

## Factors associated with family violence against adolescents based on the results of the National School Health Survey (PeNSE)

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**Abstract** *The study analyzes factors associated with family aggression against adolescents. Data from the National School Health Survey for 2015 were analyzed, and the prevalence of physical aggression per family was calculated according to four blocks. The bivariate analysis was performed, calculating the unadjusted Odds Ratio (OR) within each block and the multivariate regression. Familial aggression was reported by 14.5%. The variables associated with the model were: female, black, yellow, brown, mothers with no higher educational level, adolescent workers (OR 2.10 CI 95% 1.78-2.47). In the family context, they remained associated with aggression, lack of parents “understanding” (OR 1.71 CI95% 1.63 -1.80) and their intrusion into adolescent’s privacy (OR 1.80 CI95% 1.70 -1, 91). Report of missing school (OR1.43 CI95% 1.36-1.50). Among the behaviors: smoking (OR 1.23 CI95% 1.12-1.34), alcohol (OR 1.49 CI95% 1.41-1.57), drug experience (OR 1.24 CI95% 1, 15-1,33), early sexual intercourse (OR 1.40 CI95% 1.33 -1.48), reports of loneliness, insomnia and bullying (ORa 2.14 CI95% 2.00-2.30). It is concluded by the association between violence and gender, greater victimization of girls, living in unfavorable social and family contexts.*

**Key words** *Domestic violence, Maltreatment, Adolescent, Smoking, Survey*

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## Introduction

Abuse and maltreatment in the home and family is a worldwide problem, which explains why the World Health Organization (WHO) regards these and other forms of domestic violence as a public health problem<sup>1</sup>.

Intrafamily aggression is a form of domestic violence that refers to deprivation, neglect and aggressive acts of physical or sexual domination committed by one family member against another<sup>1,2</sup>. It is known that, although often silent or camouflaged, domestic violence is not uncommon and predominantly affects women, the elderly, children, and adolescents<sup>1,2</sup>. Adults who experienced physical violence during childhood or adolescence are six times more likely to be sexually violated at some time in their life<sup>3</sup>. Furthermore, studies show that men and women who experienced physical violence during childhood show symptoms of psychic suffering<sup>4</sup>. For these reasons, the issue of domestic violence is not restricted to the private sphere since it constitutes a violation of rights<sup>5</sup>.

The first three editions (2009, 2012 and 2015) of the Brazilian National School Health Survey (*Pesquisa Nacional de Saúde do Escolar* - PeNSE) encompassed violence against adolescents committed by family members<sup>6-8</sup>. Survey findings show that the prevalence of this form of violence rose from 10.6% in 2012 to 14.5% in 2015, equivalent to a 36% increase, thus warranting further research to gain a deeper understanding of this issue.

It is known that being excessively authoritarian, harsh discipline and physical and psychological punishment can negatively affect the physical and emotional development of children and adolescents<sup>9</sup>. Specialist literature has also shown that violence against adolescents is also associated with other problems such as psychosomatic disorders, depression, isolation, poor academic performance and learning difficulties<sup>5,10,11</sup>, bullying<sup>11</sup>, and substance use<sup>10</sup>. However, important aspects of this problem, such as the relationship between violence and child labor, parental schooling, family background etc., remain relatively unexplored.

Additional questions related to this problem were included in the 2015 PeNSE survey questionnaire for the purposes of generating evidence to inform violence prevention programs<sup>8</sup>.

In light of the above, the present study explored factors associated with physical violence against adolescents committed by family members using data produced by the 2015 PeNSE.

## Methodology

This study used secondary data generated by the 2015 PeNSE<sup>8</sup>, a cross-sectional study conducted by the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística* - IBGE) in partnership with the Ministry of Health. The survey sample encompasses eighth grade students from across Brazil, including all the country's 26 states and their capital cities and the Federal District, thus allowing for the estimation of prevalence across a range of geographical domains<sup>8</sup>.

A total of 102,301 eighth grade students from 3,040 schools and 4,159 classes took part in the survey. All students from the randomly selected classes present on data collection day were invited to participate in the study. The sample loss rate due to students declining to participate in the study was 8.5%. The final sample had the following characteristics: 48.7% were males and 51.2% females; 85.5% of the sample studied in public schools and 14.5% in private schools; 0.4% were aged under 13 years, 88.6% between 13 and 15 years, and 11% were 16 years and over. A more detailed description of the sample can be found elsewhere<sup>8</sup>.

The outcome having experienced physical aggression committed by a family member was determined using the following question: "over the last 30 days, how many times have you been physically abused by an adult from your family?" Answers were categorized as "No" (not at all) and "Yes" (once, twice or three times, four times or more).

Positive and negative associations were tested using the following independent variables divided into four categories<sup>10</sup>:

I) Sociodemographic characteristics: sex (male/female); age ( $\leq 13$  years, 13 years, 14 years, 15 years, and 16 years and over); skin color/race (white, black, brown, yellow, and indigenous); type of school (public/private); maternal schooling (without schooling, primary not completed/completed, secondary not completed/completed, higher education not completed/completed; currently working (yes/no); and paid work (yes/no).

II) Family background: living with mother and/or father, categorized as yes (living with mother and father, living with mother, or living with father) or no (living without mother and father); family supervision, categorized as yes (parents or guardians know what the adolescent is doing always or most of the time) or no (never, rarely, sometimes); skipping lessons without

parental permission, categorized as no (never) or yes (once or twice, three or more times in the last 30 days); do your parents understand your problems, categorized as no (never, rarely, sometimes) or yes (most of the time or always); do your parents go through your things, categorized as no (never, rarely, sometimes) or yes (most of the time or always); do you spend time together with your parents/guardians during mealtimes, categorized as no (twice or under twice per week, three to four times per week, five times or more per week); have you been in the presence of people who smoke (yes/no); parents/guardians smoke (yes/no).

III) Mental health: feeling lonely, categorized as no (never, sometimes in the last 12 months) or yes (most of the time, always in the last 12 months); insomnia, categorized as no (never, sometimes in the last 12 months) or yes (most of the time, always in the last 12 months); friends, categorized as no (none) or yes (one, two, three, or more friends); bullied in the last 30 days (yes/no).

IV) Risk behaviors and lifestyle habits: smoking in the last 30 days or regular smoking (yes/no); regular drinking or drinking in the last 30 days (yes/no); having tried an illicit drug at some time (yes/no); having had sexual relations (yes/no); eating fruit on a regular basis (more than five times per week); daily physical activity (yes/no).

Prevalence of violence against adolescents committed by family members was initially calculated for each variable. Binary logistic regression analysis was then performed to compute odds ratios (OR). Subsequently, multiple logistic regression analysis was performed sequentially with variables that had p-values of < 0.20, beginning with the sociodemographic variables, followed by family background, mental health, and behaviors and lifestyle habits, thus ensuring that the variables involved in the model were mutually adjusted. For the final model, statistically significant variables with p-values of < 0.05 were maintained.

The analyses took into account the sample structure and weights assigned to produce population estimates. The analyses were performed using SPSS Statistics 20.

The students were informed about the study and advised that their participation was voluntary and that they may quit at any time if they did not feel comfortable answering the questions. Students who gave their consent answered an individual questionnaire using a smartphone under the supervision of IBGE researchers. The PeNSE was conducted in accordance with the

National Health Council resolution Guidelines and Regulations for Research Involving Human Beings and was approved by the National Research Ethics Committee of the Ministry of Health (*Comissão Nacional de Ética em Pesquisas do Ministério da Saúde - CONEP/MS*) (approval March 30, 2015).

## Results

Physical aggression committed by family members was self-reported by 14.5% of the school-children (CI95% 14.3-14.7). The outcome was more common among female students (15.1%; CI95% 14.8-15.4), 15-year-olds (16.2%; CI95% 15.3-17.0), and those aged 16 years and over (17.4%; CI95% 16.7-18.1). Physical aggression was more common among black, yellow, brown and indigenous students than among white students. The outcome was less common among students studying at private schools than those at public schools and among those whose mothers had some level of schooling compared to those whose mothers had no schooling. Physical aggression was also more common among students who worked (20.8%; CI95% 20.2-21.5) and those who had paid work than those who did not work (Table 1).

With regard to family background, physical aggression was more common among students who skipped lessons without parental permission (22.4%; CI95% 21.9 -23.0), whose parents went through their things (24.6%; CI95% 23.8 - 25.3), who reported having been in the presence of people who smoke, and whose parents/guardians smoked (17.6%; CI95% 17.2 -18.1). Physical aggression was less common among students who lived with their parents, whose parents understood their problems, who were supervised by their parents/guardians (spent time together with their parents during mealtimes), and whose parents knew where they were and who their friends are (Table 2).

Physical aggression was more common among students who reported risk behaviors (regular smoking and drinking, having tried an illicit drug, having had sexual relations). No association was found between physical aggression and healthy behaviors such as eating fruit on a regular basis and daily physical activity (Table 3). Physical aggression was more common among students who reported feeling lonely, suffering from insomnia, having no friends, and being bullied (Table 4).

**Table 1.** Prevalence (%) of being physically abused by a family member and associated sociodemographic factors (crude ORs) among eight-grade students (National School Health Survey, 2015).

| Variable           | Outcome |          |       |      |          |       | P - value |
|--------------------|---------|----------|-------|------|----------|-------|-----------|
|                    | %       | CI (95%) |       | OR   | CI (95%) |       |           |
|                    |         | Lower    | Upper |      | Lower    | Upper |           |
| Total              | 14.5    | 14.3     | 14.7  |      |          |       |           |
| Age                |         |          |       |      |          |       |           |
| < 13 years         | 13.3    | 10.3     | 17.0  | 0.95 | 0.71     | 1.27  | 0.737     |
| 13 years           | 13.9    | 13.1     | 14.7  | 1.00 |          |       |           |
| 14 years           | 13.5    | 12.9     | 14.1  | 0.97 | 0.92     | 1.02  | 0.213     |
| 15 years           | 16.2    | 15.3     | 17.0  | 1.20 | 1.13     | 1.27  | < 0.001   |
| 16 years and over  | 17.4    | 16.7     | 18.1  | 1.31 | 1.23     | 1.40  | < 0.001   |
| Sex                |         |          |       |      |          |       |           |
| Male               | 13.8    | 13.4     | 14.3  | 0.90 | 0.87     | 0.93  | < 0.001   |
| Female             | 15.1    | 14.8     | 15.4  | 1.00 |          |       |           |
| Color/race         |         |          |       |      |          |       |           |
| White              | 13.1    | 12.0     | 14.2  | 1.00 |          |       |           |
| Black              | 16.8    | 15.4     | 18.3  | 1.35 | 1.28     | 1.42  | < 0.001   |
| Yellow             | 18.1    | 16.3     | 19.9  | 1.47 | 1.35     | 1.60  | < 0.001   |
| Brown              | 14.5    | 13.4     | 15.7  | 1.13 | 1.09     | 1.18  | < 0.001   |
| Indigenous         | 16.1    | 14.9     | 17.4  | 1.28 | 1.16     | 1.41  | < 0.001   |
| School             |         |          |       |      |          |       |           |
| Public             | 14.8    | 14.1     | 15.4  | 1.00 |          |       |           |
| Private            | 13.0    | 12.4     | 13.6  | 0.86 | 0.82     | 0.91  | < 0.001   |
| Works              |         |          |       |      |          |       |           |
| No                 | 13.5    | 13.0     | 14.1  | 1.00 |          |       |           |
| Yes                | 20.8    | 20.2     | 21.5  | 1.68 | 1.61     | 1.76  | < 0.001   |
| Paid work          |         |          |       |      |          |       |           |
| No                 | 13.8    | 13.2     | 14.3  | 1.00 |          |       |           |
| Yes                | 19.9    | 19.2     | 20.6  | 1.56 | 1.48     | 1.63  | < 0.001   |
| Maternal schooling |         |          |       |      |          |       |           |
| No schooling       | 19.5    | 18.3     | 20.8  | 1.62 | 1.50     | 1.76  | < 0.001   |
| Primary            | 15.1    | 14.4     | 15.8  | 1.19 | 1.13     | 1.26  | < 0.001   |
| Secondary          | 14.6    | 13.9     | 15.4  | 1.15 | 1.09     | 1.22  | < 0.001   |
| Higher education   | 13.0    | 12.5     | 13.5  | 1.00 |          |       |           |

The crude ORs for each category are shown in Tables 1, 2, 3, and 4. The following associations remained after multiple logistic regression analysis (Table 5):

I) Sociodemographic characteristics: females were more likely to experience violence than males (OR = 1 reference and ORa 0.94 CI95% 0.90 -0.99, respectively); 13-year-olds (OR = 1 reference) were more likely to experience violence than 14-year-olds (ORa 0.82 CI95% 0.77 - 0.88), 15-year-olds (ORa 0.80 CI95% 0.74 - 0.86), and students aged 16 year and over (ORa 0.73 CI95% 0.67-0.79); black, yellow, and brown students were more likely to experience violence (ORa 1.12 CI95% 1.04 - 1.21, ORa 1.21 CI95%

1.09-1.35, and ORa 1.08 CI95% 1.02-1.13, respectively) than white students; students studying at private schools were more likely to experience violence (ORa 1.13 CI95% 1.05-1.20) than those at public schools; students whose mothers had no schooling were more likely to experience violence (ORa 1.41 CI95% 1.29 - 1.55) than those whose mothers had completed primary school (ORa 1.13 CI95% 1.06 - 1.21) and secondary school (ORa 1.13 CI95% 1.06 - 1.20); students who worked were more likely to experience violence (ORa 2.10 CI95% 1.78 - 2.47) than those who did not work.

II) Family background: students who lived with their parents were more likely to experience

**Table 2.** Prevalence (%) of being physically abused by a family member and associated family characteristics (crude ORs) among eight-grade students (National School Health Survey, 2015).

| Variable  | Outcome |          |       |      |          |       |           |
|---|---------|----------|-------|------|----------|-------|-----------|
|   | %       | CI (95%) |       | OR   | CI (95%) |       | P - value |
|   |         | Lower    | Upper |      | Lower    | Upper |           |
| Living with mother and/or father  |         |          |       |      |          |       |           |
| No  | 17.2    | 16.2     | 18.2  | 1.00 |          |       |           |
| Yes   | 14.3    | 14.1     | 14.5  | 0.81 | 0.75     | 0.86  | < 0.001   |
| Family supervision  |         |          |       |      |          |       |           |
| No  | 21.2    | 20.6     | 21.8  | 1.00 |          |       |           |
| Yes   | 11.1    | 10.9     | 11.3  | 0.47 | 0.45     | 0.48  | < 0.001   |
| Skipping lessons  |         |          |       |      |          |       |           |
| No  | 12.1    | 11.7     | 12.5  | 1.00 |          |       |           |
| Yes   | 22.4    | 21.9     | 23.0  | 2.10 | 2.02     | 2.18  | < 0.001   |
| Parents understand children's problems                                  |         |          |       |      |          |       |           |
| No (never, rarely, sometimes)   | 18.5    | 18.0     | 19.1  | 2.22 | 2.14     | 2.31  | < 0.001   |
| Yes - (most of the time or always)                                      | 9.3     | 9.0      | 9.6   | 1.00 |          |       |           |
| Parents go through children's things                                    |         |          |       |      |          |       |           |
| No (never, rarely, sometimes)   | 13.0    | 12.5     | 13.5  | 1.00 |          |       |           |
| Yes - (most of the time or always)                                      | 24.6    | 23.8     | 25.3  | 2.17 | 2.08     | 2.27  | < 0.001   |
| Do you spend time together with your parents/guardians during mealtimes |         |          |       |      |          |       |           |
| No  | 24.2    | 23.0     | 25.4  | 2.20 | 2.06     | 2.35  | < 0.001   |
| Twice or under twice per week   | 18.8    | 18.2     | 19.5  | 1.60 | 1.53     | 1.67  | < 0.001   |
| Three to four times per week  | 17.5    | 16.3     | 18.8  | 1.46 | 1.34     | 1.60  | < 0.001   |
| Five times or more per week   | 12.7    | 12.4     | 12.9  | 1.00 |          |       |           |
| Had been in the presence of people who smoke                            |         |          |       |      |          |       |           |
| No  | 11.2    | 10.8     | 11.5  | 1.00 |          |       |           |
| Yes   | 17.7    | 17.4     | 18.1  | 1.72 | 1.66     | 1.78  | < 0.001   |
| Parents/guardians smoke   |         |          |       |      |          |       |           |
| No  | 13.0    | 12.5     | 13.4  | 1.00 |          |       |           |
| Yes   | 17.6    | 17.2     | 18.1  | 1.44 | 1.38     | 1.49  | < 0.001   |

violence (ORa 1.15 CI95% 1.04 – 1.27), as were those whose parents went through their things (ORa 1.80 CI95% 1.70 – 1.91), whose parents did not understand their problems (ORa 1.71 CI95% 1.63 – 1.80), who skipped lessons without parental permission (ORa 1.43 CI95% 1.36 – 1.50), whose parents smoked (ORa 1.09 CI95% 1.04 – 1.15), who had been in the presence of people who smoke (ORa 1.24 CI95% 1.18 – 1.30), and who did not spend time together with their parents during mealtimes.

III) Mental health: students who reported feeling lonely (ORa 1.41 CI95% 1.33 – 1.49), who suffered from insomnia (ORa 1.49 CI95% 1.40 – 1.59), and who were bullied (ORa 2.14 CI95% 2.00 – 2.30) were more likely to experience violence.

IV) Risk behaviors: students who smoked (ORa 1.23 CI95% 1.12-1.34), drank regularly (ORa 1.49 CI95% 1.41-1.57), had tried drugs

(ORa 1.24 CI95% 1.15-1.33), and had had sexual relations (ORa 1.40 CI95% 1.33 – 1.48) were more likely to experience violence (Table 5).

Family supervision and having paid work were found to be protective factors against physical aggression (ORa = 0.65 CI95% 0.62 – 0.68 and ORa = 0.57 CI95% 0.48-0.68, respectively) (Table 5).

## Discussion

One in seven schoolchildren reported having experienced physical violence committed by an adult member of their family. The following groups were more likely to experience physical aggression: girls; 13-year-olds; black, yellow, and brown students; students studying at private schools; students who worked; and students whose mother had no schooling. Relational fac-

**Table 3.** Prevalence (%) of being physically abused by a family member by risk behaviors and habits (crude ORs) among eight-grade students (National School Health Survey, 2015).

| Variable   | Outcome |          |       |      |          |       |           |
|--|---------|----------|-------|------|----------|-------|-----------|
|  | %       | CI (95%) |       | OR   | CI (95%) |       | P - value |
|  |         | Lower    | Upper |      | Lower    | Upper |           |
| Regular smoker                                   |         |          |       |      |          |       |           |
| No   | 13.4    | 12.7     | 14.1  | 1.00 |          |       |           |
| Yes  | 33.0    | 31.8     | 34.2  | 3.18 | 3.00     | 3.38  | < 0.001   |
| Regular drinker                                  |         |          |       |      |          |       |           |
| No   | 11.4    | 11.0     | 11.8  | 1.00 |          |       |           |
| Yes  | 24.5    | 23.9     | 25.0  | 2.52 | 2.43     | 2.61  | < 0.001   |
| Has tried drugs                                  |         |          |       |      |          |       |           |
| No   | 13.1    | 12.6     | 13.7  | 1.00 |          |       |           |
| Yes  | 28.6    | 27.7     | 29.5  | 2.66 | 2.53     | 2.79  | < 0.001   |
| Has had sexual relations                         |         |          |       |      |          |       |           |
| No   | 11.7    | 11.3     | 12.0  | 1.00 |          |       |           |
| Yes  | 22.0    | 21.5     | 22.5  | 2.14 | 2.07     | 2.22  | < 0.001   |
| Eats fruit on a regular basis (> 5 times a week) |         |          |       |      |          |       |           |
| No   | 14.6    | 14.1     | 15.0  | 1.00 |          |       |           |
| Yes  | 14.3    | 13.9     | 14.7  | 0.98 | 0.94     | 1.01  | 0.222     |
| Daily physical activity                          |         |          |       |      |          |       |           |
| No   | 14.4    | 13.9     | 14.9  | 1.00 |          |       |           |
| Yes  | 14.9    | 14.5     | 15.4  | 1.05 | 1.00     | 1.09  | 0.045     |

**Table 4.** Prevalence (%) of being physically abused by a family member by mental health and violence at school (crude ORs) among eight-grade students (National School Health Survey, 2015).

| Variable       | Outcome |          |       |      |          |       |           |
|----------------|---------|----------|-------|------|----------|-------|-----------|
|                | %       | CI (95%) |       | OR   | CI (95%) |       | P - value |
|                |         | Lower    | Upper |      | Lower    | Upper |           |
| Feeling lonely |         |          |       |      |          |       |           |
| No             | 12.3    | 11.9     | 12.8  | 1.00 |          |       |           |
| Yes            | 25.6    | 24.9     | 26.2  | 2.44 | 2.35     | 2.54  | < 0.001   |
| Insomnia       |         |          |       |      |          |       |           |
| No             | 12.8    | 12.3     | 13.3  | 1.00 |          |       |           |
| Yes            | 27.6    | 26.8     | 28.4  | 2.60 | 2.48     | 2.72  | < 0.001   |
| Friends        |         |          |       |      |          |       |           |
| 1 or more      | 14.2    | 13.3     | 15.2  | 1.00 |          |       |           |
| No friends     | 20.8    | 19.6     | 22.0  | 1.59 | 1.47     | 1.71  | < 0.001   |
| Being bullied  |         |          |       |      |          |       |           |
| No             | 13.2    | 12.6     | 13.9  | 1.00 |          |       |           |
| Yes            | 30.1    | 29.1     | 31.1  | 2.82 | 2.68     | 2.98  | < 0.001   |

tors linked to both the intrafamily environment and school increased the likelihood of the outcome.

These findings confirm that violence committed by family members is a public health

problem<sup>1</sup>. The fact that these events occur behind closed doors within a supposedly safe and secure home environment makes these victims, who have limited capacity to respond and denounce perpetrators, even more vulnerable<sup>12,13</sup>.

**Table 5.** Factors associated with being physically abused by a family member after multivariate analysis (adjusted ORs) among eight-grade students (National School Health Survey, 2015).

| Variable                         | OR   | CI(95%) |       | p-value |
|----------------------------------|------|---------|-------|---------|
|                                  |      | Lower   | Upper |         |
| Age                              |      |         |       |         |
| < 13 years                       | 1.04 | 0.74    | 1.47  | 0.811   |
| 13 years                         | 1.00 |         |       |         |
| 14 years                         | 0.82 | 0.77    | 0.88  | < 0.001 |
| 15 years                         | 0.80 | 0.74    | 0.86  | < 0.001 |
| 16 years and over                | 0.73 | 0.67    | 0.79  | < 0.001 |
| Sex                              |      |         |       |         |
| Male                             | 0.94 | 0.90    | 0.99  | 0.011   |
| Female                           | 1.00 |         |       |         |
| Color/race                       |      |         |       |         |
| White                            | 1.00 |         |       |         |
| Black                            | 1.12 | 1.04    | 1.21  | 0.002   |
| Yellow                           | 1.21 | 1.09    | 1.35  | < 0.001 |
| Brown                            | 1.08 | 1.02    | 1.13  | 0.005   |
| Indigenous                       | 1.09 | 0.96    | 1.23  | 0.183   |
| School                           |      |         |       |         |
| Public                           | 1.00 |         |       |         |
| Private                          | 1.13 | 1.05    | 1.20  | < 0.001 |
| Maternal schooling               |      |         |       |         |
| No schooling                     | 1.41 | 1.29    | 1.55  | < 0.001 |
| Primary                          | 1.13 | 1.06    | 1.21  | < 0.001 |
| Secondary                        | 1.13 | 1.06    | 1.20  | < 0.001 |
| Higher education                 | 1.00 |         |       |         |
| Living with mother and/or father |      |         |       |         |
| No                               | 1.00 |         |       |         |
| Yes                              | 1.15 | 1.04    | 1.27  | 0.007   |
| Works                            |      |         |       |         |
| No                               | 1.00 |         |       |         |
| Yes                              | 2.10 | 1.78    | 2.47  | < 0.001 |
| Paid work                        |      |         |       |         |
| No                               | 1.00 |         |       |         |
| Yes                              | 0.57 | 0.48    | 0.68  | < 0.001 |
| Feeling lonely                   |      |         |       |         |
| No                               | 1.00 |         |       |         |
| Yes                              | 1.41 | 1.33    | 1.49  | < 0.001 |
| Insomnia                         |      |         |       |         |
| No                               | 1.00 |         |       |         |
| Yes                              | 1.49 | 1.40    | 1.59  | < 0.001 |
| Family supervision               |      |         |       |         |
| No                               | 1.00 |         |       |         |
| Yes                              | 0.65 | 0.62    | 0.68  | < 0.001 |
| Skipping lessons                 |      |         |       |         |
| No                               | 1.00 |         |       |         |
| Yes                              | 1.43 | 1.36    | 1.50  | < 0.001 |
| Regular smoker                   |      |         |       |         |
| No                               | 1.00 |         |       |         |
| Yes                              | 1.23 | 1.12    | 1.34  | < 0.001 |

it continues

**Table 5.** Factors associated with being physically abused by a family member after multivariate analysis (adjusted ORs) among eight-grade students (National School Health Survey, 2015).

| Variable  | OR   | CI(95%) |       | p-value |
|---|------|---------|-------|---------|
|   |      | Lower   | Upper |         |
| Regular drinker   |      |         |       |         |
| No  | 1.00 |         |       |         |
| Yes   | 1.49 | 1.41    | 1.57  | < 0.001 |
| Has tried drugs   |      |         |       |         |
| No  | 1.00 |         |       |         |
| Yes   | 1.24 | 1.15    | 1.33  | < 0.001 |
| Has had sexual relations  |      |         |       |         |
| No  | 1.00 |         |       |         |
| Yes   | 1.40 | 1.33    | 1.48  | < 0.001 |
| Parents understand children's problems                                      |      |         |       |         |
| No (never, rarely, sometimes)   | 1.71 | 1.63    | 1.80  | < 0.001 |
| Yes (most of the time or always)  | 1.00 |         |       |         |
| Parents go through children's things  |      |         |       |         |
| No (never, rarely, sometimes)   | 1.00 |         |       |         |
| Yes (most of the time or always)  | 1.80 | 1.70    | 1.91  | < 0.001 |
| Had been in the presence of people who smoke                                |      |         |       |         |
| No  | 1.00 |         |       |         |
| Yes   | 1.24 | 1.18    | 1.30  | < 0.001 |
| Parents/guardians smoke   |      |         |       |         |
| No  | 1.00 |         |       |         |
| Yes   | 1.09 | 1.04    | 1.15  | 0.001   |
| Being bullied   |      |         |       |         |
| No  | 1.00 |         |       |         |
| Yes   | 2.14 | 2.00    | 2.30  | < 0.001 |
| Do you spend time together with your parents/<br>guardians during mealtimes |      |         |       |         |
| No  | 1.29 | 1.18    | 1.41  | < 0.001 |
| Twice or under twice per week   | 1.17 | 1.11    | 1.24  | < 0.001 |
| Three to four times per week  | 1.25 | 1.13    | 1.39  | < 0.001 |
| Five times or more per week   | 1.00 |         |       |         |

It is important to note that violence was shown to be more common against girls and younger adolescents. Some authors have suggested that cultural factors reinforce a predominantly masculine vision of society, leading to a greater underlying tendency towards violent behavior directed against girls and younger children<sup>12-14</sup>. Family violence and aggression can have a profound impact on a child's well-being, physical and mental integrity, freedom, and right to development<sup>1,13</sup>.

The association between bullying and family aggression is documented in the literature, confirming the findings of the present study. Generally, parents who perpetrate family violence were

maltreated during childhood and are more likely to be emotionally unstable and have difficulties creating affective bonds<sup>15</sup>. Furthermore, studies have reported that experiencing maltreatment during childhood is a risk factor for interpersonal violence during adolescence<sup>15,16</sup>.

The fact that both adolescents whose mothers had no schooling and who worked are more likely to experience violence is consistent with the findings of other studies<sup>17-19</sup>. Working during adolescence is interwoven with social dynamics. According to the National Household Survey (PNAD, acronym in Portuguese), the earlier an individual begins to work the lower the salary in adulthood, probably due to the years of school-



ing “lost” due to early entry into the labor market<sup>20</sup>. Individuals with lower levels of schooling are less prepared to elaborate positive coping responses to tension and adversities and have a greater tendency towards violent behavior. Family violence can often lead to maladaptive patterns of affective interaction in adulthood. According to attachment theory, abuse and aggression in the extended family network has a negative impact on emotional stability, fosters negative views of self and generates models of maladaptive adjustment<sup>21</sup>. This leads to a generational cycle of low levels of maternal schooling and income, weak emotional responses, family violence, difficulties in creating affective bonds, problems at school and in society, and low levels of schooling among new generations, which is consistent with the findings of the present study.

Early entry into the labor market is often a reflection of low socioeconomic status, which heightens vulnerability and is thus one of the root causes of negative coping strategies<sup>20</sup>. Poor living conditions, which are generally linked to emotional deprivation, can increase the likelihood of imbalances in interpersonal relationships, fostering an increase in events that culminate in acts of physical aggression<sup>21</sup>. However, further examination of this system of hypotheses grounded in the literature is beyond the scope of this study given the cross-sectional nature of the PeNSE. Nonetheless, the fact that students who reported being bullied were more likely to experience family violence provides strong evidence to suggest that adolescents are doubly exposed to violence at home and at school<sup>22</sup>.

Our findings also show a negative association between age and work and family violence (data not shown), whereby adolescents aged 13 years and under who worked were more likely to experience violence committed by family members. This association disappeared in the 14 years and over age groups, where having paid work was shown to be a protective factor. This may be explained by the fact that, despite its negative effects, early working may contribute to the integration of children and adolescents into the community and family, which has been identified as a protective factor against violence against children and adolescents performing domestic work or living on the streets<sup>23</sup>.

Students studying in private schools were more likely to be victims of violence. These findings warrant further investigation because studying at private school is generally associated with higher socioeconomic status, which tends to fa-

vor a more stable family unit. This study highlights the role of the family and the findings indicate an array of risks factors that influence family violence, showing that violence is more likely to be committed when there are family interactions; that is when the individual lives with his/her parents. The present study showed that skipping lessons without parental permission increases the likelihood of physical aggression, which is consistent with the findings of other studies<sup>16,17,19</sup>.

Students who reported having been in the presence of people who smoke (parents or others) were more likely to have experienced violence. Apart from exposing children and adolescents to passive smoking and smoking-related diseases<sup>24</sup>, this behavior leads to the development of the belief that smoking and other harmful behaviors are acceptable due to the weight of children's representations of that which is (re)produced by their parents<sup>25</sup>. Students who spent time together with their parents during mealtimes, taken as a proxy for parental supervision of children<sup>17,19,25</sup>, were less likely experience violence.

The new version of the 2015 PeNSE questionnaire allowed for the analysis of two new indicators: parents intruding on their children's privacy (going through their personal objects) and lack of parental understanding of their children's problems<sup>8</sup>. The right to privacy is ensured by the United Nations<sup>26</sup> and the Child and Adolescent Statute (*Estatuto da Criança e do Adolescent - ECA*)<sup>27</sup>, which includes respect of privacy as well as the preservation of private spaces and objects, image, identity, autonomy, values, and beliefs<sup>28</sup>. Understanding, support and dialogue between family members is essential for strong family cohesion and thus reduces the likelihood of family violence<sup>29</sup>. Being able to rely on protective parents who actively oversee and monitor their children's school activities, know where they are and respect their inner “world” and concrete objects have been shown to be protective factors against family violence. Studies have noted that this type of family behavior reduces the risk of substance use<sup>17,19,25</sup>, while the present study showed that it is a protective factor against physical aggression.

Family violence raises the victim's sense of insecurity, which in turn generates inner tension<sup>30,31</sup>, explaining the development of negative coping strategies such as greater drug use<sup>10,30,32</sup>. Experiencing physical aggression was associated with substance use. Studies have observed the multiple effects of this intricate network in which the socioeconomic context variably influences internal processes that form the basis for the

development of adaptive models, which in turn influence negative coping responses to needs and other types of discomfort<sup>21</sup>.

Evidence suggests that the prevalence of depression, substance use, feeling lonely, insomnia, and isolation is greater among victims of domestic violence<sup>33</sup>, which is consistent with the findings of the present study.

Tackling domestic violence and preventing the damage it can cause, besides legal measures, requires a paradigm shift towards respecting and promoting the rights of children and adolescents<sup>28</sup>. Brazil's Child and Adolescent Statute provides for the protection of all children and adolescents against neglect, exploitation and violence. Child protective services should, among other measures, seek to promote dialogue, family contact and rebuilding of family relationships<sup>28,34</sup>. Although Brazil has developed a comprehensive range of laws and regulations for the protection of children and adolescents, the lack of effective coordination and communication between the various agencies and services responsible for child protection often hinders their effectiveness<sup>35</sup>. The findings of this study confirm the need to strengthen cooperation between the actors and public agencies responsible for ensuring compliance with legislation and the implementation of programs targeting vulnerable groups.

In addition to family-level interventions, the creation of spaces for youth participation is essential. Youth empowerment and violence prevention programs should essentially listen to adolescents' opinions about their rights and the perceptions they hold of their everyday lives<sup>36</sup>.

The main limitation of this study is that the cross-sectional nature of the survey meant that it was not possible to establish causal relationships between habits, behaviors and problems and family violence. For example, certain factors, such as drinking, smoking, drug use, and sexual relations, may have preceded the event. The sample design simultaneously measures exposure and possible effects, meaning that the results should be interpreted with caution. It is also suggested that the associations identified by this

study should be viewed as predictors of the event and that further research should be conducted to gain a deeper understanding of the problem. Furthermore, the fact that the question used to determine the outcome did not specify the family member meant that it was not possible to identify who was the perpetrator<sup>12,13</sup>. Finally, another limitation worth mentioning is that the sample only included schoolchildren and thus did not encompass adolescents who did not go to school.

## Conclusion

This study analyzed data produced by the most wide-ranging survey of Brazilian schoolchildren conducted to date allowing us to determine the prevalence of family violence among the Brazilian population and monitor events of interest, ultimately showing that the prevalence of violence against adolescents committed by family members increased by 36% between 2012 and 2015. It can be concluded that there is an association between violence and gender. In this respect, the results show that violence is more common among girls and younger adolescents (13-year-olds). Unfavorable socioeconomic conditions, including early entry into the labor market and low levels of maternal schooling, also increase the likelihood of violence. Adolescents who experienced violence were more likely to use illicit substances, suffer from insomnia, and feel lonely. Relational factors linked to both the intrafamily environment and school increased the likelihood of the outcome.

The network of family relations established within the family structure is influenced by the socioeconomic context and by the characteristics of each of its members and the structures developed between these members. The affective protection afforded by this network is the basis for building emotional bonds and individual development. However, tensions between its members influenced by both external and internal factors can become risk factors for the development of children and adolescents.

## Collaborations

DC Malta participated in study conception, data analysis and interpretation, carried out the literature review, and contributed to the critical revision of this manuscript and final approval of the version to be published. RR Prado participated in data analysis and interpretation and contributed to the revision of the final version of this manuscript. JT Antunes, AA Assunção, and MI Freitas, contributed to the critical revision of this manuscript and final approval of the version to be published. All authors approved the final revision of this manuscript.

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