



## The impact of screen access associated with hospital admissions for migraine in children and adolescents

Isabella Campos Bezerra<sup>1</sup>; Enzo Lima Alcântara Parente<sup>2</sup>; Marisa Bezerra de Araújo<sup>1</sup>; Marcelo de Almeida Pinheiro<sup>2</sup>

1. Universidade Federal do Ceará, Fortaleza - CE - Brazil;
2. Centro Universitário Christus, Fortaleza - CE - Brazil.

**Categoria:** Cefaleias em Crianças e Adolescentes

### Introduction

Migraine is a disorder that can lead to several comorbidities and compromise the patient's quality of life. Within the pediatric population, it can lead to behavioral issues, school absences and diminished academic performance. Several studies indicate that the prevalence of migraine in childhood is approximately 7.7%, rising during adolescence. The pathophysiology of migraine involves the dysfunction of brainstem pathways that conventionally regulate sensory input. A critical role is assumed by the trigeminal ganglion, which originates from meningeal vessels and is responsible for a reflex known as the trigeminal-autonomic reflex. It becomes exacerbated in individuals suffering from migraines. These physiological processes play an essential role in the generation of pain associated with migraine.

### Objective

The study primarily aims to describe the number of hospital admissions of children and adolescents for migraines and other headache syndromes in Brazil between January 2013 and July 2023, correlating this with the literature.

### Methodology

A comparative study was conducted using DATASUS data about the number of hospitalizations of people aged 1 to 19 years with migraine or other headache syndromes in Brazil, between January 2013 and July 2023.

### Results

A progressive increase in hospital admissions due to migraine or other headache syndromes was observed between 2013 and 2019. The numbers were as follows: 1,331 in 2013, 1,437 in 2014, 1,493 in 2015, 1,536 in 2016, 1,782 in 2017, 1,855 in 2018, and 1,915 in 2019. However, in the years 2020 and 2021, there was a decline in hospitalizations, totaling 1,265 and 1,266, respectively. In 2022, these admissions saw a significant increase, reaching 1,727, and by July 2023, they had already reached 1,159.

### Conclusion

The rise in hospital admissions for migraine or other headache syndromes between 2013 and 2019 can be correlated with the increased screen time among children and adolescents. This phenomenon can be attributed to the increasingly early and intense use of electronic devices such as televisions, cell phones, and tablets. This hypothesis can be strengthened based on the results of a study published in an American article, which found that a reduction in the percentage of individuals reporting no headache occurrence can be observed as screen exposure time increases, with respective proportions of 59.8%, 57.5%, 54.6%, and 53.8% among individuals with very low, low, high, and very high exposure. In this context, migraine without aura exhibited the greatest increase as screen usage time extended, reaching 13.9% among those reporting very low exposure, 15.4% among individuals indicating low exposure, 16.3% among those reporting high exposure, and 18.2% in the very high exposure group. Additionally, the decline in these numbers in 2020 and 2021 may be linked to the COVID-19 pandemic, which resulted in a decreased utilization of medical services for non-COVID-related reasons. This rationale gains further support when considering the resurgence of hospital admissions in 2022 and 2023, years marked by a reduction in the pandemic's impact due to increased vaccination rates. So is screen overexposure associated with an increase in hospital admissions for headaches in the post-pandemic period?

**Keywords:** Migraine; Headache; Pediatric; Hospitalization; Screen time; Pandemic.