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Quality of life in patients with chronic diseases

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ORIGINAL ARTICLE

Abstract

OBJECTIVES: A quality of life assessment is of great importance for patients with chronic diseases, because problems caused by specific diseases impact specific areas of their lives. The goal of this work was to determine, in which areas select diseases (rheumatoid arthritis, Crohn's disease, ischemic disease of the lower extremities and chronic obstructive pulmonary disease) affect patients' quality of life.
METHODS: The Czech version of the WHOQOL-100 instrument and specific standardized questionnaires for individual diseases: EuroQol, EQ-5D-5L, IBDQ, PAQ were used to assess quality of life. This paper presents the results of the WHOQOL-100 questionnaire. In total, 5 research samples were put together. The first sample consisted of 200 respondents with rheumatoid arthritis (RA); the second sample included 100 respondents with inflammatory bowel disease (IBD); the third sample was comprised of 404 respondents with ischemic disease of the lower extremities (IDLE); the fourth sample consisted of 449 respondents with chronic obstructive pulmonary disease (COPD); and the fifth sample was represented by 1,456 healthy respondents. The acquired data were then statistically analyzed. A statistical data analysis was performed in two steps. In the first step descriptive statistical analyses were performed in the SASD program (absolute and relative frequencies of respondents' answers, median values and variability characteristics). In the second step differences in means of the subjectively-perceived quality of life in patients with individual diseases and in control group were tested using the Mann-Whitney U test and the non-parametric Wilcoxon pair test. These analyses were computed in the SPSS (Statistical Package for the Social Sciences) program.
RESULTS: The results show that a statistically significant difference in average domain score values was found between the healthy population and patients diagnosed with RA in the domains of "physical health", "level of independence", "environment", and "spirituality/religion/personal beliefs". A statistically significant difference was found in all domains for patients with IDLE and COPD. A statistically significant difference was found in four domains for patients with IBD, namely those of "physical health", "level of independence", "social relationships" and "spirituality/religion/personal beliefs".
CONCLUSION: All therapeutic and nursing interventions that can contribute to improving QoL in poorly performing domains should be utilized.

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INTRODUCTION

The concept of quality of life (QoL) in health care and medicine is based on the concept of health as defined by the World Health Organization (WHO), which states that health is a condition of complete physical, mental and social well-being, and not only the absence of disease. Medicine commonly refers to health-related quality of life to delimit the quality of life domain that is directly influenced by the individual's state of health and the health care provided, and which can be positively influenced by various interventions (Payne 2005; Gurková 2011).

In nursing, a QoL assessment focuses on an individual's specific life situation, as well as their state of health. Thus, a more individualistic approach is applied. However, even nursing does not have a fixed definition for QoL. Gurková (2011) notes that Ferrans identified 5 conceptual QoL categories based on a survey of QoL definitions found in the literature. These include the (1) ability to lead a normal life, (2) degree of potential physical and mental capacity, (3) happiness and satisfaction, (4) achievement of personal goals, and (5) ability to lead a socially active life.

An important step in the assessment of QoL consisted in the delimitation of the QoL domains. Most authors of conceptual QoL models agree on the following 4 domains: (1) physical well-being, (2) social well-being, (3) mental well-being, and (4) spiritual well-being. Some authors of QoL models and theories add the domains of (5) family, (6) body image and (7) response to diagnosis or therapy, to the 4 aforementioned domains. The WHO defines 6 quality of life domains: (1) physical, (2) environment, (3) mental, (4) level of independence, (5) social relationships, and (6) spirituality/religion/personal beliefs. When assessing QoL in nursing, we ascertain which areas are negatively influenced (Gurková 2011).

Vaďurová and Mühlpachr (2005) state that QoL is usually assessed from three perspectives: an objective measurement of social indicators, a subjective estimate of general satisfaction with life, and a subjective estimate of satisfaction with individual life areas. Ascertaining quality of life completes the objective indicators of health status by describing the impact of disease and therapy on patients' everyday lives. QoL can further be observed at an individual level in order to formulate a therapeutic plan and evaluate the procedures applied. It can also be observed at a group level with patients who share specific diseases, for which a QoL assessment constitutes an indicator of therapeutic efficacy, the impact of side effects of drugs, or serves as a tool to assess comprehensive programs. The observation of quality of life at the level of population investigations, which results in a description of risk population groups, serves as a base for preventive programs and the results can also be used for the planning of health and social care.

An important landmark was achieved with the creation of the concept of Health Related Quality of Life (HRQoL). The concept was created for the purposes of economic and clinical analyses, and was first used during the 1970s by Kaplan and Bush. At the beginning of the 1980s, the HRQoL measurement was performed with the help of generic tools aimed at comparing HRQoL levels between healthy and ill populations. The development of these generic tools was gradual; the first only included the physical aspects of health. This was followed by behavioral aspects, and even later by the mental, social, and existential dimensions of health. These comprehensive tools continue to be used today. They include, for example, the Medical Outcomes Study 36-Item Short-Form (SF-36), as well as the EuroQoL (EQ-5D). These tools are considered the "gold standard" in QoL measurement, both here in the Czech Republic and abroad (Vaďurová and Mühlpachr 2005; Rapley 2008; Gurková 2011). Other tools have been gradually added in order to promote its development; the World Health Organization Quality of Life assessment (WHOQOL), created by the WHO, is one of particular note. Over the course of time, however, the desire to create tools tailored to the needs of individual patient groups has increased, and specific tools for quality of life measurement began to emerge in an attempt to accurately identify which factors influence patient QoL. These tools assess a relatively narrow spectrum of factors that are directly related to the specific disease; thus, they have become more sensitive and have greater discrimination validity when compared to generic tools. At present, a selection of various specific tools for HRQoL measurement (Payne 2005; Mareš *et al.* 2006) is available for many diseases. The Centre for Information Resources at the MAPI Research Institute (France), in cooperation with the National Institute for Cancer Research (Italy), developed the Quality of Life Information Database which provides an overview of instruments available to measure HRQoL. The database will facilitate the collection of relevant and valid data that would be internationally comparable (Hnilicová 2005).

The fact that health care professionals do not focus only on saving and extending human life, but also with its quality, is very significant. They become more aware that it is very important for each individual to live their entire life with the highest possible quality. One goal of comprehensive therapy is to have a positive affect on all of a patient's problems, thereby improving their QoL. Today, a QoL assessment in clinical practice is an important indicator of best medical practice, as specified by recommended diagnostic and therapeutic procedures (Karetová *et al.* 2011).

Our research focused on patients with the following chronic diseases: rheumatoid arthritis (RA), chronic obstructive pulmonary disease (COPD), ischemic disease of the lower extremities (IDLE) and inflammatory bowel disease (IBD). The motive for the study stems from the rising incidence of disease in these groups, which has been statistically documented in recent years (Karetová *et al.* 2011; Činnost zdravotnických zařízení... 2012). Gurková (2011) states that these diseases interfere markedly with patients' QoL, and affect their families as well. Disease management requires cooperation with prescribed therapy, a will to change current lifestyles and the long-term maintenance of such changes. Therefore, in addition to high-quality medical care, emphasis must be placed on patient self-care and responsibility for one's own health, particularly with regard to activities that may negatively affect their present state of health and increase the risk of mortality. The growing need for nursing in this area can be seen in the use of QoL assessments to detect hidden issues and causes of interventional failures, and patient self-care failure. Adequate interventions selected in accordance with the determined QoL can significantly influence patient responsibility for self-care and enable them to improve it and prevent disease-related complications. (Křivohlavý, 2002).

One of the research goals was to determine the areas in which RA, IBD, IDLE and COPD affect QoL.

MATERIAL AND METHODS

The above-mentioned issue was analyzed using quantitative research performed with generic and specific standardized questionnaires. The research sample consisted of respondents from the healthy population and respondents with the selected diseases (RA, COPD, IBD and IDLE) (Table 1). The Czech version of the WHOQOL-100 was used to determine QoL among individual groups. The instrument is a 100-item self-assessment questionnaire with six domains: physical health, psychological, level of independence, social relationships, environment, and spiritual area. The instrument is subdivided into 24 life aspects (facets), with each containing 4 items. The last, facet includes 4 items that assess general QoL and health. A 5-point Likert scale was used to score individual items. It aids in the expression of quantity, capacity, frequency and satisfaction (Dragomirecká and Bartoňová 2006). The WHOQOL-100 provides a subjective assessment of an individual's QoL. Individuals suffering from the previously mentioned diseases were given an additional questionnaire to assess quality of life in direct relation to their state of health.

The EuroQol questionnaire was used to determine specific areas that may influence quality of life in individuals with RA. The EuroQol 5-Dimensional Descriptive System (EQ-5D-5L) questionnaire was used to determine the same in individuals with COPD. The Inflammatory Bowel Disease Questionnaire (IBDQ), one of the most frequently used questionnaires, was used for patients with IBD. The Spertus Peripheral Artery Questionnaire (PAQ) was used for patients with IDLE.

In total, 5 research samples were combined. The first sample consisted of 200 rheumatoid arthritis patients, with 50 men (25%) and 150 women (75%). The sample was created by quota selection, and the sole quotas were: rheumatoid arthritis and gender (a male to female ratio of 1:3) – the proportion was observed. The sample can be considered representative of rheumatoid arthritis patients, be gender, in the Czech Republic. Respondent age and region were left to chance. The second sample consisted of IBD disease. Given that IBD has no known gender and age construct, there were no requirements for disease characteristics and the sample was selected randomly; only the presence of IBD was required. There were 100 IBD patients in the sample (0.56% of the total sample). The third sample consisted of 404 IDLE patients and was constructed by quota selection, with the sole quota being age; gender and region were left to chance. The fourth sample consisted of 449 patients with COPD. The sample was constructed by quota selection, with the sole quota being the presence of COPD and a minimum age of 20 years. The fifth sample consisted of healthy controls chosen from the general Czech population. The research sample was combined as a representative sample. The total number of inhabitants in the Czech Republic aged 20 years and more was used as a baseline. This age limit was chosen given the border of incidence of IBD. The research sample was constructed by quota selection; we filled the preset quotas, i.e. gender, age and place of residence (region). Respondents were divided into 6 age groups in ranges of 10 years. The final age limit was 70 or more years. The healthy population sample consisted of 1,456 respondents.

A statistical data analysis was performed in two steps. In the first step descriptive statistical analyses were performed in the SASD program (absolute and relative frequencies of respondents' answers, median values and variability characteristics). In the second step differences in means of the subjectively-perceived quality of life in patients with individual diseases and in control group were tested using the Mann-Whitney U test and the non-parametric Wilcoxon pair test. These analyses were computed in the SPSS (Statistical Package for the Social Sciences) program.

Tab. 1. Changes in sample sizes during the study.

	before	after	decrease	decrease in %
Healthy population	1456	1441	15	1.03
Rheumatoid arthritis	200	200	0	0.00
Ischemic disease of the lower extremities	404	404	0	0.00
Chronic obstructive pulmonary disease	503	449	54	10.74
Inflammatory bowel disease	100	100	0	0.00
TOTAL	2663	2594	69	2.59

RESULTS

The 6 WHOQOL-100 domain scores for each individual group were calculated as median values of different numbers of corresponding facets (out of 24 in total). The average domain score evaluation, together with the median and standard deviation, is presented in Table 2. The results show a statistically significant difference in average domain score values between the healthy population and patients with RA in the domains of physical health, level of independence, environment, and spirituality/religion/personal beliefs. In the groups of patients with IDLE and COPD, a statistically significant difference was found in all domains. In patients with inflammatory bowel disease, a statistically significant difference was found in four domains, namely physical health, level of independence, social relationships, and spirituality/religion/personal beliefs.

With regard to the healthy population sample, an additional comparison was performed with the standard of a healthy population for the Czech Republic, as stated in the Czech language manual for the WHO QoL assessment. The 2013 results show that the average domain score values of the healthy population studied in this work fully comply with the standards specified in the manual (Table 3) published in 2006.

Finally, the difference in median domain score values among sample groups was analyzed with regard to the healthy population. Variable distribution was performed with the Kolmogorov-Smirnov test ($p<0.05$). The results showed that, given the abnormal variable distribution in the healthy population (included in all comparative analyses), it was necessary to use the non-parametric Mann-Whitney U test. The results for individual groups are shown in Table 4 (the domains with a statistically significant difference in median domain

Tab. 2. Median values in individual groups.

		MEAN			
Domain	**Healthy population** (*N* = 1441)	**Rheumatoid arthritis** (*N* = 200)	**IDLE** (*N* = 404)	**COPD** (*N* = 449)	**IBD** (*N* = 100)
Physical health	14.89	**12.88**	**12.59**	**12.98**	**13.97**
Psychological	14.57	14.48	**13.12**	**13.95**	14.65
Level of independence	16.05	**12.34**	**11.37**	**12.99**	**14.55**
Social relationships	15.23	15.19	**14.01**	**14.56**	**15.80**
Environment	14.82	**15.10**	**13.15**	**14.36**	15.11
Spirituality/religion/personal beliefs	13.00	**13.56**	**11.87**	**11.22**	**13.72**
		MEDIAN VALUE			
Domain	**Healthy population** (*N* = 1441)	**Rheumatoid arthritis** (*N* = 200)	**IDLE** (*N* = 404)	**COPD** (*N* = 449)	**IBD** (*N* = 100)
Physical health	15.00	**13.00**	**12.33**	**13.33**	**13.67**
Psychological	14.60	14.80	**12.60**	**13.80**	14.80
Level of independence	16.50	**12.75**	**11.00**	**13.25**	**14.75**
Social relationships	15.33	15.33	**14.00**	**14.67**	**16.00**
Environment	14.88	**15.19**	**12.75**	**14.13**	14.88
Spirituality/religion/personal beliefs	13.00	**13.50**	**12.00**	**11.20**	**14.00**
		STANDARD DEVIATION			
Domain	**Healthy population** (*N* = 1441)	**Rheumatoid arthritis** (*N* = 200)	**IDLE** (*N* = 404)	**COPD** (*N* = 449)	**IBD** (*N* = 100)
Physical health	2.35	2.80	2.59	2.85	2.65
Psychological	1.94	1.96	2.09	2.05	1.96
Level of independence	2.48	2.87	2.82	3.13	2.50
Social relationships	2.08	2.33	2.25	2.27	2.26
Environment	1.81	1.63	1.77	1.81	1.75
Spirituality/religion/personal beliefs	3.35	3.31	2.51	3.78	4.07

score values between the healthy population and other groups have been highlighted).

The results show a statistically significant difference between the "physical health" domain median values in all patient groups, and those of the healthy population; they are markedly lower in all patients. The results are similar for the domains of "level of independence" (lower in all patients) and "spirituality/religion/personal beliefs". Generally speaking, the IDLE and COPD groups differ significantly from the healthy population in all domains. More specifically, the QoL is markedly lower in all WHOQOL-100 domains.

On the other hand, no difference was found in the "psychological" domain when comparing the healthy population to the RA and IBD groups. Additionally, no further difference in quality of life domains was found in the following two groups: RA patients in "social relationships", and the IBD patients in "environment". In these two groups, the differences found in the domains of "social relationships", "environment", and "spirituality/religion/personal beliefs" were quite positive, with higher values than the healthy population. This indicates that these two groups have a better QoL in these areas.

Tab. 3. Comparison of WHOQOL-100 domain scores of Czech Republic population standards and the average scores of the healthy population used in this research.

Domain	**STANDARD interval**			**Healthy population** (*N* = 1441)
	Lower limit of standard	**Average of standard**	**Upper limit of standard**	
Physical health	14.3	15.4	16.5	14.9
Psychological	13.5	14.4	15.3	14.6
Level of independence	15.9	16.9	17.8	16.0
Social relationships	14.0	15.1	16.1	15.2
Environment	13.8	14.6	15.4	14.8
Spirituality/religion/personal beliefs	12.2	13.9	15.6	13.0

Tab. 4. Test results of individual QoL domains (WHOQOL-100) between healthy controls and groups with specific diseases, using the non-parametric Mann-Whitney U test.

Domain	**Rheumatoid arthritis** (*N* = 200)	**IDLE** (*N* = 404)	**COPD** (*N* = 449)	**IBD** (*N* = 100)
	Sig.	**Sig.**	**Sig.**	**Sig.**
Physical health	**0.000**	**0.000**	**0.000**	**0.000**
Psychological	0.579	**0.000**	**0.000**	0.595
Level of independence	**0.000**	**0.000**	**0.000**	**0.000**
Social relationships	0.805	**0.000**	**0.000**	**0.012**
Environment	**0.020**	**0.000**	**0.000**	0.211
Spirituality/religion/personal beliefs	**0.027**	**0.000**	**0.000**	**0.040**

Tab. 5. Comparison of WHOQOL-100 domain scores for Czech Republic population standards and the average scores for all studied groups.

Domain	**Lower limit of standard**	**Average of standard**	**Upper limit of standard**	**Healthy population** (*N* = 1441)	**Rheumatoid arthritis** (*N* = 200)	**IDLE** (*N* = 404)	**COPD** (*N* = 449)	**IBD** (*N* = 100)
Physical health	14.3	15.4	16.5	14.9	**12.88**	**12.59**	**12.98**	**13.97**
Psychological	13.5	14.4	15.3	14.6	14.48	**13.12**	13.95	14.65
Level of independence	15.9	16.9	17.8	16.0	**12.34**	**11.37**	**12.99**	**14.55**
Social relationships	14.0	15.1	16.1	15.2	15.19	***14.01***	14.56	15.80
Environment	13.8	14.6	15.4	14.8	15.10	**13.15**	14.36	15.11
Spirituality/religion/personal beliefs	12.2	13.9	15.6	13.0	13.56	**11.87**	**11.22**	13.72

It was interesting to compare QoL levels in individual groups and the actual interval of QoL standards in a healthy population from the Czech Republic. This comparison showed that all groups with diseases were below the lower limit (highlighted in boldface in Table 5) in the domains of "physical health" and "level of independence". If the difference was not statistically significant (determined with the non-parametric Wilcoxon pair test at $p<0.05$), the value has been highlighted in italics (i.e. in the IBD group). In general, the worst quality of life measurements for were found in the IDLE group; each domain value was, below standard, with the exception of "social relationships" (in which the difference was not statistically significant, but borderline), unlike the other patient groups.

DISCUSSION

The results show that patients with IDLE have a markedly lower QoL than the healthy population in all domains of the WHOQOL-100 questionnaire. Being a chronic disease, it has a very negative effect on patients, resulting in permanent stress for them. Moreover, as Slováček *et al.* (2006, 2008) states, patients in more serious stages are also stigmatized by the disease. The disease's primary manifestation (pain in the lower extremities after walking some distance) limits patients in everyday activities, and significantly reduces their QoL (Lovell *et al.* 2011).

It must be understood that, in terms of disease diagnostics, patients are subjected to a number of examinations that are frequently time consuming while simultaneously causing mental strain. The permanent stress caused by the disease results in subsequent behavioral changes in patients. In comparison to the healthy population, these changes are observed in psychological the situation changed by the disease. Further deviations were also observed in patients' social lives, in terms of their relations and approach to other people. Issues can arise in the physical, mental and social areas (Slováček *et al.* 2006, 2008).

The impact IDLE has on patients was also assessed from the perspective of an impaired ability to work. If patients are not polymorbid, nearly normal work is possible in stages I and II, provided it does not take place in damp, cold or otherwise risky workplaces (Klener 2011). According to the Fontaine classification, asymptomatic disease stages (i.e. the first stage) has minimal impact on general performance under normal loads; the degree of impaired working ability is reported to be from 5 to 10%. The moderate claudication stage, with claudication intervals of 200 meters or more (i.e. Stage IIa), reduces an individual's working ability by 15 to 25%. Considerable impairment of the extremities, general performance, and some daily activities is typical for the medium claudication stage, or Stage IIb; the reduction of working ability is specified at 30 to 40%. Stage IIc, with serious claudication and a claudication interval of less than 50 meters, restricts most daily activities, thereby reducing working ability by 50 to 60%. In the rest stage, ischemic pain, the impossibility of loading the extremities and incidence of skin defects or gangrene, decreased working ability hovers at the border of 70 to 80%. The abovementioned values clearly show IDLE's impact on patient working abilities and the degree to which it can affect their economic activities, common daily activities, general performance and ability to care for themselves. IDLE may even disable patients (ÚZ 2013). In order to reduce their difficulties as much as possible, IDLE therapy must not focus not only on actual vessel impairment, but also on factors contributing to the deterioration of the atherosclerotic process (Puchmayer and Roztočil 2000; Chochola *et al.* 2005). Thus, IDLE therapy must be comprehensive and long-term. It must also be aimed at optimal revascularization, the elimination of rest pains, the extension of claudication intervals and support the healing extremity defects (including the prevention of atherosclerosis and thrombosis) Slováček *et al.* (2006; 2008) assessed the influence endovascular intervention, with a PTA dilatation catheter, had on IDLE patients' QoL 3–6 months after implementation. In compliance with the original assumption, they successfully demonstrated a statistically significant increase in IDLE patients' global QoL following endovascular intervention treatment with a PTA dilatation catheter.

Our results for the COPD patients were similar to those of IDLE patients. COPD patients had a markedly lower QoL in all domains of the WHOQOL-100 questionnaire when compared to the healthy population. It is clear that the chronic nature of this disease significantly reduces patient QoL, similarly to the incidence of different symptoms and expressions of bronchial obstruction. COPD patients frequently undergo a QoL assessment, particularly when undergoing long-term therapy. QoL assessments are an integral part of recommended medical procedures in COPD patient care. The subsequent determination of positive therapeutic influences on an improved QoL is indisputable. However, it has been demonstrated that persons with less serious forms of COPD often incorrectly indicate that their disease does not significantly affect their general QoL. For example, they frequently connect this definition with the fact that they only have lower physical performance. It can also be said that up to 45% patients do not distinguish between fatigue and dyspnea. A number of experts (Goldney, Ford, or Hazel for example, 2003) found a significant negative impact on COPD patients' QoL. Our results are consistent with the results of their studies. Our results also prove that COPD patients have reduced QoL, not only compared to a healthy population, but also when compared to some other chronic diseases. Exacerbation also has a significant impact on their QoL, given that the impact of frequent exacerbations on a rapidly deteriorating QoL has already been demonstrated. Additionally, other quality of life aspects must not be ignored either. The restriction of everyday activities may lead to a secondary incidence of depression in the patient, including fear of death and dying in an acute stage of the disease. Such a condition may even result in social isolation with negative consequences on the patient's general state of health. Both anxiety and depression can have a very negative impact on disease prognosis, which is serious by itself, as well as QoL in COPD patients (Vondra and Malý 2003; Salajka 2006; Musil *et al.* 2012).

When comparing the RA sample with the healthy population, no statistically significant difference was found in the domains of "psychological" and "social relationships", but there was a statistically significant difference in the remaining four domains. Our research results are not fully consistent with those reported in the literature. As Russell (2008), Češka *et al.* (2010) and Olejárová and Korandová (2011) stated, RA is a disease with a large number of clinical symptoms that cause varying degrees of functional restriction, which is reflected in patients' everyday lives. Over time, many patients also develop feelings of fear and anxiety and even depression is common. It has been reported that up to 40% of RA patients experience psychological issues, but few discuss them. Such feelings are usually based on fear of the future (Tress *et al.* 2008). That the disease is chronic, and progresses over time, results in great psychological strain for all patients. They suffer from fears of job loss, changes in physical appearance (fear of not being found attractive by their life partners), etc. These psychological problems may also be caused by undesirable pharmacotherapeutic side effects (Olejárová and Korandová 2011). Physical restrictions (often linked with working restrictions) also affect the psyche and social relationships.

As with RA patients, IBD patients had a statistically significant difference in all domains except two, compared to the healthy population. Thus, the results show that IBD patients' QoL was affected in the areas of "physical health", "social relationships", "level of independence", and "spirituality/religion/personal beliefs". It is more than evident that disease symptoms were reflected in these domains. Depending on location, these symptoms include pain, stenosis at the point of damage, blood in the stool and diarrhea. Non-specific symptoms that may accompany the disease include weight loss, fever, growth disorders, eye defects, arthritis and skin defects (Tersigni and Prantera 2010; Boulton *et al.* 2011; Whayman 2011). It should also be noted that symptoms can last up to several months. Kohn *et al.* (2010) state that IBD patients can suffer from diarrhea for more than 6 weeks, and more than 50% of patients may have blood mixed in their stool. They also state that more than 70% of patients with the disease report abdominal pain. Thus, the aforementioned symptoms can affect the areas measured by the QoL assessment. It follows that QoL in the area of physical health is undoubtedly affected by the general symptoms accompanying IBD. Consequently, the decreased QoL in this area leads to a decrease in other areas (e.g. social relationships). Chelvanayagam and Emmanuel (2011) also point out that IBD patients are often socially isolated, since some of symptoms have an acute onset.

As mentioned above, IBD can also affect large joints, particularly in the lower extremities. Shores and Bloomfeld (2010) state that up to 36% of IBD patients can have extraintestinal symptoms. Patients are then considerably limited in movement, which also affects QoL to a high degree.

CONCLUSION

Quality of life in patients with chronic diseases is multifactorially conditioned. To some degree, quality of life is dependent upon the intensity and duration of disease symptoms. Symptoms are influenced by activity, form, location and extent of disease. Psychological and social factors play a significant role, too. Nursing and medical care should not only focus on physical aspects of the disease (particularly during periods of exacerbation), but on all components of holistic care (Janich 2002; Gurková 2011). It is therefore important for the nurses to proceed according to the principles of modern nursing when caring for such patients and to provide them with holistic care. As Olah *et al.* (2007) state, their competence should include cognitive, affective and psychomotor skills). Heřmanová (2012) states that modern society understands health as a metasystem that includes mutually closely related physical, mental, and social systems. The way an individual perceives and interprets health and disease is very important in this system, and all of which is reflected in each quality of life domain. Therefore, both therapeutic and nursing care must utilize all interventions that contribute to improved quality of life in affected domains found to be below the lower limit of standard. In the rheumatoid arthritis sample, they were "physical health", "level of independence", "environment", and "spirituality/religion/personal beliefs". In the IBD sample, they were "physical health", "level of independence", "social relationships", and "spirituality/religion/personal beliefs". The IDLE and COPD samples had all domains below the lower limit of standard.

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