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Future Global Outlook in Gastrointestinal and Liver Disorders: Consensus and Perspectives from the Leaders of Member Societies of the World Gastroenterology Organization

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ABSTRACT

Background & Aims: Gastrointestinal (GI) and liver diseases are common and remain major contributors to global morbidity and mortality, with disease patterns increasingly shifting toward metabolic and functional etiologies. Anticipating these evolving challenges, the World Gastroenterology Organization (WGO), comprising 121 national and regional societies, undertook a global initiative to identify key GI and liver health areas across its member countries over the next five years (2025-2030).
Methods: A 77-item structured questionnaire was developed by the WGO Clinical Research Committee, encompassing four core domains: general priorities, research, patient care, and education/teaching. The survey was pilot-tested and refined before online dissemination to leaders of WGO-affiliated GI societies. Responses were collected anonymously and rated using a 5-point Likert scale. Consensus levels were defined a priori and categorized as strong, moderate, modest, or no consensus.
Results: Thirty-one GI leaders from 25 countries completed the survey. Consensus was achieved in nearly 60% of statements. Fatty liver disease was the only item that reached a strong consensus. Research domains had the highest agreement (78.6%), followed by general issues (58.3%), patient care (52.6%), and education/teaching (50%). Key areas of moderate consensus included the need for guideline implementation, public education, and expanded research opportunities. Barriers included insufficient funding, limited government support, and inconsistent access to training resources.
Conclusions: This global consensus highlights priority areas and barriers in GI and liver health for the next five years. Addressing metabolic liver disease, strengthening research infrastructure, enhancing endoscopic standards, and improving education will require coordinated international policy, funding, and capacity-building efforts.

Key words: gastrointestinal diseases – liver disorders – global health – consensus survey – World Gastroenterology Organization.

Abbreviations: AI: artificial intelligence; DGBI: disorders of gut-brain interaction; ERCP: endoscopic retrograde cholangiopancreatography; GI: gastrointestinal; IBD: inflammatory bowel disease; MAFLD: metabolic-dysfunction-associated fatty liver disease; MDT: multidisciplinary team; SWOT: strengths, weaknesses, opportunities, and threats; WGO: World Gastroenterology Organization.

INTRODUCTION

Gastrointestinal (GI) and liver diseases represent a substantial global health burden, accounting for approximately eight million deaths annually worldwide [1]. A disproportionately high burden of digestive disease mortality is borne by low- and middle-income countries, particularly in regions such as South Asia, Sub-Saharan Africa, and Southeast Asia. Together, these regions are estimated to account for the majority, likely exceeding two-thirds of global deaths due to digestive diseases [1]. Recent shifts have shown disease patterns evolving from broadly infectious etiologies to increasingly metabolic or functional. The future global outlook of GI and liver health, encompassing research, patient care, and education, remains uncertain yet is expected to grow progressively challenging due to significant environmental and economic transformations. In response to these anticipated challenges, the mandates and interventions of the World Gastroenterology Organization (WGO) become very important.

The WGO is a global organization comprising 121 national and regional member societies and associations, representing

over 65,000 gastroenterologists, hepatologists, endoscopists, GI surgeons, and other healthcare professional members worldwide [2]. A central mission of the WGO is to advocate for optimal patient care in GI and liver disorders facilitated by healthcare professionals globally through high-quality and readily accessible educational and awareness initiatives. Through its unparalleled network of GI society leaders worldwide, the WGO is uniquely positioned to identify and prioritize critical areas of concern across different countries globally and proactively address emerging healthcare needs.

Therefore, through a structured online questionnaire, we asked leaders of national GI organizations to highlight important priority areas in luminal, endoscopic, and liver disorders, focusing specifically on issues requiring immediate global or regional attention over the next five years. An overarching goal of this initiative is to provide a future global outlook that effectively provides a roadmap for enhancing healthcare delivery and patient outcomes in GI and liver diseases based on the cascade of resources available within each geographical region.

METHODS

An online survey was conducted in mid-2024 to assess the levels of consensus among GI clinician leaders from WGO member societies regarding the most important priority areas in their respective countries over the next five years (2025-2030). Initially, core themes or domains were identified by members of the WGO Clinical Research Committee. Survey questions were designed based on expert input from committee members, white papers, published consensus statements, and literature reviews, and written by two authors (Y.Y.L. and G.M.). Any discrepancies were resolved through group discussions with WGO executives and members of the Clinical Research Committee.

The survey questions addressed four broad themes: (1) general overview of important priority areas in society member countries, (2) research, (3) patient care, and (4) education/teaching. Subthemes within the research and patient care domains were further categorized into five major disease areas including (a) upper GI diseases, disorders of gut-brain interaction (DGBI), and neurogastroenterology, (b) inflammatory bowel disease (IBD), (c) pancreato-biliary and advanced endoscopy, (d) hepatology, and (e) GI oncology. Potential responses were graded for each question using a 5-point Likert scale ranging from "strongly agree" to "strongly disagree". Before survey distribution, the questionnaire was pilot-tested by 10 gastroenterologists, all WGO Clinical Research Committee members. Based on their feedback, the survey underwent revisions to optimize clarity and ease of response. After these modifications and approval for diffusion by WGO and its clinical research committee, the finalized survey consisted of 77 questions. The questionnaire was subsequently converted into an online format using Jotform (https://www.jotform.com/, San Francisco, USA) and circulated via email to the Presidents of the 121 national or regional societies and associations of Gastroenterology that were WGO members, using official contacts listed in the WGO membership database (https://www.worldgastroenterology.org) [2]. In some countries, more than one response was received. These additional respondents included other senior members, such as executive committee representatives, committee chairs, or nationally recognized GI leaders. While this was not an intentional feature of the study design, it reflects how some countries or societies chose to engage with the survey process.

Following an initial e-mail query to potential respondents, three additional weekly reminders were sent to those who did not answer the previous requests. Anonymized responses (in keeping with WGO policy) were sampled sequentially and summarized as descriptive data in the form of frequency and percentages, stratified by consensus agreement ratings as follow: 1) Strong: ≥80% strongly agree, 2) Moderate: ≥80% strongly agree or agree and <10% strongly disagree or disagree, 3) Modest: 67-79% strongly agree or agree and <10% strongly disagree or disagree, and 4) No consensus: <67% strongly agree or agree [3]. In select cases where overall agreement met the threshold for modest, moderate, or strong consensus (i.e., ≥67%), but disagreement levels ranged between 10-15%, these items were annotated as demonstrating "borderline disagreement", and such findings were interpreted with added caution. All data were analyzed using the SPSS software version 30 (SPSS Inc., Chicago, USA).

RESULTS

A total of 31 presidents or GI clinician leaders (20 males, 11 females) from 25 WGO member countries completed the survey, yielding a national-level response rate of 20.7%. While most countries submitted a single response, a few submitted multiple, i.e., Egypt (4 respondents), Azerbaijan, Portugal, and Spain (2 respondents each). The distribution of respondents per country is detailed in Table I. Further details on the distribution of responses across all WGO member societies, including non-respondents, are available in Supplementary Table I.

Table I. World Gastroenterology Organization (WGO) survey participating countries

Participating countries (N=25)	Number of respondents (N=31)
Egypt	4
Azerbaijan	2
Portugal	2
Spain	2
Bangladesh	1
Brazil	1
Costa Rica	1
Estonia	1
Ethiopia	1
Greece	1
India	1
Italy	1
Jordan	1
Latvia	1
North Macedonia	1

Table I (continued)

Malaysia	1
Mongolia	1
Morocco	1
Myanmar	1
New Zealand	1
Peru	1
Poland	1
Burkina Faso	1
South Africa	1
Uruguay	1

Table II presents a structured summary of the findings across different sections of the survey. Out of the 77 survey questions forming statements based on agreement, consensus was reached in almost two-thirds. Notably, one statement achieved strong consensus. Moderate consensus was observed in 36.4% of statements, modest consensus in 20.8%, and a smaller subset of statements (5.2%) had modest consensus with borderline disagreement. Across different categories, research topics had the highest rate of consensus (78.6%), followed by general topics (58.3%), patient care (52.6%), and education/teaching (50%). The minimum consensus level recorded for any statement was 71%, while the maximum reached 96.8%.

Consensus of Priority Areas from the General Viewpoint

Table III presents findings from the general section addressing the most important priority diseases, strategies to tackle priority diseases, funding sources, and challenges over the next five years. Among luminal disorders, consensus was lacking for eosinophilic esophagitis and esophageal cancer. However, IBD and colon cancer screening were recognized as key areas of focus, achieving moderate consensus. In hepatology, fatty liver disease was the only condition to achieve strong consensus, while hepatocellular carcinoma and viral hepatitis received moderate and modest consensus, respectively. Within the pancreato-biliary category, gallstone disease and chronic pancreatitis lacked consensus agreement, whereas pancreatic cancer achieved moderate consensus. In endoscopy, screening and surveillance, along with quality and credentialing, attained moderate consensus, indicating agreement on their importance in enhancing diagnostic and therapeutic standards. Access and cost issues in endoscopy received modest consensus, highlighting financial and logistical challenges as notable concerns. Obesity was identified as a moderate priority in the nutrition category, emphasizing the increasing burden of metabolic diseases on gastrointestinal and liver health.

As for the potential strategies to tackle these priority areas, guideline development was the most agreed-upon approach at a moderate consensus. Establishing consortia, committees, and working groups received modest consensus, reflecting the perceived need for collaborative efforts. Conversely, initiatives such as data collection and audits, grant acquisition, quality measures, and health policy and advocacy did not reach consensus, suggesting diverse opinions on their feasibility or impact.

The government was noted as the primary funding source for tackling the most important priority areas in the GI or liver space, with modest consensus. Funding from non-governmental and private institutions lacked consensus, indicating uncertainty or variability in funding mechanisms across member countries. The action plans were identified as essential to addressing these research priorities, and moderate consensus was achieved. Action plans, including stronger advocacy from society, consistent and structured funding, more public awareness through education, and more research opportunities, achieved moderate consensus.

Lack of funding was recognized as a moderate challenge in tackling the most important priority areas. Similarly, lack of government support was also a moderate concern, indicating the need for more substantial political and regulatory backing. Other barriers, such as a lack of leadership and institutional support, received modest consensus. In contrast, factors such as lack of manpower, public support, interest among younger colleagues, gender inequality, and income disparities did not reach consensus, suggesting variability in perceived challenges across different regions and institutions.

Table II. Overall summary of survey findings

Statements	N	%
Total number of statements	77	100.0
Consensus reached	46	59.7
No consensus reached	31	40.3
% Statements consensus reached – General (36 items)	21	58.3
% Statements consensus reached – Research (14 items)	11	78.6
% Statements consensus reached – Patient Care (19 items)	10	52.6
% Statements consensus reached – Teaching (8 items)	4	50.0
Strong consensus (≥80% strongly agree)	1	1.3
Moderate consensus (≥80% strongly agree or agree, and <10% strongly disagree or disagree)	28	36.4
Modest consensus (67%-79% strongly agree or agree, and <10% strongly disagree or disagree)	17	20.8
Modest consensus with borderline disagreement (10%-15% disagree)	4	5.2
Minimum level of consensus on a statement		71.0
Maximum level of consensus on a statement		96.8

Table III. Consensus of priority areas from the general viewpoint of WGO member societies

Findings			Level of consensus
What are the most important **overall** priority areas in your country **in the next 5 years**?			
1	Luminal	Eosinophilic Esophagitis	No consensus
		Esophageal Cancer	No consensus
		Inflammatory Bowel Disease	Moderate
		Colon Cancer Screening	Moderate
	Hepatology	Fatty Liver	Strong
		Viral Hepatitis	Modest
		Hepatocellular Carcinoma	Moderate
	Pancreato-biliary	Gallstone Disease	No consensus
		Pancreatic Cancer	Moderate
		Chronic Pancreatitis	No consensus
	Endoscopy	Screening & Surveillance	Moderate
		Quality & Credentialing	Moderate
		Access & Cost	Modest
	Nutrition	Obesity	Moderate
What is your country doing to tackle the most important priority areas **in the next 5 years**?			
2	Guidelines		Moderate
	Consortia/Committee/Working Groups		Modest
	Data collection/Audit		No consensus
	Grants		No consensus
	Quality Measures		No consensus
	Health Policy and Advocacy		No consensus
What are the primary funding sources for the most important priority areas **in the next 5 years**?			
3	Government		Modest
	Non-governmental/non-private		No consensus
	Private institutions		No consensus
What are your suggested action plans to resolve the most important priority areas **in the next 5 years**?			
4	Stronger advocacy from medical society		Moderate
	Consistent and structured funding		Moderate
	More public awareness through education		Moderate
	More research opportunities		Moderate
What are the challenges to tackle the most important priority areas in your country **in the next 5 years**?			
5	Lack of funding		Moderate
	Lack of manpower		No consensus
	Lack of leadership		Modest
	Lack of government support		Moderate
	Lack of public support		No consensus
	Lack of institutional support		Modest
	Lack of interest among younger colleagues		No consensus
	Inequality among gender		No consensus
	Inequality of income		No consensus

Strong: ≥80% strongly agree	Moderate: ≥80% strongly agree or agree, AND <10% strongly disagree or disagree	Modest: 67%-79% strongly agree or agree, AND <10% strongly disagree or disagree	No consensus: <67% strongly agree or agree

Consensus in Priority Areas in Research

Table IV presents consensus findings on research trends and challenges in gastroenterology and hepatology over the next five years. In upper GI diseases, there was moderate consensus on the perceived lack of research interest in DGBI and neurogastroenterology compared to fields such as endoscopy,

IBD, and cancer. The lack of research funding in DGBI and neurogastroenterology is due to low prioritization by health regulatory bodies, which achieved moderate consensus. For IBD, a modest consensus was reached on the underrepresentation of vulnerable populations, including the elderly, in clinical trials and outcome studies. The need for big data and artificial intelligence (AI) driven personalized management strategies was also recognized with modest consensus.

Table IV. Consensus of priority areas on research, patient care, and education/teaching by WGO member societies

Findings				Level of consensus
1	Upper GI diseases, disorders of gut-brain interactions and neurogastroenterology	Research	There is a perceived lack of research interests in this area compared to endoscopy, IBD or cancer	Moderate
			There is a perceived lack of research funding due to low priorities by the health regulatory body	Moderate
		Patient Care	Diagnostic motility tests are underutilized	Moderate
			There is perceived lack in priority by the health authority despite high disease burden	Moderate
			There is perceived lack of therapeutic options in disorders of gut-brain interactions and neurogastroenterology	Moderate
			Endoscopy services for GI bleeding are not considered a health priority in local or national practice and will not be in the near future	No consensus
2	Inflammatory bowel disease	Research	There is a perceived under-representation of vulnerable populations including elderly in clinical trials or outcome studies	Modest
		Patient Care	Big data and AI for personalized management should be a focus of future research	Modest
			Disease burden is increasing over time	Moderate
			Use of biosimilars is expanding in my practice	Modest
			Ineffective therapies are still overused in local or national practice, e.g., chronic steroid use	*Modest
			Lack of access to biologics due to costs	*Modest
3	Pancreato-biliary & advanced endoscopy	Research	Low funding, low reimbursement and increasing costs are affecting innovation and development of new techniques	Modest
			Research of big data and AI is limited in this field	Modest
			There is a perceived lack of demonstrable clinical benefits and comparative trials with rapid roll-out of new technology and techniques	Modest
		Patient Care	Adverse events for ERCP will remain high because of low caseloads and lack of standardization in performance measures	No consensus
			Use of disposable endoscope and components will increase in my practice	No consensus
			Other specialists such as colorectal surgeons and thoracic surgeons are performing more endoscopy procedures without meeting stringent training requirements	No consensus
			More endoscopic procedures are performed for indications with low probability of diagnostic findings	Modest
4	Hepatology	Research	There will be more basic and translational research compared to clinical-based research	No consensus
			There is an urgent research need for better surveillance, therapeutic options and care pathways of liver cancer	Moderate
		Patient Care	Metabolic disorders will overtake viral hepatitis as the most significant liver disease burden	Moderate
			Social stigma will remain a significant restriction to access of care	No consensus
			Drugs for treatment of fatty liver are promising in future practice	No consensus
5	GI cancers	Research	More research is needed using big data and AI in screening and personalized treatment	Moderate
			There is a perceived lack of improvement in prognosis despite decades of research, and this will not change in the future	No consensus
		Patient Care	GI oncology is not recognized as a subspecialty	Moderate
			Multidisciplinary team or MDT is more opportunistic than a regular feature in my practice	No consensus
			It is unlikely a national screening program for colorectal cancer will be implemented in my future practice	No consensus
			There is a perceived lack of unity or increase in competition among different oncology specialties	No consensus

Table IV (continued)

6	Economic burden & impact of GI diseases	Research	There is a perceived lack of information on economic burden of GI diseases	Moderate
			There is a perceived lack of reporting on health-related quality of life burden of GI disorders	Moderate
			Electronic health data is not available and will not be available in the near future	No consensus
7	What are the **teaching tools** that are lacking in your practice but are important in the future?	Use of social media e.g., X (formerly Twitter), TikTok		No consensus
		Online learning platform		No consensus
		Online community sharing		No consensus
		International Guidelines		No consensus
		Digital e-books		*Modest
		Evidence-based online resource, e.g., Up-To-Date or DynaMed		*Modest
		Train-the-trainer program		Moderate
		Endoscopy training resources		Moderate

Strong:	Moderate:	Modest:	No consensus:
≥80% strongly agree	≥80% strongly agree or agree, AND <10% strongly disagree or disagree	67%-79% strongly agree or agree, AND <10% strongly disagree or disagree	<67% strongly agree or agree

*Borderline cases: Items were classified to meet consensus with borderline disagreement (10-15%). WGO: World Gastroenterology Organization; GI: gastrointestinal; AI: artificial intelligence; ERCP: endoscopic retrograde endoscopy; IBD: inflammatory bowel disease.

In the pancreato-biliary and advanced endoscopy category, low funding, low reimbursement, and increasing costs were identified as barriers to innovation, achieving modest consensus. The limited research on big data and AI applications in this field was also noted with modest consensus. Furthermore, there was modest agreement on the perceived lack of demonstrable clinical benefits and robust comparative trials accompanying the rapid roll-out of new technologies in the pancreato-biliary and endoscopy space. Likewise, for GI oncology, the necessity for more research incorporating big data and AI in screening and personalized treatment received moderate consensus. There was no consensus that the prognosis in GI cancer treatment has remained stagnant despite decades of research, and that the prognosis will remain the same in the future.

Regarding hepatology, no consensus was reached on whether basic and translational research would surpass clinical-based research. However, there was a moderate consensus on the urgent need for better surveillance, therapeutic options, and care pathways for liver cancer. Regarding the economy and health impact of GI diseases, moderate consensus was reached on the lack of information regarding the economic burden and the frequent underreporting of health-related quality-of-life outcomes. However, there was no consensus on the availability of electronic health data in the near future.

Consensus in Priority Areas in Patient Care

Table IV presents findings on patient care as a priority area within gastroenterology and hepatology in the next five years. In upper GI diseases and DGBI, moderate consensus was reached on the underutilization of diagnostic motility tests and the health authorities' perceived lack of priority despite the high disease burden. Additionally, the perceived lack of therapeutic options for DGBI and neurogastroenterology also achieved moderate consensus. For IBD, there was moderate consensus on the increasing disease burden over time. A modest consensus was achieved for the expansion of biosimilar use, the continued overuse of ineffective therapies such as chronic steroid use, and the lack of access to biologics due to high costs.

In the pancreato-biliary and advanced endoscopy category, there was no consensus on whether adverse events for endoscopic retrograde cholangiopancreatography (ERCP) would remain high due to low caseloads and lack of standardization in performance measures. The increasing use of disposable endoscopes and components also lacked consensus. However, a modest consensus was achieved for more endoscopic procedures being performed for indications with a low probability of diagnostic findings.

Regarding hepatology, moderate consensus was reached on metabolic disorders overtaking viral hepatitis as the most significant liver disease burden. However, no consensus was achieved for social stigma becoming a significant restriction to access to care and drugs for fatty liver treatment becoming promising in future practice.

For GI oncology, moderate consensus was reached on the lack of formal recognition of GI oncology as a subspecialty in the field. No consensus was reached on whether multidisciplinary teams (MDTs) are more opportunistic than a regular feature in practice, the likelihood of national colorectal cancer screening implementation, or the level of unity among oncology specialties.

Consensus in Priority Areas in Education and Teaching

Table IV (item 7) presents findings on educational tools and future teaching needs as the most important priority area in gastroenterology and hepatology over the next five years. Moderate consensus was reached on the importance of social media platforms, online learning platforms, online community sharing, digital e-books, and evidence-based online resources such as Up-To-Date or DynaMed. However, there was no consensus on the need for international guidelines. A

modest consensus was achieved regarding the need for train-the-trainer programs and endoscopy training resources, highlighting ongoing gaps in medical education.

DISCUSSION

This global survey among 31 GI clinician leaders representing 25 WGO member countries addressed 77 survey questions or statements across four core domains: priority areas over the next five years, research trends and challenges, patient care, and education or teaching needs. Overall, consensus (ranging from modest to moderate to strong) was reached in nearly 60% of the surveyed statements; however, only one item achieved strong consensus. Among the domains, research topics attained the highest consensus rate, approaching 80%, while patient care and teaching domains showed the lowest agreement. All in all, our study showed similarities to the GASTROSWOT project, an international strengths, weaknesses, opportunities, and threats (SWOT) analysis done by general and field coordinators and GI experts in terms of strengths and, more importantly, limitations, in several subspecialties in gastroenterology [4].

Fatty liver disease emerged as the sole item achieving strong consensus as a global priority over the next five years. This finding is likely driven by the increasing awareness and prevalence of metabolic-dysfunction-associated fatty liver disease (MAFLD) [5], a condition anticipated to surpass viral hepatitis in global liver disease burden [6]. Clinicians and researchers alike are recognizing the escalating impact of metabolic syndrome and its hepatic manifestations, a trend that calls for urgent advancements in prevention, diagnosis, and treatment strategies. Other areas that gained moderate consensus included IBD and colon cancer screening, signifying growing recognition of these conditions' increasing incidence [7, 8] and the urgent need for early detection strategies [9]. In endoscopy, quality assurance and surveillance also achieved moderate consensus, suggesting a global emphasis on improving the standardization of the procedure [10, 11]. Notably, implementing clinical guidelines was one of the few strategies with moderate agreement as a feasible and effective intervention [12]. However, initiatives such as grant development, data audits, and health advocacy did not reach consensus, which may reveal skepticism or structural limitations in executing these efforts. Government funding received only modest consensus, while non-governmental and private funding mechanisms lacked broad support. These findings reflect broader structural and financial barriers that may limit innovation and equitable care access, underscoring the need for targeted investment and strong political commitment.

In the research domain, respondents moderately agreed that specific fields, such as upper GI disorders, DGBI, and neurogastroenterology, are comparatively underexplored. This is attributed to limited funding and lower prioritization by health authorities. Despite their significant impact on quality of life [13], the relative neglect of these conditions highlights an imbalance in research focus, favoring high-profile fields such as endoscopy, IBD, and GI oncology. Notably, there was modest consensus that older populations remain underrepresented in IBD clinical trials, a gap that may hinder the development of age-appropriate therapeutic strategies. Emerging technologies such as AI and big data analytics are beginning to reshape the research landscape [14], particularly in areas like personalized IBD care and GI oncology [15]. However, the survey revealed only modest to moderate support for these tools, suggesting that practical implementation and acceptance remain limited while interest grows. Previous surveys done in Europe and an international SWOT analysis agreed that big data research is essential to inform and shape care in GI diseases [4, 16, 17]. In pancreato-biliary and advanced endoscopy research, there was a modest consensus that financial disincentives and high innovation costs, alongside limited reimbursement, act as barriers to development. Moreover, concerns were raised regarding the lack of robust comparative trials for novel endoscopic techniques, which often enter practice without sufficient evidence of clinical benefit [18]. These findings reinforce the critical need for methodologically sound, high-quality studies to validate the clinical utility of advanced technologies, but also ensure their generalizability across diverse practice settings. In hepatology, liver cancer emerged as a moderately prioritized research area, reflecting its increasing global incidence. However, the lack of consensus on the relative importance of basic and translational research compared to clinical trials suggests differing views on where research efforts should be focused. There was strong recognition of the paucity of data on the economic burden of GI diseases and the lack of standardized metrics for health-related quality of life, which are essential for health policy planning and resource allocation. Meanwhile, the feasibility of utilizing electronic health records for research remains uncertain, mainly due to infrastructure disparities and inconsistent data quality across regions [19, 20].

Regarding patient care delivery and emerging clinical needs, the survey highlighted several areas of concern. In DGBIs and upper GI diseases, respondents reached moderate consensus regarding the underuse of diagnostic motility testing and therapeutic limitations, coupled with low prioritization by health authorities despite high disease burdens, underscoring the need for improved management strategies. Regarding IBD care, clinicians reported an increasing disease burden, a modest expansion of biosimilar use [21] and a continued overreliance on outdated therapies such as chronic steroids [22]. Additionally, the high cost of biologics remains a barrier to equitable care [23]. No consensus was reached in the pancreato-biliary and advanced endoscopy arena on specific procedural trends (for example, whether high ERCP complication rates persist due to low case volumes, or whether disposable endoscopes will see widespread adoption). However, the clinicians modestly agreed that endoscopic procedures are increasingly performed for low-yield indications, pointing to potential overutilization of resources [24]. In hepatology, experts achieved moderate consensus that metabolic liver diseases e.g., MAFLD are overtaking viral hepatitis as the leading liver disease burden, mirroring global epidemiologic shifts [6]. Conversely, there was no explicit agreement on how social stigma or emerging pharmacotherapies for fatty liver disease will influence care, indicating unpredictability in those aspects. Finally, in GI oncology, the survey found moderate consensus that the field often lacks formal recognition as a distinct subspecialty

across the world. By contrast, no consensus was achieved on the routine use of multidisciplinary cancer teams, the implementation of nationwide colorectal cancer screening, or the degree of collaboration among oncology specialties. The variability of care delivery across regions and specialties, including cost and resource constraints, highlights the pressing need for unified care pathways, reimbursement reform, and evidence-based practice guidelines.

Concerning educational resources and future training requirements, the survey results underscore the growing importance of digital and collaborative learning tools in gastroenterology. While traditional face-to-face methods still dominate, moderate consensus was achieved regarding the significance of train-the-trainer programs and endoscopy training resources, emphasizing foundational skill-building [25]. There was also modest support for digital e-books and evidence-based online platforms such as UpToDate and DynaMed, reflecting a transition toward digital resources in ongoing medical education [26, 27]. However, no consensus was reached on the value of international guidelines, social media platforms, or online community sharing for learning purposes. This finding suggests generational and geographical variation in digital engagement and trust in emerging platforms. With the increasing globalization of medicine, there is a strong need to harmonize and update educational content across platforms while addressing the realities of local practice. Integrating AI-assisted learning, modular digital curricula, and simulation-based training may represent the future of gastroenterology education [28, 29], provided that regional and international collaborations address access and standardization challenges.

Despite its global scope and structured design, this survey has several limitations. The small sample size and exclusive inclusion of WGO-affiliated experts may limit the generalizability of findings, particularly to regions or clinical settings not represented in the respondent pool. While the responding GI member societies represented a diverse geographic and economic distribution, non-response from several notable national societies (e.g., the USA, Canada) may have limited the generalizability of the overall findings. Additionally, selection bias toward academic or tertiary-care perspectives may underrepresent the priorities and challenges encountered by community-based practitioners. The survey specifically focused on GI society leadership to lay the groundwork for future broad-based research incorporating the perspectives of healthcare providers, administrators, policymakers, and patients living with digestive and liver diseases. Lastly, as this survey reflects a cross-sectional view, ongoing disease epidemiology and clinical innovation developments may shift priorities over time, warranting periodic reassessment. These methodological constraints suggest that the survey's conclusions should be interpreted with appropriate caution and used to guide practice or policy over the next 5 years in conjunction with other evidence and context-specific considerations.

CONCLUSIONS

The WGO global survey outlines key priorities and challenges to guide gastroenterology and hepatology practice and research in the coming five years. Broad agreement on issues such as the rising burden of fatty liver disease, the importance of standardizing endoscopy, and the need for improved training programs proposes where global efforts should be concentrated. Simultaneously, gaps in research funding, care delivery inequities, and educational inconsistencies highlight the need for coordinated international action. Addressing these challenges through strategic investment, policy reform, and collaborative research will be essential to improving outcomes in GI health worldwide.

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Authors' contribution: N.T., D.M.S., Y.Y.L. and G.K.M. conceived and designed the study, collected, analysed and interpreted the data. All authors contributed to drafting of the manuscript and revision for important intellectual content. All the authors read and approved the final version of the manuscript.

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