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***Helicobacter pylori* and gastrointestinal health among South Asian physicians in the United States: Navigating clinical, economic, ethical, and sociopolitical dimensions**

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Abstract

Background: South Asian physicians constitute a significant proportion of the U.S. healthcare workforce, yet their unique perspectives on managing *Helicobacter pylori* (*H. pylori*) infections—prevalent in their countries of origin—remain underexplored within the broader context of American medical practice.

Purpose: To examine *H. pylori*-related gastrointestinal diseases through the lens of South Asian physicians practicing in the United States, analyzing the intersection of clinical knowledge, economic factors, ethical considerations, and sociopolitical influences that shape their approach to diagnosis and management.

Methods: A comprehensive literature search was performed across multiple databases including PubMed, Embase, Scopus, and Cochrane Library to identify peer-reviewed articles published between January 2015 and June 2025. The search strategy combined MeSH terms and keywords related to *Helicobacter pylori*, South Asian populations, immigrant physicians, gastrointestinal diseases, healthcare disparities, and economic burden. Boolean operators were used to refine the search, and reference lists of relevant articles were screened to identify additional studies. Due to heterogeneity in study designs, populations, and outcome measures, a narrative synthesis approach was employed. No meta-analysis was conducted due to variability in study methodologies and outcome reporting.

Results: *H. pylori* infection demonstrates high prevalence in South Asian populations, with complex gastrointestinal manifestations ranging from chronic gastritis to gastric malignancy. South Asian physicians in the U.S. navigate unique challenges including immigration-related economic pressures, structural barriers in healthcare systems, and the need to bridge cultural competency with evidence-based practice. Economic analyses reveal substantial healthcare costs associated with *H. pylori*-related diseases, while policy invisibility of South Asian communities creates additional barriers to optimal care delivery.

Conclusions: South Asian physicians bring valuable clinical experience with *H. pylori* management but face systemic challenges that may impact their practice patterns and patient outcomes. Addressing these multidimensional factors requires targeted policy interventions, enhanced cultural competency training, and recognition of the unique contributions and needs of immigrant physicians in the U.S. healthcare system.

Keywords: *Helicobacter pylori*, South Asian physicians, healthcare disparities, immigrant physicians, gastrointestinal diseases, healthcare economics

Introduction

The United States healthcare system increasingly relies on international medical graduates (IMGs), with approximately 30% of practicing physicians born abroad and 7% holding non-U.S. citizenship as of 2016 ^[1]. Among this diverse workforce, physicians from South Asian countries—particularly India and Pakistan—represent a substantial and growing demographic that brings unique clinical perspectives shaped by their training and experience with disease patterns prevalent in their countries of origin.

Helicobacter pylori infection exemplifies this intersection of global health expertise and American medical practice. With prevalence rates exceeding 60% in many South Asian regions ^[2, 3], *H. pylori* represents a familiar pathogen for physicians trained in India and Pakistan.

However, the transition to U.S. practice involves navigating different diagnostic algorithms, treatment protocols, and healthcare delivery systems while addressing the needs of both immigrant South Asian communities and the broader American population.

This article examines the complex landscape surrounding *H. pylori* management among South Asian physicians in the United States, exploring how clinical expertise intersects with economic pressures, ethical considerations, and sociopolitical factors that influence medical practice. Understanding these multidimensional challenges is essential for optimizing healthcare delivery and addressing disparities that affect both providers and patients in increasingly diverse healthcare settings.

Clinical Manifestations and Epidemiology of *H. pylori*

H. pylori infection produces a well-characterized spectrum of upper gastrointestinal pathology, ranging from asymptomatic chronic gastritis to life-threatening malignancies [4, 5]. The bacterium's ability to colonize the gastric mucosa leads to chronic active gastritis with variable topographic patterns, including antral-predominant, corpus-predominant, or pangastritis [4].

H. pylori remain a principal etiological factor in duodenal ulcers and many gastric ulcers, with infected patients typically presenting with postprandial or nocturnal epigastric pain [4, 5]. The inflammatory cascade initiated by bacterial colonization disrupts normal gastric physiology, leading to mucosal injury and ulceration. Perhaps most concerning is *H. pylori*'s role as a Group 1 carcinogen, significantly increasing the risk for intestinal-type gastric adenocarcinoma [5, 6]. The progression from chronic gastritis through atrophic gastritis, intestinal metaplasia, and dysplasia to invasive carcinoma represents a well-documented pathway that can span decades. Additionally, *H. pylori* infection is associated with mucosa-associated lymphoid tissue (MALT) lymphoma, though this occurs in a minority of cases [5].

Diagnostic considerations for *H. pylori* include histopathological examination of gastric biopsies with appropriate staining remains the reference standard for confirming *H. pylori* infection and grading associated gastritis [6]. However, endoscopic appearances can be normal in some infected patients, necessitating a multimodal diagnostic approach that combines histology with other testing modalities to optimize detection rates [6].

Prevalence in South Asian Populations

Studies from South Asian countries consistently report high but heterogeneous *H. pylori* prevalence rates, with significant variation based on geographic region, socioeconomic status, and study methodology [2, 3, 7, 8]. For instance, in Pakistan, multiple hospital-based studies using biopsy and serological methods have reported positivity rates approaching two-thirds of dyspeptic patients in some series [2, 3]. Bangladeshi studies show more variable rates, with approximately 37% fecal antigen positivity reported in dyspeptic cohorts [7]. Indian regional analyses demonstrate similar heterogeneity, with lower overall population prevalence but higher rates among patients with ulcer disease [8].

Diagnostic challenges for *H. pylori* persists. The variability in reported prevalence partly reflects differences in diagnostic methods employed. While histopathology and

rapid urease testing provide definitive results in endoscopic cohorts, noninvasive approaches such as stool antigen testing and urea breath testing offer practical alternatives for screening and post-treatment monitoring [9, 10]. Stool antigen testing has shown particular utility for confirming eradication, often proving more reliable than serology for detecting active infection [9].

South Asian Physicians in the U.S. Healthcare System Professional Demographics and Challenges

South Asian physicians represent a significant component of the U.S. medical workforce, yet they face unique professional and personal challenges that influence their practice patterns and career trajectories. These challenges operate across multiple domains, creating complex interactions between individual competency and systemic barriers.

For example, economic pressures may be experienced by international medical graduates by those from South Asia as they often experience heightened economic vulnerability due to immigration-dependent career paths [11]. Visa requirements may necessitate practice in underserved or rural settings, potentially limiting career flexibility and geographic mobility. The financial burden of medical licensing examinations, residency applications, and immigration processes creates additional economic stress during the transition to U.S. practice [11].

Training and integration challenges also arise. Despite often extensive clinical experience in their countries of origin, South Asian physicians must adapt to different healthcare systems, practice patterns, and patient populations [12]. This adaptation process may be complicated by variations in diagnostic algorithms, treatment protocols, and healthcare delivery models between their training environment and U.S. practice settings.

Lastly, sociocultural factors may influence this population of physicians. Social isolation, acculturation challenges, and unique psychosocial stressors affect immigrant physicians' professional development and well-being [12]. These factors may influence clinical decision-making, patient interactions, and professional networking opportunities, potentially impacting career advancement and job satisfaction.

Structural and Institutional Barriers

South Asian physicians, like other immigrant healthcare providers, must navigate structural and institutional racism within training programs and clinical systems [11]. These experiences create ethical tensions regarding equitable care delivery and may influence professional identity development and practice patterns.

Likewise, federal data collection and policy frameworks often aggregate South Asian populations within broader Asian American, Native Hawaiian, and Other Pacific Islander (AANHPI) categories, limiting targeted policy development and resource allocation [13, 14]. This aggregation masks specific health needs and professional challenges faced by South Asian communities and healthcare providers.

An additional barrier includes licensing and credentialing. The complex process of medical license recognition and specialty certification can create additional barriers for South Asian physicians, potentially delaying entry into practice or limiting specialty choices [11]. These credentialing challenges may influence practice location decisions and subspecialty pursuits.

Economic Dimensions of *H. pylori* Management

H. pylori-related gastrointestinal diseases impose substantial direct healthcare costs, with economic analyses consistently demonstrating the financial benefits of successful eradication therapy [15, 16, 17]. A recent U.S. linked claims-electronic health record study (2016-2019) revealed a mean 12-month all-cause healthcare costs of \$23,693 among patients with *H. pylori* infection [15]. Specific conditions showed significant cost variations: gastric cancer added \$15,705 in marginal costs, while peptic ulcer disease contributed an additional \$7,323 compared to uncomplicated infection [15].

Consequently, there is a cost-effectiveness from eradication of *H. pylori*. Multiple economic models support *H. pylori* eradication as a cost-effective intervention. Successful eradication therapy has been associated with reduced subsequent healthcare utilization and costs, particularly for preventing peptic ulcer recurrence and reducing gastric cancer risk [16, 17]. Cost-effectiveness analyses from various healthcare systems consistently favor eradication strategies, though optimal implementation approaches may vary based on local prevalence rates and healthcare infrastructure [17, 18]. Population-based *H. pylori* screening programs demonstrate favorable cost-effectiveness ratios in high-prevalence populations, with optimal implementation ages varying by regional epidemiology [18]. These economic models become particularly relevant for South Asian communities in the U.S., where high background prevalence may justify targeted screening approaches.

Economic Challenges for South Asian Physicians

Immigration-related visa requirements may influence South Asian physicians' practice choices, potentially directing them toward underserved areas with different payer mixes and reimbursement patterns [11]. These economic factors may affect their ability to implement comprehensive *H. pylori* management protocols, particularly in resource-limited settings. Variations in insurance coverage and healthcare infrastructure across different practice settings may influence diagnostic approach selection. While gold-standard endoscopic evaluation with histopathology provides definitive diagnosis, cost considerations and access limitations may necessitate reliance on noninvasive testing methods [6, 9].

Ethical Considerations

Cultural Competency and Patient Care

South Asian physicians bring valuable cultural competency when caring for patients from similar backgrounds, potentially improving communication, treatment adherence, and health outcomes. The ability to communicate in patients' preferred languages represents both an asset and a potential burden for South Asian physicians. While linguistic competency improves care quality, it may also create additional service expectations without corresponding compensation or recognition [14].

However, this cultural alignment also creates ethical responsibilities and potential conflicts. Physicians serving South Asian communities may encounter complex dual relationships, where professional and cultural boundaries intersect. Managing these relationships while maintaining professional standards requires careful ethical navigation [19].

These physicians may experience variability in treatment expectations. Cultural beliefs about illness causation,

treatment preferences, and family involvement in medical decision-making may influence *H. pylori* management approaches. South Asian physicians must balance cultural sensitivity with evidence-based practice standards [19].

Professional Ethical Challenges

South Asian physicians face ethical obligations to address structural racism and bias within healthcare institutions while maintaining their professional standing and career advancement [11]. This creates tension between advocacy responsibilities and personal vulnerability. This becomes important given this population of physicians may practice in underserved settings, and this may present ethical dilemmas regarding resource allocation and care rationing. South Asian physicians may encounter situations where optimal *H. pylori* management protocols conflict with available resources or institutional policies [11]. Finally, the underrepresentation of South Asian perspectives in bioethics discourse and clinical research creates ethical obligations to advocate for inclusive research practices and culturally appropriate care protocols [20].

Sociological Factors

Community Health Patterns

South Asian communities in the United States demonstrate complex health patterns that influence *H. pylori* management approaches and outcomes. Despite often high educational attainment and professional status, South Asian Americans experience specific health disparities that may affect *H. pylori*-related outcomes [13, 14]. These disparities stem from multiple factors, including immigration status, language barriers, and healthcare access limitations.

First-generation South Asian immigrants may maintain health beliefs and practices from their countries of origin, while subsequent generations adopt more Americanized healthcare utilization patterns [14]. These differences create complex dynamics for South Asian physicians managing *H. pylori* across generational cohorts. Strong social networks within South Asian communities can facilitate health information sharing but may also perpetuate misconceptions or delay appropriate medical care. South Asian physicians must navigate these social dynamics while providing evidence-based recommendations [14].

Professional Identity and Integration

South Asian physicians often serve as cultural bridges between American healthcare systems and South Asian patient communities. This role provides unique opportunities for improving care quality but also creates additional professional responsibilities and potential conflicts [12].

Integration into American medical professional networks while maintaining connections to South Asian professional communities creates complex identity negotiations that may influence practice patterns and career development [12]. However, there are mentorship challenges given the limited representation of South Asian physicians in senior leadership positions may create mentorship gaps that affect professional development and career advancement opportunities [11].

Political Environment and Policy Implications

Immigration Policy Impact

Immigration policies significantly influence South Asian physicians' career trajectories and practice choices. Changes

in H-1B, J-1, and other visa categories directly affect workforce planning and professional stability ^[11]. Visa requirements often mandate practice in underserved areas, influencing the geographic distribution of South Asian physicians and potentially affecting *H. pylori* management approaches in different healthcare settings ^[11]. Moreover, immigration policies affecting family reunification may influence South Asian physicians' long-term career commitments and community integration, with potential implications for continuity of care and community health outcomes ^[11].

Healthcare Policy Considerations

Current federal data collection practices that aggregate South Asian populations within broader AANHOPi categories limit targeted policy development and resource allocation ^[13, 14]. This aggregation masks specific health needs and professional challenges that require policy attention. This is detrimental considering the recognition of South Asian physicians' contributions to U.S. healthcare, particularly in underserved areas, should inform workforce planning and immigration policy development ^[11]. Their expertise with *H. pylori* and other conditions prevalent in immigrant communities represents a valuable healthcare resource. Healthcare quality measures and performance metrics should account for the complexity of caring for diverse immigrant populations, including considerations for language barriers, cultural factors, and social determinants of health that may affect *H. pylori* management outcomes ^[14].

Professional Advocacy

South Asian physician organizations play important roles in professional advocacy, policy development, and community health promotion. These organizations can facilitate knowledge sharing about *H. pylori* management and advocate for policy changes that support both providers and patients ^[12]. Consequently, advocacy for research funding that addresses South Asian health disparities and professional challenges can improve evidence-based policy development and clinical practice guidelines ^[13, 14].

Clinical Management Considerations

South Asian physicians' familiarity with *H. pylori* prevalence patterns from their training backgrounds may influence their diagnostic approaches in U.S. practice settings. However, adaptation to American healthcare systems requires integration of this experience with local practice standards and resource availability.

High background prevalence in South Asian populations may justify lower thresholds for *H. pylori* testing, particularly among recent immigrants or patients with family histories of gastric cancer ^[21]. South Asian physicians may be particularly attuned to these risk factors based on their clinical experience. However, the choice between invasive and noninvasive diagnostic methods may be influenced by practice setting, patient preferences, and insurance coverage considerations. Stool antigen testing and urea breath testing offer practical alternatives to endoscopy for initial diagnosis and post-treatment verification ^[9, 10].

Treatment Challenges

Regional variations in antibiotic resistance patterns between South Asian countries and the United States may require adaptation of treatment protocols ^[22]. South Asian

physicians must balance their experience with regional resistance patterns against local antimicrobial stewardship guidelines. Cultural factors, health beliefs, and economic considerations may influence treatment adherence among South Asian patients. Physicians from similar cultural backgrounds may be better positioned to address these factors and improve treatment outcomes ^[19]. Ensuring appropriate post-treatment testing to confirm eradication requires coordination between clinical protocols and patient preferences. Cultural competency may facilitate communication about the importance of follow-up testing and symptom monitoring ^[10].

Future Directions and Recommendations

Research Priorities

Future research should employ disaggregated data collection methods that distinguish South Asian populations from broader AANHOPi categories, enabling more precise epidemiologic studies and targeted interventions ^[13, 14]. Additionally, research examining the specific challenges and contributions of South Asian physicians in U.S. healthcare can inform policy development and professional support programs ^[11, 12]. Finally, studies investigating the impact of cultural concordance between South Asian physicians and patients on *H. pylori* management outcomes could inform care delivery models and quality improvement initiatives ^[19].

Policy Recommendations

Immigration policies should recognize the critical role of international medical graduates, including South Asian physicians, in addressing healthcare workforce shortages and serving underserved populations ^[11]. Development of targeted professional support programs for immigrant physicians, including mentorship opportunities, cultural competency training, and career development resources, could improve retention and job satisfaction ^[12]. Increased investment in community health programs serving South Asian populations, including *H. pylori* screening and management initiatives, could address health disparities and improve population outcomes ^[13, 14].

Clinical Practice Improvements

Enhanced cultural competency training for all healthcare providers can improve care quality for South Asian patients while supporting South Asian physicians in their professional roles ^[19]. Development of quality metrics that account for cultural and linguistic factors in *H. pylori* management could better reflect the complexity of caring for diverse immigrant populations ^[14]. Strengthening professional networks and mentorship programs for South Asian physicians can facilitate knowledge sharing and career development while improving patient care outcomes ^[12].

Conclusions

The intersection of *H. pylori* management with the experiences of South Asian physicians in the United States reveals a complex landscape of clinical expertise, systemic challenges, and opportunities for healthcare improvement. While these physicians bring valuable knowledge and cultural competency to American healthcare, they face significant economic, ethical, sociological, and political barriers that may impact their practice patterns and patient outcomes.

Addressing these multidimensional challenges requires coordinated efforts across multiple domains. Policy interventions should recognize the contributions of immigrant physicians while addressing structural barriers that limit their professional development and effectiveness. Healthcare systems must invest in cultural competency training and support programs that leverage the unique skills of South Asian physicians while ensuring equitable treatment and advancement opportunities.

The economic burden of *H. pylori*-related diseases underscores the importance of effective management protocols that account for cultural factors and healthcare access barriers. South Asian physicians' expertise in managing these conditions represents a valuable resource that should be supported through appropriate policy frameworks and professional development opportunities.

Future research should employ disaggregated data collection methods and examine the specific challenges and contributions of South Asian physicians in American healthcare. This evidence base can inform targeted interventions that improve both provider experiences and patient outcomes while addressing persistent health disparities in immigrant communities.

Ultimately, optimizing *H. pylori* management among South Asian physicians and the communities they serve requires recognition of the complex interplay between clinical expertise, cultural competency, and systemic factors that shape healthcare delivery in increasingly diverse practice environments. Success in this endeavor will benefit not only South Asian physicians and patients but the broader American healthcare system's capacity to provide equitable, culturally competent care to all populations.

Conflict of Interest

Not available

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Not available

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