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Najczęstsze przyczyny wykonywania zabiegów fizykoterapeutycznych

Streszczenie

Wstęp. Fizykoterapia polega na stosowaniu bodźców fizycznych, takich jak prąd elektryczny, pole magnetyczne, światło laserowe, niskie lub wysokie temperatury, oddziaływania mechaniczne – celem uzyskania korzystnych przemian w tkankach objętych procesem chorobowym. Fizykoterapia pozwala przygotować organizm do ćwiczeń leczniczych i jest przez to cennym elementem procesu rehabilitacji.

Materiał i metody. W celu określenia najczęstszych przyczyn kierowania za zabiegi fizykoterapii poddano analizie 5222 karty zabiegowe, zawierające zlecenia na 120 340 różnych rodzajów zabiegów fizykoterapeutycznych. Przedmiotem badania były wyłącznie karty zabiegowe pacjentów ambulatoryjnych, korzystających z fizykoterapii na podstawie skierowań z różnych poradni lekarskich z terenu Lublina i regionu lubelskiego. Wśród rehabilitowanych pacjentów było ponad dwukrotnie więcej kobiet (68,3%) niż mężczyzn (31,7%) oraz czterokrotnie więcej mieszkańców miast (83,2%) niż mieszkańców wsi (16,8%). Największą grupę stanowiły osoby pracujące zawodowo (46,1%). Liczba osób rehabilitowanych przebywających na rentach chorobowych była niewielka (10,1%).

Wyniki. Najczęstszą przyczyną prowadzenia rehabilitacji były: artropatie (38,26%), choroby grzbietu (24,03%), przewlekłe choroby układu nerwowego (13,06%). W badanym materiale wykazano, że populacje kobiet i mężczyzn oraz mieszkańców wsi i miast różnią się od siebie istotnie statystycznie w zakresie schorzeń, będących przyczyną rehabilitacji. Analiza obejmowała 27 rodzajów zabiegów fizykoterapeutycznych spośród których najczęściej wykonywano zabiegi laseroterapii (21,33%), krioterapii miejscowej (14,91%) i fonoterapii (11,30%). Wykazano, że w analizowanym materiale wybór preferowanego zabiegu fizykoterapeutycznego był uzależniony od rodzaju schorzenia, pomimo braku jednoznacznych wskazań w tym zakresie w dostępnej literaturze. Ponadto wykazano, że liczba niektórych rodzajów zabiegów fizykoterapeutycznych (laseroterapii, krioterapii, fototerapii) wzrasta w II i III kwartale każdego roku.

Słowa kluczowe: rehabilitacja, fizykoterapia, laseroterapia, elektroterapia, magnetoterapia, krioterapia.

The most frequent causes of physical therapy treatment

Summary

Introduction. Physiotherapy implies the use of physical impulse like electric current, magnetic field, laser light, low or high temperatures or mechanical effect to cause advantageous changes in tissues affected by disease processes. Physiotherapy permits to prepare the human body to therapeutic exercise, so it is a valuable element of the rehabilitation process.

Material and methods. In order to describe the most frequent causes of referring patients to physical therapy treatment, 5222 procedure charts were analyzed. They included 120 340 different types of physical methods. Only the charts of outpatients, who were treated by physical methods on the basis of referrals from different clinics from Lublin and the region, were subject to analysis. Among the rehabilitation patients, the number of women (68.3%) was twice as large as the number of men (31.7%) and the percentage of town inhabitants exceeded four times the percentage of village residents. The biggest group consisted of people professionally active (46.1%). The amount of people on disability pension was very small (10.1%)

Results. The most frequent causes of rehabilitation were: arthropathy (38.26%), diseases of back (24.03%), chronic diseases of the nervous system (13.06%). The testing material proved that male and female population, or town and village inhabitants differ statistically as far as diseases requiring rehabilitation are concerned. The analysis included: laser treatment (21.33%), local cryotherapy (14.91%) and phonotherapy (11.30%). The analyzed material proved that the choice of the preferred treatment depended on the kind of disease, although there are no unequivocal indications on this subject in medical literature available. Moreover it was proved, that the quantity of some types of physical methods performed (laser therapy, cryotherapy, phonotherapy) increases in the 2nd and 3rd quarter every year.

Key words: rehabilitation, physical therapy, laser therapy, electric therapy, magnetic therapy, cryotherapy.

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INTRODUCTION

Physiotherapy treatments are an essential part of the rehabilitation process, usually preceding therapeutic exercise. Different types of physiotherapy treatments are based on the effect of physical impulse (light, magnetic field, electric current, sound wave, difference of temperature) on human tissues [1, 2]. Different types of physiotherapy treatments, which are applied in different modifications and with the use of different treatment parameters (physical factor doses, performance time, method of application to human body) are well-known. Today, some physiotherapy methods have lost their therapeutic importance and they are not used any more. Usually, in therapeutic practice, the physiotherapy treatments refunded by the National Health Fund (NFZ) are mostly used. Refunded procedures are free of charge for the patient, and as such they are more easily available. Physical therapy treatment requires using modern medical equipment and keeping high safety standards, as well as learned and experienced doctors. Usually, therapeutic rehabilitation procedures concern chronic diseases. In Poland, among the most frequently met diseases we can mention spondylopathies and diseases of peripheral joints, which account for respectively 16% and 14% of all chronic diseases [3].

The physical therapy methods change alongside with the progress in the field of medical equipment design. Scientific research on safety and effectiveness of physiotherapy contribute to the change in indications and contraindications for a given treatment. Moreover, they influence the doctors' choice of physical techniques.

THE AIM OF PROJECT

The aim of the project was to define which diseases are the cause of referral to physical therapy and which physical methods are most frequently chosen by doctors.

MATERIAL AND METHODS

The source of information were procedure charts of patients referred to the Rehabilitation Centre at the Institute of Agricultural Medicine by doctors from different health care clinics in the region, who prescribed physical therapy. Physical procedures performed on a patient were confirmed in the procedure chart by the signature of the patient and the therapist. Only the procedures actually carried on were taken into consideration in the analysis. Data from procedure charts were transferred to specially prepared questionnaires, and subsequently to the electronic database. Statistic evaluation was made by ANOVA i Chi tests included in the Statistica v.8.0 program.

In total 5222 procedure charts were taken into consideration, embracing procedures carried on from, 1st Jan 2006 to 31st Dec 2008.

POPULATION OF REHABILITATED PEOPLE

Among the rehabilitated people there were twice as many women as men (Table 1). The mean age of the examined group was 54 (considering the age on the first day of rehabilitation) and it was higher for women. Town inhabitants underwent rehabilitation procedures 4 times more frequently than village residents (Table 2).

The analysis of the employment status of the treated patients led to the conclusion that professionally active people constituted the largest group, whereas the number of disability pensioners or retired people was smaller (Table 3).

Most often, the rehabilitated people were insured in Social Insurance Company (ZUS), less in w Agricultural Social Insurance Fund KRUS (Table 4).

Referrals to rehabilitation treatment were given mainly by doctors from public health care clinics (Table 5). Orthopedists predominated among the doctors referring to rehabilitation treatment (Table 6).

TABLE 1. Age and sex of rehabilitated patients in 2006-2007.

	Age			
Sex	N	%	X	SD
Female	3568	68.3	55.3	14.8
Male	1654	31.7	52.2	17.6
Overall	5222	100	54.4	15.8
p ANOVA test		0.000000		

TABLE 2. Residence of rehabilitated patients in 2006-2008.

	Number	
	N	%
CITY	4343	83.2
VILLAGE	879	16.8

TABLE 3. Employment of rehabilitated patients in 2006-2008.

Employment	N	%
Working	2406	46.1
Old age pensioners	1892	36.2
Pensioners	528	10.1
Pupils	216	4.1
Students	99	1.9
Unemployed	36	0.7
Others	45	0.9

TABLE 4. Insurance of rehabilitated patients in 2006-2008.

Insurance	N	%
KRUS (Agricultural Social Insurance Fund)	811	15.5
ZUS (Social Insurance Company)	4400	84.3
Others	11	0.2

TABLE 5. Patients' referral to rehabilitation treatment in 2006-2008 with regard to the health care institution.

Health care institution	N	%
Public	3836	73.9
Non-public	1358	26.1

TABLE 6. Patients' referral to rehabilitation treatment in 2006-2008 with regard to specialization of referring doctors.

Specialization	N	%
Orthopaedist/traumatologist	1206	23.11
Specialist in internal medicine	1190	22.81
Special. of rehabilitation/balneology/sports med.	947	18.15
GP	734	14.07
Neurologist/Psychiatrist/Psychologist	454	8.70
Rheumatologist	452	8.66
Surgeon- non Orthopaedist/Traumatologist	95	1.82
Laryngologist/Phoniatrist	73	1.40
Specialist in Intensive Care/Anaesthetist	48	0.92
Paediatrician	6	0.11
Dentist	6	0.11
Neurosurgeon	5	0.10
Dermatologist/venerologist	2	0.04

RESULTS

Causes of referring to rehabilitation

The most frequent causes of referring patients to physical methods treatment were: arthropathy, back (spine) diseases, diseases of the nervous system (Table 7). The analysis of the rehabilitation referrals including the ICD-10 classification codes showed that the most commonly used ICD-10 code is M-15, which means polyarthrosis (Table 8).

Table 9 contains the most frequent disease causes which, according to doctors' referrals, require physical therapy treatments in male and female population. As far as the cause of referral to treatment is concerned, the difference for men and women is statistically significant. Women, in comparison to men, are more frequently treated for joints degeneration (M-15) and less frequently for diseases caused by soft tissue overload (M-70).

TABLE 7. The first cause of referrals to physical therapy treatment in 2006-2008.

Causes	N	%
Arthropathy	1992	38.26
Back diseases	1251	24.03
Diseases of nervous system	680	13.06
Other diseases of osteoarticular system	489	9.39
Injury of locomotor system	412	7.91
Other injuries	219	4.21
Diseases of respiratory system	67	1.29
Transport injuries	37	0.71
Diseases of circulatory system	18	0.35
Diseases of connective tissue	10	0.19
Diseases of endocrine system, nutrition and metabolic	3	0.06
Others	28	0.54

TABLE 8. The first cause of referrals to physical therapy treatment in 2006-2008 according to ICD-10 classification (included items over 20 cases).

ICD-10 classification unit	N	%
M15 – Polyarthrosis	1312	25.2
M47 – Spin degeneration changes	820	15.8
G54 – Disorders of ventral root of spinal nerve	579	11.1
M17 – Gonarthrosis	381	7.3
M51 – Other intervertebral diseases	291	5.6
M70 – Soft tissue overload or pressure	267	5.1
T93 – After-effect of lower limb injuries	91	1.7
M16 – Coxarthrosis	88	1.7
T92 – After-effect of upper limb injuries	77	1.5
M75 – Damage of shoulders	60	1.2
S83 – Dislocation, sprain and strain knee joints and syndesmosis	59	1.1
S93 – Dislocation, sprain and strain foot joints and syndesmosis	58	1.1
M41 – Spinal curvature	55	1.1
M19 – Others degeneration diseases	51	1.0
S52 – Fracture of forearm bones	44	0.8
M54 – Back pain	43	0.8
M05 – Chronic rheumatic arthritis	39	0.7
S13 – Dislocation, sprain and strain neck joints and syndesmosis	33	0.6
J32 – Chronic sinusitis	31	0.6
M50 – Diseases of cervical vertebrals	29	0.6
S82 – Shank fracture	28	0.5
M48 – Others spine diseases	26	0.5
S42 – Fracture of shoulder and brachium	26	0.5
M22 – Kneecap diseases	21	0.4

TABLE 9. Six most common causes of referrals to rehabilitation treatment in 2006-2008 according to ICD-10 classification and a patients' sex.

Unit in ICD-10 classification		Female	Male	Overall
G54 – Disorders of ventral root of spinal nerve	N	398	181	579
	%	15.54%	16.62%	15.86%
M15 – Polyarthrosis	N	965	347	1312
	%	37.68%	31.86%	35.95%
M17 – Gonarthrosis	N	259	122	381
	%	10.11%	11.20%	10.44%
M47 – Spin degeneration changes	N	565	255	820
	%	22.06%	23.42%	22.47%
M51 – Other diseases of intervertebral	N	205	86	291
	%	8.00%	7.90%	7.97%
M70 – Soft tissue overload or pressure	N	169	98	267
	%	6.60%	9.00%	7.32%
Overall	n	2561	1089	3650
	%	70.16%	29.84%	100.00%

P Chi^2 Test. 0.00926

Another comparison was made, considering the following age groups: subpopulation of young people (up to 40 years-old), middle-aged group (41-65 years-old) and seniors (over 65 years-old), (Table 10). It showed that, as far as the causes of referrals to rehabilitation are concerned, the statistical differences between those groups are significant. With age, the percentage of people treated for joints degeneration (M-15) increases whereas, the percentage of patients with soft tissue overload (M-70), with intervertebral disc disease (M-51) and with disorders of the ventral root of the spinal nerve (G-54) decreases.

In the analyzed material, town inhabitants were much more numerous than village residents. After analyzing the causes of referrals to physical methods treatment it was concluded, that despite quite big differences in number, the differences between town and village populations are statistically significant (Table 11).

TABLE 10. Six most common causes of referrals to rehabilitation treatment in 2006-2008 according to ICD-10 classification and a patients' age.

ICD-10 Classification Unit		Young up to 40 y.o.	Older-middle-aged- 41 to 65 y.o.	The oldest-seniors over 65	Overall
G54 – Disorders of ventral root of spinal nerve	N	127	324	128	579
	%	27.67%	14.77%	12.83%	15.86%
M15 – Polyarthrosis	N	52	779	481	1312
	%	11.33%	35.52%	48.20%	35.95%
M17 – Gonarthrosis	N	39	214	128	381
	%	8.50%	9.76%	12.83%	10.44%
M47 – Spin degeneration changes	N	99	548	173	820
	%	21.57%	24.99%	17.33%	22.47%
M51 – Others intervertebral diseases	N	86	177	28	291
	%	18.74%	8.07%	2.81%	7.97%
M70 – Soft tissue overload or pressure	N	56	151	60	267
	%	12.20%	6.89%	6.01%	7.32%
OVERALL	n	459	2193	998	3650
	%	12.58%	60.08%	27.34%	100.00%
p Chi² test. 0.0000					

TABLE 11. Six most common causes of referrals to rehabilitation treatment in 2006-2008 according to ICD-10 classification versus residence of patients (city/village).

ICD-10 Classification Unit		City	Village	Overall
G54 – Disorders of ventral root of spinal nerve	N	463	116	579
	%	15.30%	18.59%	15.86%
M15 – Polyarthrosis	N	1108	204	1312
	%	36.62%	32.69%	35.95%
M17 – Gonarthrosis	N	321	60	381
	%	10.61%	9.62%	10.44%
M47 – Spin degeneration changes	N	668	152	820
	%	22.08%	24.36%	22.47%
M51 – Others diseases of intervertebral	N	234	57	291
	%	7.73%	9.13%	7.97%
M70 – Soft tissue overload or pressure	N	232	35	267
	%	7.67%	5.61%	7.32%
Overall	n	3026	624	3650
	%	82.90%	17.10%	100.00%
p Chi² test. 0,03911				

Types of physical methods most frequently mentioned in referrals

The procedure charts submitted to analysis contained in total 120340 physiotherapy procedures performed from 1st Jan 2006 to 31st Dec 2008. In 2006, 2007 and 2008 the number of procedures performed was respectively 39411, 42272 and 38657.

Table 12 shows the number of different types of procedures performed, in the order from the most frequently done to the most rare. The most frequently performed method was laser therapy (21.33%), local cryotherapy with liquid nitrogen (14.91%) and phonotherapy that is ultrasounds (11.30%).

TABLE 12. The number and kind of performed procedures (2006-2008 overall).

Kind of procedure	N	%
Laserotherapy scanner	25674	21.33
Cryotherapy with liquid nitrogen	17943	14.91
Ultrasounds (phonotherapy)	13597	11.30
Low frequency magnetic field	12767	10.61
TENS electric current	11471	9.53
High frequency magnetic field	6891	5.73
Iontophoresis	5897	4.90
Whirlpool bath of limbs	4962	4.12
Diadynamic electric current	4960	4.12
Interference electric current	3062	2.54
Galvanic current	2662	2.21
Local laserotherapy	1893	1.57
Short-wave diathermy	1828	1.52
Local massage	1526	1.27
Thermogels	1310	1.09
Mechanic massage	1018	0.85
Electrostimulation	767	0.64
Phonophoresis	500	0.42
General UV and IR	490	0.41
General whirlpool bath	252	0.21
Shower bath	225	0.19
Perl bath	220	0.18
Trebert's electric current	160	0.13
Kotz's electric current	120	0.10
Local UV and IR	80	0.07
Cryotherapy with compressed air	40	0.03
Spastic paralysis electrostimulation	25	0.02

Table 13 includes the number of particular types of procedures done quarterly within the period of 3 years. The number of procedures carried out in particular quarters has essentially oscillated within the 3 analyzed years. In order to determine the possible seasonal fluctuation (depending on the season of the year) in the number of procedures, the data of the 10 the most frequently performed types are shown

TABLE 13. The number and kind of performed procedures in quarterly distribution (2006-2008).

Kind of procedure	Quarters												Overall
	2006				2007				2008				
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Laserotherapy scanner	1383	1651	2060	2180	2672	2376	2316	2122	1374	2955	2410	2175	25674
Cryotherapy with liquid nitrogen	1401	1471	1672	1220	1586	1506	1761	1530	880	1865	1373	1678	17943
Ultrasounds	1150	1046	1080	1160	1548	1202	1101	1090	690	1575	1010	945	13597
Low frequency magnetic field	1029	907	915	1050	1370	1176	1038	1101	480	1680	1132	889	12767
TENS electric current	1310	1239	935	1040	900	935	944	950	445	1215	693	865	11471
High frequency magnetic field	575	813	984	765	480	471	468	450	470	495	560	360	6891
Iontophoresis	330	524	530	680	605	585	496	345	330	480	562	430	5897
Whirlpool bath of limbs	317	380	205	90	375	435	445	530	390	675	650	470	4962
Diadynamic electric current	294	383	555	350	515	398	410	325	307	510	603	310	4960
Interference electric current	80	295	290	350	605	258	210	160	160	230	235	189	3062
Galvanic current	210	155	216	260	210	221	230	340	235	260	140	185	2662
Local laserotherapy	555	428	100	50	265	80	60		20	30	185	120	1893
Short-wave diathermy	100	130	210	120	120	218	275	190	100	165	90	110	1828
Local massage	165	286	100	70	140	120	135	80	30	80	175	145	1526
Thermogels	180	188	120	125	210	133	40	130	100	60	10	14	1310
Mechanic massage	42	90	50	30	65	80	100	80	60	150	176	95	1018
Electrostimulation	180	105	40	35	75	30	50	10	20	90	85	47	767
Phonophoresis	10	40	20	10	130	25	70	50	20	40	20	65	500
General UV and IR	20	20	50		60	40	70	30	40	70	80	10	490
General whirlpool bath	15	52	20		10		30			40	75	10	252
Shower bath		10			10	10	10	30	10	50	70	25	225
Perl bath	20		30		70		10	20	10	20	10	30	220
Trebert's electric current	10				10	10	10	10	50	20	20	20	160
Kotz's electric current				10	20		10		10	20	20	30	120
Local UV and IR			20	10		10	20			10	10		80
Cryotherapy with compressed air					10	10						20	40
Spastic paralysis electrostimulation	10		5									10	25

in Table 14 (statistical analysis) and on Figure 1, where the number of procedures done during 3 years is compared with reference to 1st, 2nd, 3rd and 4th quarters of the year.

It was observed that in the case of laser therapy, local cryotherapy, ultrasounds, TENS electric current, if we compare the number of procedures carried on in every quarter, the statistical differences prove to be substantial. Because of lack of effective standards as far as referral to physiotherapy for particular disorders is concerned, patients are referred according to contraindications and the doctor's experience. In Table 15, the four most common diseases are compared and the frequency of using particular procedures for the treatment of each of them is defined.

Figure 2 shows the percentage of particular types of procedures within their total number for patients with a specific disease. Only in case of low frequency magnetic field it was shown that this procedure is preferred for some disorders (spin degeneration M-47 and intervertebral disc disorders M-51).

DISCUSSION

Research concerning the health condition of the population of Poland in 2004 show that women visit doctors more frequently than men [4]. Moreover, women fall for locomotor system diseases more often than men. The number of women undergoing rehabilitation therapy is twice as big as the number of men. Considering, that almost half of the patients were professionally active people, it should be assumed that women care more about health and fitness.

In the employment structure of the rehabilitated people it can be noticed that there is quite a small percentage of people on incapacity pension (about 10%) in relation to professionally active people (46%).

The results deny a common belief, that rehabilitation is for handicapped and chronic patients and it shows that professionally active people are more interested in recovering.

Very high percentage of town inhabitants among the rehabilitated people, almost 4 times bigger than the percent-

TABLE 14. The number and kind of performed procedures in quarterly distribution (total for 2006-2007).

Kind of procedure	Quarters					p ANOVA'S
	I	II	III	IV	Overall	test
Laserotherapy scanner	5429	6982	6786	6477	25674	0.000000
Cryotherapy with liquid nitrogen	3867	4842	4806	4428	17943	0.000427
Ultrasounds	3388	3823	3191	3195	13597	0.000067
High frequency magnetic field	2879	3763	3085	3040	12767	0.451469
TENS electric current	2655	3389	2572	2855	11471	0.000748
Low frequency magnetic field	1525	1779	2012	1575	6891	0.257248
Iontophoresis	1265	1589	1588	1455	5897	0.437166
Whirlpool bath of limbs	1082	1490	1300	1090	4962	0.371518
Diadynamic electric current	1116	1291	1568	985	4960	0.272998
Interference electric current	845	783	735	699	3062	0.609895

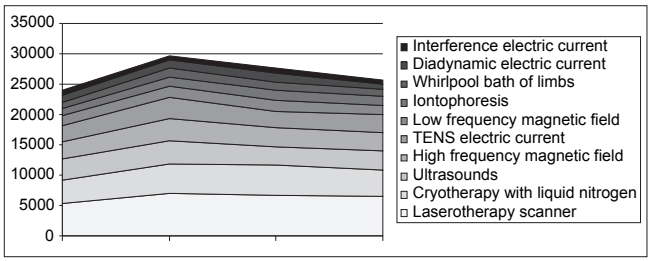

FIGURE 1. The number and kind of performed procedures depending on quarters (years 2006-2008 total).

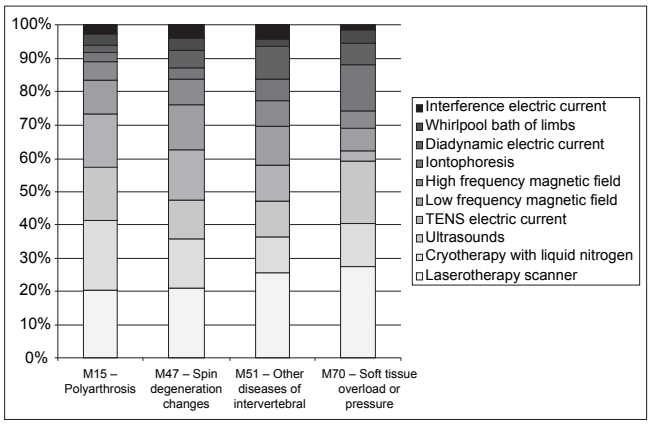

FIGURE 2. The profile of ten most frequent rehabilitation procedures in four chosen causes of referrals to physiotherapy in years 2006-2008 according to ICD-10 classification.

age of village inhabitants, could be caused by easier access to ambulatory rehabilitation for city inhabitants (shorter journey, less costs). Access to specialists is more difficult in villages and it is not improving [5]. Working conditions on farms are the causes of big incidence of locomotor system diseases. Diseases of locomotor system occupy the 1st place within the causes of applying for benefits by the insured in KRUS [6, 7]. The results of the research may prove that the level of using rehabilitation benefits in case of village inhabitants may be insufficient.

TABLE 15. The profile of rehabilitation procedure in four selected causes of referrals to physical therapy treatment in years 2006-2008 according to ICD-10 classification.

	M15 – Polyarthrosis	M47 – Spin degeneration changes	M51 – Other diseases of intervertebral	M70 – Soft tissue overload or pressure	Overall	p ANOVA's test
Laserotherapy scanner	6268	3526	1483	1410	12687	0.871066
Cryotherapy with liquid nitrogen	6504	2514	627	665	10310	0.141599
Ultrasounds	4836	1973	625	949	8383	0.184088
TENS electric current	4940	2527	630	180	8277	0.082408
Low frequency magnetic field	3169	2292	675	350	6486	0.031551
High frequency magnetic field	1659	1330	455	250	3694	0.167542
Iontophoresis	905	530	370	715	2520	0.129682
Diadynamic electric current	630	900	573	329	2432	0.178111
Whirlpool bath of limbs	1145	570	110	210	2035	0.857516
Interference electric current	775	720	262	80	1837	0.307561
Galvanic current	866	410	240	40	1556	0.117257
Local laserotherapy	500	330	75	130	1035	0.125126
Short-wave diathermy	280	310	70	140	800	
Thermogels	495	80	30	60	665	0.368025
Local massage	240	205	60	110	615	0.572666
General massage	165	270	70	10	515	0.598172
Phonophoresis	140	60	10	50	260	
General UV and IR	130	30	30	20	210	
Shower bath	70	50	60		180	
General whirlpool bath	30	50	25	28	133	0.120797
Pearl bath	20	80	10		110	
Electro-stimulation	45	40	10	10	105	0.758311
Trebert's electric current	10	60	30		100	
Local UV and IR	30	10			40	
Kotz's electric current	10	20			30	
Cryotherapy with compressed air	20	10			30	
Spastic paralysis electrostimulation	5				5	

Analysing the causes of referring to rehabilitation, it was stated that the most common cause of rehabilitation are chronic diseases of locomotor system and injury. The specialization of doctors who refer to rehabilitation most frequently correspond to those diseases. In Poland GPs do 63% of appointments [3]. Considering the possibilities of Primary Health Care (POZ) doctors who refer patients to rehabilitation, it must be concluded that the percentage of GPs (14%) referring to rehabilitation is marginal and insufficient, taking into consideration their role in the health care system. Meanwhile, from statistical data it turns out that locomotor system diseases are at the 2nd place (46%) within the causes of disability, so the participation of GPs in rehabilitation activities should be greater, and it can be reached by adequate education actions.

In the analysis of the causes of referrals to rehabilitation, differences between male and female populations were stated. Within the group of the examined men, the main diseases treated were: spine disorders (spin degeneration M-46, disorders of ventral root of spinal nerve (G-54) and soft tissue overload (M-70). Women were more frequently affected by joints degeneration (M-15).

An epidemiologic investigation made by Central Statistical Office (GUS), concerning the prevalence of these diseases in the Polish population, shows that women are affected by chronic joints and spine diseases more frequently than men [4]. The increasing number of joints degeneration and polyarthrosis (M-15 and M-17) in middle-age population represents a natural course of this disease, which belongs to involution diseases.

The differences between town and village dwellers, as far as the causes of referrals to rehabilitation are concerned, are statistically significant. Village inhabitants were referred to rehabilitation more frequently because of spine diseases: spin degeneration (M-46), disorders of ventral root of spinal nerve (G-54), intervertebral disc disorders (M-51), in comparison to town inhabitants. The character of the disorders may point to the overload of locomotor system due to physical labor, which needs to be done in agriculture [6, 9]

The big number of procedure charts (5222) and the huge number of procedures (120340), allow us to carry on multidirectional statistic analyses. Undoubtedly a drawback of the research material, preventing us from drawing a general conclusion, is that it comes from one rehabilitation clinic from a middle-size city.

After classifying 27 types of procedures it turned out that 3 of the most commonly performed ones embrace almost a half of the total number of procedures carried on. About 89% of the procedures performed are included within the range of the 10 most frequently performed ones.

The first place in frequency is occupied by laser treatment without contact (by „laser scanner". This procedure is known as devoid of essential unwanted effects appearing directly during the performance of the procedure. Patients accept this type of physiotherapy as safe and non-stressful. Doctors referring to laser treatment do not take into consideration less obvious contraindication to use biostimulated laser, and as a result they can expose patients to possible side effects and unwanted effects distant in time [2].

The analysis of the number of procedures performed within the period of 3 years shows periodical changes in proportions between particular types. Unfortunately, irregular changes within the 3-year period analyzed do not permit to show a clear tendency within the proportions of the given procedures. Comparing facts from subsequent year quarters within the period of 3 years, seasonal growth of the number of procedures performed in the 2nd and 3rd quarters was observed. Probably, patients prefer to attend rehabilitation in good weather conditions.

The choice of physical methods for a particular disorder is difficult with the present level of knowledge. Doctors take into consideration the well known, described in medical literature, indications and contraindications to a particular procedure, analyse the aim they want to achieve and are guided by experience to a large extent. Analyzing the four most common diseases treated by rehabilitation, in respect to the type of procedure in referrals, a trend, which can be explained by correct usage of medical indications, becomes visible The number of laser treatment referred in polyarthrosis (M-15) is considerably smaller. Laser radiation penetrates relatively shallowly into the tissues and in most cases it does not affect joints structure (10). In soft tissue overload syndrome (M-70) using laser treatment is quite more justified and is reflected in the results presented. In spite of the tendency to „favour" some types of therapy in particular diseases, only in the case of low frequency magnetic field a statistically important difference in the frequency of its.

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