

**SUPPLEMENTARY TABLE 1.** Broad and specific definitions for AHP-like symptoms.

Broad definition for AHP-like symptoms	<p>≥2 episodes of excruciating abdominal pain that lasted more than one day and required seeking urgent medical care</p> <p style="text-align: center;">AND</p> <p>≥2 of the following concomitant symptoms <sup>a</sup>:</p> <ul style="list-style-type: none"><li>• urine color change to dark red or brown</li><li>• skin blisters on sun-exposed areas</li><li>• peripheral nervous system manifestations (muscle weakness, pain or numbness in extremities or back)</li><li>• central nervous system manifestations (anxiety, confusion, depression, hallucinations, insomnia, seizures)</li><li>• autonomic nervous system manifestations (constipation, hypertension, nausea/vomiting, tachycardia)</li></ul>
Specific definition for AHP-like symptoms	<p>≥2 episodes of excruciating abdominal pain that lasted more than one day and required seeking urgent medical care</p> <p style="text-align: center;">AND</p> <p>≥2 of the following concomitant symptoms <sup>a</sup>:</p> <ul style="list-style-type: none"><li>• urine color change to dark red or brown</li><li>• skin blisters on sun-exposed areas</li><li>• peripheral nervous system manifestations (muscle weakness, pain or numbness in extremities or back)</li><li>• central nervous system manifestations (confusion, hallucinations, seizures)</li></ul>
<p>a: These were assessed for by asking respondents: “Thinking back to when you had excruciating belly pain, did you experience any of the following symptoms at or around the same time?”</p>	

**SUPPLEMENTARY TABLE 2.** Study population demographics compared with the U.S. population.

Variable	Study cohort (N=10,300)	2018 U.S. population
Age (years) <sup>a</sup> :		
18 to 25	1,343 (13.0%)	11.5%
26 to 34	1,650 (16.0%)	16.3%
35 to 54	4,176 (40.5%)	33.8%
55 to 64	1,629 (15.8%)	17.3%
≥65	1,502 (14.6%)	21.1%
Sex:		
Male	4,252 (41.3%)	49.2%
Female	6,019 (58.4%)	50.8%
Other	29 (0.3%)	–
Race/ethnicity:		
Non-Hispanic white	7,877 (76.5%)	60.2%
Non-Hispanic black	765 (7.4%)	12.3%
Latino	873 (8.5%)	18.3%
Non-Hispanic Asian	310 (3.0%)	5.6%
Other	475 (4.6%)	3.6%
Marital status <sup>b</sup> :		
Married or in a long-term relationship	6,256 (60.7%)	47.8%
Not married	4,044 (39.3%)	52.2%
Educational attainment <sup>c</sup> :		
High school degree or less	2,235 (21.7%)	38.6%
Some college	3,408 (33.1%)	20.3%
College degree	3,398 (33.0%)	28.6%
Advanced graduate degree	1,259 (12.2%)	12.6%
Employment status <sup>d</sup> :		
Not employed	4,311 (41.9%)	40.2%
Employed or full-time student	5,989 (58.2%)	59.8%
Total household income:		
\$0 to 50,000	4,988 (48.4%)	40.9%
\$50,001 to 100,000	3,319 (32.2%)	30.0%
\$100,001 to 200,000	1,356 (13.2%)	21.6%
≥\$200,001	180 (1.8%)	7.6%
Prefer not to say	457 (4.4%)	–

U.S. region:		
Northeast	2,255 (21.9%)	17.2%
South	3,877 (37.6%)	38.1%
Midwest	1,843 (17.9%)	20.9%
West	2,325 (22.6%)	23.8%
Has health insurance	9,265 (90.0%)	91.1%

Data are presented as n (%) or %.

U.S. population data estimates are from the 2018 U.S. Census American Community Survey (<https://data.census.gov/>) or Kaiser Family Foundation (<https://www.kff.org/state-category/demographics-and-the-economy/population/>). Data were accessed on February 20, 2020.

a: The Kaiser Family Foundation reports data for those aged 19–25 years instead of 18–25 years. The U.S. population data estimates for all age groups were also recalculated with the denominator being all adults  $\geq 19$  years of age; b: the U.S. population data are calculated among those  $\geq 15$  years old and the 2018 U.S. Census American Community Survey does not report data for those in a long-term relationship; c: the U.S. population data are calculated among those  $\geq 25$  years old; d: for the study cohort, the not employed category includes those who reported being unemployed, unable to work owing to a disability, on leave of absence from work, retired or a homemaker; for the U.S. population data, we report the employment/population ratio which is the portion of the noninstitutionalized population that is employed among those  $\geq 16$  years old.

Journal

**SUPPLEMENTARY TABLE 3.** Physician-diagnosed conditions reported by respondents that affect the gastrointestinal tract or are commonly associated with gastrointestinal disorders (N=10,300).

Variable	n (%)
Number of conditions—overall cohort (N=10,300):	
0	5,495 (53.4%)
1	2,731 (26.5%)
2	1,216 (11.8%)
≥3	858 (8.3%)
Individual condition—overall cohort (N=10,300):	
Gastroesophageal reflux disease	1,892 (18.4%)
Diabetes	1,127 (10.9%)
Gallstones	997 (9.7%)
Irritable bowel syndrome with diarrhea	631 (6.1%)
Fibromyalgia	626 (6.1%)
Chronic idiopathic constipation	574 (5.6%)
Irritable bowel syndrome with constipation	564 (5.5%)
Peptic ulcer disease	491 (4.8%)
Mixed irritable bowel syndrome	336 (3.3%)
Pancreatitis	270 (2.6%)
Ulcerative colitis	253 (2.5%)
Crohn’s disease	185 (1.8%)
Celiac disease	164 (1.6%)
Cirrhosis	128 (1.2%)
HIV/AIDS	72 (0.7%)
Individual condition—those with only 1 condition (n=2,731):	
Gastroesophageal reflux disease	655 (24.0%)
Diabetes	478 (17.5%)
Gallstones	322 (11.8%)
Irritable bowel syndrome with diarrhea	273 (10.0%)
Irritable bowel syndrome with constipation	204 (7.5%)
Chronic idiopathic constipation	137 (5.0%)
Fibromyalgia	132 (4.8%)
Peptic ulcer disease	130 (4.8%)
Mixed irritable bowel syndrome	102 (3.7%)
Ulcerative colitis	84 (3.1%)
Pancreatitis	59 (2.2%)
Celiac disease	54 (2.0%)

Crohn's disease	51 (1.9%)
HIV/AIDS	27 (1.0%)
Cirrhosis	23 (0.8%)
Individual condition—those with only 2 conditions (n=1,216):	
Gastroesophageal reflux disease	612 (50.3%)
Gallstones	322 (26.5%)
Diabetes	316 (26.0%)
Irritable bowel syndrome with diarrhea	186 (15.3%)
Chronic idiopathic constipation	177 (14.6%)
Fibromyalgia	170 (14.0%)
Irritable bowel syndrome with constipation	165 (13.6%)
Peptic ulcer disease	136 (11.2%)
Mixed irritable bowel syndrome	85 (7.0%)
Pancreatitis	70 (5.8%)
Ulcerative colitis	59 (4.9%)
Crohn's disease	49 (4.0%)
Cirrhosis	37 (3.0%)
Celiac disease	33 (2.7%)
HIV/AIDS	15 (1.2%)
Individual condition—those with only ≥3 conditions (n=858):	
Gastroesophageal reflux disease	625 (72.8%)
Gallstones	353 (41.1%)
Diabetes	333 (38.8%)
Fibromyalgia	324 (37.8%)
Chronic idiopathic constipation	260 (30.3%)
Peptic ulcer disease	225 (26.2%)
Irritable bowel syndrome with constipation	195 (22.7%)
Irritable bowel syndrome with diarrhea	172 (20.1%)
Mixed irritable bowel syndrome	149 (17.4%)
Pancreatitis	141 (16.4%)
Ulcerative colitis	110 (12.8%)
Crohn's disease	85 (9.9%)
Celiac disease	77 (9.0%)
Cirrhosis	68 (7.9%)
HIV/AIDS	30 (3.5%)

**SUPPLEMENTARY TABLE 4.** Demographics of those with AHP-like symptoms.

<b>Variable</b>	<b>AHP-like symptoms: broad definition <sup>a</sup> (n=2,413)</b>	<b>AHP-like symptoms: specific definition <sup>b</sup> (n=734)</b>
Age (years):		
18 to 29	545 (22.6%)	210 (28.6%)
30 to 39	594 (24.6%)	219 (29.8%)
40 to 49	562 (23.3%)	157 (21.4%)
50 to 59	404 (16.7%)	113 (15.4%)
≥60	308 (12.8%)	35 (4.8%)
Sex:		
Male	945 (39.2%)	370 (50.4%)
Female	1,461 (60.6%)	360 (49.1%)
Other	7 (0.3%)	4 (0.5%)
Race/ethnicity:		
Non-Hispanic white	1,715 (71.1%)	496 (67.6%)
Non-Hispanic black	217 (9.0%)	71 (9.7%)
Latino	282 (11.7%)	95 (12.9%)
Non-Hispanic Asian	45 (1.9%)	18 (2.5%)
Other	154 (6.4%)	54 (7.4%)
Marital status:		
Married or in a long-term relationship	1,483 (61.5%)	456 (62.1%)
Not married	930 (38.5%)	278 (37.9%)
Educational attainment:		
High school degree or less	621 (25.7%)	182 (24.8%)
Some college	851 (35.3%)	250 (34.1%)
College degree	712 (29.5%)	222 (30.3%)
Advanced graduate degree	229 (9.5%)	80 (10.9%)

Employment status:		
Not employed <sup>c</sup>	1,059 (43.9%)	291 (39.7%)
Employed or full-time student	1,354 (56.1%)	443 (60.4%)
Total household income:		
\$0 to 50,000	1,314 (54.5%)	381 (51.9%)
\$50,001 to 100,000	723 (30.0%)	234 (31.9%)
\$100,001 to 200,000	261 (10.8%)	87 (11.9%)
≥\$200,001	40 (1.7%)	17 (2.3%)
Prefer not to say	75 (3.1%)	15 (2.0%)
U.S. region:		
Northeast	518 (21.5%)	144 (19.6%)
South	993 (41.2%)	292 (39.8%)
Midwest	371 (15.4%)	126 (17.2%)
West	531 (22.0%)	172 (23.4%)
Has health insurance	2,196 (91.0%)	665 (90.6%)
Has usual source of care	2,123 (88.0%)	642 (87.5%)
Has comorbidity that affects GI tract <sup>d</sup>	1,693 (70.2%)	540 (73.6%)
Abdominal pain locus of control (0-5) <sup>e</sup>	3.2 (0.9)	3.5 (0.8)
Abdominal pain PROMIS percentile score <sup>f</sup>	50.0 (34.7)	64.8 (30.9)
Physical global health PROMIS T-score <sup>g</sup>	40.9 (7.9)	39.0 (7.4)
Mental global health PROMIS T-score <sup>g</sup>	43.1 (9.3)	42.1 (9.5)

Data are presented as n (%) or mean (standard deviation).

a: Includes those with ≥2 episodes of excruciating abdominal pain along with ≥2 of the following concomitant symptoms: urine color change, skin blisters, and peripheral (muscle weakness, pain or numbness in arms, legs, or back), central (anxiety, confusion, depression, hallucinations, insomnia, seizures), and autonomic (constipation, hypertension, nausea/vomiting, tachycardia) nervous system manifestations; b: includes ≥2 episodes of excruciating abdominal pain along with ≥2 of the following concomitant symptoms: urine color change, skin blisters, and peripheral (muscle weakness, pain or numbness in arms, legs, or back) and central (confusion, hallucinations, seizures) nervous system manifestations; c: includes those who reported being unemployed, unable to work owing to a disability, on leave of absence from work, retired, or a homemaker; d:

see Supplementary Table 3 for list of associated physician-diagnosed conditions; e: locus of control measures the extent to which individuals believe they can control events that affect them—higher score corresponds to lower perceived control of events that affect their abdominal pain; f: higher score corresponds to more severe symptoms with 50 being the median among all individuals with abdominal pain; g: higher score corresponds to better health.

Journal Pre-proof