

Acute Treatment Optimization for Migraine: Results of the American Migraine Prevalence and Prevention (AMPP) Study

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BACKGROUND

As the gap between evidence-based treatment guidelines and actual clinical practice continues to be large, healthcare providers need tools to help in optimizing and individualizing treatment.

OBJECTIVES

To assess and compare acute treatment optimization as measured by the Migraine Treatment Optimization Questionnaire (M-TOQ)¹ within a U.S. population-based sample of persons with migraine.

METHODS

- The AMPP study is a longitudinal, US population-based study in which annual questionnaires were mailed to a sample of 24,000 severe headache sufferers first identified in 2004 and followed from 2005-2009.
- Subjects in the current analyses were 2006 survey respondents with ICHD-2 migraine and either chronic migraine (CM: ≥15 HA days/month) or episodic migraine (EM: <15 HA days/month).
- Acute treatment optimization was measured with the M-TOQ, a valid and reliable patient-report tool which assesses acute treatment optimization in five domains: functioning, rapid relief, consistency of relief, risk of recurrence and tolerability over the preceding 4 weeks.
- The M-TOQ is a 19 item instrument, of which a subset of 5 can be used (M-TOQ-5) to assess limits in specific areas of acute treatment. Clinical suggestions are offered for the areas that are considered not optimized.
- We used the 5-item M-TOQ and an additional item assessing perceived control and lack of disruption in daily activities.
- We expanded the dichotomous response options so that respondents were asked to rate statements with the response options: never, rarely, <half the time and ≥half the time.
- An Item Response Theory (IRT) model was used to define scaled treatment optimization scores as a function of the M-TOQ item set, where lower scores indicate less or problematic optimization and higher scores indicate greater optimization.
- This model was expanded to incorporate a contrast of persons with CM and EM on the scaled optimization scores.
- This contrast was explored further through sociodemographic adjustments for age and gender.

RESULTS

- 8,612 study respondents met criteria for migraine (539 with CM and 8,073 with EM) and completed the M-TOQ as part of the 2006 AMPP survey. (Table 1)
- IRT model parameters indicated excellent psychometric properties of the M-TOQ. (Distribution of scaled scores by EM and CM groups are shown in Figure 1)
- Scaled treatment optimization scores were significantly lower (indicating worse optimization) for persons with CM (3.25) compared to persons with EM (4.01), ($b = -0.757$, $p < .0001$).
- These mean differences corresponded to a scaled optimization mean score for CM roughly 0.5 standard deviations (SDs) below that of EM (scaled score 2 SDs above the total scale mean).
- After adjustment, the mean difference on the scaled optimization score remained significantly lower (i.e., worse) for persons with CM ($b = -0.751$, $p < .0001$).

Figure 1: Distribution of Scaled M-TOQ Scores for EM and CM

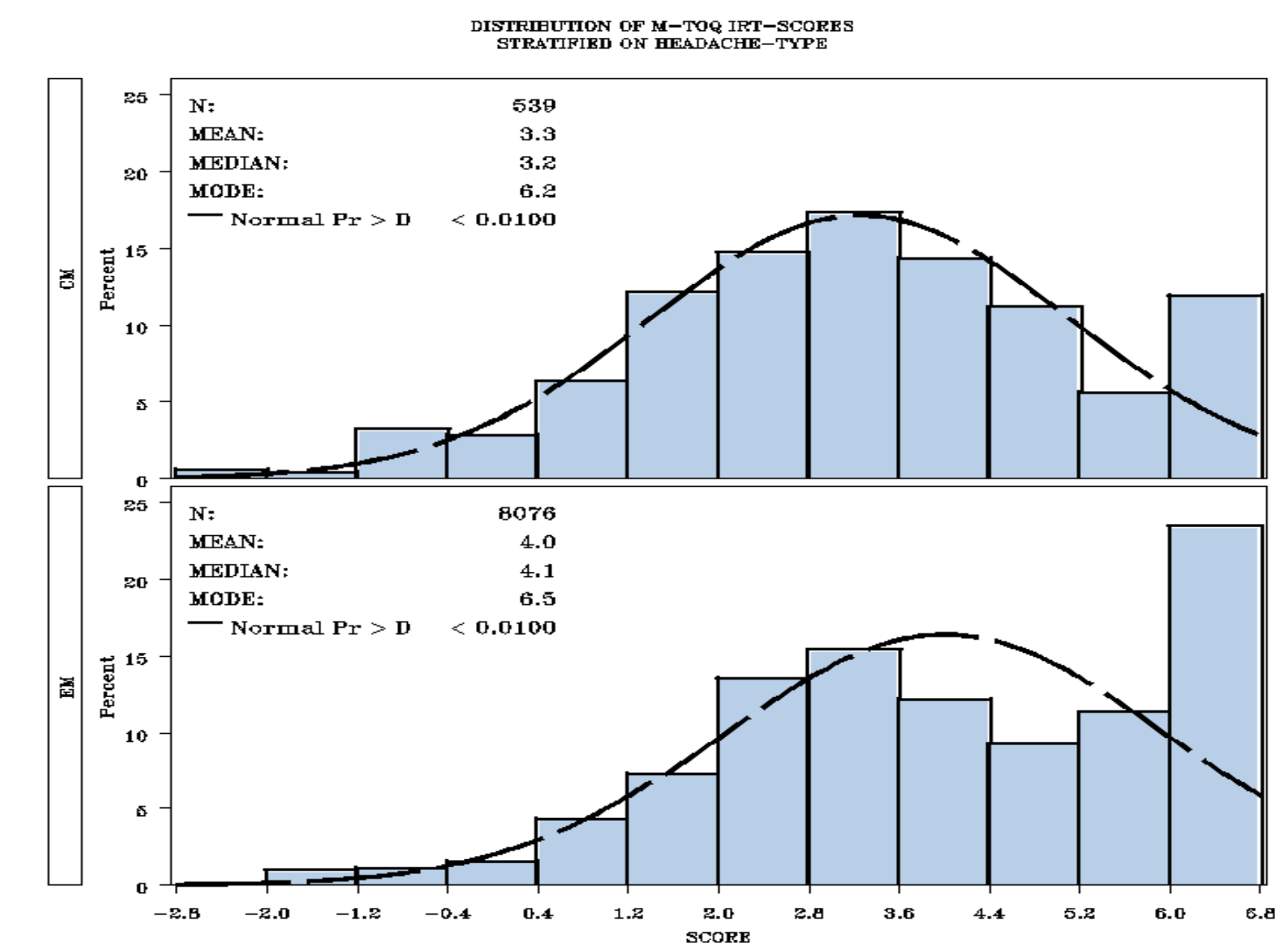


Table 1. Modified M-TOQ Items Included in 2006 AMPP Questionnaire

M-TOQ-Items	Episodic Migraine N (%)				Chronic Migraine N (%)			
	Never	Rarely	<Half the Time	≥ Half the Time	Never	Rarely	<Half the Time	≥ Half the Time
1. Are you able to quickly return to your normal activities (i.e., work, family, leisure, social activities) after taking your migraine medication?	266 (3.3%)	1,046 (13.0%)	2,539 (31.7%)	4,170 (52.0%)	27 (5.1%)	94 (17.7%)	186 (35.0%)	225 (42.3%)
2. After taking your migraine medication, are you pain free within 2 hours for most attacks?	566 (7.2%)	1,432 (18.3%)	2,332 (29.8%)	3,484 (44.6%)	65 (12.4%)	118 (22.5%)	158 (30.1%)	184 (35.1%)
3. Does one dose of your migraine medication usually relieve your headache and keep it away for at least 24 hours?	657 (8.5%)	1,409 (18.2%)	2,001 (25.8%)	3,692 (47.6%)	88 (17.0%)	145 (28.1%)	135 (26.1%)	149 (28.8%)
4. Is your migraine medication well tolerated?	196 (2.6%)	340 (4.5%)	1,240 (16.4%)	5,790 (76.5%)	16 (3.2%)	33 (6.5%)	99 (19.6%)	357 (70.7%)
5. Are you comfortable enough with your migraine medication to be able to plan your daily activities?	314 (4.1%)	638 (8.3%)	1,646 (21.5%)	5,076 (66.2%)	31 (6.0%)	61 (11.8%)	126 (24.4%)	298 (57.8%)
6. After taking your migraine medication, do you feel in control of your migraines enough so that you feel there will be no disruption to your daily activities?	471 (6.1%)	1,082 (14.0%)	2,311 (29.9%)	3,859 (50.0%)	58 (11.2%)	87 (16.8%)	176 (34.0%)	196 (37.9%)

CONCLUSIONS

- Individuals with both EM and CM have substantial unmet acute treatment needs.
- Treatment regimens are even less well optimized in the domains measured by the M-TOQ (i.e., functioning, rapid relief, consistency of relief, risk of recurrence and tolerability) among persons with CM when compared to persons with EM.
- Additional exploration of these findings will include examining optimization among these two groups by other covariates.

REFERENCES

- Lipton, R.B., Kolodner, K., Bigal, M.E., et al. Validity and reliability of the migraine-treatment optimization questionnaire. *Cephalalgia* 29(7):751-759, 2009.