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## Use of Treatments for Irritable Bowel Syndrome and Patient Satisfaction, Based on IBS in America Survey

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### Short summary:

Many treatments for irritable bowel syndrome are available to those with the disease. Satisfaction with these treatments is low, and a need exists for further effective treatments for the condition.

Irritable bowel syndrome (IBS) is a common, chronic, and often debilitating condition with an estimated prevalence in the general population ranging from 10–15% (1–3). There are many treatment options for individuals with IBS, but there has been limited research on patterns of utilization or satisfaction with specific IBS treatments. This study aims to better understand treatment utilization and satisfaction among individuals with IBS, and to compare treatment recommendations among physicians. We utilized data from the IBS in America Survey, an online study commissioned by the American Gastroenterological Association (AGA) in September and October of 2015. The data was acquired from 3,254 individuals fulfilling the Rome III criteria for IBS-constipation (IBS-C) or IBS-diarrhea

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(IBS-D), as well as data from 302 physicians who treat IBS (evenly divided between primary care physicians (PCPs) and gastroenterologists (GIs)). Individuals with IBS and physicians were both asked about utilization of and satisfaction with various IBS treatments using Likert scales. The supplemental methods provide details on the specific questions to participants in this survey and analysis. The study was completed prior to approval of eluxadoline and prior to wide marketing of plecanatide.

## Results

The mean age of individuals with IBS was 47.3 years, 81.2% were female, and approximately 90% identified as Caucasian; 72% sought consultation for their IBS symptoms from a PCP, and 45% from a GI.

### Treatment use and satisfaction among individuals with IBS

The majority (77%) reported having used an over-the-counter (OTC) treatment for their IBS symptoms. In IBS-C, the most commonly utilized OTC treatments were fiber, laxatives (e.g. PEG, senna, bisacodyl), and stool softeners (e.g. docusate). Satisfaction with OTC treatments was low, with less than 15% reported being “very satisfied” with each treatment (Table 1). In IBS-D, the most commonly utilized OTC treatments were loperamide, fiber, and bismuth subsalicylate. Less than 20% were “very satisfied” with each treatment (Table 1). Only 18.7% of individuals with IBS-C and 10.9% with IBS-D reported having tried an FDA approved prescription medication, with approximately 25% of each group being “very satisfied” with their prescription treatments (Table 1).

### Physician Selection of and satisfaction with outcomes

Fiber supplementation (78.5%) and PEG (67.9%) were the most commonly recommended OTC treatments for IBS-C (Supplemental Figure 1). In IBS-D, the most commonly recommended OTC treatments were fiber supplementation (69.6%) and loperamide (50.4%) (Supplemental Figure 1). Only 2.6% of physicians reported being “very satisfied” with OTC options for IBS-D, and 6.3% with OTC options for IBS-C.

Prescription PEG was the most commonly recommended prescription treatment for IBS-C (52.0%), followed by linaclotide (43.1%) and lubiprostone (32.1%); 3.6% of physicians reported being “very satisfied” with prescription treatment options for IBS-D.

Antispasmodics (51.0%) and diphenoxylate (33.5%) were the most commonly recommended prescription medications for IBS-D; 8.9% of physicians reported being “very satisfied” with prescription options for IBS-C.

Some differences in prescribing patterns between GIs and PCPs were noted. GIs were more likely to prescribe bile acid sequestrants and rifaximin for IBS-D, as well as linaclotide and lubiprostone for IBS-C, compared to PCPs (Supplemental Figure 1).

The most common non-pharmacologic therapies recommended by physicians were probiotics (73%), dietary changes (Low-FODMAP 27%, other dietary modification 28%),

and relaxation (26%). The low-FODMAP diet was more commonly recommended by GIs compared to PCPs (45.0% vs 9.9%,  $p < 0.001$ ).

## Discussion

In this large nationwide survey of individuals with IBS, OTC treatments were more commonly utilized than prescription medications (77% vs 15%), and satisfaction was low for both. The OTC treatments most commonly utilized were fiber and laxatives (e.g., PEG) for IBS-C, and loperamide and fiber for IBS-D. Physicians most commonly prescribed PEG, linaclotide, and lubiprostone for IBS-C and antispasmodics and diphenoxylate for IBS-D.

Our findings are corroborated by other studies assessing treatment utilization and satisfaction. Prior studies have cited OTC utilization rates ranging from 60%–86% in various IBS populations(2,4,5). A study of IBS-C noted that approximately one third of survey respondents were satisfied with OTC and prescription options(4). Two recent studies of IBS-D also showed low satisfaction, with one noting overall treatment satisfaction of approximately 20%(6), and another noting that approximately 50% or more patients were dissatisfied with commonly utilized treatments(5). This study adds to the existing literature by providing utilization and satisfaction data from a large, nationwide sample of individuals with IBS-C and IBS-D in the United States.

In this survey, only approximately 15% of individuals reported having tried a prescription treatment for IBS. Prescribing differences between PCPs and GIs have thus far not been studied. The medications prescribed were similar between PCPs and GIs. However, GIs were more likely to prescribe certain medications, such as linaclotide and lubiprostone for IBS-C, and rifaximin and bile acid sequestrants for IBS-D. This likely reflects the increased symptom severity among patients being seen by GIs, as well as increased experience and comfort with these medications by GIs. In a Swedish study of IBS-D patients, it was similarly noted that those who had seen a gastroenterologist were significantly more likely to be using antibiotics and bile acid sequestrants(5). The low FODMAP diet was also recommended significantly more frequently by GIs compared to PCPs, suggesting that knowledge of this diet's efficacy(7) is widely disseminated among GIs or that patients had already exhausted OTC options. Interestingly, over 70% of physicians reported recommending probiotics for IBS, which is likely due to their relatively low cost, good safety profile, and perceived efficacy despite low quality of evidence and lack of consensus on the appropriate strain, dose or duration of therapy(8).

Limitations of this study include the fact that results were survey-based, and thus prone to recall bias. In addition, participants had to opt in to the online survey, leading to possible self-selection bias. Within these limitations, this large, nationwide survey of individuals with IBS and physicians treating IBS showed that satisfaction with currently available treatments for IBS is low, and that, while prescribing patterns are overall similar between PCPs and gastroenterologists, some notable differences do exist, pointing to opportunities for further education and treatment optimization

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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## What You Need to Know

### **Background and context:**

Irritable bowel syndrome (IBS) is a common condition in both gastroenterology and primary care clinics. Limited research exists on patterns of treatment utilization.

### **New findings:**

Treatment satisfaction was low among both IBS individuals and physicians. IBS individuals most commonly utilize over the counter treatments for their symptoms. Gastroenterologists were more likely to utilize certain prescriptions and low FODMAP diet compared to primary care physicians.

### **Limitations:**

This was a survey based study prone to both self selection bias and recall bias on the part of both IBS individuals and physicians.

### **Impact:**

The low satisfaction with existing treatments highlights the need for further effective IBS treatments. Differences in treatment utilization between gastroenterologists and primary care physicians also point to opportunities for further education.

TABLE 1 –

## UTILIZATION AND SATISFACTION WITH PHARMACOLOGIC TREATMENTS IN INDIVIDUALS WITH IBS-C AND IBS-D

	% having ever tried	Very Satisfied	Somewhat Satisfied
<b>IBS-C (n = 1,667)</b>			
<i>Non-Prescription Medications</i>			
Fiber	69.5%	12.0%	39.0%
Non-prescription laxatives (PEG, bisacodyl, senna, etc)	62.6%	13.6%	47.1%
Stool softener (Colace, etc)	60.2%	10.0%	45.3%
<i>Prescription Medications</i>			
FDA approved prescriptions for IBS-C (linaclotide or lubiprostone)	18.7%	25.3%	31.7%
Prescription laxatives (lactulose, etc)	11.2%	16.7%	33.9%
<b>IBS-D (n = 1,587)</b>			
<i>Non-Prescription Medications</i>			
Loperamide	49.5%	18.2%	49.2%
Fiber	43.6%	7.9%	33.4%
Bismuth subsalicylate	41.8%	8.9%	36.8%
Simethicone	29.9%	12.9%	41.8%
<i>Prescription Medications</i>			
FDA approved prescription medication for IBS-D (alosetron or rifaximin)	Alosetron: 7.5% Rifaximin: 4.5%	Alosetron: 26.1% Rifaximin: 20.8%	Alosetron: 33.6% Rifaximin: 30.6%