Pielęgniarstwo Neurologiczne i Neurochirurgiczne
THE JOURNAL OF NEUROLOGICAL AND NEUROSURGICAL NURSING
eISSN 2299-0321 ISSN 2084-8021 www.jnnn.pl **Original**

DOI: 10.15225/PNN.2018.7.1.3

Ways to Deal with Back Pain Among Patients Treated in the Neurosurgery Ward

Sposoby radzenia sobie z bólem kręgosłupa wśród pacjentów leczonych w oddziale neurochirurgii

Ewa Piszczatowska[1], **Monika Chorąży**[2], **Katarzyna Krystyna Snarska**[3], **Grzegorz Kulikowski**[4]

[1]A graduate of the Faculty of Health Sciences at The Medical University of Białystok, Poland
[2]The Medical University of Białystok, Department of Neurology, Poland
[3]A graduate of the Faculty of Medicine at The Medical University of Białystok, Poland
[4]The University of Białystok, Department of Clinical Medicine, Poland

Abstract

Introduction. Lumbar spine pain syndromes are a widespread problem that leads to lowering the quality of life and significant limitations of social, occupational and social life. Pharmacotherapy is often used as a remedy, and so is rehabilitation treatment. However, in chronic and traumatic cases, the best solution is surgery that removes the direct cause of pain.
Aim. The aim of the study was to evaluate methods of dealing with the disease in patients with spinal pain, to determine the factors affecting the pain of the spine, to assess the severity of the pain before and after surgery using the VAS scale.
Material and Methods. The study included 100 patients hospitalised in the neurosurgery ward. The study involved 41 women and 59 men. The average age was 54 years. The survey questionnaire was used for the questionnaire survey.
Results. The study covered 41% of women and 59% of men. The average age was 54 years. The average duration of pain was 9.97±5.02 years. Most often the pain was located in the lumbar spine 71% and cross-section 71%. The most common method of coping with the disease was style oriented to experience emotions and passivity ($\overline{x}$=1.18), to search for the best solutions ($\overline{x}$=1.04), to solve the problem ($\overline{x}$=0.95), avoidance ($\overline{x}$=0.82). People who prefer a problem-oriented style were characterized by a significantly higher level of well-being.
Conclusions. Spinal pain is chronic. Pain is most commonly occur in lumbosacralis. Overweight and obesity are an important risk factor for spinal pain. In the study group the problem concerned 53% and 36% of cases respectively. It has not been found that the type of work significantly increases the level of ailments experienced. The respondents stated that spinal pain increased when bending (78%), 78% when lifting heavy objects, 72% when remaining in the sitting or standing position — 68%. Spinal pain limits occupational activity, performing household and family responsibilities, social life, doing sports. Spinal pain reduces one's well-being. The surgical treatment significantly reduced the level of pain experienced. **(JNNN 2018;7(1):22–32)**
Key Words: pain, VAS scale, degeneration of the spine, operation

Streszczenie

Wstęp. Zespoły bólowe kręgosłupa lędźwiowego są powszechnym problemem, doprowadzającym do obniżenia jakości życia oraz powodującym znaczne ograniczenia w życiu społecznym, zawodowym i towarzyskim. Najczęściej jako środek zaradczy stosuje się farmakoterapia, a także zabiegi rehabilitacyjne. Jednak w przypadkach przewlekłych i pourazowych najlepszym rozwiązaniem jest zabieg operacyjny, usuwający bezpośrednią przyczyną dolegliwości bólowych.
Cel. Celem pracy była ocena metod radzenia sobie z chorobą wśród pacjentów z bólami kręgosłupa, określenie czynników wpływających na występowanie dolegliwości bólowych kręgosłupa, ocena nasilenia stopnia dolegliwości bólowych przed i po zabiegu za pomocą skali VAS.
Materiał i metody. Badaniem objęto 100 osób pacjentów hospitalizowanych w oddziale neurochirurgii. W badaniu udział wzięło 41 kobiet i 59 mężczyzn. Średnia wieku badanych wynosiła 54 lata. Do badań wykorzystano kwestionariusz autorskiej ankiety.

Wyniki. Badaniem objęto 41% kobiet i 59% mężczyzn. Średnia wieku wynosiła 54 lata. Średnia czasu trwania dolegliwości bólowych wynosiła 9,97±5,02 lat. Najczęściej ból był umiejscowiony w odcinku lędźwiowym 71% i krzyżowym 71%. Najczęściej preferowaną metodą radzenia sobie z chorobą był styl zorientowany na przeżywanie emocji i bierność ($\overline{x}$=1,18), na poszukiwaniu najlepszych rozwiązań ($\overline{x}$=1,04), na rozwiązaniu problemu ($\overline{x}$=0,95), na unikanie ($\overline{x}$=0,82). Osoby preferujące styl zorientowany na rozwiązane problemu charakteryzowały się istotnie wyższym poziomem dobrego samopoczucia.
Wnioski. Bóle kręgosłupa mają charakter przewlekły. Dolegliwości bólowe najczęściej występują w odcinku lędźwiowo-krzyżowym. Nadwaga i otyłość stanowią istotny czynnik ryzyka wstąpienia bólu kręgosłupa. W badanej grupie problem ten dotyczył odpowiednio: 53% i 36% przypadków. Nie stwierdzono, aby rodzaj pracy znacząco podnosił poziom odczuwanych dolegliwości. Ankietowani określili, że ból kręgosłupa nasila się przy schylaniu się 78%, dźwiganiu ciężkich przedmiotów 78%, długotrwałym przebywaniu w pozycji siedzącej 72% lub stojącej 68%. Dolegliwości bólowe kręgosłupa ograniczają aktywność zawodową, wykonywanie obowiązków domowych i rodzinnych, życie towarzyskie, uprawianie sportów. Bóle kręgosłupa obniżają poziom dobrego samopoczucia chorego. Zastosowane leczenie operacyjne znacząco obniżyło poziom odczuwanego bólu. **(PNN 2018;7(1):22–32)**
Słowa kluczowe: ból, skala VAS, zwyrodnienie kręgosłupa, operacji

Introduction

Under the general term "back pain" or "spinal pain syndrome" there are pains in individual sections of the spine, which include pain in the neck, low back, back. These ailments do not as such constitute a separate disease entity, but they accompany numerous disorders of the nervous, osteoarticular and muscular systems [1]. Taking into account the duration of pain, we distinguish: acute pain lasting up to a month and chronic pain lasting over 3 months. Acute pain is usually of local nature perceived in one or several segments of the spine [2]. Local pain can also be a projection pain.

Pain in each spinal section constitutes a serious and widespread medical problem in highly developed and urbanized countries. In these countries, between 54% and 80% of the population complain of back pain at least once in their lifetime, in more than a half cases the symptom disappears spontaneously after 1–2 weeks. However, in the case of people undergoing treatment due to back pain, in up to 90% pain only subsided after the 8-week period, where in 50% of cases the pain returns every year. In almost 10% of patients, pain becomes a chronic disorder [1]. The incidence of the back pain increases after the age of 30, and its peak is reached after the age of 55. There is no significant tendency for more frequent occurrence of spinal pains in any of the genders, however, with age, the incidence of pain is slightly higher in women [3].

The mass character of the problem allows to include the backpain to the group of civilization phenomena resulting from the transformation of the modern man into a seated man (Latin homo sedentarius) who will spend most of his life in a sitting position which contributes to the development of pain in various parts of the spine as well as other civilization diseases, e.g. diabetes, hypertension, obesity [4].

The basic method of treating spine pains is the bed regimen, particularly in the acute period of the disease [1]. Procedural treatment is also applied, however here, certain recommendations must be met [5].

Evaluation of methods of coping with the disease among patients with back pain. Determination of factors affecting the occurrence of spine pain.

Material and Methods

The study was conducted by means of a diagnostic survey in a group of 100 patients with spinal pain, who were treated at the Department of Neurosurgery at the UCH in Białystok on the 3rd–4th day after surgery. The research was based on:

— own survey questionnaire,
— standardized scale evaluating methods of coping with the disease — SWLS — in this method there are distinguished 4 styles of coping with stress caused by the disease: a style oriented on experiencing emotions, style oriented on solving the problem, style oriented on searching for the best solutions, style oriented on avoidance [6],
— WBQ well-being questionnaire — assesses the level of well-being on the basis of respondents' responses to 10 statements. The respondent has a choice of four answers: all the time, often, rarely, at all. The maximum number of points is 30. The lower the score, the lower the assessment of the well-being of the respondents [7],
— VAS Visual — analogue pain scale — used for subjective assessment of pain intensity has a form of a 10 cm ruler, where "10" means unbearable pain, and "0" no pain. The patient points his finger to the intensity of pain from 0 to 10 [1].

The statistical analysis was carried out using the STATISTICA version 7.0 software from StatSoft Polska. Statistically significant results were those fulfilling the condition below 0.05.

Results

Characteristics of the Studied Group

The study group of 100 respondents included 41% of women and 59% of men. The average age was 54 years and was slightly higher in women than in men — 55 years and 53 years, respectively. The youngest respondent was 19 years old and the oldest was 80 years old. Every fourth respondent was not over 46 years old and half of them did not exceed 57 years of age. 75% of respondents were not over 64 years of age. Based on the received distribution of the respondent's age for further analysis, four age ranges were created: up to 50 years (36%), 50–59 years (30%), 60–69 years (22%), 70 years and more (12%).

In the surveyed group, 24 (24%) persons were residents of the country, whereas the remaining 76 (76%) were city residents.

The structure of education was as follows: primary 9%, vocational 22%, secondary 53%, higher 16%. In the surveyed group of 31 respondents, 31% worked professionally, whereas the remaining 36 persons 36% indicated pension and 33 people 33% retirement benefits as their source of income.

The mean value of BMI index in the study group was 28.85 kg/m², which according to the WHO guidelines is defined as overweight. The obtained upper quartile value allows to conclude that less than one forth in the group had normal body mass (lower quartile=26.18). The remaining respondents had an overweight problem, and at least every fourth person had obesity (upper quartile=31.25).

According to the WHO recommendations, it was assumed that the BMI index value below 18.5 means underweight, 18.5–24.99 is the correct value, 25–29.99 — overweight, and over 30 — obesity (I degree 30.0–34, 99, II degree 35.0–39.99, III degree — above 40.0). In the study group only 11% had correct body mass. The others were overweight — 53% or obese — 36%. It was found that the problem of obesity was significantly more common in women (51.2% vs. 25.4% p=0.005), residents of rural areas (54.2% vs 36.4% p=0.003), people with primary education (54.6% vs 34.0% vs. 12.5%, p=0.037).

The average duration of pain ranged 9.97±5.02 years. In every fourth of the examined, the pain did not last longer than 6 years, whereas 25% of respondents had suffered for at least 25 years (Figure).

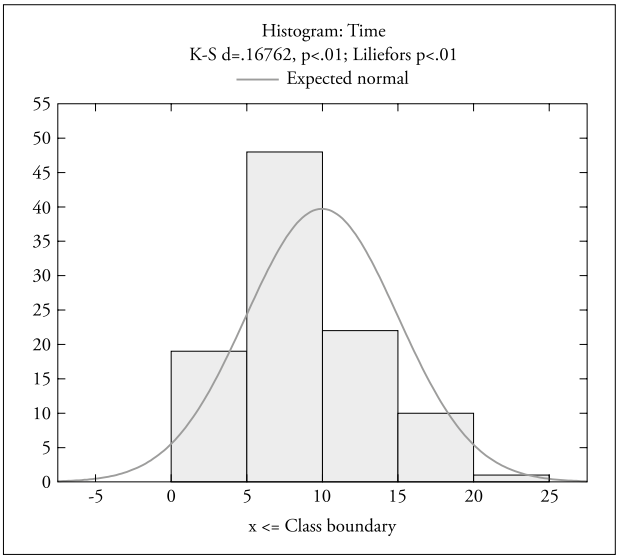

Figure. Distribution of the variable: duration of symptoms

On the basis of the distribution of the period of pain perception variable, three time intervals were created for further analysis: up to 5 years (19%), 6–10 years (48%), over 10 years (33%).

The duration of the disease was significantly longer among the residents of rural areas, people with primary education, working in a sitting position and with diagnosed obesity. Also, the duration of the disease increased significantly with the age of the respondents (Table 1).

Table 1. Structure of respondents according to the duration of the ailments

Variable	N	Up to 5 years		6–10 years		Over 10 years		χ^2	
		[n]	[%]	[n]	[%]	[n]	[%]	[r(X, Y)]	[p]
1	2	3	4	5	6	7	8	9	10
Gender									
Woman	41	8	19.5	23	56.1	10	24.4	0.1075	0.287
Man	59	11	18.6	25	42.4	23	39.0		
Age									
Under 50 years	36	16	44.4	19	52.8	1	2.8	0.5877	0.000
50–59 years	30	2	6.7	16	53.3	12	40.0		
60–69 years	22	1	4.5	11	50.0	10	45.5		
70 and more	12	0	0.0	2	16.7	10	83.3		

Table 1. Continued

1	2	3	4	5	6	7	8	9	10
Place of residence									
Village	24	1	4.0	9	37.5	14	58.3		
City <100 thousand residents	33	3	9.1	21	63.6	9	27.3	0.3668	0.000
City >100 thousand residents	43	15	34.9	18	41.9	10	23.2		
Education									
Primary	9	0	0.0	2	22.2	7	77.8		
Vocational	22	0	0.0	12	54.5	10	45.5	0.5243	0.000
Secondary	53	9	17.0	28	52.8	16	30.2		
Higher	16	10	62.5	6	37.5	0	0.0		
Type of work									
I do not work	66	7	10.6	31	47.0	28	42.4		
Sitting job	19	4	21.1	10	52.6	5	26.3	0.4167	0.000
Standing job	15	8	53.3	7	46.7	0	0.0		
BMI index									
Standard	11	3	27.3	5	45.4	3	27.3		
Overweight	53	11	20.8	28	52.8	14	26.4	0.2061	0.049
Obesity	36	5	13.9	15	41.7	16	44.4		

Source: Own research

In the study group, 98% of respondents stated that they experienced pain every day. The remaining 2% indicated the frequency of "once a week". Most often, the pain was located in the lumbar spine 71% and lower back 71%, followed by 50% in the cervical, 21% in the coccygeal section and 20% breast section. Respondents who suffered from the pain only in one section constituted 9% of the group. The remaining respondents reported complaints most often in two spine segments — 57%, as well as in 3 sections and more — 34%. The mean pain evaluation before applying the VAS treatment was 7.34 (±0.93).

The pain as significantly stronger was assessed by patients with chest section disease (p=0.006) and significantly weaker in the sacral segment (p=0.049). The respondents determined that the pain of the spine is accompanied by limb numbness — 64%, tingling and pinching of the limb — 54%, sensory disturbance — 43%, postural disorders — 17%. The respondents stated that their pain prevented them from working — 36% or limited it — 46%. Only in 7% of cases minor limitations were experienced, and 11% stated that the ailments did not affect their professional activity. The respondents stated that the pain limited their performance of housework and affected their social life to a very large extent — 21%, largely — 48%, to a small extent 31%.

Every fifth respondent was hospitalized 1–2 times due to 20% back pain. The remaining respondents stayed in hospital due to aforementioned complaints at least 3 times — 67.0%, and above 5 times — 13%.

After Surgery

The mean pain assessment after application of neurosurgical treatment according to the VAS Scale was 3.10 (±0.90). Also, pain was less perceived after the treatment applied in all types of spine degeneration (Table 2).

Table 2. Assessment of pain according to the VAS Scale before and after the treatment applied

Pain assessment	N	Mean	±SD	Min	Lower quartile	Median	Upper quartile	Max	χ^2	
									[r(X, Y)]	[p]
Before treatment	100	7.34	0.93	6	7	7	8	10	0.3298	0.000
After treatment	100	3.10	0.90	2	2	3	4	5		

Source: Own research

A Brief Method of Coping with the Disease Assessment

It is based on the recognition of legitimacy, and distinguishes 4 styles of coping with stress caused by the disease: a style oriented on solving the problem, a style oriented on searching for the best solutions, a style oriented on avoidance, a style oriented on experiencing emotions.

In the study group, the most preferred method of coping with the disease was a style oriented on experiencing emotions and passivity ($\overline{x}$=1.18), followed by searching for the best solutions ($\overline{x}$=1.04), solving the problem ($\overline{x}$=0.95), avoiding ($\overline{x}$=0.82). It was observed that in every tenth person the style oriented on experiencing emotions and passivity was the only attitude to fight stress (percentile=4). Whereas, in the style oriented on searching for the best solutions, in 10% of respondents this attitude was dominant (percentile=3). For each of the aforementioned styles, there was a group with a share of 25%, in which the behavior of none of the people showed any style (lower quartile=0). The obtained results of our own research indicate that the respondents in the fight against stress caused by the disease most often chose combined styles (Table 3).

It was found that men significantly more often than women focused on the style associated with finding the best solutions and avoiding. On the other hand, women considerably more often than men adopted the attitude of experiencing emotions and passivity (Table 4).

Table 3. Styles of coping with stress caused by the disease

Styles	N	Mean	±SD	Min	Percentile 10	Lower quartile	Median	Upper quartile	Percentile 90	Max
Style oriented on solving the problem	100	0.95	0.90	0	0	0	1	1	2	3
Style oriented on searching for the best solution	100	1.04	1.14	0	0	0	1	2	3	4
Style oriented on experiencing emotions	100	1.18	1.40	0	0	0	1	2	4	4
Style oriented on avoidance	100	0.82	0.83	0	0	0	1	1	2	3

Table 4. Style of coping with stress caused by the disease versus selected variables

Variable		N	Style oriented on solving the problem		Style oriented on searching for the best solutions		Style oriented on experiencing emotions		Style oriented on avoidance	
			$\overline{x}$	±SD	$\overline{x}$	±SD	$\overline{x}$	±SD	$\overline{x}$	±SD
1		2	3	4	5	6	7	8	9	10
Gender										
Woman		41	0.90	0.89	0.73	0.87	1.83	1.36	0.54	0.64
Man		59	0.98	0.92	1.25	1.25	0.73	1.24	1.02	0.90
χ^2	[r(X, Y)]		0.0441		0.2273		0.3898		0.2849	
	[p]		0.663		0.023		0.000		0.004	
Age										
Up to 50 years		36	1.17	0.65	1.53	1.16	0.67	0.89	0.64	0.68
50–59 years		30	1.23	0.90	1.00	1.17	0.60	0.72	1.17	0.87
60–69 years		22	0.73	1.12	0.77	0.97	1.50	1.50	0.95	0.90
70 years and more		12	0.00	0.00	0.17	0.39	3.58	1.00	0.25	0.62
χ^2	[r(X, Y)]		0.3855		0.3832		0.5848		0.0494	
	[p]		0.000		0.000		0.000		0.625	
Place of residence										
Village		24	0.54	0.93	0.83	1.20	2.13	1.54	0.50	0.72
City <100 thousand residents		33	1.18	0.98	0.64	0.86	1.15	1.18	1.00	0.94
City >100 thousand residents		43	1.00	0.76	1.47	1.16	0.67	1.21	0.86	0.77
χ^2	[r(X, Y)]		0.1670		0.2582		0.4018		0.1427	
	[p]		0.097		0.010		0.000		0.157	

Table 4. Continued

1		2	3	4	5	6	7	8	9	10
Education										
Primary		9	0.00	0.00	0.33	0.50	3.11	1.05	0.56	0.73
Vocational		22	1.00	1.15	0.82	1.18	1.32	1.55	0.82	1.10
Secondary		53	1.06	0.79	0.96	0.96	1.00	1.21	0.98	0.75
Higher		16	1.06	0.85	2.00	1.37	0.50	0.97	0.44	0.63
χ^2	[r(X, Y)]		0.2398		0.3529		0.4244		0.0193	
	[p]		0.016		0.000		0.000		0.849	
Type of work										
Out of work		66	0.74	0.86	0.62	0.87	1.68	1.44	0.94	0.84
Sitting job		19	1.63	0.83	1.42	0.69	0.11	0.32	0.84	0.83
Standing job		15	1.00	0.76	2.40	1.40	0.33	0.72	0.27	0.59
χ^2	[r(X, Y)]		0.2168		0.5730		0.4450		0.2631	
	[p]		0.030		0.000		0.000		0.008	
BMI Index										
Standard		11	0.82	0.87	1.27	1.27	1.55	1.97	0.36	0.67
Overweight		53	1.08	0.90	1.21	1.20	0.81	1.02	0.89	0.87
Obesity		36	0.81	0.92	0.72	0.94	1.61	1.55	0.86	0.80
χ^2	[r(X, Y)]		0.0654		0.1940		0.1298		0.1228	
	[p]		0.518		0.053		0.198		0.224	
Duration of the disease										
Up to 5 years		19	0.84	0.60	1.79	1.47	0.79	1.27	0.58	0.61
6–10 years		48	1.23	0.95	1.02	1.04	1.02	1.19	0.71	0.74
Over 10 years		33	0.61	0.86	0.64	0.82	1.64	1.64	1.12	0.99
χ^2	[r(X, Y)]		0.1463		0.3446		0.2289		0.2475	
	[p]		0.146		0.000		0.022		0.013	

Persons under 60 years of age significantly more often, compared to those aged over 60 preferred style oriented on solving the problem and searching for the best solutions. However, respondents aged 70+ significantly more often took an attitude of experiencing emotions and passivity.

Residents of villages and small towns <100 thousand significantly more often chose a style oriented on experiencing emotions and passivity when the inhabitants of large cities >100.000. significantly more often took the attitude of searching for the best solutions.

People with primary education significantly less often than other respondents took an attitude oriented on solving the problem. The respondents with higher education significantly more often than the other respondents preferred the style oriented on seeking the best solutions. Along with the level of education, the number of respondents taking an attitude of experiencing emotions and passivity decreased significantly.

Respondents performing standing jobs significantly more often adopted a style oriented on searching for the best solutions whereas those doing sitting jobs on solving the problem. On the other hand, non-working people significantly more often took an attitude of avoiding and experiencing emotions and passivity.

It was not stated that the BMI index significantly affected the style of coping with stress caused by the disease.

Respondents suffering from the disease for more than 10 years significantly more often chose the style oriented on avoiding and experiencing emotions and passivity. Respondents with ailments lasting not longer than 5 years significantly more frequently adopted the attitude of searching for the best solutions.

WBQ Well-being Questionnaire

The WBQ questionnaire examines the level of well-being on the basis of the respondents' answers to 10 statements. The maximum number of points possible to score is 30. The higher the score, the higher the

assessment of respondent's well-being. The average value obtained for the WBQ questionnaire was 14.48. Every 10th person did not score more than 7 points, every fourth did not exceed the threshold of 9 points, and half scored at most 15 points. 25% of respondents exceeded the threshold of 19 points, and 10% scored more than 23 points. (percentile 90%). The maximum value of 30 points was obtained in two cases (Table 5).

The highest mean value was obtained for the areas: "I easily make everyday decisions and take tasks", "I easily deal with problems and big changes in my life". "There are many things that interest me in my everyday life". The worst, however, the respondents dealt with the following areas: "I wake up fresh and relaxed" and "I feel full of energy and active". Table 20 It was not found that the level of well-being significantly depended on gender, age, place of residence, level of education, type of work, the BMI index and duration of the disease (Table 6).

Table 5. Analysis of the results of the WBQ Well-being Questionnaire

Styles	N	Mean	±SD	Min	Percentile 10	Lower quartile	Median	Upper quartile	Percentile 90	Max
Overall	100	14.48	6.39	0	7	9	15	19	23	30
I feel exhausted and sad	100	1.59	0.65	0	1	1	2	2	2	3
I feel calm and relaxed	100	1.39	0.62	0	1	1	1	2	2	3
I feel full of energy and active	100	1.04	0.85	0	0	0	1	2	2	3
I wake up fresh and relaxed	100	0.97	0.70	0	0	1	1	1	2	3
I am happy and satisfied with my life	100	1.50	0.72	0	1	1	1	2	2	3
I a well-adapted to my life situation	100	1.37	0.82	0	0	1	1	2	2	3
I live the way I like	100	1.32	0.80	0	0	1	1	2	2	3
I easily make daily decisions and take tasks	100	1.85	0.78	0	1	1	2	2	3	3
I easily deal with problems and big changes in my life	100	1.75	0.86	0	1	1	2	2	3	3
In my everyday life there are a lot of things which interest me	100	1.70	0.76	0	1	1	2	2	3	3

Table 6. Analysis of the results of the WBQ Well-being Questionnaire for selected variables

Group	N	Mean	±SD	Min	Lower quartile	Median	Upper quartile	Max	χ^2	
									[r(X, Y)]	[p]
1	2	3	4	5	6	7	8	9	10	11
Overall	100	14.48	6.39	7	9	15	19	30		
Gender										
Woman	41	13.98	7.12	0	9	15	18	30	0.0662	0.513
Man	59	14.83	5.86	4	9	15	20	30		
Age										
Up to 50 years	36	14.58	7.16	0	9	16	20	30		
50–59 years	30	16.40	4.59	7	13	17	20	24	0.1671	0.097
60–69 years	22	13.68	6.81	3	8	13	21	25		
70 years and more	12	12.88	6.99	0	8	13	19	25		
Place of residence										
Village	24	12.88	6.99	0	8	13	19	25		
City <100 thousand residents	33	15.58	5.07	6	12	17	18	24	0.0808	0.424
City >100 thousand residents	43	14.53	6.88	0	8	15	19	30		
Education										
Primary	9	14.78	6.55	7	8	15	21	25	0.0277	0.785
Vocational	22	13.59	5.81	3	9	15	18	24		

Table 6. Continued

1	2	3	4	5	6	7	8	9	10	11
Secondary	53	14.79	6.78	0	9	16	19	30		
Higher	16	14.50	6.19	7	8	15	20	23		
Type of work										
Out of work	66	14.71	6.63	0	9	16	20	30		
Sitting job	19	14.63	5.99	7	10	16	17	30	0.0711	0.482
Standing job	15	13.27	6.04	0	7	14	18	23		
BMI Index										
Standard	11	15.45	6.11	4	10	17	20	23		
Overweight	53	14.68	6.44	0	9	15	19	30	0.0789	0.435
Obesity	36	13.89	6.51	3	8	15	18	25		
Duration of the disease										
Up to 5 years	19	14.63	6.40	0	8	16	20	23		
6–10 years	48	15.54	6.54	0	10	16	20	30	0.1262	0.211
Over 10 years	33	12.85	6.00	3	8	12	16	24		

It was found that people who preferred the style oriented on problem-solving were characterized by a significantly higher level of well-being. On the other hand, respondents taking an attitude of experiencing emotions and passivity were characterized more often by a lower level of well-being (Table 7).

Table 7. Style of coping with stress caused by the disease and the level of well-being

Style		Style oriented on solving the problem	Style oriented on searching for the best solutions	Style oriented on experiencing emotions	Style oriented on avoidance
χ^2	[r(X, Y)]	0.2634	0.0848	0.2009	0.1284
	[p]	0.008	0.402	0.049	0.203

Discussion

Spinal pain syndromes are one of the most common reasons for patients to visit a physician for consultation. The experienced ailments affect all spheres of everyday life of a person and often significantly limit their functioning in family, as well as their professional and social life [3]. The most frequent pain is of periodic nature, however, the lack of proper prevention leads to chronic spine diseases [1]. Rehabilitation and pharmacotherapy alleviate pain symptoms, but do not remove their cause. Spinal surgery is often the best method of treating spine pains, removing the cause of the discomfort [5].

In own research, the respondents most often indicated pain in the lumbar region — 71% and sacral section — 71%, followed by pain in the neck — 50%, tumor incision 21% and chest pain 20%. It was determined that the dominant group of respondents felt pain within more than one section: 57% within two sections and 34% within three or more. In half of the patients (48%) degenerative pains in the spine had occurred between 6 and 10 years, when in every fifth person (19%) for 5 years, and in every third respondent (19%) for over 10 years. It was found that the duration of the disease was significantly longer among the inhabitants of villages, respondents with primary education, working in a sitting position and with confirmed obesity. It was also observed that the duration of the disease significantly increased with the age of the respondents. In the examined group, overweight and obesity constituted a significant problem, which was found on the basis of the BMI index in respectively 53% and 36% of cases. Only 11% of the respondents had correct body weight. The results of our own research correlate with the work by other authors. Lumbar-sacral pains as the most frequent were identified in their research also by Misiak et al. [8], Klimaszewska et al. [9], as well as by many other authors [3,10]. The results of our own studies confirm the multidirectional pain of the spine, particularly in the lumbosacral area. Rysiak et al. [11] based on their own research and available literature, estimated that the most frequent pain in the lumbosacral spine occurred in 60–90% of the population throughout life. According to statistics,

the incidence of such pain is 5% per year, whereas the prevalence is around 16% [5].

Zaniewska et al. [12] confirm that spinal pain is of episodic nature, which, according to the authors, in 10% of cases evolves into the state of so-called chronic back pain, whereas 90% of patients return to good physical condition [4]. In the study group, 98% of patients stated that they experienced pains every day, when 2% indicated the frequency of "once a week". The mean pain assessment with the VAS Scale before treatment was 7.34 (±0.93), which is referred to as severe pain. It was found that the complaints significantly increased with the age and duration of the disease. It was also observed that the pain as significantly stronger had been assessed by people with a disease in the thoracic region, and significantly weaker in the sacral section. The respondents stated that the pain increased primarily (78%) while bending, when lifting heavy objects (78%), and after a long-term remaining in a sitting (72%) or standing (68%) position. Also, the pain occurred, after spending a long time in front of the TV/computer (47%), after long-term physical exercise (30%), after physical work at home or in the garden (30%), after a long drive (16%), and it also increased with a general sense of tiredness (43%). The respondents determined that the pain of the spine is accompanied by numbness of a limb (64%), tingling and pinching of the limb (54%), sensory disturbance (43%), postural disorders 17%.

Klimaszewska et al. [9] in the conducted research observed that both men and women most often suffered from pain during movement and while remaining in a sitting position, most often every day (33.97%), and several times a week (28.85%), a few times a month (24.36%). Zaniewska et al. [12] indicated that among the factors exacerbating pain, patients most often mentioned the position in the slope (43%), long-term sedentary sitting (40%), as well as walking (13%) and lying (10%). The majority of the group assessed their pain at the average level, while the mean pain intensity on the VAS scale ranged 3.83±1.31. Antczak et al. [13] found that 10.9% of respondents described their pain as very weak or weak, 35% of them assessed the severity of this pain as medium, and, according to the opinion of almost half of the patients (48.5%), their pain symptoms were usually strong and very strong.

Among the respondents, the pain prevented 36% of them from professional work or limited it (46%). The problem of absence from work of people with spinal disorders was analysed by many authors. Misiak and Snarska [8] showed that among people with the strongest pain complaints, the disease greatly affected absence from work. Also Bojczuk et al. [14] confirm that lower back pain syndrome is one of the main reasons for long-term inability to work, among professionally active people, being often the cause of physical incapability or disability. Zaniewska et al. [12] indicate that spinal pain syndromes are one of the most common reasons for patients to visit a physician for consultation.

Spinal pain syndromes permeate all aspects of human life. The pain forces one to reduce one's daily activity, limits the performance of basic everyday activities, reduces self-assessment and self-esteem [4,6,7].

Antczak et al. [13] showed that the pain limited daily hygienic activities of the patients, carrying heavy or even light objects, significantly hindered walking. Misiak et al. [8] have shown that pain caused deterioration of the quality of life through an increase in absence from work, aggravation of depressive disorders, limitation of social contacts and difficulties in performing physiological activities. Zaniewska et al. [12], by using the WHOQOL-BREF scale, have shown that the patients surveyed suffering from pain in the spine significantly more frequently suffered from limitations in the psychological category, used for assessing emotions, feelings, concentration and memory, in the environmental category in which financial independence, access to healthcare are taken into account, and in the physical category, which consists of energy for performing daily activities, physical independence, pain and ability to work. Zaniewska et al. have not stated that pain significantly influenced the assessment of personal relationships, social support and sexual activity.

In own studies 37% of respondents experienced spinal injury. The event did not take place in 63% of cases. It was found that the assessment of symptoms was significantly higher in the case of those who had had a back injury in the past. This result confirms the necessity to undertake actions in this group of patients with higher intervention than pharmacotherapy or rehabilitation in the field of reducing the level of pain and increasing general fitness of the patient. The patients surveyed for pain in the spine were hospitalised in the treatment unit for 1–7 days (69%) and longer 7–14 (31%). Most often, those were multiple stays: at least 3 times (80%), including hospitalised 3–4 times 67%), and 13% were hospitalised 5 times and more, whereas 20% of respondents were hospitalised once or twice. During the diagnostics of spinal diseases, magnetic resonance was performed in 96% cases, and half of the respondents were subject to the computed tomography (47%). Every fourth person also had an X-ray taken and 14% also indicated laboratory tests. In the examined group, the spinal surgery was performed in 93% of cases. The mean pain score after the applied treatment according to the VAS Scale was 3.10 (±0.90) and was significantly lower than before the surgery. It was obtained that the symptoms were weaker perceived in all types of spine degeneration. To conclude, the applied treatment significantly reduced the intensity of spine pain complaints in patients.

A significant decrease in pain after surgery is emphasised by Misiak et al. [8]. The effectiveness of the treatment was also confirmed by Bojczuk et al. [14], who reported a significant improvement in the quality of life in 30% of patients, an average of 40%, and a slight improvement in 30% of respondents. Zaniewska et al. [12] indicate a significant reduction in pain after application of TENS. Antczak et al. [13] emphasise the effectiveness of sanatorium treatment in spinal pain. Klimaszewska et al. [9] prove the low effectiveness of pharmacotherapy, despite its widespread use.

Two standardised scales were also used in own research: A brief method of assessing the coping with stress caused by the disease and the WBQ Wellbeing Questionnaire. In the area of preferred methods of coping with the disease, a style oriented on experiencing emotions and passivity was most often obtained, followed by searching for the best solutions, solving the problem and avoiding it. Respondents focused on emotions, in stressful situations tend to focus on themselves, on their own emotional experiences, such as anger, feelings of guilt, tension, which can limit their activity and hampers the fight against the cause of stress. These people also have a tendency to think and fantasize, not to act. A problem-oriented style consists in undertaking tasks, effort to solve the problem through cognitive transformations or attempts to change the situation. Its extension is a style based on searching for the best solutions, that is taking actions, but with openness for better, new but less proven solutions. The attitude of avoidance is characteristic of people who in stressful situations tend to avoid thinking and experiencing this situation. This style can take 2 forms: engaging in substitute activities, such as watching television, eating, thinking about pleasant matters and seeking social contacts [7]. For the WBQ questionnaire, the average value obtained was 14.48, which is a rather low score out of 30 points possible to obtain. The highest average value was obtained for the following areas: "I easily make everyday decisions and do tasks", "I easily deal with problems and big changes in my life", "In my everyday life there are many things that interest me". The most difficult areas for the respondents, however, turned out to be: "I wake up fresh and relaxed" "I feel full of energy and active". This scale shows how pain significantly affects one's functioning. The results of both scales correlated significantly. It was found that people who preferred the style oriented on problem-solving were characterised by a significantly higher level of well-being. Whereas the respondents taking an attitude of experiencing emotions and passivity were characterized more often by a lower level of well-being.

Scale results: A short method of assessing coping with stress caused by the disease and the WBQ Wellbeing Questionnaire are the best summary of the research carried out. Spinal pains strongly and significantly interfere with the functioning of the human being in all aspects of their lives. The ailments experienced affect not only the physical state, but also mental and emotional spheres. The therapeutic success is observed when the patient takes actions aimed at reducing the level of perceived pain. In our study, high effectiveness of surgical procedures in the treatment of pain has been demonstrated. However, it should be emphasised that this method brings a long-lasting effect only in the case of continuing treatment through the use of appropriate prevention: undertaking daily physical activity, proper occupational hygiene, not only at work but also at home, abandoning passive rest for active rest.

Conclusions

1. The choice of methods of coping with the disease among those suffering from chronic back pain and subjected to surgical treatment is significantly affected by: gender, age, place of residence, education, professional activity and duration of the disease. The most often chosen approach was an attitude oriented towards emotions and passivity, whereas the least often chosen was the attitude of avoidance.
2. The surgical treatment proved to be the most effective method reducing pain in patients suffering from chronic back pain, which is confirmed by the results obtained on the VAS scale.
3. The factors affecting the occurrence of back pain include excessive physical activity, type of work, overweight and obesity.

Implications for Nursing Practice

In a given disease unit, each patient, depending on many factors, will react differently, act and cope. Our job as a nursing staff is, among other things, to arouse positive emotions to achieve full recovery of the patient. We can conduct such activities based on the education of the patient and his relatives, but also through empathic approach.

References

[1] Szostak L., Marcinkowski J.T. Czynnościowe dolegliwości bólowe kręgosłupa poważnym problemem zdrowia publicznego. Część 1. Wprowadzenie. *Probl Hig Epidemiol.* 2012;93(4):679–681.

[2] Topolska M., Sapuła R., Topolski A., Maciejewski M., Marczewski K. Wpływ aktywności fizycznej na przewlekły

ból dolnego odcinka kręgosłupa u kobiet w wieku od 30 do 65 lat. *Zamojskie Studia i Materiały*. 2011;1(34): 45–54.
[3] 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.
[4] Giemza Cz., Ostrowska B., Hawrylak A., Barczyk-Pawelec K., Wójtowicz D. Wpływ krioterapii ogólnoustrojowej na skuteczność zwalczania dolegliwości bólowych dolnego odcinka kręgosłupa. *Acta Bio-Opt Inform Med*. 2011;17(2): 95–98.
[5] Koszewski W. Leczenie zespołów bólowych kręgosłupa w przebiegu dyskopatii. *Lekarz POZ*. 2015;1:23–33.
[6] Kokoszka A., Radzio R., Kot W. Krótka Metoda Oceny Radzenia Sobie z Chorobą: wersje dla mężczyzn i kobiet. *Diabetol Prakt*. 2008;9(1):1–11.
[7] Kłak A., Mińko M., Siwczyńska D. Metody kwestionariuszowe badania jakości życia. *Probl Hig Epidemiol*. 2012;93(4):632–638.
[8] Misiak B., Snarska K.K. Jakość życia pacjentów z dolegliwościami bólowymi kręgosłupa. *Pielęg Neurol Neurochir*. 2014;3(3):107–115.
[9] Klimaszewska K., Krajewska-Kułak E., Kondzior D., Kowalczuk K., Jankowiak B. Jakość życia pacjentów z zespołami bólowymi odcinka lędźwiowego kręgosłupa. *Probl Pielęg*. 2011;19(1):47–54.
[10] Gajewski T., Woźnica I., Młynarska M., Ćwikła S., Strzemecka J., Bojar I. Wybrane aspekty jakości życia osób ze zmianami zwyrodnieniowymi kręgosłupa i stawów. *Med Og Nauk Zdr*. 2013;19(3):362–369.
[11] Rysiak E., Drągowski P., Prokop I., Jakubów P. Ocena kosztów i efektywności farmakologicznego leczenia bólu przewlekłego dolnego odcinka kręgosłupa. *Now Lek*. 2013;82(5):399–405.
[12] Zaniewska R., Okurowska-Zawada B., Kułak W., Domian K. Analiza jakości życia pacjentów z zespołem bólowym dolnego odcinka kręgosłupa po zastosowaniu przezskórnej elektrycznej stymulacji nerwów — TENS. *Med Pr*. 2012; 63(3):295–302.
[13] Antczak A., Haor B., Głowacka M., Biercewicz M. Jakość życia pacjentów z zespołem bólowym odcinka lędźwiowego kręgosłupa po zastosowaniu leczenia sanatoryjnego — doniesienia wstępne. *Piel Zdr Publ*. 2014;4(1):19–25.
[14] Bojczuk T., Przysada G., Strzępek Ł. Wpływ ćwiczeń leczniczych na wskaźniki jakości życia u pacjentów z bólem dolnego odcinka kręgosłupa. *Prz Med Uniw Rzesz*. 2010; 1:66–72.

Corresponding Author:
Katarzyna Snarska
Zakład Medycyny Klinicznej
Uniwersytetu Medycznego w Białymstoku
ul. Szpitalna 37, 15-295 Białystok, Poland
e-mail: khajduczek@wp.pl

Conflict of Interest: None
Funding: None
Author Contributions: Ewa Piszczatowska[A, B, D], Monika Chorąży[D, G–I], Katarzyna Krystyna Snarska[A, C, E, F, H], Grzegorz Kulikowski[E, F, I]
(A — Concept and design of research, B — Collection and/or compilation of data, C — Analysis and interpretation of data, D — Statistical analysis, E — Writing an article, F — Search of the literature, G — Critical article analysis, H — Approval of the final version of the article, I — Acquisition of assets [eg financial])
Received: 26.02.2018
Accepted: 19.03.2018