

# Prevalence of practice of bullying reported by Brazilian students: data from the National School Health Survey, 2015

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## Abstract

**Objective:** to identify the practice of bullying reported by Brazilian students, according to sex, age and geographical location. **Methods:** this was a cross-sectional study based on two national samples from the National School Health Survey (PeNSE), 2015; a total of 102,301 students participated in the study forming a nationally representative sample; data were collected through a self-administered questionnaire. **Results:** bullying prevalence was 19.8% (95%CI – 19.2;20.3), with higher prevalence in the Southeast region of the country (22.2% – 95%CI 21.1;23.4), and in the State of São Paulo (24.2% – 95%CI 22.3;26.2), however the city with the highest prevalence was Boa Vista (25.5% – 95%CI 22.9;28.1), capital of the State of Roraima; boys (24.2% – 95%CI 23.4;25.0) practiced more bullying than girls (15.6% – 95%CI 14.9;16.2), as did younger students aged 13 to 15 years (22.0% – 95%CI 20.4;23.6). **Conclusion:** higher rates of reported bullying practices were found among adolescents from the Southeast region, among male and younger students.

**Keywords:** Bullying; School Health Services; Adolescent Health; Cross-Sectional Studies.

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## Introduction

Bullying is a generalized problem in schools worldwide.<sup>1,2</sup> It is an intentional and repeated form of violence, practiced by one or more students against others, demonstrating an unequal power relationship.<sup>2,3</sup> Bullying has a negative effect on the schooling, health and psychosocial development of its victims and also among those who practices and those who witness it.<sup>4-6</sup> These attacks can either occur as a reaction, in defense against provocation or aggression received, or they can be proactive, a deliberate and planned action with the purpose of achieving an objective and not needing stimuli in order to happen.<sup>7</sup>

The literature indicates that the presence of bullying causes negative changes to the school climate and transmits to students a sensation of insecurity and institutional disorganization at school.<sup>8</sup> In settings such as these, it is also possible that uninvolved students may attack colleagues as a form of self-protection – reactive aggression – or in order not to be identified as potential victims – proactive aggression –, resulting in situations of bullying being reproduced.<sup>9</sup> Exposure to bullying can also encourage the belief that aggressive behavior is an acceptable and effective way of achieving certain objectives, in addition to desensitizing students with regard to the emotional effects of this form of violence.<sup>10</sup> Measures intended to address and prevent bullying need to be put in place in schools, in order to avoid aggression from becoming normalized in interactions between students.<sup>11</sup>

*The presence of bullying causes negative changes to the school climate and transmits to students a sensation of insecurity and institutional disorganization at school.*

Ever since the pioneer research into bullying undertaken by Dan Olweus in the 1970s in Sweden and Norway, the literature has shown interest in this phenomenon through studies conducted by researchers from different countries.<sup>8</sup> In Brazil, however, research on the theme has only become more intense with effect from 2010.<sup>12</sup> The national literature tends to converge on addressing victims, with little research directed towards attackers or exclusively towards them.<sup>5,12</sup> Even

rarer are studies conducted with representative local or nationally representative samples.

This study aimed to identify the practice of bullying reported by Brazilian students, by sex, age and geographic location.

## Methods

The National School Health Survey (PeNSE) aims to describe health-related risk and protection behaviors of Brazilian middle and high school students. PeNSE is carried out by the Brazilian Institute of Geography and Statistics (IBGE) in partnership with the Brazilian Ministry of Health.

The 2015 edition of PeNSE 2015 collected information based on two samples of students. Sample 1 was comprised of 9<sup>th</sup> grade middle school students, while Sample 2 was comprised of 6<sup>th</sup> to 9<sup>th</sup> grade middle school students and 1<sup>st</sup> to 3<sup>rd</sup> grade high school students.

To comprise Sample 1 we selected public and private schools that had answered the 2013 School Census stating that they catered for 9<sup>th</sup> grade middle school students aged 13 to 15 years old. We excluded from the selection records classes with fewer than 15 students enrolled in the 9<sup>th</sup> grade in 2013 as well as 9<sup>th</sup> grade night classes. Sample 1 represents 9<sup>th</sup> grade students from public and private schools located in the capital cities of the country's 27 Federative Units, distributed between Brazil's five geographical regions (North, Northeast, Southeast, South and Midwest). The criteria for inclusion in the study were: (i) being a student duly enrolled in the 9<sup>th</sup> grade of middle school; (ii) being present on the day the data were collected; and (iii) agreeing to take part in the study.

Sample 2 represents students aged 13, 14, 15, 16 and 17 years old, enrolled at public and private schools in the 6<sup>th</sup> to 9<sup>th</sup> grade of middle school and the 1<sup>st</sup> to 3<sup>rd</sup> grade of high school. Sample 2 similarly included the capital cities of the 27 Federative Units spread over the country's five regions. Further details of Samples 1 and 2 can be found in another publication.<sup>13</sup>

Data collection took place between April and September 2015, using the same questionnaire for both Sample 1 and Sample 2. The questionnaire was administered collectively at the schools during lesson time. Duly trained IBGE workers administered the questionnaire which had been installed on smartphones

and were comprised of thematic modules with varying numbers of questions. The students received the necessary guidance for answering the questions. On average it took 50 minutes to answer the questions. Measurement of bullying practiced was obtained by the following question asked of the students:

*In the last 30 days, have you humiliated, mocked, taunted, intimidated or teased any of your school colleagues to such an extent that they became hurt, annoyed, offended or humiliated?*

The answers to this question were classified into two categories: 'no' (never, rarely, sometimes); or 'yes' (most of the time, always).

Sample 1 and 2 data were analyzed by calculating the prevalence of the variable 'practice bullying' and its respective 95% confidence intervals (95%CI), by sex, the country's geographic regions, its Federative Units and their respective capital cities. Analysis was performed using the SAS (Statistical Analysis Software) application, taking into consideration the 'weighting' of the samples.

Sample weighting was built taking into account weighting of the schools, classes and students. Student weighting was corrected by the number of students in a class with valid questionnaires, i.e. students who agreed to take part in the study and who informed their age and sex. Sample weighting enabled us to estimate the number of enrolled students who attended lessons.

The research project was exempted from requiring a Free and Informed Consent form signed by the students' parents, since the Child and Adolescent Statute (Law No. 8069, dated July 13<sup>th</sup> 1990) provides autonomy for adolescents to use their own initiative, such as answering a questionnaire that offers no risk to their health and has the clear objective of informing health protection policies for this age group. In accordance with the recommendations of National Health Council (CNS) Resolution No. 466, dated December 12<sup>th</sup> 2012, the project was submitted to the National Research Ethics Committee (CONEP) and approved as per Report No. 1.006.467, dated March 30<sup>th</sup> 2015. The State and Municipal Education Departments and the administration of each school also authorized the study to be carried out. An Assent form was displayed on the initial page of the application installed on the smartphone used to answer the questionnaire. All students who voluntarily decided to contribute to the following results with their answers took part in the study.

## Results

Sample 1 had 102,301 students participating, accounting for 85.2% of the total of 120,122 individuals eligible for the study. The participants belonged to 4,159 ninth grade classes of 3,040 middle schools. 51.3% were female and 88.6% were aged between 13 and 15 years old. 88.6% of schools were public and 11.4% were private. Sample 2 had 10,926 students participating, from 652 classes belonging to 380 schools, 50.3% of whom were male. 87.1% of schools were public while 12.9% were private. Participants' age was distributed as follows: 13 (19.7%), 14 (20.7%), 15 (21.6%), 16 (20.3%) and 17 years (17.8%) (data not shown).

Table 1 shows the prevalence of bullying practiced based on the data collected from Sample 1, in the 13-15 age group, and which are representative of the country's five regions, its states and Federal District. National prevalence of bullying being practiced was 19.8% (95%CI 19.2;20.3), with greater occurrence among males (24.2% – 95%CI 23.4;25.0) in relation to females (15.6% – 95%CI 14.9;16.2). The highest percentages were identified in Southeast Brazil (22.2% – 95%CI 21.1;23.4), with only slight variation between that region's states with regard to bullying being practiced. The state of São Paulo stood out from the remaining Federative Units as having the highest prevalence nationwide (24.2% – 95%CI 22.3;26.2).

Still with regard to the country's regions, the lowest percentages were found in the North (17.9% – 95%CI 16.9;18.8) and Northeast (16.9% – 16.1;17.6), with the practice of bullying varying in these regions between 14.0% in the state of Piauí (95%CI 12.8;15.3) and 22.8% in Roraima (95%CI 21.0;24.7), as shown in Table 1. Roraima draws attention by having similar levels of bullying to those found in São Paulo.

Table 2 also refers to Sample 1 and shows the prevalence of bullying being practiced in the 13-15 age group in the capital cities of the 26 Brazilian states and in Brasília, Federal District (n=51,303), with a mean self-reported percentage of 20.5% (95%CI 19.7;21.2). With regard to sex, a higher prevalence of bullying practiced by boys was found (25.6% – 95%CI 24.5;26.7). Taking total data regardless of the sex of those practicing bullying, the highest percentage was found in Boa Vista (25.5% – 95%CI 22.9;28.1), capital of the state of Roraima. The lowest percentage was found in Palmas (16.6% – 95%CI 14.5;18.7), capital of the state of Tocantins.

**Table 1 – Prevalence of practicing bullying in Sample 1, by Brazil's five regions, Federative Units and Federal District (n=102,301), National School Health Survey (PeNSE), Brazil, 2015**

Regions and Federative Units	Total		Sex			
			Male		Female	
	%	95%CI <sup>a</sup>	%	95%CI <sup>a</sup>	%	95%CI <sup>a</sup>
<b>North</b>	17.9	16.9;18.8	21.5	20.1;22.9	14.5	13.4;15.6
Rondônia	16.7	14.9;18.5	20.6	18.0;23.2	13.0	11.0;15.0
Acre	19.9	18.0;21.8	25.2	22.7;27.8	14.7	12.4;16.9
Amazonas	21.0	19.0;23.1	25.3	22.8;27.8	16.8	14.5;19.0
Roraima	22.8	21.0;24.7	24.9	22.3;27.6	20.7	18.2;23.1
Pará	16.0	14.2;17.8	19.2	16.5;21.9	13.1	11.1;15.2
Amapá	18.6	17.2;19.9	22.8	20.5;25.2	14.5	13.1;15.9
Tocantins	16.4	14.6;18.3	18.4	16.0;20.9	14.5	12.2;16.9
<b>Northeast</b>	16.9	16.1;17.6	21.6	20.6;22.6	12.8	12.0;13.6
Maranhão	16.8	15.2;18.5	19.7	17.2;22.2	14.4	12.1;16.7
Piauí	14.0	12.8;15.3	17.3	15.2;19.4	11.2	9.6;12.8
Ceará	18.7	17.3;20.1	23.6	21.5;25.8	14.0	12.0;15.9
Rio Grande do Norte	14.8	13.4;16.2	19.5	17.4;21.5	10.8	9.2;12.3
Paraíba	17.9	16.4;19.3	22.3	20.3;24.3	14.3	12.5;16.0
Pernambuco	18.0	16.3;19.8	23.2	20.6;25.8	13.1	11.5;14.6
Alagoas	15.4	13.1;17.7	20.0	16.7;23.2	11.3	9.2;13.5
Sergipe	14.7	13.4;15.9	19.7	17.8;21.7	10.6	9.3;12.0
Bahia	16.5	14.2;18.7	22.1	19.2;25.0	12.1	9.9;14.4
<b>Southeast</b>	22.2	21.1;23.4	26.4	24.8;28.0	18.1	16.7;19.5
Minas Gerais	20.2	18.4;21.9	25.7	23.3;28.1	14.8	12.7;16.9
Espírito Santo	20.2	18.3;22.1	25.5	22.7;28.3	15.3	13.1;17.4
Rio de Janeiro	19.8	18.4;21.2	22.2	20.3;24.1	17.7	15.7;19.7
São Paulo	24.2	22.3;26.2	28.1	25.4;30.9	20.2	17.8;22.6
<b>South</b>	18.9	17.9;19.9	23.8	22.3;25.3	14.1	12.7;15.4
Paraná	20.2	18.6;21.8	24.7	22.4;27.0	15.5	13.1;17.8
Santa Catarina	18.8	16.8;20.8	24.5	21.4;27.6	13.9	11.9;16.0
Rio Grande do Sul	17.0	15.4;18.7	21.8	19.2;24.3	12.3	9.9;14.7
<b>Midwest</b>	20.2	19.2;21.1	25.0	23.7;26.3	15.4	14.3;16.6
Mato Grosso do Sul	20.0	18.0;22.0	25.4	22.4;28.3	14.8	12.6;17.1
Mato Grosso	19.9	17.5;22.3	23.2	20.4;26.0	16.5	13.6;17.4
Goiás	18.6	17.4;19.9	23.6	21.5;25.7	13.6	11.9;15.2
Federal District	23.6	21.5;25.7	29.7	27.0;32.5	18.2	15.5;20.9
<b>Brazil</b>	19.8	19.2;20.3	24.2	23.4;25.0	15.6	14.9;16.2

a) 95%CI:95% confidence interval.

Note: The estimates presented were corrected by sample weighting.

**Table 2 – Prevalence of practicing bullying in Sample 1, by capital cities of Brazil's Federative Units and Federal District (n=51,303), National School Health Survey (PeNSE), Brazil, 2015**

State Capitals	Total		Sex			
			Male		Female	
	%	95%CI <sup>a</sup>	%	95%CI <sup>a</sup>	%	95%CI <sup>a</sup>
Porto Velho	20.0	17.7;22.3	27.3	23.8;30.8	13.5	11.3;15.7
Rio Branco	21.4	18.8;24.0	27.3	23.8;30.8	15.7	12.7;18.7
Manaus	20.4	17.7;23.1	24.7	21.1;28.4	15.9	13.1;18.7
Boa Vista	25.5	22.9;28.1	28.2	24.3;32.1	22.8	19.5;26.1
Belém	16.8	15.0;18.7	20.5	17.7;23.3	13.4	11.1;15.7
Macapá	19.7	17.8;21.6	24.6	21.2;28.1	15.0	13.2;16.8
Palmas	16.6	14.5;18.7	20.9	17.0;24.7	12.9	10.5;15.2
São Luís	18.0	15.9;20.0	20.0	16.7;23.3	16.0	13.4;18.6
Teresina	17.2	15.4;18.9	21.4	18.1;24.7	13.4	11.3;15.6
Fortaleza	19.9	18.1;21.7	26.3	23.3;29.2	13.8	11.5;16.1
Natal	17.3	15.6;19.0	22.1	19.1;25.1	12.6	10.6;14.6
João Pessoa	18.5	16.6;20.5	23.9	21.2;26.6	13.7	11.3;16.2
Recife	17.7	15.5;19.8	22.9	19.8;25.9	13.0	10.9;15.0
Maceió	18.5	16.4;20.7	24.6	21.7;27.6	13.1	10.1;16.1
Aracaju	16.8	14.7;18.9	21.4	18.5;24.2	12.7	10.2;15.2
Salvador	17.3	15.4;19.3	20.6	18.0;23.2	14.6	12.1;17.1
Belo Horizonte	19.8	17.7;21.9	23.8	21.1;26.5	15.7	13.2;18.2
Vitória	21.0	18.5;23.4	23.8	20.8;26.8	18.3	15.5;21.0
Rio de Janeiro	19.9	17.7;22.1	23.7	20.9;26.6	16.6	13.8;19.4
São Paulo	23.0	20.6;25.3	29.1	25.8;32.5	16.7	14.0;19.4
Curitiba	19.4	17.9;21.0	26.4	23.5;29.3	12.6	10.4;14.8
Florianópolis	17.1	14.7;19.5	22.3	18.7;25.8	12.6	9.5;15.6
Porto Alegre	20.6	17.5;23.7	24.4	20.3;28.4	16.3	11.7;20.8
Campo Grande	20.1	17.5;22.6	25.5	21.5;29.6	14.7	12.0;17.3
Cuiabá	19.6	17.4;21.9	24.2	21.2;27.2	15.3	12.9;17.7
Goiânia	19.7	17.7;21.7	24.4	21.7;27.2	14.7	12.7;16.7
Brasília, DF	23.6	21.5;25.7	29.7	27.0;32.5	18.2	15.5;20.9
<b>Total</b>	<b>20.5</b>	<b>19.7;21.2</b>	<b>25.6</b>	<b>24.5;26.7</b>	<b>15.6</b>	<b>14.7;16.4</b>

a) 95%CI: 95% confidence interval.

Note: The estimates presented were corrected by sample weighting.

Boa Vista was found to have a high prevalence of bullying among girls (22.8 – 95%CI 19.5;26.1), which was not significantly different from that among boys. This state capital in the Northern region had the highest frequency of the whole country. This was significantly different to the practicing of female bullying reported, for example, by female students in Natal (12.6 – 95%CI 10.6;14.6), Curitiba (12.6 –

95%CI 10.4;14.8) and Florianópolis (12.6 – 95%CI 9.5;15.6).

Among boys the highest prevalence of bullying was found in Brasília, Federal District (29.7 – 95%CI 27.0;32.5), considerably different to that found in São Luís, capital of the state of Maranhão, which had the lowest prevalence of all the country's state capitals (20.0 – 95%CI 16.7;23.3) (Table 2).

**Table 3 – Prevalence of practicing bullying in Sample 2, by age in Brazil's five regions (n=10,926), National School Health Survey (PeNSE), Brazil, 2015**

Age range	Total		Sex			
			Male		Female	
	%	95%CI <sup>a</sup>	%	95%CI <sup>a</sup>	%	95%CI <sup>a</sup>
<b>13-15 years</b>						
<b>Brazil</b>	22.0	20.4;23.6	26.8	24.4;29.2	17.0	15.4;18.5
North	17.7	14.2;21.2	21.4	17.9;24.9	13.8	9.4;18.2
Northeast	21.8	18.4;25.2	28.2	23.6;32.9	15.0	11.8;18.2
Southeast	24.1	21.3;26.9	27.9	23.3;32.6	20.2	17.6;22.7
South	19.9	17.3;22.5	24.8	21.3;28.4	14.7	11.4;18.0
Midwest	20.5	18.0;23.0	25.6	21.4;29.8	15.4	13.0;17.9
<b>16- 17 years</b>						
<b>Brazil</b>	17.7	16.2;19.3	23.5	21.0;25.9	12.2	10.0;14.4
North	17.9	13.8;22.0	25.2	18.7;31.6	9.5	5.0;14.0
Northeast	15.2	12.1;18.3	19.8	15.7;24.0	10.5	6.4;14.7
Southeast	19.3	16.6;22.0	25.0	20.2;29.7	14.2	10.2;18.2
South	19.4	16.1;22.8	26.7	21.9;31.6	12.5	8.8;16.2
Midwest	15.2	12.5;17.9	21.6	16.6;26.6	9.2	6.1;12.2

a) 95%CI:95% confidence interval.

Note: The estimates presented were corrected by sample weighting.

Table 3 refers to Sample 2 which was comprised of 6<sup>th</sup> to 9<sup>th</sup> grade middle school students and 1<sup>st</sup> to 3<sup>rd</sup> grade high school students. The Table shows prevalence of bullying by age and sex. The data were consolidated according to the country's five geographical regions. Bullying was most practiced by students aged 13-15 with prevalence of 22.0% (95%CI 20.4;23.6) for Brazil as a whole, compared to prevalence of 17.7% (95%CI 16.2;19.3) among students aged 16-17. In the Northeast and Midwest regions, students aged 13-15 also reported higher prevalence of bullying. With regard to sex, boys aged 13-15 were those who most practiced bullying (26.8% – 95%CI 24.4;29.2) compared to girls of the same age (17.0% – 95%CI 15.4;18.5), in all regions of the country. Older students, aged 16-17 and male, also practiced bullying more (23.5% – 95%CI 21.4;25.9) than female students of the same age (12.2% – 95%CI 10.0;14.4). This finding repeated itself in all five regions.

## Discussion

The percentage of adolescents who reported practicing bullying (19.8% – 95%CI 19.2;20.3)

identified via the third edition of the National School Health Survey in 2015 is practically the same as that identified via the second edition of the same survey in 2012 (20.8% – 95%CI 19.5;22.2) with a sample of 109,104 students.<sup>4</sup> As such, the possibility of comparing the prevalence of bullying between the two editions of the survey is in itself a great step forward in researching this phenomenon in Brazil. Prior to this, the absence of national studies with representative samples hindered the comparison of results of studies conducted with smaller samples often characterized by local and regional differences. For example, research with 5,300 students from 87 schools in the state of Minas Gerais identified that 9.8% practiced bullying.<sup>14</sup> A study with a sample of 232 participants in the city of Ribeirão Preto, SP, found that 17.4% practiced bullying.<sup>9</sup> Another study conducted in the city of Santa Maria, RS, with 95 students found that 24.2% of the sample selected practiced bullying.<sup>15</sup>

Beyond influences involving students' sex, age and place of residence capable of interfering in the occurrence of bullying,<sup>16</sup> in this study we found in the differences between states and between state capital cities the possibility of prevalence also varying

according to the definition of bullying used, the way data is collected (questionnaire, interview, peer indication, direct observation, etc.), school level studied (middle school or high school) and/or type of aggression practiced (physical, verbal psychological).<sup>9</sup> Despite the cultural, theoretical and methodological differences present in studies of bullying, the quantity of Brazilian students who systematically bully colleagues at school is considered to be high in comparison with other countries.

The multicultural and ethnic and racial characteristics present in the Brazilian territory can corroborate differences between geographical regions, as a marker of vulnerability to the occurrence of bullying between peers. Studies indicate that ethnic minorities, regional and socio-economic differences, race/skin color, physical appearance, individual behaviors, level of school achievement, religious aspects, gender and sexual orientation issues are predictive factors of situations of victimization from bullying.<sup>17,18</sup>

It must therefore be considered that the establishment of this relationship implies cultural, social and other issues that are reflected in the dynamics of relationships at school, at home and in society. In this sense, inequality, diversity, forms of sociability and (re) building relationships become materialized in violence, exclusion and segregation of others or those who are seen to be different.

A transnational study conducted by the World Health Organization (WHO) in forty countries – not including Brazil –, identified a mean rate of bullying of 10.7%,<sup>2</sup> this being almost half the prevalence found for Brazil in our study (19.8%). This indicates just how important it is to implement school interventions aimed at preventing and addressing this phenomenon of national reality.

With regard to sex, the data indicate that boys practice bullying more than girls. This trend is found in Brazil<sup>6,15</sup> and in other countries such as, for instance, South Korea,<sup>19</sup> Spain,<sup>20</sup> Greece<sup>21</sup> and the United Kingdom.<sup>22</sup> This result may possibly be justified by the fact of boys cultivating more aggressive styles of interaction with their peers, as well as cultural requirements related to the hegemonic image of masculinity, domination and power that encourages them to practice and suffer greater levels of aggression.<sup>4,9</sup>

Age is one of the most studied variables in relation to bullying. The national and international literature

indicate that the probability of being a bully reaches a peak coinciding with the transition from the 5<sup>th</sup> to the 6<sup>th</sup> grade (11-12 years of age), and decreases as age increases.<sup>5</sup> The data from Sample 2 of our study confirm information found in the literature: practicing bullying was greater among younger students, with effect from the 6<sup>th</sup> grade. A possible explanation for this result may lie in the transition to adolescence, when certain types of aggression, such as physical aggression, are less socially acceptable, either to peers or to school authorities.<sup>23</sup> Thus, even though older students are more physically developed, aggression practiced by them is usually interpreted as being more serious, making them more likely to experience rejection by their peers and punishment from school authorities. In turn, greater cognitive development and improved social skills among older students can facilitate their socialization with colleagues, as well as their finding more adequate strategies for resolving conflicts, rather than resorting to reactive aggression, for instance.<sup>5,9</sup>

In accordance with the results presented by the authors of this report, their main conclusions are that the prevalence of practicing bullying in Brazil is above the global average, with regional differences (higher prevalence in the Southeast region), marked by the country's social and economic diversity. Mostly practiced by boys aged 13-15, bullying is a reality in Brazilian schools: apart from impacting negatively on the schooling, health and quality of life of children and adolescents,<sup>24</sup> this behavior makes no distinction between sexes – although boys are more associated with it –, age or cultural/regional differences. As it is seen to be universally distributed, knowledge and investigation of the main characteristics of bullying should also be of interest to the area of Health, whereby based on this information, health workers can plan and implement strategies to prevent and reduce its occurrence. The school setting, where students exercise their awareness of the world, their subjectivity and autonomy, is seen to be a privileged locus for actions to promote health and combat violence.<sup>9</sup>

It is important to recognize and contextualize the work of health professionals, their relationship with society, public health and the school environment in the current context, so as to make feasible commitment and action in the face of violence, of which situations of bullying are an increasingly present and frequent example in schools. Based on comprehensive care,

from an intersectoral and interdisciplinary perspective, articulated by Brazilian National Health Service (SUS) Primary Care with the contribution of the competencies and specificities of other areas, such as Education, Social Work and Psychology, nurses can define possibilities of educational actions, promoting health at school with the aim of minimizing and preventing bullying. This perspective is realized through the action, attitude and daily involvement of the health team and health care services in diversifying and optimizing 'self-other' forms of interaction and in 'enriching the horizons of health knowledge and practices'.<sup>25</sup>

Improvements to the quality of the social interactions of school students can stimulate the establishment of a culture aimed at preventing violence and promoting peace, intended to: (i) reduce the occurrence of bullying and its impacts on physical and mental health; and (ii) improve the quality of life of children and adolescents in the school environment, such as proposed by the Health At School Program (PSE).<sup>26</sup> Beyond the PSE guideline, the international literature has reinforced the need to have Health professionals in schools, whether for research purposes, whether through actions to promote student psychosocial well-being. Along with these measures, it is opportune to transmit a unified message against bullying.<sup>27</sup> The health care model, in the face of situations of violence and bullying at school, needs health professionals who broaden their knowledge, taking on new theories and practices capable of responding to the challenge and technical and ethical commitment of guaranteeing equity, protection and improved quality of life in childhood and adolescence, both within health centers and within the school setting.<sup>28</sup>

Our study does not represent the behavior of adolescents outside school. This is a limitation which

should be explored in future Health research. It is a cross-sectional study and this conditions it to a relationship of temporality and causality between the variables considered. Other variables associated with the event were also not included and these could be examined by other epidemiological research of a national nature. Future research can also make use of diverse instruments that have already been validated for collecting data on bullying.

Despite these limitations, it is hoped that the results obtained by this study can provide a better understanding of the prevalence and the specificities of the practice of bullying in different regions of the national territory; and that they reinforce the need for schools diagnose, foresee and address bullying, and the possibility of partnership with health teams working in an intersectoral manner, so as to promote and encourage non-violent behaviors among Brazilian students.

### Authors' contributions

Silva JL coordinated the working group, contributed to the conception of the study, data analysis and interpretation, prepared the draft and final manuscript text. Oliveira WA coordinated the discussions about the study. Mello FCM and Silva MAI contributed to data analysis and interpretation and critical revision of the manuscript. Prado RR was responsible for the statistical analysis of the data. Malta DC guided the research and contributed to the analysis, interpretation and critical revision of the study data. All authors approved the final version of the manuscript and declared themselves to be responsible for all aspects of the study, ensuring its accuracy and integrity.

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