

Prevalence of Bowel Disorders in Multiple Sclerosis and Parkinson's Disease: Results from a Nationwide Survey of Nearly 90,000 Americans

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BACKGROUND AND AIMS

- While gastrointestinal (GI) symptoms are common in people with multiple sclerosis (MS) (Levinthal et al. Mult Scler Int 2013) and Parkinson's disease (PD) (Poirier et al. Parkinsons Dis 2016), less is known about the prevalence of bowel disorders in these patients.
- Using data from the "National GI Survey II"—a nationwide audit of GI symptoms in nearly 90,000 adult Americans—we aimed to determine the prevalence of Rome IV chronic idiopathic constipation (CIC), opioid-induced constipation (OIC), irritable bowel syndrome (IBS), and other bowel disorders among those with MS and PD.

METHODS

- We conducted the online National GI Survey II from May 3 to June 24, 2020 using a logic-based survey.
- A representative adult sample based on U.S. Census age, sex, and region data was recruited.
- All respondents were asked whether they were diagnosed by a clinician with MS or PD.
- The self-administered survey guided participants through Rome IV questionnaires, NIH GI PROMIS symptom scales, and questions about healthcare seeking, medication use, comorbidities, and demographics.
- Primary outcomes were prevalences of Rome IV CIC, OIC, IBS-C, IBS-D, IBS-M, and diarrhea and fecal incontinence in the past week among those with MS/PD.
- Among those with MS/PD and a constipation disorder (CIC, OIC, IBS-C), we examined constipation severity in those symptomatic in the past week, medication use, and healthcare seeking behavior.
- We used multivariable logistic regression to adjust for confounding variables.

RESULTS

- Of the 88,969 individuals who completed the survey, 865 (0.97%) and 458 (0.51%) reported a diagnosis of MS and PD, respectively. **Table 1** presents the prevalences of bowel disorders in those with MS and PD.
- Among those with MS/PD and a constipation disorder (CIC, OIC, IBS-C) who reported constipation symptoms in the past 7 days, we noted the following PROMIS scores (percentile 0-100; higher=more severe): MS—CIC 53.1 ± 26.3; OIC 57.9 ± 29.5; IBS-C 71.8 ± 26.9; PD—CIC 60.9 ± 17.9; OIC 52.7 ± 23.6; IBS-C 80.6 ± 15.3.
- Figures 1 and 2** present the prevalences of constipation medication use and healthcare seeking for constipation.

TABLE 1. Prevalence of bowel disorders among those with MS and PD (N=88,969).

Variable	MS (n=865)	OR [95% CI] ^a	PD (n=458)	OR [95% CI] ^b
CIC	13.9%	1.60 [1.30-1.96]	13.1%	1.34 [1.004-1.80]
OIC	8.9%	1.38 [1.05-1.80]	10.9%	1.26 [0.90-1.76]
IBS-C	5.7%	1.45 [1.06-1.99]	4.4%	0.86 [0.52-1.41]
IBS-D	4.2%	0.83 [0.57-1.21]	4.6%	0.64 [0.38-1.06]
IBS-M	3.0%	0.54 [0.35-0.82]	4.4%	0.69 [0.42-1.15]
Constipation in past week	22.5%	1.43 [1.21-1.70]	20.1%	1.27 [0.99-1.63]
Diarrhea in past week	19.1%	0.90 [0.75-1.09]	20.1%	0.82 [0.64-1.07]
Fecal incontinence in past week	8.4%	1.35 [1.02-1.78]	8.5%	0.88 [0.60-1.30]

Note: The regression models adjusted for MS or PD, age, sex, race/ethnicity, education, marital status, employment, income, BMI, smoking, alcohol use, U.S. region, insurance, usual source of care, and medical comorbidities. a: Those without MS served as the reference group. b: Those without PD served as the reference group.

FIGURE 1. Current constipation medication use among those with MS/PD and a constipation disorder (CIC, OIC, IBS-C).

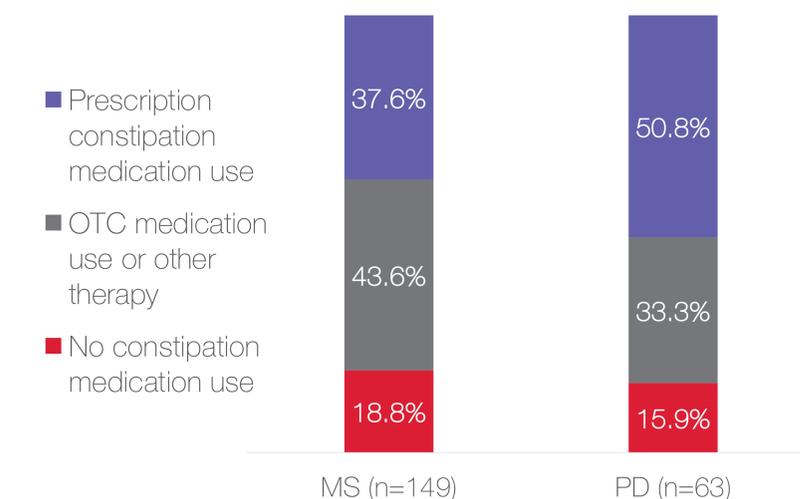
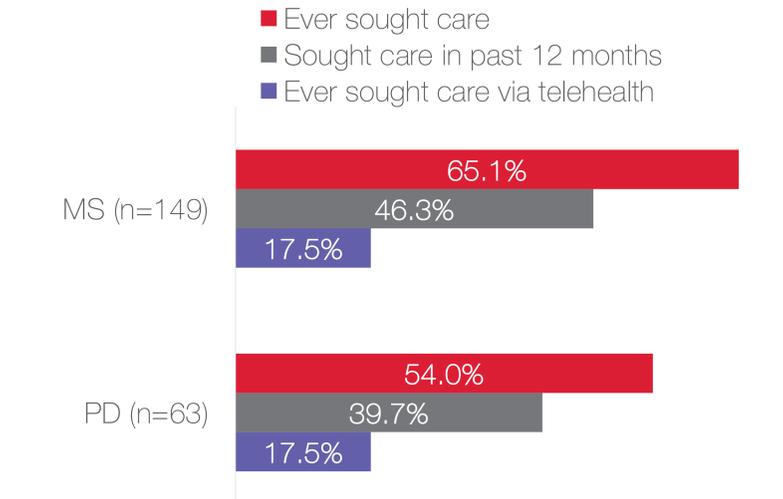


FIGURE 2. Healthcare seeking for constipation symptoms among those with MS/PD and a constipation disorder (CIC, OIC, IBS-C).



Note: Some individuals who met CIC, OIC, and IBS-C did not complete the constipation medication or healthcare seeking questions. OTC medications include fiber supplements, docusate, senna, bisacodyl, magnesium, or PEG 3350. Prescription medications includes lactulose, lubiprostone, linaclotide, plecanatide, prucalopride, or tegaserod.

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 people with MS and PD are more likely to have CIC vs. those without the disorders. We also found that those with MS have higher odds for having OIC, IBS-C, and fecal incontinence in the past week.
- We noted that ~1/3 of those with MS and ~1/2 of those with PD have not discussed their constipation with a healthcare provider.
- Given the negative impact of constipation on daily life, improved efforts by clinicians to proactively assess for and treat constipation in those with MS and PD are needed.

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