



Received on 13 July 2019; received in revised form, 02 November 2019; accepted, 29 February 2020; published 01 June 2020

STUDY ON QUALITY OF LIFE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES (IBD): IMPACT OF SOCIODEMOGRAPHIC FACTORS

G. Sathya Prabha ^{* 1}, N. Srinivasan ², S. Aravindh ³ and K. T. Manisenthil Kumar ⁴

Department of Pharmacy Practice ¹, KMCH College of Pharmacy [Affiliated to The Tamil Nadu Dr. M. G. R. Medical University], Coimbatore - 641048, Tamil Nadu, India.

Department of Pharmacognosy ², Annamalai University, Chidambaram - 608002, Tamil Nadu, India.

Department of Gastroenterology ³, Kovai Medical, Center and Hospital, Coimbatore - 641014, Tamil Nadu, India.

Administrator, Pharmacy, Quality Control & Academic ⁴, Royal Care Super Specialty Hospital, Coimbatore - 641018, Tamil Nadu, India.

Keywords:

Inflammatory Bowel Diseases IBD, Quality of life (QOL), Crohn's disease (CD), Ulcerative colitis (UC), Sociodemographic factors

Correspondence to Author:

G. Sathya Prabha

Assistant Professor,
Department of Pharmacy Practice,
KMCH College of Pharmacy
[Affiliated to the Tamil Nadu Dr. M. G. R. Medical University] Coimbatore - 641048, Tamil Nadu, India.

E-mail: thivishaprabha@gmail.com

ABSTRACT: Introduction: an Inflammatory bowel disease is a group of chronic intestinal diseases characterized by inflammation of the bowel, the large or small intestine. The common types of inflammatory bowel disease (IBD) are ulcerative colitis UC and Cohn's disease CD. Among the Asian countries, India is subjected to have one of the highest disease burdens of IBD across the globe. The number of IBD cases exceeds 12 lakhs annually, and an estimated 50 lakhs people are affected with IBD around the world stated by Indian statistics. **Objective:** To assess the quality of life in patients with inflammatory bowel disease and to associate with the sociodemographic characteristics of the patients. **Materials and Methods:** This was a prospective observational study carried out with 74 patients, and follow-up was conducted for 6 months at the outpatient clinic of Gastroenterology. A specially designed data collection form was utilized to collect patient's demographic details and validated questionnaires to measure the quality of life. **Results:** Among 74 patients evaluated, there were an equal number of males 50% and females 50% with 36 UC and 38 CD patients. Statistical analysis of SPSS 16 used for comparison on quality of life before and after intervention in baseline and post-visit, the component showed the significant difference in systemic, social, and bowel domain with $p < 0.05$ but no significance was observed in the emotional domain. **Conclusion:** There was no statistical significance in the QoL of patients with IBD when compared with sociodemographic variables.

INTRODUCTION: Inflammatory bowel disease (IBD) is a condition (Crohn's Disease CD and Ulcerative Colitis UC) that are characterized by chronic inflammation of the gastrointestinal (GI) tract, where the exact cause is unknown, but it is known to involve an interaction between genes, the immune system, and environmental factors.

Prolonged inflammation results in damage to the GI tract ¹. The number of IBD cases exceeds 12 lakhs annually and an estimated 50 lakhs people were affected with IBD around the world stated by Indian statistics. However, people don't have much awareness of the seriousness and symptoms of this disease in the country as reported by the Indian Medical Association on July 2017 ⁴.

India is evaluated with the highest burden of IBD across the globe, and all the tertiary referral centers in India are diagnosing Inflammatory Bowel Disease (IBD) at an increased rate compared to past years recently.

<p>QUICK RESPONSE CODE</p> 	<p>DOI: 10.13040/IJPSR.0975-8232.11(6).2823-27</p> <hr/> <p>The article can be accessed online on www.ijpsr.com</p> <hr/> <p>DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.11(6).2823-27</p>
---	--

Also, the burden of UC is believed to be twice that of CD in Asia compared to the western countries. In a comparison of incidence and prevalence rates of the disease, India ranks highest among the Asian countries across the world^{4, 11}. Previous studies have shown that patients were less anxious, more compliance and more satisfied with their treatment and have a reduced number of physician visits and lower patient costs on receiving information related to their disease. Patient education about IBD complication, prevention, management may potentially improve the health outcomes for the patients, but poorly controlled disease increases the risk for serious and often irreversible negative outcomes, including death⁹.

HRQOL is a tool that provides quantitative assessments of health perception and function in the physical, social, and emotional domains of the patients³. The concept in Quality of Life (QoL) refers to how well people perform their functions in daily life and the personal assessment of their well-being. The forms of inflammatory bowel disease have important consequences on the QoL of the carriers^{2, 12}. IBD patients have impaired Health-Related Quality of Life (HRQOL) with physical, social and emotional dysfunction^{3, 10}. The impact on daily life of patients affect chronic nature of disease, frequent recurrence of symptoms, extraintestinal manifestations, the effect of medical and surgical treatments and their side effects, stress of developing cancer and needing surgery cause significant attrition in quality of life (QOL) although the impact of sociodemographic factors should be considered^{1, 13}. The disease affects people at different sociodemographic levels a such as age, gender, native and origin where the risk factor of the disease is not clear but maybe because of natural history of disease such as age, gender, race, ethnicity, genetic susceptibility, family history, smoking habits, appendectomy, eating habits, psychosocial factors and others¹⁴. Measuring and identifying the HRQOL variables that were affecting is crucial for the professionals who are guiding towards interventional strategies that reconcile to improve HRQOL^{12, 13}.

MATERIALS AND METHODS: This study was a prospective observational study conducted on 74 IBD patients in the Department of Gastroenterology, Kovai Medical Centre and

Hospital (KMCH) at Coimbatore from the period of February 2018 to July 2018 by convenient sampling method. The inclusion criteria of the study enrolled the patient from 18 years and above diagnosed with moderate to severe IBD. Excluded the patients diagnosed with Intermediate colitis, Colorectal cancer, a patient undergoing alternative therapy, a Patient who underwent surgery for IBD, Pregnant women's, Patients refuse to participate in the study, disabled patient and with poor cognitive impairment. The study was approved by the Institutional Human Ethics Committee, Kovai Medical Center and Hospital, (Proposal no: EC/AP/591/02/2018). Informed written consent was obtained from the patients before enrolment whose fulfilling the inclusion and exclusion criteria taken in this study. This is an observational study done to assess the quality of life in IBD and to associate the results with socio-demographic factors of the patients.

A specially designed data collection form was utilized to collect patient's demographic details (age, gender, nationality, marital status, education level, smoking habits, *etc.*), past and present medical conditions, psychological factors, clinical features, intestinal manifestation and the other details required for the study. Patients' QOL data were collected through structured interviews. The modified and validated Short Form Inflammatory Bowel Disease Questionnaire SIBDQ uses 10 questions derived from the original 32 items of Inflammatory Bowel Disease Questionnaire to subjectively assess the HRQoL in patients with IBD. The modified SIBDQ examines four domains: bowel symptoms, systemic symptoms, emotional function, and social function are presented in the form of multiple choices with seven alternatives. Each question is scored from 0 to 7 with a total score ranging from 10 (worst health) to 70 (best health). The enrolled patients were recorded with patient data collection form and modified SIBDQ questionnaire at the baseline of the study, then the patients were subjected to education using patient information leaflets. After 3 months in revisit, patients were measured for modified SIBDQ then interpreted using statistical analysis. Statistical analysis was done using SPSS (statistical package for the social science) version 16. Socio-demographic characteristics were analyzed using descriptive statistics. The mean values of the scores

before and after intervention and QoL were calculated by paired t-test. The mean scores of each domain of modified SIBDQ with socio-demographic were assessed by ANOVA.

RESULTS: A total of 74 patients were enrolled in the study with the mean age of the study participant of 1.7027 ± 0.73521 . In Gender wise study, there were equal numbers of males and females of 37 patients. Among 37 male patients, 21(28.38%) with UC and 16 (21.62%) suffering from CD and in the females were 15(20.27%) UC and 22 (29.73%) CD respectively. In this study, there were only 12(16.2%) patients having appendicitis and were equally with UC and CD. Patients on admission presented with the clinical features of abdominal pain (63.2%), loose stools (55.8%) and blood in stools (34.9%), weight loss (25.3%) and others (27.7%) respectively. On the assessment of first-degree relative's 29% of patients with the history of IBD diagnosis in which relatives of CD patients was more than that of UC⁵. Based on the lifestyle, the patient with the intake of coffee (68.9%) and nonvegetarian food (83.8%) was more than tea (32.1%) and vegetarian foods (16.2%).

On considering alcohol consumption 35.4% with intake and smoking habits of 36.9% than non-alcoholic 64.6% and non-smokers 73.1% in this study. The severity of disease was classified as mild, moderate and severe in UC and CD in which it was observed moderate predominant among the patients **Fig. 3**.

Localization of UC with proctitis 16.2% (16.50 ± 1.50), Left colon 8.1% (17.83 ± 1.32), pancolitis 21.6% (16.00 ± 1.46) and in CD patients with ileitis 16.2% (15.91 ± 1.97), Ileocolon 27.2% (15.75 ± 2.48) and in colon with 10.8% (16.25 ± 3.61) in **Fig. 4**. IBD patients experience the extraintestinal manifestation in 25 patients, commonly like arthralgia (55.4%), backache (37.2%), skin lesions (9.4%), hepatobiliary problems (16.8%) and others (7.3%). Duration of IBD in one to six months of 43.2% with a mean score of 16.25 ± 1.70 , seven to twelve months 2.7% of 14.50 ± 2.12 and more than 1 year with 36.5% of 16.25 ± 2.58 . Patient admission to hospital with IBD related issues was less with 8.12% with the mean score of 16.50 ± 2.07 presented in **Table 1**.

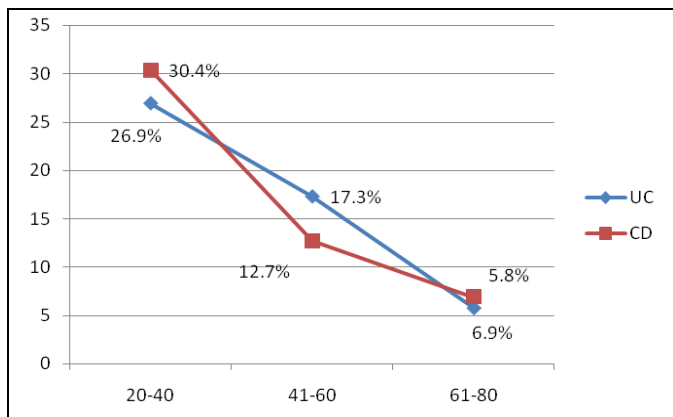


FIG 1: AGE DISTRIBUTION IN IBD

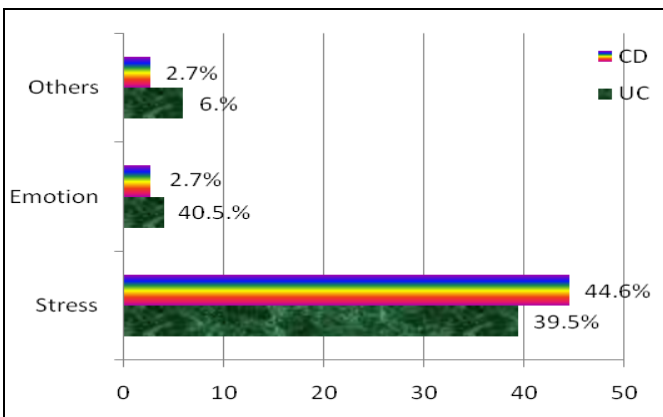


FIG 2: PSYCHOLOGICAL FACTORS IN IBD

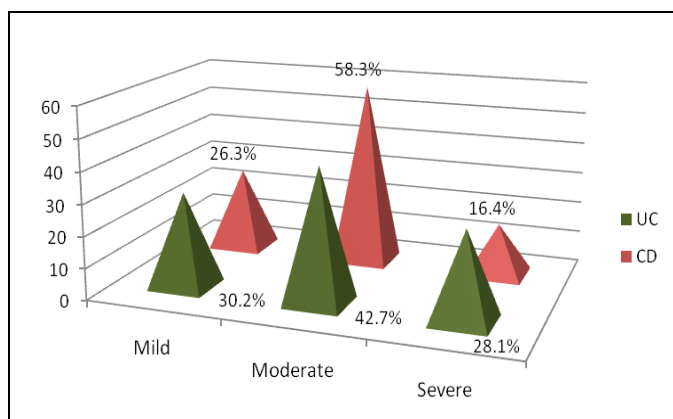


FIG 3: DISEASE SEVERITY IN IBD

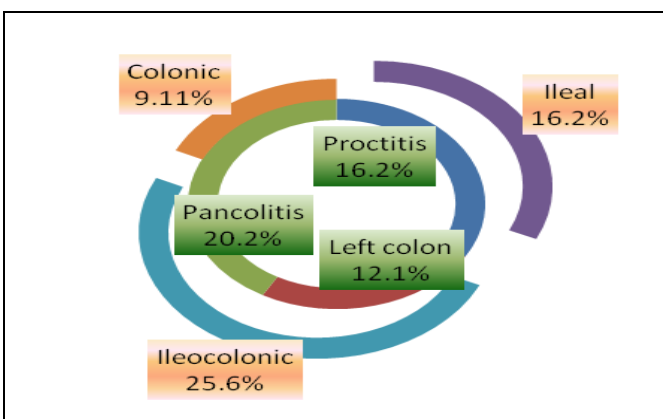


FIG 4: LOCALISATION OF IBD

TABLE 1: COMPARISON OF SOCIODEMOGRAPHIC FACTORS WITH QOL DOMAINS

Variables	N = 74	Systemic		Social		Bowel		Emotional		
		Mean ± SD	p- value	Mean ± SD	p- value	Mean ± SD	p- value	Mean ± SD	p- value	
Gender	Male	37	12.32 ± 0.93		12.13 ± 1.08		18.56 ± 1.59		15.27 ± 1.10	0.52
	Female	37	12.40 ± 0.68	0.48	12.24 ± 0.59	0.59	18.43 ± 0.95	0.65	15.10 ± 1.21	
Age	20-40	34	12.32 ± .878		12.00 ± 0.49		18.32 ± 1.47		15.38 ± 1.10	0.35
	41-60	28	12.28 ± 0.76	0.74	12.35 ± 1.19	0.22	18.64 ± 1.22	0.05	15.07 ± 1.08	
	61-80	12	12.5 ± 0.79		12.33 ± 0.77		18.66 ± 0.98		14.91 ± 1.09	
Education al status	primary	13	12.21 ± 0.85		11.94 ± 1.17		18.43 ± 1.38		15.42 ± 0.90	0.66
	Secondary	27	12.48 ± 0.65		12.36 ± 0.70		18.36 ± 1.25		15.04 ± 1.09	
	higher	21	12.23 ± 0.99	0.70	12.19 ± 0.81	0.65	18.52 ± 1.03	0.76	15.37 ± 1.06	
Past history	DM	11	12.01 ± 0.44		12.00 ± 0.00		18.90 ± 0.83		15.36 ± 1.12	0.72
	HT	3	12.33 ± 0.57		13.00 ± 1.00		18.66 ± 0.57		15.66 ± 0.57	
	Intestinal disorder	1	12.00 ± 0.02		12.00 ± 0.04		12.00 ± 0.02		12.00 ± 0.12	
				0.63		0.49		0.56		
Surgery	IBD	9	12.44 ± 0.52		12.44 ± 0.88		17.55 ± 1.74		15.22 ± 0.97	
	Other	11	12.18 ± 1.40		12.00 ± 0.89		17.90 ± 1.75		14.72 ± 1.79	
	Yes	26	12.42 ± 0.71		12.00 ± 0.42		18.41 ± 1.24		15.25 ± 1.05	
Appendix x	No	48	12.37 ± 0.83	0.51	12.12 ± 0.95	0.39	18.45 ± 1.41	0.71	15.33 ± 1.05	0.12
	Yes	12	12.16 ± 0.71		12.00 ± 0.42		18.41 ± 1.24		15.25 ± 1.05	
Life style	No	62	12.37 ± 0.83	0.04	12.22 ± 0.93	0.41	18.51 ± 1.32	0.81	15.17 ± 1.10	0.83
	Coffee	51	12.21 ± 0.85		12.09 ± 0.92		18.39 ± 1.45		15.13 ± 0.88	
Food habits	Tea	22	12.63 ± 0.65	0.11	12.40 ± 0.73	0.37	18.77 ± 0.86	0.49	15.13 ± 0.88	0.94
	veg	12	12.50 ± 0.52	0.45	12.58 ± 0.9	0.08	18.50 ± 1.24	0.00	14.91 ± 1.08	
Family history	Non-veg	62	12.30 ± 0.86		12.11 ± 0.85		18.50 ± 1.32		15.24 ± 1.09	0.34
	First relative	22	12.09 ± 0.61	0.18	12.04 ± 1.09	0.08	18.50 ± 1.40	0.93	15.45 ± 0.96	0.02
Psycho factors	Second relative	1	13.00 ± 0.02							
	Stress	69	12.31 ± 0.83							
	Emotion Others	5	12.60 ± 0.54	0.46	12.20 ± 0.90	0.61	18.55 ± 1.21	0.21	15.15 ± 1.10	0.03
Duration of IBD	1-6 months	32	12.37 ± 0.70							
	7-12 months	2	12.50 ± 0.70	0.84	12.37 ± 0.70	0.09	18.34 ± 0.60	0.87	13.45 ± 1.01	0.23
	>1 yr	27	12.37 ± 0.62							
	nil	13	12.15 ± 0.81							

SD: Standard Deviation P value < 0.05

Comparison of Modified SIBDQ Components:

The questionnaire was prepared and validated with the patients and other healthcare professionals which consisting of a total of 10 questions that examine four domains: bowel symptoms, systemic, emotional, and social functions.

The comparison of the quality of life of patients was done before and after the intervention. Each component showed the difference in the mean value. The components got a significant difference in the systemic domain, social domain, and in bowel domain. $p < 0.05$ were shown in **Table 2**.

TABLE 2: COMPARISON OF SIBDQ COMPONENTS

S. no.	Components	Before Intervention	After Intervention	p-value
		Mean ± SD	Mean ± SD	
1	Systemic	9.59±2.00	12.33±0.815	0.00
2	Social	9.35±2.34	12.18±0.87	0.00
3	Bowel	14.39±3.05	18.50±1.30	0.00
4	Emotional	14.48±3.05	15.20±1.09	0.06

DISCUSSION: IBD is a multifactorial disease that is caused by the interaction of environmental, immunogenetics, and lifestyle. The impact of IBD on patients QOL is influenced by the early age of onset and lack of definite cure. In this study population majority of patients in the age group of 20 to 40 years, and this was similar to the Olmsted

County study where the median age of diagnosis for Ulcerative colitis and Crohn's disease was 34.9 years and 29.5 years respectively. **Fig. 1** presents that appendectomy seems positively associated with the development of CD, so appendectomy should be avoided in order to avoid the prognosis of IBD⁷. First-degree relative patients have 3 to 20

fold greater likelihood of developing the disease in the general population, and the study performed shown significance range ⁵. **Fig. 3** represents the psychological factors, stress due to IBD was more than emotion and reported that the worries and stress might be regarded as a normal feature of life ⁶. Employed patients there was a higher mean score of 15.76 ± 0.0123 than unemployed 14.76 ± 1.1232 and students 14.23 ± 1.56 this coincides with the study stating the patients with higher education shows good knowledge ³.

The importance of HRQOL in chronic diseases has been increasingly reliable because of its implication on patients' psychological well being and social adjustment to the illness. Measuring HRQoL provides important data to quantify the impact of the disease on the daily life of patients ⁴. In a recent study, it was reported that relapse, long-duration (>5 yrs), low education and young age at disease onset may increase the risk of patients with decreased HRQOL ³.

CONCLUSION: IBD patients react to unpredictable conditions, so chronic, life-long conditions can be treated but not cured. The pharmacist plays a key role in educating the patient. It was observed that no association between different domains of modified SIBDQ with demographic characters. As education regarding IBD is a crucial step that requires the health care team to provide better patient care. Research studies continue to show a rise in the number of people living with inflammatory bowel disease (IBD), reflecting a need for more research to find a cure. IBD can significantly affect a patient's quality of life and may have a high financial burden.

ACKNOWLEDGEMENT: Nil

CONFLICTS OF INTEREST: This research has no conflict of interest to declare.

REFERENCES:

1. Habibi F, Habibi ME, Gharavinia A, Mahdavi SB, Akbarpour MJ and Baghaei A: Quality of life in inflammatory bowel disease patients: A cross-sectional study. *Journal of Res Medical Sciences* 2017; 22: 104.
2. Vivan TK, Santos B and Marques Dos Santos CH: Quality of life of patients with Inflammatory Bowel Disease. *Journal of Coloproctology* 2017; 37: 279-84.
3. Mahalli AAE and Alharthi HMA: Assessment of health-related quality of life of patients with inflammatory bowel diseases in Eastern Province, Saudi Arabia. *Journal of Infection and Public Health* 2017; 10: 93-101.
4. Sathya Prabha G, Srinivasan N, Aravindh S and Manisenthil Kumar KT: A clinical study on knowledge assessment in IBD: A Glimpse in Tertiary care Hospital at Coimbatore, South India. *Asian Journal of Pharmacy and Pharmacology* 2019; 464-69.
5. Moller FT, Andersen V, Wohlfahrt J and Jess T: Familial risk of inflammatory bowel disease: a population-based cohort study 1977-2011. *American Journal of Gastroenterology* 2015; 110(4): 564-71.
6. Selinger CP, Lal S, Eaden J, Jones DB, Katelaris P and Chapman G: Better disease specific patient knowledge is associated with greater anxiety in inflammatory bowel disease. *Journal of Crohn's and Colitis* 2013; 7: 214-18.
7. Caetano FLAC and Elisabete RBL: Appendectomy and Crohn's Disease: *Journal of Coloproctology* 2018; 104.
8. Sgambato D, Miranda A, Ranaldo R, Federico A and Romano M: The Role of Stress in Inflammatory Bowel Diseases. *Current Pharm Design* 2017; 23(27): 3997-02.
9. Abegunde AT, Muhammad BH, Bhatti O and Ali T: Environmental risk factors for inflammatory bowel diseases: evidence based literature review. *World Journal of Gastroenterology* 2016; 22: 6296-17.
10. Ananthakrishnan. A.N. Epidemiology and risk factors for IBD: *Nat Rev Gastroenterol & Hepat* 2015; 2: 205-17.
11. Kedia S and Ahuja V: Epidemiology of inflammatory bowel disease in india: the great shift east. *Inflammatory Intestinal Disease* 2017; 2: 102-15.
12. Chouliaras G, Margoni D, Dimakou K, Fessatou S, Panayiotou I and Roma-Giannikou E: Disease impact on the quality of life of children with inflammatory bowel disease. *World J of Gastroenterol* 2017; 23(6): 1067-75.
13. Moradkhani A, Beckman LJ and Tabibian JH: Health-related quality of life in inflammatory bowel disease: Psychosocial, clinical, socioeconomic, and demographic predictors. *Journal of Crohn's and Colitis* 2013; 7: 467-73.
14. Delmondes LM, Nunes MO, Azevedo AR, Oliveira MM, Coelho LE and Torres-Neto JD: Clinical and Sociodemographic Aspects of Inflammatory Bowel Disease Patients. *Gastroenterol Res* 2015; 8(3-4): 207-15.

How to cite this article:

Prabha GS, Srinivasan N, Aravindh S and Kumar MKT: Study on quality of life in patients with inflammatory bowel diseases (IBD): impact of sociodemographic factors. *Int J Pharm Sci & Res* 2020; 11(6): 2823-27. doi: 10.13040/IJPSR.0975-8232.11(6).2823-27.

All © 2013 are reserved by the International Journal of Pharmaceutical Sciences and Research. This Journal licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

This article can be downloaded to **Android OS** based mobile. Scan QR Code using Code/Bar Scanner from your mobile. (Scanners are available on Google Playstore)