Original Article

Awareness and Knowledge Among Residents in Western Region Regarding Lower Gastrointestinal Bleeding Etiologies

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ABSTRACT

Background: Lower gastrointestinal bleeding (LGIB) is an important condition that may indicate serious underlying diseases, including colorectal cancer. This study aimed to assess awareness and knowledge of LGIB etiology among adults in the Western Region of Saudi Arabia (SA) and to identify factors associated with good knowledge.

Methods: A descriptive cross-sectional study was conducted among adults aged ≥18 years. Data were collected using a validated online questionnaire distributed via social media. Knowledge scores were categorized as poor (<60%) or good (≥60%).

Results: A total of 439 participants were included. Only 26.9% demonstrated good knowledge. Awareness was highest for hemorrhoids and anal fissures, while knowledge of serious causes was limited.

Conclusion: Public awareness of LGIB remains limited. Targeted educational interventions are recommended.

Keyword: Lower gastrointestinal bleeding; Public awareness; Health knowledge; Saudi Arabia.

Introduction

Lower gastrointestinal bleeding (LGIB) is defined as bleeding distal to the ligament of Treitz. It represents an important cause of emergency department visits and hospital admissions worldwide [1]. LGIB arises from conditions ranging from benign anorectal conditions to life-threatening disorders. Of particular concern is colorectal cancer (CRC), where LGIB may be an early symptom [2,3]. Public awareness and

Knowledge regarding gastrointestinal disorders play a fundamental role in encouraging prompt medical consultation. However, studies across Saudi Arabia have demonstrated notable gaps in public knowledge related to gastrointestinal diseases. A recent survey in Jeddah revealed limited awareness regarding colorectal cancer risk factors, red-flag symptoms, and recommended screening guidelines [4].

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Similarly, research conducted in the Al-Qunfudah region found that only one-third of participants exhibited adequate awareness of CRC and its associated risk factors [5]. These findings highlight persistent misconceptions and low levels of disease literacy within the community. Despite this, limited research has assessed awareness of LGIB specifically. Poor awareness may delay diagnosis and worsen outcomes [6]. Given the increasing burden of gastrointestinal diseases in SA [7], assessing public awareness is essential.

Methods

A descriptive cross-sectional study was conducted in Western Region of SA (June-November 2025) to assess awareness of LGIB causes among adults aged ≥ 18 of both genders and nationalities.

Data were collected using a validated self-administered online questionnaire with two sections: demographic and assessment of awareness and knowledge of LGIB cases.

The study received ethical approval from Biomedical Research Ethics Committee in Umm Al-Qura University (HAPO-02-K-012-2025-04-2680).

Data analysis:

Data were analyzed using SPSS. Descriptive statistics summarized participants' characteristics, awareness, and knowledge, while scores were calculated based on correct answers and converted into percentages. Chi-square/Fisher's exact tests and multivariate logistic regression were used to assess associations and identify predictors of good knowledge ($p < 0.05$ considered significant). Further, multivariate logistic regression analysis was conducted to identify independent predictors of good knowledge, with results expressed as adjusted odds ratios (AORs) and 95% confidence intervals (CIs).

Results

The study sample (N=439) was mainly younger adults, with nearly two-thirds falling between 18 and 40 years of age (69.7%). Women represented the clear majority (85.6%). Educational level was generally high, as most participants had completed university education (72.9%). Most respondents were Saudi nationals (94.5%). Regarding nutritional status, almost half were within the normal BMI range (45.8%). Only 67 participants (15.3%) reported chronic diseases. A history of gastrointestinal disorders was reported among 79 individuals (18.0%), and 73 (16.6%) reported a family history of such conditions. Smoking prevalence was low, with most respondents being non-smokers (89.7%) (Table 1). (Table 2) shows the awareness and knowledge regarding lower gastrointestinal bleeding (LGIB) among residents in the Western Region. Fewer than half of participants reported prior knowledge of LGIB causes (44.2%). When asked to identify possible causes, most respondents recognized piles (83.2%) and anal fissures (68.7%) as common etiologies, while awareness of more clinically significant causes, such as colorectal cancer (62.6%) and colonic polyps (37.4%), was moderate. Knowledge of vascular causes (35.5%) and inflammatory conditions such as colitis (55.1%) and gastroenteritis (46.7%) varied considerably. Despite these knowledge gaps, perceptions of the seriousness of LGIB were strong, with a large majority viewing it as a critical medical condition (84.7%). Participants identified several factors that may increase LGIB risk, most commonly a history of digestive diseases (74.0%), lifestyle factors including low-fiber diet (247; 56.3%), and smoking or alcohol consumption (56.3%). However, awareness of other contributors, such as liver disease (19.6%), obesity (20.7%), and age (26.9%) was substantially lower. Recognition of symptoms showed a similar pattern. While most participants correctly identified blood in stool (83.6%) as a key sign, fewer recognized changes in bowel habits (47.4%), abdominal pain (41.5%), or systemic symptoms like nausea, vomiting, dizziness, and fatigue (31.4% each). Notably, almost all respondents acknowledged that severe or untreated LGIB can lead to complications (95.7%).(Figure 1) shows that most participants had limited knowledge of lower gastrointestinal bleeding, with 321 individuals classified as having poor overall knowledge, compared with only 118 who had good knowledge. Regarding sources of information (Figure 2), the internet was the most frequently reported source, cited by 202 participants. Physicians were identified by 142 participants. A notable proportion of the sample, 145 participants, reported having no source of information at all. (Table 3) illustrates several significant associations between participants' characteristics and their overall knowledge of lower gastrointestinal bleeding. Age showed a clear relationship with knowledge level (p=0.001), where participants aged 18–40 had a higher proportion of good knowledge compared with those aged 41–60 and those over 60. Gender was also significantly associated with knowledge (p=0.001), with females showing a much higher proportion of good knowledge than males. Body mass index had a significant effect (p=0.006). Participants with normal weight had the highest level of good knowledge, followed by underweight individuals. A significant association was found

between a history of gastrointestinal diseases and knowledge (p=0.030). Individuals with a history of GIT diseases had a higher level of good knowledge compared with those without such a history. Similarly, family history of GIT diseases was significantly related to knowledge level, with 29 participants demonstrating good knowledge compared with only 89 among those without family history. Smoking status showed a borderline association (p=0.095), and while not statistically significant, good knowledge appeared lower among smokers and ex-smokers compared with non-smokers. One of the strongest and most significant associations was observed with sources of information (p=0.001). Participants who relied on books had the highest level of good knowledge, followed by those who obtained information from physicians. In contrast, individuals reporting no source of information had extremely low knowledge levels, with only 8 participants falling in the good knowledge category. Other variables, including educational level, nationality, and chronic disease status, showed no significant association with knowledge. As (Table 4) shows the multivariable logistic regression analysis identified several significant predictors of good knowledge regarding lower gastrointestinal bleeding. Age was a strong predictor (p=0.001), with younger participants showing higher odds of good knowledge, indicating that individuals in older age groups were substantially less likely to be knowledgeable. Gender also showed a significant effect (p=0.003), as females had markedly higher odds of good knowledge compared with males. A history of gastrointestinal disease was another significant predictor (p=0.043), with affected individuals showing increased odds of good knowledge. One of the strongest predictors in the model was the use of scientific sources of information, such as physicians or books (p=0.001). Participants relying on these sources had over three times higher odds of good knowledge compared with those who used non-scientific or no sources. On the contrary, educational level, nationality, BMI, chronic disease status, family history of GIT disease, and smoking were not statistically significant predictors, as their p-values exceeded 0.05 and confidence intervals crossed unity.

Discussion

Our results revealed a considerable deficiency in public knowledge and awareness regarding lower gastrointestinal bleeding (LGIB) among the surveyed population in the Western Region of SA. Only about one quarter of participants achieved good knowledge, with the majority remaining in the “poor knowledge” category. This pattern simulates findings from local studies on colorectal cancer (CRC), a major lower GI condition. For instance, in a nationwide survey, fewer than half of respondents recognized polyps as a risk factor for CRC, and only a minority understood the role of asymptomatic polyps in cancer development [1]. Similarly, a recent analysis across Saudi regions concluded that general public awareness about CRC and its risk factors remains suboptimal, calling for intensified educational efforts [2,9]. The discrepancy in recognition of LGIB causes within our study—high awareness of benign and symptomatic conditions such as hemorrhoids (piles) and anal fissures, versus lower awareness of more serious or asymptomatic causes such as colonic polyps or vascular lesions—reflects a trend also observed internationally. Research among medical students in Riyadh found that even this educated subgroup had inadequate knowledge about certain serious etiologies of GI bleeding [3,10]. This indicates that the knowledge defect is not limited to the general public but extends into more health-literate segments, underscoring the prevalent nature of inadequate education on lower GI conditions in SA. The dominance of non-specialist information sources in our sample, including the Internet, family/friends, and informal communities, aligns with similar studies in Saudi populations assessing CRC awareness [4,11]. Dependence on such sources may lead to misconceptions or incomplete understanding, especially around risk factors, asymptomatic disease, and the seriousness of GI bleeding. In contrast, participants in our study who cited “scientific” sources (physicians or books) had significantly higher odds of good knowledge, highlighting the importance of credible medical information in improving awareness [5,12]. Moreover, the association between younger age, female gender, and higher knowledge levels may reflect differential exposure to health information through schools, social media, or community networks. Similar demographic patterns have emerged in CRC awareness studies where individuals with higher formal education or younger age groups were more likely to correctly identify risk factors and screening guidelines locally [1] and globally [6,7,9,13]. However, unlike some CRC studies, where educational level strongly predicted awareness, our multivariable model did not find education level to be a significant independent predictor of good knowledge. This may indicate that formal education alone is insufficient; what matters more is the content and quality of health information accessed.

Table 1: Bio-Demographic Characteristics of the Study Participants, Western Region, SA (N=439).

Bio-Demographic data	**No**	**%**
Age in years		
18-40	306	69.7%
41-60	126	28.7%
> 60	7	1.6%
Gender		
Male	63	14.4%
Female	376	85.6%
Educational level		
Below university	89	20.3%
University education	320	72.9%
Post-graduate degree	30	6.8%
Nationality		
Saudi	415	94.5%
Non-Saudi	24	5.5%
Body mass index		
Underweight	34	7.7%
Normal weight	201	45.8%
Overweight	118	26.9%
Obese	86	19.6%
Have chronic diseases		
Yes	67	15.3%
No	372	84.7%
History of GIT diseases		
Yes	79	18.0%
No	360	82.0%

Family history of GIT diseases		
Yes	73	16.6%
No	366	83.4%
Smoking		
Yes	24	5.5%
No	394	89.7%
Ex-smoker	21	4.8%

Table 2 Awareness and Knowledge Among Residents in the Western Region Regarding Lower Gastrointestinal Bleeding Etiology (N=439).

Knowledge items	**No**	**%**
Do you have prior knowledge of the causes of lower gastrointestinal bleeding?		
Yes	194	44.2%
No	245	55.8%
What are the causes of lower gastrointestinal bleeding?		
Piles	178	83.2%
Cancer colon	134	62.6%
Polyps in the colon	80	37.4%
Anal fissures	147	68.7%
Vascular diseases, such as aneurysms	76	35.5%
Colitis	118	55.1%
Gastroenteritis	100	46.7%
Do you believe that lower gastrointestinal bleeding is a critical medical condition?		
Yes	372	84.7%
No	67	15.3%
Factors that increase the incidence of lower gastrointestinal bleeding		
Having a history of digestive disorders, such as enteritis, polyps, and cancer	325	74.0%

Having a family history of cancer or polyps	220	50.1%
Nonsteroidal anti-inflammatory drugs and steroids	165	37.6%
Medications, such as anticoagulants	165	37.6%
Lifestyle factors, such as following a low-fiber diet	247	56.3%
Smoking and alcohol	247	56.3%
Liver disease	86	19.6%
Obesity	91	20.7%
Age	118	26.9%
Symptoms related to lower gastrointestinal bleeding		
Blood in stool	367	83.6%
Dark or sticky stools	131	29.8%
Changes in bowel habits	208	47.4%
Abdominal pain/cramps	182	41.5%
Nausea/Vomiting	138	31.4%
Feeling tired and dizzy	138	31.4%
Can severe or untreated lower gastrointestinal bleeding lead to several complications?		
Yes	420	95.7%
No	19	4.3%

Awareness and Knowledge Among Residents in Western Region Regarding Lower Gastrointestinal Bleeding Etiologies.

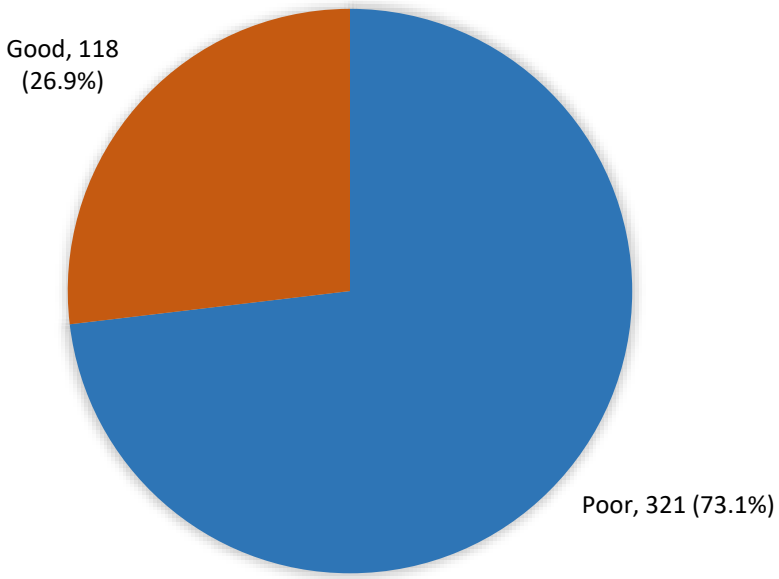

Figure 1: The Overall Knowledge and Awareness Regarding Lower Gastrointestinal Bleeding Etiology, Western Region, Saudi Arabia (N=439).

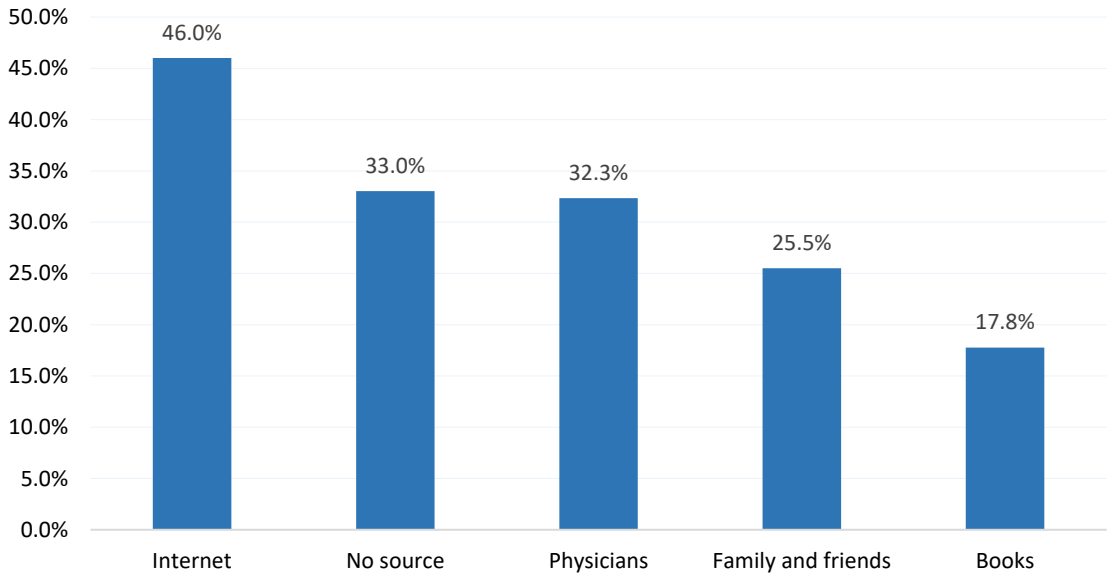

Figure 2: The Public Source of Information About Lower Gastrointestinal Bleeding Etiology, Western Region, SA (N=439).

Table 3: Factors Associated with Public Knowledge and Awareness regarding Lower Gastrointestinal Bleeding Etiology, Western Region, SA (N=439).

Factors	Overall knowledge level				p-value
	Poor		Good		
	No	%	No	%	
Age in years					
18-40	199	65.0%	107	35.0%	.001*^
41-60	116	92.1%	10	7.9%	
> 60	6	85.7%	1	14.3%	
Gender					
Male	59	93.7%	4	6.3%	.001*
Female	262	69.7%	114	30.3%	
Educational level					
Below university	70	78.7%	19	21.3%	.136
University education	226	70.6%	94	29.4%	
Post-graduate degree	25	83.3%	5	16.7%	
Nationality					
Saudi	302	72.8%	113	27.2%	.492
Non-Saudi	19	79.2%	5	20.8%	
Body mass index					
Underweight	23	67.6%	11	32.4%	
Normal weight	133	66.2%	68	33.8%	.006*
Overweight	93	78.8%	25	21.2%	
Obese	72	83.7%	14	16.3%	
Have chronic diseases					
Yes	52	77.6%	15	22.4%	.368
No	269	72.3%	103	27.7%	

History of GIT diseases					
Yes	50	63.3%	29	36.7%	.030*
No	271	75.3%	89	24.7%	
Family history of GIT diseases					
Yes	44	60.3%	29	39.7%	.007*
No	277	75.7%	89	24.3%	
Smoking					
Yes	21	87.5%	3	12.5%	.095^
No	282	71.6%	112	28.4%	
Ex-smoker	18	85.7%	3	14.3%	
Source of information					
Physicians	50	35.2%	92	64.8%	.001*
Internet	129	63.9%	73	36.1%	
Family and friends	77	68.8%	35	31.3%	
Books	21	26.9%	57	73.1%	
No information	137	94.5%	8	5.5%	

^: *Exact Probability test, *: P < 0.05 (Significant)*

Table 4: Multivariable Logistic Regression Analysis of Predictors of Good Knowledge Regarding Lower Gastrointestinal Bleeding.

Predictors	**p-value**	**OR_A**	**95% CI**	
			Lower	**Upper**
Age	0.001*	0.22	0.11	0.43
Gender	0.003*	4.90	1.69	14.23
Educ	0.771	0.93	0.57	1.53
Nationality	0.566	0.72	0.24	2.18
BMI	0.286	0.86	0.65	1.14
Diseases	0.657	0.85	0.42	1.72

GIT Disease	0.043*	0.55	0.31	0.98
FH	0.183	0.68	0.38	1.20
Smoking	0.570	1.29	0.54	3.08
Scientific source of information (physician/books)	0.001*	3.21	1.52	10.36

*ORA: Adjusted odds ratio, CI: Confidence Interval, * P < 0.05 (significant)*

Importantly, our findings uncover a critical public health gap: many participants failed to recognize serious or silent causes of GI bleeding (e.g., colonic polyps, vascular lesions), and risk factors such as obesity, liver disease, and older age were poorly identified. This could delay help-seeking behavior and diagnosis, ultimately compromising outcomes. Given the rising incidence of colorectal diseases globally and regionally, including increasing rates among younger adults in some populations [8,13], there is a pressing need for targeted awareness campaigns tailored to local sociocultural contexts. Study limitations: This study has limitations including self-reported data with potential bias, limited generalizability due to sampling from the Western Region only, and underrepresentation of some groups. In addition, some aspects of LGIB knowledge may not have been fully captured by the questionnaire.

Conclusion

This study shows that public awareness of LGIB in the Western Region of SA is limited, particularly regarding serious causes such as colorectal cancer, vascular and inflammatory diseases, and risk factors like liver disease and advanced age. These findings emphasize the need for targeted public health education through reliable, evidence-based sources.

Conflict of Interest

None

Funding

None

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