

A Cross-sectional Study on the Burden and Impact of Migraine on Work Productivity and Quality of Life in Selected Workplaces in the Philippines

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CONCLUSION

Migraine poses a significant burden to work productivity in the Philippines, with annualized costs due to migraine potentially costing as much as PHP40,000 (USD800) for every employee with migraine. Quality of life was significantly lower among those with high migraine disability than those with low migraine disability across all eight SF-36 domains. The two highest differences were found in role limitations, both physically and mentally. There are companies in the Philippines that seem to provide ample support for medical consultations through their employee benefits program but there are additional opportunities to implement interventions such as prevention and wellness programs. Further research is needed to gauge willingness of employers to pay for preventive medication for migraine and any migraine treatment must also be assessed on factors such as efficacy and cost-effectiveness.

INTRODUCTION

Migraine imposes a substantial personal and economic burden to many working age individuals. This study aimed to evaluate the burden and impact of migraine on work productivity in selected workplaces in the Philippines.

METHODOLOGY

A cross-sectional survey was conducted among employees suspected or diagnosed with migraine from Feb to May 2020.

- Migraine screening and testing was done using the ID-Migraine™ test and Migraine Disability Assessment (MIDAS) questionnaire.
- Quality of life was measured using the Short Form-36 (SF-36) questionnaire with additional questions on triggers, coping mechanisms, workplace assistance, and health care utilization.
- Multiple logistic regression was used to identify significant predictors of migraine disability (high – MIDAS Grade III/IV vs. low – MIDAS Grade I/II) while multiple linear regression was used to measure differences in quality of life scores due to migraine disability.
- Productivity costs lost to migraine disability were calculated as the number of days lost to migraine multiplied by the self-reported wage rate.
- Costs according to migraine severity were measured using a two-part model - logistic then generalized linear model.

RESULTS AND DISCUSSION

511 positive migraine screens were included in the final sample. Females comprised two-thirds of all positive migraine screens and were more likely to have high migraine disability (odds ratio: 1.60, 95% CI: 1.03 - 2.49) than males. Those with high migraine disability scored lower on role limitations compared to those with low migraine disability (see Figure 1).

Stress and looking at computer screens were cited as the top triggers for migraine. As much as nine days of work may be affected over a three-month period, or about 10% of all employee work hours, for those with the most severe forms of migraine. Mean annual productivity costs lost due to migraine disability were PHP27,794.00 (USD556) (see Table 1). This is much lower than previously reported in upper middle income and upper income countries due to lower median household income in the Philippines but this remains significant to Filipino employees and their families.

Table 1. Marginal effects of work productivity losses and economic costs due to migraine.

	Low migraine disability (95% CI)	High migraine disability (95% CI)
Number of days of absenteeism in the past 3 months	0.70 (0.50 - 0.89)	3.20 (2.75 - 3.65)
Number of days of presenteeism in the past 3 months	1.24 (0.99 - 1.48)	5.75 (5.36 - 6.14)
Total number of days lost due to migraine in the past 3 months	1.92 (1.61 - 2.24)	8.97 (8.49 - 9.46)
Monthly costs due to absenteeism (PHP)	263.6 (187.9 - 339.4)	1 151.1 (984.7 - 1 317.6)
Monthly costs due to presenteeism (PHP)	605.6 (514.9 - 696.3)	2 279.6 (2 185.3 - 2 373.9)
Total monthly costs due to migraine (PHP)	865.1 (754.3 - 975.9)	3 440.8 (3 323.4 - 3 558.3)

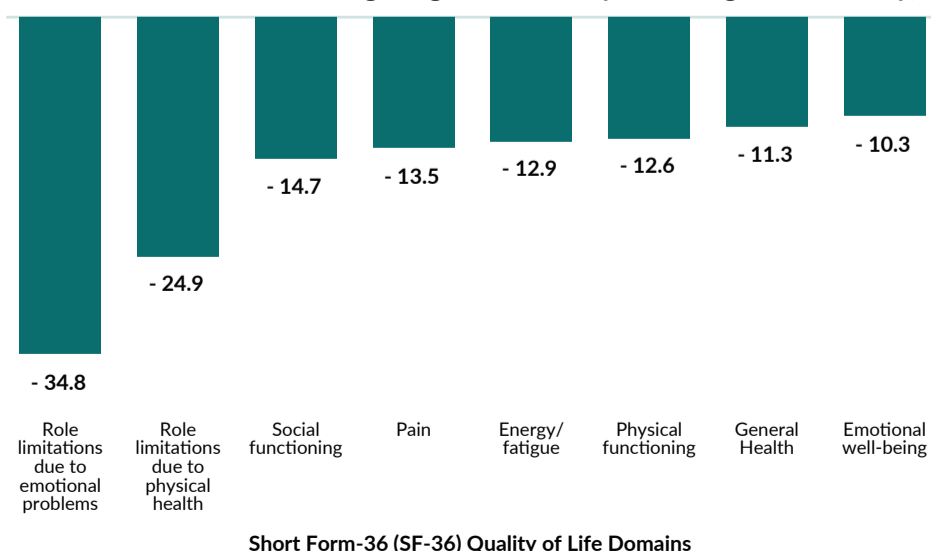
Notes: Adjusted for gender, age, educational attainment, and employee rank; workplace productivity losses were assessed using a two-part model, where the first part measured the likelihood of reporting at least a day lost to migraine, and the second part measuring the number of days and associated costs lost due to migraine for those reporting at least a day lost to migraine; PHP: Philippine Pesos, Conversion rate approximately PHP50 = USD1.

There are many opportunities to address migraine better in the workplace and the companies selected in this sample have implemented some (see Figure 2).

- Three in four (77%) employees visited their company clinic within the past three months, which meant that most doctors seen for migraine-related symptoms were general practitioners.
- Five in six (85%) took medication for migraine, almost all of which were over-the-counter medications. The use of prescriptive acute and preventive therapies remain very low, and this may be because employees do not receive enough information on migraine.
- About two in five (40%) with migraine would like more educational materials and disease management programs available in their workplace, but currently less than 5% of employees report these being available.

Figure 1. Adjusted difference in Short Form-36 (SF-36) quality of life scores between low and high migraine.

Difference in SF-36 scores (High migraine disability - Low migraine disability)



SF-36 is scored on a standardized scale from 0 (lowest quality of life) to 100 (highest quality of life) Differences have p-values <0.001, adjusted for gender, age, college education, and employee rank

Figure 2. Workplace conditions and support for migraine.

Workplace assistance to address migraine symptoms

■ % of employees finding it useful ■ % of employees currently reporting those services available at their workplace

