Frequent Nausea in Episodic Migraine is Common and Associated with Increased Burden: Results from the American Migraine Prevalence and Prevention (AMPP) Study

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BACKGROUND

- Migraine is a complex and debilitating disorder with identifiable features.
- After head pain, nausea is one of the most debilitating symptoms; therefore, frequent nausea associated with headache would likely increase headache-impact and headache-related disability in persons with episodic migraine (EM).

OBJECTIVE

- To describe sociodemographics, headache-impact and headache-related disability by groups stratified by frequency of nausea associated with headache in a population-based sample of persons with EM.

METHODS

- ICHD-2 criteria were used to identify respondents with EM (<15 headache days/month) from the 2009 AMPP survey.
- Respondents rated headache-related nausea (occurring none of the time, rarely, < half the time, or ≥ half the time with their headaches), provided sociodemographics, headache-related disability (MIDAS), headache pain severity and lifestyle impact (Headache Impact Test [HIT-6]).
- Logistic regression was used to assess differences in high frequency nausea by sociodemographics and ordinal logistic regression was used to assess the influence of nausea on outcome measures. Both model types adjusted for the sociodemographic variables age, gender, race, household income, census region and population density.

RESULTS

- Among 6,448 EM respondents reporting nausea symptom data, nearly half (49.5%) reported headache-related nausea ≥ half the time, 29.1% < half the time, and 21.4% never or rarely. Frequent nausea was more common in females (52.4%) vs. males (39.2%, p < .001). Those with frequent nausea were more likely to be occupationally disabled or on medical leave vs. those with no/rare nausea (OR 2.13, CI 1.66-2.73, p< .001).

CONCLUSIONS

- In this US population based sample of EM, those with moderate and frequent headache-related nausea fared significantly worse than migraineurs without headache-related nausea in terms of headache-related disability (MIDAS) and impact (HIT-6).
- Those with frequent nausea were more likely to be female and also more likely to be occupationally disabled or on medical leave.
- Nausea appears to be a substantially debilitating feature of EM leading to significantly worse outcomes in those who experience it with their headache and providing an important target for treatment.
- Additional work is underway to better understand the causal pathway for frequent nausea and migraine related burden.

Table 1. Rates of High Frequency Nausea by Selected Demographics

		Percent High Frequency Nausea in EM	OR (95% CI) (*p<.001)
Gender	Male	39.2%	reference
	Female	52.4%	1.71(1.52-1.93)*
Income	<$30,000	50.1%	reference
	$30,000 to 49,999	51.6%	1.03(0.89-1.18)
	$50,000 to 74,999	47.5%	0.91(0.79-1.06)
	≥$75,000	48.8%	0.96(0.83-1.1)
Race	White	50.1%	reference
	Black	39.7%	0.61(0.49-0.75)*
	Asian	35.2%	0.60(0.37-0.99)*
	Native American	62.0%	1.85(1.03-3.3)*
	Other	53.8%	1.19(0.73-1.94)
	Unknown	56.5%	1.32(0.9-1.93)
Age Group	18-29	47.2%	reference
	30-39	47.4%	0.93(0.74-1.18)
	40-49	51.6%	1.1(0.88-1.37)
	50-59	51.4%	1.13(0.91-1.4)*
	≥60	46.9%	0.94(0.75-1.18)*

Figure 1. Headache-Related Disability (MIDAS Grade) by Nausea Frequency

(OR 1.96, p<.000)
(OR 1.25, p<.007)

Severe / Moderate / Mild / Little/No Disability

	Never/Rarely	Less Than Half the Time	Half the Time or More
Severe	6.6%	7.0%	12.9%
Moderate	7.0%	9.0%	11.6%
Mild	10.2%	12.2%	13.6%
Little/No Disability	76.2%	71.9%	62.0%
Mean Headache Days Per Month	2.37	2.47	2.69

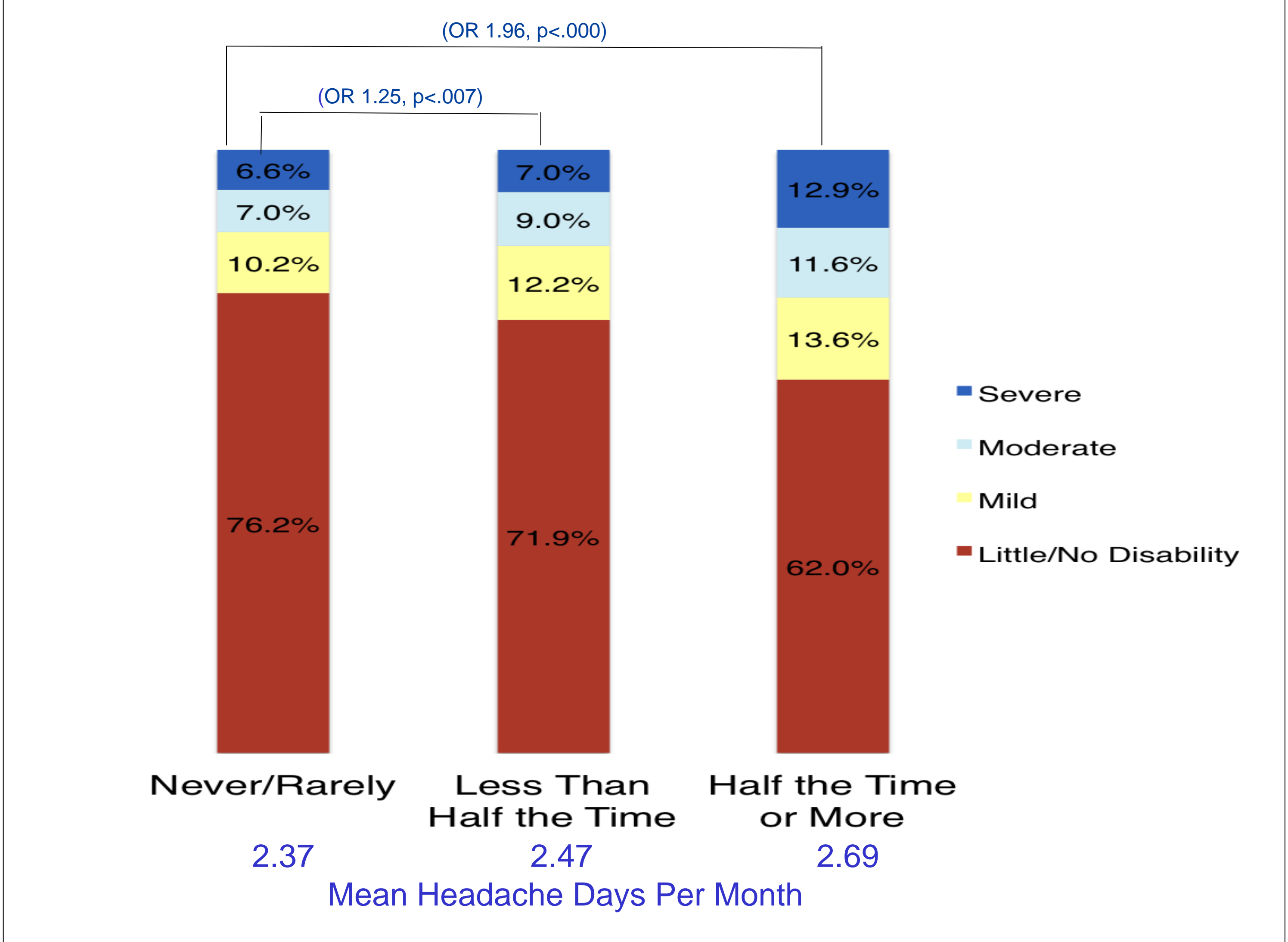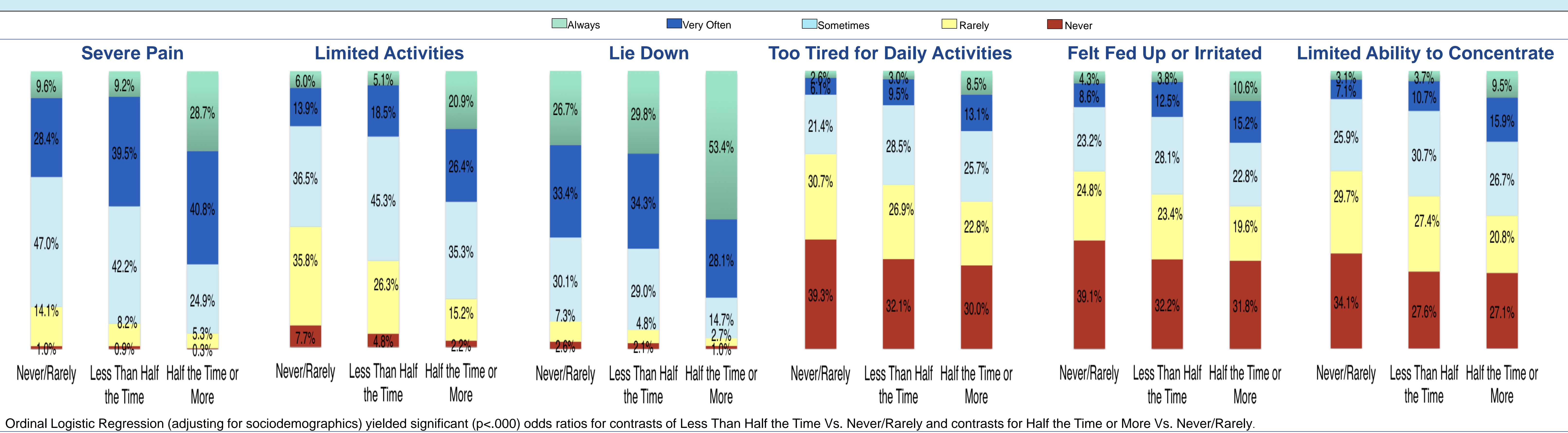### Figure 2. Headache Impact (HIT-6 Individual Items Regarding Symptoms and Feelings During Headache) by Nausea Frequency

Always / Very Often / Sometimes / Rarely / Never

Ordinal Logistic Regression (adjusting for sociodemographics) yielded significant (p<.000) odds ratios for contrasts of Less Than Half the Time Vs. Never/Rarely and contrasts for Half the Time or More Vs. Never/Rarely.