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## Assessment of the Effect of Pain on Daily Functioning of Patients with the Diagnosed Back Pain Syndrome

### Ocena wpływu bólu na codzienne funkcjonowanie pacjentów ze zdiagnozowanym zespołem bólowym kręgosłupa

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#### Abstract

**Introduction.** The back pain syndrome is one of the most common health problem of the contemporary society. Acute pain syndromes of the lower section of the spine affect 28 people per 1000 inhabitants. The disease more often affects men aged 25–64. In the population of one hundred thousand inhabitants 107 men and 64 women suffer from acute pain syndrome of the cervical spine. Most often the pain occurs between 50 and 54 years of age. Also, back pain syndromes constitute a serious economic problem for the contemporary society as they are statistically the most frequent in the case of men and the second in the case of women reason for absence from work, and in 20% of cases they indicate the necessity of granting disability pension due to permanent inability to work.

**Aim.** Assessment of pain intensity effect on daily functioning of patients diagnosed with the back pain syndrome.

**Material and Methods.** The research included 187 patients diagnosed with back pain syndrome aged from 20 to 83 years and it was carried out in April and May 2013. The diagnostic survey method and statistical analysis were applied.

**Results.** The most difficult issue for the respondents in their daily functioning was to accept permanent pain stimuli (100%), permanent stiffness in the back or neck, (96.33%), copying with the pain when the performance of everyday duties required prolonged sitting or standing (99.47%) as well as the performance of daily household activities (100%). Back pain to greater or lesser extent resulted in the loss of control over major spheres of everyday life in the respondents, on average from 3.34 to 6.37 on the scale from 1 to 10 points. All respondents admitted having problems with remaining in the sitting position for a long time. The average loss of fitness in the group of respondents ranged 39.30±18.09 points (Me=37; range from 7 to 88 points). Based on the average value ± 1 SD it was stated that 16.58% (n=31) of respondents had light malfunction, whereas 65.78% (n=123) had moderate and 17.64% (n=33) serious.

**Conclusions.** 1. Chronic back pain has a devastating impact on the daily functioning of patients with diagnosed spinal pain syndrome 2. The most difficult issue for the respondents in their daily functioning was to accept permanent pain stimuli 3. The average strength of the negative impact of the back pain on daily functioning ranged from 6.25 to 6.49 in the scale from 1 to 10 points. 4. All respondents admitted that back pain to greater or lesser extent resulted in a loss of control over major spheres of everyday life. 5. Just over a quarter of respondents (25.13%) did not have major problems, resulting from the pain, with the performance of daily duties at work. 6. For more than three quarters of the respondents (77.01%) pain while sitting in the chair for a few hours was a significant problem in everyday functioning. 7. The statistical analysis carried out, showed a significant correlation between the intensity of the back pain and lowering of physical fitness. (JNNN 2014;3(4):157–168)

**Key Words:** back pain, functional capacity, problems at work, active recreation

#### Streszczenie

**Wstęp.** Zespół bólowy kręgosłupa to jeden z najczęstszych problemów zdrowotnych współczesnego społeczeństwa. Ostre zespoły bólowe dolnego odcinka kręgosłupa występują u 28 osób na 1000 mieszkańców. Choroba dotyczy częściej mężczyzn pomiędzy 25 a 64 rokiem życia. W populacji 100 tys. mieszkańców na ostry zespół bólowy szyjnego

odcinka kręgosłupa cierpi 107 mężczyzn i 64 kobiety. Najczęściej ból pojawia się pomiędzy 50 a 54 rokiem życia. Ponadto zespoły bólowe kręgosłupa stanowią bardzo poważny problem ekonomiczny dla współczesnego społeczeństwa, ponieważ są statystycznie najczęstszą u mężczyzn i drugą, co do częstości u kobiet, przyczyną absencji w pracy, a w 20% są wskazaniem do przyznania renty inwalidzkiej z powodu trwałej niezdolności do pracy.

**Cel.** Ocena wpływu nasilenia dolegliwości bólowych na codzienne funkcjonowanie pacjentów ze zdiagnozowanym zespołem bólowym kręgosłupa.

**Materiał i metody.** Badaniem objęto 187 pacjentów ze zdiagnozowanym zespołem bólowym kręgosłupa w wieku od 20 do 83 lat. Badania przeprowadzono w kwietniu i w maju 2013 r. Wykorzystano metodę sondażu diagnostycznego oraz przeprowadzono analizę statystyczną.

**Wyniki.** Najtrudniejsze dla ankietowanych w codziennym funkcjonowaniu było zaakceptowanie ustawicznych bodźców bólowych (100%), ciągła sztywność pleców lub szyi (96,33%), radzenie sobie z bólem, gdy wykonywane obowiązki wymagały długiego siedzenia lub stania (99,47%) oraz wykonywanie codziennych czynności domowych (100%). Ból kręgosłupa w mniejszym lub większym stopniu spowodował u badanych utratę kontroli nad ważnymi sferami codziennego życia, średnio od 3,34 do 6,37 w skali od 1 do 10 punktów. Do kłopotów z długim przebywaniem w pozycji siedzącej przyznali się wszyscy badani. Średni ubytek sprawności fizycznej w badanej grupie wynosił  $39,30 \pm 18,09$  pkt. ( $Me=37$ ; zakres od 7 do 88 pkt). Na podstawie wartości średniej  $\pm 1$  SD stwierdzono, że 16,58% ( $n=31$ ) badanych miało lekką niesprawność, zaś 65,78% ( $n=123$ ) umiarkowaną i 17,64% ( $n=33$ ) ciężką.

**Wnioski.** 1. Przewlekły ból kręgosłupa ma destrukcyjny wpływ na codzienne funkcjonowanie pacjentów ze zdiagnozowanym zespołem bólowym kręgosłupa. 2. Najtrudniejsze dla ankietowanych w codziennym funkcjonowaniu było zaakceptowanie ustawicznych bodźców bólowych. 3. Średnia siła negatywnego oddziaływania bólu kręgosłupa na codzienne funkcjonowanie wahała się od 6,25 do 6,49 w skali od 1 do 10 punktów. 4. Wszyscy badani przyznali, że ból kręgosłupa w mniejszym lub większym stopniu spowodował utratę kontroli nad ważnymi sferami codziennego życia. 5. Zaledwie nieco ponad jedna czwarta badanych (25,13%) z powodu bólu nie miała większych problemów z wykonywaniem codziennych obowiązków w pracy. 6. Dla ponad trzech czwartych (77,01%) respondentów dolegliwości bólowe podczas siedzenia na krześle przez kilka godzin stanowiły istotny problem w codziennym funkcjonowaniu. 7. Przeprowadzona analiza statystyczna wykazała istotny związek pomiędzy nasileniem dolegliwości bólowych kręgosłupa a obniżeniem sprawności fizycznej. (PNN 2014;3(4):157–168)

**Słowa kluczowe:** ból kręgosłupa, wydolność funkcjonalna, problemy w pracy, aktywny wypoczynek

## Introduction

The back pain syndrome is one of the most common health problem of the contemporary society. Sharp pain syndromes of the lower section of the spine affect 28 people out of 1000 inhabitants. The disease more often affects men aged 25–64 [1]. In the population of one hundred thousand inhabitants 107 men and 64 women suffer from acute pain syndrome of the cervical spine. Most often the pain occurs between 50 and 54 years of age [2]. Also, back pain syndromes constitute a serious economic problem for the contemporary society as they are statistically the most frequent reason, in the case of men and the second in the case of women, for absence from work, and in 20% of cases they indicate the necessity of granting disability pension due to permanent inability to work [3].

Pain is a multi-dimensional and subjective sensation and therefore it is difficult to obtain its immediate and objective evaluation [4]. The intensity of pain perception is very subjective, and it depends not only on the severity of pathological processes with a given disease. The intensity of pain sensation is closely related with the patient's personality as well as the patient's state of mind [5]. It includes normal, excessive or substantially weakened sensation of pain in relation to the ongoing disease process in the body. Sometimes the intensity of

pain is genetically conditioned [6]. The International Society of Pain Research defines pain as unpleasant and emotional sensation related to the current or possible damage to tissues or described in the categories of such damage. We can distinguish a few types of pain including acute pain, which is most often related to damage of a specific tissue, chronic pain lasting for years, accompanied by limitations in functioning, often depression or emotional disorders [7].

Pain is a process consisting of a few stages linked together. The first stage is a sensual experience, which generates the feeling of unpleasantness (the second stage). The third stage — suffering is a phenomenon consisting of sensory reactions, such as depression, anxiety, anger. They are closely related to human views regarding pain, to personality and to ways of coping with a difficult situation. The fourth stage is the pain behaviour which means behavioral expression of pain. It consists not only of the way of expressing feelings but also of what can be observed, which is what the man does, says, but also what the man does not do, say, because of the pain felt. Patients with greater restraint in expressing their feelings will not be too expressive in manifesting the pain perceived [8]. Mental response to pain is divided into response level of pain perception threshold and response level of pain tolerance threshold [9]. The pain perception threshold is the smallest intensity of the stimulus causing conscious

perception of pain in every patient — it is stable and only a little diversified. The pain tolerance threshold means the most intensified pain described by the unit as ‘unbearable pain’ — highly variable (may be reduced or increased) and depends on numerous factors. The pain threshold is reduced by: insomnia, fatigue, experiencing anxiety, fear, the occurrence of negative emotions such as: anger, sadness, closing in oneself, a sense of abandonment, internal seclusion. Whereas, relaxation, empathy, kindness of other people, a sense of security and pain control, the understanding and mitigation of somatic symptoms raises the pain threshold [10].

Chronic spinal pain syndrome contributes to the formation of negative emotions, such as sadness or anger, which often lead to the development of anxiety and depression, and in extreme cases, prolonged and severe pain can generate severe mental illness. In addition, a sudden reduction or cessation of vital activity of the patient in the family, at work and in society causes exhaustion, both mental and physical. Deepening of the pain perception by the patient is also affected by the lack of sufficient knowledge regarding possible reasons for the dysfunctions as well as on possible therapeutic actions [11]. In the light of the latest scientific reports, disorders, and even psychological discomfort caused by chronic pain can lead to aggression and therefore to destabilization of patient’s functioning in both family and social relationships [12]. Untreated pain may generate psychological responses of the body which can disturb or prevent the effective treatment and rehabilitation of spinal pain syndrome [13].

The extended condition of permanent pain results in a feeling of chaos which leads the sufferer to seek ways to self relieve the discomfort. The first reaction of the patient is usually to look for support from family or friends. Many patients try to reduce the intensification of the emotions related to pain by means of distraction, relaxation or meditation exercise etc. The best approach to the problem of chronic back pain, is one focused on a particular solution (such as improving exercise, for example). Many authors indicate the effectiveness of actions aimed at looking for information which helps to understand the scope of different options resulting in the improvement of the health condition [14]. However, not everyone can copy with pain. Some patients apply ineffective strategies, trying to ‘escape’ from the problem and pretending it does not exist or ‘alternatively’ they focus on it, treating it as a catastrophe, which generates additional suffering and makes the treatment less effective [15].

The most important and at the same time the least appreciated method to copy with pain is psycho-education: providing patients with relevant information regarding the mechanism and reason for pain occurrence as well as patients’ own possibilities of joining the process of

treatment and therefore increasing its effectiveness. In many cases cognitive behavioral therapy is recommended, which apart from teaching correct behavior, focuses on correcting wrong attitudes, beliefs, and non-adaptive ways of thinking about the pain and the situation related to it [16].

The study has aimed at the assessment of the effect of pain severity on daily functioning of patients diagnosed with back pain syndrome.

## Material and Methods

The research included 187 patients aged from 20 to 83 years. The group consisted of both genders, including 63.10% (n=118) of women and 36.90% (n=69) of men. The respondents in 33.69% (n=63) had secondary education, whereas 32.09% (n=60) of the respondents had higher education, 30.48% (n=57) vocational education and 3.74% (n=7) basic education. 47.59% (n=89) of the respondents live in a city, whereas 52.41% (n=98) of the respondents lived in the country. Almost two thirds of the respondents (61.50%) were employed.

The research was carried out in April and May 2013. They were performer in a sanatorium in Horyniec Zdrój, in the KRUS Farmers Rehabilitation Centre, in a sanatorium in Kołobrzeg, and rehabilitation centres in Lublin including Academic Centre for Physiotherapy at WSS and Luxmed. The research was carried out after obtaining the consent from the Bioethics Committee at the Medical University of Lublin no. KE-0254/72/2013 dated 28th March 2014. Participation in the study was voluntary. The people taking part in it were informed about its aim and character and they signed the ‘Template of their consent in the research’. The patient could, at any moment, withdraw from the research without any consequences.

For the needs of this study the method of diagnostics survey was applied. The first author part of the survey included questions which allowed to gather demographic information regarding the population studied. The author part of the questionnaire also included questions about the moment when the spinal pain occurred and when the disease was diagnosed. The were inquired about the course of the diagnostics process, the type and form of the therapy applied as well as the ways of copying with the back pain problem. The survey also referred to the issues of the respondents’ physical activity, time spent on passive rest, the manners of copying with stress and to smoking. In part two of the survey an analog Barbara Headley scale of pain assessment (VAS) was included. It is a scale consisting of 14 specific questions regarding: pain perception by respondents, stiffness felt in the back or neck as well as its intensification at night, while sitting,

walking, motionless sitting or standing, doing housework and driving. The remaining questions in this part of the questionnaire regarded the effectiveness of the painkillers applied, stiffness felt in the back or neck, situations having an effect on the reduction of pain, change of previous duties at work as well as control over pain and other parts of life due to the pain [17]. Part three of the survey included the author's questionnaire based on the standardised Quebec Back Pain Disability Scale (QDS). The scale in question is used for assessing the effect of back pain on daily functioning of the respondents.

The results of the research were subject to statistical analysis. The values of measurable parameters analyzed are presented by means of the average value, median and standard deviation whereas in the case of immeasurable parameters, frequencies and percentage have been applied. For the measurable characteristics, the normality of distribution of the parameters analyzed has been assessed using Shapiro-Wilk *W* test. For the comparison of two independent groups Mann-Whitney *U* test was applied. For more than two groups Kruskal-Wallis test was used. In order to examine the relationship between the variables R Spearman correlation was applied. In the case of unrelated quality properties, for the purpose of identifying the differences between the groups compared, the homogeneity test  $\chi^2$  was used. For studying the existence of correlations between the properties tested the independence  $\chi^2$  test was used.

## Results

The study showed, that chronic back pain significantly reduced daily activities of the respondents, who in most cases (51.34%) due to the pain faced the necessity of withdrawing from numerous daily activities (Table 1, Figure 1). Strength of the negative impact of the disease on routine duties in the household ranged from 6.25 to 6.49 in the scale from 1 to 10 points. It has been stated that chronic back pain nearly always results in the loss of control over important spheres of everyday life, on average from 3.34 to 6.37 in the scale from 1 to 10 points (Table 2, Figure 2). There has been shown a significant correlation between the duration of pain and the limitation in patients' functioning efficiency — relevant correlations adopted values ranging from 0.21 to 0.56 (Table 3).

The research has proved that back pain is a serious problem (3.59 on the scale from 1 to 5), when there is a need of lifting or even moving a heavy object (such as a suitcase or door). It is also a big problem for a person with damaged spine to fulfill duties at work, particularly when one's work requires remaining in the sitting or standing position for a long period of time. The authors have also proved that chronic back pain significantly disturbs active rest of the respondents (Table 4; Table 5; Figure 3; Figure 4).

Table 1. Frequency of the occurrence of problems in the functioning due to back pain

Range of functioning	0 points (none)		1–4 points		5–6 points		7–10 points (the most troublesome)	
	N	%	N	%	N	%	N	%
Perception of one's own pain	0	0.00	24	12.83	76	40.64	87	46.52
Pain felt in the night	7	3.74	77	41.18	61	32.62	42	22.46
Activity disorders resulting from pain	0	0.00	27	14.44	64	34.22	96	51.34
Impact of painkillers	6	3.21	90	48.13	42	22.46	49	26.20
Assessment of stiffness in one's back/neck	5	2.67	56	29.95	42	22.46	84	44.92
Problems with sitting resulting from pain	1	0.53	51	27.27	65	34.76	70	37.43
Impact of pain on walking	2	1.07	72	38.50	68	36.36	45	24.06
Impact of pain on sitting/standing	1	0.53	23	12.30	56	29.95	107	57.22
Impact of pain on the performance of daily activities at home	0	0.00	30	16.04	65	34.76	92	49.20
Impact of pain on driving	2	1.07	92	49.20	45	24.06	48	25.67
Assessment of the severity of pain after lying down	2	1.07	63	33.69	54	28.88	68	36.36
Impact of pain on duties at work	47	25.13	63	33.69	37	19.79	40	21.39
Assessment of pain control	1	0.53	69	36.90	54	28.88	63	33.69
Assessment of the loss of control over other spheres of life resulting from pain	17	9.09	118	63.10	30	16.04	22	11.76

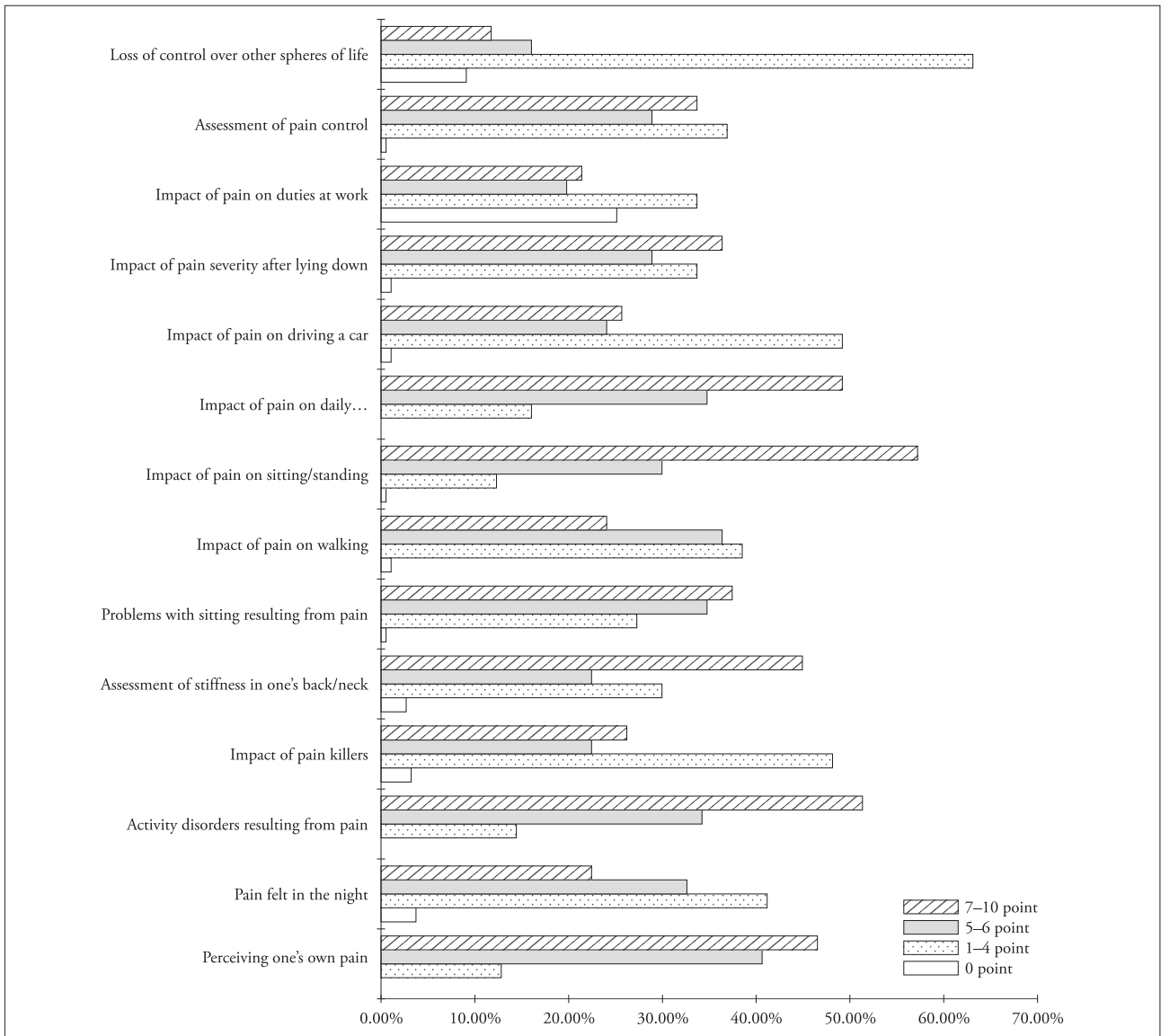


Figure 1. Frequency of the occurrence of problems in functioning resulting from back pain

Table 2. Assessment of the back pain severity impact on the problems in functioning

Range of functioning	Average	Median	Min	Max	SD
Perception of one's own pain	6.42	6.00	3.00	10.0	1.57
Pain felt at night	4.76	5.00	0.00	10.0	2.22
Disorders of activity due to pain	6.37	7.00	1.00	10.0	1.82
Impact of painkillers	4.76	4.00	0.00	10.0	2.47
Assessment of stiffness in one's back/neck	5.67	6.00	0.00	10.0	2.29
Problems with sitting resulting from pain	5.68	6.00	0.00	9.0	1.85
Impact of pain on walking	4.97	5.00	0.00	9.0	1.90
Impact of pain on sitting/standing	6.49	7.00	0.00	10.0	1.79
The impact of pain on the performance of daily activities at home	6.25	6.00	1.00	10.0	1.74
Impact of pain on driving	4.89	4.00	0.00	10.0	2.45
Assessment of the severity of pain after lying down	5.43	5.00	0.00	10.0	2.66
Impact of pain on duties at work	3.80	3.00	0.00	10.0	3.19
Assessment of pain control	5.22	6.00	0.00	10.0	2.27
Assessment of the loss of control over other spheres of life resulting from pain	3.34	3.00	0.00	9.0	2.17



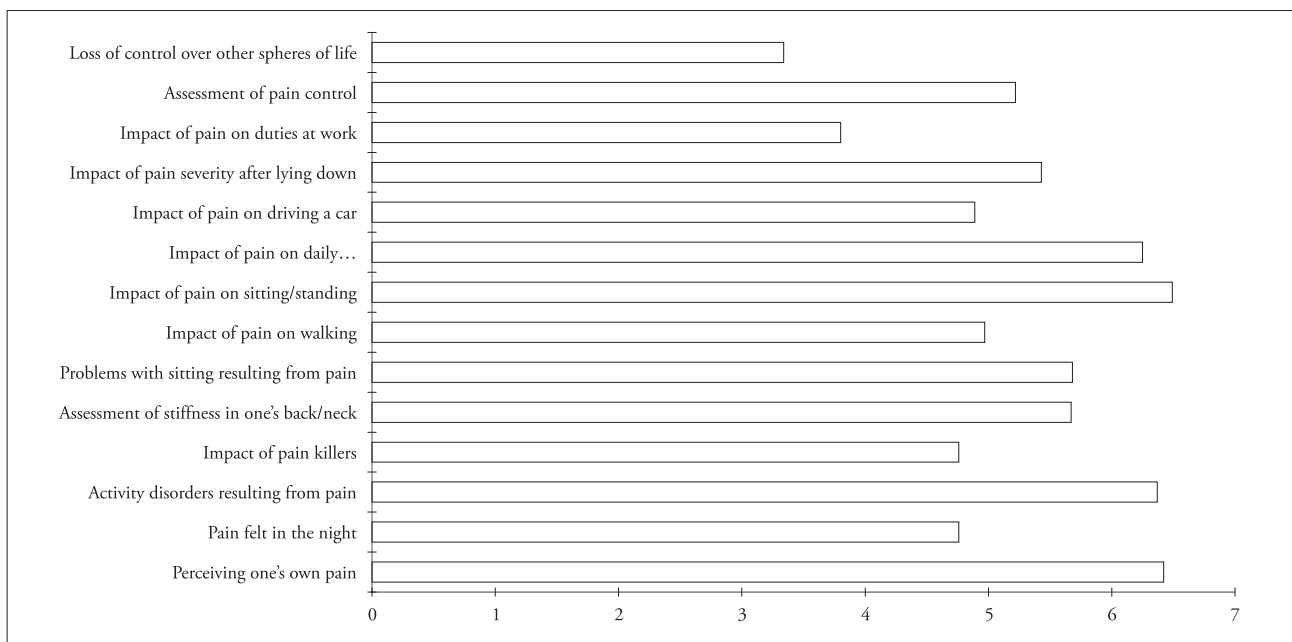


Figure 2. Assessment of the back pain impact on the problems in functioning

Table 3. Assessment of the correlation of back pain severity and duration on problems in functioning

Range of functioning	Statistical analysis	
	R	p
Perception of one's own pain	0.55	<0.000001*
Pain felt in the night	0.56	<0.000001*
Activity disorders resulting from pain	0.39	<0.000001*
Impact of painkillers	0.21	0.005*
Assessment of stiffness in one's back/neck	0.26	0.0003*
Problems with sitting resulting from pain	0.28	0.00009*
Impact of pain on walking	0.42	<0.000001*
Impact of pain on sitting/standing	0.35	0.000001*
Impact of pain on the performance of daily activities at home	0.42	<0.000001*
Impact of pain on driving	0.43	<0.000001*
Assessment of the severity of pain. after lying down	0.44	<0.000001*
Impact of pain on duties at work	0.27	0.0002*
Assessment of pain control	0.33	0.000003*
Assessment of the loss of control over other spheres of life resulting from pain	0.35	0.000001*

Table 4. Assessment of the occurrence of problems in daily functioning

Type of the problem	Is not difficult at all		Minimum of difficulty		Slightly difficult		Quite difficult		Very difficult		Impossible to be performed	
	0		1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%	N	%
1	2	3	4	5	6	7	8	9	10	11	12	13
Getting up from bed	34	18.18	48	25.67	54	28.88	35	18.72	16	8.56	0	0.00
Sleeping over the whole night	32	17.11	48	25.67	53	28.34	33	17.65	18	9.63	3	1.60
Rolling on the bed	55	29.41	60	32.09	39	20.86	22	11.76	9	4.81	2	1.07
Driving a car	28	14.97	57	30.48	55	29.41	24	12.83	13	6.95	10	5.35

Table 4. Continued

1	2	3	4	5	6	7	8	9	10	11	12	13
Standing for 20–30 minute	27	14.44	44	23.53	44	23.53	45	24.06	22	11.76	5	2.67
Sitting in a chair for a few hours	0	0.00	7	3.74	36	19.25	75	40.11	65	34.76	4	2.14
Climbing up one flight of stairs	66	35.29	50	26.27	44	23.53	20	10.70	7	3.74	0	0.00
Covering the distance of 300–400 meters (walking)	68	36.36	66	35.29	24	12.83	20	10.70	7	3.74	2	1.07
Covering a distance of a few kilometers (walking)	16	8.56	20	10.70	50	26.74	51	27.27	39	20.86	11	5.88
Reaching upper shelves	37	19.79	57	30.48	45	24.06	29	15.51	13	6.95	6	3.21
Throwing a ball	49	26.20	52	27.81	40	21.39	32	17.11	11	5.88	3	1.60
Covering the distance of 100 meters (running)	20	10.70	43	22.99	29	15.51	48	25.67	30	16.04	17	9.09
Taking out food from the refridgerator	87	46.52	54	28.88	22	11.76	16	8.56	7	3.74	1	0.53
Making the bed	43	22.99	48	25.67	51	27.27	33	17.65	10	5.35	2	1.07
Putting on socks (tights)	27	14.44	36	19.25	32	17.11	44	23.53	44	23.53	4	2.14
Bending in order to clean the bath	13	6.95	23	12.30	48	25.67	49	26.20	47	25.13	7	3.74
Moving a chair	123	65.78	47	25.13	10	5.35	5	2.67	2	1.07	0	0.00
Pulling or pushing heavy door	5	2.67	20	10.70	46	24.60	42	22.46	43	22.99	31	16.58
Carrying two bags with shopping	12	6.42	38	20.32	65	34.76	38	20.32	21	11.23	13	6.95
Lifting and carrying a heavy suitcase	1	0.53	3	1.60	30	16.04	45	24.06	67	35.83	41	21.93

Table 5. Assessment of the severity of the difficulties in everyday functioning

Type of the problem	Average	Median	Min	Max	SD
Getting up from bed	1.74	2.00	0.00	4.00	1.21
Sleeping over the whole night	1.82	2.00	0.00	5.00	1.27
Rolling on the bed	1.34	1.00	0.00	5.00	1.21
Driving a car	1.82	2.00	0.00	5.00	1.33
Standing for 20–30 minutes	2.03	2.00	0.00	5.00	1.33
Sitting in a chair for a few hours	3.12	3.00	1.00	5.00	0.87
Climbing up one flight of stairs	1.22	1.00	0.00	4.00	1.17
Covering the distance of 300–400 meters (walking)	1.13	1.00	0.00	5.00	1.19
Covering a distance of a few kilometers (walking)	2.59	3.00	0.00	5.00	1.32
Reaching upper shelves	1.69	1.00	0.00	5.00	1.32
Throwing a ball	1.53	1.00	0.00	5.00	1.29
Covering the distance of 100 meters (running)	2.41	3.00	0.00	5.00	1.49
Taking out food from the refridgerator	0.96	1.00	0.00	5.00	1.16
Making the bed	1.60	2.00	0.00	5.00	1.23
Putting on socks (tights)	2.29	2.00	0.00	5.00	1.44
Bending in order to clean the bath	2.61	3.00	0.00	5.00	1.28
Moving a chair	0.48	0.00	0.00	4.00	0.81
Pulling or pushing heavy door	3.02	3.00	0.00	5.00	1.35
Carrying two bags with shopping	2.30	2.00	0.00	5.00	1.29
Lifting and carrying a heavy suitcase	3.59	4.00	0.00	5.00	1.08

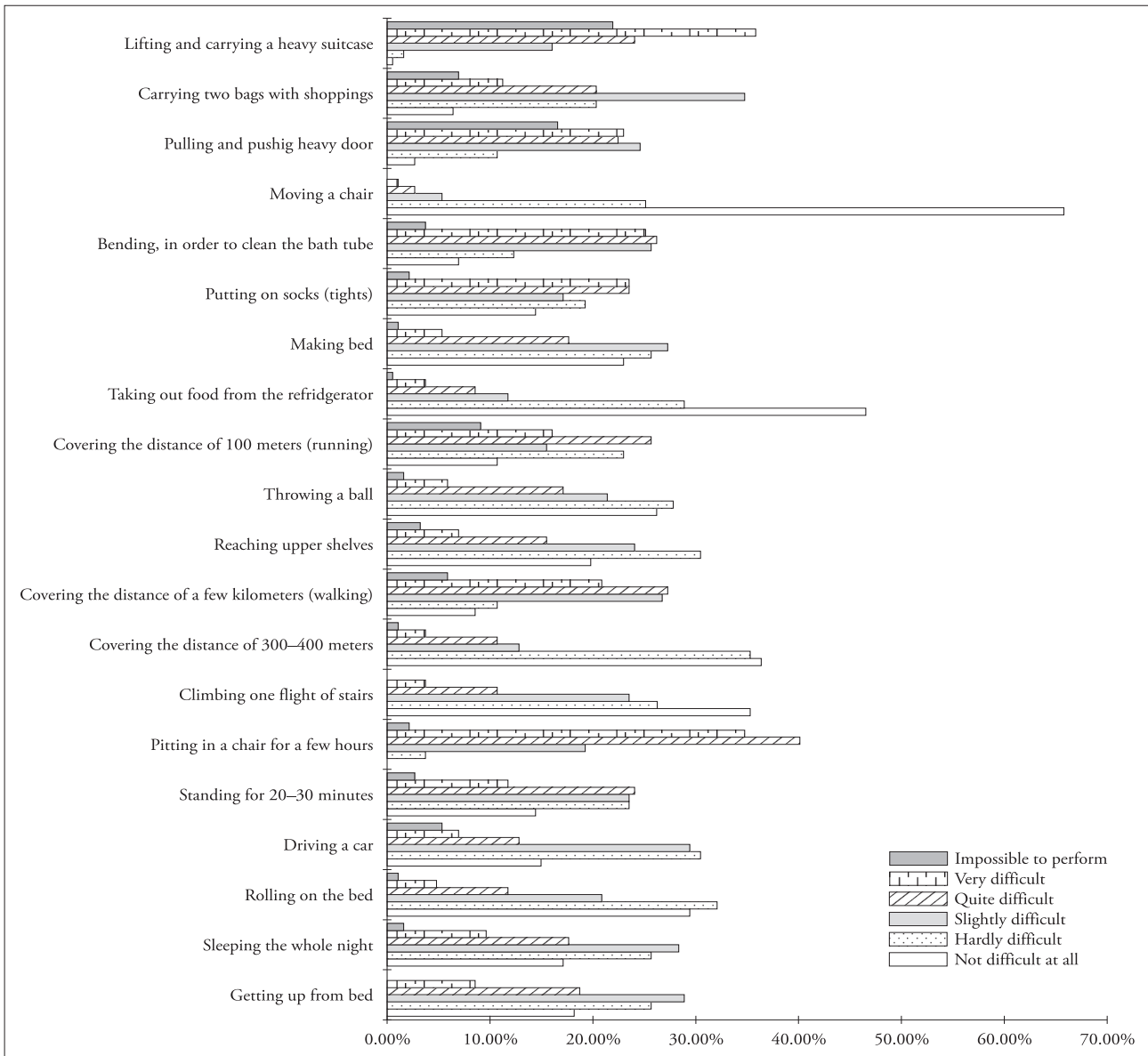


Figure 3. Assessment of the occurrence of problems in daily functioning

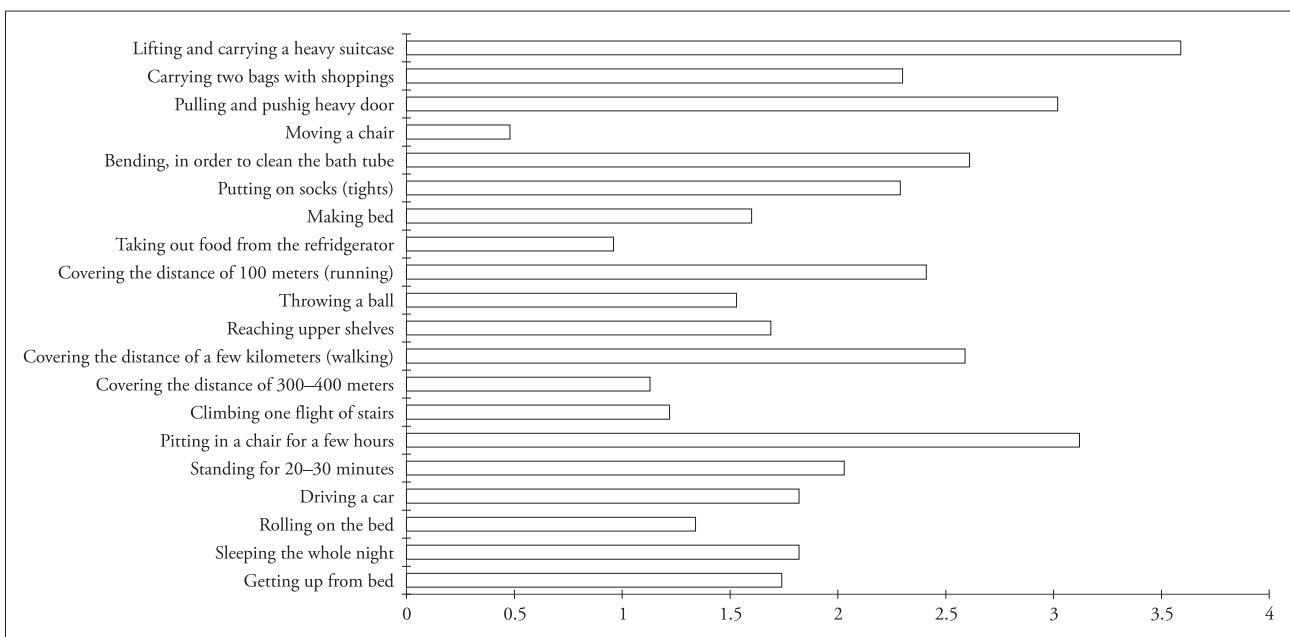


Figure 4. Assessment of difficulty increase in daily functioning



Table 6. Assessment of the back pain impact on the decrease of physical fitness and problems in everyday functioning

Range of functioning	Statistical analysis	
	R	p
Perceiving one's own pain	0.59	<0.000001*
Pain felt in the night	0.66	<0.000001*
Activity disorders resulting from pain	0.67	<0.000001*
Impact of painkillers	0.18	0.01*
Assessment of stiffness in the back/neck	0.46	<0.000001*
Problems with sitting resulting from pain	0.52	<0.000001*
Impact of pain on walking	0.51	<0.000001*
Impact of pain on sitting/standing	0.56	<0.000001*
Impact of pain on the performance of daily activities at home	0.64	<0.000001*
Impact of pain on driving	0.66	<0.000001*
Assessment of the severity of pain after lying down	0.54	<0.000001*
Impact of pain on duties at work	0.52	<0.000001*
Assessment of pain control	0.55	<0.000001*
Assessment of the loss of control over other spheres of life resulting from pain	0.67	<0.000001*

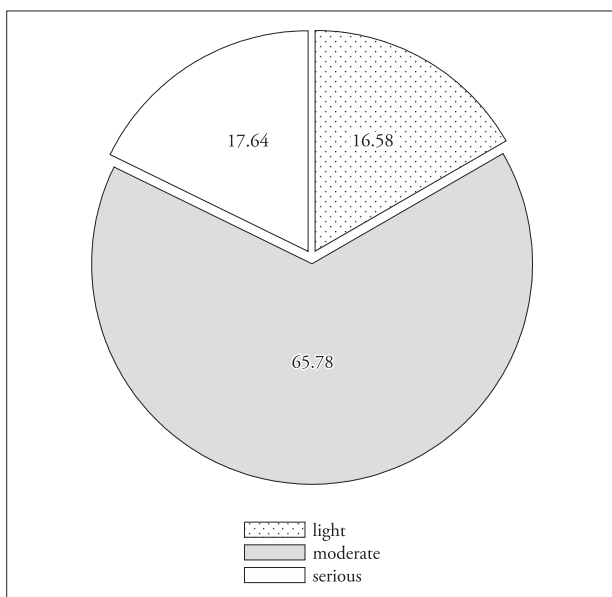


Figure 5. Percentage of respondents including the disability level

It has been shown that average loss of physical fitness in the group of respondents was  $39.30 \pm 18.09$  points. ( $Me=37$ ; range from 7 to 88 points). It has been stated, based on the average value  $\pm 1$  SD that 16.58% ( $n=31$ ) of the respondents had minor disability, 65.78% ( $n=123$ ) moderate and 17.64% ( $n=33$ ) serious (Figure 5). A statistically significant relationship has been reported between the severity of back pain and the decrease of physical fitness and the occurrence of problems related to everyday functioning. The correlations adopted values ranging from 0.18 to 0.67 (Table 6, Figure 5).

## Discussion

Decrease of physical capacity resulting from chronic back pain is usually connected with measurable difficulties in everyday functioning of the individual, both at home as well as in the professional and social aspects of life [18]. This has been confirmed by our studies which have proved that chronic back pain significantly decreased daily activity (6.42), and in the case of majority of respondents (51.34%) the struggle against strong pain meant the necessity to withdraw from most of everyday duties. It most difficult for the respondents to accept in their daily functioning, continuous pain stimuli (100%), permanent stiffness of the back or neck (96.33%), copying with pain, when the performance of duties required sitting or standing for a long time (99.47%) as well as performing everyday activities at home (100%). The average strength of the negative impact of back pain on the above aspects of daily functioning ranged from 6.25 to 6.49 on a scale from 1 to 10 points.

Chronic disease of the spine and the associated decrease of psychomotor capacity always makes the patient define new life aims [19]. This thesis has been confirmed by all respondents by admitting that back pain to a lesser or greater extent, caused the loss of control over important spheres of everyday life, ranging on average from 3.34 to 6.37 on a scale from 1 to 10 points. It found its evidence in form of: light pain, which disturbed rest at night (96.26%) and in difficulties with driving (98.93%), whereas pharmacological treatment was effective only for 3.21% of the respondents. Just over a quarter of respondents (25.13%) had no major problems with the performance of daily duties at work because of the pain.

Similar results were obtained in previous studies which showed that chronic back pain significantly disturb the functioning of an individual almost in all spheres of one's life which is manifested by the fact that the vast majority of patients with chronic back pain (82.05%) were forced, due to growing complaints, to devote their free time to a long and arduous procedure of finding the reasons for pain and a diagnosis defining spine treatment possibilities [20]. According to the research carried out in 2011, back pain in particular occurs in the representatives of medical professions where the vast majority of the nurses surveyed (70.87%) admit having a problem with performing a full professional activity due to back pain. The most difficult situation is in the surgical wards, where more than three-quarters (76.58%) of nurses due to the pain in the spine are forced to limit their activity [21].

The statistical analysis carried out, indicated significant relationship between the severity of the impact of back pain problems in the functioning within the period of back pain occurrence. Correlations had values ranging from 0.21 to 0.56. Along with the longer continuance of back pain, the pain to a greater extent limits the functioning of the respondents.

Since the chronic back pain significantly disturbs the functioning of the individual in all spheres, it was decided that it should be found which everyday activities cause most problems to the patients. The research performed has proved that back pain is a large problem (3.59 on the scale from 1 to 5) when there occurs a need of lifting a heavy object. Over one fifth (21.93%) of respondents admitted that due to the back pain they are not able to lift and carry heavy objects, including a heavy suitcase. Pulling and pushing heavy door was a significant problem (3.02 on the scale from 1 to 5), which could be managed by 16.58% of respondents. How severe in the performance of professional duties back pain is, found its evidence in the previous studies carried out by the authors which prove that the overwhelming majority (71.23%) of nurses have problems with back pain when lifting or carrying heavy objects [21].

In the contemporary society more and more duties both at work as well as at home are performed in the sitting position. The research carried out clearly shows that in the case of patients with the pain syndrome diagnosed remaining in the sitting position for a few hours is a large problem (3.12 on the scale from 1 to 5). All respondents admitted having problems with remaining in the sitting position for a long period, and for more than three quarters (77.01%) of respondents the pain perceived during the period of sitting for a few hours in the chair was a significant problem in their everyday functioning. The necessity of remaining in the sitting position for a long time is a large problem in the performance of medical professions. The latest research

indicate that as many as 60.47% of nurses experience discomfort due to back pain during a long period of remaining in the sitting position [21].

Chronic back pain significantly disturb active rest of the respondents, which can be exemplified by respondents' problems with covering the distance of approximately 100 m running (2.41 on the scale from 1 to 5), or with covering the distance of a few kilometers walking (2.59 on the scale from 1 to 5). The authors are concerned about the fact that only one out of ten respondents (respectively 10.70% and 8.56%) did not report problems in this respect (Table 4; Table 5; Figure 3; Figure 4). It appears that the main reason for that is a low rate of physical activity of Poles, who only in 39.2% admit spending their free time in an active way [22].

The back pain syndrome makes it difficult to perform such daily activities as bending over to wash the bath tube (2.61 on a scale of 1 to 5), carrying two bags with the purchased products (2.30 on a scale of 1 to 5), or even putting on socks (tights) (2.29 on a scale of 1 to 5). These results clearly indicate that chronic back pain is the reason for significant reduction or even loss of physical fitness. It finds its evidence in the research carried out on the 'healthy' population in the group of professional nurses. The research in question has proved that nurses' work to a smaller extent contributes to the increase of physical fatigue having been on duty. Back pain is the main symptom which increases the feeling physical fatigue after the duty [21].

Therefore, it was decided that it should be verified how serious the problem of disability in the population with the back pain syndrome is. It turned out that the average loss of physical fitness in the group of respondents was  $39.30 \pm 18.09$  points. ( $Me=37$ ; range from 7 to 88 points). Based on the average value of  $\pm 1$  SD it has been stated that 16.58% ( $n=31$ ) of respondents had a minor disability, whereas 65.78% ( $n=123$ ) had moderate and in the case of 17.64% ( $n=33$ ) the disability was recognized as serious.

Statistical analysis showed a significant correlation between the severity of back pain, the reduction in physical fitness and the emergence of problems related to daily functioning. The correlations adopted values ranging from 0.18 to 0.67. The results illustrated in table 6 correlate with other studies where was proved that more than one third (36.32%) of the society experiences permanent condition of fatigue and physical exhaustion in the result of chronic back pain [21].

## Conclusions

1. Chronic back pain has a destructive effect on daily functioning of patients with an diagnosed back pain syndrome.

2. The most difficult problem faced by the respondents was to accept permanent pain stimuli.
3. The average strength of the negative impact of the back pain on daily functioning ranged from 6.25 to 6.49 on the scale from 1 to 10 points.
4. All respondents admitted that back pain to a larger or lesser extent had resulted in the loss of control over the main spheres of everyday life.
5. Just over a quarter of respondents (25.13%) had no major problems with the performance of daily duties at work due to pain.
6. For more than three quarters (77.01%) of respondents pain occurring during the time of sitting in a chair for a few hours was a significant problem in their daily functioning.
7. Statistical analysis showed a significant correlation between the severity of back pain and a reduction in physical fitness.

### Implications for Nursing Practice

Analyses carried out in this dissertation allow to recommend to nurses working with patients who suffer from back pain, all activities aimed at educating the patient. The educational support recommended by the authors should include patient's involvement in the development of the ways to avoid overloading of the spine at work as well as during the leisure time. Patients should be made aware how important it is to follow the basic principles of ergonomics, such as appropriate height of chairs, regular breaks, and avoiding long periods of remaining in the same position. The nurse whenever it is possible, should provide the patient suffering from the back pain syndrome with guidelines regarding safe handling of heavy objects. It is also important to make this group of patients aware of the advantages which active rest might have in the course of back pain treatment.

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