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Healthcare Access, Economic Stability, and Food Security and Inflammatory Bowel Disease in Hispanic Adults Living in the United States

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Abstract

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by

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MS, InterAmerican University of Puerto Rico, 2018

BS, InterAmerican University of Puerto Rico, 2011

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Hispanic adults in the United States experience disparities in chronic disease detection and outcomes, including inflammatory bowel disease (IBD). Social determinants of health (SDoH), including economic stability, healthcare access, and food security, play a crucial role in shaping health risks and diagnostic opportunities in this population. The purpose of this quantitative cross-sectional study was to examine the relationship between selected SDoH factors and self-reported IBD diagnosis among U.S. Hispanic adults. This study utilized survey data from the 2023 National Health Interview Survey (n = 29,457). Weighted descriptive statistics and logistic regression were used to analyze the relationships between variables while controlling for age, gender, and employment status. The weighted sample represented 45.3 million Hispanic adults, of whom 1.1% reported a diagnosis of IBD. All three predictors were significantly associated with IBD diagnosis. Individuals living below the poverty threshold (OR = 0.785, 95% CI [0.779, 0.791], p < .001), near the poverty threshold (OR = 0.533, 95% CI [0.529, 0.537], p < .001), and those without access to healthcare (OR = 0.531, 95% CI [0.523, 0.538], p < .001) had significantly lower odds of reporting IBD. Conversely, respondents experiencing low food security (OR = 1.303, 95% CI [1.291, 1.314], p < .001) and very low food security (OR = 1.775, 95% CI [1.757, 1.793], p < .001) had significantly higher odds of reporting IBD. These findings demonstrate that structural and social conditions may influence diagnostic patterns in IBD among Hispanic adults. This research has the potential to contribute to positive social change by promoting equitable access to early detection and comprehensive care for Hispanic adults affected by IBD in the United States.

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Dedication

This dissertation is dedicated to my family: my father, who rests in Heaven, my mother, my sister, my nephew, and my boyfriend. Each of you has been a source of strength, love, and purpose throughout this journey. Your unwavering support, encouragement, and belief in me carried me through every challenge and made this accomplishment possible.

To my daddy, this final step of my doctoral journey is for you. Although you are no longer here physically, I have felt your presence and guidance every step of the way. I know you are proud of me, just as I am forever proud to be your daughter. All my love to you, always and forever, until we meet again.

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I am profoundly grateful for the love and support of my boyfriend, who stood by me through long nights of writing, periods of doubt, and every milestone along the way. His patience, faith in my abilities, and constant encouragement motivated me to keep moving forward.

I would also like to thank my family, whose unconditional love and belief in my potential have been my foundation. Their sacrifices, prayers, and emotional support have carried me through every challenge of this academic journey. Without their support, this achievement would not have been possible.

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Chapter 1: Introduction to the Study

Introduction

The purpose of this study was to examine the relationship between social determinants of health (SDoH) and inflammatory bowel disease (IBD) diagnosis among Hispanic adults living in the United States. Understanding the impact of factors such as economic stability, food security, and healthcare access is critical to addressing the health disparities faced by this population. This study aimed to provide insights into how these social determinants influence IBD diagnosis, informing public health policies and interventions to improve healthcare access and disease management. By identifying key factors affecting IBD progression in Hispanic adult communities, this research could improve health outcomes and reduce health inequities.

This chapter provides an overview of the study's topic and background information on the significance of SDoH in the context of IBD. The problem statement and the purpose of the study will be discussed, followed by an outline of the research questions, hypotheses, and theoretical framework guiding this research. Additionally, this chapter will address the study's assumptions, limitations, and significance, which will help understand the potential implications for public health policy from an epidemiological perspective.

Background

IBD encompasses a group of chronic disorders characterized by recurrent inflammation of the gastrointestinal (GI) tract, resulting from an abnormal immune response to intestinal microflora in individuals who are genetically predisposed. IBD primarily includes two distinct types: Crohn's disease (CD) and ulcerative colitis (UC), which differ in terms of the location and depth of inflammation within the GI tract (McDowell et al., 2023). Although these conditions share overlapping symptoms, they present unique clinical challenges, as the affected bowel regions and the progression of inflammation vary.

The global epidemiology of IBD is rapidly evolving, with an estimated prevalence exceeding 0.3%, disproportionately impacting regions such as North America, Oceania, and Europe (Caviglia et al., 2023). Furthermore, emerging industrialized areas are experiencing a rising prevalence of diseases attributed to lifestyle and environmental changes associated with urbanization. In the United States, approximately 762,890 cases of IBD were documented as of 2019, resulting in significant increases in direct healthcare costs and an elevated chronic disease burden (Wang et al., 2023).

Notably, the incidence of IBD is rising among racial and ethnic minority groups, including Hispanic individuals living in the United States, who now demonstrate higher incidence rates compared to non-Hispanic Whites (Zhornitskiy et al., 2021). This increase highlights the urgent need for public health initiatives to address the growing burden of IBD among these populations. Hispanic individuals face heightened risks for IBD progression and management challenges due to intersecting factors such as economic instability and limited access to specialized healthcare services (Damas et al., 2022).

The influence of SDoH on chronic disease outcomes, including IBD, is well-documented. However, there is a notable gap in research specifically addressing how SDoH impacts IBD diagnosis among adult Hispanic individuals living in the United

States. This quantitative study identified the critical SDoH significantly influencing IBD in this population. By exploring key factors such as economic stability, food security, and healthcare access, this study seeks to address an important gap in the literature and contribute to a more comprehensive understanding of the disparities in IBD outcomes among Hispanic adults in the United States.

This research has the potential to drive positive social change by addressing the influence of social determinants on health outcomes through the development and implementation of targeted social support programs and community engagement initiatives. Such efforts may include educational and awareness campaigns designed to reduce the incidence and prevalence of IBD among Hispanic adults living in the United States. By fostering greater understanding and awareness of the social and environmental factors that contribute to IBD, these initiatives aim to improve disease management and promote health equity within this underserved population.

Problem Statement

For adult Hispanic populations living in the United States, limited access to healthcare is a primary barrier, contributing to delayed diagnoses, poorer disease management, and increased complications (Damas et al., 2022). Researchers have emphasized that access to healthcare is essential for managing IBD effectively; however, Hispanic communities living in the United States frequently encounter systemic barriers, including language challenges, inadequate insurance coverage, and a lack of culturally competent care (Tulimiero et al., 2021). These barriers underscore the need for targeted policy interventions to improve healthcare accessibility and equity for minority populations. Studies examining SDoH across various chronic diseases suggest that SDoH is essential to the disease outcome (Damas et al., 2022). Nevertheless, there is a significant gap in the literature regarding how SDoH, such as economic stability, food security, and access to healthcare, specifically influence IBD among Hispanic adults living in the United States. My purpose in conducting this research was the need to assess the SDoH that may affect adults with IBD in Hispanics living in the United States due to the scarce information regarding the SDoH and its influence on IBD diagnosis or complications in Hispanic adults living in the United States. It is crucial to explore the related SDoH to gain insights into factors that could potentially lead to worse health outcomes for individuals with IBD.

Purpose of the Study

This quantitative study examined and identified critical SDoH that may significantly influence IBD among Hispanic adults in the United States. With an epidemiological focus, this research study examined the influence of key SDoH factors, including economic stability, food security, and healthcare access, on the progression and management of IBD within the study population.

Research Questions and Hypotheses

Research question (RQ)1: What is the relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States?

$H_0$1: There is no statistically significant relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States.

H_a1: There is a statistically significant relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States.

RQ2: What is the relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States?

$H_0$2: There is no statistically significant relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States.

H_a2: There is a statistically significant relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States.

RQ3: What is the relationship between food security and IBD diagnosis among Hispanic adults living in the United States?

$H_0$3: There is no statistically significant relationship between food security and IBD diagnosis among Hispanic adults living in the United States.

H_a3: There is a statistically significant relationship between food security and IBD diagnosis among Hispanic adults living in the United States.

Conceptual Framework for the Study

This study was grounded in the SDoH framework outlined in the Healthy People 2030 initiative and the World Health Organization (WHO) 2024. The SDoH framework explores how environmental conditions, such as where individuals are born, live, work, and age, impact health outcomes, quality of life, and overall well-being (Healthy People 2030, n.d.b; WHO, 2024). Specifically, this research focused on assessing the relationship between SDoH factors and IBD among adult Hispanic individuals in the United States by addressing a gap in the existing literature. Recent evidence has highlighted that IBD prevalence is increasing globally, with approximately 4.9 million individuals now affected (Wang et al., 2023). Within the United States, Hispanic populations face unique challenges, including economic instability and limited access to specialized healthcare services, which exacerbate disease progression and hinder effective management (Damas et al., 2022).

The conceptual framework for this study built upon an extensive body of research that underscores the impact of socioeconomic, healthcare, and environmental factors on health disparities. While the SDoH framework has been widely applied to chronic disease research, its use in examining IBD outcomes among Hispanic adult populations is limited, thereby presenting a significant gap in the literature. By examining the impact of economic stability, food security, and healthcare access on IBD diagnosis, this study sought to provide a more in-depth and comprehensive understanding of these crucial relationships.

Logical connections among the framework's key elements are evident through their alignment with the epidemiological principles embedded in the Healthy People 2030 initiative. These principles emphasize addressing the social and environmental conditions that shape health outcomes, particularly among underserved populations. This approach aligns with public health objectives to reduce health disparities and achieve equitable outcomes (Healthy People 2030, n.d.b).

The SDoH framework provides a foundation for evaluating the socioeconomic and healthcare-related variables that influence IBD outcomes in Hispanic adult populations. This approach addresses critical knowledge gaps and supports the development of targeted interventions and policies. By prioritizing the needs of marginalized groups, the study aligns with public health goals to improve population health and promote health equity.

Nature of the Study

I used a nonexperimental cross-sectional study design to address the RQs in this quantitative study. I analyzed secondary data from the 2023 National Health Interview Survey (NHIS). This dataset provides information on IBD diagnosis among Hispanic adults, along with the independent variables of poverty, access to health services, and food security. Cross-sectional studies collect data simultaneously, allowing researchers to assess the prevalence of different variables and their associations within a population (Burkholder et al., 2019). These studies are beneficial for measuring the prevalence of health outcomes, understanding health determinants, and describing the characteristics of populations (Wang & Cheng, 2020). In this study, I explored the relationship between the

SDoH and IBD among Hispanic adults living in the United States based on poverty, access to health services, and food security. I used descriptive statistical analysis and logistic regression models to assess the significance of the relationships between independent variables and the diagnosis of IBD.

Definitions

Access to health services: The ability to utilize personal health services promptly to achieve optimal health outcomes. Limited access to care can negatively impact an individual's physical, mental, and social well-being, as well as their quality of life and overall livelihood (Healthy People 2030, n.d.a).

Crohn's disease (CD): A chronic autoimmune disease and a type of IBD that causes digestive tract inflammation and affects the small intestine (National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], 2024).

Economic stability: A crucial determinant of health, defined by sufficient financial resources to meet essential needs and support well-being. It includes factors such as stable, well-paying employment, access to affordable housing, and reliable transportation, which play a key role in reducing health risks and preventing chronic illnesses and premature death (Centers for Disease Control and Prevention [CDC], 2023; The Network for Public Health Law, n.d.). Economic stability ensures that individuals have the resources necessary for maintaining a healthy life, thereby alleviating the adverse effects of financial insecurity on overall health outcomes (The Network for Public Health Law, n.d.).

Financial toxicity: The adverse consequences of economic strain resulting from medical expenses, which can compromise patients' well-being and reduce quality of life (Pisu & Martin, 2022).

Food security: Is characterized by consistent access to sufficient, nutritious food for maintaining an active and healthy life. In 2020, nearly 15% of households in the United States faced periods of food insecurity, reflecting challenges in ensuring adequate food availability for all members to support their health and overall well-being (National Institute on Minority Health and Health Disparities [NIMHD], 2024).

Hispanic / Latino: Encompass individuals with cultural or ancestral ties to Cuba, Mexico, Puerto Rico, Central or South America, or other Spanish-speaking regions, regardless of their racial background (U.S. Census Bureau, 2024a). Hispanic and Latino are interchangeable terms for the purposes of this study.

Inflammatory bowel disease (IBD): A group of chronic disorders that cause recurrent inflammation in the intestines and can lead to complications in the GI tract (CDC, 2024a).

Poverty: The lack of sufficient financial resources to meet basic needs for survival and well-being. In the United States, the Census Bureau defines poverty as having a total family income below the official threshold for that family's size and composition (US Census Bureau, 2024b; Habitat for Humanity, n.d.).

Ulcerative colitis: The most common type of IBD that affects the inner lining of the colon, causing inflammation from the rectum through the colon (CDC, 2024b).

Assumptions

First, I assumed that participants provided truthful, honest, and accurate responses to the survey questions in the NHIS, ensuring the reliability of the self-reported data. Additionally, survey responses in the NHIS were presumed to be complete, with minimal missing data, reducing the potential for bias in the analysis. The sampling methodology of the NHIS, which employs a stratified multistage and cluster sampling design, was assumed to represent civilians and noninstitutionalized U.S. populations within the 50 states and the District of Columbia, which reflects the diversity of ethnicity, socioeconomic status, and demographic characteristics, which was essential for the generalizability of the findings (see CDC, 2024c). Finally, it was assumed that Hispanic participants in the NHIS included individuals born in the United States and those who migrated to the country.

Scope and Delimitations

This study investigated the relationship between SDoH and IBD prevalence among Hispanic adults in the United States, focusing on economic stability, food security, and healthcare access. The study utilized secondary data from the NHIS 2023, specifically focusing on Hispanic adults aged 18 and older, encompassing both U.S.-born and immigrant populations. Non-Hispanic individuals and those under 18 were excluded to focus on health disparities specific to Hispanic adults. The SDoH framework guided the study, while alternative frameworks, such as the social ecological model, were not included to maintain focus on the research objectives.

Using secondary data and self-reported measures poses threats to internal and external validity. Participants may have provided responses they deemed socially acceptable rather than reflecting their attitudes, perceptions, or behaviors, which could compromise the study's internal validity. Furthermore, the NHIS questionnaire, while designed for a diverse population, may contain terms or concepts that some participants, particularly those with limited English proficiency, may not fully comprehend. This could affect the reliability and accuracy of the data, further threatening internal validity. External validity is limited when using NHIS data, as these data may not capture the full diversity of the Hispanic population, and voluntary participation may not accurately represent the general population.

Limitations

This study had several limitations. First, due to the cross-sectional design of the NHIS, causal inferences cannot be drawn. The reliance on self-reported data may introduce bias, as participants could provide socially desirable answers or misinterpret questions. Additionally, the health outcomes in NHIS are not validated by healthcare professionals, which affects the reliability of the data. Despite the availability of English and Spanish versions and bilingual interviewers, some terminology in the NHIS may not be fully understood by all participants, which could potentially affect construct validity.

Another limitation is that the NHIS data may not fully capture small subpopulations, which may be underrepresented in the data. The voluntary nature of participation introduces selection bias, as individuals who opt to participate may differ from those who do not, potentially skewing the results. The potential for sampling error in these groups could affect the generalizability of the findings. As with many cross-sectional studies, sample bias is inherent, meaning that the findings may not apply to all populations (Wang & Cheng, 2020).

Significance

This study addressed a critical gap in assessing the SDoH influencing IBD among Hispanic adults living in the United States. By examining epidemiological patterns and the role of SDoH, the findings from this research can potentially guide the development of targeted public health interventions and policy changes aimed at reducing disparities and enhancing healthcare for Hispanic adults with IBD. Furthermore, it can promote community engagement initiatives that focus on raising awareness, providing education, and empowering individuals to take proactive steps toward improving their health. These efforts can focus on educational and awareness campaigns to reduce the incidence and prevalence of IBD among Hispanic adults in the United States.

Summary

The high incidence of IBD among Hispanic adults in the United States is a significant public health concern. I examined the relationship of SDoH, including economic stability, healthcare access, and food security, on IBD diagnosis among Hispanic adults in the United States. I hope my findings contribute to a deeper understanding of how these factors influence IBD diagnosis in Hispanic adults and guide future research addressing health disparities within this population. My research aimed to inform policymakers, public health professionals, and future scholars in developing effective interventions and strategies to reduce the burden of IBD among Hispanic adults in the United States.

Chapter 2 includes a review of literature from various studies on IBD among United States minorities, primarily focusing on the Hispanic adult population. This review will help establish the study's conceptual framework by examining the relationship between SDoH and IBD prevalence. The discussion in Chapter 2 will focus on the significant social health disparities faced by Hispanic adults with IBD, emphasizing the connection with factors such as socioeconomic status, healthcare access, and food insecurity.

Chapter 2: Literature Review

Introduction

IBD, which encompasses CD and UC, is a chronic condition that causes recurrent inflammation in the GI tract (McDowell et al., 2023). The burden of IBD is increasing globally, and annual incidence rates vary by geographical region. Current literature suggests that IBD incidence in the United States is also growing among minority groups, including Hispanics, with incidence rates of 62.68% compared to non-Hispanic Whites (29.83%; Zhornitskiy et al., 2021). In 2019, approximately 762,890 cases of IBD were reported in the United States (Wang et al., 2023). Several SDoH are associated with effective treatment for IBD, healthcare access, and dietary needs due to food insecurity, especially for Hispanics living in the United States (Bernstein et al., 2020; Damas et al., 2022). The literature review is guided by the Healthy People 2030 framework on the SDoH to examine factors that influence disease prevalence and management in Hispanic communities. Identifying and addressing key factors affecting disease progression in Hispanic communities may decrease health disparities and could improve health outcomes of individuals diagnosed with IBD, specifically CD and UC.

This chapter provides an overview of the databases and keywords used to identify the research gap. The literature review section describes the variables and conceptual framework that will be used to understand the SDoH disparities related to IBD in Hispanic adults living in the United States.

Literature Search Strategy

A systematic literature review was conducted to examine the SDoH factors that can affect IBD outcomes among Hispanic adults living in the United States. The following databases were accessed: PubMed, ScienceDirect, NCBI, Google Scholar, PLOS ONE, BMC, and EBSCOhost. The search was based on the following terms: *inflammatory bowel disease or IBD, ulcerative colitis, Crohn's disease, incidence or prevalence, Hispanic or Latino, social determinants of health or SDOH, poverty or financial toxicity, access to healthcare, food insecurity,* and *economic stability.* The literature search strategy was limited to peer-reviewed articles written in English and published within the previous 5 years. The identified references were manually reviewed to assess their relevance and context, informing this dissertation.

Conceptual Framework

The SDoH framework, as outlined in the Healthy People 2030 initiative and the WHO 2024, served as the guiding framework for this study. The SDoH framework examines how various environmental conditions, such as where individuals are born, live, work, and age, affect health outcomes, quality of life, and overall well-being (Healthy People 2030, n.d.b; WHO, 2024). By emphasizing the influence of socioeconomic, healthcare, and environmental conditions, this framework explains how systemic factors contribute to health disparities within populations, underscoring the need for targeted health interventions.

Research has shown that IBD cases are rising globally, with nearly 4.9 million individuals now affected by the disease, including many in the United States (Wang et al., 2023). Hispanic populations within the United States face heightened risks related to the progression and management of IBD due to intersecting factors such as economic instability and limited access to specialized healthcare (Damas et al., 2022). While these social determinants are known to impact chronic disease progression broadly, there remains a gap in research focusing specifically on how SDoH affects IBD among Hispanic adult individuals living in the United States.

The application of the SDoH framework in this study is essential for exploring the social and environmental factors that impact the prevalence of chronic conditions like IBD among adult Hispanic individuals living in the United States. Understanding these determinants is crucial to achieving public health goals, such as those outlined in the Healthy People 2030 initiative, which prioritizes nonclinical factors to attain equitable health outcomes (Healthy People 2030, n.d.b). This framework supports efforts to reduce health disparities and provides a foundation for shaping clinical practices and health policies that are better aligned with the needs of marginalized populations.

Literature Review Related to Key Variables

Etiology of IBD

IBD is a group of chronic disorders that cause recurrent inflammation in the GI tract due to an abnormal immune response to intestinal microflora in genetically predisposed individuals. It includes two main types, CD and UC, which differ based on the location and depth of inflammation within the GI tract (McDowell et al., 2023). Although these conditions share similar symptoms, they affect the bowel in distinct ways, leading to unique clinical challenges.

CD causes inflammation that penetrates the entire thickness of the bowel wall (transmural) and can occur anywhere in the GI tract. However, it most often impacts the terminal ileum and colon. The disease progresses in a discontinuous, patchy pattern, leading to complications such as strictures, fistulas, and abscesses. Clinicians classify CD into inflammatory, structuring, or penetrating phenotypes based on how the disease develops in each case (McDowell et al., 2023). In contrast, UC causes continuous inflammation limited to the mucosal layer of the colon and rectum, usually beginning in the rectum (proctitis) and potentially spreading throughout the colon (pancolitis). UC remains confined to the large intestine, unlike CD, which can affect other areas of the digestive tract (Mayo Clinic, 2022).

Both CD and UC are characterized by diverse clinical presentations, which include diarrhea, abdominal pain, weight loss, and rectal bleeding that can worsen if left untreated. However, the severity and frequency of these symptoms vary across individuals and over time (CDC, 2024a; Wang et al., 2023). IBD often follows a cyclical pattern of flare-ups and remissions, with periods of symptom relief interrupted by sudden exacerbations (CDC, 2024a). Although researchers have not identified a definitive cause, studies suggest that IBD results from a combination of genetic, environmental, immune, and microbial factors (Wang et al., 2023). Key risk factors include early diagnosis, typically before the age of 30, a family history of IBD, and ethnicity, with a secondary peak in diagnoses occurring among individuals in their 60s (Johns Hopkins Medicine, n.d.).

Managing IBD requires personalized strategies to control symptoms and prevent complications. Without proper treatment, UC and CD can cause serious health outcomes, including bowel obstructions, fistulas, and a heightened risk of colorectal cancer. SDoH, including socioeconomic status, access to healthcare, food security, transportation, and environmental exposures, also influence disease progression and outcomes by affecting individuals' quality of care and their ability to manage chronic diseases such as IBD (Shah et al., 2023). Researchers have continued to investigate the interplay between genetics, immune function, gut microbiota, and social factors to refine treatment approaches and improve individual outcomes (McDowell et al., 2023).

Epidemiology of IBD

The global epidemiology of IBD is rapidly evolving, with an estimated prevalence of over 0.3%, resulting in a higher burden in regions such as North America, Oceania, and Europe (Caviglia et al., 2023). Emerging industrialized areas have also experienced rising prevalence, attributed to lifestyle and environmental changes associated with urbanization. In the United States alone, approximately 762,890 cases of IBD were identified by 2019, leading to substantial increases in direct healthcare costs and overall chronic disease burden (Wang et al., 2023). Around the United States, there are approximately 39,000 to 56,000 new IBD diagnoses per year (Lewis et al., 2023). The incidence of IBD is also growing among racial and ethnic minority groups, including Hispanic individuals living in the United States, who now demonstrate higher incidence rates (62.68%) compared to non-Hispanic Whites (29.83%; Zhornitskiy et al., 2021). There is an increased frequency of extensive UC in Hispanics compared to non-Hispanic whites (Barnes et al., 2020). This increase highlights the need for public health initiatives and resource allocation to manage the growing IBD burden among these populations, primarily because the U.S. Census trends predict that 54% of the U.S. population will comprise minorities by 2050, with Hispanics accounting for 45% of the population (Ore et al., 2022).

Historically considered a Western disease, IBD has also spread to newly industrialized regions such as Latin America and the Caribbean, where rapid urbanization and dietary shifts have contributed to rising incidence rates (Yamamoto-Furusho et al., 2022). Disease distribution in these regions varies, with CD found to be more prevalent in the Caribbean. At the same time, UC dominates Latin American countries, with an incidence 7.7 times higher for UC, 12.8 times higher for CD, and 3.8 times higher for inconsistent colitis (IC; Yamamoto-Furusho et al., 2022). These regional variations reflect complex interactions among environmental, genetic, and healthcare disparities, highlighting the need for interventions tailored to local needs and conditions. Additionally, Caribbean individuals with IBD reportedly exhibit aggressive disease behaviors, including resistance to corticosteroids, underscoring the critical importance of timely diagnosis and effective disease management (Damas et al., 2022).

Effective treatment of IBD imposes considerable costs on individuals, impacting dietary needs, frequency of medical visits, and quality of life (Bernstein et al., 2020). Individuals from higher sociodemographic index regions have experienced better disease outcomes due to their access to advanced therapies and robust healthcare infrastructure. At the same time, those in lower-resource areas have faced more severe disease progression and higher hospitalization rates (Wang et al., 2023). For Hispanic populations in the United States, limited access to healthcare is a primary barrier, contributing to delayed diagnoses, poorer disease management, and increased complications (Damas et al., 2022). Researchers have emphasized that access to healthcare is essential for managing IBD effectively; however, Hispanic communities in the United States frequently encounter systemic barriers, including language challenges, inadequate insurance coverage, and a lack of culturally competent care (Tulimiero et al., 2021). These barriers underscore the need for targeted policy interventions to improve healthcare accessibility and equity for minority populations. Furthermore, there is scarce research regarding SDoH's impact on IBD outcomes in Hispanic adults living in the United States.

Delayed Diagnoses and Healthcare Disparities

Damas et al. (2022) identified delayed diagnosis as a recurring issue among Hispanic individuals diagnosed with IBD, which often led to worsened disease outcomes and higher complication rates. Many individuals sought care only in emergency settings, which increased the likelihood of disease progression and long-term disability. These authors highlighted systemic barriers, including a lack of access to specialized gastroenterology services and inadequate health insurance coverage, as contributing to these delays. Similarly, Yamamoto-Furusho et al. (2022) found that delays of more than two years were common among people living in the Caribbean, which compounded the risk of complications.

Wang et al. (2023) reported that Hispanic individuals were less likely to receive biologic therapies, even when their disease severity warranted such interventions. This disparity was attributed to underinsurance and logistical challenges, including the limited availability of specialists in rural areas. Language barriers and low health literacy levels further exacerbated the issue of access to healthcare. Lee et al. (2023) argued that expanding telemedicine services and recruiting bilingual providers could mitigate some of these challenges by offering more accessible care options for underserved populations. Mistrust of healthcare providers among some Hispanic communities also hindered timely diagnosis and adherence to treatment (Agrawal et al., 2019).

The Role of Poverty and Financial Toxicity

Poverty remains a significant barrier to effective IBD management for Hispanic populations in the United States. Hispanic households reported higher poverty rates than their non-Hispanic White counterparts, which limited access to medications, consultations, and preventive services (Hobbs & Thakur, 2019). Financial toxicity, or the economic strain associated with managing chronic illness and medication non-adherence, is exceptionally high among individuals diagnosed with IBD due to the high costs of biologics and hospitalizations (Damas et al., 2022). In the United States, IBD care's direct and indirect cost is estimated at over $30 billion annually (Axelrad et al., 2019). Consequently, many Hispanic individuals with IBD reported delaying treatments or discontinuing medications because of financial limitations, which increased the likelihood of disease relapse and complications (Damas et al., 2022). Results from a cohort study suggest that limited financial resources could increase the risk of adverse outcomes in individuals with IBD (Shah et al., 2023).

Financial toxicity was found to be particularly prevalent among people with IBD, as high costs associated with biologics, hospitalizations, and surgeries imposed significant economic burdens (Wang et al., 2023). Also, lower socioeconomic status or poverty was associated with more physician visits, hospitalizations, corticosteroid use, and death in individuals with IBD (Bernstein et al., 2020). Many people with IBD, particularly those relying on Medicaid, struggled with out-of-pocket expenses and accrued medical debt, compounding their financial stress and limiting their access to necessary treatments (Wang et al., 2023). Financial strain further impacted mental health outcomes; elevated levels of anxiety and depression among persons with IBD were associated with economic hardship, complicating their ability to manage the disease effectively (Yamamoto-Furusho et al., 2022). In addition, financial toxicity was related to affect other social determinants, such as food insecurity (Thakur & Barret, 2021). Lower income status, insecure employment status, and lack of health insurance contribute to financial hardships that negatively impact healthcare access, as highlighted by Lee et al. (2023).

In a recent study, an estimated 422,614 individuals, or 14% of U.S. adults with IBD, were food insecure (Nguyen et al., 2021). Incorporating financial counseling into individual care could alleviate some of these challenges. People with IBD could benefit from referrals to assistance programs that cover medication costs or subsidized care, promote treatment adherence, and reduce hospitalizations (Hobbs & Thakur, 2019).

Improving access to such resources could play a crucial role in enhancing the quality of life and health outcomes for low-income Hispanic adults with IBD.

Barriers to Accessing Healthcare Services

Access to specialized healthcare services remains essential in determining health outcomes for Hispanic individuals with IBD. Studies have shown that people with IBD relying on public insurance programs like Medicaid face limited access to gastroenterologists and advanced treatments (Agrawal et al., 2019). These restrictions in access often led to delays in treatment, resulting in increased complications and reliance on emergency services (Agrawal et al., 2019). However, universal healthcare access does not indicate optimal health (Bernstein et al., 2020).

Geographic barriers further restricted access to healthcare, especially for Hispanic individuals with IBD in rural or underserved urban communities. Many individuals had to travel long distances to access gastroenterology clinics, resulting in missed appointments and worsened health outcomes due to treatment delays (Yamamoto-Furusho et al., 2022). Delays in IBD diagnosis resulted in morbidity from untreated disease complications that may have been less severe or prevented with early diagnosis (Anyane-Yeboa et al., 2022). Expanding mobile care options has been proposed to bridge these gaps, providing more accessible consultations and reducing individual logistical burdens (Lee et al., 2023).

Language and cultural barriers also limit adequate healthcare access for Hispanic individuals. Many individuals reported difficulty understanding medical instructions, which resulted in treatment non-adherence and poorer disease outcomes (Damas et al., 2022). Increasing the availability of bilingual providers and culturally tailored individual education programs is essential for promoting better disease management and overall individual engagement (Lee et al., 2023).

Food Insecurity and IBD Outcomes

Food insecurity is the uncertain access to adequate and affordable nutritious food, which has been identified as a significant SDoH that can significantly impact Hispanic households dealing with chronic illnesses like IBD (NIMHD, 2024). In 2020, 10.5% (13.7 million) of U.S. households experienced food insecurity; the ethnic minority population was the most affected (Murkey et al., 2024). In a population-based study of individuals with IBD, it was found that 1 in 8 individuals had food insecurity and lacked social support (Bernstein et al., 2020). Additionally, food insecurity, which includes poor diet and nutrition, has been associated as a risk factor for IBD, multiple chronic conditions, and overall health status, impacting healthcare utilization with an annual estimation of health expenditure of $77.5 billion (Han et al., 2020; Mayfield et al., 2024).

Individuals experiencing food insecurity often reported higher disease activity, reduced adherence to medications, malnutrition, obesity risk, poor sleep, and increased psychological distress, as limited access to nutritious foods exacerbated symptoms and could exacerbate IBD (Murkey et al., 2024; Ofili & Lawson, 2020). This restricted access to anti-inflammatory foods compounded disease management challenges for persons diagnosed with IBD, leading to increased symptom severity and more frequent disease flares (Khademi et al., 2023). Several studies have found that individuals with IBD reported problems with food security and limited access to nutritional food (Shah et al., 2023). Programs that referred individuals to food banks and nutrition assistance resources were associated with better adherence to treatment plans and improved control of IBD (Wang et al., 2023). Incorporating food insecurity screenings into routine care can help healthcare providers identify individuals at risk early and connect them to essential food resources (Yamamoto-Furusho et al., 2022).

Structural barriers, such as transportation difficulties, limited program hours, and concerns about deportation, also restricted access to food resources for many Hispanic individuals (Mokari-Yamchi et al., 2024). Collaborative efforts between healthcare providers and community organizations could address these challenges, offer flexible services, and expand nutrition education programs for Hispanic communities (Lee et al., 2023). Additionally, educating individuals about affordable dietary options could empower them to make healthier food choices, reducing the frequency and severity of IBD flares. Interventions targeting food insecurity could show positive effects on chronic disease management.

Summary and Conclusions

The literature review provided insight into the intersection of IBD and the SDoH, emphasizing the disparities experienced by Hispanic adult populations in the United States. The review revealed that individuals within these communities frequently encounter substantial structural and systemic barriers, including limited economic resources, restricted access to quality healthcare services, and food insecurity. The literature was consistent that these challenges contribute to delayed diagnoses, poorer disease management, and worse health outcomes among individuals living with IBD. As the incidence of IBD is growing among Hispanics, it could intensify the vulnerability to adverse IBD-related outcomes. Despite the growing incidence of IBD among Hispanic adult individuals, there is a need to fill the gap in research that systematically explores the relationship between SDoH and IBD in this population.

Chapter 3 outlines the research methodology for a quantitative investigation to address the RQs and examine the relationship between SDoH and IBD diagnosis among Hispanic adults in the United States.

Chapter 3: Research Method

Introduction

I conducted this quantitative study to examine and identify critical SDoH significantly influencing IBD diagnosis among Hispanic adults in the United States. With an epidemiological focus, this research study examined the influence of key SDoH factors, including economic stability, food security, and healthcare access, on IBD diagnosis within this population. In this chapter, I will describe the research design, methodology, population, and sampling strategy, utilizing secondary data from the 2023 NHIS. I will also discuss the data collection procedures and data analysis plan, as well as threats to validity and ethical considerations that will support my research.

Research Design and Rationale

This study used a retrospective, nonexperimental cross-sectional design to investigate the relationship between independent variables (i.e., poverty, access to healthcare, food security) and the dependent variable (IBD diagnosis). Demographic characteristics were included as covariates. The data for this study were secondary data obtained from the NHIS for the year 2023. The NHIS dataset constituted self-reported information on health, health behaviors, healthcare access and use, health insurance coverage, and demographics. The dataset is publicly available on the CDC's internet-based website (see CDC, 2024c). Cross-sectional studies collect data simultaneously, allowing researchers to measure the prevalence of different variables and their relationship within a population (Burkholder et al., 2019). These studies help estimate the prevalence of health outcomes, understand health determinants, and describe a population's characteristics (Wang & Cheng, 2020). A quantitative method is appropriate for examining the relationship between variables and testing hypotheses, as it enables the researcher to identify and analyze measurable patterns and relationships within the sample population. This methodology eases the evaluation of phenomena or occurrences affecting individuals by employing numerical data and statistical analysis (Allen, 2017; Coghlan & Brydon-Miller, 2014).

Methodology

A nonexperimental quantitative study assessed the relationship between SDoH and IBD among Hispanic adults living in the United States. The study utilized secondary data from the 2023 NHIS, a national survey conducted by the National Center for Health Statistics (NCHS) that provides insights into the estimated health of the U.S. population (see CDC, 2024c). The hypothesis was tested for significance to determine if SDoH factors, as measured by poverty, food security, and access to primary care, have a significant relationship with IBD outcomes among Hispanic adults living in the United States. Demographic characteristics were included as covariates.

Population

The target population is limited to Hispanic or Latino adults aged 18 and older residing in the United States who participated in the 2023 NHIS. Inclusion criteria included participants who self-identified as Hispanic or Latino, were 18 years of age or older, and provided valid responses to the questions regarding IBD diagnosis "Have you ever been told by a doctor or other health professional that you had Crohn's Disease?" and "Have you ever been told by a doctor or other health professional that you had

Ulcerative Colitis?" Non-Hispanic individuals and those respondents with incomplete data were excluded from this study.

Sampling and Sampling Procedures

This study utilized secondary data from the NHIS, which employs a stratified, multistage, and cluster sampling design. The survey is conducted confidentially through personal interviews on an annual basis and collects data from approximately 27,000 adults. However, the sample size varies from year to year. The sampling strategy ensures representation from civilians and the noninstitutionalized U.S. population within the 50 states and the District of Columbia, including diverse racial and ethnic groups (CDC, 2024c). Data from NHIS 2023 were used in this study. In the 2023 survey, the sample of adults interviewed was 29,522, with a response rate of 47.0% (NCHS, 2024).

Power Analysis

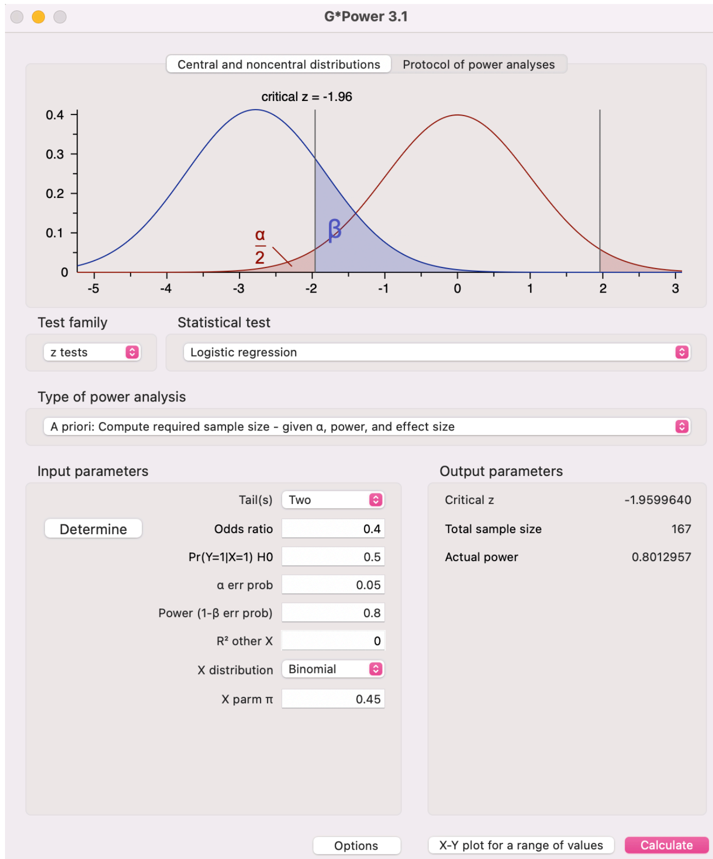
Power analysis is a crucial step in research design, as it helps determine the minimum sample size required to determine if the results obtained are statistically significant (Kemal, 2020). Insufficient statistical power can result in a low probability of making the correct decision and a higher likelihood of selecting incorrect choices. It is recommended that power analysis be conducted using validated software to ensure the sample size provides adequate power for the study (Kang, 2021). Several studies have suggested a statistical power of 0.8 (80%) and an alpha level of 0.05 (Serdar et al., 2020).

For this study, G*Power version 3.1.9.6 was used to determine the sample size required to ensure a statistical power of 80%. G*Power is a statistical software that allows the researcher to estimate the necessary sample size based on the input parameters

(Faul et al., 2009). A similar study, "Social Determinants of Health and Type 2 Diabetes among Enrollees of California Children's Services Program in Fresno County, California" (Aghadjanian, 2021), was used as a reference to calculate the power analysis based on similarities in research design and the *z*-test family. The statistical test of logistic regression was aligned with the study's statistical analysis. The sample size necessary was 80% certain of identifying a statistically significant outcome should the hypothesis be valid for the population, with P for statistical significance set at 0.05 and calculated using G*Power (Andrade, 2020). The sample size is a crucial consideration, as it directly impacts the statistical power, precision of estimates, and generalizability of the study findings. This allows for a more precise estimation of population parameters and enhances confidence in the study findings (Biau et al., 2008). The type of power analysis was calculated using a priori, which computed the required sample size using the following input parameters: Tails = Two, Odds ratio = 0.4 (Medium effect size), α error probability = 0.05, power = 0.8 (or 80%), $R^2 = 0$, and X parm $\pi = 0.45$. As a result, the minimum sample size needed for this was 167 participants. Figure 1 illustrates the parameters used to estimate the minimum required sample size for this research.

Figure 1

*Sample Size Calculation Using G*Power Version 3.1.9.6*



Procedures for Data Collection

This research used secondary data from NHIS 2023, which collects health data on the U.S. population. Trained staff conduct the data collection through online interviews or face-to-face interviews nationwide. Participation in this survey is voluntary, and each participant signs an informed consent (CDC, 2024c). The data are de-identified, and access does not require special permissions, as they are publicly available online through the CDC's NCHS website (https://www.cdc.gov/nchs/nhis/documentation/2023-nhis.html).

Instrumentation and Operationalization of Constructs

Operationalization involves defining variables in detailed descriptions that can be measured (DeCarlo, 2019). The NHIS comprises reliable and validated survey items developed by the NCHS, intended to capture essential measurements of the U.S. population's health status, healthcare access, and health behaviors (CDC, 2024c). Ensuring that any study is valid and reliable is crucial for advancing in the field and gaining a deeper understanding of human behavior (Babbie, 2017). The dataset was appropriate for this study because it includes variables necessary to guide my RQs about the SDoH in the US Hispanic adult population. I selected three primary independent variables based on the Healthy People 2030 and WHO 2024 SDoH domains: economic stability (measured as poverty), healthcare access (measured as access to primary care), and inability to acquire adequate food (measured by food security). The dependent variable, IBD outcome, is a self-reported diagnosis of UC or CD.

Dependent Variable

The dependent variable for this study was IBD diagnosis, which was self-reported as either UC or CD. IBD involves CD and UC, a group of inflammatory conditions in the GI tract, specifically located in the intestines. Persistent inflammation can lead to complications, requiring more healthcare visits and hospitalizations. Following a nutritional diet, medication, and attending regular medical appointments is recommended to reduce disease complications (Damas et al., 2022; Han et al., 2020; Shah et al., 2023).

Independent Variables

The independent variables of interest were economic stability (measured by poverty ratio), healthcare access (measured by access to primary care), and inability to acquire adequate food (measured by food security). These variables were selected based on the Healthy People 2023 and WHO 2024 SDoH conceptual framework. Effective treatment of IBD imposes significant expenses on individuals, affecting their dietary needs, the regularity of medical visits, and overall quality of life (Bernstein et al., 2020). Demographic characteristics, including gender, age, and employment, will be included as covariates. Table 1 presents a summary of variables and their level of measurement.

Table 1

Summary of Variables and Level of Measurement

Variable type	Variable name	Level of measurement
Dependent	IBD_DX (IBD Diagnosis)	Nominal
Independent	FDSCAT3_A (Food security)	Ordinal
Independent	POVERTY3 (Poverty ratio)	Ordinal
Independent	NOCARE12M (Access to primary care)	Nominal
Covariate	AGE_A (Age)	Continuous
Covariate	SEX_A (Gender)	Nominal
Covariate	EMPLASTWK_A (Employment status)	Nominal

Data Analysis Plan

To address the RQs and analyze the data, I used IBM's Statistical Package for the Social Sciences (SPSS) version 30, a statistical software program for data management and analysis (IBM, n.d.). I utilized secondary data from the NHIS 2023, which was screened and cleaned to remove missing values and recoded into binary or grouped variables as needed for regression analysis. Participants with incomplete data on the main study variables were excluded from the analysis.

Descriptive statistics and logistic regression were conducted to determine whether to reject or retain the null hypothesis based on an alpha level of 0.05. As stated in Chapter 1, the RQs were as follows:

RQ1: What is the relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States?

$H_0$1: There is no statistically significant relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States.

H_a1: There is a statistically significant relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States.

RQ2: What is the relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States?

$H_0$2: There is no statistically significant relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States.

H_a2: There is a statistically significant relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States.

RQ3: What is the relationship between food security and IBD diagnosis among Hispanic adults living in the United States?

$H_0$3: There is no statistically significant relationship between food security and IBD diagnosis among Hispanic adults living in the United States.

H_a3: There is a statistically significant relationship between food security and IBD diagnosis among Hispanic adults living in the United States.

Descriptive statistics were computed to summarize the sample's demographic characteristics and the primary study variables, including means, standard deviations, frequencies, and percentages. Descriptive statistics help display the data in an optimal way for visualization, aiding researchers in identifying a specific area of study of interest (Wagner, 2020). A person-level weight variable (WTFA_A) was applied to all analyses to account for the NHIS's complex, multistage probability sampling design. This adjustment corrected for unequal probabilities of selection and nonresponse, ensuring that the estimates accurately represented the US civilian, noninstitutionalized Hispanic adult population (NHHS, 2024). Weighted analyses were performed in SPSS to produce nationally representative prevalence estimates and to examine relationships between variables. Logistic regression was used to explore the relationship between the dependent and independent variables. Logistic regression analysis allows the examination of the association between categorical predictors and a binary outcome (presence or absence of IBD) while controlling for potential covariates (Warner, 2013). According to Warner (2013), logistic regression is appropriate when the RQ involves a categorical or dichotomous outcome variable and predictor variables that can be either categorical or continuous. Statistical significance was set at $p < .05$, and odds ratios (OR) and confidence intervals (CIs) were reported as appropriate.

Threats to Validity

Using secondary data and self-reported measures poses threats to internal and external validity. Participants may have provided responses they considered socially acceptable rather than reflecting their attitudes, perceptions, or behaviors, which could compromise the study's internal validity. While the NHIS offers a Spanish version of the questionnaire and employs bilingual interviewers, some participants may still encounter challenges in understanding specific terminology or concepts. This could affect the reliability and accuracy of the data, further threatening internal validity. External validity concerns the generalizability of the findings to the target population (Burkholder et al., 2020). However, external validity can also be improved by drawing a sample from a population, which can be done using random selection (Trochim & Donnelly, 2006). External validity is limited when using NHIS data, as these data may not capture the full diversity of the Hispanic population, and voluntary participation may not accurately represent the general population.

Ethical Procedures

This research study employed secondary data from the 2023 NHIS, a publicly available dataset. Participation in this survey was voluntary, and each participant signed an informed consent form provided by the NHIS and NCHS, which are legally responsible for protecting participants' confidentiality and data storage (see CDC, 2024c). The dataset was de-identified, and access does not require special permissions as it is publicly available. Hence, the present research study posed no risk to participants' confidentiality. The data used for this dissertation were solely for research, and no attempt was made to identify providers or participants; no unnecessary manipulations were made. Approval to conduct this secondary analysis was obtained from the Walden International Review Board (IRB) before analyzing the dataset, IRB 07-24-25-1023552.

Summary

This quantitative study utilized a retrospective, nonexperimental cross-sectional design to investigate the relationship between SDoH, specifically poverty, access to healthcare, food security, and the dependent variable (IBD diagnosis) among Hispanic adults in the United States. The research design was appropriate for examining the relationship between variables and testing hypotheses, as it facilitates the identification and analysis of measurable patterns and relationships within the sample population. The study used secondary data from the 2023 NHIS. The NHIS dataset includes self-reported information from the U.S. population on health, health behaviors, healthcare access and use, health insurance coverage, and demographics. Only participants who self-identified as Hispanic or Latino, aged 18 or older, and provided valid responses of being diagnosed or having been diagnosed with CD or UC were included in this study.

A power analysis conducted with G*Power determined the minimum sample size required for this study to achieve statistically significant results. Statistical analysis was performed using IBM SPSS version 30. The data were analyzed using descriptive statistics and weighted logistic regression to determine whether to reject or retain the null hypothesis. Each RQ was individually tested to assess the relationships between independent and dependent variables, including *p*-values, odds ratios (*OR*s), and confidence intervals (CIs), which were reported as appropriate. Ethical considerations were followed, and no unnecessary manipulations were performed. IRB permission was required before data analysis. Chapter 4 will outline the study's statistical results.

Chapter 4: Results

Introduction

This cross-sectional quantitative study aimed to determine the relationship between SDoH, including economic stability, food security, and health care access, and the dependent variable IBD among the target population. Secondary data from the 2023 NHIS were used to examine the relationship between the dependent and independent variables. The RQs and hypotheses for this study were as follows:

RQ1: What is the relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States?

$H_0$1: There is no statistically significant relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States.

H_a1: There is a statistically significant relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States.

RQ2: What is the relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States?

$H_0$2: There is no statistically significant relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States.

H_a2: There is a statistically significant relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States.

RQ3: What is the relationship between food security and IBD diagnosis among Hispanic adults living in the United States?

H_03: There is no statistically significant relationship between food security and IBD diagnosis among Hispanic adults living in the United States.

H_a3: There is a statistically significant relationship between food security and IBD diagnosis among Hispanic adults living in the United States.

In this chapter, I present the data collection, analysis, results, and the study's key findings. The chapter begins with a review of the secondary data and a brief explanation of the methodology used. The results of the statistical analyses are then presented, addressing each RQ and testing the hypotheses. Tables and narrative discussions are used to demonstrate any relationship between variables clearly.

Data Collection

This research utilized secondary data from NHIS 2023 to examine the relationship between poverty, access to healthcare, food security, and IBD among Hispanics living in the United States. The NHIS employs a stratified, multistage, and cluster sampling design, conducting confidential personal interviews on an annual basis with the US civilian noninstitutionalized population, ensuring broad national coverage (NCHS, 2024). The survey also includes diverse racial and ethnic groups (CDC, 2024c). In the 2023 survey, the overall household response rate was 47.0% (NCHS, 2024).

No discrepancies occurred between the data collection plan outlined in Chapter 3 and the dataset used. It was necessary to recode the variables for SPSS analysis. Table 2 presents the variables that have been recoded for SPSS analysis.

Table 2

Summary of Recoded Variables

Variable	Label	Recoded variable
HISP_A	Hispanic origin	1= Yes; 2 = No
SEX_A	Gender	1 = Male; 2 = Female
AGEP_A	Age	18 – 85+ years
EMPLASTWK_A	Employment	1 = Employed; 2 = Not Employed
FDSCAT3_A	Food security	1 = Food secure; 2 = Low food secure; 3 = Very low food secure
NOCARE12M	Access to healthcare	0 = Had access; 1 = No access
POVERTY3	Poverty status	1 = Below poverty; 2 = Near poverty; 3 = Above poverty
IBD_DX	IBD Diagnosed (Crohn's or UC)	0 = No; 1 = Yes

Based on a priori power analysis using G*Power, the minimum sample size required for adequate statistical power was 167 participants. To achieve generalizability, the person-level weight variable (WTFA_A) was applied in all analyses. This adjustment accounted for the complex survey design of the NHIS and corrected unequal probabilities of selection and nonresponse. Applying the weights ensures that the prevalence estimates and relationships among variables accurately represent the US Hispanic adult population at the national level.

The data were restricted to adults aged 18 or older, who self-identified as Hispanic and provided valid responses to questions related to CD and UC. After applying survey weights, the analytic sample represented approximately 45.3 million Hispanic adults in the United States, of whom 1.1% reported a diagnosis of IBD. The average age of the participants was 42.6 years, with a higher representation of females (52.1%). In terms of socioeconomic indicators, 61.8% reported being employed at the time of the survey, and 55.5% were above the federal poverty threshold. Regarding healthcare access, 89.9% reported having access to primary care within the past 12 months.

The use of survey weights corrects for differential probability selection and oversampling of specific groups, while aligning the data with the U.S. population distribution. The analytic decision is consistent with NHIS guidelines for the use of secondary data, thereby enhancing the external validity of the study findings (NHHS, 2024). This procedure strengthens the external validity of the study, ensuring that the weighted descriptive results and regression analyses generalize to the larger Hispanic adult population in the United States. Thus, enhancing the utility of the findings for informing public health practice and policy.

Preliminary univariate analyses were conducted to assess the distribution of study variables and to justify the inclusion of covariates in the regression models. As presented in Table 3, the mean age of participants was 42.6 years (*SD* = 16.9). The gender distribution was balanced, with 52.1% females and 47.9% males. Regarding employment status, 61.8% of participants were employed, and 33.0% were not employed at the time of the survey. Based on prior research suggesting that age, sex, and employment may confound relationships between SDoH and IBD, these variables were retained as covariates.

Data Analysis Results

Weighted descriptive statistics of the 2023 NHIS secondary data used in this study are illustrated in Table 3. The sample represented approximately 45.3 million Hispanic adults in the United States. The age of this study sample ranged from 18 to 85 with a mean age of 42.6 years (*SD* = 16.9). The gender distribution was balanced, with 47.9% of the participants being male and 52.1% female. In terms of employment status, the percentage of employed participants was higher (61.8%) compared with those who were not employed at the time of the survey (33.0%). Socioeconomic status revealed that 17.6% of participants lived below the federal poverty threshold, 26.9% were near the poverty threshold, and 55.5% were above the poverty threshold. There was a significant difference in food security analyses, with most respondents (81.4%) reporting having food security, while 12.9% reported low or very low food security.

Regarding healthcare access, participants reported having access to care in the past 12 months was notably higher (89.9%) compared with those who did not have access (9.3%). Among Hispanic adults, the weighted prevalence of self-reported IBD diagnosis (CD and UC) was 1.1% overall. The prevalence was similar for both genders, at 1.1% among males and 1.2% among females.

Table 3

Unweighted and Weighted Sample Demographics of Hispanic Adults, NHIS 2023

Variable	*n* (Unweighted)	*n* (Weighted)	% (Weighted)
Age, years	-	-	*M*= 42.65 (*SD* = 16.90)
Gender			
Male	13,457	21,698,460	47.9
Female	16,059	23,576,129	52.1
Employment			
Employed	15,641	27,976,313	61.8
Not employed	12,616	14,930,689	33.0
Poverty status			
Below poverty	3,108	7,947,078	17.6
Near poverty	5,384	12,191,778	26.9
Above poverty	21,030	25,138,615	55.5
Food security			
Food secure	25,710	36,851,080	81.4
Low food security	1,359	3,873,496	8.6
Very low food security	1,086	1,950,805	4.3
Access to healthcare			
Had access	27,560	40,706,826	89.9
No access	1,716	4,190,383	9.3
IBD diagnosis			
No	28,896	44,673,190	98.7
Yes	572	514,749	1.1

Note. Weighted estimates are based on WTFA_A to represent the US Hispanic population. Age is presented as mean (*M*) and standard deviation (*SD*). Missing cases were excluded listwise from the analysis. Unweighted counts (n) represent the analytic sample of 29,457 respondents.

The weighted descriptive statistics provided an overview of the demographic and socioeconomic characteristics of the sample. These characteristics provided a context for hypothesis testing by describing the population under study. Before addressing the RQs with logistic regression, the statistical assumptions of the model were examined as necessary. The dependent variable, IBD diagnosis, was dichotomous, meeting the requirement for a binary outcome. Independent variables included both categorical predictors and a single continuous predictor, thereby complying with the assumptions (Laerd Statistics, 2018). Missing data were handled using listwise deletion, meaning that only cases with complete information across all study variables were included in the analysis. This approach is consistent with analytic guidelines for secondary survey data. The assumptions of logistic regression were met, supporting a valid interpretation of the models.

RQs and Hypotheses

RQ1

RQ1 was as follows: What is the relationship between economic stability, measured by poverty level, and IBD diagnosis among Hispanic adults living in the United States? To address this RQ, a logistic regression analysis was conducted with IBD diagnosis as the dependent variable and poverty status as the primary predictor, while controlling for age, gender, and employment status. The weighted sample represented approximately 45.3 million Hispanic adults with complete responses, of which 514,749 reported an IBD diagnosis. Statistical significance was set at $p < .05$, and odds ratios (ORs) with 95% confidence intervals (CIs) were reported.

The logistic regression model was statistically significant, $\chi^2(5) = 179{,}923.150$, $p < .001$, explaining 3.6% of the variance in IBD diagnosis (Nagelkerke $R^2 = 0.036$), correctly classifying 98.9% of cases. As shown in Table 4, the participants living below the poverty threshold had significantly lower odds of reporting an IBD diagnosis compared to those above the poverty threshold (OR = 0.785, 95% CI [0.779, 0.791], $p < .001$). Similarly, individuals near the poverty threshold also had reduced odds of reporting IBD diagnosis (OR = 0.533, 95% CI [0.529, 0.537], $p < .001$). Both poverty categories (below and near poverty) were statistically significant predictors of IBD diagnosis. Odds ratios < 1.0 indicated that individuals in these groups had lower odds of reporting IBD compared to those above the poverty threshold, confirming a negative relationship between economic disadvantage and IBD diagnosis. Based on these findings, the null hypothesis was rejected.

Table 4

Logistic Regression Predicting IBD Diagnosis by Poverty Status, NHIS 2023

							95% CI	
	B	SE	Wald	*df*	*p*	OR	Lower	Upper
Poverty (Below vs Above)	-.242	.004	3,826.058	1	<.001	.785	.785	.791
Poverty (Near vs Above)	-.629	.004	26,739.830	1	<.001	.533	.529	.537
Age (years)	.020	.000	53,610.716	1	<.001	1.020	1.020	1.020
Gender (Male vs Female)	.232	.003	6,143.965	1	<.001	1.261	1.254	1.269
Employment (Unemployed vs Employed)	.756	.003	52,093.128	1	<.001	2.130	2.117	2.144
Constant	-5.648	.005	1,508,109.534	1	<.001	.004	-	

Note. Reference categories: Above poverty, Female, Employed.

RQ2

RQ2 was as follows: What is the relationship between access to primary care, as a proxy of access to healthcare, and IBD diagnosis among Hispanic adults living in the United States? A weighted logistic regression analysis was performed to examine whether the lack of healthcare access was related to the likelihood of an IBD diagnosis while controlling for age, gender, and employment status. The weighted sample represented approximately 45.3 million Hispanic adults, including 514,749 who reported an IBD diagnosis. The model was statistically significant, χ^2 (4) = 160,592.357, $p < .001$, explaining 3.2% of the variance in IBD diagnosis (Nagelkerke $R^2 = 0.032$). As displayed in Table 5, individuals without access to primary care were substantially less likely to report IBD compared to those with access (OR = 0.531, 95% CI [0.523, 0.538], $p < .001$). Lack of healthcare access was a statistically significant predictor of IBD. The odds ratio was < 1.0, showing that Hispanic adults without access to primary care were less likely to report IBD compared to those with access. This negative relationship was statistically significant, resulting in the rejection of the null hypothesis.

Table 5

Logistic Regression Predicting IBD Diagnosis by Healthcare Access, NHIS 2023

							95% CI	
	B	SE	Wald	*df*	*p*	OR	Lower	Upper
Healthcare access (No vs Yes)	-.634	.007	8,347.842	1	<.001	.531	.523	0.538
Age (years)	.019	.000	52,072.661	1	<.001	1.019	1.019	1.020
Gender (Male vs Female)	.224	.003	5,720.225	1	<.001	1.251	1.244	1.259
Employment (Unemployed vs Employed)	.649	.003	40,641.682	1	<.001	1.914	1.902	1.926
Constant	-5.726	.005	1,608,080.42	1	<.001	.003	-	

Note. Reference categories: Having access to healthcare, Female, Employed.

RQ3

RQ3 was as follows: What is the relationship between food security and IBD diagnosis among Hispanic adults living in the United States? To evaluate the relationship between food security and IBD diagnosis, a weighted logistic regression analysis was conducted. The model was statistically significant, $\chi^2(5) = 162{,}820.654$, $p < .001$, demonstrating that food security status contributed to predicting IBD diagnosis while controlling for age, gender, and employment status. The model explained 3.3% of the variance in IBD diagnosis (Nagelkerke $R^2 = 0.033$) and correctly classified 98.9% of cases. As presented in Table 6, respondents with low food security had significantly higher odds of reporting IBD compared to those who were food secure (OR = 1.303, 95% CI [1.291, 1.314], $p < .001$). Likewise, individuals with very low food security had nearly 1.8 times the odds of reporting IBD relative to those who were food secure (OR = 1.775, 95% CI [1.757, 1.793], $p < .001$). Both food security categories (low and very low) were statistically significant predictors of IBD diagnosis, providing evidence to reject the null hypothesis.

Table 6

Logistic Regression Predicting IBD Diagnosis by Food Security, NHIS 2023

							95% CI	
	B	SE	Wald	*df*	*p*	OR	Lower	Upper
Food security (Low vs Secure)	.264	.005	3,278.477	1	<.001	1.303	1.291	1.314
Food security (Very low vs Secure)	.574	.005	11,944.335	1	<.001	1.775	1.757	1.793
Age (years)	.020	.000	54,550.974	1	<.001	1.020	1.020	1.020
Gender (Male vs Female)	.251	.003	7,159.937	1	<.001	1.285	1.278	1.293
Employment (Unemployed vs Employed)	.617	.003	36,195.997	1	<.001	1.854	1.842	1.866
Constant	-5.850	.005	1,651,673.232	1	<.001	0.003	-	

Note. Reference categories: Food secure, Female, Employed.

Summary

This study examined the relationship between SDoH factors, including economic stability, food security, and healthcare access, and self-reported IBD diagnosis among

Hispanic adults in the United States, using secondary data from the 2023 NHIS. Logistic regression results showed that both below the poverty and near poverty thresholds had significantly lower odds of reporting an IBD diagnosis compared to individuals above the poverty threshold, suggesting possible underdiagnosis in economically disadvantaged groups. The lack of primary care was related to significantly reduced odds of reporting an IBD diagnosis compared to those with access, further indicating that barriers to healthcare access may contribute to missed or delayed diagnosis. In terms of food security, both low and very low food security were significantly related to increased odds of reporting IBD compared to being food secure, indicating a relationship between nutritional disadvantage and IBD burden.

The study findings provide evidence of health disparities in IBD diagnosis among Hispanic adults. The results suggest that socioeconomic disadvantage may mask the true prevalence of IBD due to underdiagnosis, while very low and low food security appear linked to elevated disease burden. These disparities underscore the need for further epidemiological investigation and the development of targeted public health interventions to enhance access to care and mitigate inequities in chronic disease outcomes.

In Chapter 5, the findings will be interpreted in the context of the existing literature, limitations, and implications for public health practice and policy, as well as their social significance and recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative cross-sectional study was to examine the relationship between selected SDoH, specifically economic stability, healthcare access, and food security, and IBD diagnosis among Hispanic adults in the United States. Guided by the SDoH framework as defined in the Healthy People 2030 initiative and WHO 2024, this study addressed the public health concern of IBD disparities within an underserved population. Understanding how nonclinical factors influence disease outcomes is crucial for advancing health equity, improving population health, and enhancing chronic disease surveillance among minority groups. Secondary data from the 2023 NHIS were analyzed using weighted descriptive statistics and logistic regression to assess these relationships while controlling for age, gender, and employment status. The findings indicated statistically significant relationships for each independent variable. Lower economic status and lack of healthcare access were related to decreased odds of IBD diagnosis. In contrast, low and very low food security were related to increased odds of IBD diagnosis. These results suggest diagnostic inequities and potential underdiagnosis among socioeconomically disadvantaged Hispanic adults in the United States.

This chapter details the interpretation of the findings in the context of existing literature, discusses limitations, provides recommendations for future research, and outlines implications for practice and positive social change.

Interpretation of the Findings

Poverty and IBD

The findings indicated a statistically significant relationship between economic stability and IBD diagnosis among Hispanic adults. Individuals living below the poverty threshold had 21% lower odds of reporting IBD compared to those above the poverty threshold (OR = 0.785, 95% CI [0.779, 0.791], $p < .001$). Likewise, individuals near the poverty threshold had 47% lower odds (OR = 0.533, 95% CI [0.529, 0.537], $p < .001$) of reporting IBD diagnosis. Based on existing literature, this pattern is unlikely to reflect a truly lower risk of disease but instead may indicate systemic diagnostic barriers linked to socioeconomic inequities. Economic hardship is known to limit access to specialist gastroenterology healthcare services, delay diagnosis, and reduce engagement in preventive care due to cost-related barriers (Damas et al., 2022). The Healthy People 2030 initiative identifies economic stability as a foundational health determinant that influences care utilization, chronic disease monitoring, and diagnostic opportunities (Healthy People 2030, n.d.b). Similarly, Agrawal et al. (2019) reported that financial barriers contributed to delays in IBD diagnosis, resulting in an increased risk of adverse outcomes (Shah et al., 2023). Therefore, the results suggest that the lower reported prevalence of IBD may be explained by limitations in disease detection among economically disadvantaged populations rather than differences in disease occurrence. From an epidemiologic perspective, individuals with low financial resources often have delayed or reduced interaction with the healthcare system, which limits their likelihood of receiving a formal diagnosis. Individuals facing financial strain are more likely to postpone medical evaluation and depend on urgent or emergency care rather than routine or specialty care, which is essential for diagnosing chronic inflammatory conditions such as IBD (Damas et al., 2022).

Furthermore, low economic stability affects access to diagnostic procedures, such as colonoscopies and endoscopies, as well as specialist referrals, which are necessary for establishing an IBD diagnosis but are often inaccessible due to cost and insurance barriers. In addition, longer diagnostic delays may result in IBD being underrepresented in population-based surveys such as NHIS. Thus, the findings likely reflect limited diagnostic opportunity linked to socioeconomic barriers, reinforcing the importance of considering structural health factors when interpreting disease patterns in US Hispanic populations.

Healthcare Access and IBD

The second RQ examined the relationship between access to primary care and IBD diagnosis among Hispanic adults. Results from this study showed that individuals who reported not having access to primary care had significantly lower odds of reporting an IBD diagnosis compared to those with access (OR = 0.531, 95% CI [0.523, 0.538], $p < .001$). This inverse relationship suggests that individuals lacking access to healthcare have fewer diagnostic opportunities. Primary care plays a key role in the early identification and referral of individuals with persistent GI symptoms for specialized evaluation. Agrawal et al. (2019) found that individuals who relied on public insurance or had unstable access to healthcare experienced restricted access to standard diagnostic procedures for IBD. These diagnostic delays have been associated with increased risk of complications, as untreated inflammation may progress to strictures, fistulas, or increased emergency care utilization (Anyane-Yeboa et al., 2022). Reduced access to healthcare has a significant impact on disease outcomes, particularly for chronic diseases, where early treatment is crucial to minimize disease complications (Lee et al., 2023). However, Hispanic populations experienced significant system-level barriers to healthcare engagement, including gaps in insurance coverage, financial limitations, and difficulty navigating the healthcare system (Damas et al., 2022). The reduced likelihood of reporting an IBD diagnosis among those without access to primary care may be attributed to system-level barriers that delay clinical evaluation and referral for diagnostic testing. Studies have shown that Hispanic individuals with IBD frequently faced obstacles such as long wait times, lack of specialist availability, and limited referral pathways to gastroenterologists, which collectively contributed to diagnostic delays (Damas et al., 2022). Geographic barriers can further limit access to specialty care, as individuals living in rural or underserved urban areas may be required to travel long distances for gastroenterology services, resulting in delayed evaluation and potential disease progression (Yamamoto-Furusho et al., 2022). Therefore, the findings of this study support the interpretation that limited access to primary care contributes to delayed or missed diagnosis of IBD among Hispanic adults in the United States.

Food Security and IBD

The third RQ examined the relationship between food security and IBD diagnosis among Hispanic adults. Results indicated that individuals with low food security had significantly higher odds of reporting IBD compared to those who were food secure (OR

= 1.303, 95% CI [1.291, 1.314], $p < .001$), and those with very low food security had even greater odds (OR = 1.775, 95% CI [1.757, 1793], $p < .001$). These findings suggest that low or very low food security may contribute to increased vulnerability to IBD or worsen disease expression among affected individuals. Food insecurity, defined as uncertain or limited access to adequate and nutritious food (NIMHD, 2024), disproportionately affects Hispanic households in the United States (Murkey et al., 2024). Prior research has found that approximately one in eight individuals with IBD experience low or very low food security, often accompanied by poor nutritional status and limited social support (Bernstein et al., 2020). Inadequate access to nutritious foods may increase GI inflammation and trigger symptoms, as diets low in fiber, fresh produce, and essential micronutrients and high in processed foods are associated with worse IBD outcomes (Shah et al., 2023). The findings of this study are consistent with evidence indicating that low food security is related to adverse disease outcomes in chronic inflammatory conditions and may also influence disease risk and health management (Han et al., 2020).

Individuals experiencing low or very low food security often face additional challenges that may affect the management of IBD and contribute to worsening disease outcomes (Ofili & Lawson, 2020). Previous studies have shown that food insecurity is associated with higher disease activity, reduced treatment adherence, and increased symptom burden among individuals with chronic GI conditions (Ofili & Lawson, 2020; Murkey et al., 2024). Limited access to consistent and appropriate nutrition may lead to malnutrition, micronutrient deficiencies, and unintentional weight changes, all of which can impair GI healing and worsen inflammation in IBD (Khademi et al., 2023).

Psychological stress related to uncertainty about food availability has also been identified as a factor that may exacerbate inflammatory responses and trigger IBD flare-ups (Han et al., 2020). Although some individuals with IBD adopt restrictive diets to minimize symptoms, inadequate dietary intake may unintentionally worsen overall health status and increase fatigue or functional limitations (Shah et al., 2023). These findings suggest that low and very low food security are not only socioeconomic issues but also clinical risk factors that may complicate disease progression in IBD, consistent with the results of this study.

The findings of this study correlate with the SDoH framework, which suggests that health outcomes are affected by the conditions in which individuals live, work, and access essential services (Healthy People 2030, n.d.b; WHO, 2024). The results from RQ1 and RQ2 demonstrated that poverty and limited access to healthcare were related with lower odds of IBD diagnosis among Hispanic adults in the United States, suggesting barriers to disease detection among individuals facing socioeconomic disadvantage. Additionally, the findings from RQ3 indicated that low and very low food security were related to higher odds of IBD, reflecting the influence of environmental and nutritional conditions on chronic inflammatory disease. These findings support that the SDoH examined in this study are relevant and consistent pathways through which social context influences health outcomes among U.S. Hispanic adults. The results suggest that social disadvantage may shape both disease distribution and detection patterns within this population, reinforcing the need to integrate SDoH measures in surveillance and risk assessment strategies for IBD.

Limitations of the Study

This study had several limitations that should be considered when interpreting the findings. First, the use of a cross-sectional design limits the ability to establish causal relationships between the independent variables and IBD diagnosis. Although relationships were identified, the temporal ordering of exposure and outcome cannot be determined. Second, the study relied on self-reported data from the NHIS, which may introduce recall bias and misclassification. The IBD diagnosis variable was based on participants' reports of medical history and was not clinically verified, which may affect diagnostic accuracy. Measurement error is also possible, as survey questions may be interpreted differently across participants. The voluntary nature of survey participation may also contribute to selection bias, as individuals with poorer health or unstable living conditions may be less likely to participate. Lastly, although person-level survey weights were applied, residual confounding may still be present, and the small proportion of individuals with IBD (1.1%) may limit the precision of some estimates.

Despite these limitations, this study has notable strengths. It used a large, nationally representative dataset and applied appropriate weighting procedures to enhance generalizability to the U.S. Hispanic adult population. The use of standardized NHIS measures improved comparability with prior research, and the analytical approach aligned with established epidemiological methods for population-based health research. These strengths support the validity of the observed relationships and provide a foundation for future research on social determinants of IBD among Hispanic populations in the United States.

Recommendations

Previous studies have suggested that U.S. Hispanic individuals may experience delayed diagnosis of IBD due to structural barriers and limited healthcare access. The findings of this study support those concerns, indicating that individuals with socioeconomic disadvantage and restricted access to healthcare were less likely to report an IBD diagnosis. Therefore, future studies should examine diagnostic pathways, screening practices, and time to diagnosis to determine whether underdiagnosis contributes to the observed prevalence differences. Improved epidemiologic monitoring is needed to determine whether current IBD prevalence estimates reflect accurate disease distribution or differences in diagnostic opportunity among Hispanic adults in the United States.

Further research is also needed to incorporate additional social and environmental variables not available in the NHIS dataset. These include immigration-related factors, language proficiency, health literacy, acculturation, and discrimination factors, which are known to influence access to healthcare and health outcomes in Hispanic populations in the United States. Future studies should also consider mental health variables such as stress and anxiety, as these may mediate the relationship between social disadvantage and IBD outcomes.

Expanding future research to examine barriers to diagnosis and care specific to Hispanic individuals with IBD is also recommended. Additionally, qualitative or mixed-methods studies may provide insight into patient experiences with healthcare navigation, cultural beliefs about GI illness, and trust in the healthcare system. These approaches would provide important context for the quantitative findings of this study and strengthen the understanding of how social conditions affect IBD identification and disease burden in underrepresented populations. Lastly, future research should evaluate strategies designed to enhance the identification and management of IBD among Hispanic adults in the United States. This may include testing early screening approaches in primary care settings, improving continuity of care, or implementing interventions aimed at reducing food insecurity, increasing access to specialty care, and providing economic assistance to individuals below the poverty threshold.

Implications

The findings of this study have meaningful implications for public health practice, particularly in designing strategies to improve equitable access to chronic disease detection among Hispanic adults in the United States. Integrating SDoH into screening processes may strengthen early identification efforts by identifying individuals who are less likely to access routine care and therefore more likely to experience diagnostic delays. Public health systems may also consider including GI health education within preventive health initiatives to increase awareness of IBD symptoms among populations who may not regularly engage with healthcare services.

At the community level, findings suggest the value of strengthening outreach and engagement strategies for medically underserved U.S. Hispanic populations. Partnerships with trusted community organizations may support health system navigation and help reduce barriers that limit access to specialty care, insurance enrollment, or follow-up services. Incorporating culturally responsive communication strategies may also encourage earlier care-seeking for GI symptoms among U.S. Hispanic adults who face structural or informational barriers to diagnosis. Overall, these findings support a public health approach that addresses both clinical needs and social determinants to promote earlier identification of IBD in Hispanic communities in the United States.

The methodological approach of this study demonstrates the value of using nationally representative datasets to examine the relationship between SDoH and chronic disease outcomes in minority populations. Future research may build upon this methodological foundation by refining data collection approaches, increasing measurement precision, and incorporating variables that better capture the complexity of social conditions affecting disease detection and outcomes. Continued methodological development in this area can support stronger analytical frameworks for examining how structural and social factors shape chronic disease outcomes in Hispanic populations in the United States.

The findings of this study may contribute to positive social change by addressing a critical gap in understanding how social determinants influence the diagnosis of IBD among Hispanic adults in the United States. By demonstrating that poverty, limited access to healthcare, and low food security are associated with lower reported diagnoses among those experiencing social disadvantage, this study highlights the need to consider social conditions as part of strategies to improve health equity. These findings may help guide the development of public health approaches that promote early identification, equitable access to care, and enhanced engagement with health services among US Hispanic adults. Furthermore, the results may support education and awareness efforts aimed at improving recognition of IBD symptoms and reducing barriers to timely medical evaluation. Overall, this study provides evidence of how non-clinical factors influence IBD diagnosis. Incorporating health practices, policies, and care strategies that are better aligned with the needs of underserved populations may support efforts to reduce health disparities within this population.

Conclusion

This quantitative study examined the relationship between key SDoH, including economic stability, access to healthcare, and food security, and the diagnosis of IBD among Hispanic adults in the United States, using 2023 NHIS data. The results indicated statistically significant relationships for all three determinants. Lower reported IBD diagnosis among individuals below or near the poverty threshold and among those without access to healthcare suggest potential barriers to diagnosis. In contrast, higher odds of diagnosis among those experiencing low or very low food security may indicate greater disease burden in socially vulnerable groups. These findings support the applicability of the SDoH framework in understanding disparities in the identification of chronic diseases within Hispanic populations in the United States.

The study contributes to the existing literature by providing epidemiologic evidence that social disadvantage may influence IBD diagnostic patterns in a large national sample of U.S. Hispanic adults. These findings underscore the importance of incorporating social risk assessment into public health strategies that aim to enhance disease detection and improve access to care. Although causal inferences cannot be made due to the cross-sectional design, the study highlights areas that warrant further investigation to reduce diagnostic delays and improve health equity. Future research should continue exploring these relationships using longitudinal methodologies and clinically validated diagnoses to strengthen public health responses and advance equitable care for diverse populations.

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