ORIGINAL ARTICLE

Sociodemographic characteristics of Inflammatory Bowel Disease: An observational study at multispeciality hospital

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Abstract

Background: The chronic inflammation in the gastrointestinal tract is characterized by the non-infectious conditions of inflammatory bowel disease (IBD) characterised as Crohn's disease and ulcerative colitis caused by the abnormal immune response. Indian statistical report states that world has exceeded 12 lakhs cases annually due to poor awareness about the disease seriousness. **Purpose:** This study aimed to determine the outcomes in sociodemographic characteristics of IBD at a multi-specialty hospital in South India. **Materials and Methods:** This was a hospital-based cross-sectional observational study conducted among 69 individuals attending the gastroenterology department with IBD from November 2018 to February 2020 by a convenient sampling method. The questionnaire was used to analyze the sociodemographic variables by the statistical package of SPSS 20 version. **Results:** The study explored from 69 patients was diagnosed with a mean age of 36.75 ± 0.827 and ratio of females to male (0.8:0.6), urban patients with 27.5 ± 4.157, in graduates of 15 ± 3.045, 4.3% of positive family history, smoking 6.5 ± 1.953, alcoholism 7 ± 2.034, business as an occupation in 9.5 ± 2.397 and food habits with 21 ± 3.622. **Conclusion:** Further suggest for more studies in IBD to have a better understanding of sociodemographic factors. Gender was significant, age of the patient, family history, and smoking habits with less than $*p < 0.05$ but remaining variables were found to be controversial from other studies. This information may be used to establish various strategic measures to prevent and control inflammatory disease. The current study will be useful for policymakers and healthcare professionals to frame the protocols for future perspectives.

Key words: Family history and educational status, gender, inflammatory bowel disease, sociodemographic factors

INTRODUCTION

Non-infectious condition of inflammatory bowel disease (IBD) is a chronic life-threatening disease characterized by inflammation in the gastrointestinal tract which is composed of ulcerative colitis (UC), Crohn's disease (CD), and intermediate colitis. Crohn's disease primarily affects from mouth to anus in any segment of the GI tract and UC affects only the limited area of colonic mucosa. Economic and health burdens inflict IBD worldwide in all communities with a substantial decrease in quality of life in upcoming days. Epidemiological studies conducted by different countries have recognized the various trends of predicting the harm following their prevalence, severity, and utilization in healthcare resources of IBD.[1]

Environmental factors (e.g., diet, smoking, and physiological stress), intestinal microbiota, and numerous genetic susceptibility were continuously analyzed for the association

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of anti-inflammatory and pro-inflammatory responses. In all aspects, the disease may adversely affect the individual life. When the disease is poorly managed, IBD patients are at serious risk of complications. IBD occurs in both the genders of males and females as a lifelong disease in their early life. Further, in the extent of incidence, the gastrointestinal disease was most prevalent in newly industrialized nations with marked raise in both the incidence and prevalence at the earliest of the twenty-first century and in the second half of 20th century.[2] Recently, IBD in India is the main encumbrance across the globe, so all the tertiary referral centers were diagnosing at an greater rate compared to preceding years.[3]

In UC incidence of age raise to begin from the second decade and flattens thereafter but in Crohn's disease it affects the third span of life. A typical effect of the disease at a young age may influence the maturation of physical and social attitude leading to the problem in choosing their career and paths. Due to the recurrence of the disease, often lead the patient to hospitalization and frequent surgery.[4] Recent years of westernization in lifestyle including the changes in food habits (diet), alcoholism, smoking, chemical exposure, and pollution caused more prevalence among developing regions than the developed countries with greater incidence.[5] Etiology of IBD remains indistinct, though there have been numerous epidemiological studies.[6]

Numerous variables combined to form the complex socioeconomic status which includes employment status, income, educational level, and the place of residence. Among these best markers to determine the socioeconomic status was educational level to measure the stability of the individual level of the participants with no reversal problem causation like wealth and income status.[7] As a result, hospital-based cross-sectional study was planned to determine the outcomes in sociodemographic factors of the IBD patients at a multispecialty hospital in South India.

MATERIALS AND METHODS

Study Site

The study was conducted at the Department of Gastroenterology at Kovai Medical Center and Hospital (KMCH) at Coimbatore.

Study Design

A prospective observational study.

Study Duration

The study was conducted for a period of 16 months.

Sampling Technique

Convenient sampling method.

Study Population

Sixty-nine patients (patients selected based on sample size calculation using Rao software).

Study Criteria

Inclusion criteria

- The adult population above 18 years with a diagnosis of IBD
- Newly diagnosed IBD patients
- Patients who cooperate to provide information for the study.

Exclusion criteria

- Pregnancy or women who are nursing or plan to become pregnant during the study
- Pediatric population
- Subjects of irritable bowel syndrome
- Patients with intermediate colitis
- Diagnosed to have colorectal cancer
- Population with severe physical illness.

The Phase of Study

- Phase I: Face-to-face interview using Performa after the visit of a gastroenterologist
- Phase II: Statistical analysis
- Phase III: Result and Discussion.

Sources of Data

A specially designed Performa was used to gather information regarding demographic data (age, gender, marital status, area, educational qualification, employment, occupation, smoking, alcoholism, diet, and family history). The Performa was validated with the patients and healthcare team.

Study Protocol

The ethical clearance was approved by the Institutional research and ethics committee before the commencement of the study with Proposal no: EC/AP/591/10/2018. The study was conducted at the hospital through face to face interview method. The performa consists of collecting data such as age, gender, marital status, occupation, area of living, employment, family history, smoking, alcoholism, surgery, history of appendicitis, and type of IBD.

Variables Description

For each patient in this study, numerous variables were measured under grouping as patient-related variables (age, gender, occupation, family history, employment, educational qualification, history of IBD, smoking, and alcoholism), disease-related variables (type of disease, disease severity, stay in hospital and extraintestinal manifestation) and treatment-related variables (drugs used in the management of disease).

Statistical Analysis

Microsoft Excel Worksheet was used to enter and code the variables from the Performa. IBM statistical package software SPSS 20.0 V was used for statistical analysis. To find the demographic characteristics, the descriptive data expressed as mean ± standard deviation (SD) used for all the continuous variables. Statistical significance represented by $*p < 0.05$ and as $**p < 0.01$.

RESULTS

From the patient who had been diagnosed from the gastroenterology clinic, 69 patients enrolled for the study through the interview method for the period of 1 year. In a total among the age of the patients, 24 (34.8%) were categorized between 30 and 40 years with 36.75 ± 0.827 followed by 20 (29.9%) patients between 40 and 50 years, 15 (21.8%) patients from 20 to 30 years, 5 (7.5%) patients in 50–60 years and 4 (5.9%) in more than 60 years of age [Figure 1]. In gender-wise distribution, 69 patients 41 (59.4 %) diagnosed as UC and 28 (40.6%) in CD. In this study, there were 30 (43.5%) male patients and female patients 39 (56.5%) with the ratio of male (0.4): female (0.6) shown in [Figure 2]. The mean ± SD in males was 15.3 ± 3.23 and 20 ± 3.532 in females showing the statistical significance of $P < 0.00$.

Relationship of age with gender indicates the male 10 (33.4%) and female 16 (41.1%) in the age between 30 and 40 years with the greater incidence from other age categories. However in the 40–50 years male predominance was more with 11 (36.7%) patients than the female with 8 (20.5%) patients. In the marital status, there was no significance relating to this study and classified as married with 45 (53.6%), single 15 (21.7%), divorced 3 (4.3%), and widow as 4 (5.8%) patients with the maximum in 23 ± 3.795 among married patients [Table 1]. IBD in familial occurrence was characterized by their presence with mean and SD as 2 ± 0.924 and absent in 33.5 ± 4.596. In sociodemographic, occupation and food habits of IBD patients were given in [Figures 3 and 4].

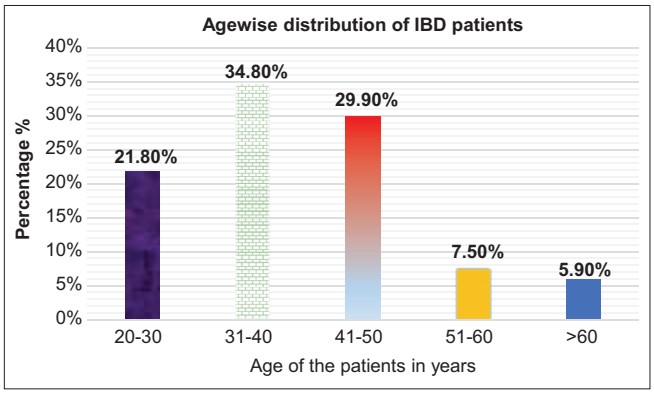

Figure 1: Distribution based on the age of the patients (n = 69)

DISCUSSION

The present study describes about the age during onset of the disease varies between the paediatrics to geriatrics, but IBD was found most common in elderly patients due to the chronic condition.[8] This was controversial to our study with maximum in age group of 30–40 years by reporting the similarity of study stated the disease was common among the third decade of life (mean age of 33.5 ± 13.1 years) and

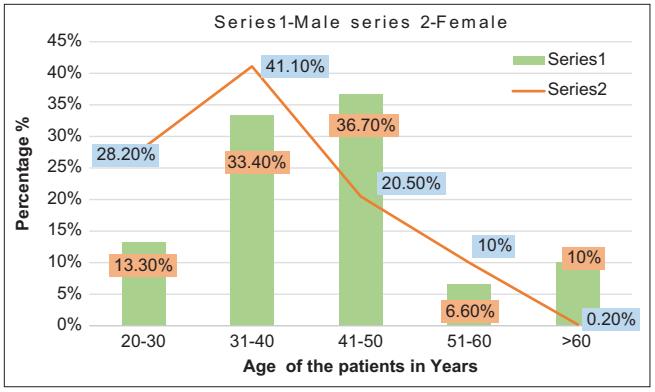

Figure 2: Relationship with gender and age of the patients (n = 69)

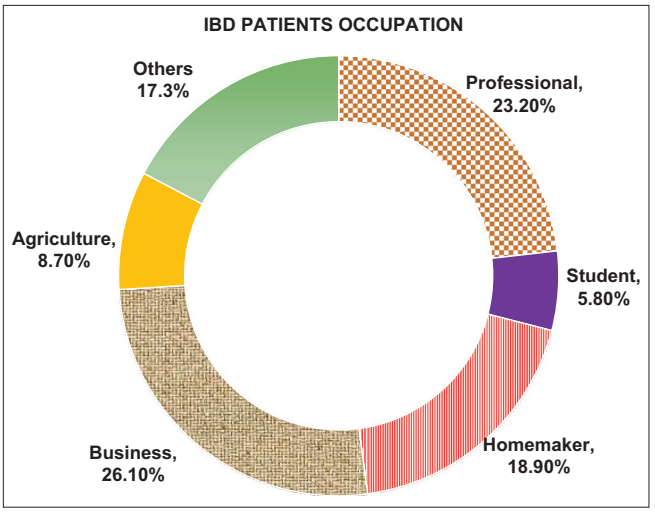

Figure 3: Occupation of the patients (n = 69)

Table 1: Sociodemographic variables in IBD patients

S. No.	Variables	No of patients *n*=69	Percentage	Mean±SD	*p*-value
1	Gender				
	Male	30	43.5	15.3±3.23	0.002*
	Female	39	56.5	20±3.532	
2	Age in years				
	20–30	15	21.8	25.34±1.307	0.054*
	31–40	24	34.8	36.75±0.827	
	41–50	20	29.9	45.55±1.113	
	51–60	05	7.5	54..00±2.147	
	>60	04	5.9	62.75±3.050	
3	Marital Status				
	Married	45	53.6	23±3.795	0.06
	Single	15	21.7	8±2.186	
	Divorced	3	4.3	2±0.924	
	Widow	4	5.8	2.5±1.096	
4	Educational Status				
	Illiterate	6	8.7	3.5±1.367	0.102
	Elementary	11	15.9	6±1.869	
	High school	23	33.3	12±2.711	
	Graduates	29	42.1	15±3.045	
5	Occupation				
	Professional	16	23.2	8.5±2.259	
	Student	4	5.8	2.5±1.096	0.03
	Homemaker	13	18.9	7±2.034	
	Business	18	26.1	9.5±2.397	
	Agriculture	6	8.7	3.5±1.367	
	Others	12	17.3	6.5±1.953	
6	Area of Residence				
	Urban	54	78.2	27.5±4.157	0.005*
	Rural	15	21.8	8±2.186	
7	Family history				
	Yes	03	4.3	2±0.924	0.01*
	No	66	95.7	33.5±4.596	
8	Alcoholism				
	Yes	13	18.8	7±2.034	0.60
	No	47	68.1	24±3.878	
	Past	09	13.1	5±1.687	
9	Smoking				
	Yes	12	17.4	6.5±1.953	0.002*
	No	51	73.9	26±4.04	
	Past	6	8.7	3.5±1.367	
10	Food Habits				
	Vegetarian	28	40.5	14.5±2.992	0.05
	Vegetarian + Nonvegetarian	41	59.5	21±3.622	
11	Types of Food				
	Fibrous	12	17.4	6.5±1.953	0.154
	Nonfibrous	27	39.1	14±2.938	
	Traditional	10	14.4	5.5±1.78	
	Junk foods	20	29.1	10.5±2.527	

P<0.05 significance *P*<0.00 statistically significance

maximum in females than in males.[9,10] In proportion of UC to CD the most effected gender in CD was female and in UC effected greater in male patients.[11,12] On finding the association between age and gender, the ratio was higher in men during the first phase of life than the females and also reported that the mean age at diagnosis of UC disease was 29.4 ± 6.9 in the frequency of 10–40 years and early onset have more chance for the development of chronic intermittent symptoms.[6] On determining the family history of disease shown the significance to the disease with $P < 0.1$ and resembles the study with the prevalence of IBD among the first relative was highest in siblings next to the parents with the greatest probability of recording the disease occurrence in family members of North India than the western countries.[12,13] Educational status proves good knowledge in higher education with a significance of $P < 0.10$ as knowledge improves the quality in life of the patient [Figure 5].[9,14] Among smoking habits proposed to cause alteration in gut flora and alcohol consumption in either acute or chronically shown to have a modification in the immune system and triggers the causation in IBD.[15,16] In area of residence, urbanization due to population density and environmental factors were assumed to be a risk factor of IBD and the lifestyle factors such as urban living with a lot of exposure to hygiene hypothesis may cause risk in a patients on association with diet change and emergence of the disease.[17]

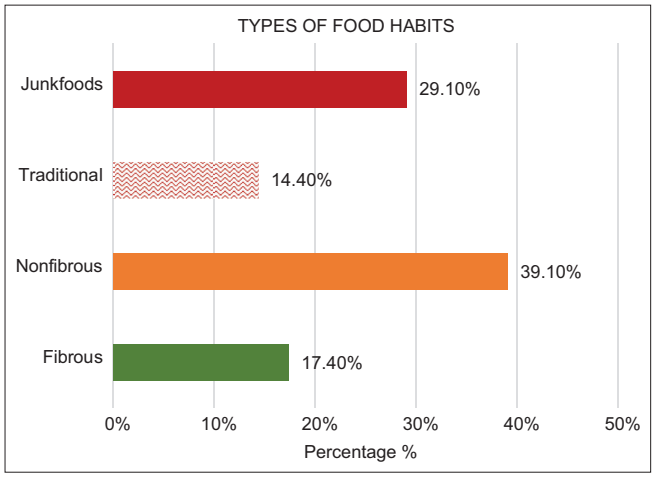

Figure 4: Types of food habits ($n = 69$)

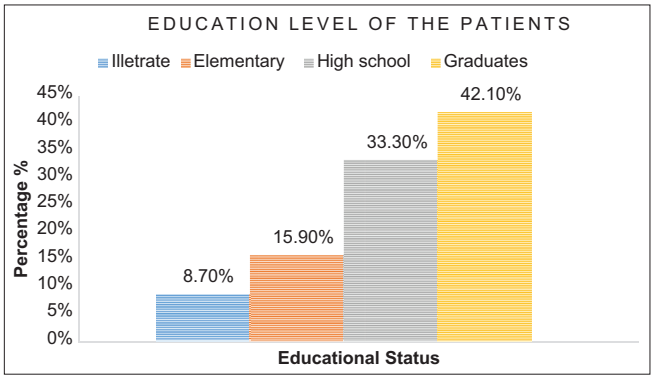

Figure 5: Educational status of the patients ($n = 69$)

CONCLUSION

Further, suggest more studies in IBD to have a better understanding of sociodemographic factors. Gender was significant, age of the patient, area of residence, family history, and smoking habits with less than $p < 0.05$ but remaining variables were found to be controversial from other studies. This information may be used to establish various strategic measures to prevent and control inflammatory disease. The current study will be useful for policymakers and healthcare professionals to frame the protocols for future perspectives.

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