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Strategies for Coping with Neuropathic Pain and Impact of Pain on the Functional Condition of Patients

Strategie radzenia sobie z bólem neuropatycznym oraz wpływ dolegliwości bólowych na stan funkcjonalny chorych

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Abstract

Introduction. Determining the strategies, which patients implement in order to fight the pain and the extent, to which they are able to control symptoms can greatly facilitate the selection of appropriate treatment.
Aim. The study aimed at assessing strategies to cope with pain by patients suffering from neuropathic pain.
Material and Methods. The study group consisted of 60 patients of the Pain Management Unit aged of 25–80 years suffering from neuropathic pain. The study was performed with the use of *Coping Strategies Questionnaire* (CSQ), *Visual Analogue Scale* (VAS) as well as a survey of own design.
Results. The average intensity of pain in the study group was 7.88 in VAS (±1.64). The most widely used strategy for dealing with pain in the study group was Praying (av. 3.3±1.1), whereas on the second place was Catastrophizing (av. 3.1±1.6). The patients over the age of 60 are significantly more likely to apply those strategies than younger patients. The other strategies were applied above all by the patients below 60.
Conclusions. The most often applied strategies in the study group was Praying and Catastrophizing. The choice of strategies for coping with pain varied depending on age, to lesser extend it was conditioned the gender. **(JNNN 2016;5(1):10–15)**
Key Words: neuropathic pain, coping with pain, CSQ, VASh

Streszczenie

Wstęp. Poznanie strategii, jakie podejmuje pacjent w walce z bólem oraz stopnia, w jakim jest w stanie opanować dolegliwości może znacznie ułatwić dobór odpowiedniego leczenia.
Cel. Celem pracy była ocena strategii radzenia sobie z bólem przez pacjentów cierpiących z powodu bólu neuropatycznego.
Materiał i metody. Badaniem objęto 60 pacjentów Poradni Leczenia Bólu w przedziale wiekowym 25–80 lat, cierpiących z powodu bólu neuropatycznego. Posłużono się kwestionariuszem „Strategii radzenia sobie z bólem" (ang. *Coping Strategies Questionnaire*, CSQ), wzrokowo-analogową skalą oceny bólu (ang. *Visual Analogue Scale*, VAS) oraz kwestionariuszem ankiety własnej konstrukcji.
Wyniki. Średnie natężenie dolegliwości bólowych w badanej grupie wynosiło 7,88 pkt w skali VAS (±1,64 pkt). Najpowszechniej stosowaną strategią radzenia sobie z bólem w badanej grupie była modlitwa (śr. 3,3±1,1), a na drugim miejscu katastrofizowanie (śr. 3,1±1,6). Pacjenci powyżej 60 roku życia istotnie częściej niż młodsi chorzy wybierali powyższe strategie. Wybór pozostałych strategii był domeną chorych poniżej 60 roku życia.
Wnioski. Najczęściej stosowanymi strategiami w badanej grupie były modlitwa i katastrofizowanie. Dobór strategii radzenia sobie z bólem był zróżnicowany w zależności od wieku, w mniejszym stopniu zależał od płci badanych. **(PNN 2016;5(1):10–15)**
Słowa kluczowe: ból neuropatyczny, radzenie sobie z bólem, kwestionariusz CSQ, skala VAS

Introduction

The pain is understood as an unpleasant sensory and emotional experience associated with real or possible tissue damage or described in terms of such damage (definition according to *International Association for the Study of Pain*, IASP) [1].

Chronic pain is continuous or recurrent pain that persists for more than 3–6 months, which itself is a disease and therefore requires regular analgesic therapy [2,3]. This kind of pain is responsible for a number of physical and physiological changes such as: limitation of physical activity, addiction to drugs or the medicines applied, isolation from the environment as well as apathy, anxiety and depression [4].

According to IASP definition, the neuropathic pain is caused by structural damage and nerve cell dysfunction in the peripheral or central nervous system [1]. Neuropathic pain is unique of its kind, given the characteristic clinical picture and it responds differently to drug therapy, namely the medicines reveal low efficiency [5]. According to Torrance et al. approximately 8% of population suffer from neuropathic pain, which corresponds to 17% of patients with chronic pain of varying aetiology [6].

The most common neuropathic pain syndromes are post-herpetic neuralgia and painful diabetic neuropathy [7]. Much less frequent are traumatic peripheral neuropathy, mainly prolonged post-operative pain, multi-symptomatic local pain syndromes, phantom pain, or central pain after stroke [8,9].

Despite advances in medicine, research in many centres around the world and the systematic introduction of new drugs for treatment, the efficacy of treatment of neuropathic pain is still not satisfactory, which in turn translates into the day-to-day functioning of patients [10].

The aim of this study was to find out the strategies for coping with pain by patients suffering from neuropathic pain.

Material and Methods

The study included 60 patients of Pain Management Unit of Health Centre in Tuchów (including 65.0% of women) aged 25–80 years, suffering from neuropathic pain. The patients were classified into two groups: group I (n=30; 50.0%) consisted of patients diagnosed with post-herpetic neuropathy, diabetic neuropathy, peripheral neuropathy and patients with phantom pain after amputation. Group II (n=30; 50.0%) included patients with chronic back pain caused by pressure on the nerve roots. Patients were informed about the aim of the study, its voluntary and anonymous character as well as they were instructed on the method of filling in the questionnaire.

The research was carried out by means of diagnostic survey, using a questionnaire. In order to examine ways of coping with neuropathic pain, there was applied a questionnaire "Strategies of dealing with pain" by A.K. Rosenstiel and F.J. Keefe in the Polish language adaptation developed by Zygfryd Juczyński. The questionnaire contains 42 statements for assessing strategies to cope with pain and their effectiveness in controlling and reducing pain. Ways of dealing with pain correspond to 7 strategies (6 cognitive and 1 behavioural), which in turn are part of the 3 factors: active coping (Reinterpreting Pain Sensations, Ignoring Pain Sensations, Coping Self-statements); distraction and taking alternative actions (Diverting Attention and Increasing Activity Level), catastrophic thinking and the search for hope. The composition of each of the 7 strategies includes 6 statements (with points from 0 to 6). The task of respondents is to assess the frequency of acting in a certain manner in the event of pain (from 0 — "never" to 6 — "I always do it"). A higher score means assigning greater importance to a given way of combating pain. The last two categories concern the ability to manage and opportunities to reduce pain. The range of results is from 0 to 6 [11].

The study also involved The own questionnaire containing socio-demographic data and information about pain (duration, nature, severity of pain), day-to-day functioning and emotional sphere of the participants. The respondents used a 5-level Likert scale in order to answer the question about satisfaction with their health and with themselves and the impact of pain on contact with family and friends. To assess the severity of pain Visual Analogue Scale has been applied. It is a universal tool, used for subjective assessment of the degree of pain experienced by patients. The patient assesses pain intensity, indicating a specific number on a simple scale from 0 to 10, where "0" means "no pain" and "10" — "the greatest imaginable pain" [12].

Statistical analysis were performed using STATISTICA for Windows 9.0. Mann-Whitney U test, Chi^2 test and phi Yul test as well as V Kramer coefficient were used. Statistically significant were the results for which the significance level was lower than or equal to 0.05.

Results

The largest number of respondents, defined the duration of pain as lasting from 1 to 1.5 years (28.3%, n=17), slightly fewer patients reported that they suffer from neuropathic pain lasting from 3 to 12 months (26.7%; n=16), and further from 1.5 to 2 years (20.0%,

n=12), from 2 to 3 years (11.7%, n=7), from 3 to 4 years and >4 years (each group 6.7%, n=4).

Data concerning pain

The largest number of the surveyed specified the duration of pain as lasting from 1 to 1.5 years (28.3%, n=17), slightly fewer reported that they suffer from neuropathic pain from 3 to 12 months (26.7%; n=16), and further from 1.5 to 2 years (20.0%, n=12) from 2 to 3 years (11.7%, n=7), from 3 to 4 years and >4 years (by 6.7%, n=4).

The vast majority of respondents identified the nature of pain as stinging (68.3%; n=41), slightly fewer as sharp (66.7%; n=40), tingling (65.0%; n=39), the patients rarely used such expressions as rapid (58.3%, n=35), numbing (41.7%, n=25), stinging (38.3%, n=23), electrifying (25.0%, n=15) or dull (3.3%; n=3).

The average intensity of pain in the study group was 7.88 on VAS (±1.64). Slightly greater degree of pain was perceptible in the case of the patients suffering from diabetic neuropathy, post-herpetic neuropathy as well as in the case of the patients after amputation (av. 8.28 ±1.65) than it was by the patients with pain due to nerve root oppression (av. 7.50±1.57), however this result was not statistically significant (p>0.05).

The applied forms of pain therapy

The majority of respondents (58.6%; n=34) previously benefited from physiotherapy treatments to reduce pain. The therapies most often mentioned included: laser therapy (51.7%), magnet therapy and electrotherapy (each 33.3%; n=20), whereas the least popular was hydrotherapy (3.3%; n=2). The percentage values do not add up to 100% because it was a multiple-choice question.

Acupuncture was used only by 15.0% of respondents (n=9), therapeutic massage was slightly more popular — 48.3% (n=29). Improving exercises were used by 45.0% of patients (n=27).

The impact of pain on daily functioning

Sleep disorders resulting from the pain experienced were stated by 68.3% of respondents (n=41), fewer respondents complained about dizziness — 32.8% (n=19). These symptoms were significantly more frequent in the case of those with post-herpetic as well as diabetic neuropathy and patients after amputation than in the case of patients with nerve root opression (p=0.01).

The vast majority of patients (81.4%; n=48) said that the pain hindered their daily functioning and 66.7% (n=38) reported that these problems affected their physical activity. The most common forms of physical activity undertaken in the study group were the following: work in the garden (48.3, n=29), walk (43.3%; n=26), cycling (36.7%; n=22) Nordic Walking (13.3%, n=8), swimming (11.7%, n=7) and aerobics (6.7%; n=4). The percentage values do not add up to 100% because it was a multiple-choice question.

According to the majority i.e. 44.8% of respondents (n=26) the pain moderately hindered contacts with family and friends. In the case of 22.4% of patients (n=13) the pain did not influence the relations with people, according to 19.0% (n=11) it had a slight impact, in the case of 10.3% (n=6) of respondents the pain had a significant effect on the relations, whereas 3.4% (n=2) indicated a significant impact.

Influence of pain on the emotional status of the respondents

The majority of respondents, 52.6% (n=30), were quite satisfied with their health, 29.8% (n=17) of respondents were dissatisfied, 10.5% (n=6) very dissatisfied and 7.0 % were satisfied (n=4). None of the respondents was very satisfied with their health. Most respondents, 43.1%, were not satisfied with themselves (n=25), 41.4% (n=24) were quite satisfied, 10.3% (n=6) were satisfied, 3.4% (n=2) were very unhappy, and the remaining 1.7% (n=58) very satisfied. It is worth noting that both less satisfied with themselves (p=0.02) as well as with their health (p=0.001) were the respondents suffering from diabetic and post-herpetic neuropathy and those after amputation than patients with root syndrome.

As many as 60.3% (n=35) of respondents reported that they often felt depressed or resigned. Slightly fewer — 32.8% (n=19) stated that such emotions affected them rarely, and 6.9% (n=4) answered that they never had such a feeling. Significantly fewer patients, who felt affliction, were those with neuropathies resulting the oppression of the nerve roots (p=0.005).

Strategies for coping with pain

The most widely used strategy for dealing with pain in the study group was Praying (av. 3.3±1.1), whereas Catastrophizing were the second (av. 3.1±1.6) (Figure). The respondents in their conviction slightly better coped with pain (av. 2.9±1.3) than were able to reduce it (av. 2.8±1.1).

The study revealed that the patients aged over 60 were significantly more likely than younger patients to cope with pain choosing such strategies as Catastrophizing

Table. Strategies for coping with pain depending on age and gender of the respondents

Strategy	Age			Gender		
	Average [points] Up to 60 years of age	Average [points] >60 years of age	p U Mann Whitney	Average [points] Women	Average [points] Men	p U Mann Whitney
Ability to Control Pain	3.5	2.2	<0.0001*	2.7	3.0	0.566
Ability to Decrease Pain	3.3	2.2	<0.0001*	2.7	2.7	0.845
Diverting Attention	2.1	1.4	0.005*	1.8	1.8	0.827
Reinterpreting Pain Sensations	0.9	0.4	0.003*	0.5	0.6	0.490
Catastrophizing	2.3	4.0	<0.0001*	3.3	2.8	0.436
Ignoring Pain Sensations	1.6	0.6	<0.0001*	1.1	1.0	0.870
Praying or Hoping	2.8	3.7	0.002*	3.5	2.4	<0.0001*
Coping Self-statements	2.6	1.5	0.000*	2.0	2.1	0.819
Increasing Activity Level	2.3	1.7	0.009*	2.1	1.7	0.197

* statistically significant differences

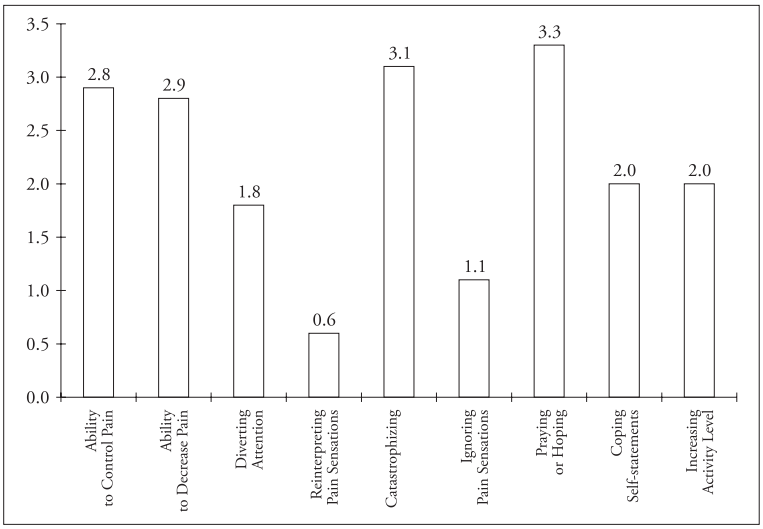

Figure. Frequency of application of given strategies for coping with pain by the respondents (averaged values)

and Praying. Selection of other strategies was the domain of patients younger than 60. It was also found that women more often cope with pain through praying than men (Table).

Discussion

The nature of strategies for coping with pain depends on individual predisposition of a given person that strengthens or weakens the experience of pain [13].

The studies carried out by Rosenstiel and Keefe dealing with chronic pain, most frequently used the following strategies: Praying and Coping Self-statements and the patients were least likely to apply Reinterpreting Pain Sensations [14]. In our study, the most commonly used strategies for coping with pain were Praying and Catastrophizing, whereas Reinterpreting Pain Sensations was the method applied most rarely. The results obtained by the authors to some extent differ from the results of studies achieved by other authors.

Both Kadłubowska et al. [15] conducting an analysis of patients with rheumatoid arthritis and Andruszkiewicz et al. [16] studying the cases of patients with degeneration of a hip showed that patients most often have used such strategies as: Praying and Coping Self-statements, whereas Reinterpreting Pain Sensations was the method applied least frequently. The studies of Juczyński that were conducted among respondents suffering from degenerative changes of the spine revealed that the patients often chose to cope by Ignoring Pain Sensations [17].

The turn towards religion is a distinctive strategy in the case of conditions where pain is one of the dominant elements. This is confirmed by, among others, a study conducted among Americans by Quiuling et al. [18] on the basis of which it was reported that more than half of the respondents coped with the pain through prayer. Also Cigrang et al. [19] observed that patients suffering from chronic pain coped with it due to religious practices and found the strength to cope with the limitations. In addition, some studies indicate that the increase in religiosity causes a decrease in the level of depression and anxiety as well as increase in adaptation to the disease progress [20].

The second way of coping with pain most frequently reported by patients was Catastrophizing, which is classified as non-adaptive strategy. Research conducted by Toth et al has shown that this type of strategy is associated with less effective treatment, more likely discontinuation concerning the application of medicines,

deepening disability and thus a significant decrease in quality of life [21].

Our results are consistent with the foreign data, which show a strong connection between catastrophic thinking and neuropathic pain [22–24].

Conclusions

1. The most commonly used strategies in the study group were prayer and catastrophic thinking, whereas re-evaluation of pain sensation was the least frequently used.
2. Selection of strategies to cope with the pain varied, depending on the age and to a lesser extent, depending on the gender of the respondents.
3. The intensity of pain in the study group was at a high level.

Implications for Nursing Practice

Understanding the strategies which let the patient control the pain and the extent to which they are able to control symptoms may facilitate the selection of appropriate treatment so that the patient will have a better chance of recovery.

Multidimensionality of pain requires an interdisciplinary program of care and treatment, including wide-ranging co-operation of nurses, doctors, physiotherapists and psychologists in order to be appropriate and effective [25].

References

[1] Merskey H., Lindblom U., Mumford J.M. et al. Part III: Pain Terms, A Current List with Definitions and Notes on Usage. In: Merskey H., Bogduk N. (Ed.). *Classification of Chronic Pain, Second Edition*. IASP Press, Seattle 1994;209–214.

[2] Turk D.C., Okifuji A. Pain Terms and Taxonomies of Pain. In: Loeser J.D. (Ed.). *Bonica's Management of Pain. 3rd ed*. Lippincott Williams & Wilkins, Philadelphia 2001;18–25.

[3] Kumar N. *WHO normative guidelines on pain management*. Report of a Delphi Study to determine the need for guidelines and to identify the number and topics of guidelines that should be developed by WHO, Geneva 2007.

[4] Harvard Mental Health Letter 2004. *Depression and Pain*. Retrieved July 02, 2015, from http://www.health.harvard.edu/mind-and-mood/depression_and_pain/article/.

[5] Butera J.A. Miniperspectives: recent approaches in the treatment of neuropathic pain. *J Med Chem*. 2007;11:2543–2546.

[6] Torrance N., Smith B.H., Bennett M. et al. The epidemiology of chronic pain of predominantly neuropathic origin. Results from a general population survey. *Journal of Pain*. 2006;7:281–289.

[7] Wordliczek J., Dobrogowski J. *Leczenie bólu*. PZWL, Warszawa 2011.

[8] Stannard C., Kalso E., Ballantyne J. (Red.), *Evidence-based chronic pain management*. Blackwell Publishing, Chichester 2010.

[9] McMahon S., Koltzenburg M. *Wall and Melzack's Textbook of Pain*. Churchill Livingstone, Edinburgh 2005.

[10] Szczudlik A., Dobrogowski J., Wordliczek J. et al. Diagnosis and management of neuropathic pain: review of literature and recommendations of the Polish Association for the study of pain and the Polish Neurological Society — part one. *Neurol Neurochir Pol*. 2014;48:262–271.

[11] Juczyński Z. *Narzędzia pomiaru w promocji i psychoonkologii zdrowia*. Pracownia Testów Psychologicznych, Warszawa 2009;156–161.

[12] Domżał T.M. Ból przewlekły — problemy kliniczne i terapeutyczne. *Pol Prz Neurol*. 2008;4:1–8.

[13] de Walden-Gałuszko K., Majkowicz M. *Psychologiczno-kliniczna ocena bólu przewlekłego. Wskazania dla lekarzy pierwszego kontaktu oraz poradni przeciwbólowych i paliatywnych*. Akademia Medyczna, Gdańsk 2003.

[14] Rosenstiel A., Keefe F. The use of coping strategies in chronic low back pain patients: relationship to patient characteristics and current adjustment. *Pain*. 1983;17:33–44.

[15] Kadłubowska M., Kózka M., Bąk E. i wsp. Zachowania zdrowotne jako determinanta strategii radzenia sobie z bólem chorych z reumatoidalnym zapaleniem stawów. *Probl Hig Epidemiol*. 2015;96:175–180.

[16] Andruszkiewicz A., Wróbel B., Marzec A. i wsp. Strategie radzenia sobie z bólem u pacjentów ze zmianami zwyrodnieniowymi stawu biodrowego. *Probl Piel*. 2008;16:237–240.

[17] Juczyński Z. Spostrzegana kontrola a strategie radzenia sobie z przewlekłym bólem. *Sztuka leczenia*. 2001;2:9–16.

[18] Qiuling S., Langer G., Cohen J. et al. People in pain: How do they seek relief? *J Pain*. 2007;8:624–636.

[19] Cigrang J., Hryshko-Mullen A., Peterson A. Spontaneous reports of religious coping by patients with chronic illness. *J Clin Psychol Clin Settings*. 2003;10:133–137.

[20] Bovero A., Leombruni P., Miniotti M. et al. Religiosity, pain and depression in advanced cancer patients. *World Cultural Psychiatry Research Review*. 2012;8:51–59.

[21] Toth C., Brady S., Hatfield M. The importance of catastrophizing for successful pharmacological treatment of peripheral neuropathic pain. *J Pain Res*. 2014;7:327–338.

[22] Haythornthwaite J.A., Clark M.R., Pappagallo M. et al. Pain coping strategies play a role in the persistence of pain in post-herpetic neuralgia. *Pain*. 2003;106:453–460.

[23] Jensen M.P., Ehde D.M., Hoffman A.J. et al. Cognitions, coping and social environment predict adjustment to phantom limb pain. *Pain*. 2002;95:133–142.

[24] Sullivana M.J.L., Lynchb M.E., Clark A.J. Dimensions of catastrophic thinking associated with pain experience and disability in patients with neuropathic pain conditions. *Pain*. 2005;113:310–315.

[25] Wössmer B., Loosli P., Hochstrasser J. Multidisciplinary treatment of chronic pain — opportunities and challenges for collaboration between psychosomatic medicine and physiotherapy. *Ther Umsch*. 2007;64:595–599.

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