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The utilization of health resort treatment services by older people in Poland – results of the PolSenior study

Korzystanie z lecznictwa uzdrowiskowego przez osoby starsze w Polsce – wyniki badania PolSenior

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Abstract

Introduction. *Health resort treatment (HRT) is an integral part of the Polish healthcare system designed to prevent disability and accelerate return to fitness.* ***Aim.*** *As utilization of HRT services by older people in Poland has not been studied in population-based surveys, the aim of this analysis was to assess HRT in relation to sociodemographic, economic and functional status as well as self-rated health of older individuals.* ***Material and methods.*** *Presented analyses were performed in 4813 respondents of the PolSenior study (96.7% of the whole group) who have answered a question concerning the use of HRT.* ***Results.*** *Among respondents aged 65 years and over, 10.7% participated in HRT during a proceeding 3-year period (8.7% financed from public health funds, 4.5% by respondents). Utilization of HRT decreased from about 14.0% in younger old age cohorts to 4.0% in nonagenarians. People independent in basic (ADL) and instrumental activities of daily living (IADL) were more likely to use HRT services than those whose functional status was impaired. Multivariate regression analysis showed that HRT was more often utilized by individuals younger than 85 years, subjects independent in IADL, certificate of disability holders, city dwellers, and people with education level higher than primary. Self-rated health and financial status, occupation in the past, chronic pain, and gender were not associated with the HRT utilization.* ***Conclusions.*** *Younger, better educated seniors, large cities dwellers, disability certificate holders, independent in daily living were the main beneficiaries of HRT. Current pattern of utilization of HRT services preserves and even augments inequalities in health. (Gerontol Pol 2018; 26; 7-13)*

Key words: *health resort treatment, ageing, disability*

Streszczenie

Wstęp. *Lecznictwo uzdrowiskowe, które służy zapobieganiu niepełnosprawności i przyspiesza powrót do zdrowia, stanowi integralną część systemu opieki zdrowotnej w Polsce.* ***Cel.*** *Celem niniejszej pracy była analiza korzystania z lecznictwa uzdrowiskowego przez seniorów w zależności od czynników socjodemograficznych, ekonomicznych, stanu funkcjonalnego oraz samooceny stanu zdrowia. W Polsce, jak dotąd, nie prowadzono badań populacyjnych z udziałem osób starszych w omawianym zakresie.* ***Materiał i metoda.*** *Analizę przeprowadzono na grupie 4813 respondentów projektu PolSenior w wieku 65 i więcej lat (96,7% populacji badanej), którzy odpowiedzieli na pytanie dotyczące korzystania z lecznictwa uzdrowiskowego.* ***Wyniki.*** *Z lecznictwa uzdrowiskowego w ciągu trzech lat poprzedzających udział w projekcie skorzystało 10,7% badanych (8,7% respondentów – z pobytów finansowanych ze środków publicznych, 4,5% respondentów – z pobytów finansowanych ze środków własnych). Udział badanych w pobytach uzdrowiskowych zmniejszał się z około 14,0%*

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w młodszych kohortach wiekowych do 4,0% wśród dziewięćdziesięcolatków. Osoby niezależne w zakresie ADL i IADL korzystały z pobytów uzdrowiskowych częściej od zależnych. Analiza regresji wieloczynnikowej wykazała, że częściej z lecznictwa uzdrowiskowego korzystali respondenci w wieku do 85. roku życia, niezależni w zakresie IADL, posiadający orzeczenie o niepełnosprawności, mieszkający w miastach oraz deklarujący wykształcenie wyższe niż podstawowe. Nie stwierdzono zależności pomiędzy korzystaniem z lecznictwa uzdrowiskowego a samooceną stanu zdrowia, statusem ekonomicznym, zawodem wykonywanym w przeszłości, występowaniem bólu przewlekłego, czy płcią. ***Wnioski.*** *Głównymi beneficjentami pobytów uzdrowiskowych byli młodsi, lepiej wykształceni seniorzy, mieszkańcy dużych miast, osoby ze stwierdzoną prawnie niepełnosprawnością, niezależni w zakresie czynności życia codziennego. Obecny model korzystania z lecznictwa uzdrowiskowego podtrzymuje, a nawet pogłębia obserwowane nierówności w zdrowiu. (Gerontol Pol 2018; 26; 7-13)*

Słowa kluczowe: *lecznictwo uzdrowiskowe, starzenie, niepełnosprawność*

Introduction

According to the Central Statistical Office of Poland (GUS), the number of older people will almost double by 2050 and every third person will be at least 65 years old, while the number of aged 80 and over will increase by almost 2.5 times, reaching 10.0% of the population, and constituting almost one third of older individuals. The so called phenomenon of "double aging" will be most apparent among the oldest seniors – centenarians, whose number will increase almost 14 times in the period under review [1].

With the increase in the number of older population, there will be a growing demand for rehabilitation services, as aging is accompanied by comorbidities, functional impairment and disability. According to the European Health Interview Survey (EHIS), there were 2.6 million community-dwelling biologically disabled people aged 65 years and over in 2012 in Poland [2]. In addition, in the PolSenior study, 29.0% of Poles aged 65 years and over held a disability certificate (27.5% women and 30.4% men), and the percentage of severely disabled was increasing with age – from 27.9% among the youngest (65-69 y.o.) to 70.8% among the oldest (90+ y.o.) individuals [3].

One of the most effective methods of preventing disability and accelerating return to fitness is medical rehabilitation carried out in ambulatory or stationary conditions. Kinesiotherapy, physiotherapy are effective methods for restoration of functional performance after surgical procedures, and may prevent frailty, especially among the oldest people. Access to rehabilitation, including geriatric rehabilitation, pain treatment with the use of physiotherapy may decrease the risk of disability and, consequently, increase life expectancy as well as reduce the cost of care.

Health resort treatment (HRT) is an integral part of the healthcare system in Poland. Among health resort facilities are: spa hospitals, spa sanatoriums, spa clinics and physiotherapeutic spa units [4]. Nowadays, there are 46 municipalities in Poland with the statutory status of health resort, with 42,303 beds available [5].

In Poland, like in other post-transformation countries, the health resort therapy is financed or co-financed from public resources [Social Insurance Institution (ZUS), Agricultural Social Insurance Fund (KRUS), State Fund for Rehabilitation of Disabled Persons (PFRON) and National Health Fund (NFZ)].

Wide range of rehabilitation services, and balneologic treatments offered in health resorts makes this form of therapy attractive for large groups of users, including people without referral from public health institutions who pay for the accommodation and rehabilitation on their own. The effectiveness of complex HRT is comparable or even higher than outpatient services [6-9].

The utilization of HRT by older people has not been studied in population-based surveys in Poland.

Aim

The aim of the study was to evaluate the utilization of HRT by people aged 65 years and over, in relation to selected sociodemographic characteristic, functional status and self-rated health (SRH). Identification of factors affecting the utilization of HRT by Polish seniors will help to determine the causes of inequalities in the access of older Poles to health resort rehabilitation services preventing disability. Growing long-term care expenditures for elderly who lost independence is a challenge to public health systems in Poland and other European Union countries that needs to be thoroughly addressed [1,10,11].

Material and methods

The PolSenior project was carried out on a representative group of 4979 Poles aged 65 years and over, in five-year age-based cohorts. The methodology of the study was previously described [12]. The present analysis included 4813 respondents (96.7% of the whole group) who have answered question concerning the utilization of HRT.

The method of HRT financing was taken into account in the analysis, including publicly co-funded HRT based on a referral obtained from a health insurance physician, and HRT funded from the respondents' resources without referral from a health insurance physician.

The following variables were included: gender, age, place of residence, level of education, occupation in the past and self-rated financial situation, formal disability and functional status, chronic pain occurrence and SRH.

The functional status of the study subjects was characterized using the Katz Index of Independence in Activities of Daily Living (ADL) [13] and the Lawton Instrumental Activities of Daily Living (IADL) [14] scales. Three groups of respondents were identified on the basis of ADL results: independent (score: 5-6), partially dependent (score: 3-4), dependent (score: 0-2), and within the IADL scale: independent (score: 24), partially dependent (score: 19-23) and dependent (score: 8-18) [3].

SRH was assessed by Visual Analog Scale (from 0 to 10 points) [12], and the score was divided into three categories as follows: 0-3 points – poor SRH, 4-6 points – fair SRH, 7-10 – good SRH. The analysis included the prevalence of chronic pain as described previously [15].

All participants or their caregivers signed an informed consent form. The PolSenior project was approved by the Bioethics Committee of the Silesian Medical University in Katowice.

Statistical analyses were performed using Statistica 10.0 software (StatSoft, Tulsa, OK., USA). The χ^2 and Cochran-Armitage for trend tests were used to analyze the significance of difference in the frequency of HRT utilization in the study population. A multivariate logistic regression analysis was performed to analyze factors affecting HRT and data were presented as odds ratios (ORs) with 95% confidence intervals (95%CIs). In the regression model, IADL was chosen as a determinant of functional status.

In all analyses, p value < 0.05 was considered statistically significant.

Presented analyses differed in terms of number of observations because of the deletion of missing data.

Results

During the three years period preceding the participation in the PolSenior study, a total of 516 (10.7%) participants utilized HRT, including 419 (8.7%) based on the referral from a health insurance physician, and 217 (4.5%) funded from the respondents' resources. Almost one-fourth (N = 120; 23.3%) of respondents who participated in HRT, utilized both forms of funding. Participation in HRT decreased from the age of 80 years, from about 14.0% in younger cohorts (65-79 years old) to 10.8% in 80-84 year olds, 5.8% in 85-89 year olds and 4.0% in nonagenarians ($p < 0.001$). The HRT services in younger age cohorts were more often utilized by women than men (15.8% *vs.* 13.3% among 65-69 years old), but in older age groups by men (1.6% women *vs.* 6.4% men among nonagenarians; $p < 0.001$), however, no gender difference were observed when the whole study group was considered.

City dwellers participated in HRT regardless of its source of funding three-time more often than the rural cohort ($p < 0.001$), with residents of large cities being the most frequent spa visitors. HRT services were most often utilized by people with higher education, and least often by those with primary or the lack of education (25.4% *vs.* 5.1%, $p < 0.001$). Respondents that had previously worked as 'white collars' utilized HRT 2.5 times more often than 'blue collars' and four times more often than farmers ($p < 0.001$). People who self-rated their financial situation as good ('enough money for all needs'), participated more often in HRT funded from the respondents' resources than less wealthy individuals ($p < 0.001$).

Respondents with formal disability status utilized HRT services over twice more often than those without a certified disability status ($p < 0.001$). The difference was less apparent when HRT services were covered from personal resources (Table I).

People independent in both ADL and IADL scales were more likely to use HRT services than those who were partially dependent or dependent (11.8% *vs.* 3.7% *vs.* 2.8% for ADL; 15.7% *vs.* 8.9% *vs.* 4.2% for IADL, respectively; $p < 0.001$).

There were no statistical differences between the use of HRT services and the prevalence of chronic pain, regardless of the funding source.

Those who rated their health as poor, were less likely to use this form of treatment than those whose SRH was fair and good (7.3% *vs.* 11.8%, $p = 0.013$), with the significant difference only among women ($p = 0.045$). Detailed data concerning gender and source of funding are presented in Table I.

Multivariate regression analysis was performed for HRT, irrespective of the form of funding (due to the small number of the group utilizing HRT services) – Table II. It showed that people aged 85 years and over had the lowest chance of participating in HRT. The HRT services were more often utilized by respondents independent in IADL, disability certificate holders, city dwellers (with number of residents over 50,000) and those with the education level higher than primary. Self-rated health and financial situation, occupation in the past, chronic pain, and gender were not associated with the HRT utilization.

Table I. Utilization of health resort treatment by form of financing and gender

Variable	Characteristics	Funded from the respondents' resources									Co-financed by public funds								
		Total		p	Women		p	Men		p	Total		p	Women		p	Men		p
		n	%		n	%		n	%		n	%		n	%		n	%	
Age cohort [years] N = 4813	65-69 y.o.	51	6.6	<0.001	34	8.5	<0.001	17	4.6	NS	89	11.6	<0.001	48	12.0	<0.001	41	11.1	<0.001
	70-74 y.o.	46	5.1		24	5.6		22	4.7		113	12.5		59	13.7		54	11.5	
	75-79 y.o.	46	5.7		25	6.4		21	4.9		93	11.4		42	10.8		51	12.0	
	80-84 y.o.	35	4.6		11	3.1		24	5.9		65	8.5		27	7.6		38	9.3	
	85-89 y.o.	27	3.2		6	1.6		21	4.6		35	4.2		12	3.2		23	5.0	
	90 y.o. and over	12	1.6		3	0.8		9	2.5		24	3.3		5	1.3		19	5.3	
Place of residence N = 4813 [number of residents]	Rural area	37	1.9	<0.001	16	1.7	<0.001	21	2.2	<0.001	79	4.1	<0.001	39	4.0	<0.001	40	4.1	<0.001
	City ≤20,000	30	4.7		16	5.1		14	4.2		48	7.5		23	7.4		25	7.5	
	City >20,000-50,000	33	5.6		12	4.4		21	6.7		55	9.4		21	7.6		34	10.9	
	City >50,000-200,000	43	7.0		24	8.6		19	5.6		79	12.8		37	13.2		42	12.4	
	City >200,000-500,000	14	6.3		6	5.7		8	6.9		39	17.6		23	21.9		16	13.8	
	City >500,000	60	7.4		29	7.5		31	7.4		119	14.7		50	12.9		69	16.4	
Education N = 4798	Lack of education	4	0.6	<0.001	1	0.3	<0.001	3	1.1	<0.001	7	1.0	<0.001	5	1.3	<0.001	2	0.7	<0.001
	Primary	55	2.6		32	2.8		23	2.4		104	4.9		62	5.4		42	4.3	
	Vocational	67	7.3		36	8.5		31	6.3		138	15.0		67	15.8		71	14.3	
	Secondary	32	5.4		10	6.1		22	5.1		69	11.5		21	12.9		48	11.0	
	Bachelor	26	9.3		13	12.5		13	7.4		50	17.8		19	18.3		31	17.5	
	MCs*	32	15.5		11	14.7		21	15.9		49	23.7		18	24.0		31	23.5	
Type of work N = 4531	Blue-collar worker	78	3.2	<0.001	32	3.2	<0.001	46	3.3	<0.001	153	6.3	<0.001	57	5.7	<0.001	96	6.8	<0.001
	Farmer	9	1.4		3	0.8		6	2.4		26	4.2		18	4.8		8	3.2	
	Other**	19	6.4		7	4.9		12	7.7		32	10.7		13	9.1		19	12.3	
	White-collar worker	109	9.1		59	10.6		50	7.8		199	16.6		96	17.3		103	16.1	
Self-reported economic status N = 4307	Enough money for all needs	170	5.7	<0.001	75	5.8	0.007	95	5.6	0.013	294	9.9	0.042	128	9.9	0.017	166	9.9	NS
	Enough money to make a living, but not for all needs	30	2.6		17	2.6		13	2.5		87	7.5		39	6.1		48	9.4	
	Not enough money	6	3.3		4	3.5		2	3.0		13	7.2		9	8.0		4	6.0	

Variable	Characteristics	Funded from the respondents' resources									Co-financed by public funds								
		Total		p	Women		p	Men		p	Total		p	Women		p	Men		p
		n	%		n	%		n	%		n	%		n	%		n	%	
ADL status***	Dependent	3	1.0		0	0.0		3	2.4		6	2.1		4	2.5		2	1.6	
N = 4754	Partially dependent	3	1.0	<0.001	2	1.3	0.002	1	0.7	0.027	9	3.0	<0.001	5	3.3	0.001	4	2.8	<0.001
	Independent	210	5.0		100	5.1		110	5.0		398	9.5		182	9.2		216	9.9	
IADL status****	Dependent	22	1.5		9	1.2		13	1.9		50	3.5		20	2.8		30	4.3	
	Partially dependent	39	3.6	<0.001	16	2.9	<0.001	23	4.2	<0.001	80	7.3	<0.001	31	5.7	<0.001	49	8.9	<0.001
	Independent	154	6.8		78	7.5		76	6.2		286	12.6		142	13.6		144	11.8	
N = 4787																			
Chronic pain	Yes	82	4.1	NS	49	4.4	NS	33	3.8	NS	190	9.5	NS	100	8.9	NS	90	10.3	NS
N = 4779	No	135	4.9		54	4.6		81	5.1		228	8.2		92	7.8		136	8.5	
Disability certificate	Yes	83	6.1	0.001	37	5.9	0.045	46	6.2	0.013	216	15.9	<0.001	95	15.3	<0.001	121	16.4	<0.001
N = 4724	No	133	4.0		66	4.0		67	3.9		198	5.9		94	5.7		104	6.1	
SRH*****	Poor	7	1.7		5	2.2		2	1.0		28	6.6		15	6.6		13	6.5	
	Fair	113	5.0	0.005	58	5.1	NS	55	4.9	0.023	222	9.8	NS	109	9.6	NS	113	10.0	NS
N = 4438	Good	93	5.3		38	5.0		55	5.6		158	9.1		61	8.0		97	9.8	

*MCs – master's degree
**Other worker including salespersons, owners of a trade or service workshop, small entrepreneurs, uniformed services officers
***ADL status – Activities of Daily Living
****IADL status – Instrumental Activities of Daily Living
*****SRH – self-rated health

Table II. Multivariate logistic regression model including factors significantly associated with utilization of HRT services

Variable	Characteristics	Utilization of HRT (irrespective of the form of funding)		
		OR	95%CI	P-value
Age cohort [years]	65-69 y.o.	reference	reference	reference
	70-74 y.o.	0.98	0.72-1.32	NS
	75-79 y.o.	1.04	0.75-1.43	NS
	80-84 y.o.	0.95	0.67-1.35	NS
	85-89 y.o.	0.55	0.36-0.84	0.006
	90 y.o. and over	0.53	0.33-0.89	0.016
Place of residence [number of residents]	Rural area	reference	reference	reference
	City ≤20,000	1.30	0.88-1.91	NS
	City >20,000-50,000	1.72	1.19-2.49	0.004
	City >50,000-200,000	2.10	1.48-2.99	<0.001
	City >200,000-500,000	2.68	1.71-4.19	<0.001
	City >500,000	2.31	1.66-3.22	<0.001
Education	Lack of education	reference	reference	reference
	Primary	3.04	1.46-6.37	0.003
	Vocational	5.00	2.27-10.98	<0.001
	Secondary	4.74	2.19-10.25	<0.001
	Bachelor	5.31	2.28-12.37	<0.001
	MCs*	9.21	3.88-21.85	<0.001
IADL status**	Dependent	reference	reference	reference
	Partially dependent	1.45	0.98-2.14	NS
	Independent	1.88	1.30-2.72	<0.001
Disability certificate	No	reference	reference	reference
	Yes	2.39	1.93-2.97	<0.001

*MCs – master's degree; **IADL status – Instrumental Activities of Daily Living

Discussion

According to GUS, in 2015 a total of 801,700 patients utilized HRT in stationary conditions (91.2%) or outpatient facilities (8.8%). Two-third of stationary services were financed by NFZ or other sources (including ZUS, KRUS, PFRON), while one-third by commercial patients [16]. This is in agreement with the results of our study, where 66.0% of stays were finances by NFZ and 34.0% from own customers' sources. The slightly higher engagement of NFZ founds in our study was probably caused by the lack of co-funding opportunities from other public sources for retired people. The utilization of HRT covered by commercial patients slightly exceeds one-third in the general population group as in the present study. Interestingly, almost one-fourth of PolSenior HRT participants utilized both forms of funding during the analyzed period. It shows that there is a group of seniors who use this form of treatment on regular bases.

It would be expected that two-three weeks rehabilitation within HRT financed or co-financed from public resources should be devoted to the group of people who could not attend outpatient rehabilitation facilities located close to the place of living: rural dwellers, seniors with limited mobility (partial dependence in IADL), with the risk of frailty or disability. Contrary to this assumption, the participants in HRT in our study were younger seniors, independent in IADL. The access to HRT was easier for better educated respondents, living in big cities, and with higher self-rated economic status. Interestingly, occurrence of chronic pain did not increase the use of HRT. Holding legal disability certificate doubled the chances of using HRT and funding from public sources increased HRT utilization three times. One can speculate that legal disability certificate holders are resourceful and knowledgeable about certified benefits.

These data indicate that the access to the HRT is highly unequal and related to health awareness, rewarding individuals seeking opportunities to benefit from public fundings. Our findings suggest the need for reconsideration of the rules of granting HRT, having in mind the optimization of spending public resources for the most effective prevention of disability.

According to our best knowledge, there are no studies analyzing HRT utilization in the general population of seniors in relation to the sociodemographic and economic determinants. Therefore, we could only refer our data to GUS reports.

Conclusions

Younger, better educated seniors, large cities dwellers, disability certificate holders, independent in daily living are the main beneficiaries of health resort rehabilitation services.

Current pattern of utilization of health resort rehabilitation services preserves and even augments inequalities in health.

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Conflict of interest
None

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