

## Precipitating factors of school bullying in victims and bully-victims from eight-to-eleven-years of age

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**Aim:** The aim of the present study was to identify precipitating factors of bullying in schoolchildren.

**Methods:** A total of 425 schoolchildren aged eight to eleven years, enrolled in public and private schools in Lavras, Brazil, participated in this cross-sectional study. The schoolchildren answered two questions addressing characteristics that could affect their relationships with peers and completed the Brazilian version of the Olweus Bully/Victim Questionnaire. The characteristics investigated included weight, height, facial features, dentofacial appearance, and other individual factors, such as halitosis and wearing glasses. Parents answered a questionnaire on demographic characteristics. Descriptive analysis and multinomial logistic regression were performed ( $p \leq 0.05$ ).

**Results:** Bully-victims were more likely to be enrolled in public schools (OR = 5.43, 95% CI: 1.14-25.91,  $p = 0.03$ ). Victims of bullying were more likely to report characteristics such as halitosis, wearing glasses, and other aspects (OR = 3.31, 95% CI: 1.14-9.57,  $p = 0.02$ ), as well as dentofacial appearance (OR = 3.80, 95% CI: 1.38-10.41,  $p = 0.01$ ), as factors that affected interactions with peers.

**Conclusions:** The findings show that physical appearance, socioeconomic aspect, and individual characteristics are factors associated with victims and bully-victims. Pediatric dentists should discuss these issues with their patients and parents/caregivers when taking patient history.

**Uniterms:** Bullying. Precipitating Factors. Epidemiology. Schools.

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## INTRODUCTION

Bullying is a public health problem among schoolchildren<sup>1</sup> and is characterized by aggressive behavior carried out through negative actions by individuals intending to injure or cause discomfort to the victim<sup>2</sup>. It is a practice that occurs repetitively, with a power imbalance between the victim and the bully<sup>2</sup>. This imbalance, which puts the victim at a disadvantage, can be determined by inequality in physical strength, intelligence, the environment (when a child enters a new school), as well as divergences in popularity, number, and size of those involved<sup>2,3</sup>. Forms of bullying can

be physical, verbal, relational/social, and through digital means, denoted as cyberbullying<sup>2,3</sup>.

School bullying can occur inside and outside the classroom, such as in bathrooms and hallways, and can also occur on the internet<sup>4,5</sup>. The literature shows that bullying can also occur in the home environment (bullying between siblings), underscoring how bullying can permeate a child's life<sup>5</sup>. It is noteworthy that most individuals bullied through digital media are also victims of traditional bullying<sup>6</sup>.

Individuals involved in school bullying can be classified as bullies, victims, or bully-victims (individuals who have been targeted by bullying

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and have also practiced bullying on others)<sup>1</sup>. Moreover, individuals involved in bullying may either support the bully, such as those who laugh at the victims, or defend the victim<sup>7</sup>. The focus of this study will be on those who suffer school bullying (victims and bully-victims).

Victims of bullying may have a lower level of satisfaction with life as well as greater occurrences of loneliness, anxiety, interpersonal difficulties, depression, low self-esteem, suicidal thoughts, physical discomfort, and sleep disorders<sup>1,4,8,9</sup>. The literature states that bully-victims are more likely to plan suicide, experience depression, panic disorder, and emotional problems, have fewer friends, dislike going to school, and have a lower level of satisfaction with life<sup>1,10,11</sup>.

Globally, one in three children experiences bullying at school<sup>12</sup>. In Brazil, the prevalence of bullying varies among studies. These discrepancies in prevalence may be due to the social context, assessment instruments used, cultural aspects, and public education policies<sup>13,14</sup>. Some reports state that 5.7% to 8.3% of Brazilian schoolchildren are victims of bullying<sup>14,15</sup> and 2% to 9.6% are bully-victims<sup>14,15</sup>.

Several factors can trigger school bullying. Children/adolescents who are more vulnerable or perceived as “different” for some reason are at greater risk of being victims<sup>4,12</sup>. Issues related to gender, race, physical characteristics (e.g., weight, dentofacial appearance, and skin color), mental health, religion, and lower socioeconomic status are reported to be factors that make children and adolescents more prone to being bullied at school<sup>4,12,16-20</sup>.

Given these factors, dentists can play a role in identifying bullying among schoolchildren by taking a good patient history, identifying factors that hinder relationships with peers, such as physical characteristics (e.g., oral conditions). Working together with parents and teachers is essential to the prevention of school bullying. If bullying is identified, health professionals can refer affected individual for proper help<sup>5</sup>.

The present study addresses the role of dentists working with schools to promote oral health. It is important for dentists to be aware of the physical and individual characteristics that may upset patients and affect their wellbeing, as these may be factors that lead to school bullying. It is also important to evaluate triggering/precipitating factors of bullying in this age group and measure bullying through the use

of a questionnaire that addresses the various dimensions of this phenomenon. Therefore, the aim of the present study was to identify triggering/precipitating factors in schoolchildren who suffer school bullying (victims and bully-victims).

## **MATERIAL AND METHODS**

This study was conducted in accordance with the guidelines of *Strengthening the Reporting of Observational Studies in Epidemiology (STROBE Statement)*<sup>21</sup>.

## **ETHICAL CONSIDERATIONS**

The present study received approval from the Human Research Ethics Committee of Universidade Federal de Minas Gerais (certificate number #82839718.4.0000.5149). Parents/caregivers agreed to participate and authorized their children’s participation by signing a statement of informed consent. The schoolchildren agreed to participate by signing an assent form. Anonymity and the confidentiality of the information were ensured.

## **STUDY DESIGN, SAMPLE SIZE, AND PARTICIPANTS**

A school-based cross-sectional epidemiological study was conducted with schoolchildren eight to 11 years, enrolled in the 3<sup>rd</sup> to 5<sup>th</sup> year of primary school at public and private schools in the city of Lavras, Minas Gerais, Brazil. Schoolchildren less than eight years and more than 11 years of age were excluded. The study also involved the participation of the parents/caregivers of the schoolchildren and was conducted from August to December 2018. Lavras is located in the southeastern region of Brazil and has a Human Development Index of 0.782, with an estimated population of 105,756 residents. In 2018, the city had 29 primary schools (18 public and 11 private) that covered the school grades of the children evaluated in the study.

The sample size was calculated based on a previous study<sup>16</sup>, using a 50% prevalence rate of bullying due to the appearance of the teeth, a standard error of 5%, and a 95% confidence interval. A correction factor of 1.2 was used due to the multi-stage sampling. The minimum sample size was estimated to be 417 schoolchildren, to which 20.0% was added to compensate for possible losses (n = 521).

## **ELIGIBILITY CRITERIA**

Schoolchildren classified as bullies were excluded from the analysis because the aim of the study was to identify triggering factors of bullying in those who suffer from this phenomenon (victims and bully-victims). Individuals with syndromes and neurological disorders, as reported by parents/caregivers or based on school-provided health data, were excluded from the study. Schoolchildren without cognitive deficiencies and those classified as victims and bully-victims of school bullying, based on an instrument validated for use in Brazil,<sup>22</sup> were considered eligible for the study.

## **DATA COLLECTION**

Parents/caregivers answered a questionnaire sent through the schoolchildren addressing demographic/socioeconomic characteristics. In classrooms provided by the schools, the schoolchildren answered the Brazilian version of the Olweus Bully/Victim Questionnaire (OBVQ)<sup>22</sup> and two questions addressing characteristics that trigger school bullying.

## **ASSESSMENT OF BULLYING IN SCHOOL ENVIRONMENT**

The Brazilian version of the OBVQ was used to identify individuals involved in school bullying<sup>22</sup> as victims and bully-victims. The instrument consists of 46 items – 23 for the identification of the intimidating profile and 23 for the identification of the victim profile. Each item addresses a context in which children may have been involved at school. The participant was instructed to report how often the situation occurred in the previous month (response options: never; once or twice a month; once or more times a week)<sup>22</sup>. Schoolchildren who reported having suffered at least one of the bullying behaviors three times a month were classified as victims. Those who reported having practiced and suffered at least one of the bullying behaviors three times a month were classified as bully-victims<sup>22</sup>.

## **EVALUATION OF TRIGGERING/PRECIPI-TATING CHARACTERISTICS OF SCHOOL BULLYING**

The schoolchildren received a questionnaire with two questions on characteristics that could affect their relationships

with peers. These questions were based on factors reported in previous studies associated with a high vulnerability to experiencing bullying attacks<sup>16,19</sup>:

1. “Do you think your teeth affect your relationships with classmates?” (no or yes);
2. “Mark an X on the characteristics below that affect your interactions with classmates: ( ) Hair; ( ) Skin color; ( ) Nose; ( ) Mouth; ( ) Being short; ( ) Being tall; ( ) Being overweight; ( ) Being underweight; ( ) Others - Which ones? \_\_\_\_\_”.

Options related to height (short/tall) and weight (overweight/underweight) were transformed into two variables denominated “problems with height” and “problems with weight” and dichotomized as “yes” or “no”. Individual variables were created for the other characteristics (hair, skin color, nose, mouth, and others) and dichotomized as “yes” (when the children marked the option) or “no” (when the children did not mark the option). Examples of other characteristics listed by the participants were eye problems, the use of glasses, and halitosis.

## **DEMOGRAPHIC/SOCIOECONOMIC CHARACTERISTICS**

The demographic/socioeconomic characteristics of interest were the child’s age, type of school in which the child was enrolled (public and private), child’s sex (female or male), adult respondent (father, mother, or other), whether the parents live with the child (“yes” or “no”), family income using the Brazilian monthly minimum wage (BMMW) as reference (corresponding to US\$ 242.13 at the time of the study and categorized as  $\leq 1$  BMMW;  $>1$  to  $\leq 2$  BMMW;  $> 2$  BMMW), mother’s or father’s schooling, considering the highest level of education achieved by the mother or father (categorized as less than eight years; nine to eleven years; twelve years or more of study).

## **PILOT STUDY**

A pilot study was conducted with 45 schoolchildren (10% of the sample) enrolled at a public school in the city of Lavras to evaluate the methods. The results revealed that the researcher needed to read the questions to the schoolchildren. This reading was adopted in the main study. For the OBVQ, synonyms were given

to facilitate the participants' understanding; for example, 'offended' was used as a synonym for 'insulted'. No substantial changes were deemed necessary. The schoolchildren who participated in the pilot study were not included in the main study.

### STATISTICAL ANALYSIS

Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSS, SPSS Inc., version 21.0, Armonk, NY, USA). Descriptive analysis was first performed, followed by univariate and multivariate analyses using logistic regression. The outcome was the occurrence of school bullying. The main independent variable was dentofacial appearance. Associations between involvement in bullying as a victim or bully-victim and triggering/precipitating factors for bullying (controlling for the other independent variables) were evaluated using unadjusted and adjusted multinomial logistic regression, with the calculation of odds ratios (OR), respective 95% confidence intervals (CI), and probability (p) values. All independent variables were included in the final model, and the

association of interest (dentofacial appearance x involvement in school bullying) was adjusted for all covariables regardless of their statistical significance. A p-value  $\leq 0.05$  was considered indicative of statistical significance.

### RESULTS

A total of 425 schoolchildren eight to 11 years participated in the study. The mean age of the participants was  $9.13 \pm 1.01$  years. The proportion of boys (47.5%) and girls (52.5%) was similar. Most parents/caregivers who participated in the study were mothers (86.2%), followed by fathers (8.6%), and others (5.2%). Sixty-seven schoolchildren (15.8%) reported being victims of school bullying, 25 (5.9%) reported being bully-victims, and 333 (78.4%) reported not being involved in school bullying. Regarding triggering characteristics reported by the participants, 14.9% of the victims and 12% of the bully-victims reported that their teeth affected relationships with peers. Table 1 shows the distribution of triggering factors for bullying among schoolchildren classified as victims, bully-victims, or not involved in school bullying.

**Table 1.** Distribution of triggering/precipitating factors for bullying among schoolchildren classified as victim, bully-victim, or not involved in school bullying.

(continues)

Variables	Bully-victim n(%)	Victim n(%)	Not involved n (%)
Age			
Mean (*SD)	9.48 (0.963)	9.21 (1.08)	9.09 (1.01)
Median (Min-Max)	9 (8-11)	9 (8-11)	9 (8-11)
Sex			
Female	11 (44.0%)	28 (41.8%)	184 (55.3%)
Male	14 (56.0%)	39 (58.2%)	149 (44.7%)
Type of school			
Public	23 (92.0%)	55 (82.1%)	233 (70.0%)
Private	2 (8.0%)	12 (17.9%)	100 (30.0%)
Parents sharing the same household			
No	11 (44.0%)	22 (33.3%)	90 (27.0%)
Yes	14 (56.0%)	44 (66.7%)	243 (73.0%)
Family income (**BMMW)			
$\leq 1$ BMMW	6 (24.0%)	22 (33.8%)	88 (27.4%)
>1 to $\leq 2$ BMMW	14 (56.0%)	28 (43.1%)	113 (35.2%)
>2 BMMW	5 (20.0%)	15 (23.1%)	120 (37.4%)
Hair			
No	23 (92.0%)	57 (85.1%)	312 (93.7%)
Yes	2 (8.0%)	10 (14.9%)	21 (6.3%)
Skin color			
No	24 (96.0%)	62 (92.5%)	325 (97.6%)
Yes	1 (4.0%)	5 (7.5%)	8 (2.4%)

Problems with height			
No	19 (76.0%)	54 (80.6%)	286 (85.9%)
Yes	6 (24.0%)	13 (19.4%)	47 (14.1%)
Problems with weight			
No	20 (80.0%)	56 (83.6%)	296 (88.9%)
Yes	5 (20.0%)	11 (16.4%)	37 (11.1%)
Others			
No	23 (92.0%)	60 (89.6%)	319 (95.8%)
Yes	2 (8.0%)	7 (10.4%)	14 (4.2%)
Mouth			
No	24 (96.0%)	65 (97.0%)	325 (97.6%)
Yes	1 (4.0%)	2 (3.0%)	8 (2.4%)
Nose			
No	24 (96.0%)	65 (97.0%)	324 (97.3%)
Yes	1 (4.0%)	2 (3.0%)	9 (2.7%)
Teeth			
No	22 (88.0%)	57 (85.1%)	321 (96.4%)
Yes	3 (12.0%)	10 (14.9%)	12 (3.6%)

\*SD= standard deviation.

\*\*BMMW, Brazilian monthly minimum wage = US\$ 242.13

The results of the unadjusted and adjusted multinomial logistic regression between physical characteristics and involvement in school bullying are presented in Table 2. In the unadjusted analysis, type of school ( $p = 0.03$ ) and family income ( $p = 0.04$ ) were associated with being a bully-victim, whereas sex ( $p = 0.04$ ), type of school ( $p = 0.04$ ), hair ( $p = 0.02$ ), skin color ( $p = 0.04$ ), others ( $p = 0.04$ ), and dentofacial appearance ( $p = 0.001$ ) were associated with being a victim of school bullying. In the adjusted

analysis, bully-victims were more likely to be enrolled in public schools compared to children not involved in bullying (OR = 5.43, 95% CI: 1.14-25.91,  $p = 0.03$ ). Victims of bullying were more likely to report other characteristics, such as halitosis, wearing glasses, and other aspects (OR = 3.31, 95% CI: 1.14-9.57,  $p = 0.02$ ) as well as dentofacial appearance (OR = 3.80, 95% CI: 1.38-10.41,  $p = 0.01$ ), as factors that affected interactions with peers compared to schoolchildren not involved in school bullying.

**Table 2.** Multinomial analysis of the comparison of the triggering/precipitating factors of bullying in school victims and bully-victims to schoolchildren not involved in bullying.

(continues)

Variables	Bully-victim				Victim			
	*OR (95% **CI) Non-adjusted	$p$ †	OR (95% CI) Adjusted	$p$ †	OR (95% CI) Non-adjusted	$p$ †	OR (95% CI) Adjusted	$p$ †
Age	1.44 (0.98-2.13)	0.06	1.46 (0.96-2.22)	0.07	1.12 (0.87-1.45)	0.36	1.23 (0.93-1.63)	0.13
Sex								
Female	0.63 (0.28-1.44)	0.27	0.74 (0.31-1.79)	0.51	0.58 (0.34-0.98)	<b>0.04</b>	0.65 (0.36-1.15)	0.14
Male	1		1		1		1	
Type of school								
Public	0.49 (1.14-21.33)	<b>0.03</b>	5.43 (1.14-25.91)	<b>0.03</b>	1.96 (1.01-3.83)	<b>0.04</b>	1.58 (0.73-3.41)	0.23
Private	1		1		1		1	
Parents sharing the same household								
Yes	1		1		1		1	
No	2.12 (0.92-4.84)	0.07	2.22 (0.90-5.46)	0.08	1.35 (0.76-2.37)	0.29	1.12 (0.59-2.12)	0.71
Family income (±BMMW)								
≤ 1 BMMW	1.63 (0.48-5.53)	0.42	0.77 (0.20-2.98)	0.77	2.00 (0.98-4.07)	0.05	1.52 (0.66-3.50)	0.31
>1 to ≤2 BMMW	2.97 (1.03-8.52)	<b>0.04</b>	2.05 (0.66-6.34)	0.21	1.98 (1.00-3.90)	0.04	1.59 (0.75-3.35)	0.21
>2 BMMW	1		1		1		1	

Hair									
Yes	1.29 (0.28-5.85)	0.74	0.96 (0.17-5.15)	0.96	2.60 (1.16-5.82)	<b>0.02</b>	2.01 (0.79-5.10)	0.13	
No	1		1		1		1		
Skin color									
Yes	1.69 (0.20-14.09)	0.62	0.80 (0.07-8.44)	0.85	3.27 (1.03-10.34)	<b>0.04</b>	1.65 (0.42-6.43)	0.46	
No	1		1		1		1		
Problems with height									
Yes	1		1		1		1		
No	0.52 (0.19-1.37)	0.18	0.61 (0.21-1.75)	0.36	0.68 (0.34-1.34)	0.27	0.71 (0.33-1.51)	0.38	
Problems with weight									
Yes	1		1		1		1		
No	0.50 (0.17-1.41)	0.19	0.45 (0.15-1.38)	0.16	0.63 (0.30-1.32)	0.22	0.65 (0.29-1.43)	0.28	
§Others									
Yes	1.98 (0.42-9.25)	0.38	3.04 (0.54-17.00)	0.20	2.65 (1.03-6.86)	<b>0.04</b>	3.31 (1.14-9.57)	<b>0.02</b>	
No	1		1		1		1		
Mouth									
Yes	1.69 (0.203-14.09)	0.62	1.08 (0.10-11.12)	0.94	1.25 (0.25-6.02)	0.78	0.96 (0.17-5.39)	0.96	
No	1		1		1		1		
Nose									
Yes	1.50 (0.18-12.33)	0.70	1.21 (0.12-12.18)	0.87	1.10 (0.23-5.24)	0.89	0.76 (0.14-4.08)	0.75	
No	1		1		1		1		
Teeth									
Yes	3.70 (0.96 – 14.20)	0.05	4.00 (0.84 – 20.00)	0.08	4.76 (1.96 – 12.50)	<b>0.001</b>	3.80 (1.38 – 10.41)	<b>0.01</b>	
No	1		1		1		1		

\*OR: Odds ratio, \*\*CI: Confidence Interval. †Significance level  $p \leq 0.05$ . Bold type indicates statistical significance.

‡BMMW, Brazilian monthly minimum wage = US\$ 242.13.

§Others: halitosis; use of glasses; squint eye; name/surname; ear; being boring; having a mustache (girl); body joints (marked flexibility); face/head; way of walking; colleagues calling him monkey; 'crybaby'; speak loudly (screaming); play football (girls); way to act; not perform tasks; forehead; coiffure; big nails.

## DISCUSSION

The present cross-sectional study evaluated associations between triggering/precipitating factors of bullying and involvement in bullying as victim and bully-victim among schoolchildren.

The prevalence of victims in this study was similar to that reported in a previous study conducted with Estonian schoolchildren (13.8%)<sup>23</sup>. However, two other studies reported rates different from that of the present investigation, such as 5.7%<sup>15</sup> and 60.9%<sup>24</sup>. Regarding the prevalence of bully-victims, two previous studies found similar rates to that of the present investigation (3.2%<sup>11</sup> to 4.3%<sup>23</sup>), whereas two others found rates of 9.6%<sup>15</sup> and 33.9%<sup>1</sup>. Differences in cultural aspects, social contexts, public education policies, the methods employed in the studies<sup>13,14</sup>, and age group evaluated hinder the comparison of the prevalence of bullying among different populations.

School bullying is an important public health problem<sup>1</sup> and attention to these rates

is extremely important, as victims and bully-victims can experience feelings of sadness, hopelessness, loneliness, a lower level of satisfaction with life, trouble sleeping, depression, anxiety, panic, aversion to school, risk behaviors, such as alcohol use, and suicidal ideation<sup>1,4,8-11,24</sup>.

Schoolchildren who were victims of bullying were more likely to report dentofacial appearance and other aspects, such as wearing glasses and halitosis, as factors that affected their interactions with peers compared to those not involved in bullying. Children and adolescents in situations of vulnerability are at greater risk of bullying<sup>4</sup>. A study with 920 11-to-12-year-old schoolchildren found that physical and dentofacial characteristics were associated with bullying, and 50% of victims recognized their teeth as the cause of teasing. Diastema, missing teeth, tooth discoloration, and prominent teeth were the main characteristics identified by the participants of the study as a cause of bullying and teasing by classmates<sup>16</sup>. Another study with children eight to 10 years at public schools found that 27% of the participants reported having

been victims of verbal bullying due to their oral-dental characteristics. Such individuals had a greater frequency of untreated tooth decay, which can cause halitosis as well as changes in the color and shape of the teeth<sup>13</sup>. Another study involving 12-year-olds found that 22.8% of bullied individuals were ashamed of their teeth<sup>25</sup>.

Other characteristics reported by the schoolchildren were associated with being a victim of school bullying, such as eye problems, the use of glasses, and halitosis. School bullying is strongly related to differences among schoolchildren, which may be observed by the individual or may be real differences<sup>17</sup>. Therefore, it is important to consider the self-observations that individuals perform regarding inequalities between themselves and their peers, as well as their attention to specific characteristics that often do not receive focus as possible factors associated with victims of bullying. Like the present study, a previous study involving 11-to12-year-old schoolchildren also found that characteristics such as eyes, ears, hair, and the use of glasses constituted the targets of bullying<sup>16</sup>.

A significant association was found between being a bully-victim and the type of school in which these individuals were enrolled. Bully-victims were more likely to be enrolled at public schools compared to those not involved in bullying, and public schools had a higher number of bully-victims compared to private schools. A Brazilian study with schoolchildren showed that students enrolled at private schools were less likely to be bullied at school<sup>18</sup>. Family context exerts an influence on the social behavior of children<sup>26</sup>. The parents of children and adolescents enrolled at public schools often have jobs that place an excessive burden on them, affecting the way they participate in their children's school life<sup>27</sup> and hindering interactions with teachers<sup>28</sup>. Thus, a less cohesive family environment translates to parents who are less responsive to the needs of their children, making them more vulnerable to aggressive attacks and more likely to carry out aggressive attacks<sup>26</sup>. Adaptive social and relational behaviors may be reflections of these less cohesive family environments that are less responsive to children's needs<sup>26</sup>. However, one of the limitations of this study was the lack of an investigation of the working hours of the parents/caregivers of the schoolchildren. This association can be influenced not only by the parents'/caregivers' experiences but also other factors related to the social context of these individuals. Therefore, further studies are

needed to investigate associations between the type of school and involvement in school bullying, addressing bully-victims in particular. Another limitation of this study regards the cross-sectional design, which does not enable the inference of cause-and-effect relationships between variables. Therefore, longitudinal studies are encouraged. Qualitative studies are also recommended.

This study also has strengths that should be pointed out. It is a representative study with a high response rate. It is also important to note that bullying presents in many forms. Aggression can be physical, verbal, or relational/social and can occur through digital means (cyberbullying)<sup>2,3</sup>. Therefore, the present study measured school bullying using the Brazilian version of the OBVQ, which has multiple dimensions addressing all forms of bullying.

The present findings have relevant implications for dentistry<sup>16</sup>. During the clinical examination of children and adolescents, dentists should discuss with the patient and his/her parents/caregivers the consequences of individual dentofacial characteristics and the association of these characteristics with bullying<sup>16</sup>. Indeed, the literature reports that schoolchildren who are bullied because of their teeth report poor oral health-related quality of life, with far-reaching consequences regarding emotional wellbeing<sup>29</sup>.

Health care providers should include questions related to school bullying when taking the patient history, asking whether the patient is being victimized or is intimidating colleagues<sup>30</sup> while ensuring that the answers to these questions will be kept confidential<sup>31</sup>. Questions such as "Do you like school?", "Has anyone bothered you or been mean to you at school?", "Have you ever tormented or been mean to any classmates at school?", "How often did these actions happen?" are indicated to probe involvement in school bullying<sup>31,32</sup>. When such behaviors are confirmed, education and health care should be provided to the patients and their families, and, when appropriate, they should be referred to another specialized health care provider<sup>30,32</sup>, such as mental health professionals<sup>32</sup>. Moreover, health professionals should work together with schools regarding the implementation of anti-bullying policies<sup>30</sup>. Such measures are essential for individuals involved in school bullying, as they often do not tell anyone about their involvement in these phenomena for fear of retaliation and feelings of guilt or shame<sup>4,31</sup>. One should bear in mind that the consequences can last throughout one's lifetime<sup>3</sup>.

## CONCLUSIONS

In conclusion, the findings of this study showed that:

1) Children who are more vulnerable due to some reasons (dental characteristics, lower socioeconomic status – type of school – and others) are at higher risk of experiencing bullying. It is, therefore, essential to understand the precipitating/triggering factors associated with this phenomenon.

2) It is important to take into account the self-observations that children make regarding disparities between themselves and their peers, as these can serve as precipitating/triggering factors of school bullying.

3) Health professionals, such as pediatric dentists, should collaborate with schools in identifying and preventing bullying.

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## AUTHOR CONTRIBUTIONS

All authors contributed to the study conception and design. Júnia Maria Serra-Negra and Miriam Pimenta Vale conceived the ideas (Conceptualization); Letícia Silva Alonso collected the data, did data curation, and led the writing; Letícia Silva Alonso and Lucas Guimarães Abreu did formal analysis; and Miriam Pimenta Vale, Júnia Maria Serra-Negra, Luciana Fonseca Pádua Gonçalves Tourino and Lucas Guimarães Abreu reviewed the manuscript (Writing – review & editing).

## DECLARATION OF CONFLICT OF INTEREST

'No conflict of interest to declare'.

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## Fatores precipitantes do bullying escolar em vítimas e vítimas-intimidadoras de oito a onze anos de idade

**Objetivo:** O objetivo do presente estudo foi identificar os fatores precipitantes do bullying em escolares.

**Métodos:** Um total de 425 escolares de oito a onze anos matriculados em escolas públicas e privadas de Lavras, Minas Gerais, Brasil, participaram deste estudo transversal. Os escolares responderam duas perguntas abordando características que poderiam afetar seu relacionamento com seus pares e preencheram a versão brasileira do *Olweus Bully/Victim Questionnaire*. As características investigadas foram peso, altura, características faciais, aparência dentofacial e outros fatores individuais, como halitose e uso de óculos. Os pais responderam um questionário sobre características sociodemográficas. Análise descritiva e regressão logística multinomial foram realizadas ( $p \leq 0,05$ ).

**Resultados:** As vítimas-intimidadoras eram mais propensas a serem de escolas públicas (OR = 5,43, IC 95%: 1,14-25,91,  $p = 0,03$ ). As vítimas de bullying foram mais propensas a relatar características como halitose, uso de óculos e outros aspectos (OR = 3,31, IC 95%: 1,14-9,57,  $p = 0,02$ ), bem como aparência dentofacial (OR = 3,80, IC 95%: 1,38-10,41,  $p = 0,01$ ) como fatores que afetaram suas interações com seus pares.

**Conclusões:** Os achados mostram que a aparência física, o aspecto socioeconômico e as características individuais são fatores associados às vítimas e às vítimas-intimidadoras. Odontopediatras devem discutir essas questões com as crianças/adolescentes e seus pais/responsáveis ao obter a história do paciente.

**Descritores:** Bullying. Fatores Desencadeantes. Epidemiologia. Instituições Acadêmicas.