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**Sociodemographic factors and children's mental health were associated with sleep bruxism in children. Chronic stress, as measured by hair cortisol levels, showed no significant association with bruxism.**

## BACKGROUND



Current theories on bruxism suggest that its link to chronic stress may provide valuable insights into its etiology.

This study aimed to investigate the relationship between hair cortisol concentration, a marker of chronic stress, and the occurrence of possible sleep bruxism in 4-year-old children

## METHODS

Data from the 2015 Pelotas Birth Cohort were used:



Follow-up studies:

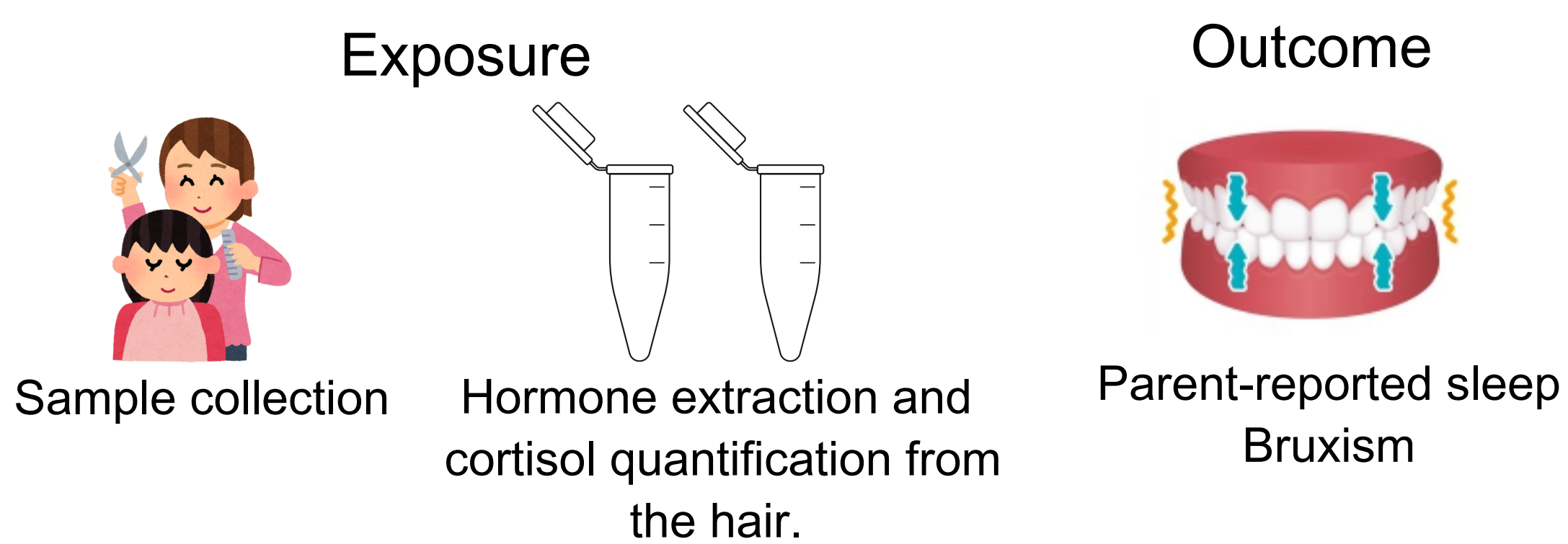
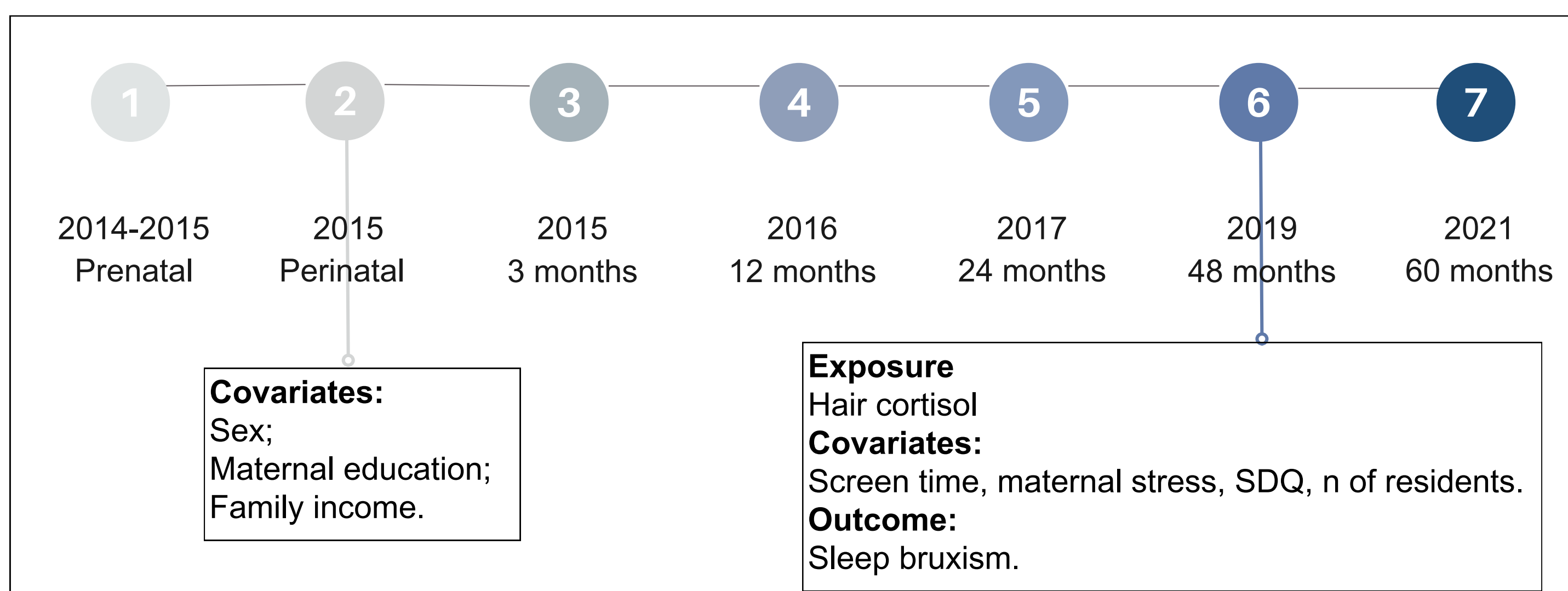


Table 1. Characterization of the sample and prevalence of sleep bruxism in children aged 4 years according to independent variables. Pelotas/RS, Brazil (n=3,229).

Characteristics	N	%	Possible Sleep bruxism		p
			N	% (95%CI)	
<b>Sex</b>					<b>&lt; 0.001</b>
Male	1589	49.21	382	24.04 (22.00-26.20)	
Female	1640	50.79	311	18.96 (17.13-20.93)	
<b>Maternal educational level</b>					<b>0.017</b>
0-10 years	1113	40.69	211	18.96 (16.76-21.37)	
≥ 11 years	1622	59.31	369	22.75 (20.77-24.85)	
<b>Family income at birth (BMW)</b>					<b>0.031</b>
≤ 1	341	10.57	74	21.70 (17.63-26.40)	
1.1-3.0	1505	46.64	290	19.27 (17.35-21.34)	
3.1-6	916	28.39	209	22.82 (20.21-25.65)	
6.1-10	255	7.90	64	25.10 (20.14-30.79)	
>10	210	6.51	56	26.67 (21.11-33.07)	
<b>Number of residents in the house</b>					<b>0.310</b>
≤ 4	2387	73.97	523	21.91 (20.29-23.61)	
> 4	840	26.03	170	20.24 (17.65-23.09)	
<b>Screen time</b>					<b>0.004</b>
Normal (< 2 hours)	573	17.92	97	16.93 (14.07-20.23)	
Excessive (≥ 2 hours)	2625	82.08	588	22.40 (20.84-24.04)	
<b>Maternal stress level</b>					<b>0.042</b>
Low	1511	47.06	301	19.92 (17.98-22.01)	
Moderate	1547	48.18	348	22.50 (20.48-24.64)	
High	153	4.76	42	27.45 (20.95-35.08)	
<b>SDQ</b>					<b>0.017</b>
Normal	2251	69.84	453	20.12 (18.51-21.83)	
Borderline	367	11.39	88	23.98 (19.87-28.62)	
Abnormal	605	18.77	151	24.96 (21.67-28.57)	
<b>Child's hair cortisol</b>	<b>Median</b>	<b>IQR</b>	<b>Median</b>	<b>IQR</b>	<b>0.500</b>
	7.78	5.58/11.01	7.99	5.56/11.09	

BMW, Brazilian Minimum Wage; SDQ, Strengths and Difficulties Questionnaire

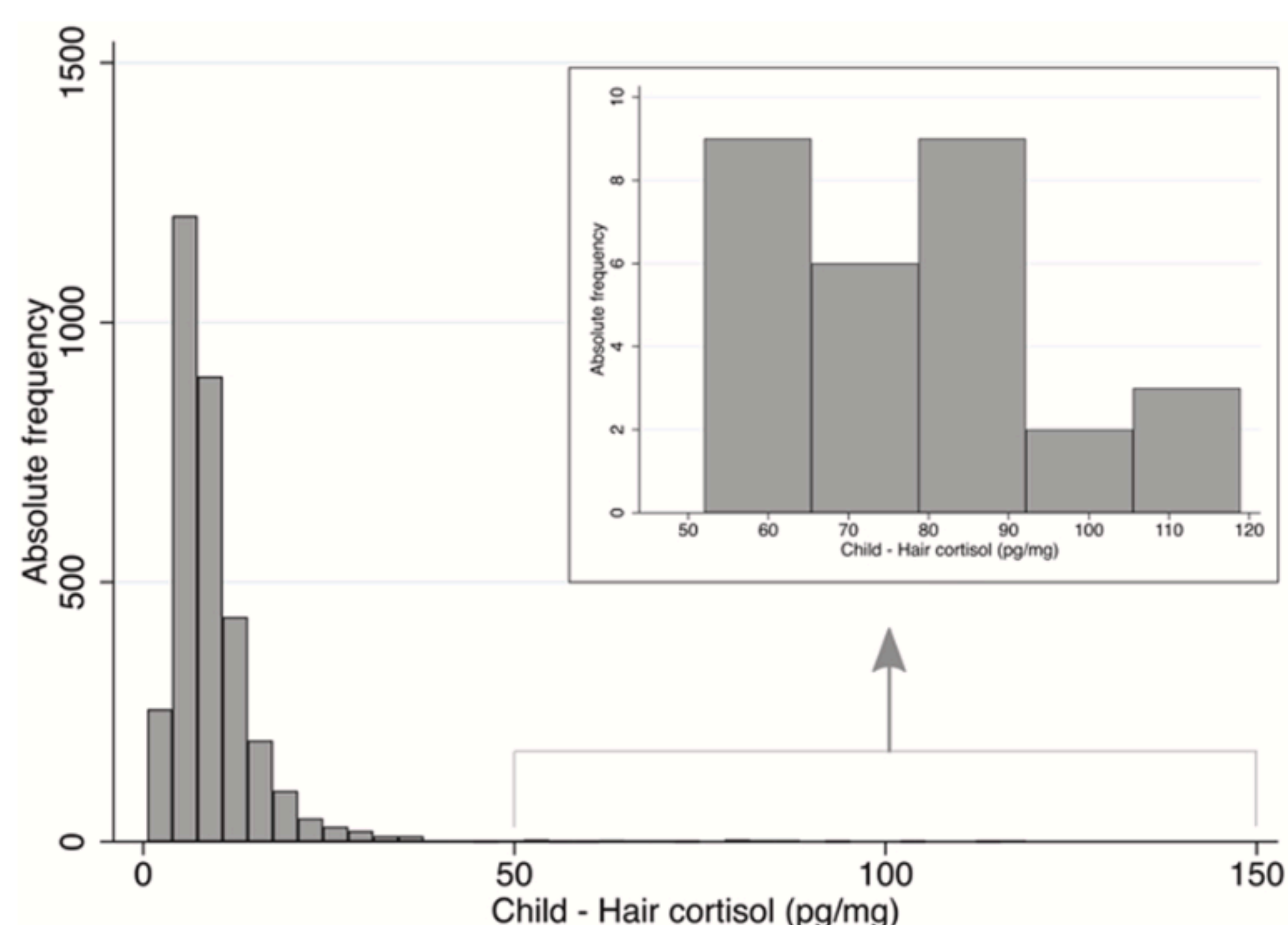
Table 2. Crude and adjusted Poisson regression analysis of the association between child's hair cortisol and possible sleep bruxism in children aged 4 years determined using Poisson regression. Pelotas/RS, Brazil

Child's hair cortisol	Crude	p	Adjusted	p
	PR (95%CI)		PR (95%CI)	
Child's hair cortisol	1.00 (0.99-1.01)	0.802	1.00 (0.99-1.01)	0.966

Girls had 31% lower frequency of possible sleep bruxism (SB) than boys. Abnormal behavior and excessive screen time were linked to higher SB prevalence (28% and 31%, respectively). Higher maternal education and stress levels were also associated with increased SB frequency.

## RESULTS

The analytical sample included all individuals who had information available on the variables of interest, totaling 3,229 children.



## CONCLUSIONS

- The occurrence of possible sleep bruxism in children is not directly associated with chronic stress, as measured by hair cortisol concentration.
- Sociodemographic factors, along with children's emotional and behavioral problems, were significantly linked to the presence of sleep bruxism in this sample.
- Findings underscore the importance of considering broader contextual and behavioral factors when examining the etiology of sleep bruxism in children.

### ADDITIONAL KEY INFORMATION

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The authors report no conflict of interest.