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Prevalence and factors associated with bullying victimization among Brazilian students, 2019

Prevalência e fatores associados à vitimização por bullying entre escolares brasileiros, 2019

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ABSTRACT The present study aimed to analyze the prevalence, reasons, and factors associated with bullying among Brazilian schoolchildren, aged 13 to 17 years. This was a cross-sectional, analytical study using data from the 2019 National School-Based Health Survey. The outcome assessed was reported as bullying. Prevalence rates were estimated, along with 95% confidence intervals, and crude and adjusted prevalence ratios were calculated to investigate the association between the outcome and covariates. Bivariate analysis was followed by multivariate analysis using Poisson regression. Of the 125,123 participants, 23.1% reported having been bullied. The following were positively associated with the outcome in the final model: feeling lonely, feeling sad, believing life is not worth living, not having friends, suffering from family violence, missing classes, and using tobacco. In conclusion, one in four students reported having been bullied, with unidentified reasons, followed by body and facial appearance, associated with individual and contextual determinants. It is crucial that anti-bullying interventions involve health professionals, education professionals, social workers, and public authorities, considering the multiple individual, contextual, and social factors that permeate and are associated with the occurrence of this phenomenon.

KEYWORDS Bullying. Adolescent. Schools. Health surveys. Brazil.

RESUMO *Objetivou-se analisar a prevalência, os motivos e os fatores associados a sofrer bullying em escolares brasileiros de 13 a 17 anos. Estudo transversal e analítico que utilizou dados da Pesquisa Nacional de Saúde do Escolar de 2019. O desfecho avaliado foi o relato de ter sofrido bullying. As prevalências foram estimadas, com Intervalos de Confiança de 95%, e as razões de prevalência brutas e ajustadas foram calculadas, investigando a associação entre o desfecho e as covariáveis. A análise bivariada foi seguida da multivariada, utilizando regressão de Poisson. Dos 125.123 participantes, 23,1% relataram ter sofrido bullying. Associaram-se positivamente ao desfecho no modelo final: sentir-se solitário, triste, acreditar que a vida não vale a pena, não ter amigos, sofrer violência familiar, faltar às aulas, consumir tabaco. Em conclusão, um em cada quatro estudantes refere ter sofrido bullying, tendo como motivo a não identificado, seguido pela aparência corporal e do rosto, associando-se com determinantes individuais e contextuais. É crucial que as intervenções anti-bullying envolvam profissionais da saúde, educação, serviço social e atores do poder público, considerando os múltiplos fatores individuais, contextuais e sociais que permeiam e se associam à ocorrência desse fenômeno.*

PALAVRAS-CHAVE *Bullying. Adolescente. Instituições Acadêmicas. Inquéritos Epidemiológicos. Brasil.*

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Introduction

Victimization due to bullying has been described in the literature since the 1960s[1,2]. The English word bully (bully, fighter)[3] has been translated as school harassment and refers to aggressive behavior among peers[4], resulting from a systematic practice with attitudes of intimidation, humiliation, or discrimination, which may be added to physical or psychological violence[5].

The phenomenon of bullying manifests itself through the unequal power relationship between the peers involved and can occur in the school environment, as well as in other settings[3]. Bullying has been more commonly studied in the school context; however, it can also occur in the virtual environment, in the workplace, in the family environment, on sports teams, and in other social spaces[6].

The literature describes adverse health outcomes for victims of bullying, which include sleep disorders, difficulties in school activities, a greater propensity for school dropout, difficulties in relationships, worsening of self-esteem and self-image, mental disorders in adulthood, and suicide attempts[5,7-11]. These outcomes negatively impact health and self-esteem, resulting in high social and economic burdens for victims, families, governments, and societies[12].

A study of data from 317,869 adolescents, aged 12 to 17 years, from 83 low-, middle-and high-income countries, found a combined 30.5% (95% CI: 30.2-31.0) prevalence of bullying victimization on one or more days within the past 30 days[13]. However, it revealed that this prevalence was highest in the Eastern Mediterranean region (45.1%; 95% CI: 44.3-46.0) and the African region (43.5%, 43.0-44.3), and was lowest in Europe (8.4%; 95% CI: 8.0-9.0)[13].

A report published by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2019, conducted in 71 countries, identified very different prevalences among nations and continents, with the highest percentage (48.2%) found in Sub-Saharan Africa, while in North America it was 31.7%; in South America, 30.2%; and in Central America, 22.8%[14]. Hence, a great variation was found in the magnitude and burden of bullying among countries, although the phenomenon has been described in several territories.

Regarding the factors associated with bullying, there is evidence that being male, a younger adolescent, of black ethnicity, the child of parents with low educational level[15], and facing problems related to mental health, such as having few friends; using substances and tobacco; suffering from depression, anxiety and having suicidal ideation; having different sexual and gender orientations; in addition to having little family support, present a greater risk of experiencing this type of violence[5,9,10,16-18].

In Brazil, the National School-Based Health Survey (Pesquisa Nacional de Saúde do Escolar – PeNSE) integrates the surveillance of Noncommunicable Diseases (NCDs) and conditions among school-aged adolescents, and is carried out by the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística – IBGE) in partnership with the Ministry of Health, constituting an important source of information for the design of actions and public policies[19]. The latest edition of PeNSE[20], carried out in 2019, incorporated important methodological changes, such as expanding the single sample of schoolchildren, aged 13 to 17 years, in addition to modifying the question about bullying, increasing its sensitivity, and including, for the first time, questions about suicidal ideation.

Considering the changes that have occurred in PeNSE and the importance of investigating the occurrence and associated factors among adolescents in Brazil, this study aimed to analyze the prevalence,

reasons, and factors associated with experiencing bullying among Brazilian schoolchildren aged 13 to 17 years.

Material and methods

This is a cross-sectional, analytical study that used data from PeNSE 2019. PeNSE was conducted in public and private schools across the five geographic regions of Brazil, including all Brazilian states, capital cities, and the Federal District. PeNSE is conducted every three years, and the data for 2019 were collected between April and September. The sample consisted of Brazilian students, aged 13 to 17 years, enrolled in and attending grades 6 through 9 of elementary school, and grades 1 through 3 of high school.

In 2019, the IBGE used a single sample of students, aged 13 to 17 years, from public and private schools, encompassing 4,242 schools and 6,612 classrooms, for the following geographic levels: Brazil, Major Regions, States, Capital Cities, and the Federal District. Considering the expected number of students and the number collected, the sample loss was 15.2%.

The PeNSE sample consisted of two-stage clusters, in which schools represented the first stage of selection, and the classes of enrolled students, the second. In selected classes, all students were voluntarily invited to answer the survey questionnaire. Sample weights were calculated considering the weights of schools, classes, and students, adjusted from the data of the 2019 School Census[21].

The PeNSE sample was designed to estimate population parameters for adolescents, aged 13 to 17 years, aiming to estimate a proportion (or prevalence) *P* of the order of 0.5 (50%) with a coefficient of variation of 4%[20].

Data collection

In the selected classes, all students were invited to answer the research questionnaire adapted for smartphones, which is structured and self-administered. This questionnaire covers information about the socioeconomic situation, family context, experimentation and use of cigarettes, alcohol and other drugs, violence, safety, accidents, and other living conditions of these adolescents who attend school.

Variables

The outcome variable for this study was experiencing bullying, which was measured using the following question:

> In the last 30 days, how many times has one of your schoolmates bullied, teased, mocked, intimidated, or ridiculed you so much that you felt hurt, bothered, annoyed, offended, or humiliated?[22].

The response options were: Never in the last 30 days; 1 time; 2 or more times.

To analyze the possible factors associated with bullying victimization, the conceptual model proposed by Malta et al.[5] was used, structured in four dimensions: I) demographic factors, II) factors related to mental health; III) family situations; IV) behaviors.

In addition, the following explanatory variables were tested:

I. Sociodemographic characteristics: a) sex (categorized as male and female); b) age range (categorized as 13-15 years and 16-17 years); c) skin color (categorized as white, black, brown, yellow, and indigenous); d) schools (public or private); e) mother's education (no schooling, elementary [incomplete/complete], secondary [incomplete/complete], higher [incomplete/complete]).

II. Family context: a) living with mother and/or father – categorized as yes (schoolchildren who live with father and/or mother) or no (living without father and mother); b) family supervision – categorized as yes (most

of the time, parents or guardians always knew what the adolescent was doing) or no (never, rarely, sometimes); c) skipping classes without permission – categorized as no (never) or yes (1 or more times in the last 30 days); picking up a relative (yes or no).

III. Mental health: a) feeling alone/lonely – categorized as no (never, sometimes in the last 12 months), yes (most of the time, always in the last 12 months); b) feeling sad – no or yes; c) friends – categorized as no (none) or yes: (1, 2, 3 or more friends); feeling that life is not worth living – no or yes.

IV. Behaviors: a) cigarette use in the last 30 days or regular (yes, no); b) tobacco use in the last 30 days or regular (yes, no); c) regular alcohol use, use in the last 30 days (yes, no); d) regular drug use in the last 30 days (yes, no); e) having had sexual intercourse (yes, no).

Data analysis

Initially, the prevalence and 95% confidence intervals (95% CI) of experiencing bullying were estimated according to sociodemographic variables, family context, family violence, mental health, risk behaviors, and sexual relationship. The prevalence of bullying victimization was disaggregated according to reasons for experiencing bullying, subsequently stratified by race/skin color, facial appearance, sexual orientation, region of origin, or other reasons.

To explore factors associated with the outcome, a bivariate analysis was initially performed to assess the isolated effect of each variable, considering a significance level of 5%. The estimated measure of association was the Crude Prevalence Ratio (PRb), with the respective 95% CI. Subsequently, Adjusted Prevalence Ratios (PRaj) were estimated through multivariate analysis, using Poisson regression, and the variables that presented $p \leq 0.01$ were selected for the final model.

Data analysis and processing were performed using Stata software, version 14.0 (StataCorp LP, College Station, United States), using the 'svy' procedure, which considers the weights applied according to the complex sampling plan.

Ethical aspects

This study used publicly available and unrestricted secondary data provided by the IBGE, thus eliminating the need to submit the project for review by a Research Ethics Committee involving human subjects.

Results

In 2019, the sample consisted of 125,123 students, with 49.3% being male and 50.7% female.

Table 1 shows that 23.1% (95% CI: 22.6-23.7) of the students reported having experiences bullying perpetrated by schoolmates. For the majority of students (61.7%; 95% CI: 60.7-62.7), the causes of bullying were not identified, followed by concern about body image or appearance (16.7%; 95% CI: 15.9-17.4); facial appearance (11.4%; 95% CI: 10.9-12.2); race or skin color (4.4%; 95% CI: 3.9-5.0); sexual orientation (2.5%; 95% CI: 2.3-2.9); religion (2.4%; 95% CI: 2.1-2.7); and region of origin 0.9% (95% CI: 0.8-1.1).

In the analysis by sociodemographic factors, it was observed that the majority of black adolescents reported having suffered bullying for racial reasons, reported by 15.5% (95% CI 13.1-18.3), as well as among indigenous people (6.3%; 95% CI: 4.5-8.8). Among girls, the main reason was body appearance, reported by 19.0% (95% CI: 18.0-20.1) (*table 1*).

Table 1. Distribution of percentages and confidence intervals of reasons given for experiencing bullying among adolescents, National School-based Health Survey 2019. Brazil, 2019

	Skin color or race			Religion			Facial appearance			Bodily appearance			Sexual orientation			Region of origin			Other reasons		
		95% CI*			95% CI*			95% CI*			95% CI*			95% CI*			95% CI*			95% CI*	
Variable	**%†**	**LL‡**	**UL§**	**%†**	**LL‡**	**UL§**	**%†**	**LL‡**	**UL§**	**%†**	**LL‡**	**UL§**	**%†**	**LL‡**	**UL§**	**%†**	**LL‡**	**UL§**	**%†**	**LL‡**	**UL§**
Total	4.4	3.9	5.0	2.4	2.1	2.7	11.4	10.8	12.2	16.7	15.9	17.4	2.5	2.3	2.9	0.9	0.8	1.1	61.7	60.7	62.7
Age range																					
13 to 15 years	4.3	3.8	4.9	2.3	2.0	2.7	12.1	11.2	13.0	17.6	16.8	18.5	2.4	2.1	2.7	0.7	0.5	0.8	60.6	59.3	61.9
16 and 17 years	4.6	3.8	5.7	2.4	2.0	3.0	10.2	9.3	11.1	14.7	13.7	15.9	2.9	2.4	3.5	1.4	1.0	1.9	63.7	62.2	65.3
Sex																					
Male	6.3	5.5	7.2	2.4	2.0	2.9	12.5	11.5	13.5	13.6	12.7	14.5	3.0	2.5	3.5	1.1	0.8	1.4	61.1	59.7	62.6
Female	3.0	2.5	3.5	2.3	2.0	2.7	10.6	9.7	11.6	19.0	18.0	20.1	2.2	1.9	2.6	0.8	0.6	1.0	62.1	60.7	63.4
Race/color																					
White	2.1	1.6	2.7	2.1	1.7	2.6	11.3	10.3	12.3	17.5	16.3	18.7	2.5	2.0	3.0	0.7	0.5	1.0	63.9	62.2	65.5
Black	15.5	13.1	18.3	2.6	2.0	3.5	11.1	9.4	13.1	12.0	10.4	13.9	2.4	1.7	3.3	1.2	0.7	2.1	55.2	52.3	58.0
Yellow	3.0	2.0	4.6	2.5	1.5	4.1	11.8	9.0	15.2	14.6	12.1	17.6	2.2	1.4	3.5	1.4	0.6	3.3	64.5	59.9	68.8
Brown	3.0	2.5	3.7	2.4	2.0	2.8	11.6	10.7	12.6	17.8	16.7	18.9	2.7	2.3	3.1	0.9	0.7	1.1	61.7	60.2	63.1
Indigenous	6.3	4.5	8.8	3.3	2.1	4.9	12.4	8.7	17.2	13.0	10.0	16.6	3.0	1.5	6.1	1.8	1.0	3.2	60.3	54.9	65.5
School																					
Public	4.9	4.3	5.6	2.5	2.2	2.9	11.8	11.0	12.7	17.1	16.2	17.9	2.6	2.3	3.0	1.0	0.8	1.2	60.1	58.9	61.3
Private	1.8	1.5	2.1	1.5	1.2	1.7	9.6	9.0	10.2	14.5	13.8	15.3	2.1	1.8	2.4	0.7	0.5	0.9	69.9	68.8	70.9'

Source: Created by the authors, based on IBGE[20] data.

* 95% CI = 95% Confidence Interval; † % = Percentage; ‡ LI = Lower Limit; § LS = Upper Limit.

Table 2 presents the prevalence and PRb of having experienced bullying, which proved to occur more frequently among girls (26.5%; 95% CI: 25.8-27.3) and students aged 13-15 years (24.2%; 95% CI: 23.5-24.9), while black students had a lower prevalence (21.7%; 95% CI: 20.4-23.0). There was no difference between students from public and private schools, nor in relation to the mother's educational level.

It was found that experiencing bullying was less frequent among students who lived with their parents. Among the characteristics of mental health, victimization was more frequent among those who reported loneliness (31.4%; 95% CI: 16.1-17.2), feeling sad (28.9%; 95% CI: 28.2-29.7), and having no friends (32.0%; 95% CI: 29.3-34.8), and that life was not worth living (34.3%; 95% CI: 33.3-35.3) (*table 2*).

Among the characteristics of family, schoolchildren who reported being beaten by family members (34.2%; 95% CI: 32.8-35.6) and those who skipped classes without informing their family (27.1%; 95% CI: 25.9-28.3) suffered greater victimization, whereas those who reported family supervision, tended to experience less bullying (22.1%; 95% CI: 21.5-22.7) (*table 2*).

Of those who reported risky behavior, experiencing bullying was more frequent among students who had consumed tobacco (29.3%; 95% CI: 27.9-30.8), smoked regular cigarettes (29.8%; 95% CI: 27.7-32.0), consumed alcohol (26.7%; 95% CI: 25.6-27.9), or used drugs in the last 30 days (30.3%; 95% CI: 27.8-33.0), as well as among those who reported having had sexual intercourse (24.3%; 95% CI: 23.5-25.2) (*table 2*).

Table 2. Prevalence and crude prevalence ratios of self-reported bullying according to sociodemographic factors, family context variables, mental health, and behaviors, National School-based Health Survey 2019. Brazil, 2019

				Experience Bullying			
		95% CI‡			95% CI‡		
Variables	**%†**	**LL§**	**UL‖**	**PRb***	**LL§**	**UL‖**	**p-value**
Total	23.1	22.6	23.7				
Age range							
13 to 15 years	24.2	23.5	24.9	1.00			
16 and 17 years	21.2	20.3	22.0	0.87	0.83	0.92	**< 0.001**
Sex							
Male	19.6	19.0	20.3	0.74	0.71	0.77	**< 0.001**
Female	26.5	25.8	27.3	1.00			
Race							
White	23.3	22.4	24.1	1.00			
Black	21.7	20.4	23.0	0.93	0.87	1.00	**0.046**
Yellow	25.0	22.4	27.7	1.07	0.96	1.20	0.212
Brown	23.2	22.4	24.0	1.00	0.95	1.04	0.908
Indigenous	25.4	22.7	28.4	1.09	0.97	1.24	0.153
School							
Public	23.2	22.5	23.8	1.00			
Private	22.9	22.3	23.5	0.99	0.95	1.03	0.555
Mother's education level							
No schooling	23.6	21.1	26.3	1.00			
Elementary (incomplete/complete)	24.1	23.0	25.3	1.02	0.91	1.15	0.717
Secondary (incomplete/complete)	22.7	21.7	23.8	0.96	0.86	1.08	0.522
Higher education (incomplete/complete)	23.0	22.0	24.1	0.98	0.87	1.10	0.693
Lives with mother and/or father							
No	26.1	24.3	28.0	1.00			
Yes	22.9	22.4	23.5	0.88	0.81	0.94	**0.001**
Feeling lonely							
No	13.5	12.9	14.1	1.00			
Yes	31.4	30.6	32.2	2.33	2.22	2.45	**< 0.001**
Feeling sad							
No	12.1	11.4	12.9	1.00			
Yes	28.9	28.2	29.7	2.39	2.24	2.54	**< 0.001**
Life's not worth living							
No	34.3	33.3	35.3	1.00			
Yes	16.3	15.8	16.9	2.10	2.02	2.19	**< 0.001**
Friends							
1 or more	22.8	22.2	23.3	1.00			
I don't have any	32.0	29.3	34.8	1.40	1.29	1.53	**< 0.001**
Violence (family)							
No	20.2	19.6	20.8	1.0			
Yes	34.2	32.8	35.6	1.69	1.6	1.8	**< 0.001**

Table 2. Prevalence and crude prevalence ratios of self-reported bullying according to sociodemographic factors, family context variables, mental health, and behaviors, National School-based Health Survey 2019. Brazil, 2019

				Experience Bullying			
		95% CI‡			95% CI‡		
Variables	**%†**	**LL§**	**UL‖**	**PRb***	**LL§**	**UL‖**	**p-value**
Family supervision							
No	25.7	24.7	26.7	1.00			
Yes	22.1	21.5	22.7	0.86	0.83	0.89	**< 0.001**
Absence from school							
No	22.2	21.6	22.8	1.00			
Yes	27.1	25.9	28.3	1.22	1.16	1.28	**< 0.001**
Regular smoking							
No	22.7	22.1	23.2	1.00			
Yes	29.8	27.7	32.0	1.31	1.22	1.42	**< 0.001**
Regular tobacco use							
No	22.1	21.5	22.6	1.00			
Yes	29.3	27.9	30.8	1.33	1.26	1.40	**< 0.001**
Regular alcohol consumption							
No	21.7	21.1	22.4	1.00			
Yes	26.7	25.6	27.9	1.23	1.17	1.30	**< 0.001**
Regular drug use							
No	22.8	22.2	23.3	1.00			
Yes	30.3	27.8	33.0	1.33	1.22	1.45	**< 0.001**
Sexual relationship							
No	22.5	21.9	23.2	1.00			
Yes	24.3	23.5	25.2	1.08	1.04	1.12	**< 0.001**

Source: Created by the authors, based on IBGE[20] data.

* PRb = Crude Prevalence Ratio; † % = Prevalence; ‡ 95% CI = 95% Confidence Interval; § LL = Lower Limit; || UL = Upper Limit; ¶ p-value = Significance Level

In the multivariate analysis, the age of 16-17 years was kept in the model (PRaj = 0.84; 95% CI: 0.81-0.88), showing a negative association. However, the following were positively associated with the outcome: feeling lonely (PRaj = 1.60; 95% CI: 1.51-1.69), feeling sad (PRaj = 1.61; 95% CI: 1.50-1.72), thinking that life is not worth living (PRaj = 1.39; 95% CI: 1.33-1.45), not having friends (PRaj = 1.21; 95% CI: 1.11-1.31), being beaten (family member) (PRaj = 1.39; 95% CI: 1.33-1.45), skipping classes (PRaj = 1.08; 95% CI: 1.03-1.14), and regular tobacco use (PRaj = 1.05; 95% CI: 1.05-1.15) (*table 3*).

Table 3. Factors associated with self-reported experience of bullying among Brazilian schoolchildren, aged 13 to 17 years, National School-based Health Survey 2019. Brazil, 2019

Variable	PRaj*	95% CI†		p-value‖
		LL‡	UL§	
Age				
13 to 15 years old	1.00			
16 and 17 years old	0.84	0.81	0.88	**< 0.001**
Feeling lonely				
No	1.00			
Yes	1.60	1.51	1.69	**< 0.001**
Feeling sad				
No	1.00			
Yes	1.61	1.50	1.72	**< 0.001**
Life not worth living				
No	1.00			
Yes	1.39	1.33	1.45	**< 0.001**
Friends				
1 or more	1.00			
I don't have any	1.21	1.11	1.31	**< 0.001**
Violence (family member)				
No	1.00			
Yes	1.39	1.33	1.46	**< 0.001**
Skipping school				
No	1.00			
Yes	1.08	1.03	1.14	**0.001**
Regular smoking				
No	1.00			
Yes	1.10	1.05	1.15	**< 0.001**

Source: Created by the authors, based on IBGE[20] data.

Discussion

The present study revealed that approximately a quarter of the students between the ages of 13 and 17 years reported having been victims of bullying. Among the associated factors, it was observed that younger adolescents (13 to 15 years), who say they feel lonely, have no friends, are sad, and believe that life is not worth living, especially those who experience family violence, skip classes without informing their parents, and have risky behaviors, such as regular tobacco use, are more likely to face this type of violence.

The study points to high prevalences of bullying among Brazilian adolescents in 2019. However, due to the change in response options in this edition, it is not possible to compare our study with previous PeNSE surveys. Thus, it cannot be stated whether or not there is a possible change in the trend of this indicator. It should be noted, however, that international evidence is varied. One study conducted with 95,873 Chinese students in 2018 identified a

similar prevalence of 30.4%[23]. By contrast, the results of the UNESCO report pointed to variations between countries, with the prevalence closest to Brazil being found in Central America (22.8%)[14]. These differences can be explained by the methodology employed in the research, with variations in the age of the students surveyed, in the questionnaires used, as well as cultural aspects and understanding of this phenomenon in different countries[6].

The results show that the reasons and causes of bullying are, in most cases, not identified by the victims; even with the dissemination of information about the problem in the school context, students still have difficulty identifying the motivations of the aggressors. To a lesser extent, students attributed the causes to body appearance, face, skin color, or race, which had already been described in other national studies[12,18]. It is important to note that, when black students were asked, the identification of racial discrimination as a cause was four-fold higher, which points to the suffering resulting from structural racism[24]. In addition, girls more frequently report suffering bullying resulting from body and facial appearance, which reinforces the beauty standards imposed upon women, reflecting a misogynistic and sexist society[25].

This study did not show differences according to sex, a result that was also described in a survey conducted among schoolchildren in Belo Horizonte[26]. However, in general, studies indicate that boys are more frequently victims of physical or verbal bullying, while girls are more involved in cyberbullying situations[23,27,28]. Meanwhile, further investigations are needed to understand if in fact there are gender differences in the distribution of experiencing bullying among adolescents in the Brazilian context.

The association between experiencing bullying and mental health characteristics stands out, such as feeling lonely, not having friends, feeling sad, and thinking that life is not worth living. These results were also found in a study that used the Global School-Based Student Health Survey (GSHS) questionnaire in a sample of 9,726 adolescents in four West African countries (Ghana, Benin, Liberia, and Sierra Leone) in 2023, which identified a strong association between suicidal ideation, suicide attempts, and bullying[29]. These findings are of great concern, given the future consequences of this type of victimization and its outcomes, such as depression and suicide attempts[9,30,31].

In this context, the 2019 PeNSE made progress by introducing the topic of suicidal ideation through the question 'do you think life is not worth living?' in its questionnaire. However, it should be pointed out that the complete GSHS questionnaire contains other questions on the topic[32], which could be incorporated into future editions of PeNSE due to the seriousness of the topic and its magnitude. Monitoring mental health among young people becomes even more relevant, given the evidence of worsening mental health among adolescents in the context of the COVID-19 pandemic in Brazil[33].

Different studies around the world have highlighted the association between victimization and health risk behaviors, such as the use of tobacco, alcohol, and drugs[23,30,34]. In China, victimization also showed a strong association with current cigarette use (OR: 2.71, 95% CI: 1.88-3.89) and the onset of drug use (OR: 2.19, 95% CI: 1.71-2.81)[23]. In Brazil, these associations have been described in previous studies[16,17,26]. In the current study, in the bivariate analysis, the regular consumption of both substances (alcohol and drugs) was associated, but in the final model, only tobacco use continued to be associated, which was similar to the findings of PeNSE 2015[5].

Regarding family situations and the occurrence of bullying, a survey conducted in 65 GSHS countries concluded that 'parental supervision', 'parental connectivity' and 'parental bonding' are important protective factors in the mental health of adolescents who have experienced bullying[35]. Furthermore, in Brazil, a study using data from PeNSE 2015

highlighted the importance of family supervision[5]. Bullying proved to be more frequent when these bonds are broken, as evidenced by the behavior of skipping classes without informing parents and being 'assaulted by family members'. These findings denote the absence of family ties, environments permeated by insecurity and violence, resulting in harm to the physical and mental health of adolescents[36].

Estimates from the Global Burden of Disease Study showed that, between 1990 and 2019, global rates of disability-adjusted life years (DALYs) for anxiety disorders and major depressive disorder attributable to bullying victimization increased by 23.31% and 26.60%, respectively[37]. These significant increases in the burden attributed to bullying reinforce the relevance of advancing an intersectoral and multisectoral perspective in addressing this problem worldwide. In this sense, it is crucial that anti-bullying interventions involve professionals from health, education, social services, and public authorities, considering the multiple individual, contextual, and social factors that permeate and are associated with the occurrence of this phenomenon among Brazilian adolescents, as evidenced in this study.

The potential of health professionals in the school environment to promote and develop bullying prevention actions among adolescents is also highlighted[38], especially in the context of the School Health Program[12]. This action should be guided by the perspective of stimulating the protagonism of schoolchildren in the context of preventing this violence, in addition to encouraging the social connection of adolescents, with family and peer interventions that contribute to fostering respect for diversity and social support[13].

There is evidence that school-centered interventions are more effective in reducing bullying than interventions carried out only through classroom curricula or social skills training[39], as well as being generally effective and working especially well for younger children (under 12 years of age) and young individualized who are more heavily victimized[40]. Furthermore, interventions based on network actions, in an intersectoral and multidisciplinary manner, have been valued, as they broaden the possibilities of problem-solving in their multiple interfaces[41-43].

Potentials and limitations

PeNSE is the most important survey among Brazilian schoolchildren, covering various topics related to adolescent health, with national and subnational representation in public and private schools. However, it is important to highlight some limitations, such as the fact that it is a cross-sectional study, which restricts conclusions about causality, and that it only interviews adolescents in school, excluding those in situations of greater vulnerability outside the school environment. It should also be reiterated that the PeNSE questionnaire, in the module on bullying, has not undergone validation, which may introduce some bias into the results. By contrast, the findings of this study can contribute to understanding the magnitude of this phenomenon in the country, which is important for the formulation of more targeted actions and public policies.

Conclusions

In 2019, almost one in four Brazilian adolescents reported being victims of bullying in the school context, which highlights the persistence of this form of violence and its association with sociodemographic variables, especially among younger students, with mental suffering, unfavorable family environments, and regular tobacco use. These findings indicate that the school environment, despite its essential role in the formation and socialization of individuals, can also serve as a space for the reproduction of inequities and vulnerabilities that directly affect the health of schoolchildren.

In this sense, considering public health as an interdisciplinary field of knowledge, it becomes essential to recognize the school as a strategic territory for anti-bullying research and intervention actions, especially when articulated with public policies that take into account the social determinants of health and the need for intersectoral actions, considering the multiple determinants involved in this issue.

Collaborators

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