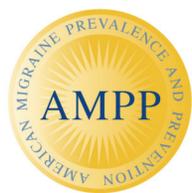


# LOST PRODUCTIVE TIME AND COST DUE TO HEADACHE IN CHRONIC MIGRAINE AND EPISODIC MIGRAINE: RESULTS FROM THE AMERICAN MIGRAINE PREVALENCE AND PREVENTION (AMPP) STUDY

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## BACKGROUND

Chronic migraine (CM) has been demonstrated to have significant work-related consequences; however, the economic impact of these consequences has yet to be quantified.

## OBJECTIVE

To estimate and compare lost productive time (LPT) over the lifespan between CM and episodic migraine (EM) sufferers and quantify the per person cost of reduced productivity.

## METHODS

- The AMPP is a longitudinal, population-based, mailed questionnaire study. Respondents were identified in 2004 by screening 120,000 US households to identify 24,000 individuals with severe headache. Respondents have been followed annually between 2005-2009. The current study used a cross sectional design and analyzed the data from 2005.
- Respondents were asked if employed either full or part-time and to complete the Work and Health Questionnaire, a 17-item, self-administered questionnaire which assesses usual number of hours worked/week; number of missed workdays in the preceding 2 weeks (“absenteeism”); days at work not feeling well and reduced work performance (“presenteeism”), and reasons for absenteeism and presenteeism.
- Respondents who met ICHD-2 criteria for migraine and provided the necessary data were categorized into two groups:
  - CM (ICHD-2 diagnosis of migraine with  $\geq 15$  headache days/month)
  - EM (ICHD-2 diagnosis of migraine with 0-14 headache days/month)
- LPT was self-reported and calculated as the sum of missed hours plus reduced productivity hour equivalents. Rate ratios (RR) for integerized LPT scores were calculated adjusting for age and gender in zero-inflated negative binomial models.
- The zero model was based on inverse effects for MIDAS work and school disability. The interaction between headache status and age was analyzed to characterize the effects of EM and CM on LPT across the lifespan.
- Per-person cost analyses estimated the annual cost of LPT.
- All analyses were restricted to respondents aged 25-64 in order to limit the effect of part time and retired laborers on LPT and cost estimates.
- Median income estimates for demographic strata obtained from 2005 US Census:  
<http://www.census.gov/hhes/income/histinc/incpertoc.html>

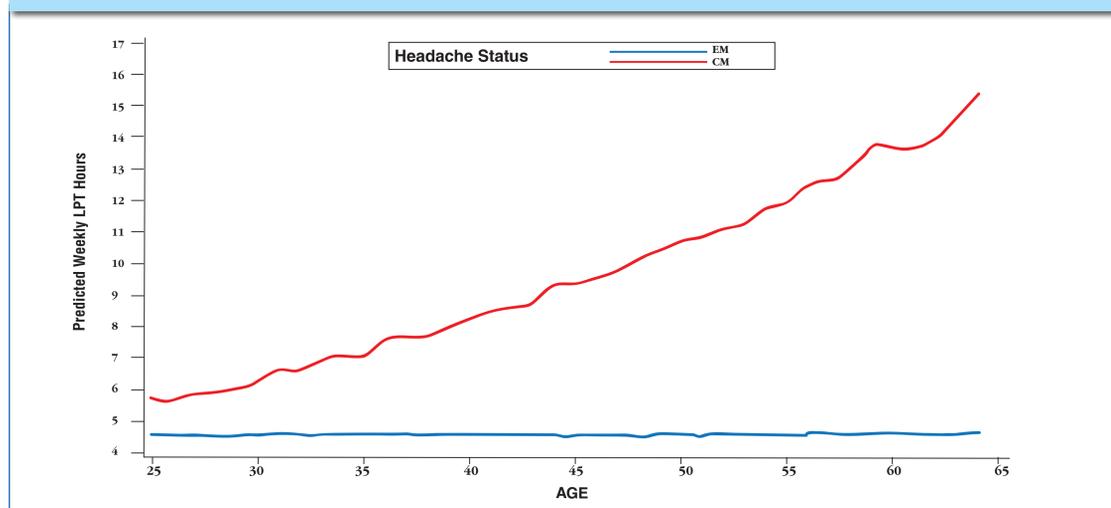
## RESULTS

- Valid data was available on 18,500 respondents aged 18 and older surveyed in 2005
- Of which, 6,116 migraineurs were employed full- or part-time, were aged 25-64, and completed the Work and Health Questionnaire
  - EM: N=5841 (51% of EM respondents)
  - CM: N=275 (42% of CM respondents)
- Among employed individuals, rates of LPT were not significantly different as a function of main effects in the presence of the interaction
- The interaction effect indicates that rates of LPT differ between CM and EM and the difference increased between the two populations over the lifespan (RR=1.023; t=2.23, p<0.05). (Figure1)
- The model-implied average LPT is plotted in Figure 1, magnifying the amplitude of the difference in LPT between EM and CM over the lifespan.
- Across the lifespan in those employed full- or part-time, CM sufferers demonstrated higher costs associated with LPT when compared to EM. (Table 1)

**TABLE 1** COMPARISON OF COST (\$/PER WEEK) IN LPT BETWEEN CM AND EM

Gender	Age Group (years)	CM Mean Cost of LPT (\$)	EM Mean Cost of LPT (\$)
FEMALE	25-34	\$ 61.51	\$ 44.34
	35-44	\$ 93.04	\$ 39.79
	45-54	\$ 118.05	\$ 46.49
	55-64	\$ 118.64	\$ 30.80
MALE	25-34	\$ 62.13	\$ 53.15
	35-44	\$ 235.91	\$ 86.82
	45-54	\$ 287.12	\$ 76.02
	55-64	\$ 101.99	\$ 62.60

**FIGURE 1** AVERAGE PREDICTED LPT (AVERAGE LOST HOURS /WEEK) BY CM AND EM



## CONCLUSIONS

- CM is remarkably disabling when compared to EM in terms of LPT across the age range of 25-64.
- Monitized costs of LPT are higher for CM than EM at every age.
- Though the RR for the interaction of LPT with age in CM and EM is modest on a yearly basis, the effect becomes substantial over many years.
- These data demonstrate that CM sufferers experience significant work-related consequences in LPT and related costs, and this is worse at older age.
- Effective treatments for CM may help reduce these work and economic consequences.

## DISCLOSURE

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