of 104 people using primary health care for lumbar spine problems. Both 12 and 24 months after the end of therapy, favorable results were observed in terms of reducing pain intensity, improving fitness and quality of life. For people over 49 years of age, better results in terms of pain and fitness were recorded compared to younger adults. In own analyzes, the relationship between pain intensity and functional performance was assessed, as well as age and BMI values. The positive relationship between the amount of improvement in functional performance assessed with the ODI questionnaire and the age of patients suggests that with age, the improvement in functional capacity is smaller. Body build is not a factor affecting the severity of pain and functional capacity of people with lumbar discopathy.

Summing up, it should be emphasized that the topic raised in this study is a part of a comprehensive discussion on the effectiveness of therapeutic methods used in patients with back pain syndromes. It is a main problem that faced by most therapists dealing with rehabilitation of such patients. Analysis of the available literature and the results of own research indicate the need for long-term studies in order to more fully assess the effectiveness of massage in the treatment of symptoms of spinal dysfunction.

Conclusions

1. Classical massage has an effect on relieving pain and improving functional performance in people with lumbar discopathy.
2. There are relationships between functional performance and age in people with lumbar discopathy. The improvement in functional performance is smaller with age. Body build is not a factor affecting the severity of pain and functional performance of people with lumbar discopathy.

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