

# Evolution of the report of suffering bullying among Brazilian schoolchildren: National Scholl Health Survey – 2009 to 2015

*Evolução do relato de sofrer bullying entre escolares brasileiros: Pesquisa Nacional de Saúde do Escolar – 2009 a 2015*

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**ABSTRACT: Introduction:** The purpose of this paper was to compare the tendency of bullying across Brazilian capitals, considering the editions of National Scholl Health Survey (PeNSE) 2009, 2012 and 2015, and to describe the prevalence of bullying by sex, age and administrative dependence of the school in the 2015 sample.

**Methodology:** The prevalence of bullying and its 95% confidence interval (95%CI) were assessed per State capital and for all capitals. 95%CI was used to check for differences in the period. In the last edition, two samples were analyzed: sample 1 represents the students of the 9th year of Elementary School and sample 2 holds students from 13 to 17 years of age, from the 6th to 9th grade of Elementary and High Schools. **Results:** The report of suffering bullying by 9th graders in Brazilian capitals increased from 5.4% (95%CI 5.1 – 5.7), in 2009, to 7.2% (95%CI 6.6 – 7.8), in 2012, staying at 7.4% (95%CI 7.1 – 7.7) in 2015. Descriptive analysis for Brazil showed variation by age, as adolescents aged 13 years suffered more bullying than those aged 14, 15 and 16 years. Boys usually report more this problem than girls, as well as public school students, but with overlapping CI.

**Discussion:** The study pointed 37% increase in the prevalence of bullying between 2009 and 2015 in Brazilian capitals by. **Conclusion:** This study reiterates that Brazilian schools are still a space for violence reproduction, which makes it urgent to make progress in prevention and minimization of bullying at schools based on the concept of health promotion and integral care.

**Keywords:** Bullying. Adolescents. Violence. Vulnerability. Intersectoral collaboration. Survey.

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**Conflict of interests:** nothing to declare – **Financial support:** Health Surveillance Secretariat of the Ministry of Health.

**RESUMO:** *Introdução:* O estudo objetivou comparar a tendência de *bullying* nas capitais brasileiras, considerando as edições da Pesquisa Nacional de Saúde do Escolar (PeNSE) 2009, 2012 e 2015, e descrever na amostra de 2015 a prevalência do *bullying* por sexo, idade e dependência administrativa da escola. *Metodologia:* Foram comparadas as prevalências de sofrer *bullying* e seus intervalos de confiança de 95% (IC95%), por cada capital e total de capitais. Foram considerados os IC95% para verificar a ocorrência de diferenças no período. Na última edição, foram analisadas duas amostras: a amostra 1 representa os alunos do 9º ano do Ensino Fundamental e a amostra 2, alunos de 13 a 17 anos, estudantes do 6º ao 9º ano do Ensino Fundamental e do 1º ao 3º ano do Ensino Médio. *Resultados:* O relato de sofrer *bullying* entre os alunos do 9º ano das capitais brasileiras aumentou de 5,4% (IC95% 5,1 – 5,7), em 2009, para 7,2% (IC95% 6,6 – 7,8), em 2012, e 7,4% (IC95% 7,1 – 7,7), em 2015. Uma análise descritiva do Brasil apontou variação do problema com a idade e que adolescentes de 13 anos sofreram mais *bullying* que alunos de 14 a 16 anos. Meninos em geral relatam mais esse problema que as meninas, bem como alunos da escola pública, embora com sobreposição dos IC. *Discussão:* O estudo apontou aumento de 37% da prevalência de sofrer *bullying* entre 2009 e 2015 nas capitais brasileiras. *Conclusão:* Reitera-se do estudo que o contexto escolar brasileiro continua sendo um espaço de reprodução da violência, tornando-se urgente avançar na perspectiva de prevenção e minimização das situações de *bullying* na escola, fundamentada no conceito de promoção da saúde e integralidade do cuidado.

*Palavras-chave:* *Bullying*. Adolescentes. Violência. Vulnerabilidade. Intersetorialidade. Inquérito.

## INTRODUCTION

Studies have shown that children and adolescents take antisocial postures and aggressive, individualistic behaviors in school context. Violence involves several actors in the school community, with episodes of verbal, physical and symbolic assaults, thus drawing the attention of civil society<sup>1</sup>.

Violent behavior observed in schools results from an interaction between individual development and social contexts such as family, school, and community. One of the forms of school violence is bullying, a frequent phenomenon described as repeated and intentional acts of oppression, humiliation, discrimination, tyranny, aggression, and domination by persons or groups over other people or groups, who are subjugated by the force of the former<sup>2-4</sup>. Authors have pointed out that practices such as event recurrence and power abuse make the victim vulnerable<sup>4,5</sup>.

The word “bullying” comes from English “bully”. This phenomenon is understood as a subset of aggressive behaviors, characterized by repetition and power imbalance<sup>6</sup> — abuse of power, which involves dominance by the aggressor and submission, humiliation, feelings of conformism, impotence, anger, and fear by the victims<sup>7</sup>.

In Brazil, a recent Federal Law (No. 13.185) addressing bullying defines it as systematic intimidation or occurrence of physical or psychological violence in acts of humiliation or

discrimination, and also systematic intimidation on the Internet (cyberbullying) related to demeaning, inciting violence, adulterating photos and personal data in order to create psychosocial constraint<sup>8</sup>.

Bullying between students is found in most schools, regardless of students' social, cultural, and economic characteristics. Research conducted among schoolchildren in more than 40 countries has showed that 14% of 13-year-olds reported having suffered bullying in the past 2 months<sup>9</sup>, which places this practice as a global problem common to several nations and schools<sup>9,10</sup>.

Also in the scenario of school violence in Brazil, the first National School Health Survey (PeNSE) — carried out in 2009 with a sample of 60,973 students from the 9th grade of elementary school in 1,453 public and private schools, representative of the 26 Brazilian capitals and the Federal District — pointed out that 5.4% of students reported having suffered bullying almost always or always in the 30 days prior to interview<sup>11</sup>. In 2012, a new edition of PeNSE, with a sample of 109,104 students from 2,842 public and private schools, revealed a 7.2% prevalence of bullying in State capitals, that is, a growth of the problem in the country<sup>12</sup>.

In 2015, PeNSE was carried out as a new partnership between the Brazilian Institute of Geography and Statistics (IBGE) and the Ministry of Health. That being said, the present study aimed to compare the tendency of bullying across Brazilian State capitals while considering the three editions of the survey, and to describe the prevalence of bullying by sex, age and administrative dependency of schools in the 2015 sample.

## METHODOLOGY

This is a cross-sectional descriptive study, with data from the epidemiological survey PeNSE, conducted in a partnership between IBGE and the Ministry of Health. It is, therefore, an important national research aiming to provide information for the System of Surveillance for Non-Communicable Chronic Disease Risk Factors (DCNT), with updated data on the distribution of these factors in the target audience — adolescents<sup>13</sup>.

Prevalence of bullying and 95% confidence intervals (95%CI) of the three editions of PeNSE, from 2009, 2012 and 2015, were compared per State capital and between all capitals for differences in the period.

In PeNSE 2015, two samples were analyzed. Sample 1 represented students of the 9th grade of Elementary School and sample 2, students aging 13 to 17 years, from the 6th to 9th grades of Elementary School and also from the 1st to 3rd years of High School, from both public and private schools located in urban and rural areas throughout the country.

To compose sample 1, public and private schools that reported having 9th grade classes in the 2013 School Census were selected. Those with less than 15 students enrolled in the

9th grade in 2013 were excluded, as well as students from the night shift. Sample 1 was designed to estimate population parameters — proportion or prevalence — in several geographic domains: the 26 State capitals' municipalities and the Federal District, the 26 Federative Units, the five major regions of the country, and Brazil as a whole. Selection had three stages: first, the municipalities and/or groups of municipalities — Primary Sampling Units (PSU) — were drawn; then, the schools — Secondary Sampling Units (SSU); and lastly, the classes or Tertiary Sampling Units (TSU), whose students formed the sample of students in each stratum.

After data collection, sample weights were calculated in association with each student. Sample 1 had 3,160 schools, 4,418 classes, with 128,027 students enrolled. But the survey was in fact conducted in 3,040 schools with 4,159 classes, totaling 124,227 students of which only 120,122 were present on the day of data collection. The questionnaire was answered by 102,301 students. Considering all frequent schoolchildren, sample loss was about 8.5%. Of the total number of students in sample 1, 48.7% were males, 51.2% were females, 85.5% of schools were from the public network and 14.5% from the private network, 0.4% of students were under 13 years of age, 88.6% aged 13 to 15 years, and 11% were 16 years old<sup>13</sup>.

Sample 2 represents students aged 13 to 17 years who attended the 6th to 9th year of elementary school and the 1st to 3rd years of high school in public and private schools. This sample was prepared to estimate parameters of interest in each of the five major regions of the country (North, Northeast, Southeast, South and Mid-West) and, consequently, in Brazil as a whole. The survey was conducted in 380 schools with 652 classes, totaling 19,558 students, of which 16,608 were present on the day of data collection. Only students who answered the questionnaire and agreed to participate in the study, who reported gender and age and were aged 13 and 17 years, were included in the analysis (10,926 adolescents). Of the total students in sample 2, 50.3% were males, 48.7% were females, 87.1% were enrolled in public schools and 12.9% in private schools. As for age, 19.7% were 13 years old; 20.7% were 14 years old; 21.6% were 15 years old; 20.3% were 16 years old, and 17.8% were 17 years old<sup>13</sup>.

Data were collected between April and September 2015, and the same questionnaire was used for all students in samples 1 and 2. In 2015, new questions were included, some were excluded and some were adapted to help students understand, standardize response options and contemplate the methodology recommended by the Global School-based Student Health Survey (GSHS), developed by the World Health Organization (WHO)<sup>14</sup>. Certain questions of the questionnaire were added with the option of skipping, to reduce application time and minimize inconsistent answers. Most variables of PeNSE 2015 had a non-response percentage lower than 1.0%. In sample 2, although data were collected from all students in the classes selected, the analysis was carried out in the age group of 13-17 years as of the initial research planning. The self-administration questionnaire was available in a smartphone, where students fulfilled it. The information collected fed a database and was analyzed with the help of the statistical package SAS. PeNSE addresses

assorted topics such as feeding habits, physical activity, accidents, violence, mental health, sexuality, among others<sup>13</sup>.

In this study, we assessed situations of violence involving adolescents, and the following variables were addressed:

- not feeling well treated by colleagues (“IN THE PAST 30 DAYS, how often have your classmates treated you well and/or been helpful to you?”). Added under “I have not been treated well” (“Never in the past 30 days” and “Rarely in the past 30 days”); and “Yes, I have been well treated” (“Sometimes in the past 30 days”; “Most of the time in the past 30 days”; “Always in the past 30 days”);
- suffering bullying (“IN THE PAST 30 DAYS, how often did any of your schoolmates mocked or made fun of you?”). Added under “Yes” (“Almost always” or “Always”); and “No” (“Rarely in the past 30 days”, “Sometimes in the past 30 days”).

In sample 1, encompassing 9th graders, the variables and respective IC95% were described by gender, school system (public or private), region and Federation Unit. In sample 2, the variable “suffer bullying” was analyzed according to age (13 to 17 years) and school system (public or private).

The research was preceded by contact with State and Municipal Secretariats of Education and directorate boards of the schools selected in each municipality. The student’s participation was voluntary, as they were informed that they were free to not participate or not answer the questionnaire in part or entirely. Information about students and schools was collected and kept confidential.

PeNSE 2015 was approved by the National Research Ethics Committee (CONEP) of the Ministry of Health, National Health Council (CNS), which regulates and approves health research involving human beings, through Opinion 1,006,467 as of March 30, 2015. It is further stated that the research has no conflict of interest.

## RESULTS

Comparing the three editions of PeNSE, the report of bullying among 9<sup>th</sup>-grade students of Brazilian State capitals increased from 5.4% (95%CI 5.1 – 5.7) in 2009 to 7.2% (95%CI 6.6 – 7.8) in 2012, and 7.4% (95%CI 7.1 – 7.7), in 2015, a 37% growth in the period. The following capitals showed a statistically significant increase in the period: Porto Velho, Manaus, Macapá, Palmas, São Paulo and Cuiabá, while in Rio Branco and Campo Grande there was an increase with a small overlap of the CIs (Table 1).

Figure 1 describes how often schoolmates treated well and/or were helpful to students interviewed: among 9th graders in 2015, they were most often helpful in 61.2% of the cases (95%CI 61.2 – 62.5%), rarely in 30.3% (95%CI 29.7 – 30.9) and none in 7.8% (95%CI 7.4 – 8.1). The girls reported being well treated more often than boys. Figure 2 shows how often 9th graders felt humiliated by teasing or reported being

Table 1. Prevalence of bullying among 9<sup>th</sup> graders, per capitals of the Federal and Federal District Units, National School Health Survey 2009, 2012 and 2015.

	2009 (n = 60,973)		2012 (n = 109,104)		2015 (n = 102,301)	
	%	95%CI	%	95%CI	%	95%CI
Total	5.4	5.1 – 5.7	7.2	6.6 – 7.8	7.4	7.1 – 7.7
Porto Velho	4.1	3.2 – 5.0	5.1	4.1 – 6.3	7.0	5.7 – 8.3
Rio Branco	5.8	4.6 – 6.9	8.2	6.3 – 10.4	8.2	6.8 – 9.7
Manaus	4.8	3.7 – 6.0	5	4.0 – 6.2	7.8	6.9 – 8.8
Boa Vista	6.5	5.3 – 7.7	6.8	5.7 – 7.9	7.3	6.0 – 8.5
Belém	4.2	3.3 – 5.1	4.7	3.9 – 5.6	4.9	3.8 – 6.0
Macapá	4.5	3.6 – 5.4	6.4	5.4 – 7.4	6.9	5.7 – 8.1
Palmas	3.5	2.6 – 4.5	6.6	5.4 – 8.0	6.5	5.2 – 7.8
São Luís	4.8	3.9 – 5.6	5.3	4.5 – 6.3	6.3	4.9 – 7.6
Teresina	4.8	3.9 – 5.7	5	4.1 – 6.0	5.5	4.5 – 6.5
Fortaleza	4.8	3.8 – 5.9	6.4	5.4 – 7.6	6.8	5.3 – 8.2
Natal	4.2	3.3 – 5.1	6.4	5.1 – 7.9	5.4	4.4 – 6.5
João Pessoa	5.5	4.5 – 6.6	6.2	5.2 – 7.4	5.5	4.6 – 6.5
Recife	5.7	4.7 – 6.7	6.9	6.0 – 7.9	6.7	5.5 – 8.0
Maceió	5.3	4.0 – 6.5	5.1	4.2 – 6.1	5.7	4.4 – 6.9
Aracaju	4.6	3.7 – 5.6	5.6	4.6 – 6.7	6.5	5.4 – 7.7
Salvador	4.2	3.2 – 5.1	6.9	5.7 – 8.2	4.9	3.8 – 6.0
Belo Horizonte	6.9	5.9 – 7.9	7.6	6.5 – 8.8	7.6	6.4 – 8.8
Vitória	5.6	4.5 – 6.6	8.1	6.8 – 9.6	6.8	5.6 – 8.1
Rio de Janeiro	5.6	4.7 – 6.5	6.2	5.1 – 7.4	6.1	4.9 – 7.3
São Paulo	5.6	4.7 – 6.6	8	6.8 – 9.3	7.9	6.8 – 9.1
Curitiba	5.7	4.7 – 6.7	7.1	5.8 – 8.6	6.5	5.4 – 7.6
Florianópolis	4.5	3.6 – 5.4	4.9	4.1 – 5.9	4.4	3.4 – 5.5
Porto Alegre	4.7	3.6 – 5.8	4.9	3.8 – 6.2	5.3	4.0 – 6.6
Campo Grande	5.4	4.3 – 6.4	7.2	6.1 – 8.5	7.9	6.4 – 9.5
Cuiabá	4.4	3.4 – 5.3	6.1	4.8 – 7.8	8.3	6.9 – 9.7
Goiânia	5.6	4.7 – 6.5	6.9	6.0 – 7.9	7.6	6.3 – 9.0
Federal District	6.5	5.5 – 7.4	7	6.0 – 8.3	6.7	5.5 – 7.9

95%CI: 95% confidence interval.

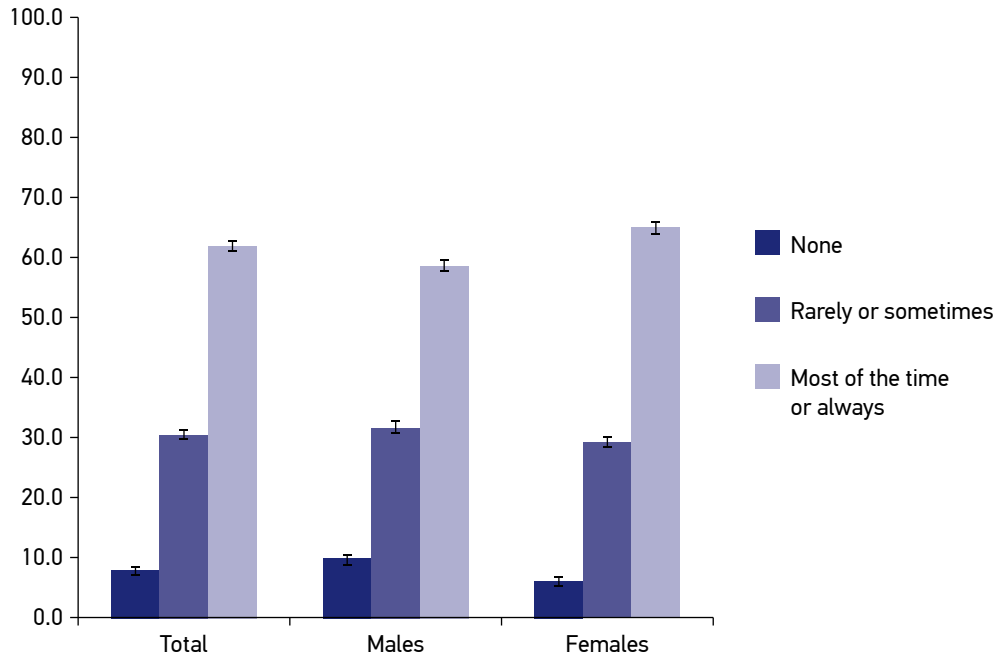


Figure 1. Frequency of schoolmates treating well and/or being helpful to students interviewed, National School Health Survey 2015, Brazil.

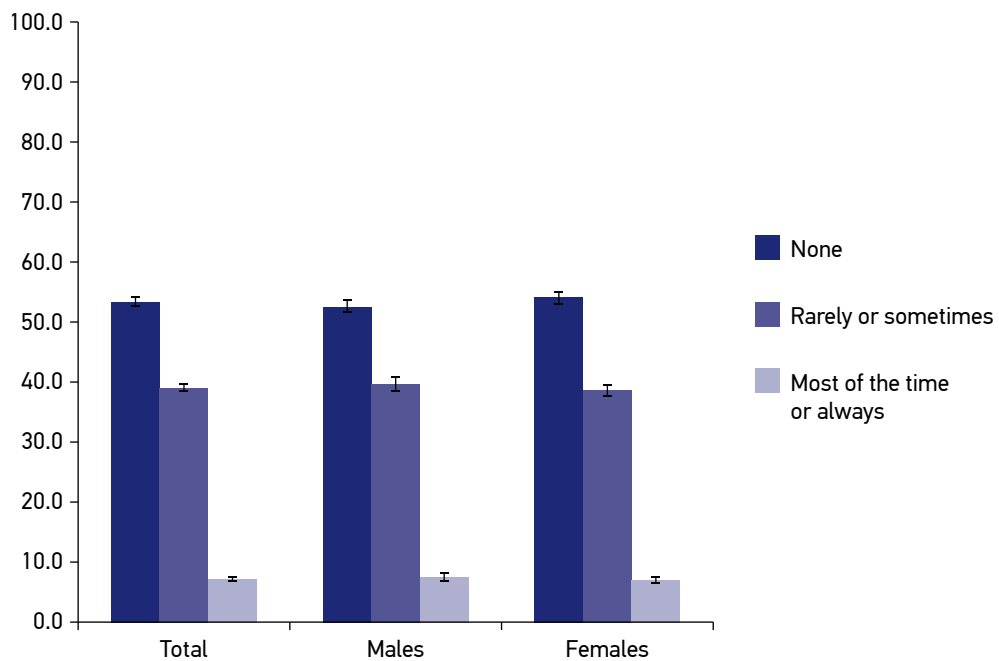


Figure 2. Frequency of 9<sup>th</sup> graders being humiliated, provoked, mocked or bullied by colleagues, National School Health Survey 2015, Brazil.

bullied. In Brazilian schools, this number was similar for both sexes, totaling 7.4% of all cases (95%CI 7.1 – 7.7).

In 2015, the prevalence of bullying practiced by school colleagues among students in the 9th year sample 1 for Brazil, regions and states was 7.4% (95%CI 7.1 – 7.7). No difference was found between genders: boys with 7.6% (95%CI 7.2 – 8.1) and girls with 7.2% (95%CI 6.7 – 7.6). Below the national average, for both sexes, were the states of Piauí, Pará, Santa Catarina, Rio Grande do Norte, Alagoas and Sergipe; and above the national average, the states of Paraná and São Paulo. Among girls, the the highest prevalence values regarded Paraná, with 9.5% (95%CI 7.8 – 11.2) and São Paulo, with 9.2% (95%CI 7.6 – 10.8). Among boys, the state with the highest prevalence was Mato Grosso do Sul, with 9.8% (95%CI 8.1 – 11.5), at the CI limit. Frequencies between public and private schools were, respectively, 7.6% (95%CI 7.2 – 7.9) and 6.5% (95%CI 5.7 – 7.2), with overlapping CIs (Table 2).

Table 3 shows the prevalence of bullying being practiced by school colleagues, according to the specific ages of sample 2, by age for Brazil and regions. At age 13, the prevalence in Brazil was 9.6% (95%CI 7.7 – 11.4); for the North region, 7.9% (95%CI 4.8 – 11); Northeast, 10.8% (95%CI 7.0 – 4.7); Southeast, 10.0% (95%CI 6.6 – 13.4); South, 7.6% (95%CI 5.0 – 10.3); and Mid-West, 8.3% (95%CI 5.7 – 10.8).

At age 14, the prevalence was 7.1% (95%CI 5.0 – 9.3), with no statistically significant differences per region. At age 15, the prevalence was 5.8% (95%CI, 4.4 – 7.2), also with no statistically significant difference between regions. At age 16, the prevalence was 5.7% (95%CI 4.3 – 7.0), with no statistically significant differences between regions. At age 17, the prevalence was 4.6% (95%CI 3.3 – 6.0), also with no statistically significant differences between regions. The differences were statistically significant only according to age, and younger adolescents (13 years), who reported suffering bullying more than interviewees aged 15, 16 and 17 years (Table 3).

Boys, in general, report more bullying than girls, but with overlapping of ICs per gender in all ages surveyed. At age 13, prevalence among males was 10.7% (95%CI 8.2 – 13.1) and among females 8.4% (95%CI 6.5 – 10.4); at age 14, 8.3% for males (95%CI 5.4 – 11.3) and 5.8% for females (95%CI 3.9 – 7.8); at age 15, 6.3% in males (95%CI 4.5 – 8.0) and 5.3% in females (95%CI 3.7 – 7.0); at age 16, 5.7% for males (95%CI 3.8 – 7.7) and 5.6% for females (95%CI 3.5 – 7.6); and at age 17, 4.0% in males (95%CI 2.1 – 5.9) and 5.3% in females (95%CI 3.2 – 7.3) (as shows Table 3).

According to the administrative dependence of schools, students aged 13 from public schools reported bullying in 10.2% of the cases (95%CI 8.1 – 12.3) and those from private school in 6.1% of cases (95%CI 3.3 – 8,8). At all subsequent ages, bullying had a downwards tendency as age increased, being slightly higher in public schools, except at the age of 17, when the prevalence in private schools appeared a little higher (8.1%, 95%CI 1.7 – 14.5), when compared to those of the public system (4.3%, 95%CI 3 – 5.5). However, differences were not statistically significant for all ages, in both public and private schools.



Table 2. Frequency of bullying among 9<sup>th</sup> graders, in Brazil's major regions and States, National School Health Survey 2015, Brazil.

	Total			Males			Females			Public schools			Private schools		
	%	95%CI		%	95%CI		%	95%CI		%	95%CI		%	95%CI	
Brazil	7.4	7.1	7.7	7.6	7.2	8.1	7.2	6.7	7.6	7.6	7.2	7.9	6.5	5.7	7.2
Rondônia	6.1	5.1	7.1	6.8	5.4	8.2	5.4	4.0	6.8	6.0	5.0	7.0	7.4	4.1	10.7
Acre	8.6	7.6	9.7	8.9	7.4	10.3	8.4	7.1	9.7	8.7	7.6	9.7	8.2	4.7	11.6
Amazonas	7.4	6.5	8.3	7.8	6.4	9.2	7.0	5.8	8.2	7.3	6.4	8.3	8.3	5.9	10.8
Roraima	7.6	6.5	8.6	6.8	5.7	7.9	8.4	6.8	10.0	7.4	6.3	8.6	10.0	8.6	11.4
Pará	5.1	4.2	6.1	5.1	3.8	6.5	5.1	3.9	6.4	5.0	4.0	6.0	6.4	3.5	9.2
Amapá	6.5	5.6	7.5	6.8	5.5	8.2	6.2	5.1	7.4	6.3	5.3	7.3	8.6	5.4	11.8
Tocantins	6.6	5.4	7.8	6.9	5.5	8.4	6.4	4.9	7.9	6.8	5.6	8.1	4.2	1.5	6.9
Maranhão	6.8	5.7	7.9	6.9	5.3	8.5	6.7	5.3	8.1	6.6	5.4	7.7	9.2	6.1	12.3
Piauí	4.7	3.9	5.5	5.0	3.8	6.1	4.5	3.5	5.6	4.5	3.6	5.3	6.5	4.3	8.7
Ceará	6.3	5.3	7.3	7.5	6.1	8.8	5.2	3.9	6.5	6.1	5.0	7.1	7.9	4.8	10.9
Rio Grande do Norte	5.3	4.4	6.2	6.0	4.8	7.3	4.7	3.5	5.9	5.0	4.0	6.0	6.8	4.8	8.8
Paraíba	6.5	5.7	7.4	7.4	6.0	8.8	5.8	4.6	6.9	6.4	5.4	7.4	7.2	5.6	8.8
Pernambuco	7.4	6.4	8.4	8.8	7.2	10.4	6.1	5.0	7.1	7.4	6.3	8.4	7.5	5.0	10.0
Alagoas	5.4	4.6	6.3	5.7	4.1	7.3	5.2	4.1	6.3	5.1	4.1	6.1	7.0	5.1	8.8
Sergipe	6.1	5.3	6.9	6.4	5.2	7.6	5.8	4.9	6.8	6.0	5.1	6.9	6.3	4.9	7.8
Bahia	6.5	5.5	7.5	7.4	6.1	8.7	5.8	4.5	7.0	6.5	5.4	7.6	6.4	3.9	8.8
Minas Gerais	7.8	6.6	8.9	8.3	6.7	9.9	7.3	5.8	8.7	7.9	6.8	9.1	6.1	2.7	9.5
Espírito Santo	7.4	6.2	8.5	7.6	6.1	9.2	7.1	5.5	8.7	7.7	6.4	9.0	5.0	3.5	6.5
Rio de Janeiro	7.2	6.2	8.2	6.7	5.4	7.9	7.8	6.4	9.1	7.4	6.1	8.6	6.8	5.3	8.3
São Paulo	9.0	8.0	10.0	8.8	7.4	10.2	9.2	7.6	10.8	9.7	8.6	10.9	5.3	3.1	7.4
Paraná	8.8	7.7	9.8	8.1	6.5	9.7	9.5	7.8	11.2	9.1	7.9	10.2	7.0	5.3	8.7
Santa Catarina	5.2	4.1	6.3	5.1	3.5	6.6	5.3	3.9	6.7	5.0	3.8	6.2	6.8	5.0	8.7
Rio Grande do Sul	6.3	5.1	7.5	5.8	4.0	7.7	6.7	4.9	8.6	6.2	5.0	7.5	7.3	2.8	11.7
Mato Grosso do Sul	8.4	7.3	9.4	9.8	8.1	11.5	7.0	5.6	8.5	8.4	7.3	9.5	7.7	3.9	11.6
Mato Grosso	8.4	7.0	9.8	8.2	6.2	10.2	8.6	6.9	10.3	8.5	7.0	10.0	7.0	2.3	11.7
Goiás	8.3	7.3	9.3	8.9	7.5	10.3	7.6	6.3	9.0	8.5	7.4	9.7	6.8	5.3	8.4
Federal District	6.7	5.5	7.9	7.4	5.4	9.3	6.1	4.6	7.6	6.9	5.6	8.2	6.1	3.5	8.8

95%CI: 95% confidence interval.

Table 3. Frequency of students undergoing bullying by school friends, aging 13 to 17 years, Brazil 2015.

		Total		Males		Females		Public school		Private school	
		%	95%CI	%	95%CI	%	95%CI	%	95%CI	%	95%CI
13 years	Brazil	9.6	(7.7 – 11.4)	10.7	(8.2 – 13.1)	8.4	(6.5 – 10.4)	10.2	(8.1 – 12.3)	6.1	(3.3 – 8.8)
	North	7.9	(4.8 – 11.0)	7.9	(4.5 – 11.3)	7.9	(3.5 – 12.3)	8.8	(5.5 – 12.2)	3.8	(– 8.2)
	Northeast	10.8	(7.0 – 14.7)	12.6	(7.2 – 18.1)	9.2	(4.7 – 13.6)	10.9	(6.7 – 15.1)	9.7	(4.4 – 15.0)
	Southeast	10.0	(6.6 – 13.4)	11.3	(6.8 – 15.8)	8.5	(5.4 – 11.7)	11.4	(7.2 – 15.5)	5.3	(0.8 – 9.8)
	South	7.6	(5.0 – 10.3)	8.5	(5.2 – 11.7)	6.8	(2.9 – 10.6)	7.9	(5.0 – 10.8)	4.9	(1.0 – 8.8)
	Mid-west	8.3	(5.7 – 10.8)	8.2	(4.6 – 11.7)	8.4	(4.7 – 12.1)	8.1	(5.2 – 11.1)	8.8	(4.8 – 12.8)
14 years	Brazil	7.1	(5.0 – 9.3)	8.3	(5.4 – 11.3)	5.8	(3.9 – 7.8)	7.3	(5.0 – 9.6)	5.4	(2.2 – 8.6)
	North	5.0	(2.9 – 7.1)	5.0	(2.3 – 7.8)	4.9	(2.3 – 7.5)	5.0	(2.7 – 7.2)	5.2	(0.3 – 10.0)
	Northeast	6.7	(3.7 – 9.7)	6.8	(3.4 – 10.2)	6.7	(2.8 – 10.5)	6.9	(3.8 – 10.1)	3.5	(– 8.4)
	Southeast	8.1	(3.3 – 12.8)	11.7	(4.8 – 18.6)	4.4	(0.8 – 8.0)	8.3	(3.0 – 13.5)	6.2	(– 13.4)
	South	6.6	(3.4 – 9.7)	5.4	(1.5 – 9.3)	7.7	(3.9 – 11.6)	7.0	(3.6 – 10.4)	1.9	(– 4.8)
	Mid-west	7.6	(5.3 – 9.8)	7.1	(4.2 – 9.9)	8.1	(4.3 – 11.9)	7.4	(4.9 – 9.9)	8.6	(3.5 – 13.7)
15 years	Brazil	5.8	(4.4 – 7.2)	6.3	(4.5 – 8.0)	5.3	(3.7 – 7.0)	5.9	(4.4 – 7.5)	5.0	(3.3 – 6.7)
	North	7.4	(0.6 – 14.2)	8.0	(1.4 – 14.6)	6.7	(– 14.2)	8.2	(0.9 – 15.6)	...	...
	Northeast	6.6	(3.9 – 9.2)	7.0	(3.5 – 10.5)	6.1	(3.1 – 9.2)	6.8	(4.0 – 9.7)	3.6	(– 7.4)
	Southeast	4.9	(2.8 – 6.9)	4.6	(1.8 – 7.4)	5.1	(2.3 – 7.9)	4.6	(2.1 – 7.0)	6.1	(3.6 – 8.7)
	South	5.9	(3.9 – 7.9)	8.2	(5.1 – 11.3)	3.4	(0.7 – 6.0)	6.0	(3.6 – 8.5)	5.2	(3.7 – 6.6)
	Mid-west	6.1	(3.8 – 8.5)	6.7	(3.5 – 9.9)	5.6	(2.6 – 8.5)	6.5	(3.8 – 9.2)	3.8	(0.5 – 7.1)
16 years	Brazil	5.7	(4.3 – 7.0)	5.7	(3.8 – 7.7)	5.6	(3.5 – 7.6)	5.8	(4.3 – 7.4)	4.5	(2.4 – 6.7)
	North	4.8	(1.9 – 7.7)	4.5	(0.7 – 8.3)	5.0	(2.1 – 8.0)	4.4	(1.3 – 7.5)	8.9	(2.9 – 15.0)
	Northeast	4.5	(2.6 – 6.5)	5.2	(1.7 – 8.6)	3.9	(1.0 – 6.8)	4.9	(2.7 – 7.1)	2.4	(– 5.4)
	Southeast	5.8	(3.1 – 8.5)	5.6	(1.9 – 9.3)	5.9	(2.0 – 9.9)	5.7	(2.7 – 8.8)	6.1	(2.4 – 9.8)
	South	7.9	(5.2 – 10.7)	7.2	(3.1 – 11.4)	8.6	(4.6 – 12.7)	8.9	(5.7 – 12.0)	3.3	(1.1 – 5.4)
	Mid-west	6.1	(3.8 – 8.4)	7.7	(4.2 – 11.2)	4.6	(1.4 – 7.8)	6.4	(3.9 – 8.9)	4.0	(– 9.1)
17 years	Brazil	4.6	(3.3 – 6.0)	4.0	(2.1 – 5.9)	5.3	(3.2 – 7.3)	4.3	(3.0 – 5.5)	8.1	(1.7 – 14.5)
	North	3.0	(1.0 – 5.0)	2.3	(– 5.1)	3.9	(0.9 – 6.8)	3.0	(1.0 – 5.1)	...	...
	Northeast	6.2	(3.2 – 9.2)	6.8	(1.6 – 12.0)	5.7	(3.0 – 8.3)	6.9	(3.5 – 10.2)	2.3	(– 5.2)
	Southeast	4.4	(2.2 – 6.7)	2.8	(0.6 – 5.0)	6.1	(1.8 – 10.4)	3.3	(1.6 – 5.0)	14.2	(5.0 – 23.4)
	South	3.9	(1.7 – 6.1)	3.7	(0.7 – 6.7)	4.1	(0.9 – 7.2)	3.7	(1.4 – 6.0)	7.7	(0.0 – 15.5)
	Mid-west	3.1	(0.9 – 5.3)	3.3	(0.3 – 6.2)	3.0	(– 6.2)	2.9	(0.6 – 5.2)	5.2	(– 11.7)

95%CI: 95% confidence interval.

## DISCUSSION

This study showed a 37% increase in the prevalence of bullying among 9th graders between 2009 and 2015 in Brazilian State capitals. In 2015, 7.4% of schoolchildren reported bullying. The States of São Paulo and Paraná had higher numbers. In the sample of schoolchildren aged 13 to 17 years, the prevalence at 13 years was higher, tending to decline among older students, being statistically lower in 15, 16 and 17 year-olds. Boys, in general, report more bullying than girls, but with ICs overlapping. The practice was more reported in public schools, but with no statistical difference.

Bullying persists in the country in an upwards trend, as corroborated by national and international research<sup>9,15</sup>. Bullying can be practiced in several spaces and the school is where these social-life behaviors are reproduced<sup>16</sup>. Bullying is an expression of prejudice, intolerance, diversity denial, and it is noteworthy that it manifests at such early ages<sup>9</sup>.

Although our study shows that the prevalence of bullying is growing, it is still lower than other studies report. A study conducted in Belo Horizonte showed a prevalence of 26.4%, with no variation as per sex and age<sup>15</sup>, which in part can be attributed to differences in research methodology and in the questionnaire used.

PeNSE has showed that younger students have been bullied at schools. Similar age-related behavior was found in a WHO-led survey with adolescents conducted in several countries, with a prevalence of 14% among 13-year-olds and dropping to 10% among 15 year-olds<sup>9</sup>. Also in Spain, a study indicated a 30% prevalence of bullying between the ages of 13 and 14 years, which drops among 15 and 16 year-olds<sup>16</sup>.

The variations between States were not significant, with São Paulo and Paraná presenting higher prevalence than other states. WHO also identified wide variations across countries, with Sweden being the lowest (4.5%) and Lithuania the highest (29%), which may be justified by varied cultural perspectives, as the instrument implemented by WHO was the same for different countries<sup>9</sup>.

A study carried out in Belo Horizonte reported that the space where bullying occurs varies according to age, and younger adolescents reported more occurrences in school environment, while older adolescents included other places in their reports, such as the street, work place etc.<sup>15</sup>.

Authors have reported that the occurrence of noncordial treatment among schoolmates results in impairments in students' learning process, demotivation and insecurity at school<sup>17</sup>. It is understood that situations of bullying and violence between peers reflect the social contexts of exclusion and prejudice in which the adolescent is inserted, be it the family, the school or the society. In fact, this phenomenon should not be considered a normal characteristic of the development of children and adolescents, but rather an indicator of vulnerability that may result in other violent behaviors, including carrying weapons, frequent physical assaults and aggression-related injuries<sup>18</sup>.

In the context of Brazil, school violence has been the object of recent studies, and a systematic review<sup>19</sup> has identified that bullying is more frequently associated with males and situations of violence in the family. Other studies also indicated higher prevalence of victimization among boys<sup>9,16,20</sup>, while an international study<sup>21</sup> identified cyberbullying at high rates among girls. The present descriptive study found no significant differences between genders, which still needs to be confirmed in multi-variate analyzes.

Also in the descriptive analysis, no differences were found in prevalence between public and private schools. Other studies<sup>22,23</sup> argue that bullying is a phenomenon that crosses society, which manifests in most schools, regardless of their administrative dependencies (whether public or private) and the social, cultural and economic characteristics of students.

In terms of prevention policies, in 2015 a program for the systematic intimidation of bullying was established through Law 13.185<sup>8</sup>, which seeks to prevent this practice across the country, becoming a legal framework in its confrontation.

PeNSE is the largest school survey ever conducted in the country. It is also remarkable because of its sustainability, being in its third edition. In 2015, with methodological advances such as sampling by age, which allows to compare behaviors among different ages, sample 2 had a higher prevalence of bullying among younger students reported. It is recommended to maintain this theme in the upcoming editions of the survey, in order to monitor these events. There are, however, limits, such as not including out-of-school adolescents, who are more vulnerable to all forms of violence. In addition, the time trend represented here refers to changes in population over time, not to individuals, since cross-sectional studies use a sample that is representative of the population each year of the survey.

## CONCLUSION

It is a fact that bullying exposes schoolchildren to vulnerability, having family, school, social and cultural contexts as determinant factors<sup>24</sup>. However, it is known that the school is not responsible for the production of violence in this context alone, since the phenomenon is complex, dynamic, multifaceted and with many causes, also rooting from macrosocial and economic issues and, therefore, requiring intersectoral confrontations and systematic educational actions through valorization of youth protagonism<sup>12,23</sup>.

This study reiterates that Brazilian schools are still a space for violence reproduction, which makes it urgent to make progress in prevention and minimization of bullying at schools based on the concept of health promotion and integral care. Violence is considered a sociocultural phenomenon that permeates society, institutions, groups and subjects, so it must be approached and studied in a holistic and macrostructural fashion.

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Received on: 01/23/2017

Final version presented on: 03/07/2017

Accepted on: 03/08/2017

