

# PREVALENCE OF HEADACHE AFTER ORTHODONTIC TREATMENT IN CHILDREN AND ADOLESCENTS: PRELIMINARY RESULTS OF A SYSTEMATIC REVIEW

Luiz Felipe Tavares<sup>1,2</sup> Reid Friesen<sup>3</sup> Pia Köning<sup>1</sup> Mareike Neuhaus<sup>1</sup> Susan Armijo-Olivo<sup>1,4</sup> Harry von Piekartz<sup>1</sup>

<sup>1</sup> Federal University of Sao Carlos (UFSCar) – São Carlos, Brazil; <sup>2</sup> Hochschule Osnabrück University of Applied Sciences, Osnabrück, Germany; <sup>3</sup> Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Canada

## BACKGROUND & OBJECTIVE



Headache is experienced by many people, including children (approx. 60%). Stress, lack of movement, and muscular tension are mentioned as triggers.

Orthodontic issues are typically assessed and addressed during childhood and adolescence. Evidence suggests that severe malocclusions significantly impact the quality of life of adolescents more negatively compared to mild malocclusions or the absence of malocclusion.



To systematically review and assess the prevalence of headaches after orthodontic interventions.

## METHODS

PRISMA guidelines; PROSPERO (CRD42022340817)

**DATABASES:** MEDLINE, Embase, CINAHL, Cochrane Library, and Web of Science (from inception until March 14, 2022).

### INCLUSION CRITERIA

- **CONDITION:** Primary and secondary headaches;
- **CONTEXT:** Orthodontic interventions (excluding trauma and surgery);
- **POPULATION:** Individuals from 7 to 18 years old and malocclusions;

**STUDY DESIGN:** No limitation (most studies would be observational studies)

**DATA EXTRACTION:** results from primary studies were compiled in an excel file;

**RISK OF BIAS (RoB):** Cochrane Collaboration RoB 2 tool.

**QUALITY OF EVIDENCE:** The Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach.

## Selection of studies

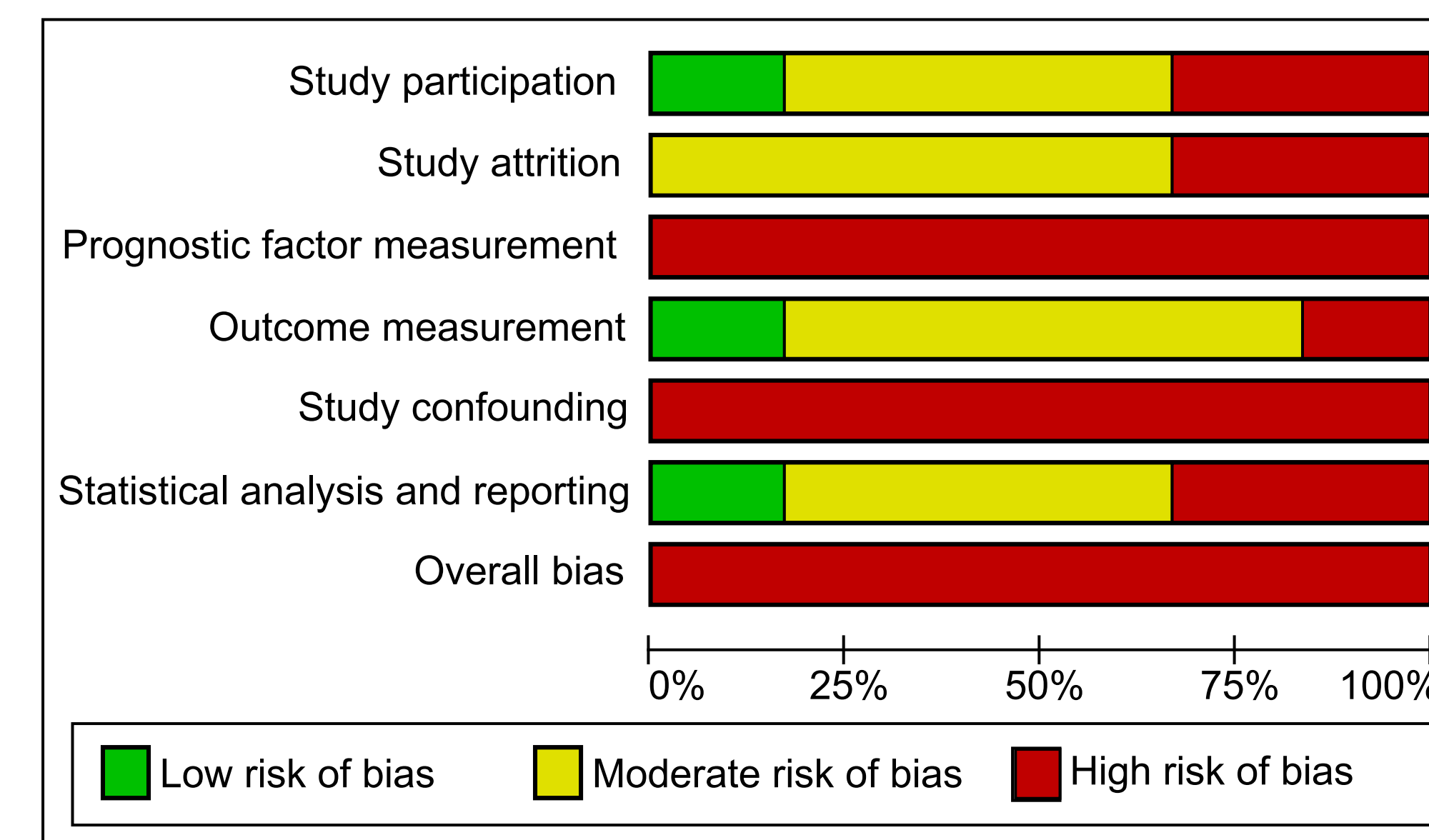
995 ⇒ 421 ⇒ 43 ⇒ 6

Published between 1995 - 2023

- ✓ Age ranged from 7 to 18 yo
- ✓ Mixed sex (4 studies)
- ✓ Female only (2 studies)
- ✓ Fixed appliances
- ✓ Headache, TTH, Migraine
- ✓ 3 Cohort, 2 cross-sec, 1 rct

**625 individuals:** the prevalence of headache was 41.12% for the individuals that underwent orthodontic treatment and 41.62% for the untreated children and adolescents.

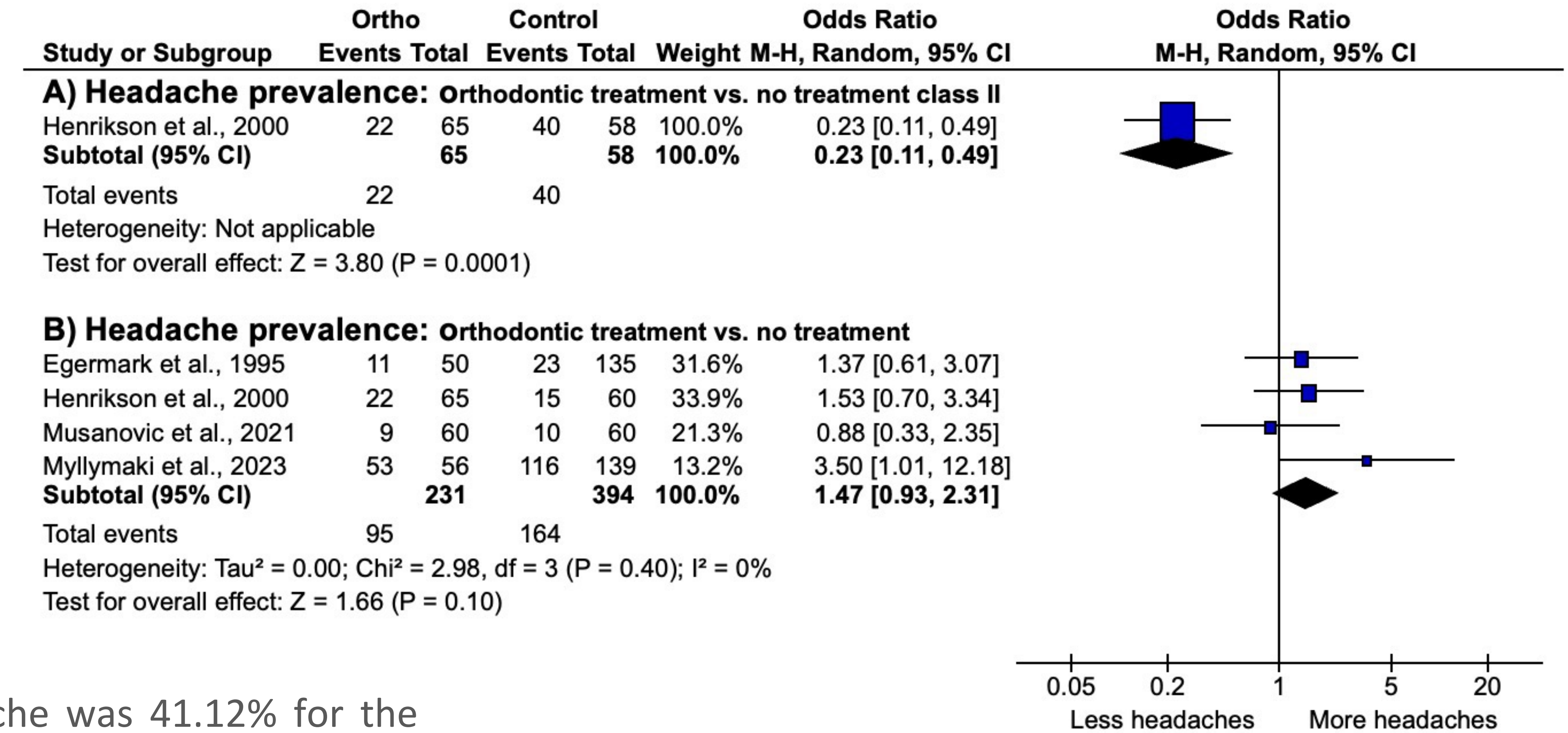
## Risk of bias



## Certainty of the evidence (GRADE)

⊕○○○  
Very low

## RESULTS



## CONCLUSIONS

Children and adolescents with untreated malocclusions and whose malocclusion have been orthodontically treated reported similar levels of headache.

Due to the limited number and low quality of the studies, the results should be interpreted with caution.

Further prospective observational studies using long term follow-ups and valid and reliable methods to measure headache are needed.

Contact author:  
felipeetav@gmail.com  
✉ tavaresphysio

