Evaluation of the quality of life of patients with osteoarthritis

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ABSTRACT

Purpose: The tools for measuring objective quality of life include research regarding the conditions of a successful life and life satisfaction. Osteoarthritis (OA) is characterized by progressive degradation and loss of articular cartilage as well as abnormal bone growth and remodeling, located directly under the cartilage. The aim of this study is to answer the question on which level OA patients perceive their quality of life dependent on health.

Material and methods: The Polish version of the HAQ questionnaire, assessing the quality of life over the past week, was used for overall assessment of quality of life. The Polish version of the AIMS-2 questionnaire was used as a specific questionnaire for assessing the health status of patients with osteoarthritis. Surveys were conducted in a group of 240 people.

Results: The quality of life dependent on health is significantly reduced in the group of healthy people who take painkillers sporadically because of other reasons and in the OA pateints group compared to the control group, the same as in the OA pateints group compared to the group of healthy people who take painkillers sporadically for other reasons.

Conclusions: According to the answers from the questionnaire, patients with OA seek different forms of improving their quality of life. It is important to change their lifestyle (weight reduction, using a bench-mounted bike, walking stick or walking frame), reducing the surface area of the joints, reducing the defective position of the limb axis. Exercises that increase muscle mass and exercises to improve joint mobility should be introduced. It is advisable to refer the OA patient for physical therapy and/or balneotherapy.

Keywords: quality of life, osteoarthritis, chronic disease

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INTRODUCTION

The concept of "quality of life" was introduced by H. Shipper as an the effect of the disease and its treatment on the functioning and well-being of the patient [1].

According to the WHO definition, "quality of life" is understood as a perception of a persons' state of life from the point of view of professed cultural values and someone life goals [2].

There are the tools for measuring objective quality of life were we include research regarding the conditions of a successful life and life satisfaction.

The tools for measuring the subjective quality of life questionnaire methods, e.g. WHOQOL-100, SF-36, HAQ, HAQ-S, AIMS-2 [3].

Chronic disease adversely affects on all spheres of the patients' life. These changes may be temporary or permanent. Often, especially when using long-term treatment, it is necessary to change the current lifestyle. Patients with a chronic diseases percept their own health condition significantly different from the general assessment made by third persons. People with chronic diseases think of themselves as they were ill. However, during a long-term illness, patients are accustomed to the limitations caused by the disease state and they need to be adapted to a new limited living conditions [4-6].

Osteoarthritis (OA) is characterized by progressive degradation and loss of articular cartilage as well as abnormal bone growth and remodeling located directly under the cartilage. In the synovium, during the early stages of OA, an inflammatory process occurs and secondarily leads to damage or destruction of the membrane. Degenerative changes also apply to articular capsule, ligaments and periarticular muscles. Osteoarthritis causes sclerosis of the subchondral parts of the bone and narrowing of the joints cavities. These changes cause pain and distortion of the joints. Impaired articular activities can lead to permanent disability. HRQOL assessment questionnaires, pain scale or impairment of motor functions are used to monitor the quality of life, the course of disease and the effectiveness of treatment [7,8].

Primarily OA is related to over 50 year old persons. More severe symptoms occur more frequently in women [9]. The genetic component may be responsible for the development of about 35-40% the knee joints, and even 60% of the hip joints osteoarthritis [10].

The aim of this study is to answer the question on what level patients with OA perceive their dependent on health quality of life.

MATERIALS AND METHODS

The Bioethics Committee of the Medical University of Bialystok approval number R-I002/15/2016 from January 28, 2016 was obtained for the tests.

The questionnaires were carried into the group of 240 people out.

The first one group (OA) (120 patients, including 74 women and 46 men) were patients who were treated and diagnosed during the hospitalization or by the general practitioner because of the osteoarthritis and their average age was - 63.8 ± 15.1 years and the average duration of the disease was - 9.4 ± 8.3 years.

The second, reference group (C + p/k) were 60 healthy people (35 women, 25 men), who take painkillers sporadically because of other reasons, eg. headache and their average age was - 62.4 ± 9.8 years.

The third one control group (k) were 60 healthy people (35 women, 25 men), with no painkiller using during last 2 mounth and their average age was - 64.6 ± 9.1 years.

The Polish version of the HAQ questionnaire was used for the overall assessment of quality of life. The Polish version of the AIMS-2 questionnaire was used as a specific questionnaire for assessing the health status of patients with osteoarthritis.

The tests used a range of health-related quality of life: $0 \leq HRQOL < 3$ - very good, $3 \leq HRQOL < 5$ - good, $5 \leq HRQOL < 7$ - sufficient, $7 \leq HRQOL < 9$ - bad, $9 \leq HRQOL < 10$ - very bad. Statistical analysis was performed using the Statistica 10.

Non-parametric tests (chi2, Fisher, Spearman, φ-Yula coefficient) were used for the analysis.

RESULTS

The quality of life dependents on health is significantly reduced in the group C + p/k and OA compared to the control group and in the OA group compared to the group C + p/k (Table 1).

Significance and correlations regarding unassisted dressing, unassisted standing up from a chair without handrails, unassisted positioning and getting up, unassisted raising a full glass to a mouth, unassisted opening a new carton of milk, walking with no help on a flat surface outside, unassisted stepping up on a five stairs, unassisted bathing in the bathtub, using the toilet with no help, bending down to lift clothes from the floor, unassisted turning fancet on and off, arranging various matters or shopping themselves, are presented in Tables 2-5.

Significantly more people in the OA group require another persons' help during dressing and taking care of appearance, getting up, maintaining a good standards of hygiene, reaching for an object, eating, walking, gripping and opening an object, houseworking in comparison to the control group (C) and reference group(C + p/k). Correlations between these two studied variables which are related with such an activities as: "dressing and taking care in personal apperance", "getting up", "reaching for an object", "walking", "catching and opening an object" and "arranging various matters" and "houseworking or shopping themselves " were weak, whereas correlation of answers about preparing the food and maintaining good standards of hygiene were distant (Table 5).

The analysis of using the instruments and assistance that are usually used in the performance of various activities showed the OA group significantly more often use sticks and crutches in comparison to the control (C) and reference (C + p / k) groups. Correlations between the two variables were low in both cases. Secondly, to help with self-service in the bathroom and toilet, people with OA significantly more often use the elevated toilet seat, bathtub chair, bathtub rail or utensils with a long handle (e.g. a body brush) in comparison to the control group (C) and reference group (C + p/k). The correlations between these two variables in all cases were negligible. Thirdly, people from the group OA to help self-service in the kitchen and dinning room significantly more often use the jar opener (for the jars which were already opened), specially adapted kitchen accessories and eating utensils with a long handle helping to reach an object in comparison to the control (C) and reference group (C + p / k). The correlations between these two variables in all of the above cases were negligible (Table 5).

Table 1. Perception of quality of life dependent on health by patients with OA

	C ± std.dev.	C+p/k ±std. dev.	OA ±std. dev.	p C : C+p/k	p C : OA	p C+p/k : OA
HRQOL	0.95±0.07	2.42±0.2	6.93±0.4	**0.02**	**0.0001**	**0.008**

Abbreviations: HRQOL - C- control group, C + p/k- reference group of generally healthy people taking painkillers sporadically, OA – osteoarthritis patients, p- statistical significance <0.05, r- correlation coefficient, ns- statistically insignificant.

Table 2. Parameters used in assessing the quality of life of patients with OA part 1

C	C+p/k	OA	C : C+p/k	C : OA	C+p/k : OA

C	C+p/k	OA	C : C+p/k	C : OA	C+p/k : OA
Areyou able to dress yourself, including tying shoelaces and button clasps? (%)					
Without difficulty					
100	100	38.3	ns	**p=0.00001 r=0.349**	**p=0.00001 r=0.349**
with some difficulty					
0	0	46.7	ns	**p=0.00001 r=0.226**	**p=0.00001 r=0.226**
with great difficulty					
0	0	13.3	ns	**p=0.003 r=0.049**	**p=0.003 r=0.049**
unenforceable					
0	0	1.7	ns	p=0.3146 r=0.006	p=0.3146 r=0.006
Are you able to get up from a chair without a handrail? (%)					
without difficulty					
100	100	53.3	ns	**p=0.00001 r=0.226**	**p=0.00001 r=0.226**
with some difficulty					
0	0	25	ns	**p=0.00001 r=0.1**	**p=0.00001 r=0.1**
with great difficulty					
0	0	20	ns	**p=0.0002 r=0.077**	**p=0.0002 r=0.077**
unenforceable					
0	0	1.7	ns	p=0.3146 r=0.006	p=0.3146 r=0.006
Are you able to go to bed and get up? (%)					
without difficulty					
100	100	58.3	ns	**p=0.00001 r=0.192**	**p=0.00001 r=0.192**
with some difficulty					
0	0	28.4	ns	**p=0.00001 r=0.116**	**p=0.00001 r=0.116**
with great difficulty					
0	0	13.3	ns	**p=0.003 r=0.049**	**p=0.003 r=0.049**
unenforceable					
0	0	0	ns	ns	ns

Are you able to bring a full glass to your lips? (%)					
without difficulty					
100	100	66.7	ns	**p=0.00001 r=0.143**	**p=0.00001 r=0.143**
with some difficulty					
0	0	26.7	ns	**p=0.00001 r=0.108**	**p=0.00001 r=0.108**
with great difficulty					
0	0	3.3	ns	p=0.1527 r=0.011	p=0.1527 r=0.011
unenforceable					
0	0	3.3	ns	p=0.1527 r=0.011	p=0.1527 r=0.011

Abbreviations: C- control group, C + p/k- reference group of generally healthy people taking painkillers sporadically, OA – osteoarthritis patients, p- statistical significance <0.05, r- correlation coefficient, ns- statistically insignificant.

Table 3.Parameters used in assessing the quality of life of patients with OA part 2

Are you able to open a new milk carton? (%)					
without difficulty					
C	C+p/k	OA	C : C+p/k	C : OA	C+p/k : OA
100	100	60	ns	**p=0.00001 r=0.182**	**p=0.00001 r=0.182**
with some difficulty					
0	0	26.6	ns	**p=0.00001 r=0.108**	**p=0.00001 r=0.108**
with great difficulty					
0	0	11.7	ns	**p=0.0059 r=0.042**	**p=0.0059 r=0.042**
unenforceable					
0	0	1.7	ns	p=0.3146 r=0.006	p=0.3146 r=0.006
Are you able to walk on a flat surface outside? (%)					
without difficulty					
100	100	73.3	ns	**p=0.00001 r=0.108**	**p=0.00001 r=0.108**
with some difficulty					
0	0	18.3	ns	**p=0.0004 r=0.069**	**p=0.0004 r=0.069**
with great difficulty					
0	0	8.4	ns	**p=0.0214 r=0.029**	**p=0.0214 r=0.029**
unenforceable					
0	0	0	ns	ns	ns
Are you to step five steps with no help? (%)					
without difficulty					
100	100	38.3	ns	**p=0.00001 r=0.349**	**p=0.00001 r=0.349**
with some difficulty					
0	0	36.7	ns	**p=0.00001 r=0.162**	**p=0.00001 r=0.162**
with great difficulty					
0	0	25	ns	**p=0.00001 r=0.1**	**p=0.00001 r=0.1**
unenforceable					
0	0	0	ns	ns	ns
Are you able to take a bath in the bathtub? (%)					
Without difficulty					
100	100	60	ns	**p=0.00001 r=0.182**	**p=0.00001 r=0.182**
with some difficulty					
0	0	26.7	ns	**p=0.00001 r=0.108**	**p=0.00001 r=0.108**
with great difficulty					
0	0	8.3	ns	**p=0.0214 r=0.029**	**p=0.0214 r=0.029**
unenforceable					
0	0	5	ns	p=0.0781 r=0.017	p=0.0781 r=0.017

Abbreviations: C- control group. C + p/k- reference group of generally healthy people taking painkillers sporadically. OA – osteoarthritis patients. p- statistical significance <0.05. r- correlation coefficient. ns- statistically insignificant.

Table 4. Parameters used in assessing the quality of life of patients with OA part 3

C	C+p/k	OA	C : C+p/k	C : OA	C+p/k : OA
			Are you able to sit on the toilet and get up? (%)		
			without difficulty		
100	100	66.7	ns	**p=0.00001 r=0.143**	**p=0.00001 r=0.143**
			with some difficulty		
0	0	18.3	ns	**p=0.0004 r=0.069**	**p=0.0004 r=0.069**
			with great difficulty		
0	0	11.7	ns	**p=0.0059 r=0.042**	**p=0.0059 r=0.042**
			unenforceable		
0	0	3.3	ns	p=0.1527 r=0.011	p=0.1527 r=0.011
			Are you able to bend down and pick up clothes from the floor? (%)		
			Without difficulty		
100	100	31.7	ns	**p=0.00001 r=0.418**	**p=0.00001 r=0.418**
			with some difficulty		
0	0	40	ns	**p=0.00001 r=0.182**	**p=0.00001 r=0.182**
			with great difficulty		
0	0	20	ns	**p=0.0002 r=0.077**	**p=0.0002 r=0.077**
			unenforceable		
0	0	8.3	ns	**p=0.0214 r=0.029**	**p=0.0214 r=0.029**
			Are you able to turn on and to turn off a tap? (%)		
			Without difficulty		
100	100	78.3	ns	**p=0.0001 r=0.084**	**p=0.0001 r=0.084**
			with some difficulty		
0	0	18.4	ns	**p=0.0004 r=0.069**	**p=0.0004 r=0.069**
			with great difficulty		
0	0	3.3	ns	p=0.1527 r=0.011	p=0.1527 r=0.011
			unenforceable		
0	0	0	ns	ns	ns

Abbreviations: C- control group. C + p/k- reference group of generally healthy people taking painkillers sporadically. OA – osteoarthritis patients. p- statistical significance <0.05. r- correlation coefficient. ns-statistically insignificant.

Table 5. Parameters used in assessing the quality of life of patients with OA part 4

C	C+p/k	OA	C : C+p/k	C : OA	C+p/k : OA
			Are you able to handle different objects. go shopping? (%)		
			without difficulty		
100	100	63.3	ns	**p=0.00001 r=0.162**	**p=0.00001 r=0.162**
			with some difficulty		
0	0	20	ns	**p=0.0002 r=0.077**	**p=0.0002 r=0.077**
			with great difficulty		
0	0	15	ns	**p=0.0016 r=0.056**	**p=0.0016 r=0.056**
			unenforceable		
0	0	1.7	ns	p=0.3146 r=0.006	p=0.3146 r=0.006
			Please mark these activities. during which you usually need some help(%)		
			dressing and taking care of the appearance		
0	0	30	ns	**p=0.00001 r=0.125**	**p=0.00001 r=0.125**
			getting up		
0	0	45	ns	**p=0.00001 r=0.214**	**p=0.00001 r=0.214**
			maintaning hygiene standards		
0	0	18.3	ns	**p=0.0004 r=0.069**	**p=0.0004 r=0.069**
			reaching for an object		
0	0	35	ns	**p=0.00001 r=0.152**	**p=0.00001 r=0.152**
			food		
0	0	11.7	ns	**p=0.0059 r=0.042**	**p=0.0059 r=0.042**
			walking		
0	0	30	ns	**p=0.00001 r=0.125**	**p=0.00001 r=0.125**
			grabbing and opening an object		

0	0	55	ns	**p=0.00001 r=0.289**	**p=0.00001 r=0.289**
doing things and houseworking
0	0	28.3	ns	**p=0.00001 r=0.116**	**p=0.00001 r=0.116**
Please mark those instruments and aids that you usually use to performe the above activities: (%)
a walking stick
0	0	20	ns	**p=0.0002 r=0.077**	**p=0.0002 r=0.077**
instruments used for dressing (e.g. hook for button fastening. other)
0	0	3.3	ns	p=0.0781 r=0.017	p=0.0781 r=0.017
a walker
0	0	5	ns	p=0.0781 r=0.017	p=0.0781 r=0.017
a disability ball
0	0	6.7	ns	**p=0.0408 r=0.023**	**p=0.0408 r=0.023**
a special chair
0	0	3.3	ns	p=0.0781 r=0.017	p=0.0781 r=0.017
a wheelchair
0	0	1.7	ns	p=0.3146 r=0.006	p=0.3146 r=0.006
an elevated toilet seat
0	0	6.7	ns	**p=0.0408 r=0.023**	**p=0.0408 r=0.023**
a bathtub chair
0	0	6.7	ns	**p=0.0408 r=0.023**	**p=0.0408 r=0.023**
a jar opener (to open a jar chich was already opened)
0	0	20	ns	**p=0.0002 r=0.077**	**p=0.0002 r=0.077**
a specially adapted cooking equipment or eating utensils
0	0	10	ns	**p=0.0112 r=0.036**	**p=0.0112 r=0.036**
a railing next to the bathtub
0	0	10	ns	**p=0.0112 r=0.036**	**p=0.0112 r=0.036**
a long handle utensils to reach an object
0	0	21.7	ns	**p=0.0001 r=0.084**	**p=0.0001 r=0.084**
a long handle utensils in the bathroom (e.g. a brush for the body)
0	0	21.7	ns	**p=0.0001 r=0.084**	**p=0.0001 r=0.084**

Abbreviations: C- control group. C + p/k- reference group of generally healthy people taking painkillers sporadically. OA – osteoarthritispatients. p- statistical significance <0.05. r- correlation coefficient.ns- statistically insignificant.

Significantly more OA patients do not attend on rehabilitation activities in spite of a doctor recommendation.

The correlation between these variables was negligible. Among the patients attending on rehabilitation, significantly more patients are ambulatory treated with using out of hospital procedures.

The correlation between these two variables was also weak. Among the patients attending on the rehabilitation activities the half of respondents noticed the anelgetic effect of the treatment. After rehabilitation procedures, significantly more patients could reduce the amount of used analgesics (in various forms). The correlation between these two variables was also weak (Table 6).

Table 6. Physiotherapy and its healing effects in patients with OA

Answer	Yes (%)	No (%)	p. r
Do you attend rehabilitation prescribed by a doctor?	43.3	56.7	**p=0.039 r=0.018**
Do you attend rehabilitation:			
outpatient?	76.9	-	**p=0.00001 r=0.29**
hospital?	23.1	-	
Do rehabilitation treatments have an analgesic effect?	50	50	ns
Could you reduce the amount of analgesics used by you (in various forms) after the rehabilitation procedures?	76.9	23.1	**p=0.0001 r=0.29**

Abbreviations: p- statistical significance <0.05. r- correlation coefficient. ns- statistically insignificant

DISCUSSION

The indicators of the health population status inform that the health condition in Polish society is worse than the average health condition in the EU society [11,12]. The EU-SILC study shows that Polish women and men perceive their health as a poor, and the number of these people is higher than in EU countries. This tendency can be observed in the group of elderly people aged 65+ (men: Poland 39.4%, EU 20.1%, women: Poland 46.3%, EU 26%) [11]. It is said that prolongating life in a good health condition can increase a positive quality of life and an economic growth which are effects of comprehensive understanding of the quality of life as a welfare in all its aspecs. The results obtained in this work indicate a significantly reduced quality of life of patients with OA in comparison to the healthy people group (C), as well as to the group of healthy people who occasionally take analgesics (C + p/k). The HRQOL decrease in OA patients group who refer to the physical field (mobility and physical activity, unassisted-dressing, tying shoelaces and button closure with no help, unassisted standing up from a chair without handrails and unassisted going to bed, walking with no help on a flat surface outside, unassisted stepping up on a five stairs).

The difference between filling a HRQOL by healthy responders and subjects taking occasional painkillers (C + p/k) compared to healthy people who do not take any analgetics during last two months preceding the survey (C) decreased and reached statistical significance. Considering the results obtained in the physical field, there are no significant changes in the quality of life of the respondents when we compare these two study groups. In the reference group (C + p/k), the quality of life significantly decreases in comparison to the control group (C). All the changes we observed may be result of a fact that pain significantly affects on the perception. The results presented by Krzych et al. confirm that pain sensation significantly affects on deteriorating quality of patients life [13].

The way to assess a problem with OA patients self-care and if there is a negative impact on these people quality of life we can use a special indicator of number of people with limited ability to perform daily activites. Our own research shows that in the group of people with OA, there can easily dress unassisted (including tying shoelaces and button clasps) only more then 1/3 of the respondents, with some difficulty almost half of them and with great difficulty more than 1/10 of the respondents. These activities are unfeasible for almost 2% of respondents. Turning on and turning off the tap, using the toilet and bathing in the bathtub does not cause any difficulties to 60-80% of respondents. These activities are difficult to

perform for 18% to 27% of respondents. The daily hygiene activities are a great difficulty for about 1/10 respondents. For about 1/20 of the subjects neither turning on and of the tap, nor using toilet and taking bath in a bathtube are impracticable. Unassisted getting up from a chair without a handrails is easy to do for only over a half of responders, but ¼ of them have some difficulty with this activity and 1/5 of subjects have a great difficulty with it. This activity is unfeasible for 2% of respondents. Unassisted going to bed and getting up easily are practiced by over a half of responders but almost 1/3 of subjects are able to make these activities with some difficulty and more than 10% of responders can make it with a great difficulty. Moreover, 7 out of 10 respondents easily deal with walking on flat terrain outside but almost 1/5 of the subjects can walk on their own but with some difficulty and almost 1/10 of respondents walk with a great difficulty. Unassisted going five stairs up with no difficulty was noticed in a group smaller than a half of responders but 1/3 of responders will make these activities with a little difficulty and a great difficulty was noted by 1/4 of respondents during going five stairs up. Unassisted bending to lift an object from the floor will not cause any problems for 1/3 OA patients, some difficulty with this activity was identify among a half of responders and 1/5 of patients assessed unassisted bending as a difficult activity. 8 out of 100 patients were unable to make this. Most of the responders, without any difficulty will deal with various matters outside a home, 1/5 of patients were able to make it and over 1/10 patients will deal with various matters outside a home with a great difficulty. The activity was unavaliable for 2% of people from a study group.

The data mentioned above show that there is a problem with OA self-care. Patient self-care associated with their personal hygiene procedures is the least difficult for them. However, it should be remembered that this is the most intimate part of life, that is why it is so difficult for OA patients ask someone for help. It requires a mental breakdown and overcoming their own shame. The governmental report from 2012 about a state of health and about elderly people health needs, confirms our results. In this report there is said that occurring of difficulties affected a self service activities starts from the age of 49 and systematically grows. There is a significant increase of a difficulty in performing everyday activities necessary for independent functioning with an age range 60-69 years [14]. Therefore, patients with OA significantly more often need someone's help with some basic activities: dressing and taking care of the appearance (1/3), standing up (almost 1/2), maintaining hygiene standards (almost 1/5), walking (1/3), catching and opening an objects (over 1/2) and doing the triks (almost 1/3).

Unfortunately, using someone's help will negatively affect the subjective assessment of the quality of patients' life, because they would know they are not independent persons and their life depends on other people. Serious problems with OA patients' self-care and with a necessity to implement the assistance in performing daily activities in this group of patients were described by Sierakowska et al. Most of the respondents involved in this study required third-parties assistance, which provided to frequent lowered mood, social isolation and limitations in full independent patients' functioning [15].

According to the questionnaire answers, patients with OA are looking for a different forms of improving their quality of life. It is important to change the lifestyle of the patient (weight reduction, using a bench-mounted bike, walking stick or walking frame), reducing the surface area of the joints, reducing the defective position of the limb axis. Exercises that increase muscle mass and exercises which may improve joint mobility should be made. It is recommended to refer the OA patient to physical therapy and/or balneotherapy [16,17].

CONCLUSIONS

Education of the patient should be based on learning an effective methods of rest, avoiding frequent repetition of activities with using specific joints and providing to normalization of body mass index. While under medical care it is crucial for OA patients to emotional support them and help them coping with a chronic disease. The priority for the most of patients is the independent functioning, which has a positive effect on the physical and mental state of the patient, strengthens faith in their own strength and restores a positive sense of existence [3]. In addition to using the purchased equipment, patients buy preparations available in pharmacies without a prescription (improving circulation and metabolism of tissues, anti-rheumatic, antiarthritic, anti-inflammatory and analgesic or improving the cartilage structure), which improves the quality of life, but can cause drug-related complications [18-20].

Conflicts of Interest

The authors declare that there are no conflicts of interests regarding the publication of this study.

REFERENCES

1. Schipper H. Quality of life: Principles of the clinical paradigm. J Psychosocial Oncol 1990; 9:171-85.
2. Papuć E. Jakość życia – definicje I sposoby jej ujmowania [Quality of life - definitions and ways of its recognition]. Curr Probl Psych 2011; 12:141-45.
3. Kłossowska J, Shpakou A, Kleszczewski T, Knaś M, Grajek Z, Kleszczewska E. Importance in therapeutictreatment of variousways of assessingsubjective and objectivequality of life from the perspective of a patient with osteoarthritis]. [In:] 21st century health - challenges, problems, dilemmas. Jankowiak B (ed), Kowalewska B (ed), Rolka H (ed), Wydawnictwo Państwowej Wyższej Szkoły Informatyki i Przedsiębiorczości, Łomża 2016:123-31. (Polish)
4. Trzebiatowski J. Quality of life in the perspective of socialand medicalsciences - systematisation of definitions. Hygeia Public Health 2011; 46:25-31. (Polish)
5. Jankowska-Polańska B, Polański J. Methods to assess the quality of life in rheumatic diseases. Reumatologia 2014; 52:69-76. (Polish)
6. Wnuk M, Marcinkowski JT. Quality of life in chronicdiseases. Hygeia Public Health 2013;48: 274-8. (Polish)
7. Mabey T, Honsawek S. Role of vitamin D in osteoarthritis: molecular, cellular, and clinical perspectives. Int J Endocrinol 2015;2015: 383918.
8. Zhang W, Doherty M, Peat G, Bierma-Zeinstra MA, Arden NK, Bresnihan B, Herrero-Beaumont G, Kirschner S, Leeb BF, Lohmander LS, Mazières B, Pavelka K, Punzi L, So AK, Tuncer T, Watt I, Bijlsma JW. EULAR evidence-based recommend-dations for the diagnosis of knee osteoarthritis. Ann Rheum Dis. 2010 Mar;69(3):483-9.
9. Sierakowska M, Wróblewska M, Lewko J. Evaluation of health problems of patients with osteoarthritis and the need for support and health education. Probl Pieleg 2011;19:353-60. (Polish)
10. Musumeci G, Aiello FC, Szychlinska MA, Di Rosa M, Castrogiovanni P, Mobasheri A. Osteoarthritis in the XXIst century: risk factors and behaviours that influence disease onset and progression.International Int J Mol Sci 2015 Mar 16;16(3):6093-112.
11. [Internet] http://www.mz.gov.pl/rozwoj-i-inwestycje/ fundusze-europejskie-dla-sekto-ra-ochrony-zdrowia/krajowe-ramy-strategi-czne-policy-paper[EU-funds-for-sector-pro tec-tion-health/national-frame-strategic-po licy-paper] Available from: 2016 March 02
12. Report from the firstmeeting of the ProvincialCouncil for HealthNeeds of the Podlasie Voivodship. 6 November 2015. (Polish)
13. Krzych ŁJ, Lach M, Mustafa S i wsp. Quality of life in patients after minimally invasive endoscopic atraumatic coronary artery bypass

grafting: a long−term follow−up. Kardiol Pol 2012;70:890-6. (Polish)

14. Suszko R. Health status and health and care needs of old people. Studia BAS 2012;2:29-58. (Polish)

15. Sierakowska M, Sierakowski S, Wróblewska M, Krajewska-Kułak E. Health-problems of patients with osteoarthritis and theirimpact on quality of life conditioned by health condition. Reumatologia 2010, 48:372–9. (Polish)

16. Kłossowska J, Zalewska A, Przystuoa Aw, Shpakou A, Wilińska I, Kleszczewska E, Knaś M. Choroba zwyrodnieniowa stawów -

17. Klimiuk PA, Sierakowski S, Kita K, Lewandowski B, Muklewicz E. Nowa Med 2002;2:37-43. (Polish)

18. Pharmindex Compendium of medicines 2016-praca zbiorowa. UMB Medica, Warszawa 2015 (Polish)

19. Podlewski J, Chwalibogowska-Podlewska A. Drugs of ContemporaryTherapy 2010, Medical Tribune Polska, Warszawa 2010.

20. Mobasheri A. The future of osteoarthritis therapeutics: targeted pharmacological therapy. Cur Rheumatol Rep 2013; 15:364.

etiopatogeneza i leczenie. Medical & Health Sciences Rewiev 2016;2(2):47-50 (Polish)