Factors Related to Quality of Life among Patients with Inflammatory Bowel Disease*

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Abstract

Purpose: To explore factors related to quality of life (QOL) among patients with Inflammatory Bowel Diseases (IBD).

Design: Descriptive correlational study.

Methods: The sample was 115 out-patients with IBD in the Gastrointestinal Department and Functional Examinations Department, Bach Mai Hospital, Hanoi, Vietnam. Data were collected using patients' hospital records and 3 questionnaires: 1) the 36-Item Short Form Health Survey (SF-36) to assess QOL, 2) the Hopkins Symptom Checklist-25 (HSCL-25) to assess anxiety and depression, and 3) the Crohn's and Colitis Knowledge Score (CCKNOW) to assess IBD-related knowledge. Descriptive statistics and Spearman's rho were employed to analyze general characteristics and test the relationships among studies variables.

Main findings: The findings indicated that anxiety and depression were significantly negative related to QOL of patients with IBD (r_s = - .649, p < .05); while BMI and knowledge about disease were significantly positive related to QOL of patients with IBD (r_s = .345, r_s = .565, p < .05).

Conclusion and recommendations: The result revealed that patients with IBD had a below average level of QOL. Anxiety and depression were negatively related to QOL; while BMI and knowledge about disease were positively related to QOL of patients with IBD. Therefore, nurses should develop program to provide the knowledge about disease and decrease anxiety and depression of the patients with IBD in order to promote QOL.

Keyword: quality of life, anxiety and depression, knowledge, BMI, inflammatory bowel disease

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ปัจจัยที่มีความสัมพันธ์กับคุณภาพชีวิตของผู้ป่วยโรคลำไส้อักเสบ*

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บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาปัจจัยที่มีความสัมพันธ์กับคุณภาพชีวิตของผู้ป่วยโรคลำไส้อักเสบ (IBD)

รูปแบบการวิจัย: วิจัยเชิงสหสัมพันธ์

วิธีดำเนินการวิจัย: กลุ่มตัวอย่างเป็นผู้ป่วยโรคลำไส้อักเสบ จำนวน 115 คน ที่มารับการรักษาในหน่วยโรคระบบทางเดินอาหาร และหน่วยตรวจการทำงานของร่างกาย โรงพยาบาลแบ็คมาย ฮานอย ประเทศเวียดนาม เก็บรวบรวมข้อมูลจากแฟ้มประวัติ และการสัมภาษณ์โดยใช้แบบสอบถาม จำนวน 3 ชุด ได้แก่ 1) คุณภาพชีวิต ประเมินด้วย the 36-Item Short Form Health Survey (SF-36) 2) ความวิตกกังวลและภาวะซึมเศร้า ประเมินด้วย the Hopkins Symptom Checklist-25 (HSCL-25) และ 3) ความรู้เกี่ยวกับโรค ประเมินด้วย the Crohn's and Colitis Knowledge Score (CCKNOW) วิเคราะห์ข้อมูลด้วยสถิติเชิงบรรยาย Spearman's Rho

ผลการวิจัย: ความวิตกกังวลและภาวะซึมเศร้ามีความสัมพันธ์เชิงลบกับคุณภาพชีวิต (r_s = - .649, p < .05); ขณะที่ดัชนีมวลกาย (BMI) และความรู้เกี่ยวกับโรคมีความสัมพันธ์เชิงบวกกับคุณภาพชีวิตอย่างมีนัยสำคัญทางสถิติ (r_s = .345, r_s = .565, p < .05)

สรุปและข้อเสนอแนะ: ผลการศึกษาแสดงให้เห็นว่าผู้ป่วยโรคลำไส้อักเสบ มีคุณภาพชีวิตต่ำกว่าเกณฑ์ทั่วไป ความวิตกกังวลและภาวะซึมเศร้ามีความสัมพันธ์เชิงลบกับคุณภาพชีวิต ส่วนดัชนีมวลกายและความรู้เกี่ยวกับโรคมีความสัมพันธ์เชิงบวกกับคุณภาพชีวิต ดังนั้นพยาบาลควรพัฒนาโปรแกรมการให้ความรู้เกี่ยวกับโรครวมถึงการลดความวิตกกังวลและภาวะซึมเศร้า และส่งเสริมภาวะโภชนาการของผู้ป่วยโรคลำไส้อักเสบ เพื่อพัฒนาคุณภาพชีวิต

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Background and Significance

The inflammatory bowel disease (IBD), ulcerative colitis, and Crohn's disease; were idiopathic chronic inflammatory disorders of the gastrointestinal tract. It has been a global health problem with continually increasing incidence[1]. IBD was commonly found in Western countries with the prevalence more than 1 million people in the USA and 2.5 million people in Europe[2]. In Asia, although incidence and prevalence of IBD were considerably lower than those reported in Western populations, they have been rising in Asian population[3]. Recent study reported that in Asia the highest annual incidence of ulcerative colitis was 6.3 per 100,000 population and the highest annual incidence of Crohn's disease was 5.0 per 100,000 population[4]. Although the actual causes of IBD still remained unknown, many researchers reviewed that the individual's genetic susceptibility, tobacco smoking, antibiotics, non-steroidal anti-inflammatory drugs, carbohydrates/animal fat/protein and dietary fibers, and immune responses were all involved and functionally integrated in the pathogenesis of IBD[1,5].

In Vietnam, little was known about the prevalence of IBD. However, the ulcerative colitis and Crohn's disease were serious issues in gastrointestinal diseases[6]. The rising incidence and prevalence of chronic illness including IBD, was likely related to health risk behaviors such as physical inactivity, poor dietary habits, current smoking, and drinking[7]. Data from the Association of Digestive in Vietnam showed that Vietnamese were diagnosed with IBD about 20-25% and they had the history of eating unhealthy food, eating food contaminated with braided typhoid bacteria (bacillus dysentery, bacterial a-MIP)[8], or taking too many antibiotics[9].

IBD had an inflammatory process that impaired the function of gastrointestinal tract leading to abdominal pain, cramping, persistent diarrhea, weight loss, rectal bleeding, fatigue, anxiety, and depression. These symptoms could affect the quality of life of patients with IBD[5,10]. Goals of IBD treatment were to promote disease control and to improve patients' health-related quality of life (HRQOL). There were several models explaining the relationships among health variables and QOL. The HRQOL theory was proposed by Wilson and Cleary in 1995[11], which integrated biological, psychological, and individual's characteristic aspects of health status to describe QOL. Therefore, this study has used the HRQOL theory[11] to explain the phenomena of patients with IBD including the domain of symptoms, biological factors, functioning, health perception, and QOL.

There were many factors related to QOL in patients with IBD. Previous studies revealed that patients with IBD had depression, anxiety[10,12-15], or sleep disturbance[10]; resulting from their symptoms and medications. Consequently, these psychological factors could adversely affect both their ability to work as well as negatively affect their family life which impacted QOL[12,14]. Moreover, previous studies also reviewed that patients with IBD had lower body mass index (BMI) than the general population caused by malassimilation, low dietary intake, and high energy expenditure[16]. Low BMI was associated with surgery, poor health outcomes and lower QOL[16]. So, knowledge about nutrition and disease was vital for patients with IBD to improve quality of life by increasing coping strategies and reducing anxiety[13], medication adherence, prevent complications, and control of disease progression[14-15,17].

As mentioned above, there were several factors related to QOL of patients with IBD. However, there was little, if any, research related to QOL among patients with IBD in Vietnam. Therefore, the researcher was interested in studying the relationships between anxiety and depression, BMI, knowledge about disease, and QOL among patients with IBD in Vietnam. The study result could be used to provide knowledge and nursing care to decrease anxiety and depression and promote QOL of patients with IBD in Vietnam.

Objective

To study the relationships between anxiety and depression, BMI, knowledge about disease, and QOL among patients with IBD.

Hypotheses

1. Anxiety and depression were negatively related to QOL among patients with IBD.

2. BMI and knowledge about disease were positively related to QOL among patients with IBD.

Methodology

Population and Sample

The population was comprised of males and females patients with age of 18 years or older who were diagnosed with IBD; and received medical treatment or followed up at the Out-Patient Gastrointestinal Department, Bach Mai Hospital, Hanoi, Vietnam.

The sample was selected from the population and sample size was calculated using G*Power Program with $\alpha = .05$; power 1- $\beta = .9$; and medium effect size = R = .3[18]. The minimum number of participants needed for a correlational design with 3 independent variables was 109[19]. Additional 5% was added to cover attrition or missing value, therefore the total sample was 115 patients with IBD.

Research Instruments

Data were collected with research instruments as follows:

1. Demographic data and illness information including BMI were collected from patients' hospital record.

2. The 36-Item Short Form Health Survey (SF-36), the SF-36 was developed by the RAND Corporation to assess health-related quality of life (HRQOL)[20]. SF-36 was a widely used self-report questionnaire in patients with disease with high reliability (Cronbach's alpha = .9). There were 36 items divided into 8 parts: vitality, physical functioning, pain, general health perception, physical role, emotional role, social role, and mental health. The scores of each part were summed into total scores ranged from 0-100 and the higher scores indicated the better QOL. QOL level was defined according to the raw scores; 0-25 "poor QOL", 26-49 "QOL below average", 50-75 "QOL greater than average" and 76-100 "Good QOL".

3. The Hopkins Symptom Checklist-25 (HSCL-25)[21], was used to assess anxiety and depression symptoms. HSCL-25 included 25 items in two parts: Part I consisted of 10 items for measuring symptoms of anxiety, part II consisted of 15 items for measuring symptoms of depression. Each question was responded by a 1-4 scale such as "1 = not at all", "2 = a little", "3 = quite a lot" and "4 = extremely". The total scores of the 25 items ranged from 25 to 100 and the higher scores indicated higher symptoms. The scores of ≥ 44 indicated that the patients had both anxiety and depression[21].

4. The Crohn's and Colitis Knowledge Score (CCKNOW), was developed by Eaden, Abrams and Mayberry in 1999[22]. CCKNOW scale consisted of 30 items multiple-choice questionnaire to measure IBD-related knowledge. Scores ranged from 0 to 30, with higher scores indicating higher levels of IBD-related knowledge. The reliability with a Cronbach's alpha was .95[22].

All research instruments were translated from English to Vietnamese language by English experts using back translation technique. Content validity was reviewed and approved by five experts in gastrointestinal diseases. CVIs of all instruments were equal to .90. Cronbach's alpha coefficients were employed to test the instruments reliability among 30 and 115 patients with IBD; and revealed that Cronbach's alpha of CCKNOW = .73 and .89, HSCL-25 = .91 and .93, and SF-36 = .92 and .94.

Protection of Human Subjects

The research proposal was ethical approved from the IRB of Faculty of Nursing, Mahidol University, Thailand (COA No.IRB-NS2016/355.0205) and the IRB of Vietnam National University, Vietnam. Data were collected following the standard process set by the IRB. Ethical issues regarding voluntary

participation with informed consent, anonymity, and confidentiality were strictly concerned.

Data Collection

1. After getting permission to collect data from the director of Bach Mai hospital, the researcher met the head of Gastrointestinal Department and Functional Examination Department, and the head nurse to inform them of the research project and data collection process.

2. The researcher self-introduced and made a relationship with the patients, then informed them about the objectives of study, read the participation information sheet, described data collection procedure and invited them to participate in the study. After the patients agreed to join the study, they were invited to sign the consent form.

3. Then, the researcher collected data from patients' hospital records and interviewed with the questionnaires. The total time for data collection was approximately 45-60 minutes per subject.

Data Analysis

Data were analyzed by computer statistical package with the significant level of .05 as the following details:

1. Descriptive statistics were used to describe demographic data and illness information including frequency, range, percentage, mean, and standard deviation.

2. All studied variables were tested for normal distribution to meet assumption of the Pearson's Product Moment Correlation. Only QOL was normal distributed, while the other variables were not normal distributed; therefore, the Spearman's rho was employed to test relationships among studied variables.

Findings

The findings illustrated that 61.74% of subjects were females; the mean age was 46.5 years (SD = 13.5) with the range of 18-76 years; 92.17% were married; 46.09% finished secondary school and 19.13% finished bachelor degree; 27.83% were farmers and 37.39% had other jobs; 65.22% lived in rural area; 84.35% were self-paid for medical treatment; 62.61% had IBD for 1 to 5 years and 18.26% had IBD more than 10 years, with the average of disease duration was 3 years (SD = 4.2).

Anxiety and depression, BMI, knowledge about disease, and QOL in patients with IBD

The result showed that 97.39% of patients experienced anxiety and depression in some degrees: 48.69% had level of "quite a bit"; 45.22% had level of "a little"; and 3.48% had level of "extremely". The total mean score of anxiety and depression was 64.76 (SD = 10.03); with the mean of anxiety score was 28.44 (SD = 5.26); and the mean of depression score was 36.31 (SD = 5.40).

The mean of BMI was 17.89 kg/m^2 (SD = 2.02); 60.87% of the subjects were underweight (BMI < 18.5 kg/m^2); whereas 3.48% of them were overweight (BMI = 23.0-24.9 kg/m^2). No subjects who had BMI ≥ 25 kg/m^2.

The knowledge about disease of patients with IBD ranged from 0 to 18 with the mean of 7.62 (SD = 5.03); 56.52% had poor knowledge (CCPKNOW 0–7), 9.56% had adequate knowledge (CCPKNOW 8–10), 17.39% had good knowledge (CCPKNOW 11–13), and 16.52% had very good knowledge (CCPKNOW ≥ 14).

Regarding quality of life (QOL) of patients with IBD, the average score was 29.54 (SD = 13.91) which indicated low QOL; 51.30% of subjects had below average score of QOL, 41.74% had poor QOL, 6.09% had average score of QOL, and only 0.87% had good/well QOL.

The relationships between anxiety and depression, BMI, knowledge about disease, and QOL among patients with IBD

The results supported the proposed hypotheses that anxiety and depression were negatively related to QOL among patients with IBD (r_s = - .649, p < .05); while BMI and knowledge about disease were positively related to QOL among patients with IBD (r_s = .565, r_s = .345, p < .05. (Table 1)

Table 1: The relationships between anxiety and depression, BMI, knowledge about disease, and QOL among patients with IBD

Variables	1	2	3	4
1. Anxiety and depression	1.00			
2. BMI	- .056	1.00		
3. Knowledge about disease	- .365*	.314*	1.00	
4. QOL	- .649*	.345*	.565*	1.00

* $p < .05$

Discussion

Overall QOL of patients with IBD in this study was considered as low with the average score was 29.54 (SD = 13.91). This result was lower than the study of Pletikosić Tončić and Tkalčić (Mean = 72.0, SD = 17.0)[23]. A possible explanation was that patients with IBD suffered from the disease-related symptoms such as abdominal pain, fatigue, weight loss, and loss of appetite. Such troubles negatively impacted their level of HRQOL.

Hypothesis 1: Anxiety and depression were negatively related to QOL among patients with IBD.

As expected, the findings supported hypothesis 1 that anxiety and depression of the patients with IBD in this study were negatively related to QOL; which meant that the higher the anxiety and depression, the lower QOL of the patients with IBD. The results of this study indicated that 97.39% of patients experienced anxiety and depression in some degrees with 48.69% had level of "quite a bit"; and 3.48% had level of "extremely". On the other hand, QOL of patients with IBD in this study was considered as low; which was congruent with the hypothesis; and similar to previous studies that anxiety and depression were related to QOL among patients with IBD[10,23-25]. It might explain that patients with IBD were deteriorated with chronic symptoms and abdominal pain which might cause anxiety and depression resulted in low QOL. Thus, health care personal should attempt to reduce anxiety and depression symptoms among patients with IBD[23].

Hypothesis 2: BMI and knowledge about disease were positively related to QOL among patients with IBD.

The findings supported hypothesis 2 that there was a significant correlation between BMI and QOL of the patients with IBD ($p < .05$), which was similar to the research of Yoo, Cho and Cha[24]. In addition, both of the findings from Dong, et al.[16] and Addolorato, et al.[25] showed that decreased BMI was associated with negative health outcomes in patients with ulcerative colitis.

An important finding of this study was patients with IBD who had more knowledge about disease, also had better quality of life ($p < .05$). The knowledge about disease of Vietnamese patients in this study with CCKNOW score 7.62 was lower than the result of Yoo, Cho and Cha[24] with 10.0 for ulcerative colitis and 8.8 for Crohn's disease. However, this result was higher than the results from Sri-Lanka which found the score of 8.0 for Crohn's disease and 6.6 for ulcerative colitis[25]. On the other hand, there was only one significant correlation between the CCKNOW sub-domains and HRQOL, which was diet knowledge[25]. Moreover, the result of Yoo, Cho and Cha[24] showed that information about medication and daily life were deemed significant in patients with IBD. According to previous studies, suitable education could help patients with IBD to apply adaptive coping strategies[26] and to improve patients' disease treatment, reduce anxiety, and improve QOL as well[27]. Therefore, the development of a systematic education plan could help the patients with IBD manage and cope with their disease

throughout their longevity. Furthermore, health care team should assess the information needs of patients with specific groups in order to increase their knowledge and understanding the overall effects of disease on QOL.

Conclusion and Implication for Practice and Further Study

In conclusion, patients' BMI, anxiety and depression, and knowledge about disease were related to their QOL. Therefore, nurses should provide information about IBD and also reduce anxiety and depression to improve the QOL among patients with IBD as well as advise self-management of their disease with diet, adherence medication, and treatment.

The programs for reducing anxiety and depression such as music therapy, meditation, or joining the IBD club should be performed and tested for its effectiveness to this group of patients.

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