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Original Article

Bullying and associated factors in adolescents aged 11 to 15 years

Bullying e fatores associados em adolescentes com idade entre 11 e 15 anos

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Abstract

Introduction: Bullying among adolescents has become the subject of extensive research due to its negative effects on attitude and behavior. However, Brazilian literature on the topic is scarce.
Objective: To assess bullying and associated factors among adolescents in a population-based sample in southern Brazil.
Method: Population-based, cross-sectional study with adolescents aged 11 to 15 years living in the municipality of Pelotas, state of Rio Grande do Sul, Brazil.
Results: A total of 1,145 adolescents were included. Bullying behaviors and attitudes were found to be associated with the following factors: intentionally skipping classes, failing at school, using alcohol, smoking cigarettes, using illegal drugs, having engaged in sexual intercourse, carrying a weapon, being involved in an accident/being run over by any vehicle, and being involved in fights with physical aggression.
Conclusion: Bullying is associated with several behaviors that pose risk to the adolescents' physical and psychological health.
Keywords: Adolescents, violence, cross-sectional studies.

Resumo

Introdução: O bullying entre adolescentes tem sido objeto de várias pesquisas devido aos prejuízos comportamentais que acarreta. Contudo, a literatura brasileira sobre o tema é escassa.
Objetivo: Avaliar comportamentos de bullying e fatores associados em uma amostra de base populacional de adolescentes vivendo no sul do Brasil.
Método: Estudo transversal, de base populacional, com adolescentes de 11 a 15 anos de idade residentes na cidade de Pelotas, RS, Brasil.
Resultados: Um total de 1.145 adolescentes foram selecionados. Os comportamentos e atitudes de bullying mostraram-se associados aos seguintes fatores: faltar aula intencionalmente, reprovar algum ano na escola, usar álcool, cigarro e/ou drogas ilícitas, ter tido relações sexuais, portar arma, sofrer algum acidente ou atropelamento e brigar e/ou agredir alguém.
Conclusão: O bullying esteve associado com vários comportamentos considerados de risco para a saúde física e psicológica dos adolescentes.
Descritores: Saúde do adolescente, violência, estudos transversais.

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Introduction

Bullying includes all sorts of repeated, intentional, aggressive attitudes and behaviors by one or more individuals against peers without any evident motivation.[1] More recently, the term has been used to designate episodes of humiliation taking place in the school environment.[2] However, bullying incidents knowingly go beyond the school yard and are observed at other social contexts, even on the web – a phenomenon that became known as cyber bullying.[3]

Bullying victims are more prone to being classified as less able academically.[4] Nevertheless, bullying is still poorly understood and is characterized by some degree of permissiveness and indifference in the school environment, with little attention paid to the negative consequences that can later contribute to the development of antisocial conducts.[5] Authors have described the impact of bullying on the physical and psychological health of victims, reporting increased rates of mental disorders,[6] self-mutilation,[7] suicidal ideation,[7] and substance use/abuse[8] in this population. There is evidence that adolescent bullying may affect quality of life, posing physical and emotional difficulties not only to victims but also to perpetrators.[9]

Studies have suggested that a poor performance at school, aggressive behaviors (bullying), difficulty adapting to the role of student, and difficulty in social interaction, could all be connected to social inequalities.[10] Indeed, bullying tends to be more prevalent in countries with more pronounced socioeconomic disparities and worse socioeconomic conditions.[11] Notwithstanding, literature focusing on this topic is scarce in Brazil.

Therefore, the objective of this population-based study was to assess factors associated with bullying behaviors in adolescents living in southern Brazil.

Method

This cross-sectional, population-based study assessed a representative sample of adolescents aged 11 to 15 years residing in the municipality of Pelotas, state of Rio Grande do Sul, southern Brazil. This investigation is part of a broader research project on health behaviors in adolescence,[12,13] conducted by the Graduate Program in Health and Behavior at Universidade Católica de Pelotas (UCPel), Pelotas, Brazil.

The present research protocol was approved by the Research Ethics Committee of the Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, Brazil. Prior to inclusion in the study, adolescents' parents or guardians were asked to sign an informed consent form developed in accordance with the ethical norms regulating research involving human beings.

According to the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística, IBGE),[14] the population of Pelotas includes approximately 24,000 adolescents in the age group targeted by the study. In order to guarantee a random selection of patients, 79 census urban tracts of a total of 448 were randomly selected. Homes were selected using a systematic sampling approach with a skip of 10 homes among the ones drawn. In the selected homes, all adolescents aged 11 to 15 years were invited to participate in the study. Adolescents showing inability to understand or answer the questionnaire were excluded, as were those whose parents or guardians did not provide written consent.

Data were collected using a self-report, confidential questionnaire that included questions about sex, age, truancy, failing at school, alcohol consumption, use of illegal drugs in the past month, sexual intercourse, carrying weapons, involvement in an accident, involvement in fights or aggressions against other people and bullying behaviors (victimization).

Because there are no instruments validated in Brazilian Portuguese for the collection of data specifically on bullying, we used an instrument designed by Hunter et al.[15] originally in English, which was translated into Brazilian Portuguese by the research group. The instrument comprises seven yes/no questions and focuses on the two past weeks, regardless of the environment where the actions took place. The following questions were used: Has anyone called you names?, Have you been threatened by someone?, Has anyone stolen or destroyed any of your personal belongings?, Have you been excluded from games or groups?, Has anyone hit you or kicked you?, Has anyone gossiped about you or teased you?, Have you been forced to do things that you did not want to do?

Data collected with the questionnaire were entered twice into the Epi-Info software version 6.04d, with automatic checks for consistency. The Statistical Package for the Social Sciences for Windows version 10.0 was used for data analysis.

First, bullying behaviors (victimization) were analyzed in association with the independent variables under investigation using the chi-square test; significance was set at $p \leq 0.05$. In order to improve data interpretation, a second analysis was performed, considering all seven bullying behaviors as one single variable, with scores ranging from 0 to 7; in this model, the Student *t* test was used to compare the means obtained for the different variables, except for age, which was assessed using analysis of variance (ANOVA) and a linear trend test.

Results

A total of 1,265 adolescents were recruited, but 120 (9.49%) either refused to participate or were considered as losses. As a result, our sample comprised 1,145 adolescents aged 11 to 15 years, at a mean age of 12.96±1.4 years. Over half of the adolescents (51.7%) were females, and the majority (57.6%) belonged to socioeconomic class D. In addition, 63.1% of the sample had 5 to 7 years of schooling, 2.8% were not attending school, 13.6% reported to frequently skip classes, and 45.4% had already failed at least once.

Regarding substance use, 21.7% reported having consumed alcohol in the past month; of these, 13% abused the substance (became drunk). Among the respondents, 7% had smoked and 3.4% reported the use of some illegal drug in the past month.

In the analysis of weapon carrying (gunfire or knives) in the past 12 months, 3.8% of the adolescents reported having carried a weapon, whereas 19.9% reported having participated in at least one fight with physical aggression in the same period. Finally, 138 (12.1%) of the adolescents had already engaged in sexual intercourse; of these, 45.1% had their first sexual experience before 13 years of age.

Table 1 shows the associations between bullying behaviors and the factors assessed. Being called names was more prevalent in younger age groups (p = 0.003) and among adolescents who had been involved in an accident or had been run over by a vehicle (p = 0.036). Being threatened, in turn, showed significant associations with several factors; worth of mention are the associations with alcohol consumption (p = 0.000), adolescents who reported carrying a weapon (p = 0.008), being involved in an accident (p = 0.001), and being involved in fights with physical aggression (p = 0.000).

Table 1 – Relationship between independent variables and bullying behaviors in adolescents, chi-square test (%)

Variables	Being called names	Being threatened	Being robbed	Being excluded	Being physically abused	Being teased (gossip)	Being forced to do something	More than two behaviors
Sex	p = 0.093	p = 0.269	p = 0.396	p = 0.023	p = 0.000	p = 0.000	p = 0.004	p = 0.608
Male	69.7	26.6	34.4	31.4	27.3	32.3	17.6	58.9
Female	64.7	23.5	31.8	25.0	18.1	43.6	11.3	57.2
Age	p = 0.003	p = 0.189	p = 0.674	p = 0.975	p = 0.374	p = 0.000	p = 0.874	p = 0.436
11 years	73.1	20.7	33.0	28.3	25.8	28.2	16.0	55.9
12 years	69.7	23.2	29.5	27.2	20.7	32.1	11.1	54.5
13 years	69.2	31.5	34.8	27.1	22.7	42.2	18.2	62.5
14 years	60.7	25.0	32.7	31.4	25.2	43.9	14.2	59.1
15 years	62.7	25.9	32.4	26.2	19.2	42.9	13.7	57.5
Has intentionally skipped classes	p = 0.578	p = 0.021	p = 0.133	p = 0.005	p = 0.009	p = 0.000	p = 0.000	p = 0.000
No	66.8	23.9	32.3	26.8	21.8	35.3	12.4	55.7
Yes	69.2	33.1	38.8	38.2	31.8	55.3	28.3	73.1
Has failed at school	p = 0.137	p = 0.013	p = 0.173	p = 0.124	p = 0.001	p = 0.000	p = 0.143	p = 0.001
No	65.9	22.8	31.6	26.2	19.4	32.3	13.1	53.7
Yes	70.3	29.7	35.8	30.7	28.4	45.4	16.5	64.4
Consumes alcohol	p = 0.182	p = 0.000	p = 0.000	p = 0.038	p = 0.004	p = 0.000	p = 0.000	p = 0.000
No	66.7	22.0	30.0	26.6	21.4	32.2	11.9	54.1
Yes	71.5	35.5	44.1	33.6	30.5	55.7	22.7	72.3
Has used illegal drugs in the past month	p = 1.000	p = 0.045	p = 0.054	p = 0.014	p = 0.003	p = 0.006	p = 0.000	p = 0.024
No	67.2	24.6	32.6	27.7	22.4	37.2	13.7	57.4
Yes	66.7	40.5	48.7	47.4	44.7	60.5	35.9	76.9
Has engaged in sexual intercourse	p = 0.460	p = 0.012	p = 0.000	p = 0.553	p = 0.176	p = 0.000	p = 0.023	p = 0.003
No	66.8	23.9	31.1	28.0	22.5	35.4	13.6	56.4
Yes	70.4	34.3	48.5	30.9	28.1	57.0	21.3	70.3
Has carried a weapon	p = 0.798	p = 0.008	p = 0.045	p = 0.361	p = 0.021	p = 0.000	p = 0.124	p = 0.277
No	67.4	24.3	32.5	28.0	22.3	36.6	14.1	57.9
Yes	64.3	43.9	48.8	35.7	39.0	68.3	23.8	67.4
Has been involved in an accident	p = 0.036	p = 0.001	p = 0.000	p = 0.061	p = 0.000	p = 0.005	p = 0.003	p = 0.000
No	65.6	22.7	29.7	26.9	20.5	35.4	12.6	54.7
Yes	73.0	33.5	45.4	33.3	32.6	45.6	20.3	70.4
Has been involved in fights with physical aggression	p = 0.438	p = 0.000	p = 0.001	p = 0.221	p = 0.000	p = 0.000	p = 0.000	p = 0.000
No	66.7	21.2	30.8	27.7	19.1	33.7	12.4	54.7
Yes	69.7	40.8	43.0	32.1	39.7	55.4	23.9	74.6

Having been robbed also showed very strong associations, especially with alcohol consumption (p = 0.000), sexual intercourse (p = 0.000), involvement in accident (p = 0.000) and fight/physical aggression (p = 0.001). Being excluded from groups was associated with male sex (p = 0.023), truancy (p = 0.005), alcohol consumption (p = 0.000), and the use of illegal drugs in the past month (p = 0.014). Being physically abused (being hit) was more prevalent among boys (p = 0.000), among adolescents who had been involved in an accident (p = 0.000), and among those who had been involved in fights (p = 0.000), plus several other associations (Table 1).

Being teased was significantly associated with all variables tested, whereas being forced to do something was markedly more prevalent among adolescents who intentionally skipped classes (p = 0.000), consumed alcohol (p = 0.000), used illegal drugs in the past month (p = 0.000), and got involved in fights (p = 0.000) (Table 1).

Adolescents who considered themselves to be victims of two or more bullying behaviors reported the following frequencies: 55.9% were victimized less than once a week; 23.6% were bullied once a week; 10.6% were bullied several times a week; and 9.9% reported being victimized every day, several times a day. Also, most adolescents (60.2%) reported being victims of bullying incidents for over a month.

When all bullying behaviors were considered as one single variable, all factors assessed, except sex and age, showed significant associations with the outcome (Table 2).

Table 2 – Comparison between the means obtained for different bullying behaviors considered as one single variable in relation to independent variables, ANOVA

Variables	Bullying behavior, mean ± SD	Difference (95%CI)	p
Sex		0.18 (-0.02 to 0.40)	0.082
Male	2.34 (1.87)		
Female	2.15 (1.74)		
Age			0.413
11 years	2.18 (1.78)		
12 years	2.12 (1.82)		
13 years	2.42 (1.85)		
14 years	2.32 (1.81)		
15 years	2.19 (1.78)		
Has intentionally skipped classes		-0.72 (-1.02 to -0.41)	0.000
No	2.15 (1.78)		
Yes	2.87 (1.90)		
Has failed at school		-0.43 (-0.65 to -0.22)	0.000
No	2.08 (1.77)		
Yes	2.52 (1.85)		
Consumes alcohol		-0.82 (-1.08 to -0.56)	0.000
No	2.07 (1.75)		
Yes	2.90 (1.89)		
Has become drunk in the past month		-1.52 (-2.18 to -0.86)	0.000
No	2.19 (1.76)		
Yes	3.71 (2.24)		
Has smoked in the past month		-0.80 (-1.21 to 0.39)	0.000
No	2.20 (1.80)		
Yes	3.00 (1.93)		
Has used illegal drugs in the past month		-1.17 (-1.75 to -0.60)	0.000
No	2.21 (1.79)		
Yes	3.38 (2.03)		
Has engaged in sexual intercourse		-0.67 (-1.01 to -0.33)	0.000
No	2.17 (1.78)		
Yes	2.84 (1.92)		
Has carried a weapon		-0.89 (-1.55 to -0.23)	0.009
No	2.22 (1.78)		
Yes	3.12 (2.12)		
Has been involved in an accident		-0.69 (-0.94 to -0.43)	0.000
No	2.11 (1.78)		
Yes	2.79 (1.78)		
Has been involved in fights or physical aggression		-0.92 (-1.19 to -0.64)	0.000
No	2.09 (1.74)		
Yes	3.00 (1.90)		

95%CI = 95% confidence interval; SD = standard deviation.

Discussion

The present study sought to better understand the relationship between several risk behaviors and bullying victimization in a population-based sample of Brazilian adolescents. Bullying is currently a public health issue, and a dose-response relationship has been observed between victimization and behavioral problems in this population.[16] To the authors' knowledge, this was the first population-based study conducted in Brazil to assess factors associated with adolescent bullying.

One of the topics most frequently addressed by the literature on bullying is related to differences between boys and girls. Several studies have reported a higher prevalence of bullying behaviors among boys.[17-19] In the present study, there were no significant differences between male and female adolescents, although a higher proportion of boys reported being excluded from groups, being physically abused, and being forced to do something. Conversely, girls showed a positive association with being teased or being the subject of gossip. Therefore, it seems that bullying similarly affects boys and girls, however taking different forms depending on the sex of adolescents.[3]

In our sample, being called names was associated with younger ages and with being involved in an accident. Another study conducted in Colombia has also reported a higher frequency of this behavior in early grades,[20] although cultural factors have been suggested to play an important role in this process.[21] Being called names is considered to be an indirect form of bullying by the relevant literature,[22] and it affected mostly our 11-13-year age groups.

Alcohol consumption was associated with all bullying behaviors under investigation, except being called names. Adolescents who reported consuming alcohol in the past month showed higher rates of being threatened, being robbed, being excluded from groups, being physically abused, being teased, being forced to do something, and being the victim of two or more bullying behaviors. Other studies have also shown an association between bullying and alcohol and/or tobacco use.[8,23]

The present investigation also found a significant association between the use of illegal drugs in the past month and being physically abused, which is in accordance with the findings of Smith et al.[24] This association points to the close relationship between health risk behaviors and bullying.

With regard to the relationship between bullying victimization and school performance, the behaviors being threatened, being physically abused, being teased and being the victim of two or more bullying behaviors were associated with failing at school and intentionally skipping classes. In particular, intentionally skipping classes was also associated with being excluded and being forced to do something. In this sense, a study conducted in China has shown an association between bullying victimization and truancy,[23] reinforcing the serious impacts of bullying on academic performance. It is important to emphasize that several studies on bullying are carried out at schools, an environment that can be considered to be more vulnerable to the occurrence of such behaviors.

Physical health risk behaviors, e.g. being involved in an accident, carrying a weapon, or being involved in fights with physical aggression, were significantly related with being threatened, being robbed, being physically abused, being teased, and with the means obtained for the different bullying behaviors assessed. Other studies have also pointed out to a dose-response association between number of bullying incidents and behavior problems.[16,25,26] Cruzeiro et al. have described a relationship between signs suggestive of conduct disorder and bullying victimization.[12] Nansel et al. found a consistent relationship between bullying and involvement in aggressive attitudes and behaviors.[27] Again, these results indicate a strong association between bullying and physical- and life-threatening behaviors.

Another important finding of our study was the relationship between bullying victimization and first sexual experience. Adolescents who had already engaged in sexual intercourse presented a higher frequency of bullying incidents and predominated in the groups who reported having been threatened, robbed, physically abused, teased, and forced to do something. Once again, the strong relationship between bullying and inappropriate health behaviors was observed.

Some limitations of the present study deserve mention. First, the cross-sectional design does not allow to draw causal conclusions about the results observed. Second, the self-report questionnaire used to assess bullying behaviors has not been subjected to psychometric validation in Brazil. Conversely, some strengths of our study include the strong consistency between our results and the international literature and the representativeness of our sample, in terms of the sampling approach adopted, adequate sample size, and heterogeneity of adolescents selected. We strongly believe that these characteristics reinforce the validity of our findings.

The present study showed that most bullying behaviors either take place at or are related to the school environment. This suggests the need to better prepare educators to deal with this important and frequent problem, in an attempt to avoid any deleterious effects on the adolescents' health and academic life.

Further studies should be conducted to develop and psychometrically validate a scale aimed to assess bullying behaviors, including not only victims, but also perpetrators. Longitudinal studies are also needed to assess bullying-related risk and protective factors in the long term.

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