



## Luminosity as a Trigger for Headaches in Adolescent

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### Introduction

The school environment requires adequate lighting for optimal performance in the teaching and learning process. The amount of luminosity has been linked to increased headache frequency in adults, but it is still not well understood whether this impairment is already present from the early years of the condition.

### Objective

To identify the frequency of headaches in adolescents and correlate it with lighting comfort.

### Materials and Methods

Analytical cross-sectional study conducted in a public school in São Luís, MA. For luminosity measurements, a portable digital luxmeter Sunche, model HS1010, with a scale ranging from 0 to 200,000 lux, was used every two hours between 08:00 am and 05:00 pm, following the recommendations of NBR 5413, NBR 5382, NBR 8995-1, NBR 15215-4, without the presence of students. All high school students who were properly enrolled were included. Questionnaires involving questions about sociodemographic data and the Headache Screening Questionnaire (HSQ-Br) to screen headache types were administered. Luminosity values were stratified according to the rules of NBR 5413: 0-200 lux (minimum values), 201-299 (intermediate values), and above 300 (recommended values). Chi-square tests, Student's t-tests, and Odds Ratio (OR) were applied, considering a statistical significance level of  $p \leq 0.05$ .

### Results

A total of 234 students were evaluated, with the majority being 53.85% ( $n=126$ ) male ( $p,o,o\%$ ), with a mean age, weight, and height of  $16 \pm 03$  years,  $60 \pm 11.15$  kg,  $168 \pm 9.18$  m<sup>2</sup>, respectively. 70.51% (165) reported experiencing headaches, with the majority being screened for episodic tension-type headache 53.45% ( $n=124$ ) of moderate intensity ( $n=105$ ). The evaluated rooms had intermediate luminosity values ranging from 201 to 299 lux. A total of 12.39% ( $n=29$ ) indicated luminosity as a trigger for headaches, but without significance ( $p=0.242$ ).

### Conclusion

A high frequency of headache complaints was observed among adolescents, but there was no association with the level of luminosity, which may be related to the fact that most individuals had episodic tension-type headaches and the luminous levels did not exceed the threshold for visual discomfort. Additionally, the luminosity level was below the recommended standards of NBR 5413.

**Keywords:** Luminosity; Adolescents; Headache.