

Characterising Paroxysmal Supraventricular Tachycardia Episodes by Patient-Perceived Episode Duration, Symptoms and Severity: Longitudinal Patient-Reported Outcomes

Sean D. Pokorney¹, Samuel Sears², Kathryn Wood³, David Bharucha⁴, Bradi Granger¹, Nihar Desai⁵

¹Duke University, Durham, NC, USA; ²East Carolina University, Greenville, NC, USA; ³Emory University, Atlanta, GA, USA; ⁴Milestone Pharmaceuticals, Charlotte, NC, USA; ⁵Yale University, New Haven, CT, USA

Introduction

- Paroxysmal supraventricular tachycardia (PSVT) is defined as a regular and rapid cardiac rhythm involving atrial or atrioventricular-nodal tissue and is characterised by an abrupt onset.¹
- Oral, pill-in-the-pocket agents such as calcium channel blockers and β -blockers show limited efficacy for management of PSVT due to their delayed onset of action.²
- Additionally, the incidence of PSVT episodes is unpredictable and may be associated with severe symptoms requiring a visit to the emergency department (ED).³
- The symptoms associated with PSVT include rapid heartbeat, shortness of breath, dizziness, chest pain and anxiety; there is marked uncertainty between episodes, and incidence and severity of symptoms may show heterogeneity across patients.⁴
- Even though patients with PSVT experience significant burden from an economic and a quality of life (QoL) standpoint,³ information on patient-reported severity, symptomology and duration of PSVT episodes is lacking.

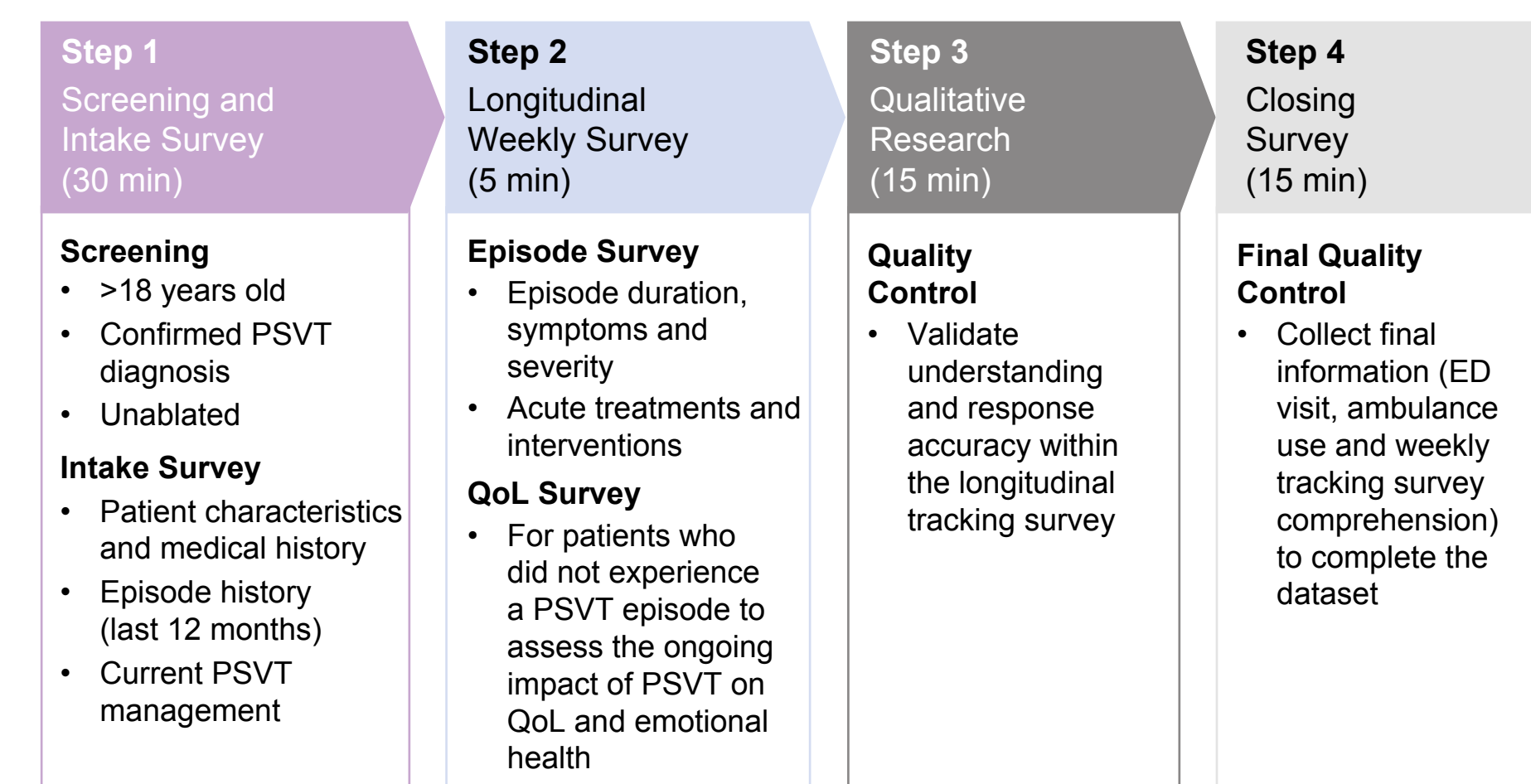
Objective

- To characterise the relationship between duration, symptom type and patient-perceived episode severity in a longitudinal study of patient-reported outcomes in the United States and the United Kingdom.

Methods

- This study was conducted through surveys, which included patients from general consumer panels, arrhythmia panels and advocacy organisations.
- Adult patients (>18 years old) with a confirmed PSVT diagnosis and without a history of ablation were included in this study.
- Surveys were divided into three phases: a 30-minute baseline/intake survey (March 2019), a 5-minute weekly tracking survey (March–December 2019) and a 15-minute closing survey (December 2019) (Figure 1).

Figure 1. Study Design



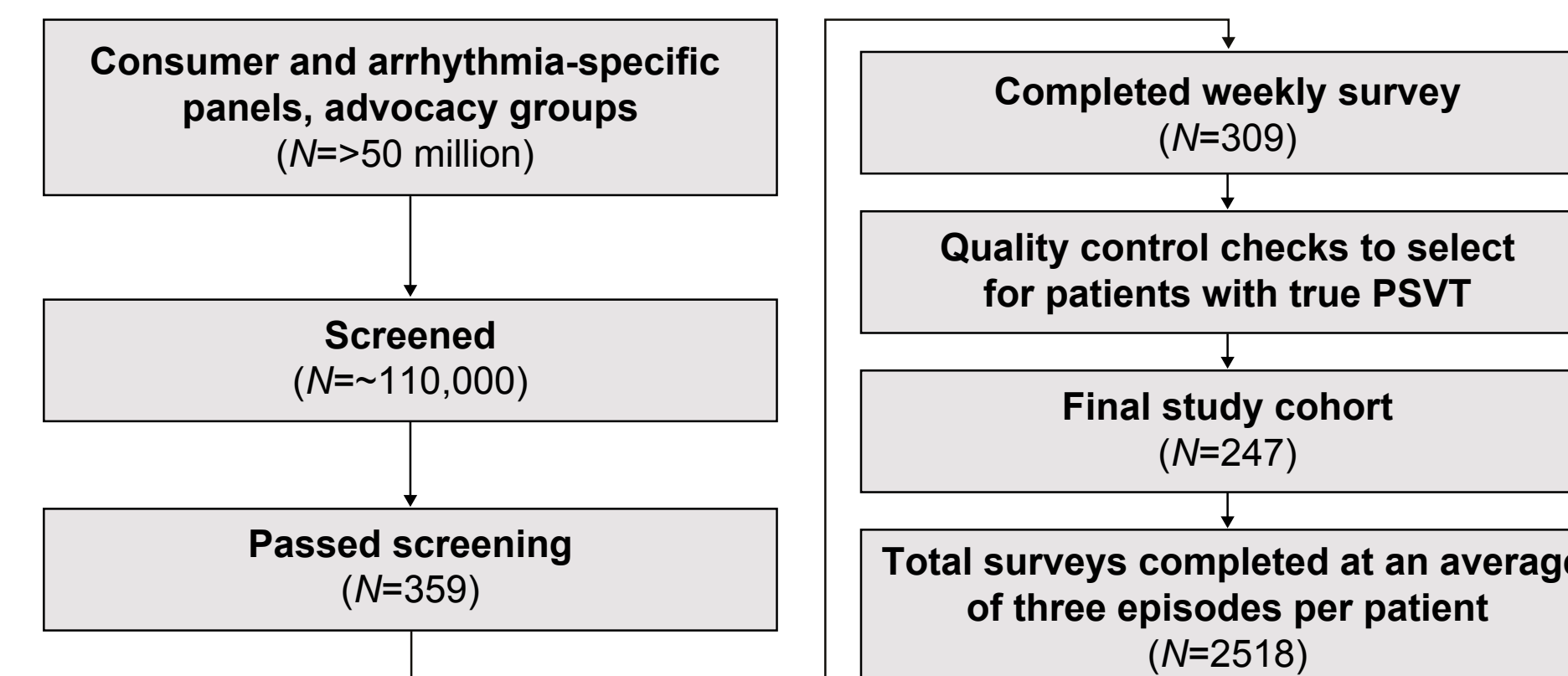
ED, emergency department; min, minute; PSVT, paroxysmal supraventricular tachycardia; QoL, quality of life.

- The baseline intake survey was designed to understand the PSVT landscape and inquired about patient demographics, medical history, PSVT management paradigms, ED visits, frequency of PSVT, duration of PSVT episodes and symptomology.
- The longitudinal weekly survey provided a real-time data collection of the supraventricular tachycardia episodes, and collected information on date, duration, severity, symptomology, treatments (vagal manoeuvre, adenosine or other), healthcare utilisation (ED, urgent care, arrhythmia clinic or physician's office) and time from symptom onset to treatment/healthcare use.
- For patients with multiple episodes within a week, the characteristics of the latest episode were collected. Patients not experiencing any PSVT episodes before the weekly survey took part in the QoL survey.

Results

- More than 110,000 patients across different panels and advocacy groups were screened.
- A total of 309 patients completed weekly surveys to assess PSVT episode severity, duration, symptomology and effect on QoL.
- Quality control checks were done to select patients with true PSVT episodes; 247 patients were included in the final analysis (Figure 2).

Figure 2. Patient Screening



PSVT, paroxysmal supraventricular tachycardia.

- Patient characteristics are noted in the Table.

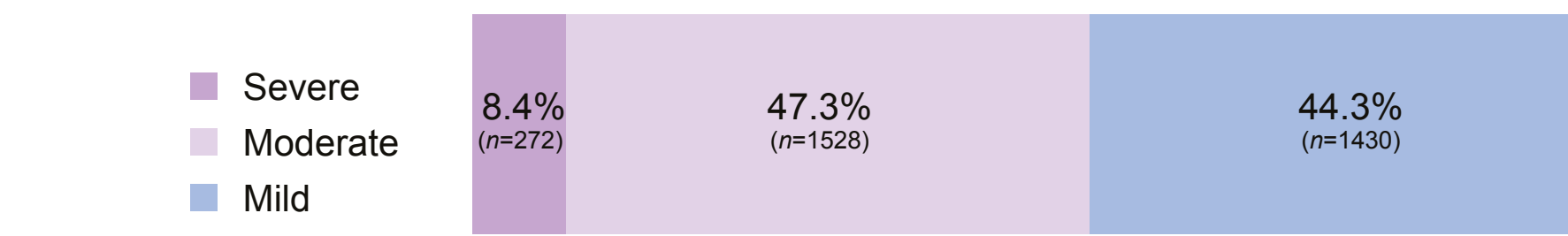
Table. Patient Characteristics

Characteristics	N=247
Mean age, years	52
Female, n (%)	177 (72)
Ethnicity/race, n (%)	
White	227 (92)
Black	7 (3)
Hispanic	7 (3)
Native American	5 (2)
Asian	5 (2)
Geographical location, n (%)	
United Kingdom	198 (80)
United States	49 (20)
Comorbidities, n (%) ^a	
Hypertension	99 (40)
Atrial fibrillation	42 (17)
Diabetes mellitus (type 2)	27 (11)
Atrial flutter	25 (10)
Congestive heart failure	17 (7)
Valvular disease	15 (6)
Coronary artery disease	10 (4)
Myocardial infarction	10 (4)
Stroke	10 (4)
Cardiomyopathy	10 (4)
Congenital heart defect	10 (4)
Pericarditis	0
None of the above	104 (42)

^aMore than one comorbidity may be reported for a single patient.

- Patient-reported PSVT severity is shown in Figure 3.
- 93% of severe, 71% of moderate and 41% of mild episodes lasted for ≥ 10 minutes.

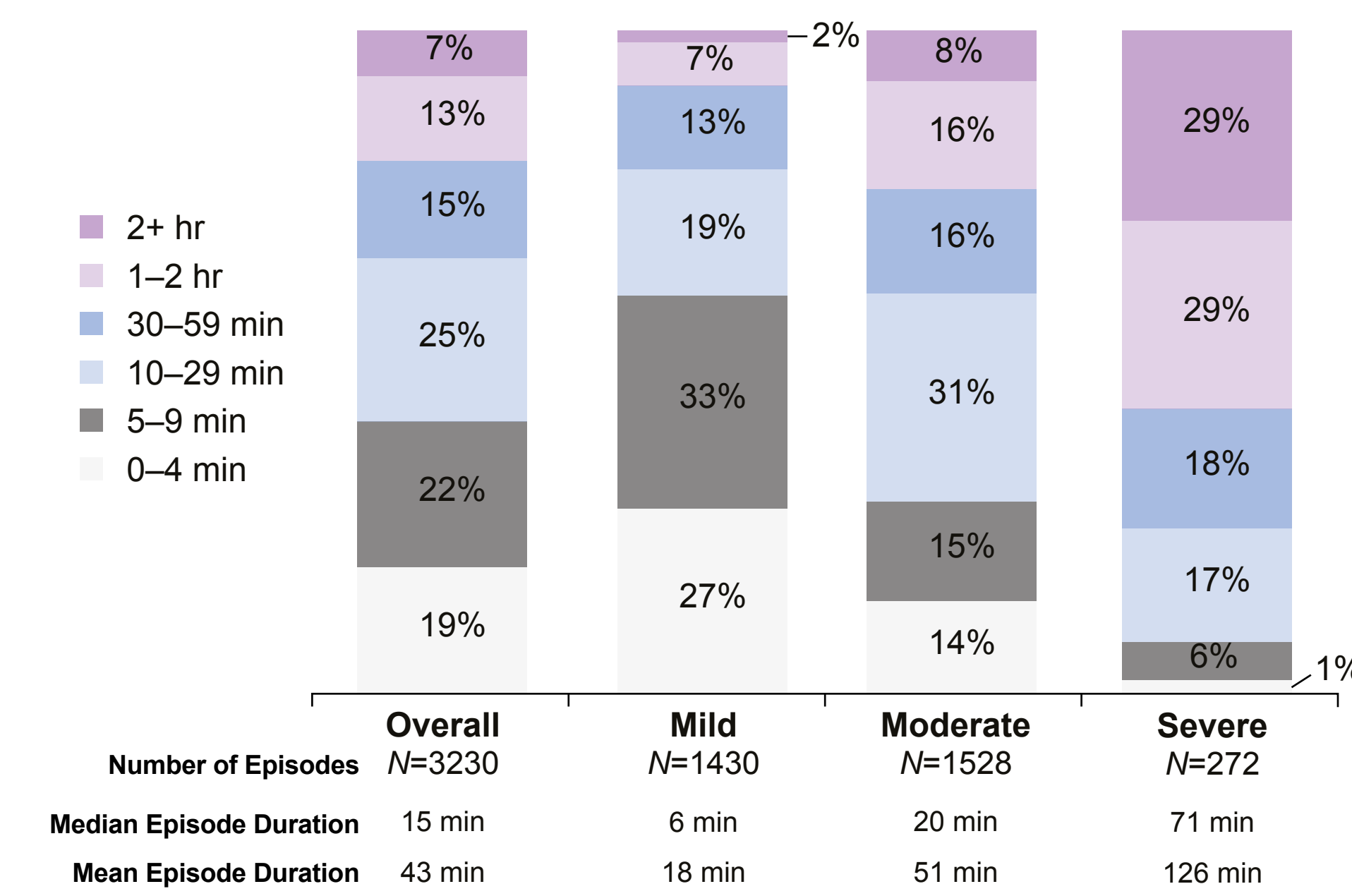
Figure 3. Patient-Reported Categorization of PSVT Episode Severity



Percentages of patient-reported mild, moderate and severe PSVT episodes were calculated from the total number of episodes (N=3230). PSVT, paroxysmal supraventricular tachycardia.

- 58% of severe episodes lasted for ≥ 1 hour versus 9% of mild episodes (Figure 4).

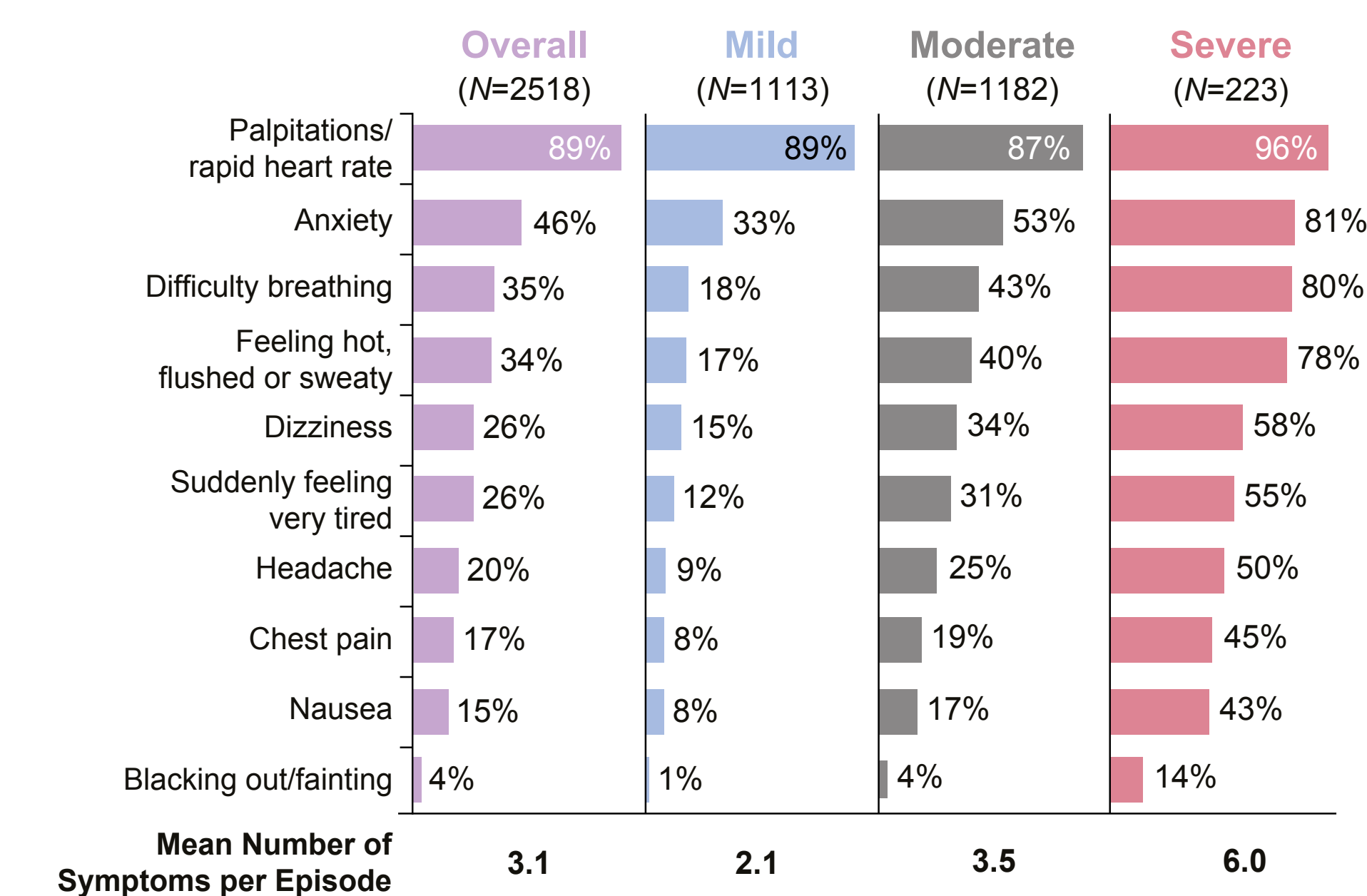
Figure 4. Duration of PSVT Episode by Severity



Severity and duration of PSVT episodes were collected from the most recent episode and from the second or third most recent episode in case there were two to three episodes per survey. min, minute; PSVT, paroxysmal supraventricular tachycardia.

- Patient-reported symptoms associated with PSVT episodes are presented in Figure 5.
- At intake, 50% (123/247) of patients reported visiting the ED at least once after PSVT diagnosis, of whom 68% (83/123) of patients reported more than one ED visit.

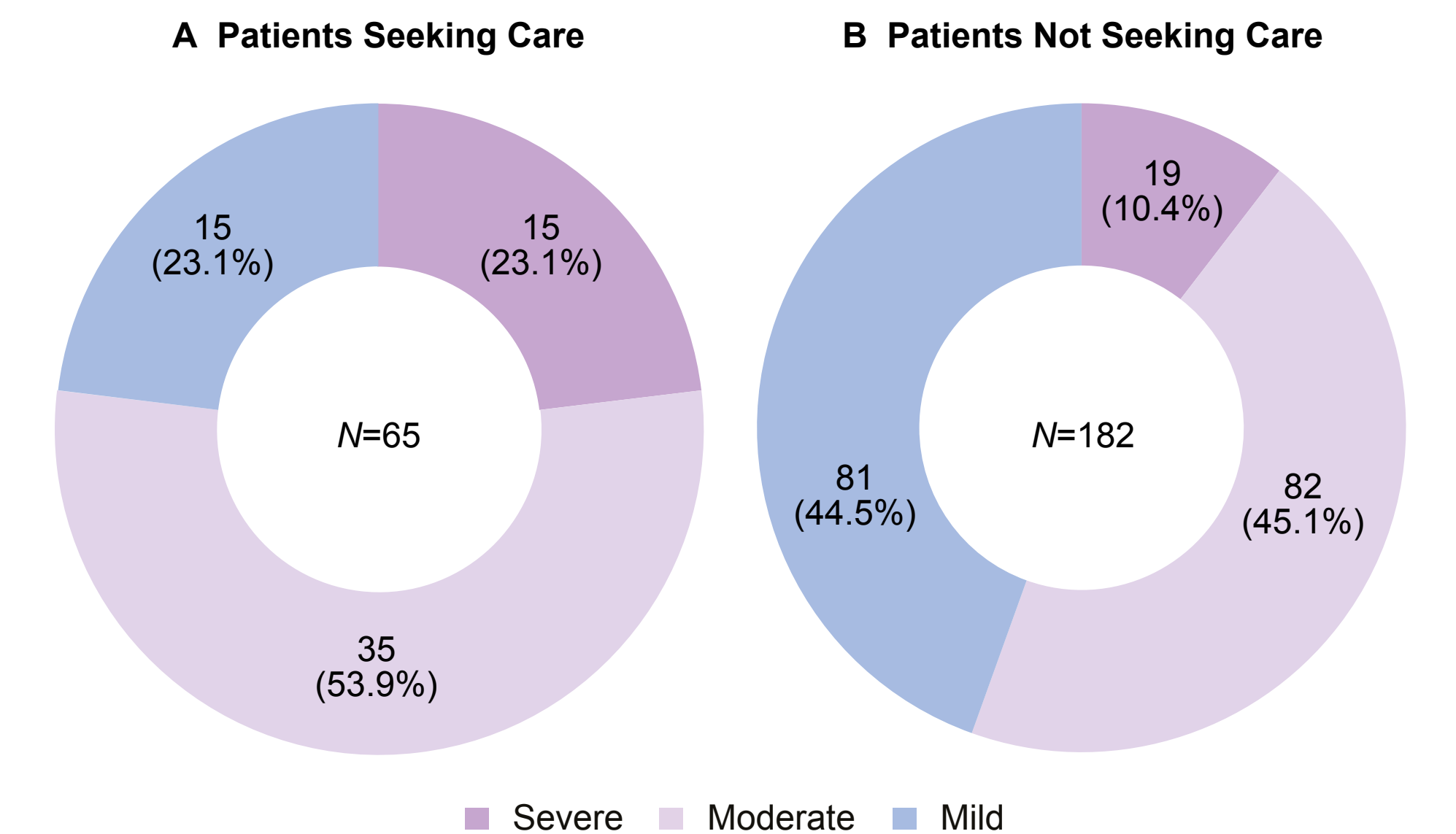
Figure 5. Symptoms Reported During PSVT Episode by Patient-Reported Severity



Symptom data were collected from the most recent PSVT episode before the weekly survey. PSVT, paroxysmal supraventricular tachycardia.

- About 26% (65/247) of patients sought care for PSVT including visits to the ED, urgent care and physician's office (episode duration for patients seeking care, Figure 6).
- At baseline, patient-reported disease severity did not reflect whether patients would seek care. Instances of patients with mild PSVT seeking care and those with severe PSVT not seeking care were observed (Figure 6A, 6B).

Figure 6. Healthcare Utilization Assessed as per Patient-Reported PSVT Severity



Patient-reported severity distribution across patients seeking and not seeking care are calculated from the total number of patients in that category. PSVT, paroxysmal supraventricular tachycardia.

Conclusions

- More than 90% of PSVT episodes reported as severe were 10 minutes or longer.
- Episodes reported by patients as severe were considerably longer than those reported as moderate or mild.
- PSVT episodes reported as severe were associated with the highest incidence of symptoms across all severity categories.
- There was heterogeneity in the patient-reported symptom and duration within each PSVT severity category.
- Approximately 26% of patients sought emergency or acute care for their PSVT episodes, the majority of which were ≥ 30 minutes in duration.
- PSVT severity is multi-factorial and baseline severity alone does not predict whether patients will seek care.

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