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(RESEARCH ARTICLE)

Dietary beliefs, food restrictions, and nutritional consequences in patients with inflammatory bowel disease

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Abstract

Background: Inflammatory bowel diseases (IBD), including Crohn's disease and ulcerative colitis, are chronic relapsing inflammatory disorders with a rising global incidence and a substantial impact on patients' quality of life. Diet is frequently perceived by patients as a key factor influencing disease activity and symptom control. Consequently, many patients adopt dietary modifications or restrictive eating behaviors, often without professional guidance.

Aim: To evaluate dietary beliefs, food avoidance behaviors, and their nutritional and psychosocial consequences in patients with inflammatory bowel disease.

Methods: This cross-sectional descriptive study included 210 patients with confirmed IBD followed in a specialized gastroenterology clinic. Data were collected using a structured questionnaire assessing demographic characteristics, patients' perceptions of the role of diet in disease activity, dietary modifications, sources of nutritional information, and potential nutritional and psychosocial consequences.

Results: Among the 210 patients included, 140 had Crohn's disease and 70 had ulcerative colitis. The mean age was 34.5 years, with a slight female predominance. Overall, 73% of patients believed that diet influenced disease activity, and 69% reported modifying their dietary habits following diagnosis. The most commonly avoided foods were dairy products (47%), high-fiber foods (39%), fatty foods (35%), and gluten-containing products (29%). Nutritional consequences included unintentional weight loss in 42% of patients and documented micronutrient deficiencies in 33%, mainly involving iron, vitamin D, and vitamin B12. Psychological impact was also observed, with 46% of patients reporting anxiety related to food consumption and 27% describing social limitations associated with meals.

Conclusion: Dietary restrictions are highly prevalent among patients with inflammatory bowel disease and are frequently implemented without professional guidance. Such practices may contribute to nutritional deficiencies and negatively affect psychosocial well-being. Integrating structured nutritional counseling into multidisciplinary IBD management may help prevent unnecessary dietary restrictions, improve nutritional status, and enhance patients' quality of life.

Keywords: Inflammatory Bowel Disease; Crohn's Disease; Ulcerative Colitis; Diet; Nutrition; Dietary Beliefs; Food Avoidance

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1. Introduction

Inflammatory bowel diseases (IBD), including Crohn's disease and ulcerative colitis, are chronic immune-mediated disorders characterized by recurrent intestinal inflammation and alternating periods of remission and relapse [1,2]. Over recent decades, the incidence and prevalence of IBD have increased worldwide, particularly in newly industrialized countries, reflecting important changes in environmental and lifestyle factors [3,4].

Beyond intestinal inflammation, IBD significantly affects patients' daily life, nutritional status, and psychological well-being. Nutrition has long been recognized as an important component in both the pathogenesis and management of these diseases [5]. Environmental influences, particularly dietary habits, are increasingly considered potential contributors to the development and progression of IBD [6].

Many patients with IBD believe that specific foods may trigger disease flares or worsen gastrointestinal symptoms such as abdominal pain, diarrhea, or bloating. As a result, dietary modifications are commonly adopted following diagnosis, with patients often avoiding certain foods perceived as harmful [7,8].

However, these dietary changes are frequently based on personal beliefs or information obtained from non-medical sources, including social media, internet forums, and anecdotal experiences shared by other patients [9,10]. Although some dietary adjustments may help alleviate symptoms, excessive or poorly supervised dietary restrictions may lead to nutritional imbalance or malnutrition.

Malnutrition and micronutrient deficiencies are common in patients with inflammatory bowel disease and may result from several mechanisms, including decreased oral intake, malabsorption, chronic inflammation, and medication effects [11,12]. Iron deficiency, vitamin D deficiency, and vitamin B12 deficiency are among the most frequently reported nutritional complications in this population [12,13].

In addition to their nutritional consequences, dietary restrictions may also have important psychosocial implications. Eating is a central component of social interaction, and fear of symptom exacerbation may lead patients to avoid shared meals or social situations, negatively affecting quality of life.

Despite the recognized importance of nutrition in IBD management, structured nutritional counseling remains insufficiently integrated into routine clinical practice in many healthcare settings.

Therefore, the aim of the present study was to evaluate dietary beliefs, food avoidance behaviors, and their nutritional and psychosocial consequences among patients with inflammatory bowel disease.

2. Materials and Methods

2.1. Study Design and Setting

This cross-sectional descriptive study was conducted in the Department of Hepato-Gastroenterology at Hassan II University Hospital in Fez, Morocco, a tertiary referral center for digestive diseases. The study aimed to evaluate dietary beliefs, food restrictions, and their potential nutritional and psychosocial consequences in patients with inflammatory bowel disease.

2.2. Study Population

A total of 210 adult patients with a confirmed diagnosis of inflammatory bowel disease were included in the study. The study population consisted of 140 patients with Crohn's disease and 70 patients with ulcerative colitis who were regularly followed in the gastroenterology outpatient clinic.

The diagnosis of inflammatory bowel disease was established based on standard clinical, endoscopic, radiological, and histological criteria according to current international guidelines.

2.3. Inclusion Criteria

Patients were eligible for inclusion if they met the following criteria:

- Age ≥ 18 years

- Confirmed diagnosis of Crohn's disease or ulcerative colitis
- Regular follow-up in the gastroenterology clinic
- Ability to understand and complete the questionnaire
- Patients who declined participation or were unable to complete the questionnaire were excluded from the study.

2.4. Data Collection

Data were collected using a structured questionnaire administered during routine outpatient consultations. The questionnaire was designed to assess several domains:

- **Demographic characteristics:** age and sex
- **Clinical characteristics:** type of inflammatory bowel disease
- **Dietary perceptions:** patients' beliefs regarding the influence of diet on disease activity
- **Dietary modifications:** changes in eating habits following diagnosis
- **Food avoidance:** types of foods restricted or eliminated from the diet
- **Sources of dietary information:** medical advice, internet, social media, or personal experience
- **Nutritional consequences:** weight loss and documented micronutrient deficiencies
- **Psychosocial impact:** anxiety related to food consumption and social limitations related to meals

2.5. Statistical Analysis

Descriptive statistical analyses were performed to summarize patient characteristics and questionnaire responses. Continuous variables were expressed as mean values, whereas categorical variables were presented as frequencies and percentages. Data were analyzed using standard statistical methods.

3. Results

3.1. Patient Characteristics (Table 1)

A total of 210 patients with inflammatory bowel disease were included in the study. The mean age of the study population was 34.5 years, with a slight predominance of female patients (54.8%). Crohn's disease represented the majority of cases (66.7%), while ulcerative colitis accounted for 33.3% of the cohort.

Table 1 Baseline Characteristics of the Study Population

Variable	Value
Total patients	210
Mean age	34.5 years
Female	115 (54.8%)
Male	95 (45.2%)
Crohn's disease	140 (66.7%)
Ulcerative colitis	70 (33.3%)

3.2. Disease Characteristics

Among the 140 patients with Crohn's disease, the distribution of disease location according to the Montreal classification was as follows: Ileal involvement (L1) in 40% of cases, Colonic involvement (L2) in 25% of cases and ileocolonic disease (L3) in 35% of cases

Regarding the progression of the disease, it was a non-stenosing and non-penetrating form (B1) in 56% of cases, a stenosing form (B2) in 28% of cases and a penetrating form (B3) in 16% of cases.

Among the 70 patients with ulcerative colitis, disease extent was distributed as follows: Proctitis (E1) in 24% of cases, Left-sided colitis (E2) in 43% of cases and Extensive colitis / pancolitis (E3) in 33% of cases

3.3. Dietary Beliefs

The majority of patients believed that diet played a significant role in the evolution of their disease. Overall, 73% of patients reported that food intake could influence disease activity.

Following diagnosis, 69% of patients reported modifying their dietary habits.

The main reasons for dietary modifications included fear of symptom exacerbation (55 %), medical advice (23%), information obtained from internet or social media (11%) and advice from relatives or other patients (11%)

3.4. Dietary Restrictions

Several categories of food were commonly avoided by patients (Table 2)

Table 2 Most Frequently Avoided Foods

Food Category	Percentage
Dairy products	47%
High-fiber foods	39%
Fatty foods	35%
Gluten-containing foods	29%
Spicy foods	22%

In most cases (77%), these dietary restrictions were self-initiated without professional dietary supervision.

- Nutritional Consequences
- Nutritional complications were frequently reported among patients.
- 42% of patients reported unintentional weight loss
- 33% presented at least one documented micronutrient deficiency
- 19% had received nutritional supplementation

The most commonly reported deficiencies involved:

- Iron deficiency (18%).
- Vitamin D deficiency (12 %).
- Vitamin B12 deficiency (7%).

3.5. Psychosocial Impact

Dietary restrictions were also associated with important psychological and social consequences.

Nearly 46% of patients reported anxiety related to food consumption, reflecting concerns about potential symptom exacerbation.

Additionally, 27% of patients reported avoiding social situations involving meals, highlighting the impact of dietary restrictions on social interactions and quality of life.

Access to Nutritional Counseling

Despite the high prevalence of dietary concerns, only 14% of patients reported regular follow-up with a dietitian.

However, a large proportion of patients (66%) expressed interest in receiving structured nutritional counseling as part of their disease management.

4. Discussion

The present study provides insight into dietary beliefs, food avoidance behaviors, and their nutritional and psychosocial consequences among patients with inflammatory bowel disease. Our findings show that a large proportion of patients perceive diet as an important factor influencing disease activity and adopt dietary restrictions after diagnosis.

In our cohort, 73% of patients believed that diet influences disease activity, and nearly two-thirds reported modifying their dietary habits following diagnosis. These findings are consistent with previous studies showing that patients with inflammatory bowel disease frequently associate certain foods with symptom exacerbation and disease flares [14,15]. Similar results were reported by Zallot et al., who demonstrated that dietary beliefs strongly influence eating behaviors among patients with IBD, often leading to significant food restrictions [11].

The most commonly avoided foods in our study included dairy products, high-fiber foods, fatty foods, and gluten-containing products. These findings are in line with previous investigations describing similar dietary patterns among patients with inflammatory bowel disease [12,16]. Patients frequently eliminate foods perceived as poorly tolerated or associated with gastrointestinal symptoms such as abdominal pain, diarrhea, or bloating.

However, many dietary restrictions observed in our study were self-initiated without professional dietary supervision, which may expose patients to nutritional imbalances. Previous studies have highlighted that patients often rely on information obtained from non-medical sources, including social media, internet forums, and anecdotal experiences shared by other patients [16,17]. This phenomenon may contribute to the adoption of restrictive diets lacking scientific evidence.

Another important finding of this study is the high prevalence of nutritional consequences associated with dietary restrictions. In our cohort, 42% of patients reported unintentional weight loss, and 33% had at least one documented micronutrient deficiency. These results are consistent with previous studies demonstrating that malnutrition and nutritional deficiencies are common among patients with inflammatory bowel disease [20–22].

Iron deficiency, vitamin D deficiency, and vitamin B12 deficiency were the most frequently reported deficiencies in our population. These deficiencies may result from several mechanisms, including reduced dietary intake, malabsorption, chronic intestinal inflammation, and medication-related effects [21,23]. Similar observations have been reported in several studies evaluating nutritional status in IBD populations [24].

Beyond nutritional consequences, our study also highlights the psychosocial impact of dietary restrictions. Nearly half of the patients reported anxiety related to food consumption, and more than one quarter described avoiding social situations involving meals. Eating plays a central role in social interaction, and fear of symptom exacerbation may lead patients to restrict social activities, negatively affecting quality of life. These findings are consistent with previous research demonstrating that dietary concerns and food avoidance behaviors may significantly impair the social and psychological well-being of patients with inflammatory bowel disease [29,30].

Despite the importance of nutrition in IBD management, only a minority of patients in our study had access to regular dietary counseling. Current international guidelines emphasize the importance of nutritional assessment and individualized dietary management as part of comprehensive IBD care [7,8]. Multidisciplinary approaches including gastroenterologists, dietitians, and psychologists may help patients adopt balanced dietary strategies while avoiding unnecessary food restrictions.

The strengths of this study include the relatively large sample size and the comprehensive evaluation of dietary beliefs, nutritional consequences, and psychosocial impact among patients with inflammatory bowel disease. In addition, the inclusion of both Crohn's disease and ulcerative colitis patients allowed a broader overview of dietary perceptions within the IBD population.

However, the present study has several limitations. First, its cross-sectional design does not allow evaluation of longitudinal relationships between dietary habits and disease activity. Second, the data were collected using a self-reported questionnaire, which may introduce recall bias. Finally, the study was conducted in a single tertiary care center, which may limit the generalizability of the findings.

Overall, our findings highlight the need for improved patient education and structured nutritional counseling in the management of inflammatory bowel disease. Integrating dietary assessment into routine clinical practice may help prevent unnecessary dietary restrictions, reduce the risk of nutritional deficiencies, and improve patients' quality of life.

5. Conclusion

This study demonstrates that dietary beliefs and food restrictions are highly prevalent among patients with inflammatory bowel disease. In our cohort, most patients perceived diet as an important factor influencing disease activity and reported modifying their dietary habits, often without professional guidance. These practices were associated with notable nutritional consequences, including weight loss and micronutrient deficiencies, as well as psychosocial effects such as anxiety related to food consumption and social limitations during meals. These findings highlight the importance of integrating structured nutritional counseling into multidisciplinary IBD care in order to prevent unnecessary dietary restrictions and improve patients' nutritional status and quality of life.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflicts of interest regarding the publication of this paper.

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