



## Relationship between the increase in temperature and cases of headache – un sustainable development goals – SDGs 3 and 13

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### Introduction

There appears to be a positive relationship between climate change and headache, but the literature remains scarce regarding the trend towards an increase in headache cases in conjunction with an increase in temperature.

### Objective

To evaluate the annual trend of headache cases in relation to climatic variation in environmental temperature.

### Materials and Methods

This is an ecological research, with a time series from the years 2014 to 2023, which was carried out through a search for secondary data from the cities of São Luís/MA and Porto Alegre/RS, chosen due to the differences in climate. Headache data were obtained from the Department of Informatics of the Unified Health System (DATASUS) and environmental temperature data were collected from the National Institute of Meteorology (INMET). The data was filtered from the systems, organized in Excel spreadsheets, after removing the lines with values, the Mann-Kendall test was used to check the monthly trends of climate change in relation to headache cases.

### Result

In São Luís- MA the sample was composed of n=125 cases, female n=88 (70%) aged 30 to 39 years; 2018 was the year with the highest frequency of notifications, with a prevalence rate of 2.1 (n=23) per 100,000 inhabitants, in Porto Alegre the sample was n=1,009 patients, the majority being female n=752 (75%), in the age group from 50 to 59 years old, 2022 was the year with the highest frequency of notification, with a prevalence rate of 8.63 per 100,000 inhabitants, the average, maximum and minimum monthly temperature in São Luís- MA it was 28°C, 32.14±0.97°C and 25.29±0.76°C and for Porto Alegre it was 26°C, 25.99±17°C and 16.27±3.75 respectively. An increasing trend in maximum and minimum temperatures (p<0.001) was observed for both cities, with a tendency for headache cases to increase as the temperature increased (p=0.001).

### Conclusion

There was a tendency for headache cases to increase as monthly temperatures increased, pointing to the need for strategies to mitigate temperature changes and future planning in several areas, including environmental policies and health.