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Quality of life of patients with irritable bowel syndrome before and after education

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Summary

Aim. The aim of the present study was to analyse the impact of education of patients with irritable bowel syndrome (IBS) on their quality of life.

Methods. The study was carried out at the Gastroenterology Outpatient Clinic of the Independent Public Clinical Hospital No. 4 in Lublin and Gastroenterology Outpatient Clinic of the Cardinal Stefan Wyszyński Regional Specialist Hospital in Lublin in the years 2010–2011. The quality of life was analysed using the Quality of Life Questionnaire (QOL-Q R. Schalock, K. Keith).

Material. The group of 83 patients with the diagnosis of irritable bowel syndrome, who gave their consent for inclusion in the study, was provided with information about the essence of the disease, disease-related diet and lifestyle, course of the disease, medications, and check-ups.

Results. Our patients educated by the physician, nurse and those provided with written information had substantially higher scores in multi-dimensional aspects of the quality of life after education. Six months after education patients with IBS showed a significantly higher quality of life in all aspects, i.e. Satisfaction, Competence/productivity, Empowerment/ independence and Social inclusion/community integration. The understanding of the essence of their disease contributed to a decrease in anxiety associated with the neoplastic disease and worrying symptoms, which significantly reduced the incidence of complaints.

Conclusions. 1. Quality of life of patients with irritable bowel syndrome is substantially reduced in all the examined spheres. 2. Education of patients with IBS resulted in enhanced quality of life and reduced disease-related complaints. 3. Education of patients with IBS plays a significant role in the entire therapeutic process.

Key words: irritable bowel syndrome, education, quality of life

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Introduction

Irritable bowel syndrome (IBS) is diagnosed according to the Rome III criteria developed in 2006. The criteria include recurrent abdominal pain or discomfort experienced on at least three days a month of at least three months and associated with the following: pain relieved by a bowel movement, onset of pain related to a change in stool frequency, onset of pain related to a change in the appearance of stool [1, 2].

Ortiz-Lucas et al. [3] emphasise that IBS is a functional disorder of the intestines without organic and biochemical changes found on examinations. Depending on predominant symptoms, three subtypes of IBS are distinguished: diarrhoea predominant, constipation predominant and mixed one. Etiopathogenesis and pathophysiology of the disease in question is not known. Genetic and environmental factors, impaired motor activity of intestines, visceral hypersensitivity, post-infectious colitis, mental disorders, physical and sexual abuse and intestinal bacterial overgrowth are implicated. The most recent theories indicate that possible combined effects of all these factors can initiate the induction of IBS. They can have impact by interactions between the brain and behaviour as well as systems responsible for maintenance of homeostasis, i.e. the central and autonomic nervous systems, immune and endocrine systems, which results in certain clinical implications.

The main goal of IBS treatment is to control the complaints that hinder everyday functioning; their severity depends on symptoms and coexisting factors, such as lifestyle, diet, stress-attributable disorders (depression, anxiety). Generally, the control of impaired motor activity of intestines relieves abdominal discomfort. The IBS treatment involves the modification of diet, including the use of dietary fibre, pharmacological therapy and psychological assistance. The changes in lifestyle, e.g. physical activities and changes in dietary habits, are primarily recommended. Moreover, psychotherapy, especially hypnotherapy and stress-coping techniques, is effective. When changes in diet and lifestyle fail, pharmacotherapy is applied. Medications are tailored according to predominant symptoms and the key goal of their use is to alleviate the symptoms [4].

Education of patients is essential for the entire therapeutic process. Protheroe et al. [5] believe that the provision of information about the disease, its treatment and complications is the key element of coping with the condition. Unfortunately, in many cases the current knowledge about the disease is poorly accessible to patients, especially those with chronic disease. Thanks to the Internet and medical journals, the information is widely available, yet paradoxically the levels of availability, use and understanding of information in the society can vary greatly.

The awareness of therapy appropriateness markedly facilitates the cooperation between the patient and medical personnel. Therefore, education of patients is an important element of the therapeutic process in many diseases and results in considerably improved quality of life of the affected people.

Aim

The objective of the present study was to analyse the effects of education of patients with irritable bowel syndrome on their quality of life.

Material

The study was conducted in the Gastroenterology Clinics of the University Hospital No.4 in Lublin and of the Cardinal Stefan Wyszyński Regional Specialist Hospital in Lublin in 2010 and 2011.

Characteristics of the study population

The study population consisted of 83 patients with the diagnosis of irritable bowel syndrome, including 64 women and 19 men aged 22–78 years. Patients gave their consent for inclusion in the study and were informed about the disease, disease-related diet and lifestyle, course of disease, drugs and check-ups. They were educated individually in the outpatient clinic and additionally received written information about their disease.

Methods

The quality of life was examined using the Quality of Life Questionnaire (QOL-Q; R. Schalock, K. Keith).

The QOL-Q, translated and adapted by Juros, measures the general feeling of life quality, which is the sum of four partial dimensions, i.e. Satisfaction, Competence/Productivity, Empowerment/Independence and Social inclusion/Community integration.

Results

The quality of life of patients with IBS before and 6 month after the education was compared. The data obtained are presented in Table 1.

Table 1. **Quality of life of patients with IBS before and 6 months after education**

Quality of life dimensions	Before education		6 months after education		t-test for dependent groups	
	M	SD	M	SD	Student's t-test	P
Satisfaction	21.28	3.34	23.00	3.23	-7.75	0.000
Competence/Productivity	17.29	5.44	17.88	5.72	-3.67	0.000

table continued on the next page

Empowerment/Independence	26.14	2.88	27.72	2.06	-5.56	0.000
Social inclusion/Community integration	20.70	3.02	22.45	3.06	-6.22	0.000
Quality of life – overall scores	85.41	10.10	91.05	9.57	-10.25	0.000

M – arithmetic mean; SD – standard deviation

All spheres of the quality of life and the total score show statistically significant differences in the dimensions before and after education in the group of patients with irritable bowel syndrome.

The most significant differences was found in the total score and in Satisfaction. The least significant differences were observed in Competence/Productivity. The medium results were noted in the dimensions of Empowerment/Independence and Social inclusion/Community integration.

The findings indicate significantly enhanced quality of life of patients with irritable bowel syndrome six months after education.

The results are illustrated in Figure 1 and 2.

Table 2 describes the direction of changes in quality of life of patients with irritable bowel syndrome.

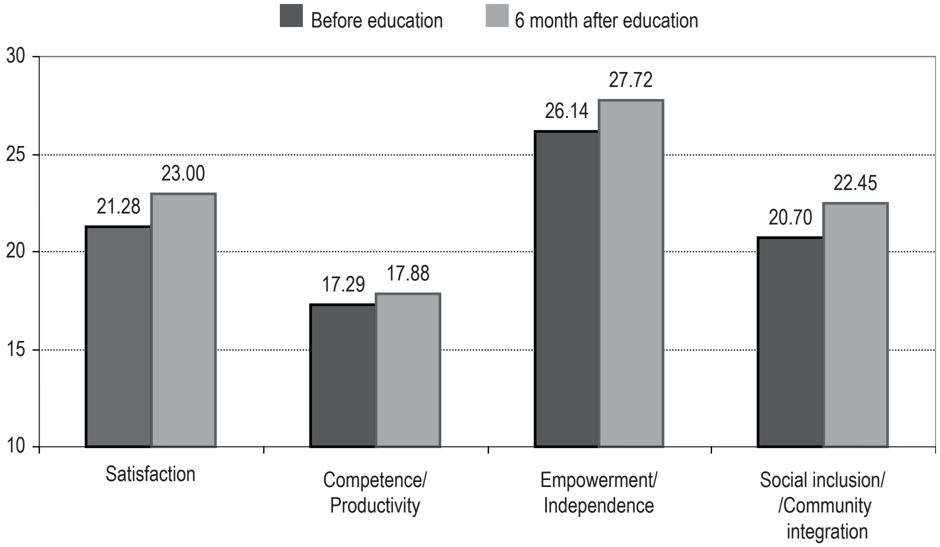

Figure 1. **Mean values in the individual spheres of quality of life in patients with irritable bowel syndrome before and after education**

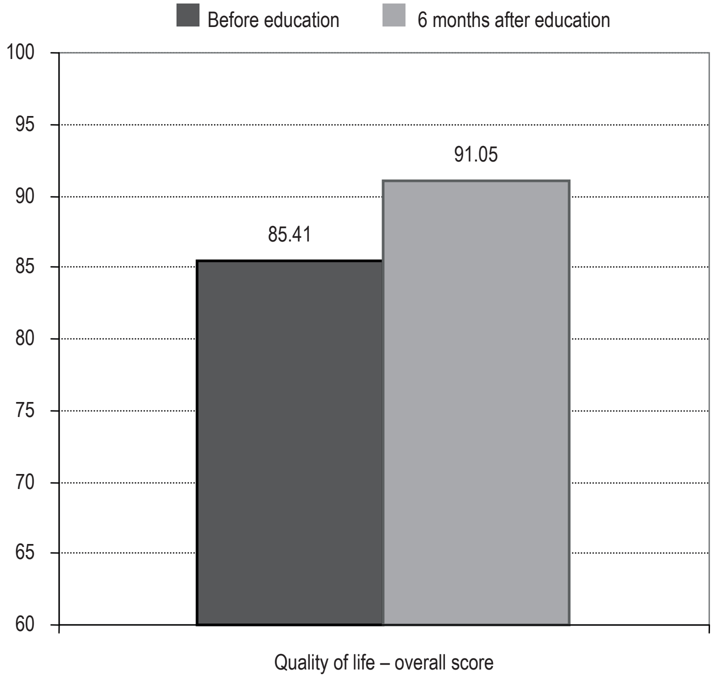

Figure 2. **Mean overall scores of quality of life in patients with irritable bowel syndrome before and 6 months after education**

Table 2. **Life quality differences between the measurement 1 and 2 in patients with irritable bowel syndrome**

Quality of life dimensions	Minimum	Maximum	M	SD
Satisfaction	-7	6	1.72	2.03
Competence/Productivity	-4	4	0.59	1.47
Empowerment/Independence	-5	15	1.58	2.59
Social inclusion/Community integration	-7	7	1.75	2.56
Quality of life – overall score	-12	20	5.64	5.01

The mean indices of the difference are positive, which means that respondents showed enhanced quality of life in all dimensions. On average, the highest values were found for the overall score whereas the least distinct increase was observed for Competence/Productivity. The means of the difference between the first and second measurement are low and vary by 1 or 2 measurement points.

Table 3. **Number (N) and percentages (%) of IBS patients with reduced, unaltered and enhanced quality of life**

Life quality dimensions	Statistics	Reduced quality of life	Unaltered quality of life	Enhanced quality of life
Satisfaction	N	8	5	70
	%	9.6	6.0	84.3
Competence/Productivity	N	9	38	36
	%	10.8	45.8	43.4
Empowerment/Independence	N	10	8	65
	%	12.0	9.6	78.3
Social inclusion/Community integration	N	6	21	56
	%	7.2	25.3	67.5
Quality of life – overall score	N	9	0	74
	%	10.8	0.0	89.2

As shown in Table 3 the quality of life increased in the Overall score (89.2%) and the domains of Satisfaction (84.3%), Empowerment/Independence (78.3%), Social inclusion / Community integration (67.5%) and Competence/Productivity (43.4%). Reduced quality of life was recorded in the Empowerment/Independence (12.0%), Competence/Productivity (10.8%), Overall score (10.8%), Satisfaction (9.6%) and Social inclusion/Community integration (7.2%). There were no changes in the quality of life in the areas of Competence/Productivity (45.8%, Social inclusion/Community integration (25.3%), Empowerment/Independence (9.6%) and Satisfaction (6%).

The above results are graphically presented in Figure 3.

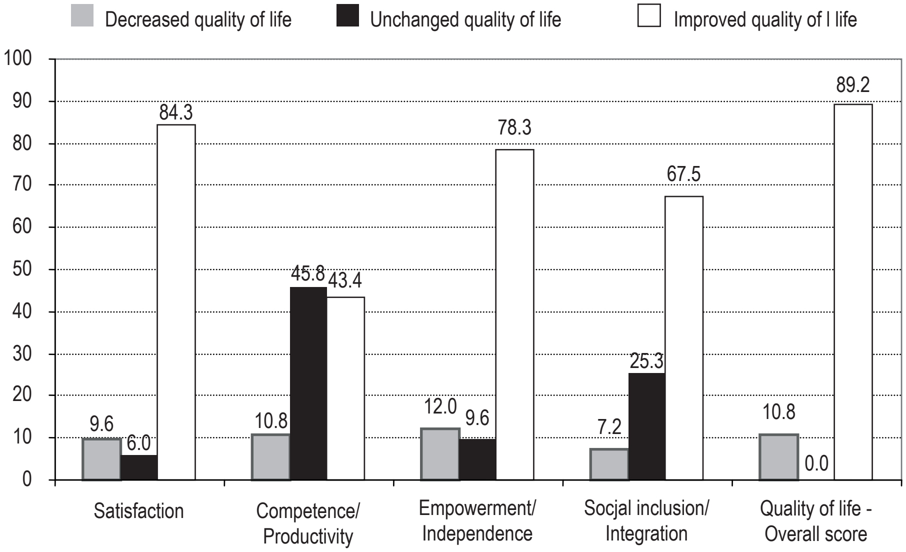

Figure 3. **Percentages (%) of IBS patients with decreased, unchanged or improved quality of life**

Table 4 shows the correlation between the quality of life and age before and after education in patients with IBS.

Table 4. **Pearson's r correlation coefficients between individual spheres of quality of life and age of patients with IBS**

Quality of life dimensions	Age
	Pearson's r
Before education	
Satisfaction	0.02
Competence/Productivity	-0.08
Empowerment/Independence	0.04
Social inclusion/Community integration	0.02
Quality of life – overall score	-0.02
6 months after education	
Satisfaction	0.00
Competence/Productivity	-0.08
Empowerment/Independence	-0.08
Social inclusion/Community integration	-0.09
Quality of life – overall score	-0.09

Analysis of the data presented in Table 4 reveals no significant correlations between age and individual spheres of life quality in patients with irritable bowel syndrome.

Discussion

Many authors emphasise that IBS substantially impairs the quality of life of patients due to pain and intestinal disorders. Park et al. [6] undertook the study to determine the quality of life of patients with IBS in Korea. Their study encompassed 664 patients diagnosed with IBS. They were demonstrated to have significantly worse quality of life in all the examined dimensions compared to the general population. The lowest quality of life was associated with health problems whereas less significant values were found in the sphere connected with sexual problems.

Similar conclusions were reported by Amouretti et al. [7]. According to their findings, the quality of life was significantly lower in IBS patients compared to the general population.

Since irritable bowel syndrome is caused by intestinal functional disorders and cannot be attributed to structural or biochemical abnormalities of the bowel, it seems reasonable that the management of patients with IBS should primarily aim at comforting patients and explaining them the causes of symptoms. Therefore, education of patients favourably affects the quality of life of patients, which was also evidenced by the results this study.

According to numerous studies, the symptoms typical of irritable bowel syndrome (abdominal pain, diarrhoea, constipation) can be triggered by anxiety or various mental disorders that substantially reduce the quality of life of the affected people [8].

Jerndal et al. [9] have observed an increased incidence of psychiatric diagnoses amongst patients with IBS. Moreover, clinical results improve when such factors as anxiety or depression are considered in the treatment of the condition.

Likewise, Modabbernia et al. [10] have demonstrated that psychiatric disorders, such as anxiety or depression, are commonly diagnosed in patients with IBS. Furthermore, there is a growing body of evidence that the specific gastric anxiety is an important factor affecting the development and severity of gastrointestinal symptoms and significantly impairing the quality of life of patients.

Hartono et al. [11] have attempted to determine whether there are differences in the incidence of anxiety and depression in patients with functional depression vs. patients with reflux disease and those with IBS. Higher scores of anxiety are found in IBS patients; however, there are no inter-group differences in the severity of depression.

The study by Jamali et al. [12] have focused on the relation between the quality of life versus depression, anxiety, severity of symptoms, educational and marital status, place of residence, age, and gender in the group of 250 Iranian patients aged 14–61 years diagnosed with IBS. The observations show that higher levels of anxiety are correlated with impaired quality of life of patients. In contrast, severity of symptoms, age, gender, place of residence, marital status and education do not affect the quality of life of the affected people.

In their study about determinants of IBS, Surdea-Blaga et al. [13] draw attention to the connection between psychosocial factors and functions of the gastrointestinal tract via the brain-gut axis. The authors notice that depression is the most common psychiatric diagnosis amongst patients with IBS.

Furthermore, in 1990–2005 Ladabaum et al. [14] have characterised 141,292 patients with IBS from North California to verify their therapeutic management. Chronic pain syndromes, anxiety and depression are found to be more common in patients with IBS as compared to controls.

Moreover, it should be mentioned that a relevant element affecting the multi--dimensional reduction in the quality of life amongst IBS patients is the presence of other somatic co-morbidities, both intestinal and extra-intestinal ones.

The above issue was undertaken by Riedl et al. [15]. The authors have pointed out that the presence of one or more co-morbidities is correlated with increased search for medical assistance, poorer prognosis, higher levels of anxiety and depression, which ultimately leads to reduced quality of life.

The recent study performed by Mathieu [16] have demonstrated that fibromyalgia, chronic fatigue syndrome and interstitial cystitis often accompany irritable bowel syndrome. The coexistence of these conditions is frequently accompanied by reduced quality of life and higher levels of mood disorders.

Butt et al. [17], who compared IBS with other chronic diseases, stress that coexistence of psychiatric disorders, such as anxiety disorders and depression, can deeply affect the course and expression of IBS symptoms, markedly impairing patients' quality of life.

According to Mönnikes [18], patients with IBS, both young and old, experience worse health-related quality of life (HRQOL) compared to the general population. The author emphasizes that IBS exerts larger negative effects on HRQOL than reflux disease, diabetes mellitus or end-stage renal failure.

The analysis of our findings showed that the quality of life of patients with irritable bowel syndrome significantly improved in all the spheres examined six months after education. The most statistically significant difference was observed in the total score and in Satisfaction. The least significant differences were found in Competence/Productivity. The medium values were noted for Empowerment/Independence and Social inclusion/Community integration.

Numerous studies reveal a poor store of knowledge and wrongful convictions about the disease in patients with IBS. et al. [19] have assessed the level of knowledge as well as anxiety and fears connected with the disease in 261 patients with IBS using the questionnaire. The majority of patients were convinced that the main factor responsible for the development of IBS was anxiety (80.5%), diet-related mistakes (75.1%) and depression (63.2%). A lower percentage of respondents (28.7%) decided that abdominal pain was the primary symptom of IBS; 40.6% claimed that the disease can be diagnosed with colonoscopy. One in seven patients believed that IBS transforms into neoplasm and 29.9% that IBS increased the risk of non-specific enteritis.

Providing the patients with appropriate, specialist information can correct their faulty beliefs about the disease, and thus significantly improve their quality of life.

The most recent studies confirm that education of patients with IBS significantly improves their quality of life. According to Håkanson et al. [20], IBS seriously impairs the everyday functioning of the affected people. Many patients realize that their knowledge about the disease is insufficient; therefore, they cannot cope with their ailments and their functioning and quality of life is significantly deteriorated.

Ostgaard et al. [21] presented their findings regarding education about the diet used by patients with IBS. Two years after the education, patients with IBS who received guidelines for the diet were observed to avoid the food products rich in fermentable constituents, such as oligosaccharides, disaccharides, monosaccharides or polyols (FODMAP), consume more products with probiotic supplements and choose foodstuffs that are essential for their health. Moreover, improved quality of life and reduced severity of symptoms were demonstrated.

Education, particularly the group one, enables meetings and conversations about similar problems as well as exchange of experiences in coping with the disease and thus has beneficial effects on the dimension of Social inclusion/Community integration, which was confirmed in the present study. Moreover, the knowledge and understanding of disease symptoms alleviate the complaints, which substantially improves Satisfaction with life and gives the meaning. Therefore, patients with IBS showed higher scores in Satisfaction six months after education.

The results reported by Ringström et al. [22] are interesting. They organized courses for patients with irritable bowel syndrome – IBS school. The study included 16 patients diagnosed with IBS. The educational program consisted of six weekly group meetings. The first meeting was conducted by the nurse and regarded the introduction to the education-related issues. The next sessions were conducted by the gastroenterologist, dietitian, physiotherapist and psychologist. After the training in the IBS school, the HRQOL improved significantly, both in the mental and physical dimension compared to baseline values.

Ringström et al. [23] also compared the effects of long-term interdisciplinary group training with short-term education delivered by nurses. The findings did not reveal differences between the two groups. The study shows that both long-term, multidisciplinary education and short-term education conducted by the nurse amongst patients with IBS are equally effective.

The abovementioned studies confirm that education of patients with IBS results in improved health-related quality of life and better coping with disease-related symptoms by increasing the knowledge related to the disease. The time devoted to patients by the medical personnel and education substantially improved the functioning of patients in the dimensions of Competence/Productivity and Empowerment/Independence favourably affecting their independence in using the services, self-control, privacy and sense of value of their efforts.

Dhaliwal and Hunt [24] have reviewed the literature to examine the relation between the primary care physician and the patient during the delivery of diagnosis. In the majority of cases, the knowledge obtained in the doctor's office fulfils the expectations of patients, particularly about the diagnosis, aetiology and diet advice. On the other hand, patients complain about the vagueness and brevity of information.

Halpert et al. [25] collected the data about the most common sources of information the patients with IBS use and those they consider the most reliable and desirable ones. The authors examined 1,242 patients with IBS and demonstrated that the most desirable and reliable source of information was "my doctor" (68%), followed by the Internet (62%) and brochures (45%). Moreover, patients reported they felt unsatisfied with the information about this disease.

Therefore, Ringström et al. [26] compared the organised group education conducted by qualified medical personnel with written information about IBS (guidelines). The education provided to patients by the qualified medical personnel in professional health care centres exerts substantially greater effects on patients' physical and mental state, significantly reducing anxiety and abdominal pain and widening their knowledge about the disease compared to patients provided with written information.

Our patients educated by the physician, nurse and those provided with written information had substantially higher scores in multi-dimensional aspects of the quality of life after education.

Six months after education patients with IBS showed a significantly higher quality of life in all aspects, i.e. Satisfaction, Competence/Productivity, Empowerment/Independence and Social inclusion/Community integration. The understanding of the essence of their disease contributed to a decrease in anxiety associated with the cancerous disease and worrying symptoms, which significantly reduced the incidence of complaints.

Conclusions

1. Quality of life of patients with irritable bowel syndrome is substantially reduced in all the examined spheres.
2. Education of patients with IBS resulted in enhanced quality of life and reduced disease-related complaints.
3. Education of patients with IBS plays a significant role in the entire therapeutic process.

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