

# Current Treatment for Spasticity in Multiple Sclerosis – Satisfaction, Limitations, and Future Directions

Barry Hedin<sup>1</sup> | Ben Thrower<sup>2</sup> | Scott D. Newsome<sup>3</sup> | Robert Chinnapongse<sup>4</sup>  
 Sherry Danese<sup>5</sup> | Jenifer Patterson<sup>4</sup>



Poster  
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<sup>1</sup>Department of Neurology, University of Arizona Medical School, Tucson, AZ, USA; <sup>2</sup>Andrew C. Carlos Multiple Sclerosis Institute, Shepherd Center, Atlanta, GA, USA; <sup>3</sup>Johns Hopkins University School of Medicine, Baltimore, MD, USA; <sup>4</sup>Jazz Pharmaceuticals, Carlsbad, CA, USA; <sup>5</sup>Outcomes Insights, Agoura Hills, CA, USA

- ### KEY POINTS
- SEEN-MSS (Symptoms and Emotions Exploration Needed in Multiple Sclerosis Spasticity), a cross-sectional, online survey, was developed in collaboration with three US-based MS advocacy organizations.
    - Survey respondents included 1,177 people with multiple sclerosis and spasticity (PwMSS), 78% female, mean age 57.
  - Overall, 86% of PwMSS are on ≥1 drug treatments for spasticity and only 8% are extremely satisfied with treatment.
  - More than half (53%) of PwMSS use other treatments (stretching, exercise, massage, physical therapy) in addition to drug treatment.
  - One-quarter (27%) stopped speaking to their physician about spasticity treatment because they believed that nothing more could be done.
  - Results highlight that most PwMSS are not satisfied with current treatments for their spasticity and 94% are interested in new treatments. Most (87%) are interested in an FDA-approved cannabis-based treatment for spasticity.
    - FDA approval would improve their comfort with discussing a cannabis-based treatment with their physicians and give them confidence in the drug's efficacy, safety, and consistency.

- ### INTRODUCTION
- Spasticity is complex and multidimensional, and occurs in up to 80% of people with MS.<sup>1</sup>
  - Evidence suggests that people with multiple sclerosis and spasticity (PwMSS) experience multiple concurrent symptoms that negatively impact many aspects of daily living.
  - Effective treatment of spasticity for PwMSS remains a challenge.
  - We developed a cross-sectional survey to characterize how PwMSS manage and treat their symptoms associated with spasticity, and also describe their satisfaction with current treatments and interest in new treatment options.

### Survey Recruitment and Respondent Characteristics

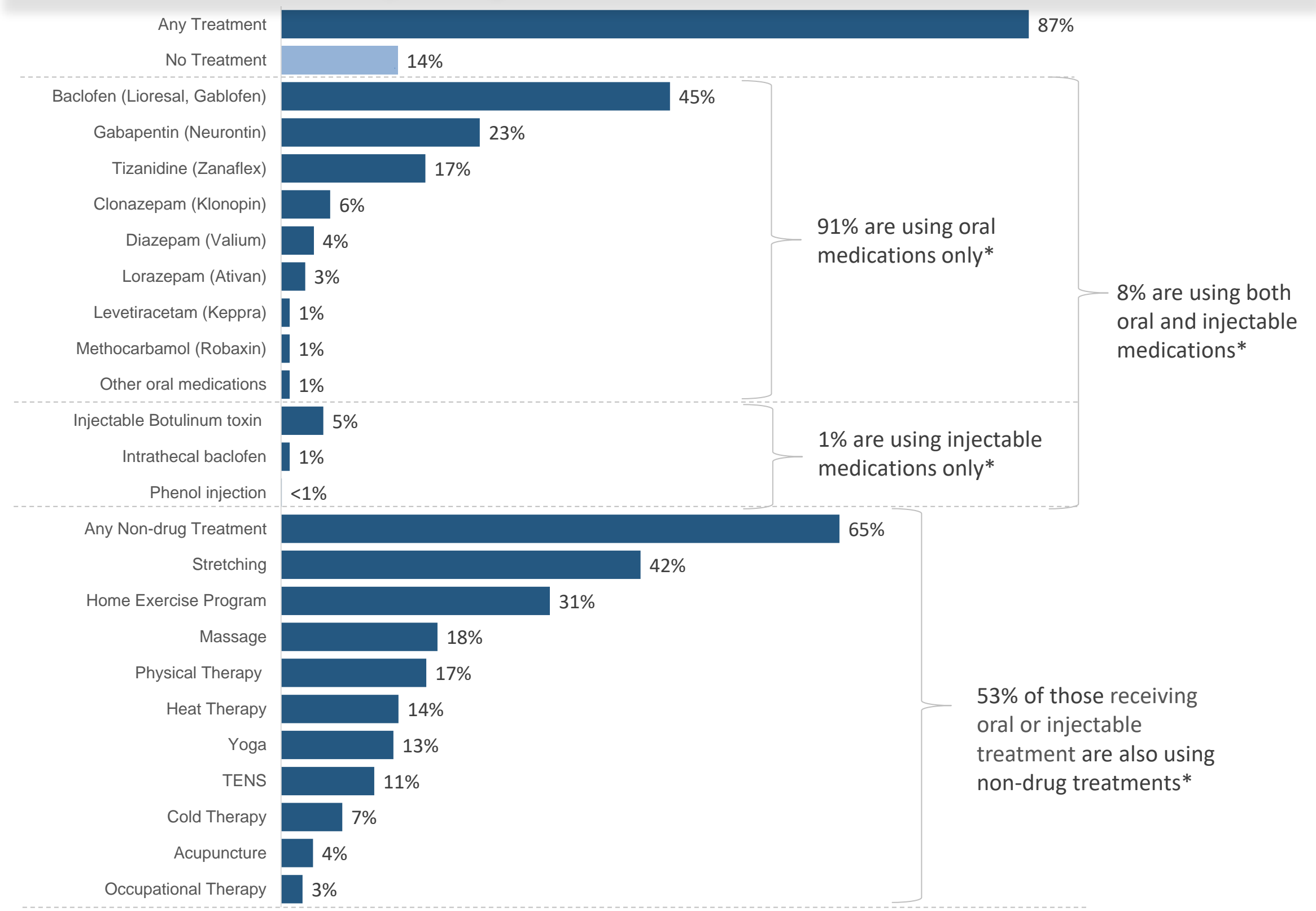
	All Respondents N=1,177
<b>Self-Reported Patient Disability Status*</b> (n=1,177)	
Normal	6%
Mild disability	7%
Moderate disability	11%
Gait disability	15%
Early cane	21%
Late cane	14%
Bilateral support	15%
Wheelchair / scooter	11%
Bedridden	0%
<b>Mean age, y (SD)</b>	56.8 (10.7)
<b>Female, n (%)</b>	913 (78)
<b>Mean time from MS diagnosis, y (SD)</b>	16.8 (10.0)
<b>Mean duration of spasticity, y (SD)</b>	11.5 (9.7)
<b>Ethnicity, n (%)</b>	
White	1004 (85)
Black	98 (8)
Hispanic, Latino, or Spanish origin	56 (5)
American Indian or Alaskan native	10 (1)
Asian	7 (1)
Other or Prefer not to respond	30 (3)
<b>MS type, n (%)</b>	
Relapsing-remitting MS (RRMS)	820 (70)
Secondary progressive MS (SPMS)	170 (14)
Primary progressive MS (PPMS)	145 (12)
Don't know / unsure	42 (4)

SD: standard deviation

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**References:** 1. Bethoux F et al. Patient. 2016;9(6):537-546. 2. Learmonth YC et al. BMC Neurol. 2013;13:37. 3. Hohol MJ et al. Neurology. 1995;45(2):251-255.  
**Contact Information:** medinfo@greenwichbiosciences.com

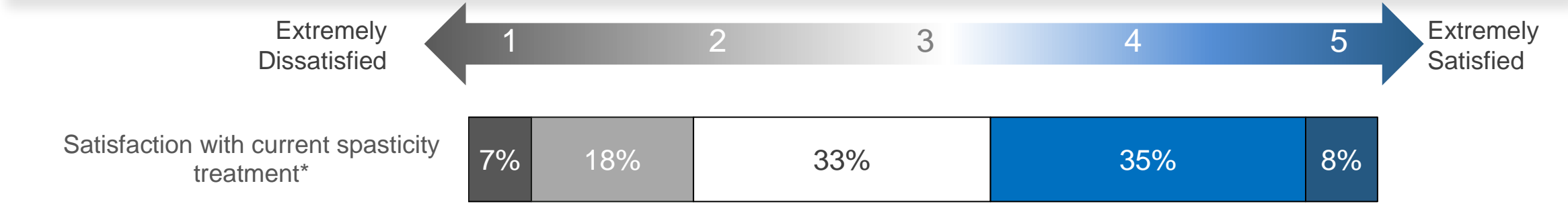
### RESULTS

#### Current Treatments for Spasticity



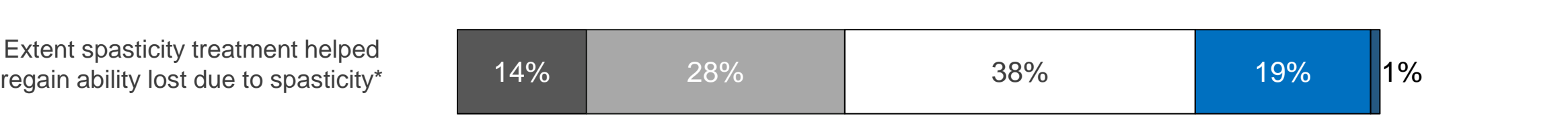
Respondents were asked to select all the treatments they were currently using to treat their spasticity from a list provided. TENS: Transcutaneous electrical nerve stimulation. \*Of those currently receiving oral or injectable treatment (n=796)

#### Satisfaction With Spasticity Treatment



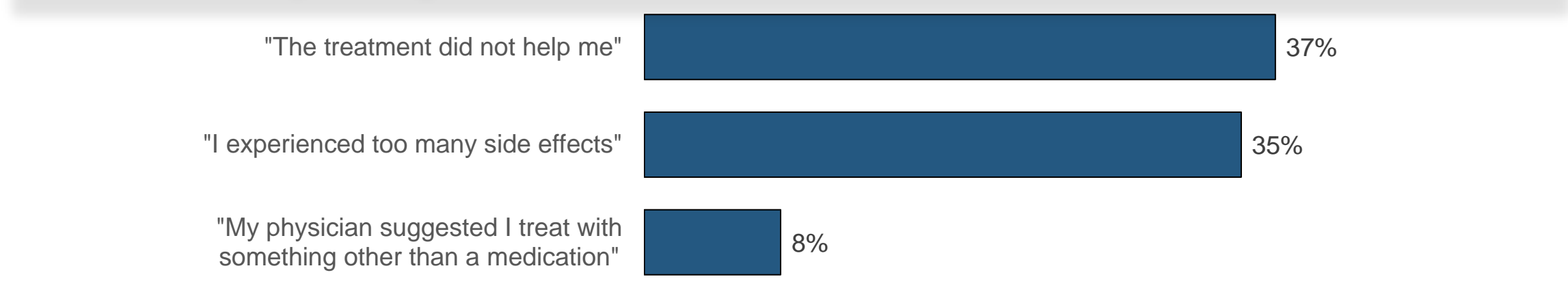
Respondents were asked "Taking all things into account, how satisfied or dissatisfied are you with your current spasticity treatment(s)?" Responses were provided on a 5-point scale: (1) Extremely dissatisfied; (2) Somewhat dissatisfied; (3) Neutral; (4) Somewhat satisfied; (5) Extremely satisfied. \*Among those currently treating, n=1,018.

#### Extent spasticity treatment helped regain ability lost due to spasticity\*



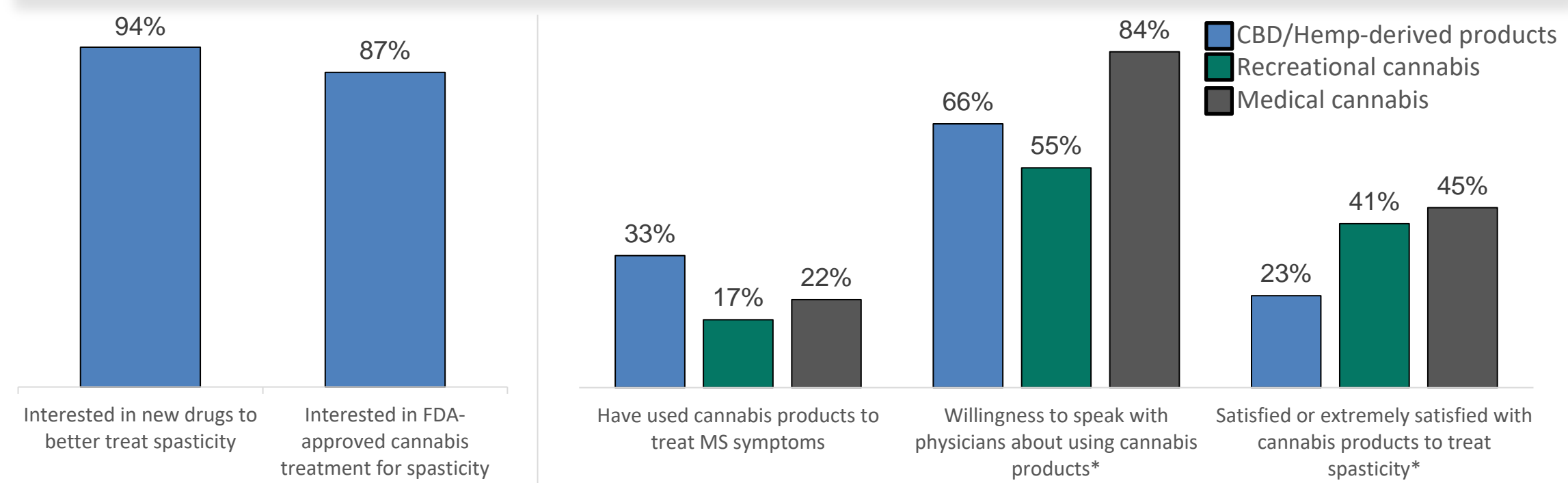
Respondents were asked "Taking all things into account, to what extent have any of your spasticity treatment(s) helped you regain an ability you lost due to spasticity?" Responses were provided on a 5-point scale: (1) Have not helped at all; (2) Have helped a little; (3) Have helped some; (4) Have helped a lot; (5) Have helped completely. \*Among those currently treating and lost ability, n=975.

#### Reasons for Spasticity Treatment Discontinuation



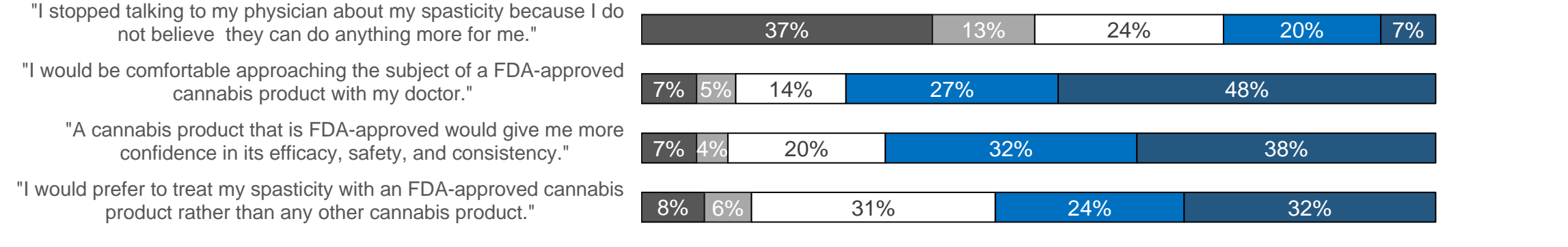
Respondents were asked, "What is the primary reason you stopped taking X treatment for your spasticity?" (Among those who have discontinued, n=863) Other reasons for discontinuation included: "The treatment was not convenient," 1%; "The treatment was too expensive," 0.6%.

#### Cannabis Products to Treat Spasticity



\*Among those who have used a cannabis product; CBD/Hemp-derived products, n=389; Recreational cannabis, n=201; Medical cannabis, n=255.

#### Strongly Disagree ← 1 2 3 4 5 → Strongly Agree



Respondents were asked "Please read each of the following statements and rate your agreement or disagreement" for each of the listed variables. Responses were provided on a 5-point scale: (1) Strongly disagree; (2) Somewhat disagree; (3) Neither; (4) Somewhat agree; (5) Strongly Agree.

### METHODS

- 20-minute online survey of US-based PwMSS developed by Greenwich Biosciences, Inc., and Scott Newsome in collaboration with three US-based MS patient advocacy organizations: Multiple Sclerosis Association of America, Multiple Sclerosis Foundation, and National Multiple Sclerosis Society.
- Respondents completed the survey between February and May 2021.
- Survey consisted of multiple-choice and rank-order questions, and scale-based responses.
- Analysis was performed using descriptive statistics.
- Further details of the SEEN-MSS survey can be found in the Supplemental Materials.

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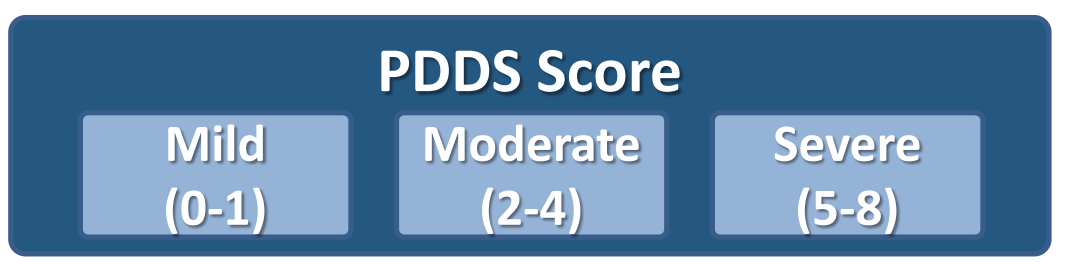
## Supplemental Material

### SUPPLEMENTAL METHODOLOGY

- SEEN-MSS (Symptoms and Emotions Exploration Needed in Multiple Sclerosis Spasticity)
  - Cross-sectional, observational, online survey.
  - Survey materials were reviewed, and a waiver was granted by an independent review board prior to study initiation.
- Survey was promoted by Multiple Sclerosis Association of America, Multiple Sclerosis Foundation, and National Multiple Sclerosis Society.
- No a priori parameters were used as quotas for recruitment.
  - Respondents provided consent prior to entering the survey using an online consent form.

### SEEN-MSS Survey Questions

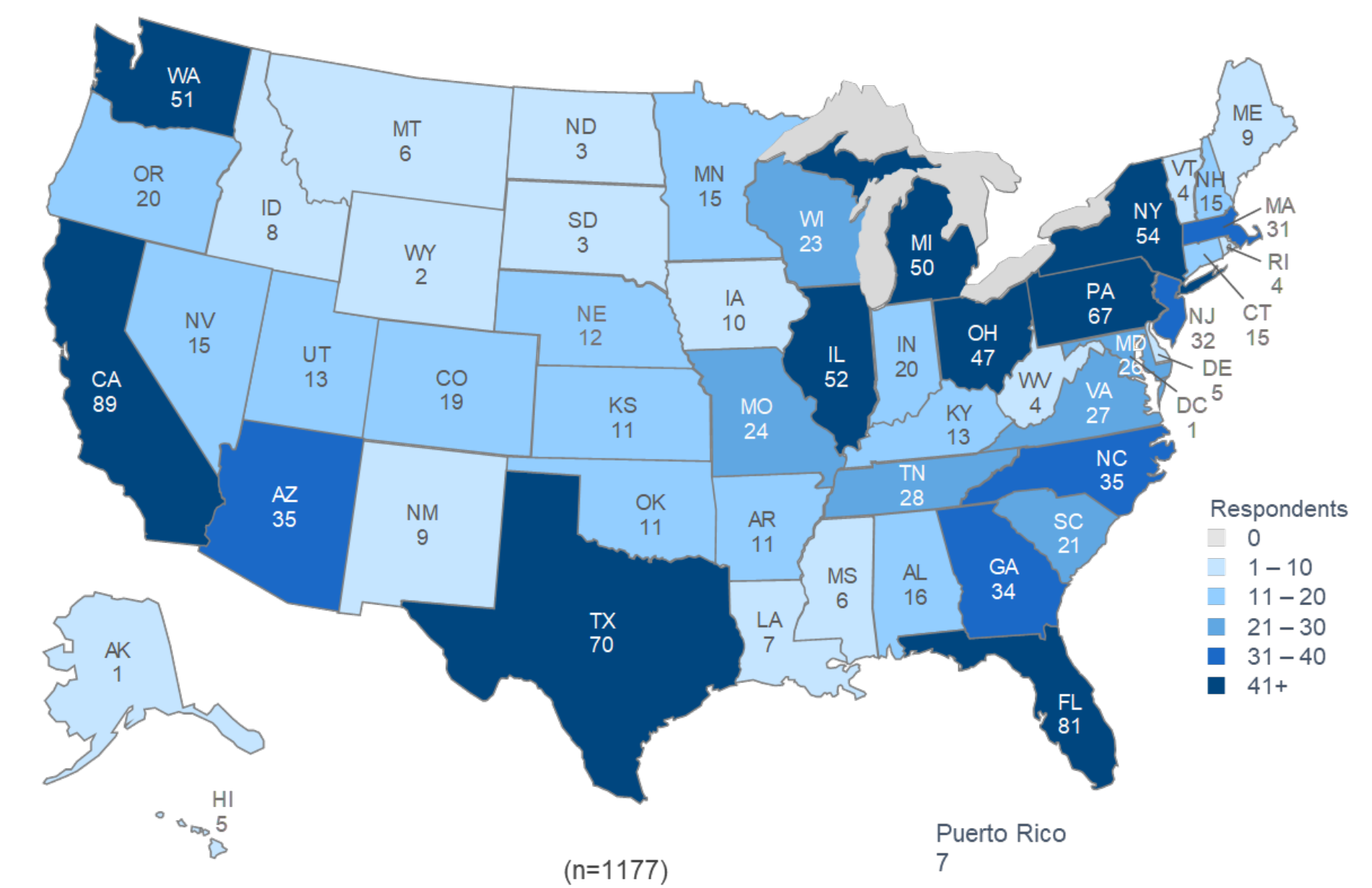
- Disease severity was captured via PDDS.<sup>1,2</sup>



- Survey questions were original in nature, developed to elicit participant feedback regarding their overall experience with spasticity in MS.
  - The content for survey questions, including symptoms and treatment lists, was developed based on expert input and review of existing literature.
- Survey consisted of multiple-choice questions, rank-order questions (order of importance 1-5), and scale-based responses using a symmetrical 5-point Likert scale of agreement with presented statements (from “strongly disagree” to “strongly agree”).

### SUPPLEMENTAL RESULTS

#### SEEN-MSS Respondent Location



#### SEEN-MSS Survey Question Examples:

**PDDS: Patient-determined Disease Steps**

Please read the choices listed below and choose the one that best describes your situation. This scale focuses mainly on how well you walk. You might not find a description that reflects your condition exactly but please mark the **one** category that describes your situation the closest.

0 – Normal	I may have some mild symptoms, mostly sensory, due to MS, but they do not limit my activity. If I do have an attack, I return to normal when the attack has passed.
1 – Mild disability	I have some noticeable symptoms from my MS, but they are minor and have only a small effect on my lifestyle.
2 – Moderate disability	I don't have any limitations in my walking ability. However, I do have significant problems due to MS that limit daily activities in other ways.
3 – Gait disability	MS does interfere with my activities, especially my walking. I can work a full day, but athletic or physically demanding activities are more difficult than they used to be. I usually don't need a cane or other assistance to walk, but I might need some assistance during an attack.
4 – Early cane	I use a cane, a single crutch, or some other form of support (such as touching a wall or leaning on someone's arm) for walking all the time or part of the time, especially when walking outside. I think I can walk 25 feet in 20 seconds without a cane or crutch. I always need some assistance (cane or crutch) if I want to walk as far as 3 blocks.
5 – Late cane	To be able to walk 25 feet, I have to have a cane, crutch or someone to hold onto. I can get around the house or other buildings by holding onto furniture or touching the walls for support. I may use a scooter or wheelchair if I want to go greater distances.
6 – Bilateral support	To be able to walk as far as 25 feet I must have 2 canes or crutches or a walker. I may use a scooter or wheelchair for longer distances.
7 – Wheelchair/scooter	My main form of mobility is a wheelchair. I may be able to stand and/or take one or two steps, but I can't walk 25 feet, even with crutches or a walker.
8 – Bedridden	Unable to sit in a wheelchair for more than one hour.

**How much has spasticity caused you to limit your typical daily activities?**

Not at all  1  2  3  4  5 Significantly

**Which of your daily activities are most limited by spasticity?**  
Please select up to 5 activities starting with the activity that is most limited by spasticity.

<input checked="" type="radio"/> Walking	<input checked="" type="radio"/> Driving
<input checked="" type="radio"/> Stairs / stair climbing	<input type="radio"/> Writing or typing
<input checked="" type="radio"/> Household activities	<input type="radio"/> Sexual activity
<input type="radio"/> Standing	<input type="radio"/> Hygiene / bathing
<input checked="" type="radio"/> Sleep	<input type="radio"/> Dressing
<input type="radio"/> Moving from one position to another	<input type="radio"/> Using the toilet
<input type="radio"/> Sitting	<input type="radio"/> Eating

References: 1. Learmonth YC et al. BMC Neurol. 2013;13:37. 2. Hohol MJ et al. Neurology. 1995;45(2):251-255. ©2022 Jazz Pharmaceuticals, Inc. All rights reserved.