Satisfaction of patients with lumbar spine pain receiving physiotherapy treatment within health insurance reimbursement in Poland and in France

A – preparing concepts
B – formulating methods
C – conducting research
D – processing results
E – interpretation and conclusions
F – editing the final version

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Abstract

Introduction: Low-back pain syndromes are a common problem. The authors estimate that this ailment is experienced by more than 80% of populations in developed countries. The treatment of spine pain syndromes is an interdisciplinary issue. Therefore, a proper therapy must be multifactorial and take into consideration all aspects of a patient's life. The aim of this work was to compare subjective evaluation of the process of rehabilitation of patients suffering from ailments related to lumbar spine pain who received physiotherapy within the health insurance reimbursement in Poland and in France.

Material and methods: The study included 100 patients who underwent physiotherapy due to lumbosacral spine pain complaints. The study group consisted of 50 participants who received physiotherapy in Poland and 50 subjects who underwent it in France. The authors' own questionnaire was employed in the study. It was prepared in two language versions, i.e. Polish and French. The questionnaire consisted of 34 questions on demography, pain complaints, the process of physiotherapy and the evaluation of pain on the VAS scale, before and after physiotherapy.

Results: The assessment of the promptness of the employed treatments was statistically higher in the case of the patients in France (p=0.039). The general assessment of the physiotherapy process by the examined patients in Poland and in France was similar. No statistically significant differences were revealed in this respect (p=0.240). The process of the therapy was most often regarded as very good (66%).

Conclusions: The patients with chronic lumbar spine pain undergoing therapy in France evaluated it higher than the patients in Poland. The effectiveness of physiotherapy in both countries did not vary considerably. France respects the rules of early intervention and extensiveness of physiotherapy to a larger degree than Poland.

Key words: **physiotherapy, spinal pain, kinesiotherapy, manual therapy**

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Introduction

Spinal pain syndromes are a common problem. The authors estimate that this ailment is experienced by more than 80% of populations in developed countries. [1,2]. As a society develops considerable changes in the lifestyle of the populations of those countries occur. Stress, haste as well as technological development contribute to a decrease in physical activity and to the limitation of time devoted to recovery and leisure time activities. Pain complaints significantly limit family and professional lives. It has been demonstrated that about 40-45% of patients with pain also suffer from depression [3,4].

The treatment of spinal pain syndromes is an interdisciplinary challenge. Therefore, proper therapy must be multifaceted and should take into consideration all aspects of a patient's life. Therefore, in order to provide proper extensive therapeutic treatment, it is necessary for a therapeutic team, including consultants (neurologists, rehabilitators), physiotherapists, psychologists, and during the acute period also nurses, to act jointly [5,6]. According to the research, around 40-45% of patients have comorbidity (depression), thus an antidepressant treatment is necessary as well [3,4]. There are plenty of physiotherapy treatment methods aimed at addressing spinal pain. Kinesiotherapy is considered a primary treatment option. Kinesiotherapy combined with physical therapy appears to produce positive effects [6-9].

The Polish Healthcare System covers most healthcare costs and contracts with both public and non-public health service providers. The scope of all services as well as the conditions of their provision are specified in the Act on Healthcare Institutions, the Act on Publicly Funded Healthcare Benefits, and in the regulations harmonizing Polish and EU law [10]. Each type of physiotherapy requires a referral from a doctor who has a contract with the National Health Fund, with some services requiring a referral exclusively from a consultant. As part of physiotherapy in outpatient settings, the National Health Fund covers up to 5 treatments per day in a cycle of 10 days [11]. There are up to 80 free treatment days per year as part of physiotherapy in the home setting. As in the case of physiotherapy in outpatient settings, here it is also possible to obtain up to 5 physiotherapy sessions a day. A general practitioner (GP) usually refers patients; however, referrals might also be given by consultants providing services within health insurance. The duration of physiotherapy in day-case settings might be from 3 weeks up to even 120 days a year [12].

The financing of the healthcare system in France, like in Poland, is through the system of social security. However, it is done in a slightly different manner. In France there are several insurance systems and the affiliation to a particular one depends on the professional/employment status of the insured [13]. Physiotherapy in the outpatient or home settings, 60% of the incurred costs are reimbursed from state funds, while the remaining 40% are covered by additional insurance or by the patient. In the case of inpatient physiotherapy, a health service provider covers 80% of the costs and the remaining part is covered by the patient or another insurance. The exception is physiotherapy resulting from a workplace accident, whose costs are covered completely from state funds. The number of reimbursed treatments depends on disease classification and a patient's condition and is established individually [14].

The aim of this work was to compare subjective evaluation of the rehabilitation process of patients suffering from ailments related to lumbar spine pain who received physiotherapy within the health insurance reimbursement in Poland and in France.

Material and methods

The study included a total of 100 patients treated with physiotherapy resulting from lumbosacral spine pain complaints. The participants were divided into two groups, based on the countries they were undergoing therapy. There were 50 individuals who underwent rehabilitation in Poland and 50 in France.

The group in Poland included 25 women (50%) and 25 men (50%), whereas the French group consisted of 28 women (56%) and 22 men (44%) (table 1).

Based on the obtained BMI values of the examined patients, the category of their body weight was determined. It was different in both groups but the differences were not significant ($p=0.363$). The majority of participants had a normal BMI body weight (53%), 30% were overweight, while 17% were obese.

The research was conducted using the authors' own questionnaire. It was prepared in two language versions, i.e. Polish and French. It consisted of 34

Tab. 1. Biometric data of the participants

Parameter	Polish participants				French participants			
	Descriptive statistics							
	$\bar{x}$ ± SD	Min	Max	p	$\bar{x}$ ± SD	Min	Max	p
Age [years]	45.88±14	25	75	0.939	46.4±14.9	25	80	0.939
Body weight [kg]	78.14±16.07	52	115	0.134	73.78±12.64	52	102	0.134
Body height [cm]	173.1±10.03	153	192	0.852	172.74±9.23	157	195	0.852
BMI [kg/m^2]	26.08±5.12	19.83	40,26	0.368	24.76±4.04	17.99	32.42	0.368

questions on demography, pain complaints, the process of physiotherapy and the evaluation of pain on the VAS scale, before and after physiotherapy.

The research was carried out in two physiotherapy clinics in Poland – "Kuba" Physiotherapy Clinic in Kańczuga and a Non-public Healthcare Institution –Burkiewicz Physiotherapy Centre in Kolbuszowa, and in two clinics in France – Centre de Reeducation Fonctionnelle Leopold Bellan and Cabinet Prive Maillard Olivier in Chaumont-en-Vexin. The research was conducted between March and July 2017.

The inclusion criterion was a referral to physiotherapy due to a lumbar spine pain syndrome. The exclusion criteria were as follows: a referral to physiotherapy due to a sustained injury, complex and accompanying orthopaedic or neurological dysfunctions and insufficient knowledge of the French language among the patients treated in France.

Having undergone physiotherapy, the patients were asked to complete the questionnaire.

Statistical analysis was performed using Statistica 13.0 software. The Cramer's V test and the PHI test were applied to evaluate correlations between selected variables for questions using nominal scales. For numerical variables, descriptive statistics were calculated. The Student's t-test and the Mann-Whitney U test were employed to evaluate differences in the average level of measurable characteristics on a ratio scale in two populations. The non-parametric Wilcoxon signed-rank test was used to evaluate intragroup variability in two populations. Statistical significance was set at $p<0.05$.

Results

The participants from both groups differed significantly in terms of their place of residence (p=0.001). The patients undergoing physiotherapy in Poland lived in cities more often than the participants from France. The French patients more frequently inhabited villages and small towns.

The patients from both groups did not differ significantly regarding their occupations (p=0.152). 38% of the participants from Poland and 32% of those from France were blue collar workers, whereas 36% of the Polish participants and 22% of the French ones were white collar workers. Hard physical work was performed by 10% of the patients from Poland and 12% of those from France. The subjects from France more often indicated a different professional status, i.e. they were retired, on a pension or took care of children.

The duration of pain complaints varied among all participants; however, it did not differ significantly as far as the Polish and French patients were concerned (p=0.057). The subjects examined in Poland indicated a longer duration of pain complaints which, in the case of 60% of the participants, exceeded 1 year. In the French group, there was a similar percentage of individuals with pain complaints longer than 1 year (34%). 26% of the patients felt pain from 6 months to 1 year, and 22% of them shorter than 3 months.

The circumstances of experiencing pain by both groups of patients were similar. There were no statistically significant differences (p=0.590). However, they were very diversified within each group, since there were similar percentages of people who experienced pain during physical exercise (26%), after exercise (35%) and while resting (39%).

The majority of the participants (80% in Poland and 72% in France) experienced chronic pain lasting more than 3 months. In this respect, there were no significant differences in both groups (p=0.348).

Significant differences were noted between the two groups in terms of the average wait time for physiotherapy treatment within health insurance (p<0.001). This correlation was strong. The patients

in Poland usually waited for treatments for at least 1 month, but in general up to 3 months. The people examined in France usually waited for treatments no longer than 1 month.

There was also a significant difference in the number of sessions received during the last physiotherapy treatment by patients from Poland and from France ($p<0.001$). In the case of the Polish patients, there were usually up to 10 sessions (70%), most often no more than 15 sessions. The patients from France always used no fewer than 15 sessions, but usually more than 20 (84%).

Regardless of the country where physiotherapy treatments were provided, the highest number of the patients declared a significant decrease in pain complaints. The patients from Poland reported a slight decrease in pain or no improvement more often than their French counterparts. In turn, the patients from France indicated the complete subsiding of pain more often. However, the differences were not significant ($p=0.149$).

The improvement in mobility after the therapy was indicated by 37 patients (74%) in Poland and 48 patients (96%) in France. This difference was statistically significant ($p=0.002$).

Interventions received by the patients from Poland and France during the last physiotherapy treatment differed significantly. The patients from France used kinesiotherapy ($p<0.001$), manual therapy ($p<0.001$), massage ($p<0.001$), cryotherapy ($p=0.037$), thermotherapy and phototherapy ($p=0.008$) as well as hydrotherapy ($p<0.001$) more often than the patients from Poland. On the other hand, the participants from Poland used laser therapy ($p<0.001$) and magnetic therapy ($p<0.001$) to treat lumbosacral spine pain complaints.

The intensity of pain experienced by the patients from Poland and France before the therapy and evaluated on the VAS pain scale differed significantly ($p<0.001$). Its average level in the case of the Polish patients was determined as 6.08 pts±1.51 pts and in the case of the French patients as 7.44 pts±1.69 pts. Pain of higher intensity was established before physiotherapy in the French patients.

However, the intensity of pain experienced by the patients from Poland and France was similar when a measurement was taken after the finished therapy. The results were 2.98 pts±1.88 pts and 2.84 pts±2.13 pts for the patients from Poland and from France, respectively. The difference was not significant ($p=0.578$).

The evaluation of a therapist's competence by the subjects from Poland and France was similar. It did not reveal significant differences in this respect ($p=0.958$). Physiotherapists' competence was most often evaluated as very good (57%) or good (28%).

The promptness of the performed treatments was significantly higher in the assessment of the French patients ($p=0.039$).

The general evaluation of the physiotherapy process by the patients in Poland and in France was similar. No significant differences were revealed in this respect ($p=0.240$). The process of the therapy was most often regarded as very good (66%).

Regardless of the place where physiotherapy treatment was received, most patients would definitely recommend the services of the clinic or the centre that they used. The differences between the evaluations by the participants from both groups were not significant ($p=0.660$).

Discussion

The results of the authors' developed survey revealed that in France, the patients with low back pain evaluated the process of physiotherapy more positively. However, the effectiveness of the therapy in both countries was similar. For the French patients, the wait time for a series of treatments was significantly shorter than for the Polish patients [16]. Therapy employed faster may lead to better results. It is worth mentioning, however, that despite different wait time for treatments, the participants in both groups experienced a significant improvement in their condition, which affected their mental and physical state and the quality of life.

The survey revealed that 60% of the Poles reported spinal pain for longer than a year whereas in France the patients with similar complaints constituted only 34% of the participants. This could indicate that there are fewer people with chronic complaints in France, however this is most likely a result of a decreased wait time in France. Polish patients usually waited for physiotherapy treatment for longer than a month. In 66% of the cases, it was up to 3 months and as many as 22% of the patients had to wait for a therapy even up to 6 months.

When these results are compared with the Supreme Audit Office report on "The accessibility and financing of therapeutic rehabilitation" drawn up after the 2014 inspection, it can be stated that the most important problem of the functioning of

Polish physiotherapy is the extended wait time for rehabilitation services. In Poland, a patient does not have early access to physiotherapy within the National Health Fund, which may affect the effectiveness of the therapy [15]. In France, the situation seems to be more systematized. According to the authors' own research, the rule of earliness is fully respected and almost all patients receive rehabilitation services not later than within a month after getting a referral, and in 52% of the cases they see a physiotherapist within the first week after visiting the doctor.

Taking into consideration the subjective impressions regarding the final effects of the therapy, no significant differences were observed between the physiotherapy processes in Poland and in France. The patients in both countries most often declared a significant decrease in pain. There was a significant difference in the subjective evaluation of joint mobility after rehabilitation. In France, an improvement was declared by 96% of the participants, whereas in Poland it was reported by 74% of the respondents.

The treatments received by the patients within the therapy differed significantly in both countries. In France, all the patients underwent kinesiotherapy, whereas in Poland it was received by only one in two patients. Only the Polish patients used exclusively physical therapy within the employed procedure. None of the patients rehabilitated in France used laser and magnetic therapies. Physical therapy used in rehabilitation clinics in France was limited to thermotherapy and cryotherapy treatments, or possibly electrotherapy treatments [16]. This results from the financing system of therapeutic rehabilitation.

An important difference in both countries is the number of sessions used by the patients. In Poland, 70% of the patients had up to 10 sessions, which means that they most often received physiotherapy in outpatient settings. Only 6% of the patients in Poland were given a referral to more than 20 sessions, probably in the form of physiotherapy in the day-case settings. In France, the situation was completely different, as 84% of the participants used more than 20 sessions and the remaining 16% completed the therapy consisting of 15-20 treatments. The cause of this situation might be the functioning of the healthcare system in a given country. However, it can be observed that in France a lot more resources are allocated for the treatment of spinal pain [17].

The subjective impressions of the participants from Poland were negative as far as the evaluation of the promptness of treatments. A patient in a Polish clinic often has to wait in separate queues to receive individual treatments. It may contribute to extending the wait time for particular treatments and, what follows from that, to their untimely provision and an unfavourable opinion of the patients.

Each of the respondents evaluated their pain on the VAS scale before and after the received physiotherapy treatment. According to the survey, before the therapy the French patients evaluated their pain as more severe than that of the Polish patients, with a difference of as many as 1.5 pts. However, these data were not significantly different after a completed series of treatments. The situation is different when the two measurements are compared taking into consideration the division of the examined groups. It was revealed that there was a significant difference in the change of the intensity of pain experienced in two consecutive measurements in the case of both Polish and French patients. The size of improvement obtained based on the pain evaluation on the VAS scale was 3.1 pts in the case of the patients from Poland and 4.6 pts in the case of the participants from France. Therefore, the improvement in well-being obtained by the French participants was higher. Here, once again, one should refer to the fact that Polish patients wait longer for an available date in a clinic. The time that passes before they see a therapist may cause slight alleviation of their acute symptoms, which in fact was demonstrated by the comparison of measurements before physiotherapy in both countries.

Regardless of the country where physiotherapy was provided, 66% of the patients evaluated its general process as very good and 19% as good. There were no significant differences in this respect. A similar situation, without discrepancies in both countries, may be observed as far as the satisfaction with the centre where the patients received physiotherapy is concerned, as 82% of all the patients would recommend their clinics to their family and friends with 61% doing it fully convinced.

As it can be noted, physiotherapy in Poland and France functions differently in practice. According to the Polish school of rehabilitation, which proposed the so-called "rehabilitation model", physiotherapy should be common, early, extensive

and continuous [18]. The survey revealed that in France more attention is paid to the extensiveness of the physiotherapy process. The model suggested by Dega et al. is not fully respected. Departures from the rules of earliness have also been noted. Nevertheless, it is difficult to make physiotherapy common to the same extent as early. The Supreme Audit Office report states plainly that the present approach does not coincide with the real needs of patients: "The accepted system of contracting and accounting for therapeutic rehabilitation services by the National Health Fund was based, similar to other services, exclusively on accounting for the number and correctness of procedures without taking into consideration the effects of therapies. This approach favours wasting public resources and limiting the access to rehabilitation to the people who really need it." [15]. Thus, physiotherapy in Poland turns out to be too common and therapists are forced to correctly complete documents rather than achieve the best possible results of their work with a patient.

Plaskiewicz et al. indicated that physical therapy is a method of treating lumbar spine dysfunctions supporting kinesiotherapy and should not be the only method of treatment [18]. First and foremost, because the problem of lumbosacral spine pain is most often of mechanical origin, in order to improve the function and alleviate complaints, appropriate mechanical stimuli, i.e. kinesiotherapy should be applied [5,19,20,21,22]. The above-mentioned authors, in a way, justify with their publication why it is in Poland that there are more people suffering from chronic complaints. Since almost half of them were not treated with kinesiotherapy, it means that it was symptoms that were treated and not the cause of the problem. The vicious circle is complete and patients have to wait again for their turn to see a therapist.

Bojczuk et al. described a beneficial effect of therapeutic exercises on the indices of the quality of life in people suffering from chronic lumbar spine pain [23]. It seems justified to use kinesiotherapy with all ill patients as it is done in France.

Caby et al. conducted research during which the effectiveness of intensive, dynamic, multidisciplinary and functional program in patients with back pain was evaluated [24]. The program included physiotherapy and occupational therapy treatments as well as psychological consultancy. The authors measured the intensity of pain, mobility, the quality of life and the return to work. The obtained results were very good and the programme produced beneficial short-term and long-term effects [24]. Therefore, it is justified to apply such extensive physiotherapy in order to help patients to quickly resume their social activity.

Petit et al. examined the effects of three chronic back pain rehabilitation strategies. The first strategy was an intensive and multidisciplinary programme carried out in a rehabilitation centre, commonly used in France in the case of complaints of this type and described in this paper. The second, less intensive strategy in outpatient settings, was carried out exclusively by a physiotherapist, similar in form to Polish physiotherapy in outpatient settings. The third mixed strategy involved the patients staying for a week in intensive care in a rehabilitation centre and subsequently receiving exclusively the services of a physiotherapist. The authors did not observe significant differences in the effectiveness of the applied strategies [25]. Similarly, according to the authors' own research, there were no differences regarding the effects of physiotherapy employed in both countries with different intensity. This paper includes a subjective evaluation by the patients. Nevertheless, it shows a similar level of success of therapies in Poland and in France. However, the authors of the above-mentioned publication aptly observe that the costs of the therapy in the case of the first strategy are incomparably higher. In their opinion, the best strategy is the mixed one, combining a stay in a centre with visits to an outpatient physiotherapy clinic. It helps to balance the costs and simultaneously reach a higher number of patients [25]. Therefore, the ideal solution would be to implement such a system in our country as well.

This study revealed substantial problems of the Polish healthcare system in the context of therapeutic physiotherapy. A critical result of the Supreme Audit Office inspection was published in 2014. This study demonstrates that this situation has not improved. It should be noted that the changes in the financing system or in the functioning of the healthcare department cannot take place overnight. It is a long process of changes connected with the politics of the country.

Unfortunately, it was shown that in France that the healthcare system appears to function more efficiently and physiotherapy works in accordance with its basic rules. It must be taken into consideration that it is a bigger, wealthier and more

economically developed country than is Poland. Certainly, this has an impact on the possibilities of reimbursing treatments from public resources. It cannot be forgotten that the French Republic finances only around 70% of the services and the rest of the expenses are usually covered from additional private insurance or directly by the patient [14]. This solution has an advantage and a disadvantage. On the one hand, citizens incur higher costs of health insurance or possible fees related to treatment. On the other hand, it eliminates the problem of patients abusing public resources and blocking the access to physiotherapy to those who really need it.

It must be taken into consideration that an evaluation and comparison of physiotherapy processes in both countries are not full since the patients from Poland do not know what the proceedings look like in France and the other way around. Each of the respondents expressed their opinion based on what they know and on comparing it only to their imaginings. The research would be more credible if the participants knew the situation in both countries.

Another limitation of the survey was the number of the investigated centres. Each institution is managed by different staff, there are different models of work organisation, clinics possess different equipment and, finally, in each of them there is a different team of therapists who are the ones that are mostly responsible for how therapy is applied. Certainly, both in Poland and in France there are some standards which should be maintained. However, it cannot be definitely stated that each centre in a given country acts the same in this respect. Until recently, there have been no standards in Poland or uniform requirements regarding the fact of who can work as a physiotherapist. In May 2016, the Act on the Profession of Physiotherapy came into effect. At the time of conducting this research, preparations were being made to form the Polish Chamber of Physiotherapists where only certified therapists might register. Thanks to this solution, patients are going to be certain that they are in the hands of a qualified specialist. Moreover, it is going to have an impact on the sense of community among physiotherapists, on systematizing the curriculum of this field of study at higher education institutions, on standardizing the proceedings and on increasing the position and status of the profession.

The paper is a pilot study. Future research should be extended by adding an objective evaluation of physiotherapy methods and the analysis of patients with non-specific lumbar spine complaints.

Conclusions

1. The patients with chronic lumbar spine pain who underwent therapy in France assessed it higher than the Polish patients.
2. The effectiveness of physiotherapy treatment in both countries did not differ significantly.
3. France, to a higher degree than Poland, respects the rules of earliness and extensiveness of physiotherapy.

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