

Sagar Munjal, MD, MS<sup>1</sup>; Aftab Alam, MBBS, MS, MBA<sup>1</sup>; Kristina M. Fanning, PhD<sup>2</sup>; Michael L. Reed, PhD<sup>2</sup>; Dawn C. Buse, PhD<sup>3</sup>; Todd J. Schwedt, MD<sup>4</sup>; Richard B. Lipton, MD<sup>3,5,6</sup>; David W. Dodick MD<sup>4</sup>

<sup>1</sup>Promius Pharma, a subsidiary of Dr. Reddy's Laboratories, Princeton, NJ, USA; <sup>2</sup>Vedanta Research, Chapel Hill, NC, USA; <sup>3</sup>Department of Neurology, Albert Einstein College of Medicine, Bronx, NY, USA; <sup>4</sup>Mayo Clinic, Phoenix, AZ, USA;

<sup>5</sup>Montefiore Medical Center, Bronx, NY, USA; <sup>6</sup>Department of Epidemiology and Population Health, Albert Einstein College of Medicine, Bronx, NY, USA

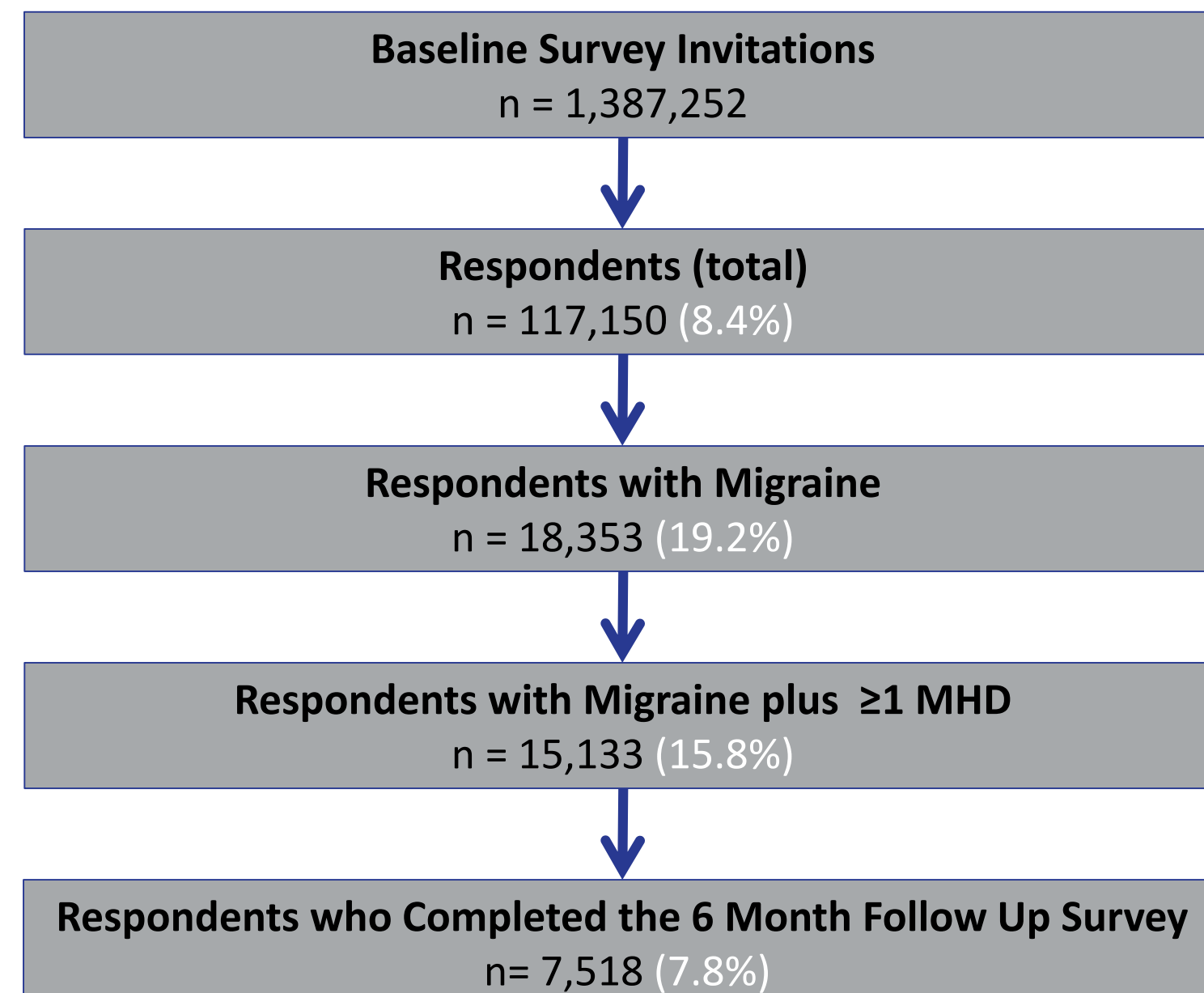
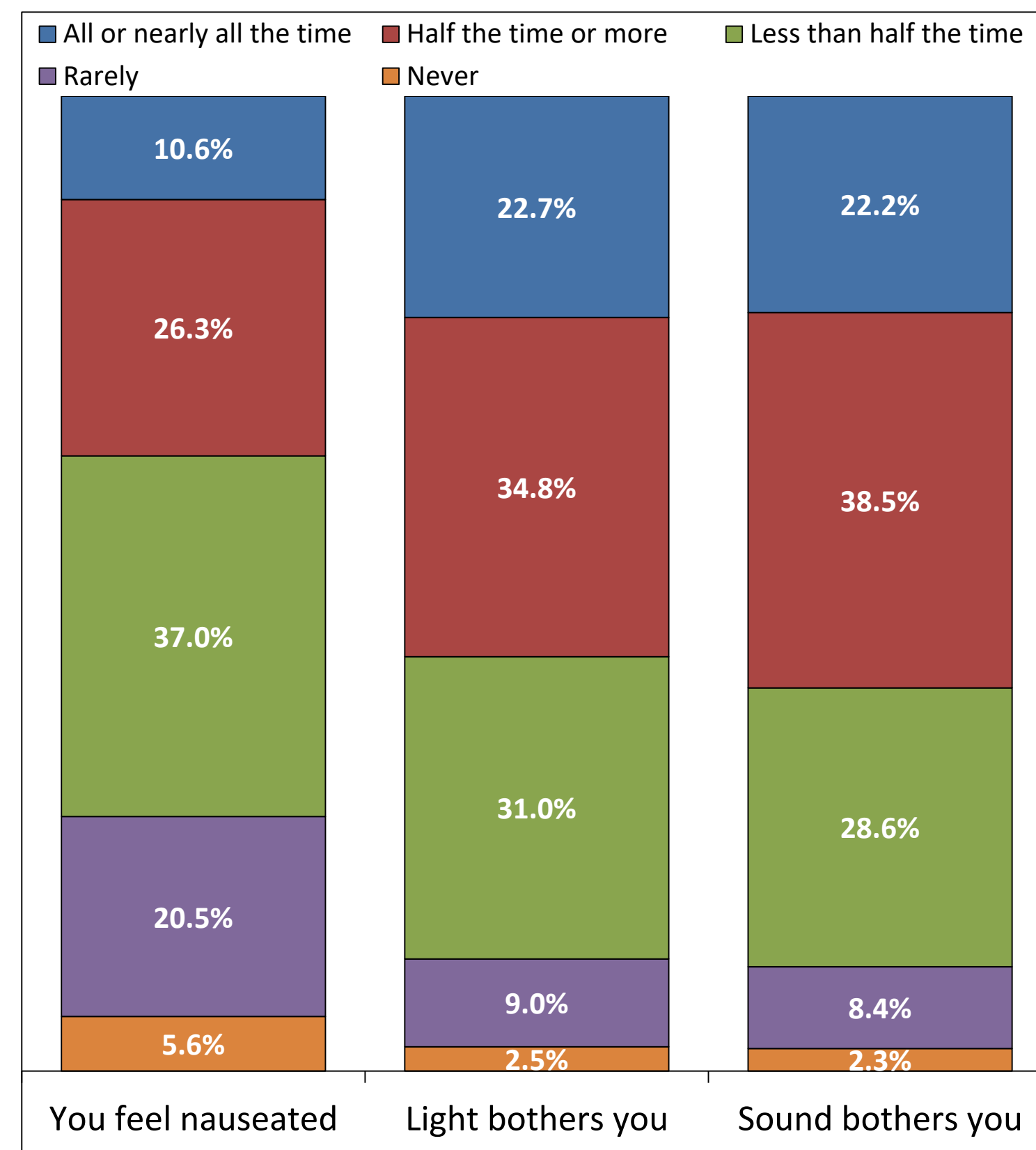
## Objective

- Relief of the most bothersome migraine symptom [MBS] (nausea, photophobia, or phonophobia) has become a co-primary endpoint in acute migraine clinical trials.
- The objective of this analysis was to measure perceptions of the single most bothersome migraine symptom among a representative sample of adults with migraine and to better understand differences in headache features by most bothersome cohorts.

## Methods

- Respondents, ≥18 years, were recruited to the MAST Study from a nationwide online research panel, using stratified random sampling. A validated screener used modified ICHD-3-beta criteria to identify individuals with migraine.
- Respondents averaging ≥1 headache day per month (MHD) over the previous 3 months were included as episodic migraine (EM; 1 to 14 headache days per month) or chronic migraine (CM; ≥ 15 headache days per month).
- Asked: "Over the past 3 months, which has been the single most bothersome symptom when you have it with your headaches (before you take medication)?"
- This initial analysis is limited to respondents endorsing all 3 symptoms.
- The sample was stratified by most bothersome symptom and contrasted on headache features and burden measures using ANOVA and chi-square analysis (P<.05).

**Fig 1. Frequency of most bothersome symptoms in migraine patients**

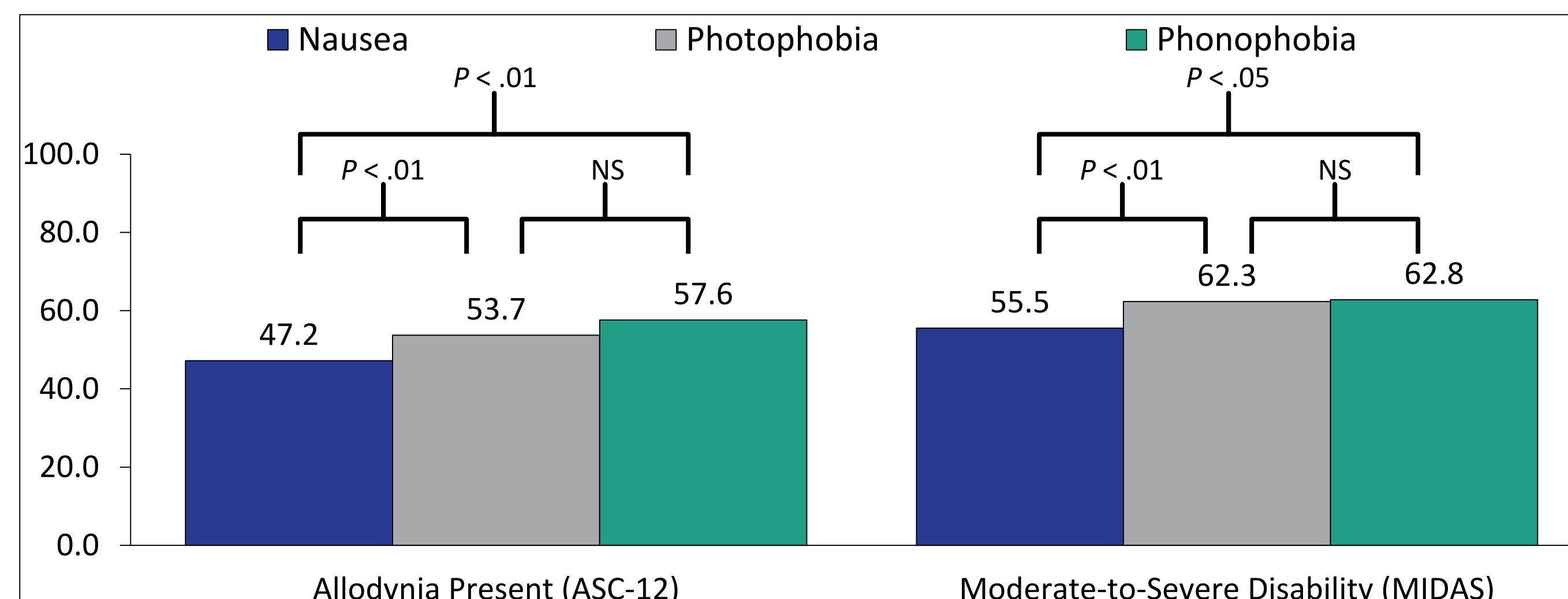


**Table 1. Demographics, medication use, and headache frequency for 3 symptom groups**

	Nausea N=627 (36.1%)	Photophobia N=807 (46.4%)	Phonophobia N=304 (17.5%)	Chi	P-Value
<b>Gender</b>					
Male	89 (14.2%)	141 (17.5%)	57 (18.8%)	4.087	0.130
Female	538 (85.8%)	666 (82.5%)	247 (81.3%)		
<b>Race</b>					
Non-Caucasian	96 (15.4%)	113 (14%)	49 (16.2%)	1.027	0.598
Caucasian	527 (84.6%)	694 (86%)	254 (83.8%)		
<b>Household Income</b>					
less than \$25,000	94 (15.3%)	96 (12.2%)	44 (14.8%)	9.838	0.277
\$25,000 to \$49,999	129 (21%)	180 (22.8%)	60 (20.1%)		
\$50,000 to \$74,999	152 (24.7%)	167 (21.2%)	65 (21.8%)		
\$75,000 to \$99,999	93 (15.1%)	145 (18.4%)	45 (15.1%)		
More than \$100,000	147 (23.9%)	201 (25.5%)	84 (28.2%)		
<b>Rx Medication Use</b>	278 (44.3%)	385 (47.7%)	133 (43.8%)	2.237	0.327
<b>Daily Oral Preventive Use</b>	119 (19%)	149 (18.5%)	61 (20.1%)	0.371	0.831
<b>Severity of Head Pain</b>					
Not at all Severe	5 (0.8%)	2 (0.2%)	4 (1.3%)	7.545	0.479
Somewhat Severe	90 (14.4%)	94 (11.6%)	38 (12.5%)		
Severe	181 (28.9%)	241 (29.9%)	84 (27.6%)		
Very Severe	220 (35.1%)	303 (37.5%)	112 (36.8%)		
Extremely Severe	131 (20.9%)	167 (20.7%)	66 (21.7%)		
<b>Moderate to Extreme Body Pain *</b>	318 (50.7%)	450 (55.8%)	180 (59.2%)	6.855	0.032
				<b>F</b>	<b>P-Value</b>
<b>Age Mean [SD]</b>	46.7 [12.46]	47.4 [12.52]	46.3 [12.63]	1.015	0.363
<b>Monthly HA Days Mean [SD]</b>	6.68 [7.01]	6.92 [6.82]	7.34 [7.11]	0.95	0.387

\*Bodily Pain post-hoc pairwise comparisons: Nausea vs Photophobia chi=3.610, P<.05; Nausea vs Phonophobia chi=5.936, P<.01; Photophobia vs Phonophobia chi=1.070, NS

**Fig 2. Rates of allodynia and migraine-related disability for three symptom groups**



## Results

- 1,738 (23.1%) reported all three symptoms and were included in this analysis.
- Average headache frequency was 6.9 days per month.
- No differences seen among symptom groups for monthly headache day frequency, severity of head pain, or Rx acute or preventive medication.
- Moderate-to-extreme body pain was significantly higher with photophobia vs nausea (Chi=3.61, P < .10), and phonophobia vs nausea (Chi=5.94, P < .05). Photophobia vs phonophobia did not differ. (Table 1)
- Same pattern seen for the presence of allodynia and moderate-to-severe headache-related disability (Fig 2).

## Conclusions

- Among respondents where photophobia and phonophobia are most bothersome (compared to nausea) there were comparable rates of severe head pain, but more body pain, ictal allodynia symptoms and headache-related disability.
- Allodynia was associated with worsening headache and elevated rates among those with phono and photo as most bothersome suggest this could be another marker of progression.
- Future analyses will further explore these findings.