

# The effect of health status on quality of life compared in women and men rehabilitated for locomotor system disorders

## Porównanie kobiet i mężczyzn pod względem wpływu stanu zdrowia pacjentów rehabilitowanych z powodu schorzeń układu ruchu na ich jakość życia

Joanna Roczeń<sup>1</sup>, Marta Kozybska<sup>2</sup>, Artur Kotwas<sup>3</sup>, Anna Knyszyńska<sup>4</sup>,  
Beata Karakiewicz<sup>3</sup>

<sup>1</sup> Student Research Group, Department of Social Medicine and Public Health of the Social Medicine Chair, Pomeranian Medical University in Szczecin, Szczecin, Poland

<sup>2</sup> Department of Medical Law of the Social Medicine Chair, Pomeranian Medical University in Szczecin, Szczecin, Poland

<sup>3</sup> Department of Social Medicine and Public Health of the Social Medicine Chair, Pomeranian Medical University in Szczecin, Szczecin, Poland

<sup>4</sup> Department of Functional Diagnostics and Physical Medicine, Pomeranian Medical University in Szczecin, Szczecin, Poland

### Streszczenie

**Wstęp.** Schorzenia układu ruchu należą do jednych z najczęściej występujących chorób. Przyczyniają się do dużej liczby absencji chorobowej, wzrostu liczby osób mających orzeczoną niezdolność do pracy oraz do obniżenia jakości życia pacjentów. **Cel:** Celem pracy było określenie związku między ograniczeniami w codziennym funkcjonowaniu z powodu choroby układu ruchu a oceną jakości życia w zależności od płci. **Materiał i metody.** Badaną grupę stanowiło 111 pacjentów rehabilitowanych z powodu schorzeń układu ruchu. Wybraną metodą był sondaż diagnostyczny, wykonany techniką ankiety, z zastosowaniem kwestionariusza oceny jakości życia SF-36 oraz kwestionariusza oceny zdrowia HAQ. **Wyniki.** W opinii ankietowanych, największym i najczęstszym ograniczeniem w codziennym funkcjonowaniu, spowodowanym stanem zdrowia, było położenie się i wstanie z łóżka. Wykazano, że im lepszy stan zdrowia pacjenta, tym lepsza ocena jakości jego życia. Zaobserwowano istotną zależność statystyczną między oceną ograniczenia w wykonywaniu takich czynności jak ubieranie się, jedzenie, chodzenie, dbanie o higienę osobistą a płcią. Mężczyźni gorzej ocenili samodzielność w wyżej wymienionych czynnościach niż kobiety. **Wnioski.** Lepszy stan zdrowia osób rehabilitowanych ze schorzeniami układu ruchu determinuje wyższą ocenę jakości ich życia. Mężczyźni rehabilitowani z powodu schorzeń układu ruchu wykazują większe ograniczenia spowodowane stanem zdrowia w zakresie takich czynności jak ubieranie się, jedzenie, chodzenie i higiena osobista niż kobiety. (Gerontol Pol 2019; 27; 100-105)

Słowa kluczowe: jakość życia, HAQ, zaburzenia układu mięśniowo-szkieletowego

### Abstract

**Introduction.** Locomotor system disorders are among the most common diseases. They contribute to many days of sick leave and a growing number of people with recognized work disabilities but above all to a decline in the quality of patients' lives. **The aim of the study.** The research objective of this study of patients with locomotor system diseases was to compare the female patients with the male patients in terms of the relationship between their self-assessed level of disability and their quality of life. **Material and methods.** The study group consisted of 111 patients rehabilitated for locomotor system diseases. This survey-based study was performed using the Short Form 36 Health Survey (SF-36) and the Health Assessment Questionnaire (HAQ). **Results.** Getting out of bed was the most frequent limitation for the surveyed patients, which was due to their health status in everyday life activities. It was shown that, the better the patient's health status, the better was their assessment of quality of life. A statistically significant relationship was observed between gender and patients'

assessment that they suffered from limitations in performing activities such as getting dressed, eating, walking, and personal hygiene. Men tended to assess lower their independence in performing these activities than did women. **Conclusions.** Better health status of rehabilitated patients with locomotor system diseases determines a higher self-assessment of quality of life. Men rehabilitated from locomotor system diseases experience greater limitations due to their health status than do women in activities such as dressing, eating, walking, and personal hygiene. (*Gerontol Pol* 2019; 27; 100-105)

**Key words:** quality of life, HAQ, musculoskeletal diseases

## Introduction

Locomotor system disorders are among the most common diseases and they are sometimes referred to as comprising an epidemic. This contributes to many days of sick leave and a growing number of people with recognized work disabilities [1].

The most frequent sites affected by locomotor system diseases are the lumbar segment of the spine (28%), the hip joint (28%), and the knee joint (21%). Lesions include progressive damage to joint cartilage, osteophytes, subchondral sclerosis, and subchondral cysts [2].

All locomotor system disorders are progressive diseases which, if left untreated, lead to disability, subsequently contributing to health, mental, and social problems [1]. The patient's acceptance of the patient, combined with professional care, regular taking of medicine, and carrying out the prescribed physical exercises all have a beneficial effect on improving the quality of life of patients with locomotor system diseases.

The World Health Organization (WHO) defines quality of life as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" [3]. In medicine, quality of life gives a holistic view of the problems that the patient is struggling with, not only in the areas of physical and mental health, but also in the life environment. This contributes to strengthening health, provides information on the patient's functioning in the areas of life that are important to them, evaluates the effectiveness of treatment, shows the benefits achieved by the patient, monitors the influence of medicines on health status, and facilitates organizing and planning care of the patient. Medicine also takes into consideration the quality of life during illness. Ailments can deteriorate or limit various aspects of life, with the most detrimental consequences being brought by incurable and chronic diseases and by those that severely limit the patient's functioning through long-lasting suffering, such as locomotor system disorders [3,4]. The quality of life of patients with locomotor system diseases is also affected by factors such as pain, physical fitness, disease duration, social position,

individual capabilities, ability to adapt, and level of support from society [2,5,6].

A diagnosis of chronic disease entails a great deal of inconvenience for the patient, such as the necessity of constant medication, frequent medical appointments, changing likes and dislikes, lifestyle issues, and mental and emotional distress. Such diseases, which are the main causes of negative behavior and of the various ailments experienced by patients, play a key role in the quality of life [3]. Individuals suffering from locomotor system disorders live with pain and have limited social functioning, which contribute to limiting their freedom and making them dependent on others [5]. This can lead to fatigue, a reluctance to engage in physical activity, and obsessive thoughts about possible disability. This is followed by limitation of social interaction and a gradual withdrawal from professional and social positions. The contemporary holistic approach to health, which aims to solve problems associated with the entire therapeutic process for a given disorder, should take into account the well-being of patients, enabling them to function satisfactorily in everyday life while performing basic social and professional roles [7].

## Aim of the study

The research objective of this study of patients with locomotor system diseases was to compare the female patients with the male patients in terms of the relationship between their self-assessed level of disability and their quality of life.

Hypothesis: women rehabilitated from locomotor system disorders assess their health and quality of life higher than men.

## Material and methods

The study group consisted of 111 patients receiving treatment at the Rehabilitation Ward of the Independent Public Complex of Integrated Health Care Units in Stargard. The criterion for inclusion in the study was a diagnosis of a locomotor system disorders (spinal pain syndrome or degenerative changes in hips and knees).

The study group included 66 women (60,4%) and 44 men (39,6%). The average age of the respondents was 62 years.

The research was based on the diagnostic survey method and employed a questionnaire. The following standardized questionnaires were also used:

- The SF-36—a questionnaire for life quality assessment; this scale is useful for assessing quality of life, irrespective of health status, disease, and age.
- The HAQ—a questionnaire of health status; this is a tool for assessing the degree of disability, based on information obtained from the patient.

Statistical analysis was based on Student's *t*-test. The maximum margin of error was set at 5%. The Pearson product-moment correlation coefficient was used as the measure of correlation. Statistically important results are

presented here in bold type and marked with an asterisk “\*” symbol.

## Results

Table I shows the results for patients' self-assessed health status using the HAQ. The respondents' most frequent limitation in functioning caused by health status was getting in and out of bed (a total of 61.8% of patients stated that they experiences difficulties or an inability to perform this activity), dressing (60.4%), standing up from an armless chair (60.4%) and walking outdoors on flat ground (50.0%). With other activities, the patients indicated smaller difficulties resulting from their health status.

Patients' health status was compared to their assessment of their quality of life. The results showed that the

**Table I. Health status of patients (HAQ)**

**Tabela I. Stan zdrowia pacjentów (HAQ)**

HAQ categories			Assessment of difficulty in the activities			
			No difficulty	Some difficulty	Much difficulty	Unable to do
Bathing and dressing	Dress himself/herself	n	44	45	17	5
		%	39.60	40.50	15.30	4.50
	Shampoo his/her hair	n	58	34	11	8
		%	52.30	30.60	9.90	7.20
Getting up	Stand up from an armless chair	n	44	44	13	10
		%	39.60	39.60	11.70	9.00
	Get in and out of bed	n	42	51	13	4
		%	38.20	46.40	11.80	3.60
Eating	Cut meat on a plate	n	78	23	9	1
		%	70.30	20.70	8.10	0.90
	Lift a full glass to his/her mouth	n	82	21	7	1
		%	73.90	18.90	6.30	0.90
	Open a new milk carton	n	78	22	6	5
		%	70.30	19.80	5.40	4.50
Walking	Walk outdoors on flat ground	n	55	36	9	10
		%	50.00	32.70	8.20	9.10
	Climb up five stairs	n	60	31	8	11
		%	54.50	28.20	7.30	10.00
Personal hygiene	Wash and dry your entire body	n	56	40	10	4
		%	50.90	36.40	9.10	3.60
	Take a bath	n	40	44	11	15
		%	36.40	40.00	10.00	13.60
	Get on and off the toilet	n	72	29	6	3
		%	65.50	26.40	5.50	2.70
Lifting	Reach and get down a 5 lb object (e.g. a bag of potatoes) from just above your head	n	25	58	19	9
		%	22.50	52.30	17.10	8.10
	Bend down to pick up clothing off the floor	n	39	52	16	4
		%	35.10	46.80	14.40	3.60

Gripping	Open car doors	n	66	32	7	4
		%	60.00	29.40	6.40	3.70
	Open jars which have been previously opened	n	66	28	10	6
		%	59.60	25.50	9.10	5.50
	Turn taps on and off	n	81	20	6	3
		%	73.00	18.20	5.50	2.70
Other activities	Run errands and shop	n	44	43	13	11
		%	39.60	38.70	11.70	9.90
	Get in and out of a car	n	48	49	9	5
		%	43.20	44.10	8.10	4.50
	Vacuuming, housework or light gardening	n	21	43	29	18
		%	18.90	38.70	26.10	16.20

better the patient's health status, the higher was their assessment of elements of quality of life. Along with a lower assessment of all aspects of health status (dressing, getting up in the morning, eating, walking, personal hygiene, lifting and gripping, and other activities) a lower

score was given to the following areas of everyday life: physical functioning (PF), general health (GH), vitality (VT), social functioning (SF), role emotional (RE), and mental health (MH). Lower scores for all aspects of health status implied greater limitations in performing eve-

Table II. Comparison of SF-36 quality of life using HAQ (Pearson's r correlation)

Tabela II. Porównanie jakości życia SF-36 z poziomem zdrowia HAQ (korelacja r Pearsona)

		HAQ categories							
		Bathing and dressing	Getting up	Eating	Walking	Personal hygiene	Lifting	Gripping	Other activities
SF-36	PF	-0.614*	-0.696*	-0.416*	-0.670*	-0.685*	-0.708*	-0.491*	-0.759*
	RP	0.504*	0.483*	0.375*	0.408*	0.462*	0.583*	0.471*	0.581*
	BP	0.259	0.175	0.147	-0.030	0.237	0.232	0.378	0.383
	GH	-0.416*	-0.389*	-0.208*	-0.302*	-0.417*	-0.490*	-0.364*	-0.418*
	VT	-0.575*	-0.618*	-0.450*	-0.625*	-0.590*	-0.663*	-0.525*	-0.595*
	SF	-0.443*	-0.400*	-0.386*	-0.419*	-0.447*	-0.490*	-0.457*	-0.501*
	RE	-0.409*	-0.359*	-0.382*	-0.354*	-0.340*	-0.431*	-0.443*	-0.457*
	MH	-0.350*	-0.305*	-0.289*	-0.249*	-0.364*	-0.462*	-0.328*	-0.353*
	CiH	0.171	0.406*	0.044	0.327*	0.237*	0.234*	0.132	0.265*

Legend: \*  $p < .05$

PF – physical functioning; RP – role physical (limitations in usual role activities because of physical health problems); BP – bodily pain; GH – general health; VT – vitality; SF – social functioning; RE – role emotional (limitations in usual role activities because of emotional problems); MH – mental health; CiH – comparison of present health status with previous year

SF-36 – Quality of life SF-36 questionnaire; HAQ – Health Assessment Questionnaire

Table III. Assessment of life quality and health status by sex

Tabela III. Ocena jakości życia oraz stanu zdrowia z podziałem wg płci

Variable		Total		Women		Men		P
		Mean value	Standard deviation	Mean value	Standard deviation	Mean value	Standard deviation	
SF-36	PF	18.32	5.90	18.42	5.64	18.04	6.34	0.741
	RP	6.85	1.58	6.87	1.55	6.82	1.65	0.867
	BP	3.56	0.73	4.00	0.00	3.33	0.82	0.214
	GH	12.45	2.09	12.25	1.89	12.72	2.36	0.254
	VT	11.25	3.44	11.49	3.26	10.74	3.65	0.318
	SF	6.90	2.27	7.22	1.96	6.40	2.63	0.067
	RE	4.41	1.38	4.48	1.38	4.27	1.39	0.451
	MH	19.37	4.12	19.35	4.02	19.33	4.31	0.976
CiH	3.59	1.00	3.68	0.95	3.47	1.08	0.271	

HAQ	Bathing and dressing	2.20	2.46	1.74	2.03	2.91	2.90	0.015
	Getting up	2.10	2.20	1.80	1.72	2.56	2.76	0.081
	Eating	1.27	2.21	0.88	1.65	1.89	2.77	0.019
	Walking	2.46	3.00	1.94	2.51	3.30	3.48	0.020
	Personal hygiene	3.12	3.27	2.55	2.55	4.00	4.04	0.024
	Lifting	2.77	2.40	2.62	2.04	3.05	2.87	0.367
	Gripping	2.55	2.87	2.36	2.39	2.90	3.49	0.342
	Other activities	4.29	3.20	4.03	2.94	4.73	3.57	0.266

*p* calculated with Student's *t*-test

**Legend:**

*PF* – physical functioning; *RP* – role physical (limitations in usual role activities because of physical health problems); *BP* – bodily pain; *GH* – general health; *VT* – vitality; *SF* – social functioning; *RE* – role emotional (limitations in usual role activities because of emotional problems); *MH* – mental health; *CiH* – comparison of present health status with previous year

*SF-36* – Quality of life SF-36 questionnaire; *HAQ* – Health Assessment Questionnaire

ryday activities. However, when comparing present health status with health status in the previous year, lower scores were given to activities such as getting up in the morning, walking, personal hygiene activities, lifting. Other activities received lower scores when comparing present health status with the previous year's (CiH). There is no basis for rejecting the null hypothesis, which assumes that there is no relation between the results obtained for health status and assessment of bodily pain (BP) as an aspect of quality of life (Table II).

When comparing the health status and life quality assessment by gender (Table III), it should be noted that no statistically significant differences were found between men and women in their assessment of quality of life. However, a statistically significant relation was revealed between gender and assessments of limitation in performing such activities as dressing, eating, walking, and personal hygiene activities. Men tended to score their independence in these activities lower than did women.

## Discussion

Locomotor system diseases, besides the physical disability and decreased biological function they cause, also involve changes in social and mental functioning [8,9]. Fatigue, fear, apathy and anxiety about health loss, pessimism, and helplessness in the face pain are the prevailing moods among people suffering from these diseases [10].

Bączyk et al. stated that the factor with the greatest effect on the functioning and quality of life of the rehabilitated patients with locomotor system disorders in their study was poor musculoskeletal system status, which results in limitations in performing everyday activities, such as hygiene activities, dressing, and running the household. They also found that the relationships between

functioning and quality of life were related to the mental state and social activity of patients [11].

Klimaszewska et al. noted in their research that patients with spinal pain syndromes suffer considerable limitations in social, professional, and family life. The disease limits daily activities or makes them impossible. The pain caused by the disease entity not only causes suffering, but also lowers the patient's self-esteem and decreases their life activity, resulting in worse quality of life [4]. A decrease in physical fitness leads to dependence on others and limits their ability to performing social roles, which in turn negatively affects self-esteem, causing mood disturbances and the development of depression [12].

Our work has shown that the health status of patients is reflected in their quality of life, as has been confirmed by others. The studies of Wojszel and Bień revealed that physical fitness disturbances decrease the quality of life as a result of the limited living space of patients and their dependence on other people [13]. Sierakowska et al. noted that progressive diseases have considerable effects on the sense of social isolation. They also observed depressive states in patients with degenerative joint disease, which prevailed among women. Due to depression, female patients negatively assessed their functioning in the physical, mental, environmental, and social aspects [14]. Stanisławska-Biernat showed that locomotor system diseases also lead to dependence on other people, resulting in the development of a sense of uselessness [15]. It has also been reported (Sierakowska et al.) that patients who accept their disease adapt more quickly to their new situation, learning to live and function despite their limitations both at home and in social and professional environments, results in an increase in the quality of life [16].

The bad health status of people suffering from locomotor system diseases implies a lower quality of life. There is, however, a group of patients who attempt to learn to



live with their disease. They attempt to become independent of other people, using locomotor aids such as canes, crutches, walkers, rails, grips, and other methods to increase their independence. They attend various counseling opportunities, support groups, and rehabilitation treatments with the aim of improving their quality of life.

## Conclusions

Better health status among rehabilitated persons with locomotor system disorders is associated with a higher

assessment of their quality of life. No statically significant relations were found between assessment of quality of life among women and men rehabilitated from locomotor system disorders. Men rehabilitated from locomotor system disorders exhibit greater limitations caused by their health status than do women in activities such as dressing, eating, walking, and performing personal hygiene.

Conflicts of interest

None

## References

- Wytrzązek M, Chochowska M, Marcinkowski J. Masaż tkanek głębokich – konieczne podejście terapeutyczne wobec narastającej epidemii chorób narządu ruchu. *Probl Hig Epidemiol.* 2013;94(3):428-3.
- Happach M, Krzemińska-Dąbrowska J, Moskalewicz B, et al. Bóle krzyża u pracowników bankowych. Analiza psychologiczna i uwarunkowania społeczne. *Reumatologia.* 2000;38(1):59-66.
- Kochman D. Jakość życia. Analiza teoretyczna. *Zdr Publ.* 2007;117;242-8.
- Klimaszewska K, Krajewska-Kułak E, Kondzior D, et al. Jakość życia pacjentów z zespołami bólowymi odcinka lędźwiowego kręgosłupa. *Probl Pielęg.* 2011;19(1):47-54.
- Zaniewska R, Okurowska-Zawada B, Kułak W, et al. Analiza jakości życia pacjentów z zespołem bólowym dolnego odcinka kręgosłupa po zastosowaniu przeszłokórnej elektrycznej stymulacji nerwów- tens. *Med Pr.* 2012;63(3):295-302.
- Bartosńska M, Ejsmond J, Tukalska-Parszuta M. Chorobowość pracowników zatrudnionych na stanowiskach pracy wyposażonych w komputery. *Med Prak.* 2001;52(3):185-95.
- Pytel A, Wrzosek Z. Cele kompleksowej rehabilitacji pacjentów z reumatoidalnym zapaleniem stawów. *Act Balneologica.* 2011;1(123):62-7.
- Gburek Z, Goździk J. Zmiany zwyrodnieniowe a choroba zwyrodnieniowa stawów. *Reumatologia.* 2004; 42:435-46.
- Szczepański L. Choroba zwyrodnieniowa stawów. W: Szczeklik A. (red). *Choroby wewnętrzne. Tom II.* Kraków: Medycyna Praktyczna; 2006. pp. 1723-33.
- Gajewski T, Woźnica I, Młynarska M, et al. Wybrane aspekty jakości życia osób ze zmianami zwyrodnieniowymi kręgosłupa i stawów. *Med Ogólna Nauki Zdr.* 2013;19(3):362-9.
- Bącznyk G, Gacek L. Ocena sprawności funkcjonalnej chorych na reumatoidalne zapalenie stawów na podstawie funkcjonalnego testu z wystandaryzowanym wyposażeniem. *Reumatologia.* 2011;49(1)40-6.
- Stanisławska-Biernat E. Społeczne i ekonomiczne aspekty choroby zwyrodnieniowej stawów. *Pol Arch Wewn.* 2008;118:50-3.
- Gajewski T, Woźnica I, Młynarska M, et al. Wybrane aspekty jakości życia osób ze zmianami zwyrodnieniowymi kręgosłupa i stawów. *Med Ogólna Nauki Zdr.* 2013;19(3):362-9.
- Sierakowska M, Sierakowski S, Wróblewska M, et al. Problemy zdrowotne pacjentów z chorobą zwyrodnieniową stawów i ich wpływ na jakość życia uwarunkowaną stanem zdrowia. *Reumatologia.* 2010; 48(6):372-9.
- Stanisławska-Biernat E. Społeczne i ekonomiczne aspekty choroby zwyrodnieniowej stawów. *Pol Arch Med Wewn.* 2008;118:50-3.
- Sierakowska M, Doroszkiewicz H, Nyklewicz W, et al. Zalecenia Europejskiej Ligi Przeciwrumatycznej – implikacje dla opieki pielęgniarskiej. *Probl Pielęg.* 2010;18: 232-8.