PRODUCTIVITY LOSS AND INDIRECT COSTS ASSOCIATED WITH MIGRAINE AND PROBABLE MIGRAINE IN KOREA

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BACKGROUND

- Migraine is a very common and often disabling neurological disease, but there is limited information on the economic burden or productivity losses of migraine in East Asia, including South Korea.[1]
- In Asia, Probable migraine (PM) has been reported as a common primary headache disorder, and PM is also known to be associated with disability and poor quality of life.[2]
- Most migraine patients experience ≤3 monthly migraine days (MMD), but the migraine burden in this population is unknown.[3]

OBJECTIVES

- This study aims to estimate costs and associated factors of productivity loss in patients with migraine or PM in Korea, and to assess productivity loss according to the level of severity defined MMD and the frequency of analgesic use.

METHODS

- **Participants**
  - Adults who responded to an online survey from October 23 to November 2, 2020, in Korea
  - Participants who had fulfilled at least on modified International Classification of Headache Disorders, second edition (ICHD-2) criterion
    - Migraine: respondents met all three criteria
    - PM: respondents met two of the three criteria
- **Measures**

Demographic and clinical characteristics

- The level of severity was defined by subgroups of
  - MMD (i.e., 0–3, 4–14, and ≥15 days)
  - The frequency of analgesic use (i.e., 0, 1, 2, 3, and ≥4 per week)

The Work Productivity and Activity Impairment (WPAI)[4]

- The effects of migraine on work productivity and daily activities were assessed using the Korean version of the validated WPAI questionnaire, modified for migraine assessment.
- For employed respondents (N=265), three metrics were calculated
  : Absenteeism, Presenteeism, Overall work productivity loss
- Activity impairment was calculated for all respondents (N=362).

Costs of productivity loss

- Costs of productivity loss due to absenteeism and presenteeism were calculated by integrating information from the WPAI questionnaire and hourly wage using the human capital method.

RESULTS

- **Demographic and clinical characteristics**
  - The total number of respondents was 362, with a mean age of 41.7 years.
  - 75.7% were female (N = 274), and 73.2% (N = 265) were employed.
- **Work Productivity and Activity Impairment (WPAI)**
  - On average, the employed respondents had lost 8.1% and 44.3% of productive time due to absenteeism and presenteeism, respectively.
  - This resulted in 47.9% of overall work impairment, which includes absenteeism and presenteeism, and 47.9% of activity impairment.

(A) Presenteeism **(B) Absenteeism**

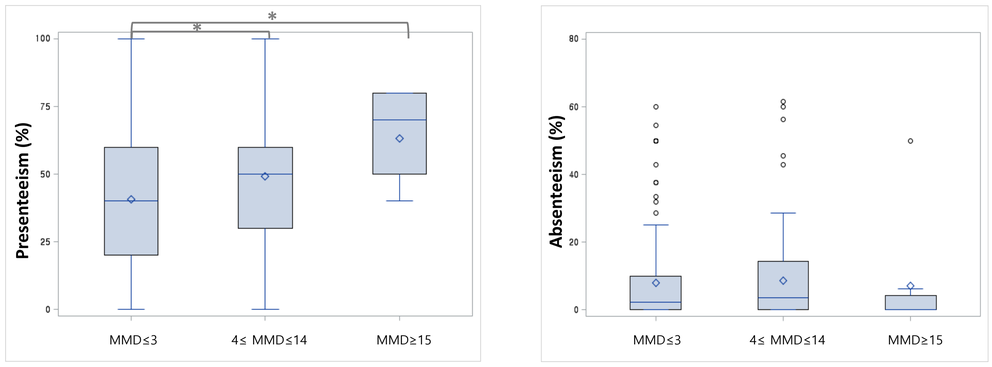

Figure 1. The impact of monthly migraine days on work productivity and activity impairment (WPAI) during previous 1 week
(A) Impairment at work (N=265) (B) Work time missed (N=265) *p<0.017

- **The cost of productivity loss**
  - The overall productivity loss cost per person per day for all employed respondents was USD 44.61 for the 'migraine and PM' group, compared to USD 47.03 for the 'migraine' group.

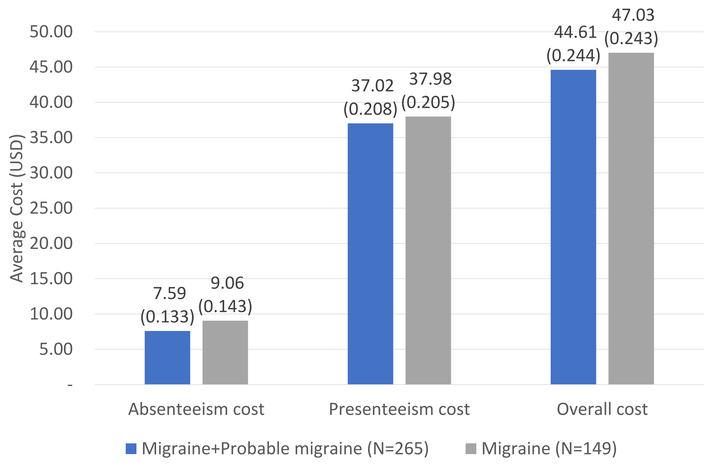

Figure 2. Means of daily productivity loss cost
- The exchange rate of Korean won to the US dollar was 1086.3 Korean won/US dollar in 2020.
- The mean and standard deviation of each cost are presented in the graph.

CONCLUSIONS

- This study found that as MMD increased, activity impairment, presenteeism, and overall work productivity loss tended to increase.
- Over 80% of overall productivity loss costs were due to presenteeism.
- Patients with low-frequency migraine and PM experienced substantial productivity loss.
- This study is significant in that it comprehensively assessed productivity loss in patients with migraine, including patients with ≤3 MMD and PM that were rarely reported in previous studies.

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