Factors Influencing the Quality of Life of Stroke Survivors – Results of an Online Survey in the US

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TAKE-HOME MESSAGE

This study reveals insights into the needs of stroke survivors and highlights the need for improvement in rehabilitation strategies to enhance patient quality of life (QoL)

BACKGROUND

- Globally, stroke and its sequelae, including hemiparesis and spasticity, are among the leading causes of disability[1]
- Stroke survivors are often challenged with long-term disabilities and complications, which often result in a poor health-related QoL[2,3]

OBJECTIVE

- To gather real-world evidence on post-stroke spasticity (PSS) in a real-life treatment setting and identify key factors influencing patient QoL

CONCLUSIONS

- These results demonstrate the critical impact of functional limitations and communication impairments on QoL in stroke survivors
- Patients with PSS may be undertreated with botulinum neurotoxin, a first-line, American Academy of Neurology– recommended treatment option for PSS[5]

METHODS

Study Design and Patients

- PROTECT was an observational, online survey of patients or their caregivers conducted in the US via Carenity, an online patient community, from July to November 2023
- The survey was reviewed and approved by a WCG institutional review board

Eligible Patients

- Adult patients who suffered from a stroke resulting in hemiparesis (having weakness in an arm and/or leg) in the past 12 months, or their caregivers
- Living in the US
- Able to provide consent

Survey Information

- The survey consisted of 4 parts: screener, sociodemographic and medical profile, patient journey with stroke and PSS, and impact of stroke on patients' QoL
  - QoL was assessed using an adapted version of the Stroke-Specific Quality of Life scale (SS-QoL),[4] which contained 12 items (SS-QoL-12), each representing a domain of the original SS-QoL, including those related to the following:
    - Trouble performing daily tasks (eg, taking a bath or shower, walking, buttoning buttons, repeating themselves after speaking, watching television, and daily chores around the house)
    - Other aspects of life (eg, trouble remembering things, feeling like a burden to the family, interference with social life, change in personality, feeling discouraged about the future, and being too tired to do desirable tasks)
  - Points were allocated for each SS-QoL-12 item on a scale from 1-5 (1 – "could not do it at all," 2 – "a lot of trouble," 3 – "some trouble," 4 – "little trouble," and 5 – "no trouble at all")
  - Overall SS-QoL-12 scores were computed as the unweighted average of all items
    - Overall SS-QoL-12 scores ranged between 1 and 5, with lower scores indicating a more severe impact on QoL and higher scores indicating a less severe impact on QoL

Data Analysis

- Multivariate linear regressions were used to model the relationship between the mean SS-QoL-12 scores and independent variables in the subgroup of patients who experienced their first stroke in the last 12 months
  - Independent variables included patient demographics (ie, age, sex, and profile [defined as a patient or a caregiver of a patient who has had a stroke]), type and number of comorbidities, symptoms, treatments (including those following the most recent stroke), and awareness of drug treatment availability
  - Coefficients and predicted means were calculated and presented with their 95% CIs and associated P values
- A first multivariate linear regression model was performed and included all the factors associated with the SS-QoL-12 in bivariate analyses at a P value <0.2
  - Adjusted variables were selected by a stepwise procedure using the Akaike Information Criterion (AIC)
  - The final model was the one with the lowest AIC value, including only factors that remained significantly and independently associated with the SS-QoL-12

RESULTS

Baseline Demographics and Characteristics

- Overall, 160 respondents (patients, 81%; caregivers, 19%) were eligible for inclusion (Table 1)
  - A mean number of 1.2 strokes was reported, with the majority of patients' most recent stroke being ischemic (72.5%)

Table 1. Baseline Demographics and Characteristics

Parameter, n (%)	Respondents (N=160)
Age at time of survey, y	
<47.5	80 (50.0)
≥47.5	80 (50.0)
Age at first stroke, y	
<47	80 (50.0)
≥47	80 (50.0)
Sex	
Female	80 (50.0)
Male	80 (50.0)
Etiology of spasticity	
Ischemic stroke	116 (72.5)
Hemorrhagic stroke	28 (17.5)
Unknown/do not remember	16 (10.0)

Comorbidities

- Respondents indicated an average of 2 comorbidities, with the most common being cardiovascular diseases, metabolic diseases, neurological diseases, and depression (Figure 1)

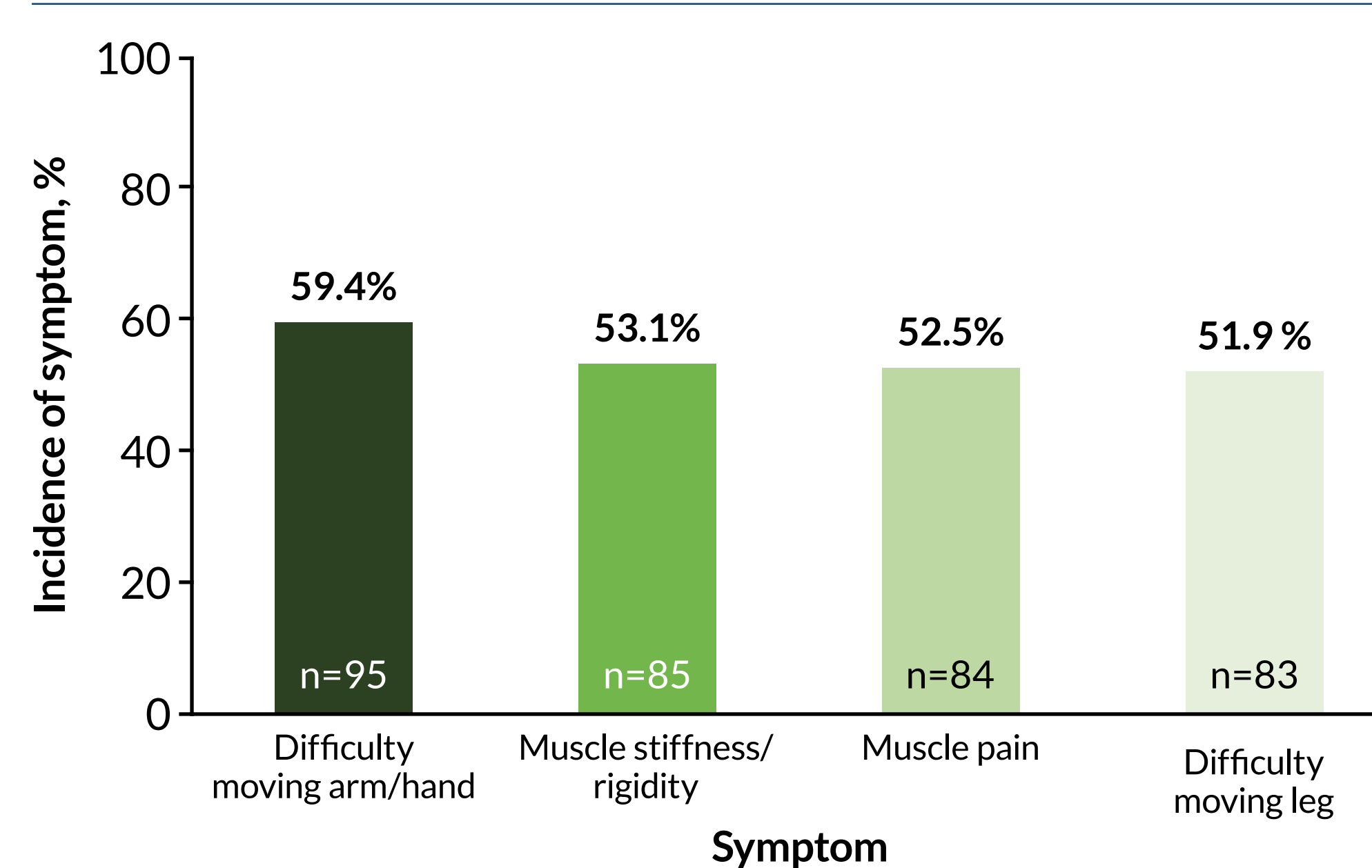**Figure 1.** Patient Comorbidity Profile (N=160)
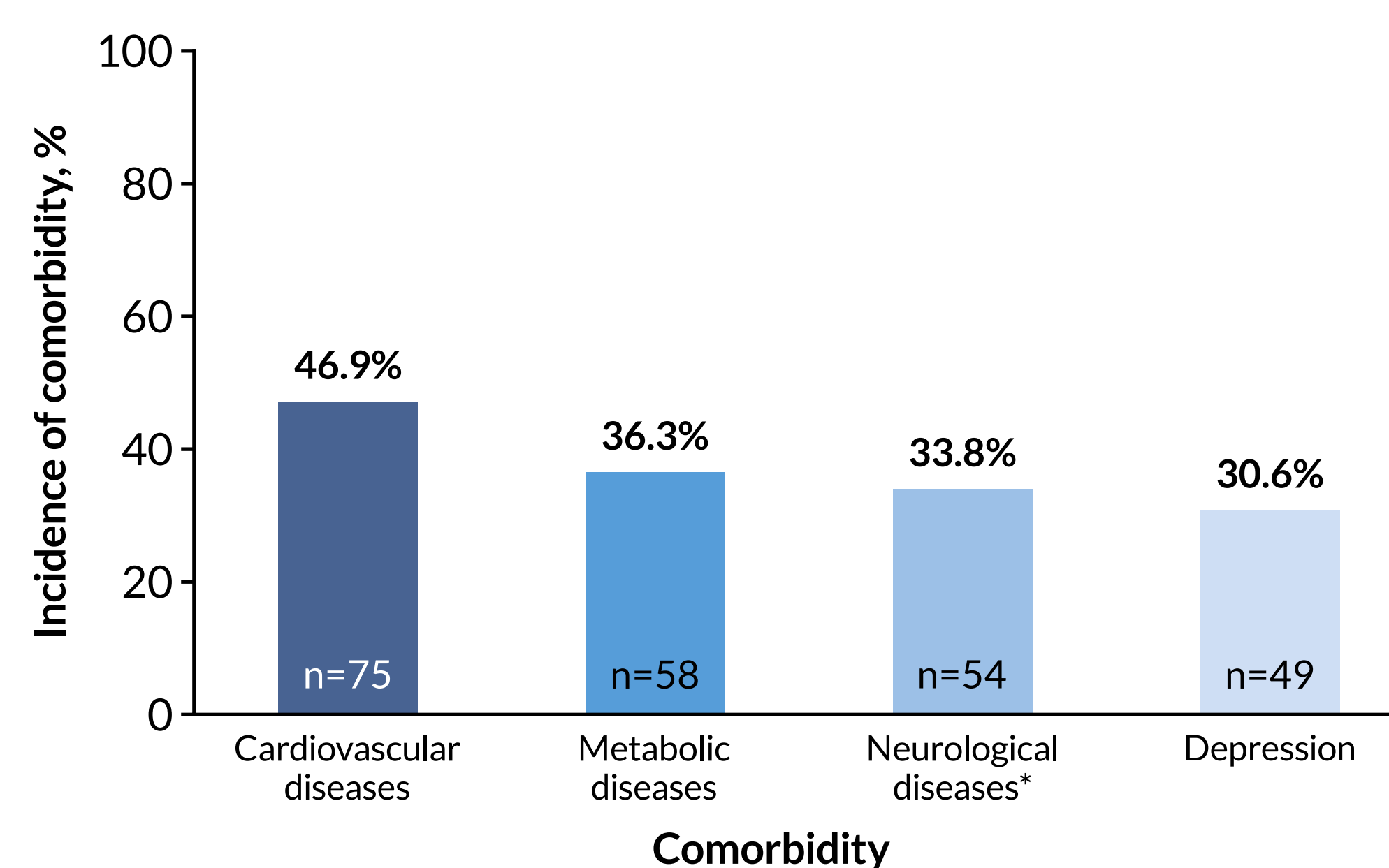
*Other than stroke.

Symptoms Following the Most Recent Stroke

- The main symptoms reported following the most recent stroke were difficulty moving the arm/hand, muscle stiffness/rigidity, muscle pain, and difficulty moving the leg (Figure 2)

Figure 2. Patient Symptom Profile Following the Most Recent Stroke (N=160)


- Of 157 respondents reporting spasticity, 87 (55.4%) shared that they or the person in their care received healthcare professional management within a week of the onset of symptoms

Spasticity Treatment Methods

- Approximately half (51.6%) of respondents reporting spasticity were aware of pharmacologic treatment options for spasticity symptoms
- Of 145 respondents who received treatment for spasticity symptoms, physical or occupational therapy was the most commonly reported method (Figure 3)

Figure 3. Treatments Received for Spasticity Symptoms (N=145)
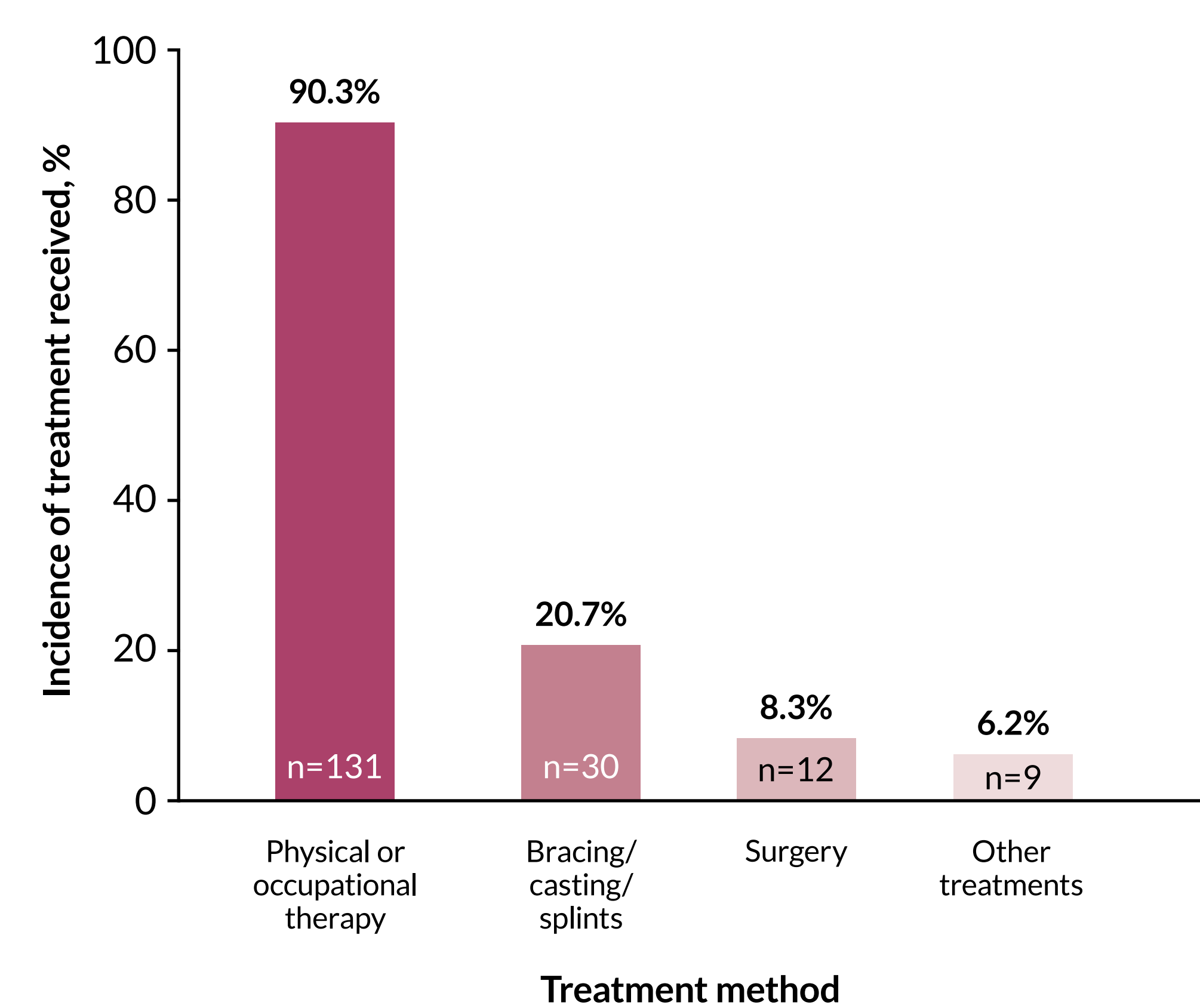
- The most common pharmacologic treatment type received by survey respondents was oral medication (43.9%; Figure 4)
  - Of 81 respondents, 75 (92.6%) had previously received or were currently receiving ≥1 pharmacologic therapy
  - Of 81 respondents, 71 (87.7%) were currently receiving ≥1 pharmacologic therapy

Figure 4. Pharmacologic Treatment Received for Spasticity Symptoms (N=157)
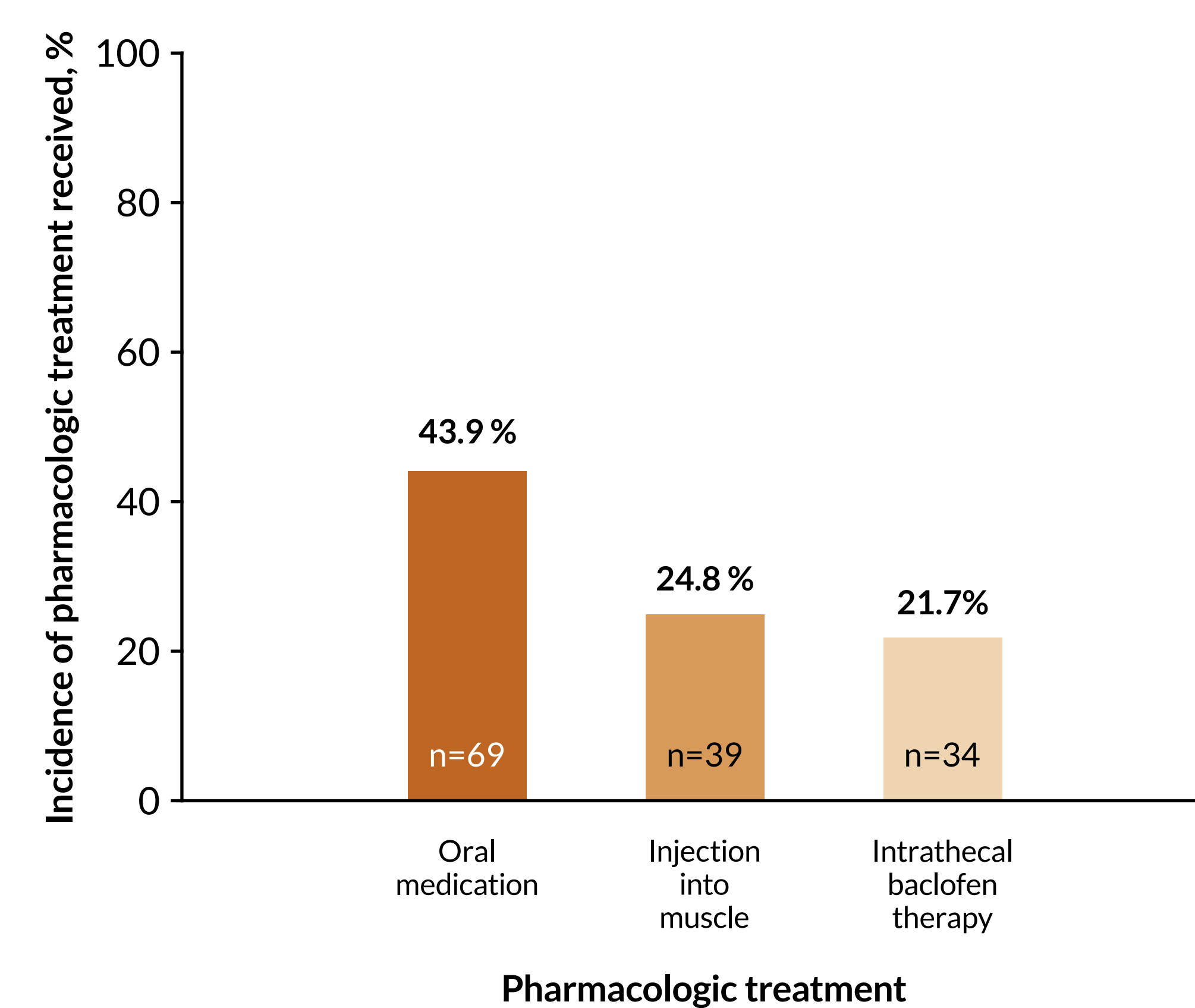
SS-QoL-12 Results

- Following respondents' most recent stroke, physical therapy was the most commonly received therapy (Table 2)
- Difficulty moving the arm or hand was the most common symptom reported by respondents after their most recent stroke
- Respondents who reported difficulty moving their arm/hand or received speech therapy treatment were associated with lower QoL scores on the SS-QoL-12 (P≤0.001)

Table 2. SS-QoL-12 Results for Therapies and Symptoms Following Most Recent Stroke (N=160)

Survey question	Respondents, n	SS-QoL-12 score, median (IQR)	P value
Therapies received following the most recent stroke			
Physical therapy			
Yes	127	2.5 (2.0, 2.9)	0.179
No	33	2.6 (2.2, 3.3)	
Occupational therapy			
Yes	80	2.5 (2.0, 2.8)	0.234
No	80	2.5 (2.2, 3.1)	
Speech therapy			
Yes	72	2.3 (1.8, 2.8)	<0.001
No	88	2.6 (2.3, 3.2)	
Other therapies			
Yes	1	1.8 (1.8, 1.8)	0.217
No	159	2.5 (2.1, 2.9)	
None			
Yes	14	2.5 (2.3, 3.1)	0.371
No	146	2.5 (2.0, 2.9)	
Symptoms following the most recent stroke			
Muscle spasms			
Yes	78	2.5 (2.0, 2.8)	0.224
No	82	2.6 (2.1, 3.0)	
Muscle stiffness/ rigidity			
Yes	85	2.5 (2.1, 2.9)	0.710
No	75	2.5 (2.0, 2.9)	
Muscle pain			
Yes	84	2.5 (2.0, 2.8)	0.065
No	76	2.6 (2.2, 3.0)	
Unwanted arm/leg movement			
Yes	54	2.4 (1.9, 2.8)	0.033
No	106	2.6 (2.2, 3.0)	
Difficulty moving leg			
Yes	83	2.4 (2.0, 2.8)	0.021
No	77	2.6 (2.2, 3.0)	
Difficulty moving arm/hand			
Yes	95	2.5 (1.9, 2.8)	0.001
No	65	2.7 (2.3, 3.3)	

SS-QoL-12, 12-item Stroke-Specific Quality of Life scale.

References

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