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Hipporehabilitation at the Felin Experimental Farm of the Agricultural University in 2000–2006

Wykorzystanie rehabilitacyjne koni na terenie Gospodarstwa Doświadczalnego Felin AR w Lublinie w latach 2000–2006

Summary. Hippotherapy was performed with four geldings (Małopolski Horse, Polish Konik and Hutzul Horse) and four mares (Felin Pony). The horses were included into the hippotherapeutic treatment program at the age of 47–124 months. and their conformation variability allowed to satisfy the patients` needs. The data of patients under the therapeutic program organized at the Felin Experimental Farm over 2000–2006 were supplied by a hippotherapist team and the Association for Movement Disabled Children and Youth.

A total of 137 patients took part in the equine-assisted therapy. The average number of sessions/patient/month ranged from 14.67 in 2000 up to 29.25 in 2004. The number of patients/ horse/ day ranged between 2.36 in 2006 to 3.38 in 2001. The mean number of 30 min-sessions per therapist daily oscillated from 2.09 (2001) up to 4.59 (2004). The calculated values appeared to be lower than those laid out in The Canons of Polish Hippotherapy (4 h/day). Significant and highly significant statistical differences recorded between the absolute means (number of sessions and patients) and the relative ones(number of sessions/ horse and / therapist) in the consecutive years gave evidence for the ongoing development of the hippotherapeutic center in Felin.

Among the clients served by the center, there was a group of patients who attended the therapy sessions regularly and it is a promising predictor for the equine-assisted therapy to be used as a valid branch of rehabilitation and recognized as such by handicapped children`s parents, doctors and the whole society.

Key words: hippotherapy, organization, patient, horse work, age, sex

INTRODUCTION

Hippotherapy includes equine-oriented rehabilitation activities utilizing the movement qualities of a specially trained and prepared horse to achieve functional outcomes [Izdebski 1996, Strumińska 2003]. The therapy aims at improvement of the physical, emotional, cognitive and social sphere of the patient life [Teichmann Engel 2004,

Wyżnikiewicz-Nawracała 2002]. Hippotherapy through its multilevel operation, involves various forms of equine-facilitated activities (physiotherapy on horseback, psychopedagogical horse riding, performing on horse-back, therapeutic contact with horse, recreative or sport horse riding) so that an individual with any physical or emotional disabilities could obtain some specific benefits in the physical and mental process of rehabilitation [Strauss 1996].

The treatment session with horse use has to proceed according to the defined guidelines. It includes not only a well conditioned trained horse and a professional therapist but physician consultants, like a physical, occupational therapist, speech – language pathologist, psychologist, neurologist, orthopedist and other specialists as well, subject to a patient`s disability [Kanony... 2007, Strumińska 2003]. Another vital role in the session is played by a horse handler – most often a volunteer [Wyżnikiewicz-Nawracała 2002]. Pairing up a client to a specific horse is dependent on the needs and conditions of a patient, i.e. size and body weight of a patient – adult or child and his disability. Therefore, a specific patient oriented treatment session includes special therapy techniques and forms of treatment procedures, safety measures off and on the horse (from the ground or with a back rider) as well as team members to conduct and control the treatment [Cieśla 2007, Teichmann Engel 2004].

The present study aims at presentati the organization of hippotherapeutic sessions and characteristics of the horses used at the Felin Experimental Farm, Agricultural University in Lublin in the years 2000–2006.

MATERIAL AND METHODS

The research concerning the use of horse in the hippotherapy center in Felin Experimental Farm UA in Lublin was carried out over 2000–2006, where hipporehabilitation was performed on 8 horses, i.e. 4 geldings and 4 mares. The gelding group (chronological order of use in hippotherapy sessions) included: **Epik** (breed-m), father (f) Kirpan (xx), mother Epira (m) after Furioso XXXIX-16 (x); **Hubal** (kn), f. Kordon (kb), m. Hubka (kn) after Moloch (kn); **Hip-Hop** (kn), f. Kult (kn), m. Hosznia (kn) after Kornik (kb); **Perkoz** (hc), f. Rygor (hc) , m. Perła (hc) after Szafir (hc); while the mare group: **Grafologia** (kf), f. Apacz (xo), m. Grafika (kf) after Gryf (kf); **Korweta** (kf), f. Filutek (kf), m. Kora (kn) after Moloch (kn); M**odelina** (kf), f. Wampir (kf), m. Modena (kn) after Odmęt (kn); **Korona** (kf), f. Witraż (kf), m. Korweta (kf) after Filutek (kf). All the horses underwent the assessment of their interior properties in terms of character, temperament, impulsiveness, courage, touch and tactile sensitivity, interaction with human and other horses, instincts, faults, bad habits. However, the key role is attributed to the psyche of a horse – the determinant while choosing an appropriate fit for the program [Budzyński *et al*. 2001, Pluta and Firlej 2006]. Besides, horse exterior was evaluated, i.e. sex, age, height, conformation: neck, trunk, shoulder blade, withers, back, loins, sacrum, rump, extremities, body condition and health as well as a horse movement at the gaits – walk and trot.

Data concerning patients' presence at the hippotherapy sessions (2000–2006) and their disabilities were provided by the hippotherapist team and The Association for Movement Disabled Children and Youth, whose members are the predominant clients (92% patients) of the Felin therapy center. A total of 137 patients were enrolled for the equotherapy at that period.

The therapy sessions were carried out throughout the year in the open fenced arena or covered one at bad weather conditions. In summer, patients of better motor proficiency were offered short ridings outside the center.

The collected material comprising the ratio of the number of the patients to the attendance rate and the number of sessions per equine rehabilitator and horse in the subsequent years was analyzed using Microsoft Excel 2007 software and the differences of means verified with t-Student` test. Besides, straight correlations were employed to determine the relationships between and within the absolute and relative values range.

RESULTS AND DISCUSSION

The characteristics of horses used as a therapeutic tool for disabled people is presented in Table 1. The horses were systematized according to the date of their introduction to the hippotherapy program. The oldest animals were – a gelding Epik (m) and a mare Grafologia (kf), which were also the first to be used in the hipporehabilitation program in Felin.

The hippotherapy services are performed by horses aged 5 years, that is 60 months. [Kanony... 2007, Pluta and Firlej 2006]. The upper age limit depends mainly on an animal body condition. The mentioned values (just like others characterizing horse`s suitability for hippotherapy) are optimal which obviously does not rule out other solutions as some authors emphasize [Cieśla 2007, Kaproń and Nowak 2000, Łojek 2006]. Therefore, Table 1 summarizes the horse age at the therapeutic service start. Only two geldings: Hubal (kn) and Perkoz (hc) were relatively younger when included into the treatment program, i.e. 54 and 47 months of age, respectively and consequently, their adaptive period in hippotherapy (two first months as a rule) lasted longer, especially in the case of the latter horse (about four months). All horses go through the adaptive period which starts upon animal introduction to regular hippotherapy sessions but at reduced patient load, i.e. 1–3 patient per day not to burden horse`s psyche excessively.

Table 1. Characteristics of therapy horses
Tabela 1. Charakterystyka koni biorących udział w zajęciach z hipoterapii

Horse name Nazwa konia	Breed Rasa	Date of birth Data urodzenia	Sex Płeć	Age at enrollment work (mo) Wiek rozpoczęcia pracy (mies.)	Height at withers Wysokość w kłębie (cm)	Chest girth circumference Obwód klatki piersiowej (cm)	Cannon's circumference Obwód nadpęcia (cm)
Grafologia	kf	26.04.1993	kl	82	134	165	17
Epik	m	23.01.1993	w	85	160	184	20
Hubal	kn	06.03.1996	w	54	140	180	21
Korweta	kf	08.03.1994	kl	82	126	160	16
Hip-Hop	kn	24.05.1996	w	73	142	169	20
Modelina	kf	09.05.1994	kl	124	135	171	17
Perkoz	hc	27.01.2001	w	47	135	173	18
Korona	kf	13.08.2001	kl	58	137	162	16

The horse size is of key importance, particularly its height at withers and chest circumference. The former parameter is significant taking into account the patient`s size (horse step length – adaptive responsive three-dimensional movement pattern of the rider`s pelvis) and a choice of patient`s safety procedures. On the other hand the latter parameter is important, e.g. when a patient is presented with substantial adductor tightness or lower extremity spasticity. For small children (aged 1.5–8 years) enrolled in the hippotherapy center in Felin, Grafologia (kf) and Korweta (kf) proved to be most useful. The youngest patients mounted on a high horse with higher movement amplitude may develop some anxiety that prevents them from taking a proper posture or positions. The disabled who needed horse safety insurance (therapist as a back rider) were offered sessions on Grafologia (kf), Hubal (kn), Hip-Hop (kn) and Perkoz (hc). Older children, youth and adults used Epik (m), Hubal (kn), Hip-Hop (kn), Modelina (kf), Perkoz (kn) and Korona (kf). On most of the presented horses, due to their size, patient safety was ensured from the ground (off the horse) by sidewalking on one or both sides. Only in the case of large-size Epik, no efficient insurance from the ground could be provided, so it was used by the patients of higher motor abilities and more courageous ones.

There is no single equine breed that would suit all the hippotherapeutic forms [Kaproń and Nowak 2000], still some breeds should be distinguished with highly selected individuals that make perfect treatment tools for the disabled. These are Polish breeds like, Hutzul Horse, Polish Konik, Biłgoraj Horse, Felin Pony and lower Silesian, Małpolska, Wielkopolska, cold blood horses and foreign breeds: Fjord horse and Haflinger and many others whose parameters resemble those of the Polish breed horses mentioned [Palaton 2004, Strauss 1996]. The horses used in the hipporehabilitation program in Felin belong to four breeds which, according to some authors, show a predilection for this form of activity [Budzyński *et al*. 2001, Kosiniak-Kamysz *et al*. 2000]. Equine variability due to breed characteristics and in turn, diverse exterior is very useful as it facilitates matching the horse size and patient disabilities.

Considering the 7-year period of the hippotherapeutic activity of the Felin center, the way and time of the horse use varied, subject to organizational issues. Epik, a gelding, as a didactic horse worked mainly „under" students, it was leased to perform hippotherapy treatments only in 2000. Then, it was replaced by Hubal (2001–2004) and Hip-Hop (mid 2002 and 2003) geldings whose work was also based on temporary care-leasing arrangement with the horse owners. Modelina, a mare, was included to the program in September 2004 and worked till June 2006. Thanks to the sponsorship, the Association (whose patients are the main clients of the center) purchased Perkoz Hutzul Horse in December 2004. Since July 2006, the following horses have been used in treatment sessions: Grafologia (from 2000), Korweta (2001), Perkoz and Korona (mid-2006). The geldings worked continuously, while the mares (reproductive cycle) had some breaks after foaling. Obviously, the signs of the approaching parturition were monitored so that the mares` work was lighter and the animal movement had a positive influence on the successive foaling (7 cases during the examined period).

The hipporehabilitation service is performed by geldings and mares [Izdebski 1996], stallions are used occasionally. Although mare inclusion into the program means breaks in their work caused by estrus occurrence, foaling and nursing period, they are widely used in hippotherapy (in Felin, too) because of the offspring reared to make a prospective base for the center just like Korona (kf), a daughter of Korweta (kf).

The average annual number of horses used in the equine-assisted therapy shows steady regular growth, as Table 2 presents. The process of development, i.e. increasing number of horses under the treatment program aimed at meeting the patients` needs. However, a parameter illustrating the mean number of instructors working in subsequent years appears to be more labile (Tab. 2). The ultimate results (regarding the organization level issues faced in the Fein center, i.e. time and space limitation) seem to be optimal (to satisfy patients` needs) and maintain welfare of the animals used.

Data summarized in Table 2 show statistical characteristics of the number of patients and sessions conducted in the study years and months. The hippotherapeutic treatment program commenced in March 2000 (9-month period service a year). Due to the covered arena in the Felin center, the sessions with patients were carried out year long, yet students could also use it. Therefore, the situation required that treatment sessions be scheduled for breaks between the planned didactic-training activities.

Initially, the session timetable regarded the transportation arrangements made by the patients` parents (or guardians). In 2000, from March to June, two horses were used interchangeably (Grafologia and Epik) to serve only one patient, but this system considerably prolonged the treatment time. Since October 2000, owing to a sufficient number of instructors and volunteers, parallel therapy riding sessions were conducted on two horses. During the first two years of hippotherapy, the service was offered from 2 to 5 days a week, in 2002 from 2 to 4 days. The lowest number of treatment days a week and month was recorded in July (holiday, especially 2000, 2001) and December (2000, 2002, 2005, 2006). A winter decrease in therapeutic session rate as well as in equine-assisted activities was most likely associated with lower attendance of patients due to children health concern and Christmas Holiday break (Tab. 2). Taking into account the 7-year period of the Felin center work, the highest number of hippotherapy practice (1166) was recorded in the second year, when 3–5 therapists performed the parallel treatment sessions on two horses for 2–5 days a week.

In 2003–2005, the equine-assisted services were conducted regularly at the same time on two horses, mostly 2 days a week. Hippotherapy was performed in August in 2000, 2003, 2004 (Tab. 2), while in other years, the therapy horses did not work in this month but were used as saddle horses and rested at pasture longer.

The year 2006 was marked with an increased number of days with hippotherapy practice (3 times more) associated with a greater demand for this form of therapy (1082 treatment services). Besides, thanks to volunteers` commitment in this year, the parallel sessions were conducted on three horses (Grafologia, Korweta, Perkoz, Modelina at disposal, the last one replaced by Korona).

In Table 2 „No of patients" means monthly total number of patients served. Most of them attended the sessions for several months a year, so their participation rate was summed and included into a total number of patients. This parameter has changed over the time. Most of the average monthly number of patients in the subsequent years showed significant and highly significant statistical differences, similarly, the mean monthly therapeutic session rates. The differences evidence the hippotherapy development in the Felin centre.

The straight correlation coefficient values (r) (Tab. 2) between the number of patients and treatment session rates in the years are substantial (0.705–0.896) and highly significant. In 2006 alone, the coefficient had moderate and significant values.

Table 2. Number of patients and hipotherapy sessions, mean numbers of horses and hippotherapists in months and years
Tabela 2. Liczba pacjentów i zajęć z hipoterapii oraz średnie liczby koni i instruktorów w miesiącach i latach

Specification Wyszczególnie	2000		2001		2002		2003		2004		2005		2006	
Month Miesiąc	number of patients liczba pacjentów	number of exercises liczba zajęć	number of patients liczba pacjentów	number of exercises liczba zajęć	number of patients liczba pacjentów	number of exercises liczba zajęć	number of patients liczba pacjentów	number of exercises liczba zajęć	number of patients liczba pacjentów	number of exercises liczba zajęć	number of patients liczba pacjentów	number of exercises liczba zajęć	number of patients liczba pacjentów	number of exercises liczba zajęć
I			22	102	16	75	13	62	15	57	17	65	20	84
II			20	81	19	88	14	48	16	61	15	68	17	72
III	11	55	20	117	22	98	15	64	17	88	16	49	19	95
IV	11	45	18	85	27	106	20	70	20	88	18	66	24	89
V	16	65	25	126	27	122	23	116	24	90	20	65	29	137
VI	20	83	24	128	28	110	24	113	21	82	23	106	30	136
VII	15	34	17	86	17	88	19	76	15	65	22	74	17	90
VIII	19	102					18	48	12	71				
IX	23	77	25	104	18	83	25	134	21	106	21	98	26	131
X	23	130	31	166	19	82	24	114	19	86	21	101	27	139
XI	19	114	30	134	20	70	20	62	18	71	21	94	23	93
XII	18	58	19	37	17	50	19	57	18	71	17	72	13	16
Total Ogółem	175	763	251	1166	230	972	234	964	216	936	211	858	245	1082
Mean number of horses Średnia liczba koni	2,00		2,55		3,18		3,33		3,17		3,45		4,00	
Mean number of trainers Średnia liczba instruktorów	2,00		4,09		3,73		2,00		2,25		2,55		3,00	
n	10		11		11		12		12		11		11	
r	0.724 **		0.896 **		0.825 **		0.847 **		0.705 **		0.769 **		0.587	
x	17.5	76.3	22.8	106.0	20.9	88.3	19.5	80.3	18.0	78.0	19.2	78.0	22.3	98.3
S	4.2	31.0	4.6	34.1	4.4	20.1	4.1	30.2	3.3	14.3	2.7	18.5	5.5	36.7
Max	23	130	31	166	28	122	25	134	24	106	23	106	30	139
Min	11	34	17	37	16	50	13	48	12	57	15	49	13	16

** – indices significant at $P \leq 0.01$ – współczynniki istotne przy $P \leq 0.01$

Table 3. Number of sessions per horse and per therapist, number of work days in months and years
Tabela 3. Liczba zajęć przypadająca na konia i instruktora oraz liczba dni pracy w miesiącach i latach

Specification Wyszczególnie	2000			2001			2002			2003			2004			2005			2006		
	mean number of work days/week – średnia liczba dni pracy w tygodniu																				
	3,90			3,64			3,18			2,17			2,00			2,09			2,91		
Month Miesiąc	work days/ month liczba dni pracy/ mies.	number of sessions – liczba zajęć		work days/ month liczba dni pracy/ mies.	number of sessions – liczba zajęć		work days/ month liczba dni pracy/ mies.	number of sessions – liczba zajęć		work days/ month liczba dni pracy/ mies.	number of sessions – liczba zajęć		work days/ month liczba dni pracy/ mies.	number of sessions – liczba zajęć		work days/ month liczba dni pracy/ mies.	number of sessions – liczba zajęć		work days/ month liczba dni pracy/ mies.	number of sessions – liczba zajęć	
		horse koń	trainer instruktor		horse koń	trainer instruktor		horse koń	trainer instruktor		horse koń	trainer instruktor		horse koń	trainer instruktor		horse koń	trainer instruktor		horse koń	trainer instruktor
I				14	34.0	34.0	15	25.0	15.0	9	15.5	31.0	8	19.0	28.5	9	16.3	32.5	8	21.0	28.0
II				11	40.5	27.0	16	29.3	17.6	8	16.0	24.0	8	20.3	30.5	8	17.0	34.0	8	18.0	24.0
III	11	27.5	27.5	14	58.5	29.3	15	32.7	19.6	9	21.3	32.0	9	29.3	29.3	6	12.3	24.5	9	23.8	31.7
IV	11	22.5	22.5	10	42.5	21.3	16	53.0	21.2	6	23.3	35.0	7	29.3	22.0	8	22.0	33.0	10	22.3	29.7
V	16	32.5	32.5	13	42.0	31.5	17	61.0	24.4	8	29.0	58.0	8	30.0	30.0	7	32.5	32.5	11	34.3	45.7
VI	16	41.5	41.5	15	42.7	32.0	16	55.0	22.0	10	37.7	56.5	7	27.3	41.0	9	53.0	35.3	12	34.0	45.3
VII	7	17.0	34.0	9	28.7	28.7	9	22.0	29.3	9	25.3	38.0	9	21.7	32.5	8	24.7	24.7	13	22.5	30.0
VIII	10	51.0	102.0							4	16.0	24.0	9	23.7	71.0						
IX	16	38.5	77.0	11	52.0	20.8	9	20.8	41.5	11	33.5	67.0	9	26.5	53.0	9	24.5	32.7	12	32.8	43.7
X	12	65.0	43.3	17	83.0	33.2	9	20.5	41.0	9	28.5	57.0	8	21.5	43.0	8	25.3	33.7	13	34.8	46.3
XI	13	57.0	38.0	16	44.7	26.8	8	17.5	35.0	6	20.7	31.0	8	23.7	35.5	8	23.5	31.3	11	23.3	31.0
XII	8	29.0	19.3	12	12.3	7.4	7	12.5	25.0	6	19.0	28.5	8	23.7	35.5	7	18.0	24.0	4	4.0	5.3
Total Ogółem	120	381.5	437.6	142	480.9	292.0	137	349.3	291.6	95	285.8	482.0	98	296.0	451.8	87	269.1	338.2	111	270.8	360.7
n	10			11			11			12			12			11			11		
r		0.449			0.541			-0.415			0.913**			-0.116			0.480			1**	
x	12.0	38.1	43.7	12.9	43.7	26.5	12.4	31.7	26.5	7.9	23.8	40.1	8.1	24.6	37.6	7.9	24.4	30.7	10.0	24.5	32.7
S	3.27	15.5	25.9	2.55	17.7	7.7	3.96	16.7	9.1	2.02	7.2	15.1	0.72	3.7	13.2	0.98	10.9	4.2	2.70	9.2	12.2
Max	16	65.0	102.0	17	83.0	34.0	17	61.0	41.5	11	37.6	67.0	9	30.0	71.0	9	53.0	35.3	13	34.7	46.3
Min	7	17.0	19.3	9	12.3	7.4	7	12.5	15.0	4	15.5	24.0	7	19.0	22.0	6	12.3	24.0	4	4.0	5.3

** – indices significant at $P \leq 0.01$ – współczynniki istotne przy $P \leq 0.01$

Table 4. Number of patients per therapist and per horse daily
Tabela 4. Liczba pacjentów przypadająca na instruktora i konia w jednym dniu pracy

Specification Wyszczególnienie	2000		2001		2002		2003		2004		2005		2006	
Month Miesiąc	number of patients/horse liczba pacjentów/konia	number of patients/trainer liczba pacjentów/instruktora	number of patients/horse liczba pacjentów/konia	number of patients/trainer liczba pacjentów/instruktora	number of patients/horse liczba pacjentów/konia	number of patients/trainer liczba pacjentów/instruktora	number of patients/horse liczba pacjentów/konia	number of patients/trainer liczba pacjentów/instruktora	number of patients/horse liczba pacjentów/konia	number of patients/trainer liczba pacjentów/instruktora	number of patients/horse liczba pacjentów/konia	number of patients/trainer liczba pacjentów/instruktora	number of patients/horse liczba pacjentów/konia	number of patients/trainer liczba pacjentów/instruktora
I			2.4	2.4	1.7	1.0	1.7	3.4	2.4	3.6	1.8	3.6	2.6	3.5
II			3.7	2.5	1.8	1.1	2.0	3.0	2.5	3.8	2.1	4.3	2.3	3.0
III	2.5	2.5	4.2	2.1	2.2	1.3	2.4	3.6	3.3	3.3	2.0	4.1	2.6	3.5
IV	2.0	2.0	4.3	2.1	3.3	1.3	3.9	5.8	4.2	3.1	2.8	4.1	2.2	3.0
V	2.0	2.0	3.2	2.4	3.6	1.4	3.6	7.3	3.8	3.8	4.6	4.6	3.1	4.2
VI	2.6	2.6	2.8	2.1	3.4	1.4	3.8	5.7	3.9	5.9	5.9	3.9	2.8	3.8
VII	2.4	4.9	3.2	3.2	2.4	3.3	2.8	4.2	2.4	3.6	3.1	3.1	1.7	2.3
VIII	5.1	10.2					4.0	6.0	2.6	7.9				
IX	2.4	4.8	4.7	1.9	2.3	4.6	3.0	6.1	2.9	5.9	2.7	3.6	2.7	3.6
X	5.4	3.6	4.9	2.0	2.3	4.6	3.2	6.3	2.7	5.4	3.2	4.2	2.7	3.6
XI	4.4	2.9	2.8	1.7	2.2	4.4	3.4	5.2	3.0	4.4	2.9	3.9	2.1	2.8
XII	3.6	2.4	1.0	0.6	1.8	3.6	3.2	4.8	3.0	4.4	2.6	3.4	1.0	1.3
Total Ogółem	32.4	37.9	37.2	23.0	27.0	28.0	37.0	61.4	36.7	55.1	33.7	42.8	25.8	34.6
n	10		11		11		12		12		11		11	
x	3.25	3.80	3.38	2.09	2.46	2.54	3.08	5.11	3.05	4.59	3.07	3.90	2.36	3.14
S	1.28	2.48	1.13	0.63	0.68	1.53	0.74	1.32	0.61	1.42	1.20	0.44	0.59	0.79
Max	5.4	10.2	4.9	3.2	3.6	4.6	4.0	7.3	4.2	7.9	5.9	4.6	3.1	4.2
Min	2.0	2.0	1.0	0.6	1.7	1.0	1.7	3.0	2.4	3.1	1.8	3.1	1.0	1.3

As to the correlations between the relative values for the number of sessions/horse and/instructor (Tab. 3), they were recorded only in 2003 and 2006 (highly significant dependences). It may be assumed that the system established at the Felin center organization work in 2006 proved optimal.

Table 3 summarizes the characteristics of therapeutic service rates in months and years per horse and therapist. A basic treatment session, just like in other centers, averages 30 minutes [Strauss 1996, Strumińska 2003] but occasionally it may last up to an hour, subject to a patient`s (or parents`) need or will. Still, the equine activity time is determined by hippotherapy team and not a patient. The treatment sessions are charged. Assuming that working session time laid out in the Canons of Polish Hippotherapy and by Izdebski [1996] was optimal, the direct work of a therapist and a therapy horse should not exceed 4 hours a day (with e.g. an hour-break). Generally, a 5-day work week of a hippotherapist and horse means 20 hours of therapeutic services a week and approximately (mean four weeks a month) 80 hours a month, that is 160 half an hour-working sessions with a patient. In the present center, the highest average values of this parameter – 43.7 were obtained in 2000 working at average 3.90 day a week (Tab. 3), while the lowest mean – 26.5 was reported in 2001 and 2002 with average work days 3.64 and 3.18 a week, respectively. During 2003–2006, the mean work day rate a week oscillated between 2.00 (2004) and 2,91 (2006). The average working session rate per therapist a month was from 30.7 (2005) up to 40.1 (2003). The data from Table 3 serve as a basis to calculate and check the session rate (patients)/therapist in a work day in respective years (Tab. 4). All the means reported for successive years are lower than from Kanony [2007] – 8 patients a day. This fact may be explained with the special work system in Felin center where the shortage of time imposes the employment of more hippotherapists conducting parallel working sessions on two horses at least. The results obtained in August 2000, 2003 and 2004 (holiday) made the exception when a ratio of 1 therapist to 6 patients was noted and over 10 patients in 2000. In 2000 and 2004 in August, one therapist conducted the sessions. It is crucial, though, that treatments were performed effectively and safely.

Table 5. Actual number of patients attending hippotherapy sessions in consecutive years
Tabela 5. Faktyczna liczba pacjentów na zajęciach z hipoterapii w poszczególnych latach

Specification Wyszczególnienie	2000	2001	2002	2003	2004	2005	2006
Number of patients Liczba pacjentów	52	49	46	40	32	33	43
Number of sessions Liczba zajęć	763	1166	972	964	936	858	1082
x	14.67 ABCDEF	23.79 AGHi	21,13 BGjKLM	24.10 CjN	29.25 DHKNOP	26.00 EiLO	25.16 FMP
S	13.51	20.70	18,24	18.51	21.45	19.81	31.89
Max	52	80	71	70	73	65	187
Min	1	2	1	1	1	2	1

Means denoted with the same letters differ significantly at: a,.. – $P \leq 0.05$; A,.. – $P \leq 0.01$
Średnie oznaczone tymi samymi literami różnią się od siebie: a,.. – istotnie przy $P \leq 0,05$; A,.. – wysoko istotnie przy $P \leq 0,01$

A hippotherapy horse is submitted not only to physical loading but the psychic ones predominantly (random changes of rider`s center of gravity, body tapping and poking, handling various noises and other stimuli [Strauss 1996, Strumińska 2003]. At the Felin center, average monthly number of sessions performed by a horse varied from maximum 43.7 in 2001 to minimum 23.8 in 2003 (Tab. 3), whereas number of patients per a horse daily is presented in Tab. 4. The parameters appear to be lower than those reported by Izdebski [1996] and Kanony... [2007] and just like the values per therapist are dependent on the organization level issues at the center.

Table 5 presents the actual number of patients who received equine-assisted therapy in the consecutive years. The highest number was recorded in the first year of the center activity (52 clients), yet in this year as many as 18 patients attended less than 6 sessions. That indicates that handicapped children`s parents got accustomed to this new form of rehabilitation, tried it out and decided to explore something else. Average yearly session rate per patient ranged between 14.67 (2000) and 29.25 (2004). The greatest amount of highly significant statistical differences was recorded between the extreme means and the others.

Interestingly, five patients attended the therapeutic sessions regularly throughout the aqnalyzed period, that is 7 years. Out of the patients who joined in 2001, two patients were in this form of therapy for the following two years. Similarly in 2002, whereas out of the patients enrolled in 2003 only one of them participated regularly for the subsequent two years. In 2004, four clients joined the program. Totally, fourteen patients who commenced hipporehabilitation in the Felin center continued it for a couple of years.

People directed to hippotherapy by physician specialists (a physician`s prescription must be submitted) vary in age but usually children under the age of 10 years make up the greatest portion (73%). The youngest client was only a year and a half. Undoubtely, the earlier a disabled child is served by the hippotherapy intervention program, the better emotional and mental rewards are, which was reported by Strauss [1996] and Teichmann Engel [2004] as well as Wyżnikiewicz-Nawracała [2002] in their studies. The age group between 11–18 yrs made up 20% of patients and 7% – patients over 18 yrs of age.

Out of the patients who received therapy, 70% suffered from cerebral palsy, 11% psychomotor delay, 6% traumatic brain injury, mostly car accidents, 4% Down Syndrome, 4% autism, 5% other mental disabilities and 1% multiple sclerosis.

Although the present study does not aim at assessing the hipporehabilitation procedure effectiveness but on the grounds of the surveys conducted on handicapped children`s parents and hippotherapists, it may be stated that hippotherapy contributes to measurable improvement of body posture and balance, it boosts emotional well-being, builds self confidence, enhances coordination and communication skills with the environment [Srauss 1996, Teichmann Engel 2004].

CONCLUSIONS

1. Hippotherapy in Felin involved 4 mares Felin Pony breed and 4 geldings: 2 Polish Konik, 1 Małopolska and 1 Hutzul Horse breed. Throughout the 7-year research period, horse work time varied due to organization level issues. Equine exterior variation facilitated meeting the patients` needs concerning their disabilities and body weight.

2. During 2000–2006 in the Felin Experimental Farm, UA in Lublin, a total of 137 patients received hippotherapeutic treatments.

3. A weekly treatment session schedule ranged from 5 and 4 days in 2000–2002 to 2 and 3 days in the other years.

4. The number of patients per horse daily oscillates slightly from 2.36 in 2006 up to 3.38 in 2001, whereas the average number of sessions per therapist per day from 2.09 in 2001 up to 4.59 in 2004.

4. The present investigations were conducted in a pilot-scale; therefore, their continuation would be recommended, with a concern to other hippotherapy centers activity.

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Streszczenie. Hipoterapię prowadzono na 4 wałachach (m, kn i hc) oraz 4 klaczach (kf). Wiek koni rozpoczynających pracę – od 47 do 124 miesięcy. Różnorodność eksterierowa koni pozwalała na zaspokojenie potrzeb pacjentów. Dane pacjentów uczestniczących w zajęciach z hipoterapii w latach 2000–2006 w GD Felin AR w Lublinie zostały udostępnione przez zespół hipoterapeutów oraz Stowarzyszenie na rzecz Dzieci i Młodzieży Niepełnosprawnej Ruchowo.

Z hipoterapii skorzystało 137 pacjentów. Średnia liczba zajęć w roku przypadająca na pacjenta wyniosła od 14,67 w 2000 r. do 29,25 w 2004 r. Liczba pacjentów przypadających na konia dzien-

nie: od 2,36 w 2006 r. do 3,38 w 2001 r. Średnia liczba zajęć (1 jazda – 30 minut) dziennie przypadająca na instruktora kształtowała się od 2,09 (2001) do 4,59 (2004). Wyliczone wartości są niższe od parametrów zawartych w Kanonach Polskiej Hipoterapii (4 h/dzień). Pomiędzy średnimi bezwzględnymi (ilość zajęć i pacjentów) oraz względnymi (ilość zajęć przypadających na konia i instruktora) w poszczególnych latach wystąpiły istotne i w większości wysoko istotne różnice statystyczne, świadczące o trwającym rozwoju hipoterapii w Felinie.

Wśród osób korzystających z hipoterapii była grupa pacjentów systematycznie na nią uczęszczających. Jest to dobry prognostyk świadczący o tym, że rehabilitacja konna w oczach rodziców, lekarzy i społeczeństwa ma szansę zrównania się z innymi formami rehabilitacji w naszym kraju.

Słowa kluczowe: hipoterapia, organizacja, pacjenci, praca koni, wiek, płeć