Journal of Enterocolitis

Review

Inflammatory Bowel Disease in Africa: A Growing Public Health Challenge

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Cite this article as: Mapesa J, Onono R, Makena S, Ndirangu F. Inflammatory Bowel Disease in Africa: A Growing Public Health Challenge. *J Enterocolitis.* 2025;4(3):49-54.

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Received: December 15, 2025 **Accepted:** December 17, 2025

DOI:10.14744/Jenterocolitis.2025.95491

Abstract

Inflammatory bowel disease (IBD), once thought to be rare in Africa, is now increasingly recognized due to urbanization, dietary changes, and improved diagnostic awareness. However, significant challenges in diagnosis and management persist across the continent. This review explores current trends, risk factors, diagnostic barriers, and treatment gaps related to IBD in the African context, while suggesting strategic solutions. We conducted a narrative review of the published literature, focusing on epidemiology, environmental and genetic drivers, dietary influences, health system constraints, and policy gaps related to IBD in Africa. Rates of IBD are rising in sub-Saharan Africa, particularly among young adults. Ulcerative colitis is reported more frequently than Crohn's disease, though both are often misdiagnosed as infections. Contributing factors include dietary westernization, reduced microbial exposure, and air pollution. Delayed diagnosis, limited access to advanced treatments, malnutrition, and coexisting infections complicate care. Policy support and investment in research remain limited. IBD is emerging as a significant public health challenge in Africa. Addressing this issue requires coordinated efforts to raise awareness, improve diagnostics and treatment, and strengthen local research. Integrating IBD into broader non-communicable disease strategies and health system planning is essential to mitigate long-term health and economic impacts.

Keywords: Africa, Crohn's disease, diagnosis, diet, epidemiology, health systems, inflammatory bowel disease, public health, ulcerative colitis

INTRODUCTION

Inflammatory bowel disease (IBD), characterized by chronic inflammation of the gastrointestinal tract and including Crohn's Disease (CD) and Ulcerative Colitis (UC), was once considered rare in Africa. However, recent data indicate a rising incidence in Sub-Saharan Africa (SSA) amid rapid urbanization and lifestyle changes.[1,2] Historically, the burden of IBD in SSA has been low, likely due to under-diagnosis and underreporting, whereas North America and Europe saw sharp increases in the 20th century before plateauing.[3] Current estimates show that the prevalence in SSA remains modest—around 10 per 100,000 in 2017—compared to over 400 per 100,000 in North America.[1] This stark disparity highlights the "emerging" status of IBD in Africa's epidemiological transition, similar to patterns observed in parts of Asia and South America.[1,2] Notably, South Africa, the continent's most industrialized country, reports the highest IBD rates in the region, likely due to better diagnostic infrastructure and surveillance.[1] In contrast, many other African countries still report very low incidence and prevalence, which reflects, in part, limitations in healthcare access and data collection.

A severe lack of robust epidemiological studies from SSA means that the true burden of IBD remains uncertain.[3] Two systematic reviews from 2020 found fewer than 250 documented IBD cases in SSA (excluding South Africa) in the published literature,1 highlighting how underrepresented the region is in global data. The apparent rarity of IBD in Africa is believed to be largely an artifact of underreporting and misdiagnosis, rather than the absence of the disease.[1] Many cases likely go undetected due to low awareness and the tendency to attribute chronic gastrointestinal symptoms to infectious diseases, such as diarrheal illnesses or tuberculosis.[1,3] In endemic regions, distinguishing IBD from infections poses a diagnostic challenge that can mask the true incidence. For example, a South African cohort study found that about 12% of IBD patients had a tuberculosis infection either before or after their IBD diagnosis,[4] illustrating how a high TB burden complicates case identification. Overall, mounting evidence suggests that IBD incidence in Africa is genuinely on the rise.[3] As countries undergo socioeconomic development, the risk factors associated with IBD become more prevalent, and previously "hidden" cases are increasingly recognized. Improved awareness and surveillance are gradually revealing an emerging disease burden, moving Africa from the earliest stage of IBD epidemiological transition toward the "emerging epidemic" stage noted in Asia and Latin America.[2,3] Despite this progress, significant gaps remain in epidemiological data, and strengthening registries and reporting systems in Africa is crucial to understanding the true scope of IBD in the region.[5]

Methodology

This article presents a narrative review synthesizing current evidence on IBD in Africa, focusing on emerging epidemiology, environmental and genetic risk factors, dietary patterns, comorbidities, and health system responses.

Search Strategy: We conducted a targeted literature search across major databases, including PubMed, Scopus, Web of Science, and Google Scholar, from inception through March 2025. The search terms included combinations of: "Inflammatory Bowel Disease," "Crohn's Disease," "Ulcerative Colitis," "Africa," "epidemiology," "risk factors," "genetics," "diet," "nutrition," "comorbidities," "health systems," and "management." Boolean operators ("AND," "OR") and Medical Subject Headings (MeSH) were applied to improve precision. We also reviewed reference lists of relevant articles to identify additional sources not captured through the database searches.

Inclusion Criteria: Peer-reviewed articles, systematic reviews, and reports focused on IBD in Africa or African-ancestry populations. Publications in English. Studies reporting on epidemiological trends, risk factors (both genetic and environmental), diet, comorbidities, or health policy aspects relevant to IBD.

Exclusion Criteria: Articles focused exclusively on non-African populations without comparative or contextual relevance. Animal studies and basic science articles unrelated to population health or clinical management. Non-peer-reviewed opinion pieces, unless published by established global health organizations.

Data Extraction and Thematic Analysis: Relevant studies were screened and selected based on titles and abstracts, followed by full-text review. Key themes were identified and organized under predefined categories aligned with the review objectives. We synthesized the findings qualitatively, highlighting regional patterns, knowledge gaps, and areas needing further research.

Demographic and Clinical Characteristics

Across African studies, IBD tends to affect younger adults, with most patients diagnosed between 20 and 40 years of age.[6] This aligns with global patterns, where IBD often presents in early adulthood. For example, a South African cohort reported a median age of onset of 32 years,6 and Nigerian data also show that the majority of cases occur in the third and fourth decades of life.[7] Pediatric onset IBD (under 18 years) appears less common, accounting for approximately 10% or fewer of cases. In Cape Town, for instance, children under 19 represented about 9.7% of IBD cases—a proportion comparable to that observed in Western countries.2 Late-onset IBD (over 60 years) is reported but remains relatively rare in Africa,1 possibly due to the region's younger population demographics and shorter life expectancies. Gender distributions in African IBD cohorts are generally balanced or show a slight female predominance, similar to patterns seen elsewhere. Some reports from East and South Africa note a higher frequency of IBD in females,[8] while Nigerian studies show near-equal gender ratios.[7] These variations may reflect small sample sizes or regional differences, but overall, they mirror global trends, where UC tends to have a modest female preponderance, whereas CD affects males and females equally.[7]

In terms of disease phenotype, UC appears to be more common than CD in Africa.[3] Hospital registries in South Africa attribute roughly 60–70% of IBD cases to UC.6 By contrast, Western countries often have a more balanced or even CD-predominant case mix, making the skew toward UC in Africa a notable difference. Patients in Africa often present with long-standing, severe symptoms by the time IBD is recognized. Common clinical features include chronic diarrhea, abdominal pain, weight loss, and rectal bleeding in UC cases.[6,9–11] However, comprehensive data on the frequency of these manifestations in Africa are limited. One striking demographic observation is the historical ethnic pattern of IBD in Africa. In South Africa, which has the largest number of IBD cases on the continent, IBD was, until recently, far more common in the white population than in indigenous black Africans.[2] Despite black Africans comprising approximately 81% of South Africa's population, they represented only about 5% of IBD cases in older studies.[2] This disparity is narrowing as IBD diagnoses increase across all groups, but it raises questions about genetic susceptibility versus access to care. It is likely that socioeconomic differences and access to specialized care played a significant role in the underdiagnosis of IBD among indigenous Africans in the past.[2] More recent data from Ghana and other African countries confirm that IBD is being identified across diverse ethnic groups as awareness grows.[2] In summary, the profile of IBD patients in Africa—where UC is more common than CD, and the disease is often advanced at diagnosis—reflects both global commonalities and unique regional patterns influenced by healthcare access and possibly genetic factors.

Environmental and Genetic Factors

Environmental factors are central to the rise of IBD in Africa. As countries develop, changes in sanitation, lifestyle, and microbial exposure alter the immune environment. The hygiene hypothesis suggests that reduced early-life exposure to microbes increases the risk of autoimmune diseases like IBD by weakening immune regulation.[1,12] In Africa, rapid urbanization may be reducing these exposures.[12] A South African case-control study found that helminth infections in childhood protect against CD.[13] Helminths modulate the immune system, and their absence could heighten IBD susceptibility.[14] Immigrant data reinforce this: African-born individuals moving to the West have low IBD rates, but their children acquire local disease risks within a generation.[1] This highlights that early environmental exposure is more influential than genetic background.

Urbanization brings westernized lifestyles that further increase IBD risk. Smoking, though less prevalent in Africa, is rising in cities. It worsens CD but may protect against UC.[1,3,15] Air pollution, particularly nitrogen and sulfur oxides and fine particulate matter, has been linked to IBD in high-income countries.[7] African cities experiencing air quality decline may face similar risks. Psychosocial stress is another factor. The stress of urban life and shifting social dynamics may trigger IBD onset or flares.[7] Modern diets, rich in fat and sugar, along with increased antibiotic use and reduced exposure to farm environments, foster conditions that promote IBD.[16,17] Infectious disease burdens in Africa further complicate the IBD landscape. Chronic gastrointestinal infections, such as tuberculosis, Clostridioides difficile, and parasites, can trigger gut inflammation or disrupt the microbiome.[13] These infections mimic IBD symptoms, making diagnosis difficult. For instance, intestinal TB resembles CD. Misdiagnosis can delay proper treatment or lead to dangerous use of immunosuppressants in TB-positive patients.[13,18] High endemic rates of infections and frequent antibiotic exposure in Africa could shape gut immunity in ways not fully understood, potentially affecting IBD risk.

Genetic contributions to IBD in Africa differ from Western patterns.

Genes linked to IBD in European populations, such as NOD2, are rare among African patients.[6,8] A South African study confirmed low frequencies of classic NOD2 mutations in CD cases, suggesting that different pathways may drive disease.[3,16,19] African populations may carry unique risk alleles, but large-scale studies remain lacking. Few genome-wide association studies (GWAS) include African cohorts. However, multi-ethnic GWAS involving African-ancestry individuals have uncovered novel variants not found in Europeans.[9,12] These insights demonstrate the value of inclusive genetic research and reveal how current knowledge is limited.

Despite the research gap, some genetic patterns are emerging. Hereditary clustering occurs in 5-15% of African IBD cases-lower than the 20–30% in European populations but still notable.[12] This suggests heritability exists, though with possible differences in expression or variant types. The historically low incidence of IBD in Africa raises the question: Is it due to low genetic risk or a lack of exposure to environmental triggers? Data from migrants suggest the latter is more likely.[1] Africa may harbor distinct genetic predispositions, but their roles remain unclear due to underrepresentation in research.

In summary, environmental shifts are likely driving the increase in IBD across Africa. Urbanization, reduced microbial exposure, air pollution, dietary changes, and ongoing infections all interact with a genetic background that is poorly understood. The African IBD profile may reflect unique gene–environment interactions not yet captured by global research. To improve diagnosis, prevention, and treatment, more genomic studies must be conducted within African populations. Understanding these dynamics can inform tailored strategies and support the development of context-specific therapies in a region where IBD is rapidly emerging.

Dietary Patterns and Gut Health in African Inflammatory Bowel Disease

Urbanization in Africa is reshaping dietary habits in ways that may promote IBD. Traditional African diets—high in fiber, fruits, and unrefined carbohydrates, and low in saturated fats and processed sugars—are being replaced by Western-style diets that are energy-dense and low in fiber.[7,20-22] These changes correlate with rising IBD rates and are part of a broader nutrition transition linked to non-communicable diseases.[3,7,16,19,23] Western diets promote dysbiosis and gut inflammation, factors implicated in IBD pathogenesis.[24,25] Fiber is essential for gut health, as beneficial gut bacteria ferment fiber to produce short-chain fatty acids (SCFAs), such as butyrate, which support intestinal barrier integrity and modulate inflammation. When fiber intake drops, SCFA production declines, potentially weakening the gut barrier and increasing inflammation.[26-29] This shift, observed in populations adopting Western diets, may explain the growing burden of UC and colorectal cancer in industrializing countries. High intake of animal proteins, additives, and fats further disrupts the microbiota, potentially exacerbating IBD.[28-30] Some traditional African foods may be protective. Millet, sorghum, and cassava provide fermentable fibers that help maintain a diverse gut microbiome.[31] As these foods are displaced by ultra-processed foods and sugar-sweetened beverages, microbiome diversity declines. Experimental studies suggest that emulsifiers and food additives, common in processed foods, aggravate gut inflammation.[24,31,32] Increased consumption of red meat and saturated fats may also encourage bile-tolerant, pro-inflammatory bacteria.[20,33] Although African-specific data are limited, global findings indicate that dietary modernization is a key environmental factor in IBD.[7,16,20,21,34]

Diet also plays a crucial role in IBD management.[35] Even during remission, many African patients report persistent gastrointestinal symptoms such as bloating, pain, and diarrhea, often triggered by food.[16,36] Diets like low-FODMAP, which restrict certain fermentable carbohydrates, have shown promise in reducing these symptoms.[37-40] However, such interventions are based on Western diets and lack cultural adaptability. As a result, African patients often receive generalized dietary advice or rely on traditional beliefs, which may lack evidence-based support. Tailored dietary guidance remains scarce. The gap between available advice and local dietary practices makes it difficult for patients to follow nutritional recommendations. Culturally adapted interventions that reflect local ingredients and eating habits are needed. Without these, patients may continue to manage symptoms through trial and error or misinformation. Research exploring diet–IBD interactions in African populations is essential to inform practical and effective nutritional strategies.

Malnutrition and micronutrient deficiencies are common among IBD patients in Sub-Saharan Africa. These arise from poor intake, malabsorption, and existing food insecurity. Deficiencies in iron, zinc, magnesium, folate, vitamin B12, and vitamin D are frequent.[41,42] Pediatric patients often experience growth stunting or delayed puberty, which exacerbates disease severity.[2] Malnutrition worsens gut inflammation and delays healing, making it both a cause and consequence of IBD.[43] Improving nutritional status through enteral feeding or supplementation can help alleviate symptoms and potentially support the induction of remission.[43,44] Unfortunately, access to specialized nutrition support is limited.[35] Most facilities lack access to elemental or parenteral nutrition and have no clinical dietitians, leaving patients reliant on general practitioners for dietary guidance. Developing practical plans using local foods can enhance adherence and promote self-care. Diet plays a dual role as both a trigger and a management tool in IBD. The shift from traditional high-fiber diets to Western eating patterns may be driving the rise in cases. Preserving or adapting traditional diets with locally appropriate solutions could reduce risk and improve outcomes. Therefore, there is a pressing need for more African context-specific studies.

Diagnostic and Therapeutic Challenges

IBD, once considered rare in Africa, is now emerging as a significant health challenge amid rising cases and under-resourced health systems.[3,7,45] Accurate diagnosis remains difficult due to limited access to essential diagnostic tools, such as endoscopy with biopsies, histopathology services, and advanced imaging like CT or MRI enterography—especially outside major urban centers.[1,3,7,46] Many African countries also face critical shortages of trained specialists, including gastroenterologists, radiologists, and pathologists.[3,7] Consequently, patients often endure prolonged diagnostic journeys, marked by misdiagnoses involving infections like tuberculosis, dysentery, or cancer.[1,47] During these delays, the disease progresses, often resulting in severe complications, such as strictures, fistulas, abscesses, and malnutrition, by the time of a correct diagnosis.[1] These systemic gaps not only delay diagnosis but also hinder timely treatment. Access to effective IBD therapies, particularly biologic agents such as anti-TNF drugs, remains extremely limited due to high costs and unavailability in most public health systems in sub-Saharan Africa.[48] Together, these barriers exacerbate patient suffering and place added strain on already overstretched healthcare infrastructures.

A meta-analysis found that delays in diagnosis are associated with worse clinical outcomes and higher complication rates.[46] One study noted that the average time from symptom onset to IBD diagnosis in some African

settings exceeded one year.[46] Key reasons include a low index of suspicion among frontline healthcare workers and the paucity of diagnostic tools. Many physicians in primary care hospitals may never have seen a case of IBD and thus might not consider it until multiple treatments for infections have failed.[46] Underreporting and misdiagnosis remain persistent problems. The high prevalence of infectious diseases, including tuberculosis, amebiasis, and chronic dysentery, indicates that IBD is often diagnosed by exclusion.[1,3] This challenge is amplified in pediatric cases, where growth faltering from malnutrition can mask IBD, or chronic diarrhea is attributed to recurrent infections.44 After diagnosis, treatment poses major challenges. While standard IBD care includes drugs like aminosalicylates, corticosteroids, immunosuppressants, and biologics (including anti-TNF agents and IL-12/23 inhibitors), many African countries lack access to the full range due to high costs and limited insurance coverage.[15] These gaps in diagnostics and treatment highlight the need for systemic investment, innovation, and advocacy to improve care.

Tuberculosis (TB) complicates IBD diagnosis in Africa.[4,49] Crohn's disease and intestinal TB present with similar symptoms, often leading to misdiagnosis. In some South African studies, up to one-third of CD patients were initially treated for TB.[4] This misdiagnosis poses serious risks, as immunosuppressive therapy for IBD can exacerbate undetected TB. Clinicians face a common dilemma: whether to delay IBD treatment until TB is excluded or to begin anti-TB therapy without a confirmed diagnosis. The challenge is further complicated by overlapping gastrointestinal infections, such as schistosomiasis and chronic bacterial enteritis. Malnutrition is also prevalent among African IBD patients and worsens disease outcomes.[44] Chronic inflammation increases nutritional needs while impairing absorption. Many patients, particularly those with CD, present with anemia, stunted growth, and vitamin deficiencies.[2,43,44] Long-standing IBD, especially ulcerative colitis, increases the risk of colorectal cancer.[32,50] While high-income countries implement regular colonoscopy screening to detect precancerous lesions, such surveillance is largely unavailable in Africa. Effective IBD management in the region requires integrated care that considers the burden of local infections and nutritional deficiencies. Urgent, population-specific research is needed to guide context-appropriate treatment strategies.

Healthcare facilities in many African countries continue to rely on older, less effective treatments, such as steroids and sulfasalazine, because newer medications are often unregistered, uncovered by insurance, or unaffordable.[15] Biologic therapies, for example, remain largely inaccessible outside South Africa due to high costs and unstable supply chains.[15,48] Diagnostic procedures also pose a financial challenge. A Nigerian audit revealed that colonoscopy services are mostly confined to private facilities and come with steep out-of-pocket expenses, with little to no insurance support.[51] Many patients, especially those without insurance, must pay for diagnostics, medications, and hospital care entirely from their own pockets, worsening economic hardship. The long-term costs of managing IBD, including lifelong medication, repeated hospitalizations, and surgery, place a significant financial burden on both households and national health systems.[7,52] Chronic conditions like IBD often force families to choose between essential healthcare and basic needs, while under-resourced health systems struggle to provide specialized care without adequate funding or financial protection mechanisms.

Policy Gaps and Barriers to IBD Care

Improving IBD care in Africa requires both grassroots action and strong policy support. Encouraging efforts are already underway. Organizations like IBD Africa, established in 2019, are increasing public awareness and offering patient education programs across the continent.[15] Professional networks, such as the Gastroenterology and Hepatology Society of Sub-Saharan Africa (GHASSA), are also contributing by providing ongoing clinical training, including virtual sessions on IBD diagnosis and treatment.[15] These initiatives are patient-centered and aim to empower both healthcare providers and those living with IBD. They have strengthened patient advocacy, encouraged open discussions, and promoted partnerships, including with pharmaceutical companies, to improve access to more affordable treatments.[15] Public campaigns, such as World IBD Day, and community outreach activities are helping reduce stigma and promote early intervention.

However, IBD care still faces significant system and policy challenges. No African country has a national registry or control program, making it difficult to track disease trends or plan services effectively. Access to care is largely confined to a few urban centers, leaving rural areas underserved. Financial barriers are significant, as insurance rarely covers chronic conditions, forcing patients to pay for tests and medications out-of-pocket.[7] Many delay seeking care due to cost or low awareness, especially when symptoms appear mild. Most national health strategies exclude IBD, leading to a lack of funding, culturally appropriate dietary advice, and psychosocial support.[48] Clinical guidelines are often borrowed from Western contexts, which may not suit local realities.[52] The shortage of region-specific research on genetics, the microbiome, or treatment response further limits evidence-based care. Together, these gaps in planning, affordability, and local data contribute to delayed diagnoses and inadequate treatment.

Limitations/Strengths of the Study

This narrative review is limited by potential selection bias and the lack of large-scale studies from Africa. However, it provides timely and relevant insights into the growing IBD burden on the continent, where awareness and policy remain underdeveloped. By combining clinical, environmental, socioeconomic, and health system perspectives, the review offers a more comprehensive view of IBD in African settings. It critically applies global knowledge to local contexts, highlights evidence gaps, and calls for more region-specific research. By connecting grassroots advocacy with systemic barriers, it serves as a valuable resource for improving IBD care and informing policy in Africa.

CONCLUSION

IBD is becoming an increasingly important public health issue in Africa, though its true impact is often concealed by underdiagnosis and poor reporting. While some clinical features align with global patterns, African cases are influenced by unique factors such as changing diets and rapid urbanization. Limited access to diagnostics and modern treatments leads to delayed care, complications, and a reduced quality of life. There is an urgent need for region-specific research on genetics, nutrition, and care approaches to guide effective responses. Addressing policy gaps by including IBD in national health plans, improving healthcare infrastructure, and expanding access to affordable treatments is essential. Adapting proven global strategies, such as early diagnosis, team-based care, and patient education, to local settings could greatly improve outcomes. Progress will require coordinated action from governments, healthcare providers, researchers, and partners across the region.

Acknowledgement: We gratefully acknowledge Prof. Dirk Haller of the Technical University of Munich for his valuable encouragement and insight, which inspired this review. His recognition of the limited literature on IBD in African

contexts highlighted the need to synthesize available evidence and identify gaps in research, policy, and practice.

Use of AI for Writing Assistance: During the preparation of this review, the authors used ChatGPT-4.0 solely to improve grammar and readability. After using this tool, the authors reviewed and edited the text as needed and take full responsibility for the content of the manuscript.

Informed Consent: Written informed consent was obtained from the patients participating in this study.

Peer-review: Externally peer-reviewed.

Author Contribution: Concept – J.M.; Design – J.M., R.O., S.M., F.N.; Supervision – J.M.; Data Collection and/or Processing - J.M., R.O., S.M., F.N.; Analysis and/or Interpretation - J.M., R.O., S.M., F.N.; Literature Review – J.M., R.O., S.M., F.N.; Writing – J.M., R.O., S.M., F.N.; Critical Review – J.M.

Declaration of Interests: The authors declare that they have no competing interest.

Funding: Authors declare that this study have not received any financial support.

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