▪ Headache Medicine 2026, Supplement ▪ p-ISSN 2178-7468, e-ISSN 2763-6178

Headache Medicine

ID: 167

Correlation between primary headaches and occupational workload: an ecological study of hospitalizations in Brazilian capitals (2015-2025)

Iasmin Maria Nascimento Martins, Aderaldo Salustriano Santiago Neto, Anna Letícia Santana Reis de Barros, Anna Luiza Carvalho dos Anjos, Antônio Machado de Almeida Neto, Camila Andrade Brandão, Emilly Kelly Porto Oliveira Santos, Guilherme Caxico de Abreu, Inácio Venâncio Farias Neto, Leonardo Gomes Fontes Araújo, Victoria Kelly Nascimento

Tiradentes University, Estância, Sergipe, Brazil

Iasmin Maria Nascimento Martins
iasmin.martins@souunit.com.br

Introduction
Primary headaches such as migraine, cluster headache, and tension-type headache are among the leading causes of disability worldwide, causing impairments, especially in the occupational sphere. However, exhausting working hours constitute stressful and demanding behavioral routines, notably marked by pain syndromes like headaches. Thus, workers with long shifts have components in their routines that feed back into a pain process and may be involved in the genesis of headaches in large urban centers. Therefore, it is necessary to understand the relationship between Brazilian capitals with the longest working hours and the prevalence of headache hospitalizations.

Objective
To correlate the hospitalization rates for primary headaches in Brazilian capitals with their respective working hours.

Methods
This is an analytical ecological study with a quantitative and retrospective approach, using secondary data extracted from sources such as the Unified Health System Informatics Department (DATASUS) and the Brazilian Institute of Geography and Statistics (IBGE). Data on the hospitalization rates for headaches in Brazilian capitals from 2015 to 2025 were analyzed. Variables included average length of stay, estimated populations per capital, and average working hours. A correlation analysis was performed between average working hours and headache hospitalization rates.

Results
There were 29,106 hospitalizations for migraine and other cephalic pain syndromes recorded in Brazilian capitals during the analyzed period, with the highest number of cases in 2025 (3,361) and the lowest in 2020 (1,760). Recife stood out for having the highest absolute number of hospitalizations (6,435) and the highest rate per 100,000 inhabitants (405.1), associated with high weekly working hours (39.2) and a high average hospital length of stay (6.4 days). Furthermore, Aracaju had one of the highest average lengths of hospital stay (10 days), concomitantly with the country's third-highest weekly working hours (39.3 hours), suggesting an association between occupational overload, clinical worsening, and a greater need for hospital care. In contrast, Macapá showed a low hospitalization rate (7.8/100,000 inhabitants) and the shortest weekly working hours (37.3). São Paulo, despite recording the highest average weekly working hours (40.1 hours) and a high absolute number of hospitalizations (4,302), exhibited a low proportional rate (36.1/100,000 inhabitants) and a shorter hospital stay (4.1 days), representing a divergent finding.

Conclusion
The data analysis allowed inferring a strong association between longer weekly working hours and increased hospitalization rates and length of hospital stay for primary headaches in Brazilian capitals. However, divergent findings suggest the influence of additional factors beyond occupational workload, reinforcing the need for further investigations and strategies for promoting workers' health and preventing occupational stress.

Keywords:
Hospitalization
Headache disorders
Work hours

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