

ORIGINAL ARTICLE

Bullying in junior high school students: general characteristics and associated risk factors

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ABSTRACT

Background. Bullying is physical harassment and/or psychological abuse among students at school. In Mexico, up to 25% of the students have experienced violence at school. The objective of this study was to determine the prevalence of bullying and to explore associated risk factors.

Methods. Students of both genders from a junior high school were included and selected from the same population, based on the presence of being a victim, aggressor or victim-aggressor role according to self-reported questionnaire responses; χ^2 and logistical regression statistics were applied.

Results. Six hundred eighty eight students with a mean age of 13.62 ± 0.96 years were included; 20.5% victims, 13.1% aggressors and 27.4% victims-aggressors were identified. Major risk factors for victims were "have a physical defect" ($\chi^2 = 21.59$, $p = 0.000$, OR 2.86, 95% CI 1.82-4.50) and "parents considering bullying a normal problem" ($\chi^2 = 30.23$, $p = 0.000$, OR 5.79, 95% CI 2.92-11.47); for aggressors: "preference for violent television programs" ($\chi^2 = 10.38$, $p = 0.001$, OR 2.22, 95% CI 1.36-3.62) and "friends who belongs to gangs" ($\chi^2 = 31.78$, $p = 0.000$, OR 4.05, 95% CI 2.45-6.71); victims-aggressors present a highlighted combination of risks factors from both roles.

Conclusions. There is a high prevalence of bullying at school with a variety of associated risk factors.

Key words: bullying, victim, aggressor, victim-aggressor, harassment, school.

INTRODUCTION

Bullying is an expression of violence currently occurring in school environments with students as the main actors. Bullying implies the presence of certain types of behaviors such as threatening, harassment, mocking, menacing, discrediting or insulting where certain students (aggressors) act against others (victims). However, sometimes a student can be both victim and aggressor.¹⁻⁵ As cited

by other authors,² Olweus³ defined this phenomenon as a set of physical and/or verbal behaviors where a student uses aggression and abuses from an actual or pretended power against another student repeatedly in order to cause damage.

Bullying, contrary to other types of violence, requires no provocation from the victim and evidences a power imbalance among participants. There are several types of bullying, and criteria used to describe it are also varied (Table 1). Not all elements are present at the same time and the reasons behind this phenomenon and why it occurs with certain characteristics have yet to be identified. European studies have shown a high percentage of students involved in this phenomenon.⁶ In Mexico there are reports that 68% of surveyed students in Guadalajara were subjected to intimidation at a given time.⁷ A study carried out including >1 million junior high school students from Mexico City and several Brazilian cities reported 83.4% of them mentioned that bullying occurred at their school.⁸ The National Survey on Health and Nutrition (ENSANUT) published in 2006 documented that ~25% of those surveyed had experienced bullying at some point,⁹ whereas

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Table 1. Frequent ways of bullying and identification criteria

<i>Manner of harrassment^{1,2,8,11,36}</i>			
	<i>Direct</i>	<i>Indirect</i>	<i>Identification criteria^{3,8}</i>
Verbal	Insults	Rumors	Aggressive and intentionally damaging behavior
	Mocking	Discrediting	
	Humiliation	Group exclusion or isolation	
	Blackmailing		Produced repeatedly
	Obscene hand gestures		
	Name-calling		Imbalance of power relationship
Physical	Pushing	Destruction of victim's belongings, including school material	
	Kicking		Produced without victim's provocation
	Hitting		
Aggression using objects			
Social	Group exclusion	Prevent participation or ignoring	
Psychological	Threatens to induce fear	Robbery (money or personal items)	
	Forces victims to perform acts against their will		

the Ministry of Education (SEP), jointly with UNICEF, reported in 2009 that 43.2% of teachers were aware that bullying occurred at their schools.¹⁰

The most frequently studied aspects of this phenomenon include the various places where threatening takes place in school and the lack of support from noninvolved classmates.¹¹⁻¹³ Regarding parents, studies have focused on their responses or attitudes when they become aware of the problem; results are varied and range from indifference to overprotection.¹⁴

Several circumstances were documented as risk factors to become a bullying victim. Chui-Betancur and Chambi-Grande¹⁴ as well as Menesini et al.¹⁵ highlight the absence of one parent as an outstanding factor because this works unfavorably towards self-esteem reinforcement and the development of interpersonal skills. When parents or teachers react with indifference or even ignore a victim's problem, this favors the continuity of bullying.¹⁶⁻¹⁹

Some experts consider that having a physical defect constitutes a high-risk element to become a victim^{20,21} as much as other factors such as race, skin color or religion.²² On the other hand, aggressors have a trend to demonstrate their strength and aggressiveness.^{23,24} However, other elements have been described that are closely related with the students' social environment (given their social or economic background), such as having acquaintances or friends who belong to youth gangs or delinquent groups. In the "worst case" scenario, the student belongs to one of such groups.^{25,26} Risk has also been associated with watching TV

shows and playing video games that portray violence.²⁷⁻³⁰ Just like victims, aggressors are at higher risk of developing bullying when they live with only one parent who is unable to provide them with structure, discipline, norms and values. This has emotional, affective and behavioral effects over potential or actual aggressors.^{16,17} Aggressors' behavior is reinforced when they perceive that their parents and teachers react in a permissive manner in front of such conduct (Table 2).^{31,32} Specific factors associated with students who act as victims and aggressors at the same time have yet to be identified.³³ However, these students may present circumstances characteristic of victims and aggressors simultaneously. Some studies reported lack of sociability, family violence, family rejection and vandalism as factors associated with this role.^{33,34} Finally, several studies have shown that males have a greater risk for developing this phenomenon in any of its three variants.³⁵⁻³⁸

We undertook this study to evaluate the prevalence and severity of this problem in schools located in northeast Mexico (state of Tamaulipas) because there are scientific reports of mental health issues in bullying participants. The goals of our study were as follows:

1. Report bullying prevalence
2. Describe the characteristics of this phenomenon
3. Explore the relationship between victims, aggressors and victim-aggressors with variables that, according to the literature, are regarded as risk factors
4. Establish the bullying rate

Table 2. Risk factors

Victim	Living with only one parent ^{14,15}
	Parental indifference in light of harassment or mistreat ^{16,17}
	Having physical defects ^{18,19}
	Students perceive teachers do not intervene, ignore or do not resolve harassment situations ^{20,21}
Aggressor	Belongs to a minority group ²²
	Demonstrates who is stronger and more violent at school ^{23,24}
	School expulsion history ^{16,17}
	Having friends who belong to a youth gang or be part of a youth gang ^{25,26}
Aggressor	Psychological treatment history, enjoys highly violent TV shows, games or internet sites ²⁷⁻³⁰
	Permissive reaction from parents when their child plays an aggressor role at school ^{31,32}
	Perceives that teachers do not intervene under mistreatment situations ^{16,17}

SUBJECTS AND METHODS

Sample

The initial sample considered 786 morning-session students registered in the 2009-2010 school cycle who attended a public junior high school located in Ciudad Madero (Tamaulipas, Mexico). The age range of students was between 11 and 16 years. However, the final sample included only 688 students, 350 (50.9%) males and 338 (49.1%) females with close to a 1:1 ratio. Distribution of students according to grade was as follows: 7th grade (35.9%), 8th grade (34.8%) and 9th grade (29.3%). This school has six groups per grade.

The project was reviewed and approved by the ethics committees of the Faculty of Medicine, Tampico (Autonomous University of Tamaulipas) and the Psychiatric Hospital of Tampico where the investigators work. It was certified that the project complied with norms set by the guidelines in the General Law on Health and Health Research in Humans in Mexico as well as following the statement of the Declaration of Helsinki. Approval was also obtained from school authorities. All students signed an informed consent.

Instrument

We used the questionnaire known as CIMEI (Concepts on Intimidation and Mistreatment among Equals). This instrument was validated and translated into Spanish by Aviles in 1999.³⁹ Internal consistency of this instrument was validated using Cronbach's alpha, which allowed us to evaluate reliability coefficients of variables for each item, estimating its value as 0.8278. An analysis of the instrument's main components was carried out in order to validate its contents and structure of underlying data using the principal components analysis with nonlinear

optimal scaling method (Princalps). Validity of contents was 8.612.^{4,39} This questionnaire can be self-applied and allows knowing impressions regarding harassment or mistreatment at school. The questionnaire has three sections and 42 questions. Each section is directed to a different audience: students, parents or teachers. The questionnaire includes 12 questions with multiple-choice, descriptive answers for students according to their age. The questionnaire was conceived from six theoretical dimensions exploring the following: students' situation, victims' profile, threats' situations, aggressors' profile, observers' profile and proposed solutions.

The 12 questions aimed specifically for students are as follows:

- Ways of threatening (item 1)
- Places where harassment/mistreatment occurs and who tries to avoid it (items 4, 6)
- Victims' impressions (items 2, 3, 5, 8)
- Aggressors' impressions (items 7, 9)
- Observers' impressions (items 10, 11)
- Proposed solutions (item 12)

Operational definitions were structured as follows:

- a) We used the bullying definitions of Ortega et al.² and Olweus.³
- b) Victim role was identified when participant chooses any but the first answer for items 2, 3, 5 and 8 (never, no one has ever threatened me, no one threatens me, no one has threatened me).
- c) An aggressor was identified when any but the first answer was chosen for items 7 and 9 (I never mistreat anyone, I have never threatened anyone).

- d) Victim-aggressor role was identified when participant answered items associated with a victim's role and an aggressor's role as previously mentioned.
- e) Observer's role was identified when a student answered any option from items 10 and 11 and also answered the first option for items 2, 3, 5, 8, 7 and 9. Finally, a data-gathering sheet was used with only two choices (yes/present, no/absent).

Procedure

A meeting was held with school authorities days before applying the questionnaire in order to inform them about the goals of the study and to set a date and time to apply the questionnaire at school. Students accepted to participate anonymously and voluntarily. All information provided by students was handled confidentially. Surveyors, who were previously trained, attended classrooms for each group-grade and explained to students the study details. Support was always given from teachers who were teaching their class at the time of the survey. Special care was taken that the surveyors transmitted instructions and observations accurately in order to guarantee confidentiality and anonymity for students. Signed consents were received from students before distributing questionnaires. A group of coordinators was integrated and were responsible for identifying incomplete forms and requested the participant to answer every question when possible. Of students, nine refused to complete the questionnaire (seven males, two females). Average time for completing the instrument was 12 min.

Statistical Analysis

We identified that this cross-sectional study contained two branches: one for involved students and one for observers. Involved students are victims, aggressors or victims-aggressors. These groups were analyzed individually and compared against the observer group. Observer group was used as the control group and represented the population that did not develop the phenomenon. However, we considered that observers are also at risk of developing the phenomenon and, if they did so, they would be included in the involved population. Once students were classified either as involved or as observers, we compared relative exposure for each group with factors reported in the literature as relevant to develop bullying.

We used descriptive statistics to analyze information and χ^2 to determine the relationship of categorical

variables. We carried out a logistic regression analysis calculating odds ratio (OR) with confidence intervals (CI) of 95% to test the hypothesis about bullying-associated factors and their relationship with the group of involved students. We considered that values were statistically significant when $p \leq 0.05$. We dichotomized the three involved groups with values (0-1) and associated risk factors in order to carry out the analysis. SPSS v.14.0 for Windows was used

RESULTS

Sociodemographic Variables

Regarding age, we documented an average of 13.62 ± 0.96 years of age in the sample population. Age averages were distributed according to school grade as follows: 12.68 ± 0.54 for 7th grade, 13.71 ± 0.57 for 8th grade and 14.66 ± 0.52 for 9th grade. Age distribution by gender presented an average of 13.67 ± 0.96 for males and 13.57 ± 0.57 for females. As expected, 99.9% of the sample population was native from Tamaulipas, residing in Ciudad Madero (61.4%), Tampico (34%) and Altamira (4.4%).

Bullying Prevalence

Of included students, 20.5% were classified as victims, 13.1% as aggressors and 27.4% as victim-aggressors. Table 3 shows distribution of these three classifications according to gender and school grade.

General Risk Factors

Of students, 72.2% live with both parents, 21.9% live with only their mother, 2.9% live with only their father and 2.9% live with other persons. On the other hand, of surveyed students, 40.2% admitted having friends who belong to youth gangs, 20.3% belonged to a youth gang at some point and 9.3% belonged to a youth gang at survey time. We also found that 4.7% were expelled at some point from school, 22.5% received psychological treatment and 40.2% enjoyed TV shows with violent contents. Also, the following information was collected: 28.1% considered as a risk having some physical defect, 90.9% considered males are more aggressive and 79.7% estimated males tend to more often mock others.

Of participants, 40.1% reported that harassment or mistreatment occurred almost on a daily basis in the previous 3 months. Victims ask for help from others as follows:

Table 3. Distribution of students involved in bullying according to gender and school grade

<i>Bullying role and school grade</i>		<i>Gender</i>		<i>Total</i>
		<i>Male</i>	<i>Female</i>	
Victim	School grade	7 th	34 (24.5%)	32 (23%)
		8 th	31 (22.3%)	15 (10.8%)
		9 th	13 (9.3%)	14 (10.1%)
	Total		78 (56%)	61 (44%)
				139 (100%)
Aggressor	School grade	7 th	16 (18%)	16 (18%)
		8 th	20 (22.5%)	14 (15.7%)
		9 th	10 (11.2%)	13 (14.6%)
	Total		46 (51.7%)	43 (48.3%)
				89 (100%)
Victim-Agressor	School grade	7 th	28 (15.1%)	22 (11.8%)
		8 th	44 (23.7%)	35 (18.8%)
		9 th	31 (16.6%)	26 (14%)
	Total		103 (55.4%)	83 (44.6%)
				186 (100%)

18.1% from a fellow student, 7.5% from family and 1.8% from teachers; however, 13.3% consider that the problem is not talked about. Students perceived that male teachers are more prone to help avoiding harassment or mistreatment; however, 17.2% of students reported that usually no one intervenes and 29.2% considered the solution for this problem should be proposed and implemented by teachers.

Ways of Harassment or Mistreatment

The most frequent manners of mistreatment among students are as follows: 40.9% for insults and name-calling; 16.5% for mocking and humiliation. Direct physical aggression was reported in 15.9% of cases. The least frequent manners of harassment or mistreatment were threats and blackmailing (1.8%), rejection and isolation (4.1%) and rumors/gossip (4.7%). Of participants, 15.6% reported harassment that included two or more types of mistreatment inflicted on one victim.

Perception on Parents Reaction

Some students (18.9%) reported that the most common reaction of parents whose children experienced bullying

is to speak with teachers; however, some considered that parents told their children that this was normal behavior (3.7%) and to return aggression (3.5%). Some parents do not pay attention to their children's report (2.1%) and some even do not believe it (0.4%).

Places Where Harassment or Mistreatment Occur

Of students, 22.1% reported aggressions occurred in the classroom when the teacher was absent, 6.5% even when the teacher was present, 5.2% at the entrance of the school, 2.7% on the street, 1.9% in school hallways, 1.3% in bathrooms and 0.6% outdoors during recess. It is worth mentioning that 59.4% of students answered more than two options on this question.

Factors Associated with the Victim Role

The following variables were not associated with the risk of becoming a victim: "expulsion from school at some point" [$\chi^2 = 0.196$, $p = 0.658$, OR = 0.78, 95% CI (0.27-2.28)] and "consider the school as safe" [$\chi^2 = 3.03$, $p = 0.082$, OR = 0.68, CI 95% (0.45-1.04)]. Other factors were considered as a risk when reaching OR >1; however,

only five were statistically significant (Table 4). Of these, at least three factors are associated with parents' reaction when they learn of the problem. The highest risk was for cases where parents think bullying is normal [$\chi^2 = 30.23$, $p = 0.000$, OR = 5.79, 95% CI (2.92-11.47)]. Another important risk factor was having a physical defect [$\chi^2 = 21.59$, $p = 0.000$, OR = 2.86, 95% CI (1.82-4.50)].

Factors associated with the aggressor role

We found that these variables were not risk factors for this group because they reported an OR <1: having a physical defect [$\chi^2 = 0.03$, $p = 0.854$, OR = 0.94, 95% CI (0.51-1.70)] and parents regard this problem as nonexistent [$\chi^2 = 0.000$, $p = 0.995$, OR = 0.99, 95% CI (0.10-9.66)]. As for remaining variables, only five were statistically significant. Factors where students are associated with youth gangs presented an OR >4 (Table 4).

Factors Associated with Victim-Aggressor Role

The following factors showed statistical significance for this group, having an OR >2: having liaisons with youth gangs, watching TV shows with violent contents, demonstrating strength at school and having a physical defect. It is important to mention how liaisons with youth gangs were influential: "belonging to a youth gang at some point" [$\chi^2 = 17.07$, $p = 0.000$, OR = 2.80, 95% CI (1.69-4.62)], "currently belong to a youth gang" [$\chi^2 = 6.39$, $p = 0.011$, OR = 2.46, 95% CI (1.20-5.06)] and "having friends who belong to a youth gang" [$\chi^2 = 20.56$, $p = 0.000$, OR = 2.46, 95% CI (1.66-6.65)] (Table 5).

DISCUSSION

Traditionally, violent behavior in school has been associated with fighting among students, robberies or abuse toward facilities. However, violence also includes harassment or mistreatment phenomena among students that lead those involved to miss school for no apparent reason or to pretend to have a physical discomfort to justify their absence before admitting that they are intimidating to their parents. Our study agrees with findings from other studies^{10-12,35} regarding the prevalence of this problem. We documented a high number of students directly involved in bullying (20.5% victims, 13.1% aggressors and 27.4% victim-aggressors).

When analyzing the differences by school grade, we observed that victims are more common among 7th grade students and aggressors were more commonly found among 8th grade students. The latter may be imprecise because a large proportion of 9th grade students were not at school when we collected data. Most victim-aggressor students were enrolled in the 8th grade. It is not unusual that 7th grade students become victims more frequently because they represent the most vulnerable group due to their arrival to a new environment. As for gender, the prevalence of males is notable for all three roles as documented in other studies;³⁵⁻³⁸ however, the role of females is increasingly frequent. It is not unusual to find bullying reports in this state with severe consequences where victims are female junior-high students. In the studied sample, the most frequent manner of harassment or mistreatment was insults and name-calling; however, >15% of cases involved physical aggression, agreeing with reports by other authors.^{5,8} There are cases where two or more forms of harassment are reported. Paredes et al.¹¹ and Contreras¹² documented that locations where aggressions occur within the school are varied. We documented that the most frequent location was the classroom when the teacher is absent, which can be associated with lack of order and discipline. However, it is quite disturbing that aggressions occur even when the teacher is present. Even though most students perceive that parents should talk with teachers when they learn that their child has experienced bullying, others consider that their family shows no interest or support towards them. This impacts victims' self-esteem and has been linked with depression, anxiety and suicidal attempts.^{40,41} On the other hand, aggressors receive a tacit stimulation when finding neither boundaries nor self-control and this impacts their personality and adaptation development.^{2,40,42} We observed certain variables in the three groups (victims, aggressors and victim-aggressors) with OR <1, which indicates exposure (risk factor) is inversely related with the event (bullying). This means that exposure reduces the probability of developing the event. Although the highest OR in the victims group was associated with the statement "parents think these problems are normal" and the value is within the confidence interval, this result should be interpreted with caution because the interval is very wide and therefore lacks precision. Our study may lack predictive power for such variable. This does not occur for the variable "having a physical defect," where confidence interval is restricted

Table 4. Risk factors associated with victims and aggressors

Risk factor	Victim (n = 139)			Aggressor (n = 89)		
	χ^2 (p)	OR	CI (95%)	χ^2 (p)	OR	CI (95%)
Having friends who belong to a youth gang	2.60 (0.085)	1.77	1.15-2.73	31.78 (0.000)*	4.05	2.45-6.71
History of being expelled from school	0.196 (0.658)	0.78	0.27-2.28	0.67 (0.411)	1.52	0.55-4.18
Psychological treatment history	3.59 (0.068)	1.59	0.98-2.60	2.22 (0.136)	1.53	0.87-2.70
Enjoys TV shows with violent contents	3.84 (0.060)	1.53	0.99-2.35	10.38 (0.001)*	2.22	1.36-3.62
Demonstrates more strength or aggressiveness in school	0.67 (0.412)	1.37	0.63-2.97	5.76 (0.016)*	2.49	1.15-5.37
Having a physical defect (actual or imaginary)	21.59 (0.000)*	2.86	1.82-4.50	0.03 (0.854)	0.94	0.51-1.73
Consider school is safe	3.03 (0.082)	0.68	0.45-1.04	0.01 (0.913)	1.02	0.61-1.70
Belongs to a youth gang at some point	2.78 (0.095)	1.63	0.91-2.92	34.85 (0.000)*	5.07	2.87-8.98
Currently belongs to a youth gang	0.13 (0.715)	1.18	0.47-2.92	26.80 (0.000)*	5.98	2.85-12.56
Male gender	5.56 (0.018)*	1.64	1.08-2.48	1.68 (0.195)	1.37	0.84-2.22
Perception of students about parents' reaction before bullying						
Parents are indifferent	4.68 (0.030)*	2.85	1.06-7.68	1.80 (0.179)	2.19	0.67-7.09
Parents think this problem does not exist	2.85 (0.091)	3.25	0.76-13.84	0.000 (0.995)	0.99	0.10-9.66
Parents tell their children to return the aggression	5.39 (0.020)*	2.32	1.12-4.80	3.15 (0.076)	2.11	0.91-4.88
Parents think these problems are normal	30.23 (0.000)*	5.79	2.92-11.47	3.09 (0.078)	2.18	0.89-5.29

* $p \leq 0.05$

OR, odds ratio; CI, confidence interval.

so a random effect is not very high. Other reports have associated this variable as very relevant for developing a victim role.^{10,20} For aggressors, most risk factors were considered relevant, although not all were statistically significant, consistent with reports from other studies.^{24,27} Students who play a victim-aggressor role combine risk factors from both roles separately; however, studies on this particular role are limited. We did not consider some aspects of this study (family violence, family rejection, lack of affection towards the child and difficult peer-to-peer social interaction),^{37,38} but it would be convenient to explore them in the future because they are important for individuals who play a mixed role.

In conclusion, bullying is present within the school environment because >50% of population is involved in this situation, either as victim, aggressor or victim-aggressor. As expected, prevalence of victims in the 7th grade and aggressors from upper grades is evident, but the fact that there are students who play a mixed role as victim-aggressor is outstanding. Bullying is prevalent among males for any role, although under certain circumstances there are no significant differences among females. Variables are associated with the risk for experiencing bullying but the most relevant variable for the victim role was having a physical defect or having an indifferent reaction from their parents in light of this problem. For aggressors, the

Table 5. Risk factors associated with victim-aggressor role

Risk factor	Victim-Aggressor (n = 186)		
	χ^2 (p)	OR	CI (95%)
Having friends who belong to a youth gang	20.56 (0.000)*	2.46	1.66-6.65
History of being expelled from school	0.024 (0.878)	1.07	0.44-2.59
Psychological treatment history	1.78 (0.182)	1.36	0.86-2.16
Enjoys TV shows with violent contents	16.50 (0.000)*	2.22	1.50-3.27
Demonstrates more strength or aggressiveness in school	5.56 (0.018)*	2.16	1.12-4.14
Having a physical defect (actual or imaginary)	11.00 (0.001)*	2.04	1.33-3.14
Considers school is safe	3.49 (0.062)	0.69	0.47-1.01
Belongs to a youth gang at some point	17.07 (0.000)*	2.80	1.69-4.62
Currently belongs to a youth gang	6.39 (0.011)*	2.46	1.20-5.06
Male gender	6.68 (0.010)*	1.49	1.10-2.01

* $p \leq 0.05$

OR, odds ratio; CI, confidence interval.

most relevant circumstances were association with youth gangs and a preference for highly violent TV programs. For victim-aggressors, we found a combination of variables from the other two roles. Bullying is currently an actual problem and with serious potential for generating sequelae on the quality of life for those involved, whatever their role. We consider it necessary to explore other risk factors and especially to identify those who play a critical role in this phenomenon. It is essential that teachers, parents, school authorities and students learn how to prevent this problem in the near future.

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