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The Role of Nurses as Guides in Inflammatory Bowel Diseases

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ABSTRACT

Inflammatory Bowel Diseases are a group of chronic and recurrent inflammatory disorders affecting the gastrointestinal system, with unknown etiology. Crohn's Disease and Ulcerative Colitis are the most common subtypes, associated with physical symptoms and psychosocial issues that negatively impact the quality of life. The management of Inflammatory Bowel Diseases requires a multidisciplinary approach, and the guiding role of nurses is critical for symptom management, treatment adherence, and enhancing patients' quality of life.

Nurses actively participate in symptom management, nutritional counseling, psychosocial support, and patient education, creating individualized care plans tailored to patients' needs. Specifically, nutritional management, psychosocial support, and educational strategies help alleviate symptoms and improve treatment adherence. Additionally, the utilization of health technologies, such as mobile health applications and tele-health services, facilitates patient follow-up and enhances treatment processes.

Psychosocial support services assist patients in managing stress, depression, and anxiety, thereby positively impacting their quality of life. Moreover, support groups and counseling services reduce social isolation and strengthen psychological resilience. Nurses play a crucial role in patient education and raising public awareness, which helps reduce social stigma and improves patients' compliance with treatment.

This review highlights the importance of nursing guidance in the management of Inflammatory Bowel Diseases and provides a guiding perspective for future research. Multidisciplinary teamwork, individualized care plans, and the integration of digital health applications are effective strategies for improving the quality of life of Inflammatory Bowel Diseases patients. In this context, strengthening the educational and counseling roles of nurses is essential for effective Inflammatory Bowel Diseases management.

Keywords: Bowel Diseases, Inflammatory, Crohn's Disease, Ulcerative Colitis, Internal Medicine Nursing, Patient Education.

INTRODUCTION

Inflammatory bowel diseases (IBD) are a group of chronic disorders characterized by persistent and lifelong inflammatory processes affecting the gastrointestinal tract. The exact etiology is unknown, but it is believed to result from complex interactions between genetic, environmental, and immunologic factors (1-3). The most common subtypes of IBD are Crohn's disease (CD) and ulcerative colitis (UC). Although these diseases share some clinical and pathological similarities, they exhibit distinct histopathological differences (4). Ulcerative colitis is characterized by recurrent ulcerative and inflammatory reactions in the mucosal and submucosal layers of the colon and rectum, leading to symptoms such as bloody diarrhea, abdominal pain, and urgency. In contrast, CD can occur anywhere in the gastrointestinal tract but most commonly affects the terminal ileum and colon. CD is characterized by transmural inflammation that can lead to segmental (skipping) lesions, fistulas, and strictures. As a result, CD is sometimes referred to as “Regional Enteritis” due to its localized and patchy distribution (3). The incidence and prevalence of IBD vary significantly depending on regional and socioeconomic factors. In developed countries such as North America and Western Europe, the prevalence and incidence of IBD have stabilized. In contrast, there is an increasing trend in disease rates in developing regions such as Eastern Europe, Asia, Western India, and North Africa. In particular, in East Asia, the average annual prevalence increase of IBD has been estimated as 2.79% (5). Global burden of disease studies show that the number of IBD patients has increased from 3.3 million in 1990 to 4.9 million in 2019. In addition, the global incidence of IBD was reported as 4.98 per 100,000 population in 2019 (5).

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Although large-scale population-based studies on IBD in Turkiye are limited, several hospital-based cross-sectional studies provide valuable insights. According to these studies, the incidence of UC in Turkey is 2.6 per 100,000 and the incidence of CD is 1.4 per 100,000 (6-9). Data show that the incidence of IBD in Turkey has increased over time, with a higher prevalence in men than in women (3,9). Furthermore, the distribution of the disease varies by geographic location, with CD being more common in urban areas, while UC is more common in rural areas (9).

These findings suggest that IBD is becoming more prevalent and may pose a significant public health problem in the coming years, requiring enhanced public health surveillance, patient education, and healthcare resource allocation.

Diagnostic Process and Evaluation

IBD is a group of chronic diseases with heterogeneous clinical manifestations that require a comprehensive and multidisciplinary approach for accurate diagnosis. Due to the complex and variable nature of IBD, no single test can confirm the diagnosis and requires the use of multiple diagnostic modalities to reach a definitive diagnosis.

This approach includes a combined evaluation of clinical symptoms, laboratory tests, biomarkers, and imaging techniques (10,11). Clinical evaluation focuses on identifying characteristic symptoms such as chronic diarrhea, abdominal pain, weight loss, and fatigue, which are common in both CD and UC but may differ in presentation and severity.

Laboratory tests and biomarkers are used to assess systemic inflammation and differentiate IBD from other gastrointestinal conditions. Common biomarkers include C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), fecal calprotectin, and fecal lactoferrin, which help assess disease activity and severity. In addition, genetic testing and serologic markers may provide supportive diagnostic information, particularly in distinguishing between CD and UC.

Endoscopic and imaging techniques are required to visualize the mucosal inflammation, ulcerations, strictures, and fistulas characteristic of IBD. Colonoscopy with biopsy remains the gold standard for diagnosing and differentiating between CD and UC. Findings in UC usually include persistent mucosal inflammation starting from the rectum, whereas segmental skip lesions, transmural inflammation, and cobblestone appearance are more common in CD. Advanced imaging modalities such as Magnetic Resonance Enterography (MRE) and Computed Tomography Enterography (CTE) allow detailed assessment of small bowel involvement, particularly in CD.

The primary goal of the diagnostic process is to differentiate IBD from other inflammatory and infectious gastrointestinal diseases, such as infectious colitis, ischemic colitis, and irritable bowel syndrome (IBS), and to determine the level of disease activity (12). Accurate and early diagnosis is crucial to initiate appropriate therapeutic interventions and improve long-term patient outcomes.

Clınical Symptoms And Findings

The most common symptoms of IBD include chronic diarrhea, abdominal pain, weight loss, hematochezia (bloody stools), and fatigue (13). However, the pattern of disease spread and the depth of intestinal wall involvement differ significantly between CD and UC and affect the clinical presentation and diagnostic approach (14). In Crohn's disease, inflammation can occur in any segment of the gastrointestinal tract from the mouth to the anus, but most commonly affects the terminal ileum and colon. CD is characterized by transmural inflammation, meaning that inflammation extends to all layers of the intestinal wall and can lead to fibrosis, stenosis, fistula formation, and abscesses. Clinically, it is characterized by segmental involvement, i.e., skip lesions, where inflamed areas are interspersed with healthy tissue. Deep ulcerations, cobblestone appearance of the mucosa, and stenosis are characteristic endoscopic findings. Patients with CD usually experience right lower quadrant abdominal pain due to terminal ileum involvement. Unlike UC, stools in CD are usually not bloody, but patients may have symptoms of malabsorption such as steatorrhea (oily stools) and vitamin B12 deficiency and anemia. Fistulas and perianal disease, such as perianal abscesses, fissures, and skin tags, are more common than in UC and contribute to significant morbidity (10,11).

In ulcerative colitis, inflammation is limited to the colon and rectum and progresses continuously from the rectum proximally through the colon without bypassing the lesion. Unlike CD, UC affects only the mucosal and submucosal layers, leading to superficial ulcerations and crypt abscesses. Bloody diarrhea with mucus, tenesmus (a constant desire to defecate), and urgency are the hallmark symptoms of UC (15). Abdominal pain is usually felt in the left lower quadrant, consistent with the affected sigmoid colon and rectum. Compared with CD, systemic symptoms such as fever, malaise, and weight loss are less pronounced in UC, except during severe exacerbations. However, extraintestinal manifestations are common in both CD and UC (16).

Extraintestinal manifestations occur in approximately %25–% 40of patients with IBD and may precede, accompany, or follow intestinal symptoms, and are usually related to disease activity. The most common are extraintestinal manifestations;

- Musculoskeletal: Peripheral arthritis, ankylosing spondylitis, and sacroiliitis are more common in CD but can also be seen in UC.
- Dermatologic: Erythema nodosum (tender red nodules on the legs) and pyoderma gangrenosum (painful skin ulcers) are often associated with IBD.
- Ocular: Uveitis, episcleritis, and conjunctivitis may occur, and uveitis is more common in CD.
- Hepatobiliary: Primary sclerosing cholangitis (PSC) is predominantly associated with UC and is a risk factor for cholangiocarcinoma.
- Hematologic and Metabolic: Anemia (due to chronic inflammation and malabsorption), osteoporosis, and vitamin deficiencies are common in both CD and UC. These systemic manifestations are particularly prominent during disease flares and may provide valuable diagnostic clues. Comprehensive management requires a multidisciplinary approach involving rheumatologists, dermatologists, ophthalmologists, and hepatologists (11,12).

Laboratory Tests and Biomarkers

Although there is no definitive laboratory test for the diagnosis of IBD, various biomarkers are used to assess the inflammatory activity and severity of the disease (13). These biomarkers not only help distinguish IBD from other gastrointestinal disorders, but also help monitor disease activity, therapeutic response, and predict relapses.
The primary biomarkers used in clinical practice include Complete Blood Count (CBC), C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), fecal calprotectin, and fecal lactoferrin (14). In addition, serum albumin, iron levels, and thiopurine methyltransferase (TPMT) activity provide valuable information about nutritional status, systemic inflammation, and drug metabolism. These biomarkers and their clinical implications are summarized;

- **C-reactive Protein:** CRP is an acute phase reactant synthesized by the liver in response to systemic inflammation. It is a sensitive marker of active inflammation and is often used to assess disease activity and response to therapy in IBD. In IBD, CRP levels are often elevated during disease flares and correlate with disease severity. Higher CRP levels are more common in CD compared to UC due to the transmural nature of inflammation in CD (12). Normal CRP levels do not necessarily exclude active disease, especially in UC patients, because CRP elevation is less sensitive in mucosal inflammation.

- **Erythrocyte Sedimentation Rate:** ESR is another marker of systemic inflammation that reflects the rate at which erythrocytes settle in anticoagulated blood. It is often used in conjunction with CRP to assess disease activity. ESR is elevated in active IBD but is known to be less sensitive and less precise than CRP for detecting inflammation (11).

- **Fecal Calprotectin and Fecal Lactoferrin:** These biomarkers are highly specific for intestinal inflammation and are used to differentiate IBD from functional gastrointestinal disorders such as Irritable Bowel Syndrome (15). Fecal calprotectin has been associated with mucosal inflammation and is used to monitor disease activity (16).

- **Serum Albumin and Iron Levels:** Serum albumin and iron levels help evaluate nutritional status and systemic inflammation in IBD patients.

- **Thiopurine Methyltransferase Activity:** TPMT activity is used to evaluate drug response in patients who will be starting immunosuppressive therapy (12).

Endoscopic And Radiologic Evaluation

Endoscopic and radiological evaluation is necessary for definitive diagnosis of IBD. Endoscopic imaging is one of the most important methods for evaluating the extent of the disease, the degree of inflammation and mucosal healing (14). Colonoscopy is considered the gold standard for differentiating UC and CD (10). While mucosal edema, fragility, erosions and diffuse ulcerations are observed in UC, segmental involvement, deep ulcers, cobblestone appearance and strictures are prominent in CD (12). Biopsy and histopathological examination have an important role in reaching a definitive diagnosis. Crypt abscess and goblet cell loss are characteristic findings in UC, while non-caseating granulomas and transmural inflammation are characteristic findings in CD (15).

Radiological examinations play an important role in evaluating small bowel involvement, especially in CD. Magnetic Resonance (MR) and Computed Tomography (CT) are preferred to determine bowel wall thickening, edema and strictures. MRI is particularly preferred because it is a radiation-free method and is a safe option for evaluating active inflammation (11,16).

Capsule endoscopy allows detailed examination in patients with small bowel involvement; however, caution should be exercised in patients at risk of intestinal stricture due to the possibility of capsule compression (11,12). The diagnostic process of IBD requires a multidisciplinary approach that includes evaluation of clinical symptoms, laboratory tests, biomarker analyses, endoscopic examinations and radiological imaging due to the heterogeneous nature of the disease. The combined use of these methods facilitates early diagnosis of the disease and makes significant contributions to the determination of treatment strategies.

Role And Responsibilities of Nurses

Inflammatory Bowel Disease is a chronic disease that significantly affects the quality of life of patients and requires a multidisciplinary management process. Nurses should adopt a multidimensional approach in the management of IBD, not only providing symptom control, but also patient education, nutritional support, psychosocial support, and prevention of complications (11,17). The Roles and Responsibilities of Nurses in Inflammatory Bowel Disease are grouped in Table 1.

Table 1. Roles and Responsibilities of the Nurse in Inflammatory Bowel Disease

Role/Responsibility	Description
Comprehensive Nursing Assessment	The patient's disease history, symptom severity, nutritional status, psychosocial needs and quality of life should be assessed, and patient education, pharmacological treatment compliance, symptom management and psychological support should be provided in line with individualized care plans (11).
Care Plans Should Be Dynamic	Care plans should be updated regularly, considering the remission and exacerbation periods of the disease. Nurses should play an active role in monitoring the clinical course of patients by encouraging them to keep symptom diaries (16).
Patient-Centered Approach	Patients with IBD should be encouraged to actively participate in the treatment process and should be supported in self-care skills. Effective education programs are critical for disease management and treatment compliance (15).

Today, the development of individualized nursing care plans, strengthening multidisciplinary teamwork, and integrating evidence-based practices into clinical practice stand out as fundamental strategies for improving patients' quality of life (14,15). The symptom profile, severity of disease, and systemic effects of IBD patients may vary among individuals. Therefore, instead of standard care protocols, individualized care plans should be created that are appropriate for each patient's clinical findings, lifestyle, and psychosocial status (12). Symptoms that directly affect the quality of life of IBD patients

include chronic diarrhea, abdominal pain, weight loss, fatigue, and psychosocial effects, and nursing care approaches for the management of these symptoms are detailed below.

Chronic Diarrhea: May cause nutritional and fluid-electrolyte imbalance disorders. The following nursing approaches are recommended for the management of this symptom:

- Low fiber diet recommendation: Consumption of low fiber foods may help control diarrhea by reducing bowel movements.
- Hydration provision: Patients should be encouraged to consume sufficient fluids to prevent fluid loss. Fluid supplements should be planned considering electrolyte balance.
- Fluid intake monitoring: Patients' daily fluid intake should be monitored to prevent dehydration.

Abdominal Pain: It can negatively affect the daily life activities of IBD patients. The recommended nursing approaches for the management of abdominal pain are as follows:

- Effective use of spasmolytic agents: In order to reduce intestinal spasms, spasmolytic drugs should be used in accordance with the doctor's recommendation.
- Hot applications: Using a hot water bag or hot compress can relieve pain by providing muscle relaxation.
- Relaxation techniques: The aim should be to reduce abdominal pain by reducing the patient's stress level with breathing exercises, meditation and other relaxation techniques.

Fatigue: Fatigue can cause a decrease in general energy levels and sleep disorders in IBD patients. Nursing approaches that can be applied to cope with fatigue are as follows;

- Recommending appropriate exercise programs: Light and regular exercises can reduce the feeling of fatigue by increasing energy.
- Sleep hygiene education: Regular sleep hours, providing a comfortable sleep environment and pre-sleep relaxation techniques should be aimed at improving sleep quality.
- Psychosocial support: Counseling services and social support should be provided to patients to cope with the psychological effects of feeling tired.

These approaches can be used effectively in managing the symptoms of IBD patients and can play an important role in improving their quality of life. It is recommended that nurses personalize their care plans by considering the individual needs of patients (11,15-17). Patient education aims to ensure that the individual is not only informed about his/her disease but also increases compliance with treatment, manages symptoms and improves quality of life (14).

Malnutrition is a common condition in IBD patients and regulation of nutritional habits has a critical place in disease management. Nurses should inform patients by creating individualized nutritional plans and follow nutritional support programs (12). Use of probiotics and prebiotics: Patient education should be provided on the effectiveness of probiotics and prebiotics that can reduce inflammation by maintaining the balance of intestinal microbiota (16). IBD is a disease that can negatively affect the psychological and social lives of patients.

Table 2. Use of Technology in Health Education and Its Benefits

Technology	Description	Benefits
Mobile Health Applications	Mobile applications developed for IBD patients provide support in symptom monitoring, medication management and diet (14).	Facilitate patient follow-up, Increase treatment compliance, Support symptom management
Video-Assisted Education Programs	It helps patients to better understand the disease and participate consciously in treatment through educational videos, virtual reality simulations and webinars (15).	Increasing patient education and awareness, Encouraging conscious participation in the treatment process
Tele-Health Services	It is a digital health approach that facilitates nurses' patient follow-up and offers remote health consultation and symptom management (16).	Ensuring remote patient monitoring, Facilitating access to healthcare professionals, Increasing health literacy

Nurses should ensure that patients are educated on stress management, direct them to patient support groups and facilitate access to psychological counseling services (15). In addition to traditional patient education approaches, innovative methods such as mobile health applications, video-supported education programs, and virtual education platforms make patient education more accessible and effective, and the use and benefits of technology in health education for IBD patients are given in Table 2 (11).

CONCLUSION

In conclusion, the guidance role of nurses is a critical factor in improving the quality of life of IBD patients, and individualized care plans, psychosocial support services, and effective use of digital health solutions are important in this process. Future research should evaluate the long-term effects of nursing care plans, examine the effects of psychosocial support services on patients, and focus on educational programs to increase the integration of nurses into digital health systems.

DESCRIPTIONS

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