

# Prevalence and Burden of Illness of Rome IV Irritable Bowel Syndrome in the U.S.

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## BACKGROUND AND AIMS

- Rome IV irritable bowel syndrome (IBS) is characterized by abdominal pain and altered bowel habits.
- Prior U.S. studies have noted a Rome IV IBS prevalence of 4.7% to 5.3% (Figure 1).
- Using data from the “National GI Survey II”—a nationwide audit of gastrointestinal (GI) symptoms in nearly 90,000 adult Americans—we aimed to determine the prevalence, burden of illness, and healthcare seeking behavior of those who met Rome IV IBS criteria.

## METHODS

- We conducted the National GI Survey II using a logic-based online survey from May 3 to June 24, 2020, a period coinciding with the peak of the initial COVID-19 wave in the U.S.
- A representative adult sample based on U.S. Census age, sex, and region data was recruited.
- The self-administered survey guided participants through the Rome IV IBS questionnaire, NIH GI PROMIS symptom scales (0-100 scale; higher=more severe), and questions on comorbidities and demographics.
- A primary outcome was prevalence of IBS based on Rome IV criteria.
- We also determined the presence and severity of non-cardinal IBS symptoms and healthcare seeking for abdominal pain, constipation, or diarrhea in those with IBS.
- We used multivariable logistic regression to adjust for confounding variables.

## RESULTS

- Of the 88,969 individuals who completed the survey, 6,543 (7.4%) met Rome IV IBS criteria. Their IBS subtypes were: IBS-M, 34.0%; IBS-C, 32.1%; IBS-D, 29.6%; IBS-U, 4.4%. Figure 1 presents comparisons of our Rome IV IBS prevalence to other studies.
- Females, non-Hispanic Whites, and those 30-49 yo and with comorbidities (e.g., prior gastroenteritis, fibromyalgia, inflammatory bowel disease) had statistically higher odds for meeting Rome IV IBS criteria (all  $p < .001$ ).
- Differences in abdominal pain severity, as measured by PROMIS, were not evident among the subtypes: IBS-C,  $66.9 \pm 22.3$ ; IBS-D,  $64.4 \pm 22.6$  ( $p = .10$  vs. IBS-C); IBS-M,  $67.0 \pm 22.5$  ( $p = .32$  vs. IBS-C). Table 1 presents the prevalence and severity of non-IBS cardinal symptoms.
- Figure 2 presents the prevalence of healthcare seeking for abdominal pain, constipation, and/or diarrhea among those with Rome IV IBS.

FIGURE 1. Prevalence of Rome IV IBS across studies.

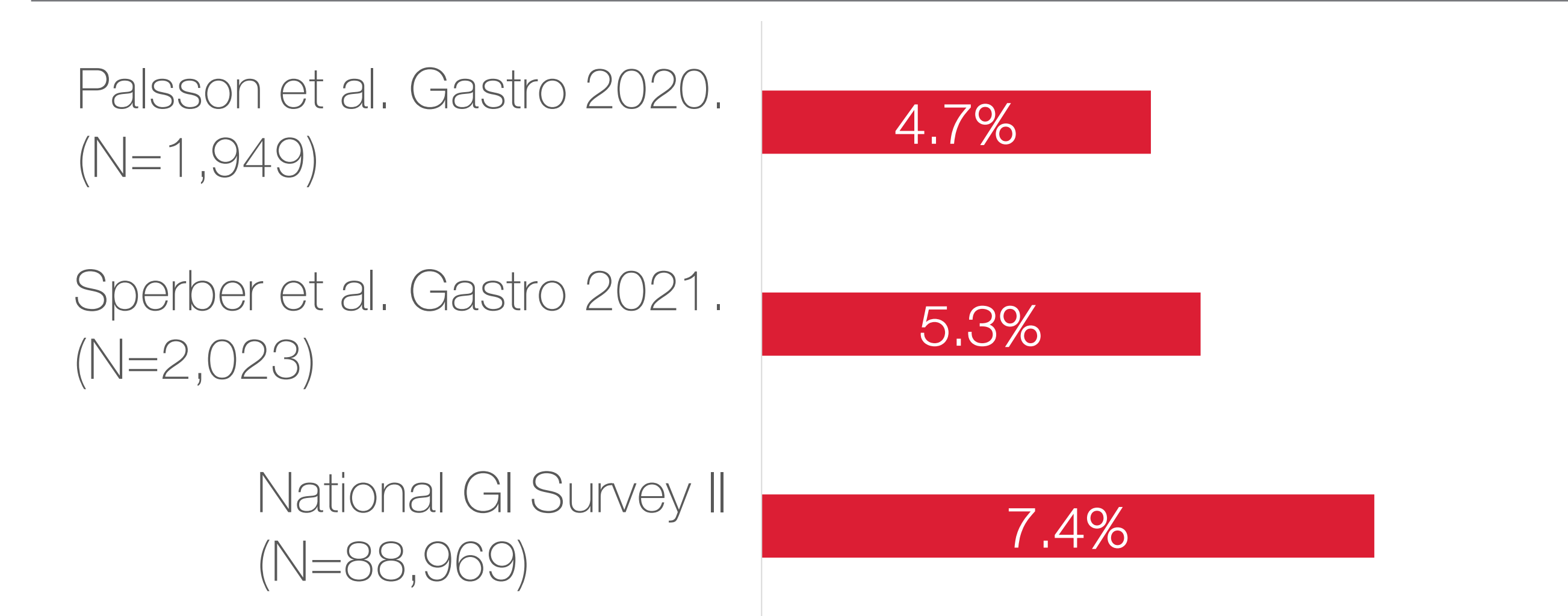
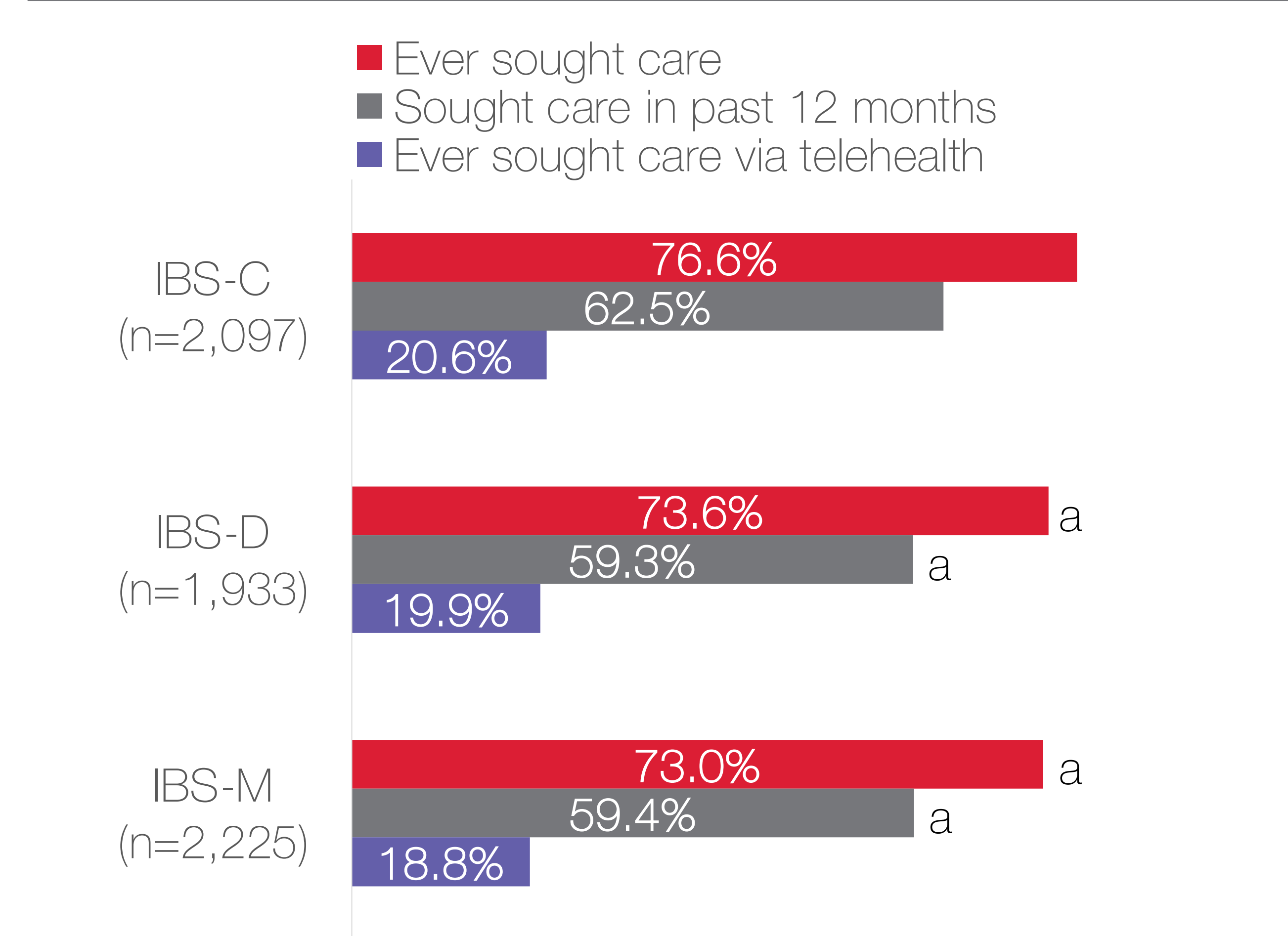


FIGURE 2. Prevalence of healthcare seeking for Rome IV IBS symptoms.



<sup>a</sup>  $p < .05$  compared to IBS-C in multivariable logistic regression.

TABLE 1. Prevalence and severity of non-cardinal symptoms among those meeting Rome IV IBS criteria.

GI symptom	IBS-C (n=2,097)	IBS-D (n=1,933)	IBS-M (n=2,225)
<b>Bloating:</b>			
Experienced in past 7 days	52.1%	45.5% <sup>a</sup>	55.8%
PROMIS score	60.7 (28.2)	55.0 (29.8) <sup>a</sup>	59.5 (29.3)
<b>Excess gas<sup>b</sup>:</b>			
Experienced in past 7 days	50.6%	50.3%	56.2% <sup>c</sup>
<b>Heartburn:</b>			
Experienced in past 7 days	44.4%	44.9%	48.5% <sup>c</sup>
PROMIS score <sup>d</sup>	66.9 (25.4)	65.8 (26.0)	68.6 (25.4)
<b>Regurgitation:</b>			
Experienced in past 7 days	20.9%	24.2% <sup>c</sup>	26.9% <sup>a</sup>
PROMIS score <sup>d</sup>	66.9 (25.4)	65.8 (26.0)	68.6 (25.4)
<b>Nausea or vomiting:</b>			
Experienced in past 7 days	23.4%	27.1% <sup>c</sup>	30.5% <sup>a</sup>
PROMIS score	64.3 (28.2)	62.5 (29.8)	66.6 (28.0) <sup>c</sup>
<b>Dysphagia:</b>			
Experienced in past 7 days	15.9%	13.6%	17.7%
PROMIS score	64.3 (25.2)	61.4 (27.1)	61.4 (25.9)
<b>Bowel incontinence:</b>			
Experienced in past 7 days	6.1%	12.0% <sup>a</sup>	11.2% <sup>a</sup>
PROMIS score	63.2 (28.6)	64.5 (24.4)	63.3 (25.5)
<b>Rectal pain<sup>b</sup>:</b>			
Experienced in past 7 days	12.7%	8.5% <sup>a</sup>	13.2%
<b>Anal pain<sup>b</sup>:</b>			
Experienced in past 7 days	10.4%	10.1%	12.5%
<b>Pelvic pain<sup>b</sup>:</b>			
Experienced in past 7 days	16.1%	14.1%	19.6% <sup>c</sup>
<b>Bladder pain<sup>b</sup>:</b>			
Experienced in past 7 days	15.0%	12.9%	17.5% <sup>c</sup>

Note: Data are presented as % or mean (standard deviation). a:  $p < .001$  compared to IBS-C. b: There is no PROMIS questionnaire for this symptom. c:  $p < .05$  compared to IBS-C. d: The gastroesophageal reflux PROMIS questionnaire includes heartburn and regurgitation items.

## LIMITATIONS

- Data were self-reported and participants were limited to those with computer and internet access.
- Survey questions had varying recall periods (e.g., 3 months for Rome IV, 7 days for NIH GI PROMIS).
- This study was undertaken during the early period of the COVID-19 pandemic, which may have impacted outcomes.

## DISCUSSION

- In this nationwide U.S. survey, we found that Rome IV IBS is more prevalent (7.4%) vs. prior estimates (4.7%-5.3%).
  - Additional research is needed to see if this higher prevalence is in part due to the COVID-19 pandemic.
  - Social distancing may have levied a psychological toll on many individuals, leading to alterations in the gut-brain axis and a propensity to develop IBS or gain greater awareness of symptoms.
- People with IBS commonly experience other symptoms in addition to their cardinal IBS symptoms.
- While most respondents with Rome IV IBS have sought care for their symptoms, 1 in 4 individuals have not done so. Moreover, only 1 in 5 have used telehealth for their symptoms. Further efforts to enhance healthcare seeking, either in-person or via telehealth, among those with this treatable condition are warranted.

## FUNDING AND DISCLOSURES

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