Grzegorczyk Michał, Majcher Piotr, Brodowicz-Król Magdalena, Kozioł Łukasz, Stasiak Elżbieta. Evaluation of the life quality of patients with lumbosacral spine pain performing sedentary work after using Kaltenborn-Evejth manual therapy techniques. Journal of Education, Health and Sport. 2018;8(11):458-491. eISNN 2391-8306. DOI http://dx.doi.org/10.5281/zenodo.1850607
http://ojs.ukw.edu.pl/index.php/johs/article/view/6341

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part B item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eISSN 2391-8306 7

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 05.11.2018. Revised: 20.11.2018. Accepted: 30.11.2018.

Evaluation of the life quality of patients with lumbosacral spine pain performing sedentary work after using Kaltenborn-Evejth manual therapy techniques

Michał Grzegorczyk[1], Piotr Majcher[2], Magdalena Brodowicz-Król[3], Łukasz Kozioł[4], Elżbieta Stasiak[5]

Department of Rehabilitation Physiotherapy at the Department of Rehabilitation and Balneotherapy at the Faculty of Health Sciences Medical University of Lublin

Department of Pediatric Nursing Faculty of Health Sciences Medical University of Lublin

Department of Oncology and Environmental Health Care, Faculty of Health Sciences, Medical University of Lublin

Abstract

Introduction: Pain in the lumbosacral spine is a substantial problem of modern civilization. It leads to lowering the quality of life and to the reduced functioning in social and professional context. This problem mainly affects people with sedentary work such as drivers and office workers. Long-term work in one position and a frequent lack of physical activity are two of the factors conducive to the occurrence of pain in people doing work in a sitting position.

Aim of the study: To assess the influence of Kaltenborn-Evejth manual therapy techniques on the quality of life of people doing sedentary work.

Material and Method: The research was carried out in the Medi-Sport Rehabilitation and Sports Center from March to October 2018. The study included 60 people doing sedentary work of which 37 were women and 23 men. The Oswestry Questionnaire was the research tool. In the study group there were 21 people aged 30-40, 23 aged 41-50 and 16 aged 51-60.

Results: The use of Kaltenborn-Evejth manual therapy techniques in people doing sedentary work reduced pain in the lumbosacral spine, improved its functions, which improved the quality of life of patients. After the therapy, the severity of pain in the lumbosacral spine decreased.

Conclusions: Techniques of Kaltenborn-Evejth manual therapy mobilization significantly reduce pain in the lumbosacral spine, which improves the quality of life of persons performing sedentary work. The severity of pain in the lumbosacral spine decreased after the therapy.

Key words: quality of life, lumbosacral pain. manual therapy, sedentary work

INTRODUCTION

Pain syndromes of the lumbar spine have become a significant problem in modern society.

Adoption of the standing posture by man enabled faster and more efficient movement, but exposed the spine to much higher loads. The sedentary work mode, the lack of movement, the continuous rush of the modern man makes an increasing number of patients report to physiotherapy offices due to chronic lower back pain.

The author's interest in the Kaltenborn-Evejth manual therapy became the motivation for undertaking the research, as well as the wish to check the effectiveness of this method as a way to reduce pain in the lumbosacral spine, improve its function, which would advance the quality of life of the respondents who perform sedentary work .

OBJECTIVE AND REASERCH PROBLEMATIC

The main aim of the work is to assess the means for immediate help for people performing sedentary work, by reducing pain in the lumbosacral spine, improving its function, and thus advancing their quality of life, thanks to the manual therapy using the Kaltenborn-Evejth method.

The implementation will be possible after having answered these research questions:

1. In which age group is the pain most important for the quality of life?

2. How does the intensity of the pain change after therapy?

3. How did the therapy affect the pain experienced by patients while standing?

4. How did the therapy influence the possibility of lifting heavy objects by patients?

5. To what extent did the therapy affect the possibility of patients resting in a sitting position?

6. To what extent did the therapy improve self-care activities?

7. How much did the therapy help patients to walk freely?

8. To what extent has the therapy improved the patients' sense of comfort while travelling?

9. To what extent did the therapy improve the quality of sleep in patients?

10. To what extent did the therapy improve the quality of social life of the respondents?

MATERIAL AND TEST METHOD

The research group included 60 people performing sedentary work (drivers, office workers) with a diagnosed pain syndrome of the lumbosacral spine. Among the respondents, three age groups were distinguished. In the first 30-40 age group, there were 21 people, in the second 41-50 age group there were 23 people, in the third group 51-60, 16 people. The tests were carried out at the Medi Sport Rehabilitation and Sports Center in Lublin.

The study excluded patients with oncological tumors and patients after neurosurgical procedures of the lumbar spine. Patients did not take painkillers during the therapy.

THE STUDY

Patients diagnosed with lumbosacral spinal pain were subjected to rehabilitation using Kaltenborn-Evejth method techniques. Treatments were performed every other day in the afternoon. Functional massage techniques, transverse massage, mobilization of hypomobile segments and traction were applied. Before starting the rehabilitation, the patients were asked to complete the "Oswestry Questionnaire". After a series of 10 procedures performed with the selected method, the patients received the same questionnaire, which examined the quality of life after the therapy.

THE RESULTS: ANALYSIS AND INTERPRETATION

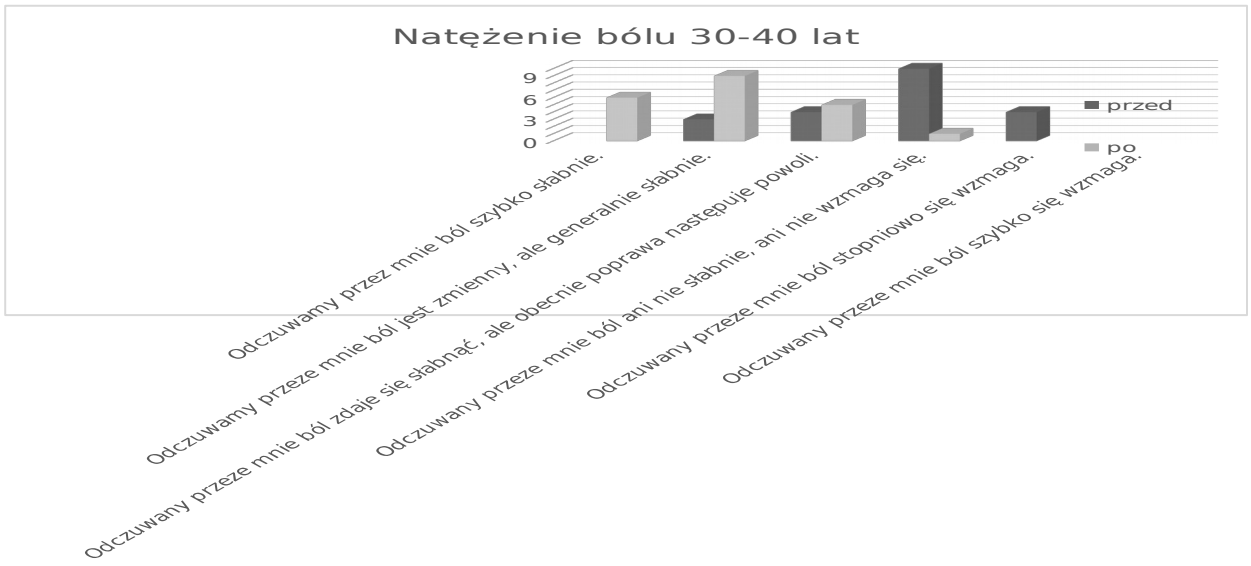
In the assessment of the impact of lumbar spine disorders on the quality of life, it is extremely important to determine the dynamics of pain. Whether the pain is present throughout the day,

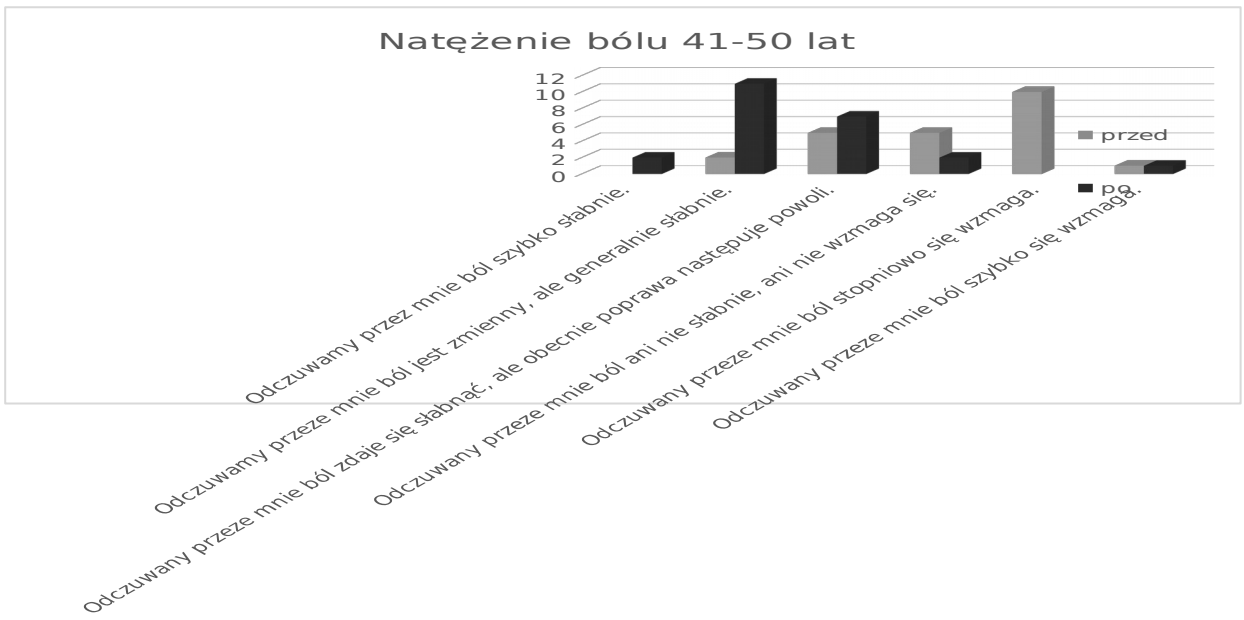
whether it is intermittent and how its intensity changes is of great importance to the patient and largely determines his perception of everyday functioning. In the study group before the treatment, the pain increased in 29%, and in 2% these changes occurred quickly. In 40% of subjects the pain was steady, and in 23% the pain weakened, but it was a slow process. After the therapy, as much as 61% of patients had a marked improvement, the pain became slightly perceptible and rapidly weakening. However, out of 69% of patients who did not see improvement before the therapy or even felt the worsening of the symptoms, after the therapy only 7% (4 people) remained. In one person, the therapy did not bring the desired effects. It cannot be ruled out that the patient, after the initial improvement and despite the therapist's recommendations, lifted something heavy or made a move that aggravated the symptoms again

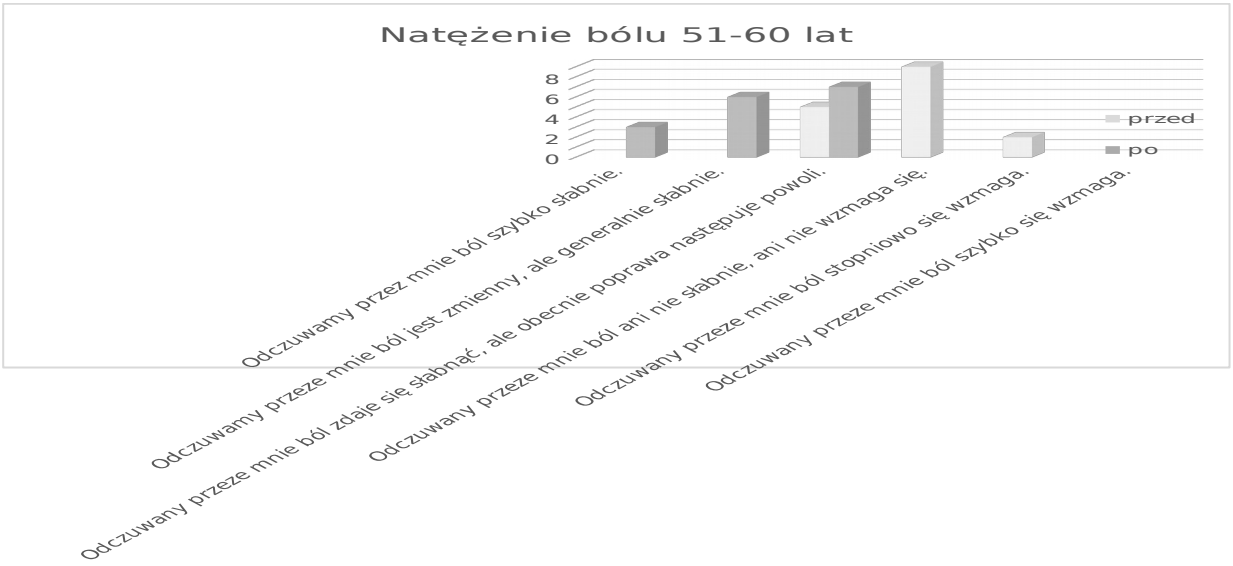
Table 1 Pain intensity

Source: own study

	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	before	after	before	after	before	%	after	%
The pain I feel fades quickly	0	6	0	2	0	3	0	0%	11	18%
The pain I feel is changeable but generally weakens	3	9	2	11	0	6	5	8%	26	43%
The pain I feel seems to diminish, but the improvement is slow	4	5	5	7	5	7	14	23%	19	32%
The pain I feel is neither weak nor intense	10	1	5	2	9	0	24	40%	3	5%
The pain I feel increases gradually	4	0	10	0	2	0	16	27%	0	0%
The pain I feel is rapidly increasing	0	0	1	1	0	0	1	2%	1	2%


Natężenie bólu 30-40 lat
9
6
3
0
przed
po
Odczuwamy przez mnie ból szybko słabnie.
Odczuwamy przeze mnie ból jest zmienny, ale generalnie słabnie.
Odczuwany przeze mnie ból zdaje się słabnąć, ale obecnie poprawa następuje powoli.
Odczuwany przeze mnie ból ani nie słabnie, ani nie wzmaga się.
Odczuwany przeze mnie ból stopniowo się wzmaga.
Odczuwany przeze mnie ból szybko się wzmaga.


Natężenie bólu 41-50 lat
12
10
8
6
4
2
0
przed
po
Odczuwamy przez mnie ból szybko słabnie.
Odczuwamy przeze mnie ból jest zmienny, ale generalnie słabnie.
Odczuwany przeze mnie ból zdaje się słabnąć, ale obecnie poprawa następuje powoli.
Odczuwany przeze mnie ból ani nie słabnie, ani nie wzmaga się.
Odczuwany przeze mnie ból stopniowo się wzmaga.
Odczuwany przeze mnie ból szybko się wzmaga.

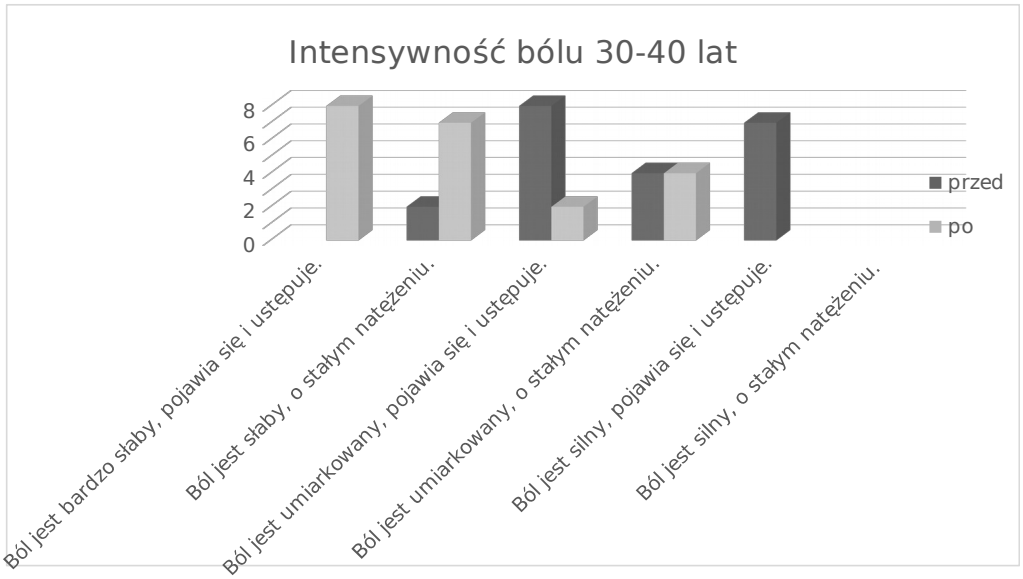


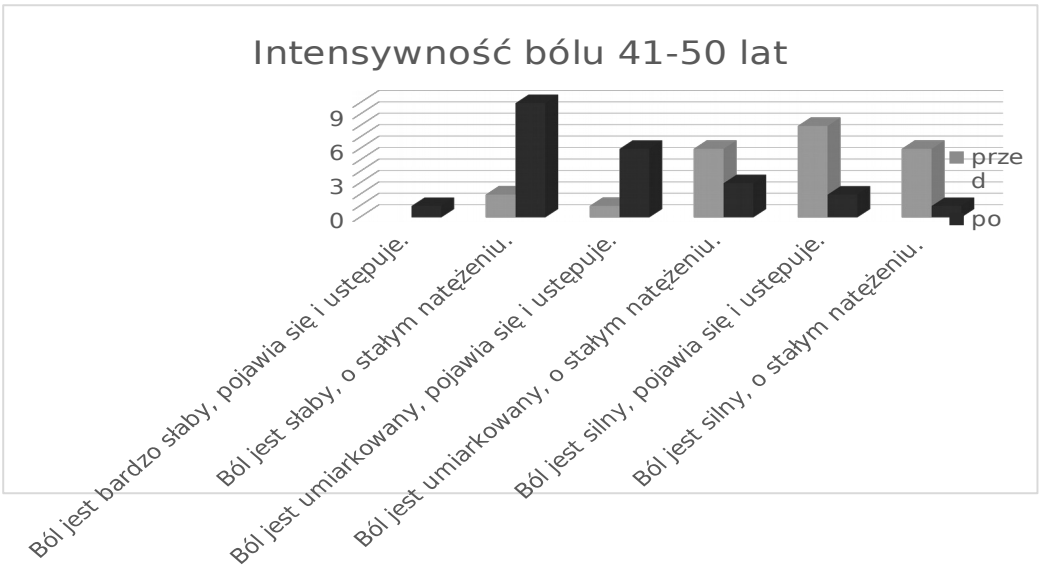
The level of pain experienced by patients is illustrated in Table 2. Before the therapy, most patients, as much as 37%, complained of severe pain, which appears and subsides, but after treatment only 3 people still felt this type of discomfort. It is also significant that in 7 subjects the pain was strong and constant, while after the therapy only one of them did not feel any improvement. Before the therapy, none of the subjects described their pain as weak and intermittent, and only 7 people as weak and constant. After therapy, 55% of respondents defined their pain as weak. The best results were achieved by people aged 30-40. In this group initially 2 people described the pain as weak, and after therapy there were 15 of them. The strongest symptoms were perceived among people aged 41-50 (14 people described the pain as strong before the therapy and 3 after the therapy) and they also did not improve as quickly, the results were similar for the oldest group.

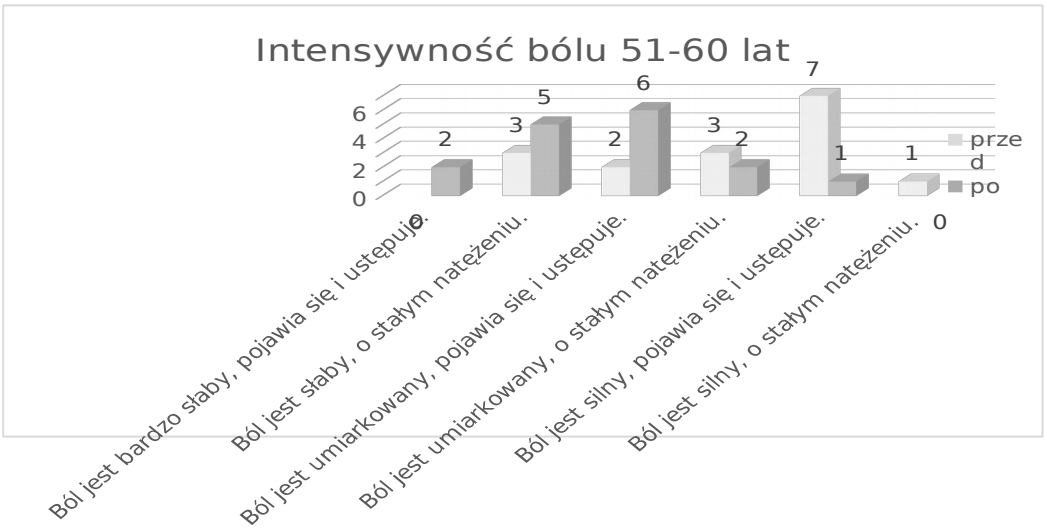
Table 2. Level of pain

Level of pain										
	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	before	after	before	after	before	%	after	%
The pain is very weak, comes and goes	0	8	0	1	0	2	0	0%	11	18 %
The pain is weak and constant.	2	7	2	10	3	5	7	12 %	22	37 %
The pain is moderate, comes and goes	8	2	1	6	2	6	11	18 %	14	23 %
The pain is moderate and constant.	4	4	6	3	3	2	13	22 %	9	15 %
The pain is strong, comes and goes	7	0	8	2	7	1	22	37 %	3	5%
The pain is strong and constant.	0	0	6	1	1	0	7	12 %	1%	2%

Source: own study





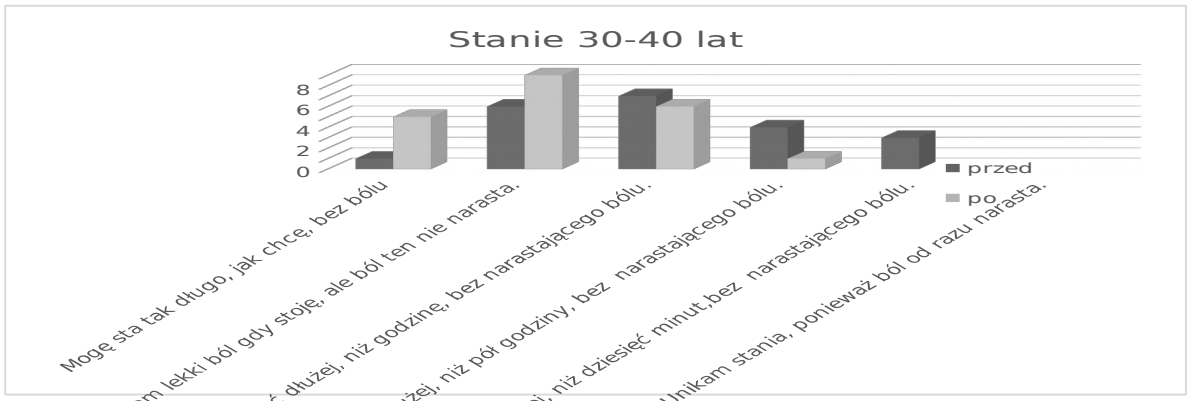


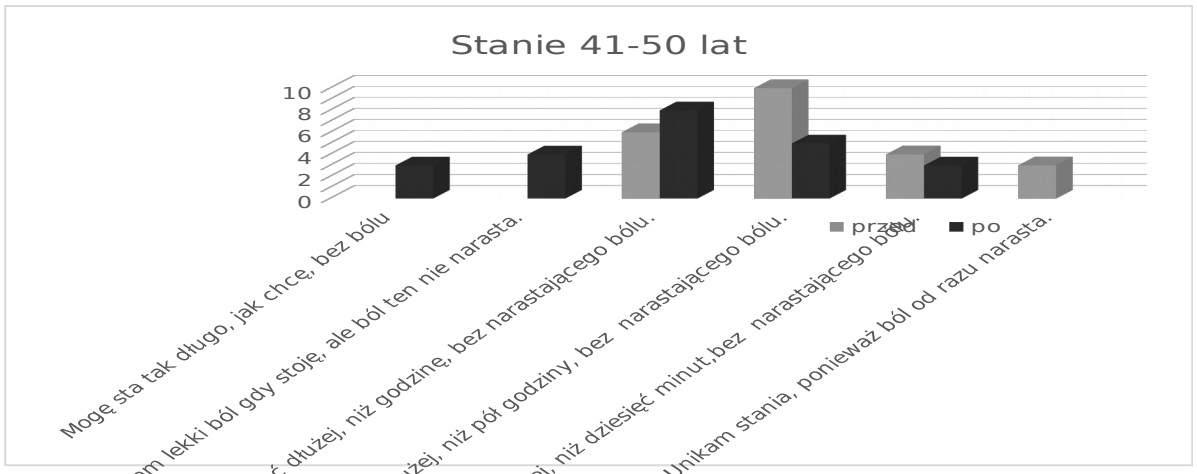
While standing, the lumbar spine is not exposed to such loads and pressures as when sitting or bending, however, this position, depending on the severity of changes in the spine, may contribute to an increased pain sensation. Among the subjects, only 22% did not have major problems while standing, while in others the pain gradually increased. 5% of people avoided standing altogether, and 15% could not stand more than half an hour. After therapy, 58% of patients could stand for longer than an hour, and none of the respondents avoided standing. Interestingly, the fewest problems with standing were noticed among people in the oldest group, 37% of whom could stand for over an hour without much pain.

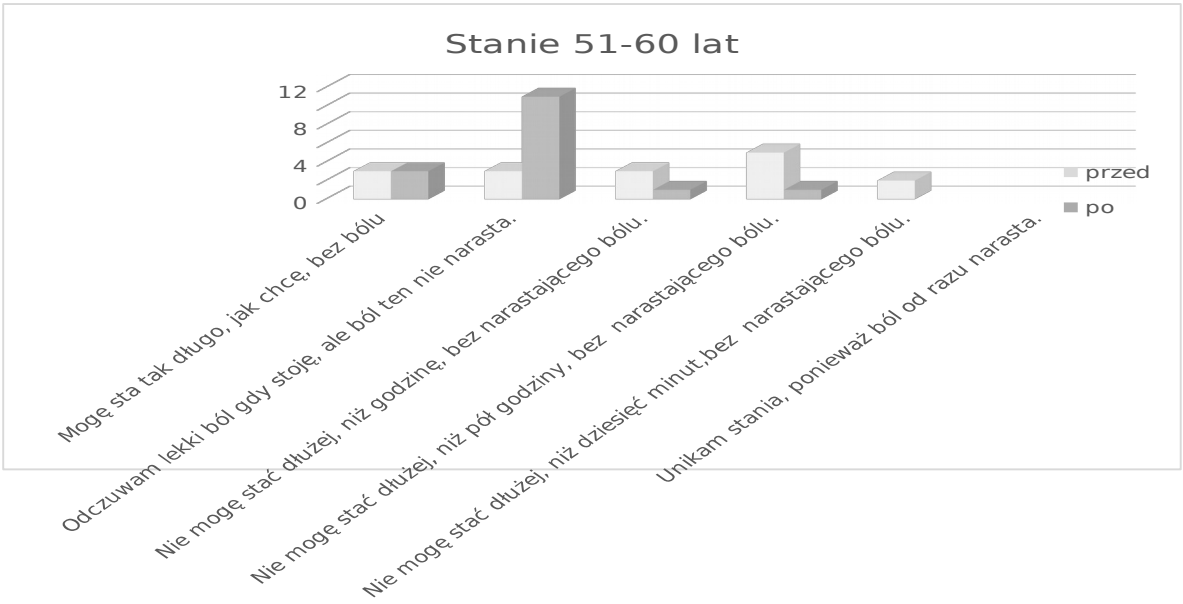
Table 3. Standing

Standing										
	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	before	after	before	after	before	%	after	%
I can stand as long as I want, without pain	1	5	0	3	3	3	4	7%	11	18%
I feel a slight pain when I stand, but this pain does not build up	6	9	0	4	3	11	9	15%	24	40%
I cannot stand for more than an hour, without the growing pain.	7	6	6	8	3	1	16	27%	15	25%
I cannot stand for more than half an hour without the growing pain	4	1	10	5	5	1	19	32%	7	12%
I cannot stand for more than ten minutes without the growing pain	3	0	4	3	2	0	9	15%	3	5%
I avoid standing, because the pain immediately builds up	0	0	3	0	0	0	3	5%	0	0%

Source: own study


Stanie 30-40 lat
8
6
4
2
0
przed
po
Mogę stać tak długo, jak chcę, bez bólu
Odczuwam lekki ból gdy stoję, ale ból ten nie narasta.
Nie mogę stać dłużej, niż godzinę, bez narastającego bólu.
Nie mogę stać dłużej, niż pół godziny, bez narastającego bólu.
Nie mogę stać dłużej, niż dziesięć minut,bez narastającego bólu.
Unikam stania, ponieważ ból od razu narasta.


Stanie 41-50 lat
10
8
6
4
2
0
przed
po
Mogę stać tak długo, jak chcę, bez bólu
Odczuwam lekki ból gdy stoję, ale ból ten nie narasta.
Nie mogę stać dłużej, niż godzinę, bez narastającego bólu.
Nie mogę stać dłużej, niż pół godziny, bez narastającego bólu.
Nie mogę stać dłużej, niż dziesięć minut,bez narastającego bólu.
Unikam stania, ponieważ ból od razu narasta.

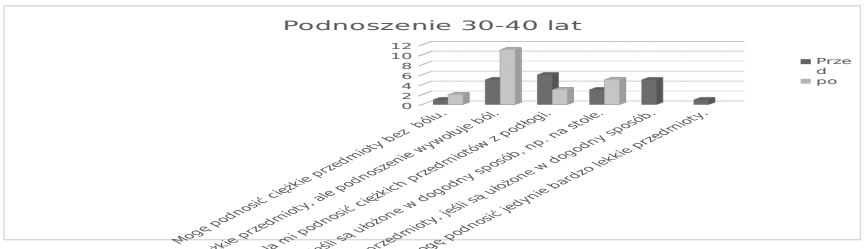


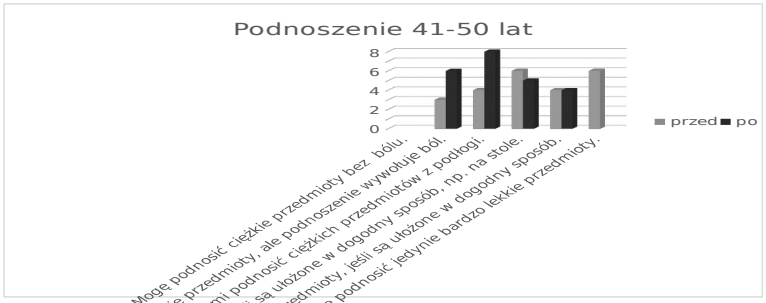
Pain in the lumbar spine causes problems in bending down and lifting objects. Having analized how a person lifts an object, it can be stated to what extent their ailments impede normal functioning. 15% of respondents had problems even with lifting a light object. Another 39 people had various problems with lifting heavy objects, and 11 people suffered additional pain while carrying a heavy object. After the therapy, 67% of patients can lift heavy objects. In the youngest group of respondents, it was possible to restore the health of all the patients to such an extent that they were able to lift heavy objects. A significant improvement was noted in the oldest group, where more than 50% of the respondents (8 people) had problems with lifting both light or heavy objects, even placed on the table, while after the therapy, this result fell to less than 18% (3 people). However, such effects were not obtained in the middle group, where there has been only a slight improvement. This may be due to the fact that they were patients with more serious disc lesions in the lumbar spine and required longer therapy to make the effects more spectacular.

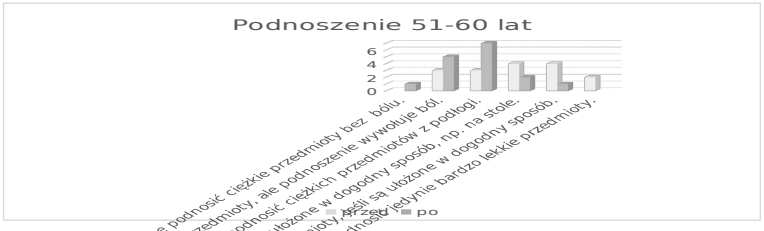
Table 4. Lifting

Lifting										
	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	Before	after	before	after	before	%	after	%
I can lift heavy objects without pain.	1	2	0	0	0	1	1	1%	3	5%
I can lift heavy objects, but lifting causes pain.	5	11	3	6	3	5	11	18%	22	37%
The pain does not allow me to lift heavy objects from the floor	6	3	4	8	3	7	13	22%	18	30%
Pain does not allow me to lift heavy objects from the floor, but I manage if they are conveniently positioned, eg on a table.	3	5	6	5	4	2	13	22%	12	20%
The pain does not allow me to lift heavy objects, but I can lift light and moderately heavy objects if they are conveniently positioned	5	0	4	4	4	1	13	22%	5	8%
I can only lift very light objects	1	0	6	0	2	0	9	15%	0	0%

Source:own study


Podnoszenie 30-40 lat
12
10
8
6
4
2
0
Prze
d
po
Mogę podnosić ciężkie przedmioty bez bólu.
Mogę podnosić ciężkie przedmioty, ale podnoszenie wywołuje ból.
Ból nie pozwala mi podnosić ciężkich przedmiotów z podłogi.
Mogę podnosić ciężkie przedmioty z podłogi, ale radzę sobie, jeśli są ułożone w dogodny sposób, np. na stole.
Ból nie pozwala mi podnosić ciężkich przedmiotów, ale mogę podnosić lekkie i niezbyt ciężkie przedmioty, jeśli są ułożone w dogodny sposób.
Mogę podnosić jedynie bardzo lekkie przedmioty.


Podnoszenie 41-50 lat
8
6
4
2
0
przed
po
Mogę podnosić ciężkie przedmioty bez bólu.
Mogę podnosić ciężkie przedmioty, ale podnoszenie wywołuje ból.
Ból nie pozwala mi podnosić ciężkich przedmiotów z podłogi.
Mogę podnosić ciężkie przedmioty z podłogi, ale radzę sobie, jeśli są ułożone w dogodny sposób, np. na stole.
Ból nie pozwala mi podnosić ciężkich przedmiotów, ale mogę podnosić lekkie i niezbyt ciężkie przedmioty, jeśli są ułożone w dogodny sposób.
Mogę podnosić jedynie bardzo lekkie przedmioty.

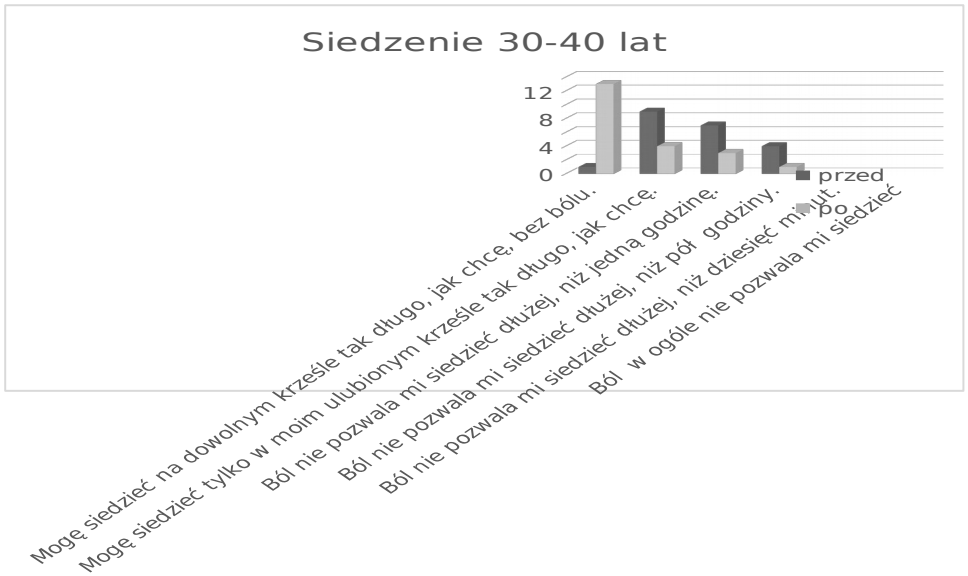

Podnoszenie 51-60 lat
6
4
2
0
Mogę podnosić ciężkie przedmioty bez bólu.
Mogę podnosić ciężkie przedmioty, ale podnoszenie wywołuje ból.
Ból nie pozwala mi podnosić ciężkich przedmiotów z podłogi.
Mogę podnosić ciężkie przedmioty z podłogi, ale radzę sobie, jeśli są ułożone w dogodny sposób, np. na stole.
Ból nie pozwala mi podnosić ciężkich przedmiotów, ale mogę podnosić lekkie i niezbyt ciężkie przedmioty, jeśli są ułożone w dogodny sposób.
Mogę podnosić jedynie bardzo lekkie przedmioty.
przed
po

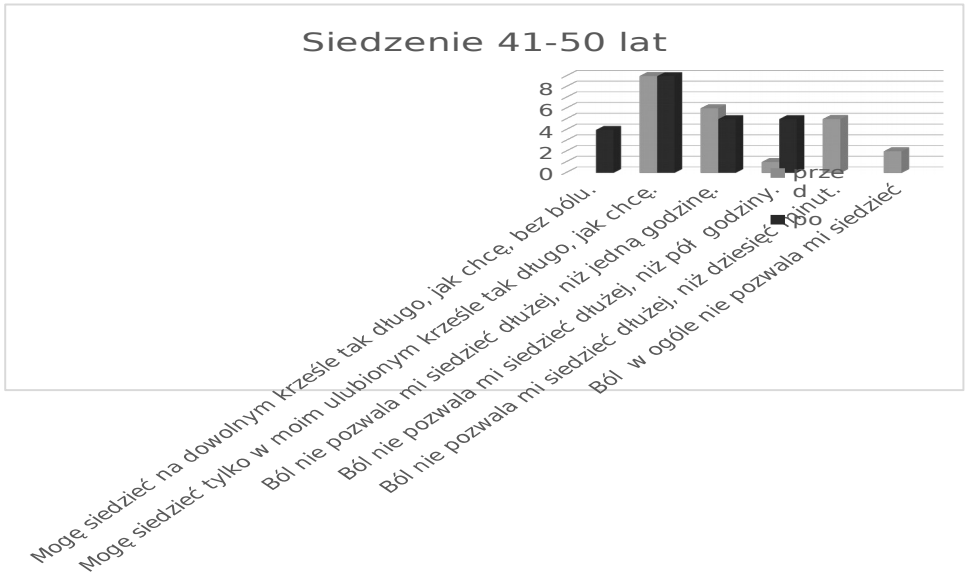
The table below shows the sensations that the patients experience in a sitting position. For people with changes in the lumbar spine, the sitting position is relatively painful, and after lengthy period of time in such a position, the symptoms may become worse. 38% of respondents can sit for as long as they want, provided, that it is a favorite piece of furniture. Only 12% of respondents can sit on any chair. After the therapy, the number of these people increased threefold. In the group of 41-50 year olds, and therefore the most active professionally, there were people who declared that they cannot sit for longer than 10 minutes (5 people) or even cannot sit at all (2 people). After the therapy, there were no patients who experienced these problems. The best effects of the therapy were achieved in the youngest group, where 61% of the respondents did not have any problems with sitting after the therapy.

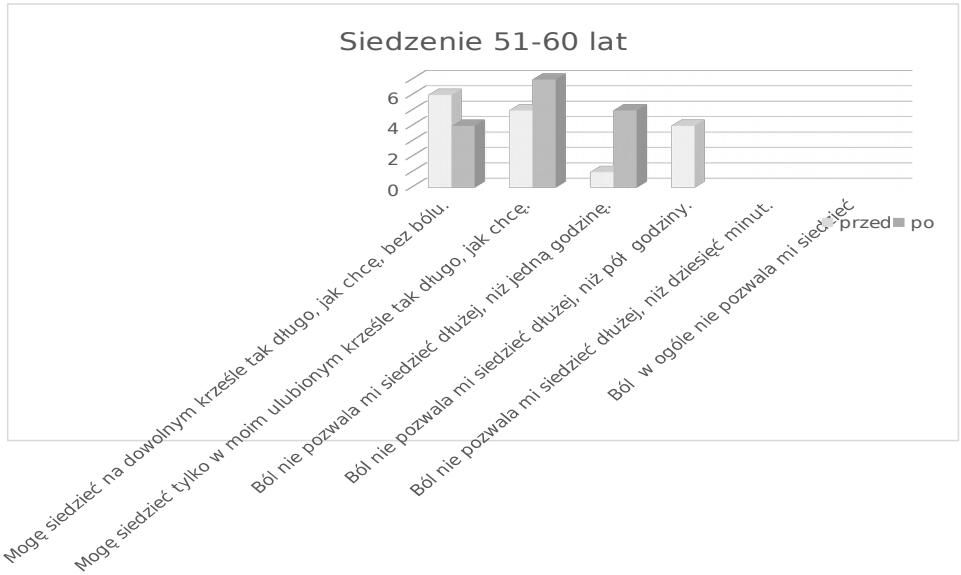
Table 5. Sitting

Sitting										
	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	before	after	before	after	before	%	after	%
I can sit in any chair for as long as I want, without pain.	1	13	0	4	6	4	7	12%	21	35%
I can only sit in my favorite chair for as long as I want.	9	4	9	9	5	7	23	38%	20	33%
The pain does not let me sit for more than one hour.	7	3	6	5	1	5	14	23%	13	22%
The pain does not let me sit for more than half an hour.	4	1	1	5	4	0	9	15%	6	10%
The pain does not let me sit for more than ten minutes.	0	0	5	0	0	0	5	8%	0	0%
The pain does not let me sit at all	0	0	2	0	0	0	2	3%	0	0%

Source:own study


Siedzenie 30-40 lat
12
8
4
0
przed
po
Mogę siedzieć na dowolnym krześle tak długo, jak chcę, bez bólu.
Mogę siedzieć tylko w moim ulubionym krześle tak długo, jak chcę.
Ból nie pozwala mi siedzieć dłużej, niż jedną godzinę.
Ból nie pozwala mi siedzieć dłużej, niż pół godziny.
Ból nie pozwala mi siedzieć dłużej, niż dziesięć minut.
Ból w ogóle nie pozwala mi siedzieć


Siedzenie 41-50 lat
8
6
4
2
0
przed
po
Mogę siedzieć na dowolnym krześle tak długo, jak chcę, bez bólu.
Mogę siedzieć tylko w moim ulubionym krześle tak długo, jak chcę.
Ból nie pozwala mi siedzieć dłużej, niż jedną godzinę.
Ból nie pozwala mi siedzieć dłużej, niż pół godziny.
Ból nie pozwala mi siedzieć dłużej, niż dziesięć minut.
Ból w ogóle nie pozwala mi siedzieć

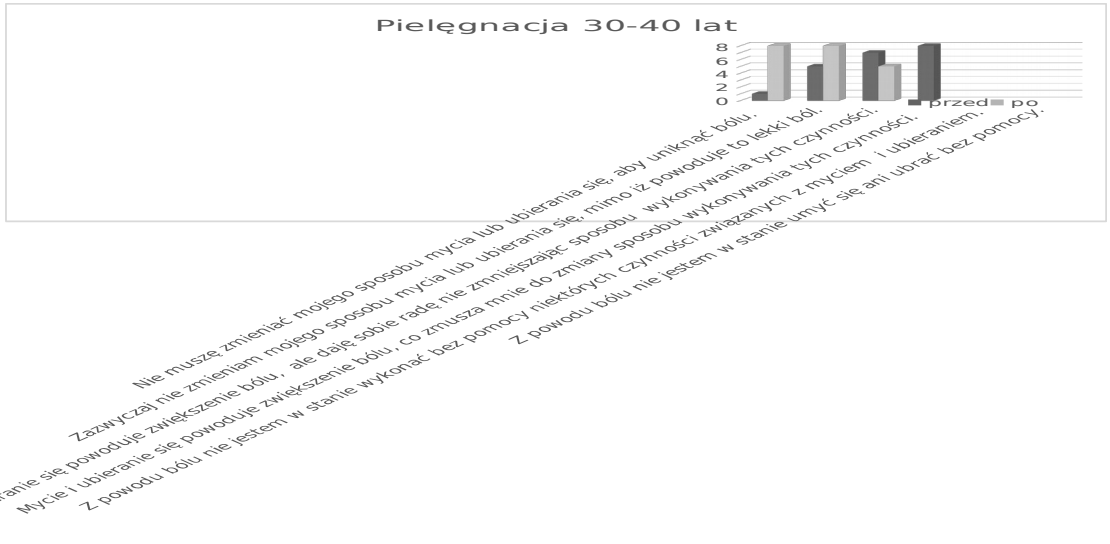


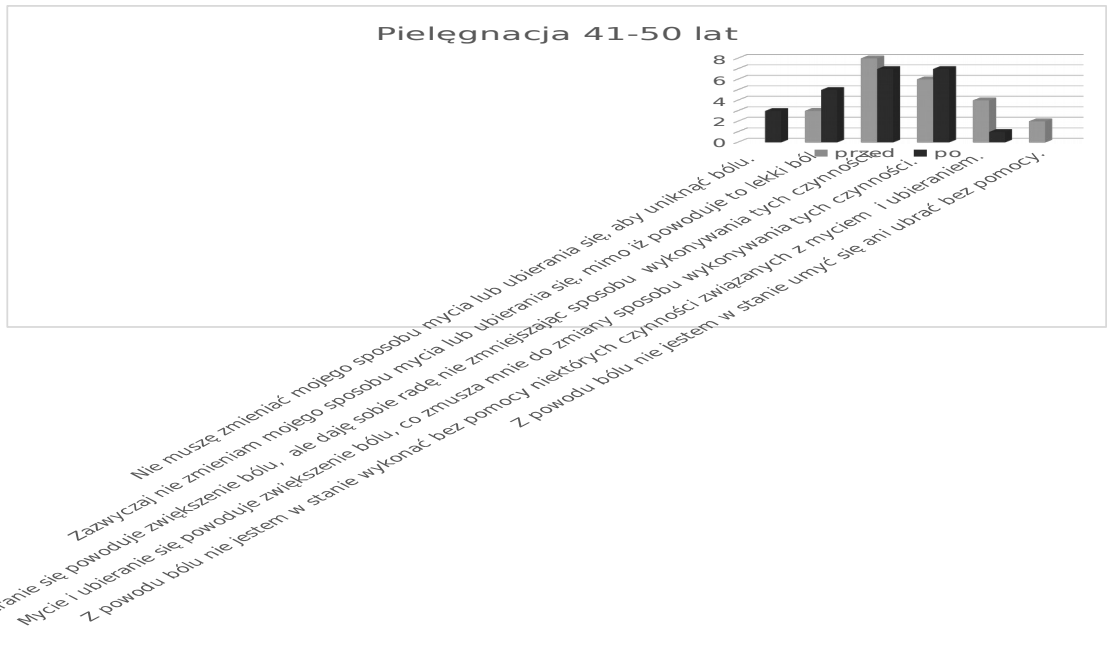
An important factor in assessing the quality of life is the capacity for self-care. Activities such as washing, dressing or combing can be hindered by pain in the lumbar region of the spine. In 7 people it was so strong that it made it impossible for them to perform self-care activities independently. Respondents who suffered from pain while performing self-care activities most often coped by searching for a different way to perform these activities (32%) or simply ignored the discomfort (37%). After treatment, almost two-thirds of the subjects felt only slight pain when performing daily care activities.

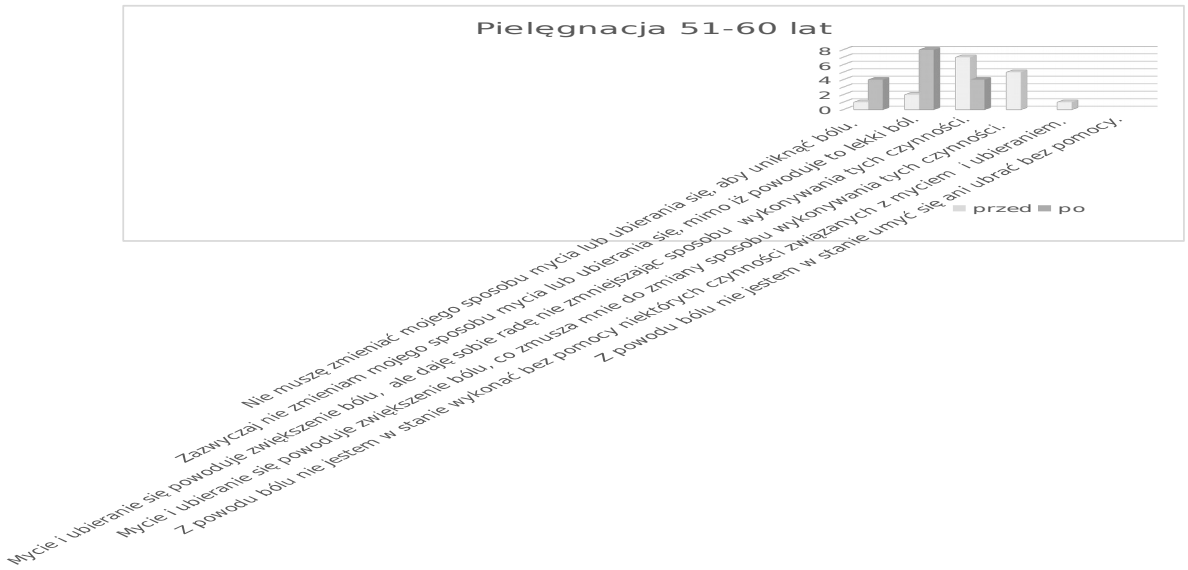
Table 6. Self-care

Self-care (washing, getting dressed, etc.)										
	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	before	after	before	after	before	%	After	%
I do not have to change the way I wash or get dressed to avoid pain	1	8	0	3	1	4	2	3%	15	25%
Usually, I do not change the way I wash or get dressed, even though it causes a slight pain	5	8	3	5	2	8	10	17%	21	35%
Washing and dressing increase the pain, but I manage without changing the way I do it	7	5	8	7	7	4	22	37%	16	27%
Washing and dressing increases pain, which forces me to change the way I do it	8	0	6	7	5	0	19	32%	7	12%
Because of the pain I cannot perform some washing and dressing activities independently	0	0	4	1	1	0	5	8%	1	2%
Because of the pain I cannot perform washing and dressing activities independently	0	0	2	0	0	0	2	3%	0	0%

Source: own study


Pielęgnacja 30-40 lat
8
6
4
2
0
przed
po
Nie muszę zmieniać mojego sposobu mycia lub ubierania się, aby uniknąć bólu.
Zazwyczaj nie zmieniam mojego sposobu mycia lub ubierania się, mimo iż powoduje to lekki ból.
Mycie i ubieranie się powoduje zwiększenie bólu , ale daję sobie radę, nie zmniejszając sposobu wykonywania tych czynności.
Mycie i ubieranie się powoduje zwiększenie bólu , co zmusza mnie do zmiany sposobu wykonywania tych czynności.
Z powodu bólu nie jestem w stanie wykonać bez pomocy niektórych czynności związanych z myciem i ubieraniem.
Z powodu bólu nie jestem w stanie umyć się ani ubrać bez pomocy.


Pielęgnacja 41-50 lat
8
6
4
2
0
przed
po
Nie muszę zmieniać mojego sposobu mycia lub ubierania się, aby uniknąć bólu.
Zazwyczaj nie zmieniam mojego sposobu mycia lub ubierania się, mimo iż powoduje to lekki ból.
Mycie i ubieranie się powoduje zwiększenie bólu , ale daję sobie radę, nie zmniejszając sposobu wykonywania tych czynności.
Mycie i ubieranie się powoduje zwiększenie bólu , co zmusza mnie do zmiany sposobu wykonywania tych czynności.
Z powodu bólu nie jestem w stanie wykonać bez pomocy niektórych czynności związanych z myciem i ubieraniem.
Z powodu bólu nie jestem w stanie umyć się ani ubrać bez pomocy.

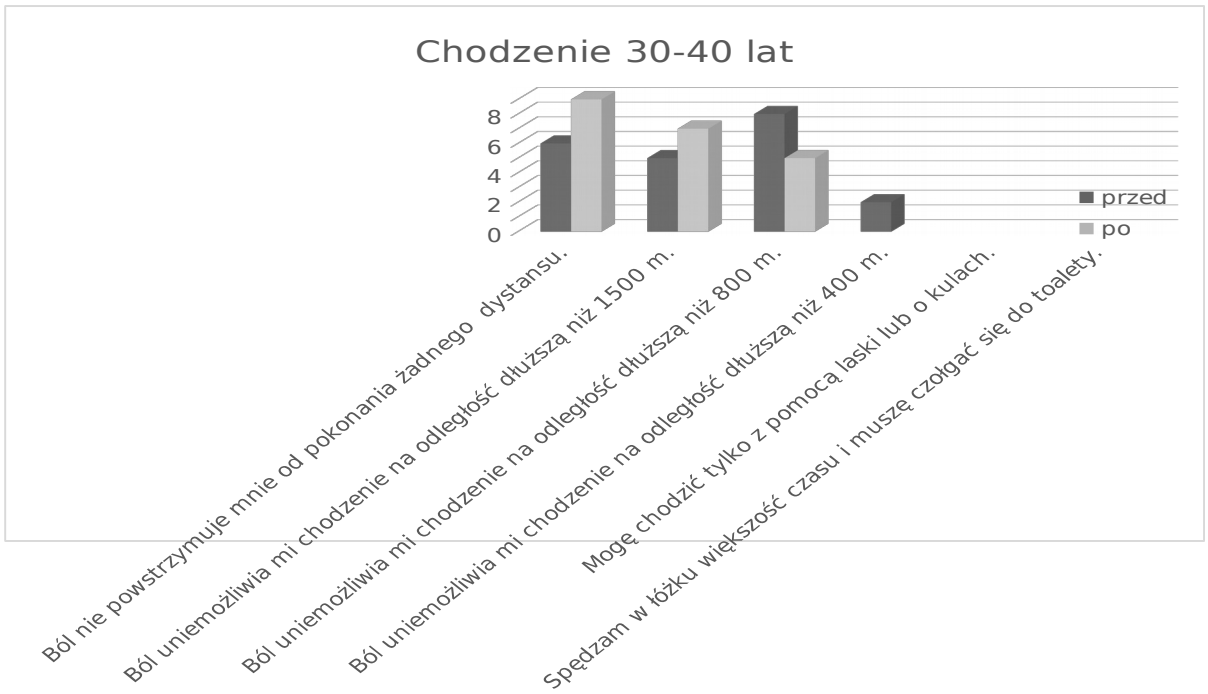


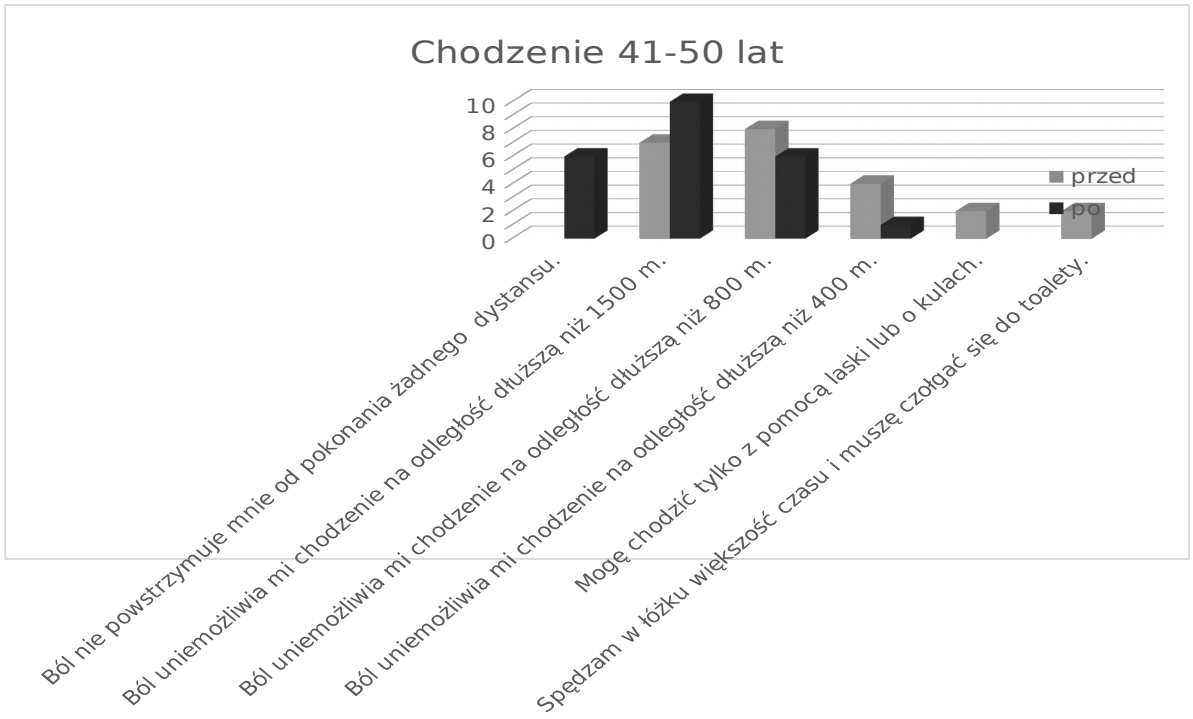
The next table illustrates the dynamics of pain while walking. Generally, lumbar spine disorders should not affect the ability to move, however, with large inflammatory changes in the intervertebral discs, walking or even longer standing may exacerbate the pain. Before the therapy, 37% of the respondents claimed that they could not walk more than 800m without feeling pain, 17% of respondents could not walk half this distance, 7% moved on crutches, 2 people avoided walking and spent time mainly in a lying position. After the therapy, 38% of patients were able to walk any distances, while 41% of respondents claimed that they could walk up to 1500m. People who avoided walking belonged to the 41-50 years-old age group and, interesting, in this group there were no people who did not experienced any problems while walking. After the therapy, the situation of these people improved and, apart from one person, there were none who were unable to walk for 800m. The fewest problems with walking were experienced by people aged 30-40, which seems to be an obvious correlation with the age of the respondents.

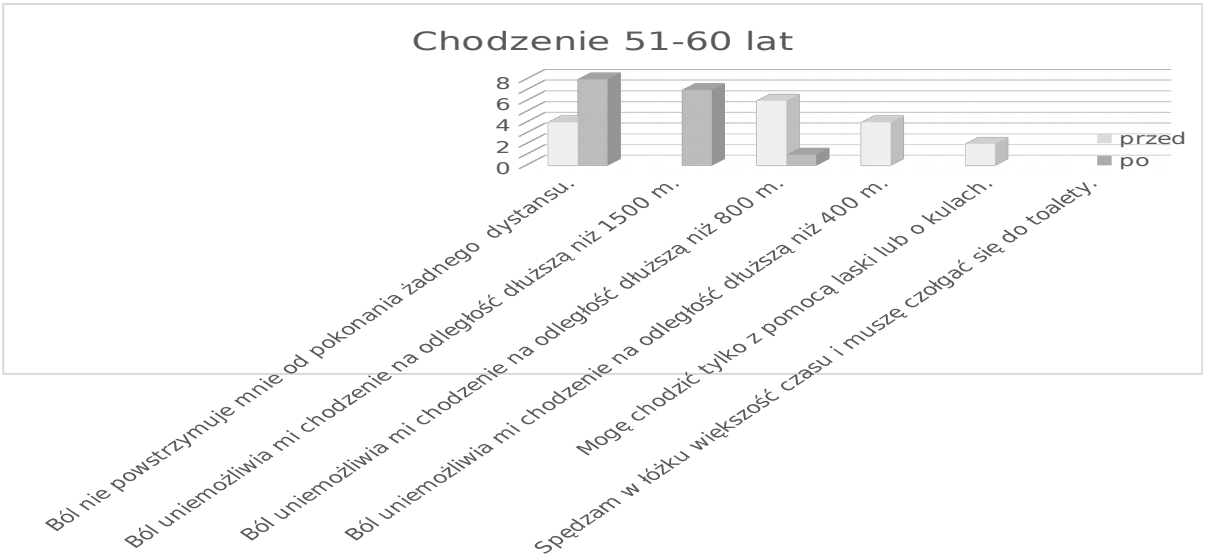
Table 7. Walking

Walking										
	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	before	after	before	after	before	%	after	%
The pain does not stop me from walking any distance	6	9	0	6	4	8	10	17%	23	38%
The pain prevents me from walking further than 1500 m.	5	7	7	10	0	7	12	20%	24	40%
The pain prevents me from walking further than 800 m	8	5	8	6	6	1	22	37%	12	20%
The pain prevents me from walking further than 400 m	2	0	4	1	4	0	10	17%	1	2%
I can only walk with the help of a walking stick or crutches.	0	0	2	0	2	0	4	7%	0	0%
I spend most of my time in bed and have to crawl to get to the toilet.	0	0	2	0	0	0	2	3%	0	0%

Source : own study


Chodzenie 30-40 lat
8
6
4
2
0
przed
po
Ból nie powstrzymuje mnie od pokonania żadnego dystansu.
Ból uniemożliwia mi chodzenie na odległość dłuższą niż 1500 m.
Ból uniemożliwia mi chodzenie na odległość dłuższą niż 800 m.
Ból uniemożliwia mi chodzenie na odległość dłuższą niż 400 m.
Mogę chodzić tylko z pomocą laski lub o kulach.
Spędzam w łóżku większość czasu i muszę czołgać się do toalety.

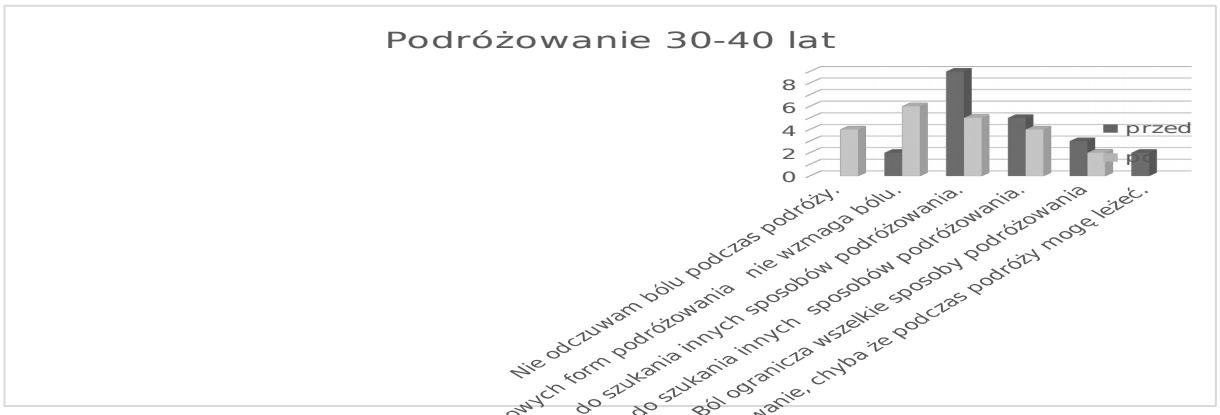

Chodzenie 41-50 lat
10
8
6
4
2
0
przed
po
Ból nie powstrzymuje mnie od pokonania żadnego dystansu.
Ból uniemożliwia mi chodzenie na odległość dłuższą niż 1500 m.
Ból uniemożliwia mi chodzenie na odległość dłuższą niż 800 m.
Ból uniemożliwia mi chodzenie na odległość dłuższą niż 400 m.
Mogę chodzić tylko z pomocą laski lub o kulach.
Spędzam w łóżku większość czasu i muszę czołgać się do toalety.

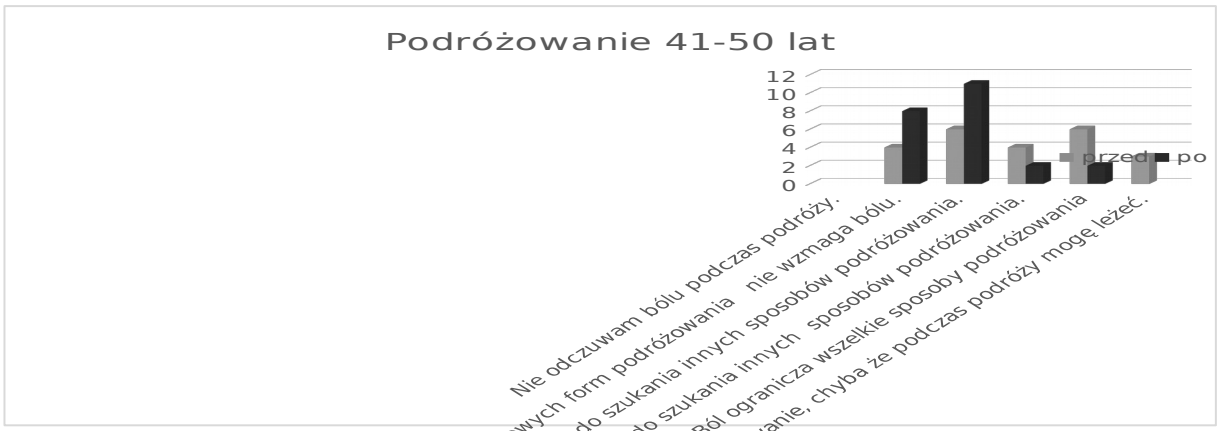


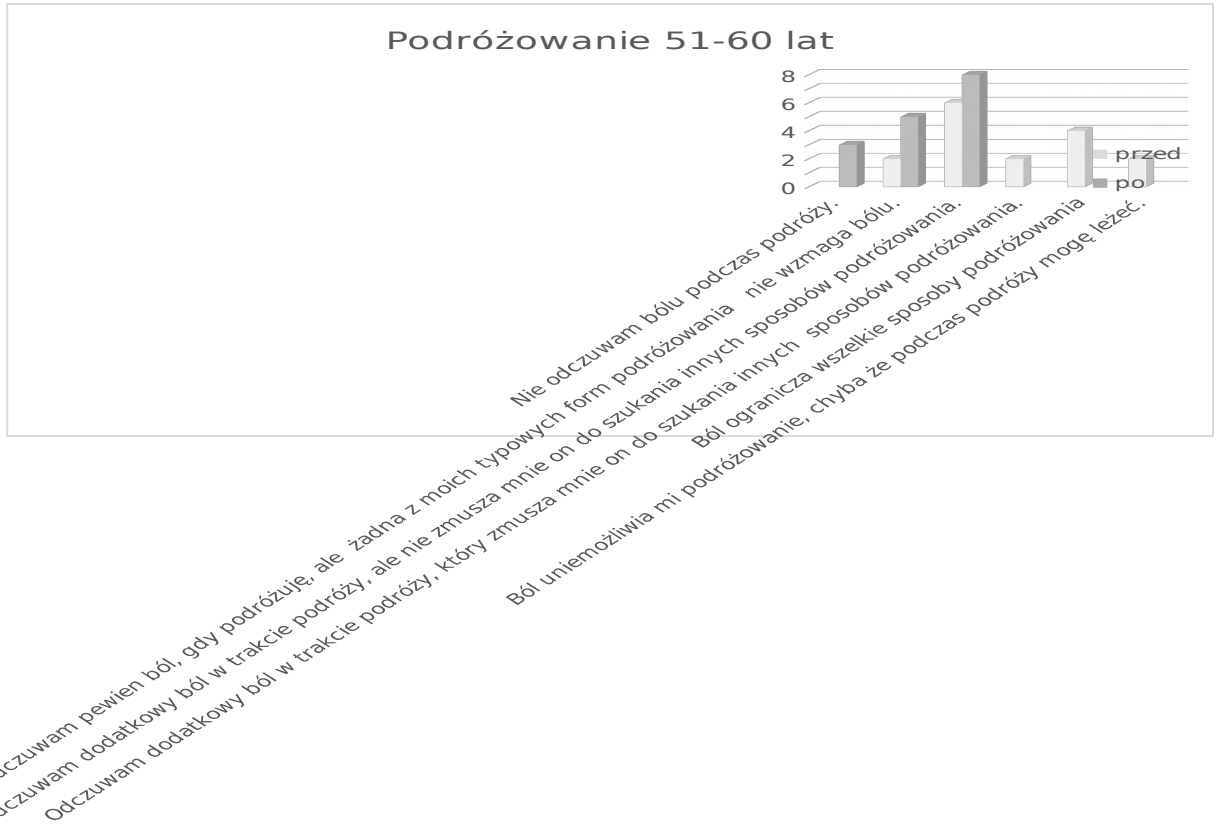
One of the indicators of the quality of life is the ability to move freely, or to travel. Depending on the way you travel, lumbar spine conditions may get worse or weaker. For a large group of subjects, the pain prevented or significantly limited the possibility of traveling. Before the therapy, it was 34%, while after therapy, only 7%. 21 people travelled freely, although they felt pain, while 11 people had to look for other forms of travel to cope with the disorder. After the treatment, 72% of all patients travel with only slight pain or no pain at all. In each group, the respondents most often chose the answer that the journey causes them pain, but it is not strong enough to look for alternative forms of transport.

Table 8. Travelling

Travelling										
	30-40 year olds		41-50 year olds		51-60 year olds					
	before	after	before	after	before	after	before	%	After	%
I do not feel pain while traveling.	0	4	0	0	0	3	0	0%	7	12%
I feel some pain when I travel, but none of my typical forms of traveling increases the pain	2	6	4	8	2	5	8	13%	19	32%
I feel additional pain when I travel, but it does not force me to look for alternative ways to travel	9	5	6	11	6	8	21	35%	24	40%
I feel additional pain when I travel, and it does not force me to look for alternative ways to travel	5	4	4	2	2	0	11	18%	6	10%
Pain limits all ways of travel	3	2	6	2	4	0	13	22%	4	7%
The pain makes it impossible for me to travel, unless I can lie while traveling	2	0	3	0	2	0	7	12%	0	0%


Podróżowanie 30-40 lat
8
6
4
2
0
przed
po
Nie odczuwam bólu podczas podróży.
Odczuwam pewien ból, gdy podróżuję, ale żadna z moich typowych form podróżowania nie wzmaga bólu.
Odczuwam dodatkowy ból w trakcie podróży, ale nie zmusza mnie on do szukania innych sposobów podróżowania.
Odczuwam dodatkowy ból w trakcie podróży, który zmusza mnie on do szukania innych sposobów podróżowania.
Ból ogranicza wszelkie sposoby podróżowania
Ból uniemożliwia mi podróżowanie, chyba że podczas podróży mogę leżeć.


Podróżowanie 41-50 lat
12
10
8
6
4
2
0
przed
po
Nie odczuwam bólu podczas podróży.
Odczuwam pewien ból, gdy podróżuję, ale żadna z moich typowych form podróżowania nie wzmaga bólu.
Odczuwam dodatkowy ból w trakcie podróży, ale nie zmusza mnie on do szukania innych sposobów podróżowania.
Odczuwam dodatkowy ból w trakcie podróży, który zmusza mnie on do szukania innych sposobów podróżowania.
Ból ogranicza wszelkie sposoby podróżowania
Ból uniemożliwia mi podróżowanie, chyba że podczas podróży mogę leżeć.

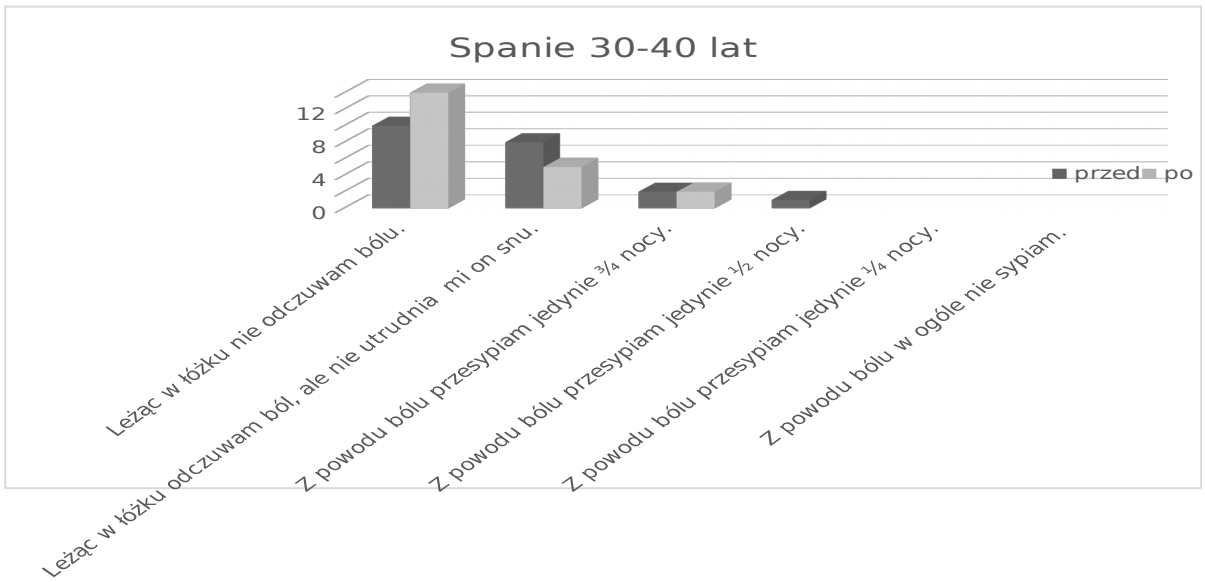


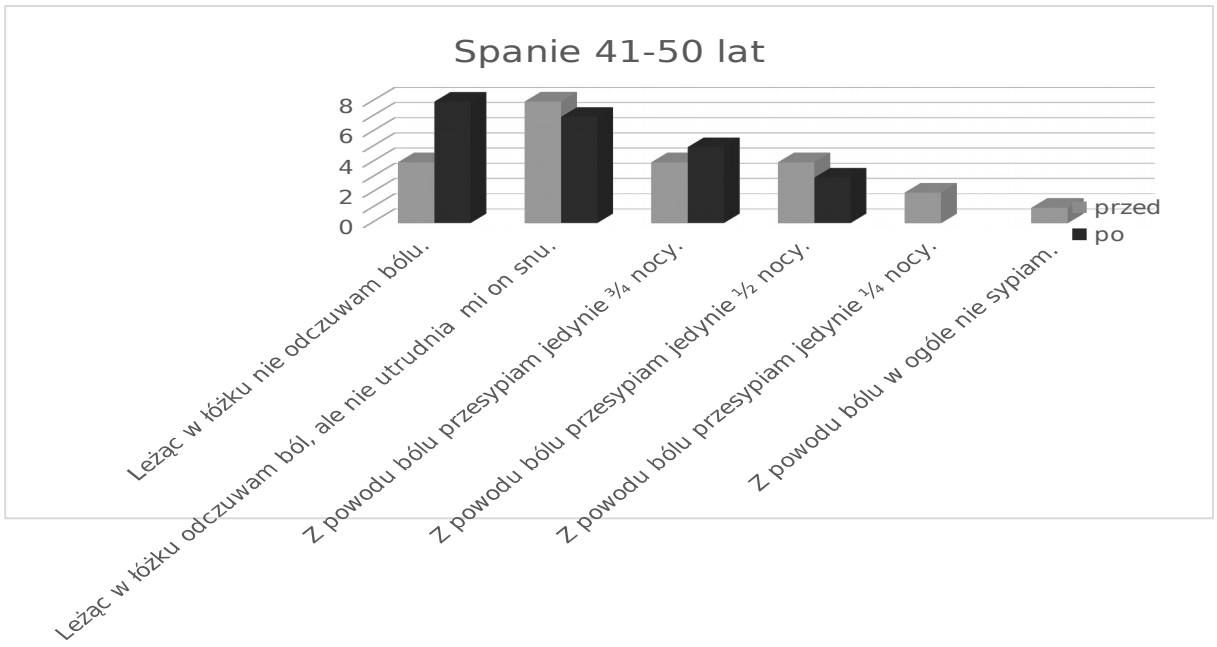
For patients suffering from lumbar spine pain, lying down is an analgesic and relaxation position, but with advanced changes in the spine, even in this position, patients may experience pain or discomfort. In the study group, only 8% of respondents had serious sleep problems due to the condition, which were eliminated using appropriate rehabilitation techniques. It is surprising, however, that as many as 18% of respondents complained of pain when lying down, which caused a shorter sleep time, which could be the result of the active inflammation at night or even as prosaic a cause as a badly matched mattress. Before the therapy 65% , and after the therapy 77% of the respondents did not feel pain or the pain was so weak that it did not cause any trouble sleeping. The biggest problems with sleep were observed in people aged 41-50, while the youngest group had the best quality of sleep.

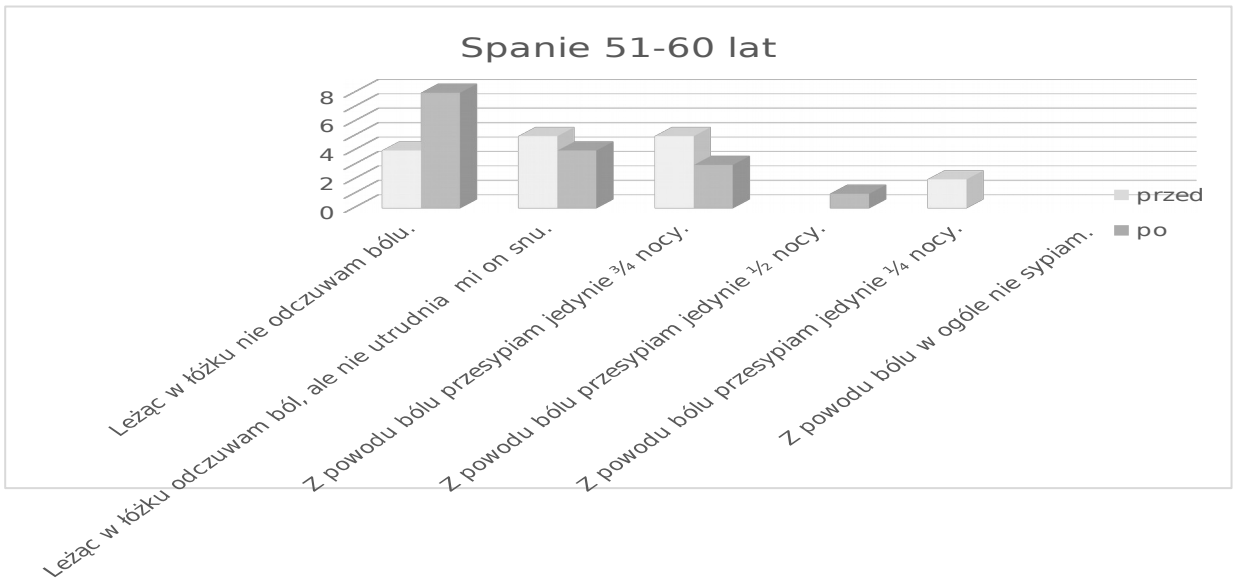
Table 9. Sleeping

Sleeping										
	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	before	after	before	after	before	%	After	%
Lying in bed I do not feel pain.	10	14	4	8	4	8	18	30%	30	50%
Lying in bed I feel pain, but it does not make it difficult for me to sleep	8	5	8	7	5	4	21	35%	16	27%
Because of the pain, I sleep only ¾ of the night	2	2	4	5	5	3	11	18%	10	17%
Because of the pain, I sleep only ½ of the night nights.	1	0	4	3		1	5	8%	4	7%
Because of the pain, I sleep only a quarter of a night.	0	0	2	0	2		4	7%	0	0%
Because of pain, I do not sleep at all	0	0	1	0	0	0	1	2%	0	0%

Source: own study







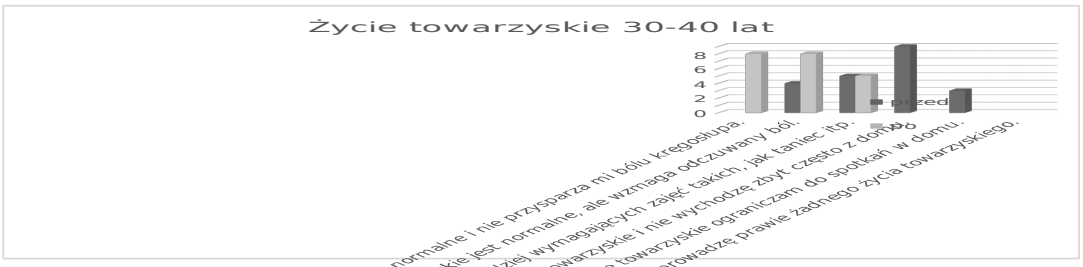
Lumbar spine discomfort can affect social life by making it difficult for the patient to leave home or because of the pain that they experience during prolonged standing or sitting. The ability to lead an active social life and meet with other people is an important determinant of the quality of life. There was no one in the study group who would describe their ability as normal before the therapy, whereas after the therapy social life was described as normal by every fifth respondent. As many as 47% of respondents experienced pain when leaving the house (after the therapy it was only 15%), and 37% had to avoid such forms of spending time

as dancing or other more challenging activities. 63% of patients were helped to the point when they could lead a normal social life. Among all the respondent, the lumbar spine pain limited social life the most for the group of 41-50 year olds.

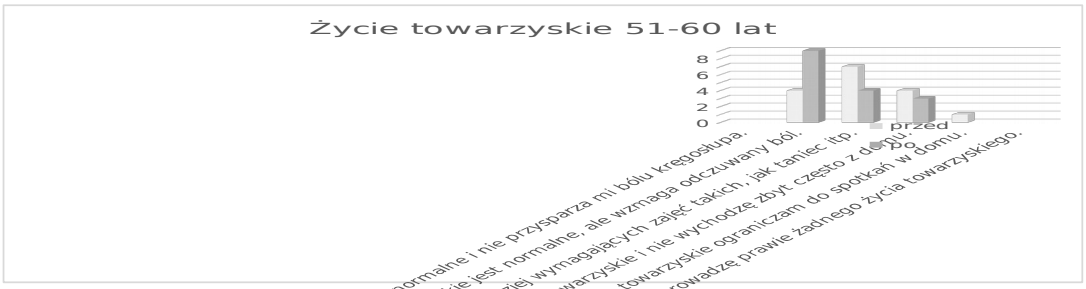
Table 10. Social life

Social life										
	30-40 year olds		41-50 year olds		51-60 year olds		total			
	before	after	before	after	before	after	before	%	after	%
My social life is normal and does not cause me back pain.	0	8	0	4	0	0	0	0%	12	20%
My social life is normal, but it increases the pain I feel.	4	8	2	9	4	9	10	17%	26	43%
The pain does not have a significant impact on my social life, but I must avoid more challenging activities such as dancing.	5	5	10	4	7	4	22	37%	13	22%
The pain limits my social life and I do not leave home too often.	9	0	2	5	4	3	15	25%	8	13%
Because of the pain, I limit my social life to meetings at home.	3	0	8	1	1	0	12	20%	1	2%
Because of the pain, I do not lead almost any social life.	0	0	1	0	0	0	1	2%	0	0%

Source: own study


Życie towarzyskie 30-40 lat
8
6
4
2
0
przed
po
Moje życie towarzyskie jest normalne i nie przysparza mi bólu kręgosłupa.
Ból nie ma znaczącego wpływu na moje życie towarzyskie, ale muszę unikać bardziej wymagających zajęć takich, jak taniec itp.
Moje życie towarzyskie jest normalne, ale wzmaga odczuwany ból.
Moje życie towarzyskie ograniczam do spotkań w domu.
Ból ogranicza moje życie towarzyskie i nie wychodzę zbyt często z domu.
Z powodu bólu całe moje życie towarzyskie prawie żadnego życia towarzyskiego.
Z powodu bólu nie prowadzę


Życie towarzyskie 41-50 lat
10
8
6
4
2
0
przed
po
Moje życie towarzyskie jest normalne i nie przysparza mi bólu kręgosłupa.
Ból nie ma znaczącego wpływu na moje życie towarzyskie, ale muszę unikać bardziej wymagających zajęć takich, jak taniec itp.
Moje życie towarzyskie jest normalne, ale wzmaga odczuwany ból.
Moje życie towarzyskie ograniczam do spotkań w domu.
Ból ogranicza moje życie towarzyskie i nie wychodzę zbyt często z domu.
Z powodu bólu całe moje życie towarzyskie prawie żadnego życia towarzyskiego.
Z powodu bólu nie prowadzę


Życie towarzyskie 51-60 lat
8
6
4
2
0
przed
po
Moje życie towarzyskie jest normalne i nie przysparza mi bólu kręgosłupa.
Ból nie ma znaczącego wpływu na moje życie towarzyskie, ale muszę unikać bardziej wymagających zajęć takich, jak taniec itp.
Moje życie towarzyskie jest normalne, ale wzmaga odczuwany ból.
Moje życie towarzyskie ograniczam do spotkań w domu.
Ból ogranicza moje życie towarzyskie i nie wychodzę zbyt często z domu.
Z powodu bólu całe moje życie towarzyskie prawie żadnego życia towarzyskiego.
Z powodu bólu nie prowadzę

DISCUSSION

Pain in the lumbo-sacral spine affects a large portion of the world's societies. Considering medical, social and economic factors, it is important to identify a group of people particularly at risk of the occurrence of pain. [13,14]

Some researchers believe that there is no conclusive evidence that sedentary work promotes back pain (Lisiński) [10]. Meanwhile, the pain of the lumbosacral segment is the most common complaint of people working in a sitting position. Although the researchers have different opinions on the impact of lifestyle on lower-back pain, they agree on the fact that some of the professional groups are more likely to experience such discomforts [1.15] The group most at risk of this type of pain is considered to be drivers [1,2,6,9,12], among whom, according to Siedlecka, it is the most common reason for complaints related to the locomotor system. [14]

Millions of years of adjusting to an upright posture are being challenged by a school-bench sitting position. [12,13] Technological developments mean that such a position becomes dominant in all aspects of human life - working at a desk, traveling by car or plane, and even relaxing in front of a computer or watching TV [3.4,] Long-term sitting causes inflammation of intervertebral discs, disc overloads, may even cause pain to the lower extremities or their numbness. In addition, J. Kiwerski draws attention to the low physical activity of society, abnormal distribution and magnitude of load, obesity, non-compliance with the principles of ergonomics, which all have a negative effect on the well-being and promote the formation of spinal pain syndrome. One should also take into account the fact of relatively low awareness of the physiotherapist's work and the perception of massage as a method of relaxation rather than pain treatment, which results in late reporting to the specialist when the changes are already advanced. Many people try to cure it conservatively, eliminating pain with pharmacological agents, instead of undergoing comprehensive therapy to eliminate the causes of pain. According to Depa, the majority of patients do not use the prophylaxis of back pain in the form of even the simplest exercises, and if they exercise, it is seldom and unsystematic. [2] In addition, some patients discontinue the therapy after the first positive effects appear, without stabilizing the improvement, which causes the return of symptoms, and sometimes even their strengthening. Therefore, researchers emphasize the importance of the second prophylaxis, which aims to prevent the recurrence of the disease and in the event of the re-emergence, to eliminate it as soon as possible. [15]

The method of treating pain in the lumbosacral segment depends to a large extent on the skills of the physiotherapist and the methods he uses on a daily basis. The manual therapist will choose one type of therapy [5,7], and a physiotherapist specializing in PNF therapy will indicate the effectiveness of this method. Subjective assessments of patients regarding the way of functioning and their physical fitness, as well as the clinical experience of the authors

show the effectiveness of manual therapy in reducing pain in the lumbosacral spine, improving its function, which significantly affects the quality of life of the patients.

CONCLUSIONS

Basing on the analysis of the conducted research and the results obtained, the answers to the questions posed are as follows:

1. Pain associated with changes in the lumbar spine have the greatest impact on the quality of life of patients in the 41-50 year olds age group.

2. Pain felt by the majority of patients was initially constant, with a variable severity, after the therapy it became weak and intermittent.

3. The number of patients who can stand an hour or more without any pain increased almost three times.

4. Thanks to the therapy, the number of patients who are able to lift a heavy object has almost doubled.

5. The number of people who can stay in a sitting position without pain has increased threefold.

6. Thanks to the therapy, about 60% of respondents felt only slight pain when performing daily care activities, and therefore three times more than before the therapy.

7. The distance, which the respondents could walk without pain or experiencing slight discomfort, doubled.

8. After treatment, almost 3/4 of patients can travel comfortably experiencing only light pain or no pain at all.

9. Although the lying position is beneficial for lumbar spine disorders, some patients experienced pain that prevented sleep, which may be caused by the advancement of changes and the intensification of the inflammatory process at night.

10. Before the therapy, all respondents complained of some degree of pain in the lumbar spine in social activities, while after the therapy, 1/5 of the subjects did not feel the influence of pain on non-professional life any more.

BIBLIOGRAPHY

1. Czechowska D, Palgan M, Bac A. Ocena charakteru pracy oraz dolegliwości bólowych kręgosłupa u pilotów samolotów pasażerskich Kwart Ortop 2010;3:334-341
2. Depa A, Drużbicki M. Ocena częstości występowania zespołów bólowych lędźwiowego odcinka kręgosłupa w zależności od charakteru wykonywanej pracy. Prz Med Uniw Rzesz 2008;1:34-41
3. Derewiecki T, Duda M, Majcher P. Wpływ dyskopochodnych dolegliwości bólowych kręgosłupa L-S na postawę ciała. Ortop Traumatol Rehab 2013;15:31-39
4. Garczyński W, Lubowska A. Postępowanie fizjoterapeutyczne u pacjentów ze zmianami zwyrodnieniowymi lędźwiowego odcinka kręgosłupa. J Health Sci 2013;3:118-130
5. Hussain, S., *Effect of Kaltenborn lumbar mobilization with and without Piriformis stretching on chronic mechanical low back pain,* w: In Manual Therapy, 2016
6. Kaczor S, Bac A, Brewczyńska P. Występowanie dolegliwości bólowych dolnego odcinka kręgosłupa i nawyków ruchowych u osób prowadzących siedzący tryb życia. Post Rehab 2011;1:34-41
7. Kaltenborn F.M.: *Kręgosłup. Badanie manualne i mobilizacja*, tłum. M. Dębski, Lubicz 1998.
8. Kiwerski J.: *Schorzenia i urazy kręgosłupa*, Warszawa 2001.
9. Lis AM, Black KM, Korn H. Association between sitting and occupational LBP. Wuropean Spine Journal 2007;16:283-298
10. Lisiński P., Majewska M., Samborski W., *Efektywność ćwiczeń wzmacniających mięśnie u chorych z przepukliną jądra miażdżystego w dolnej części kręgosłupa lędźwiowego*, Balneologia Polska 2006.
11. Maszorek-Szymala A. Zachowanie zdrowotne kobiet i mężczyzn czynnych zawodowo. Now Lek 2012;81:360-365
12. Mikołajczyk A, Kupcewicz E. Dolegliwości bólowe pleców wśród pacjentów podstawowej opieki zdrowotnej. Kwart Ortop 2010;1:86-93
13. Morton M. Zespoły bólowe kręgosłupa. Przew Lek 2008;11:45-52

14. Siedlecka J. Wybrane problemy zdrowotne związane z pracą kierowców pojazdów komunikacji miejskiej. Medycyna Pracy 2006;57(1):47-52
15. Skrzyńska A, Skrzyńska-Kudelka J, Tkaczyk K. Profilaktyka zespołów bólowych kręgosłupa w pozycji siedzącej w odcinku lędźwiowo-krzyżowym. Think – Studenckie Naukowe Czasopismo Internetowe 2011;4:71-80
16. Tatara T, Dąbrowska- Bender M Najczęstsze choroby powodowane pracą w warunkach biurowych. Zdr Publ 2010;120:203-208
17. Zejda J, Bagajska J, Kowalska M. Dolegliwości ze strony kończyn górnych, szyi i pleców u osób wykonujących pracę biurową z użyciem komputera. Med. Pr 2009;60:359-367